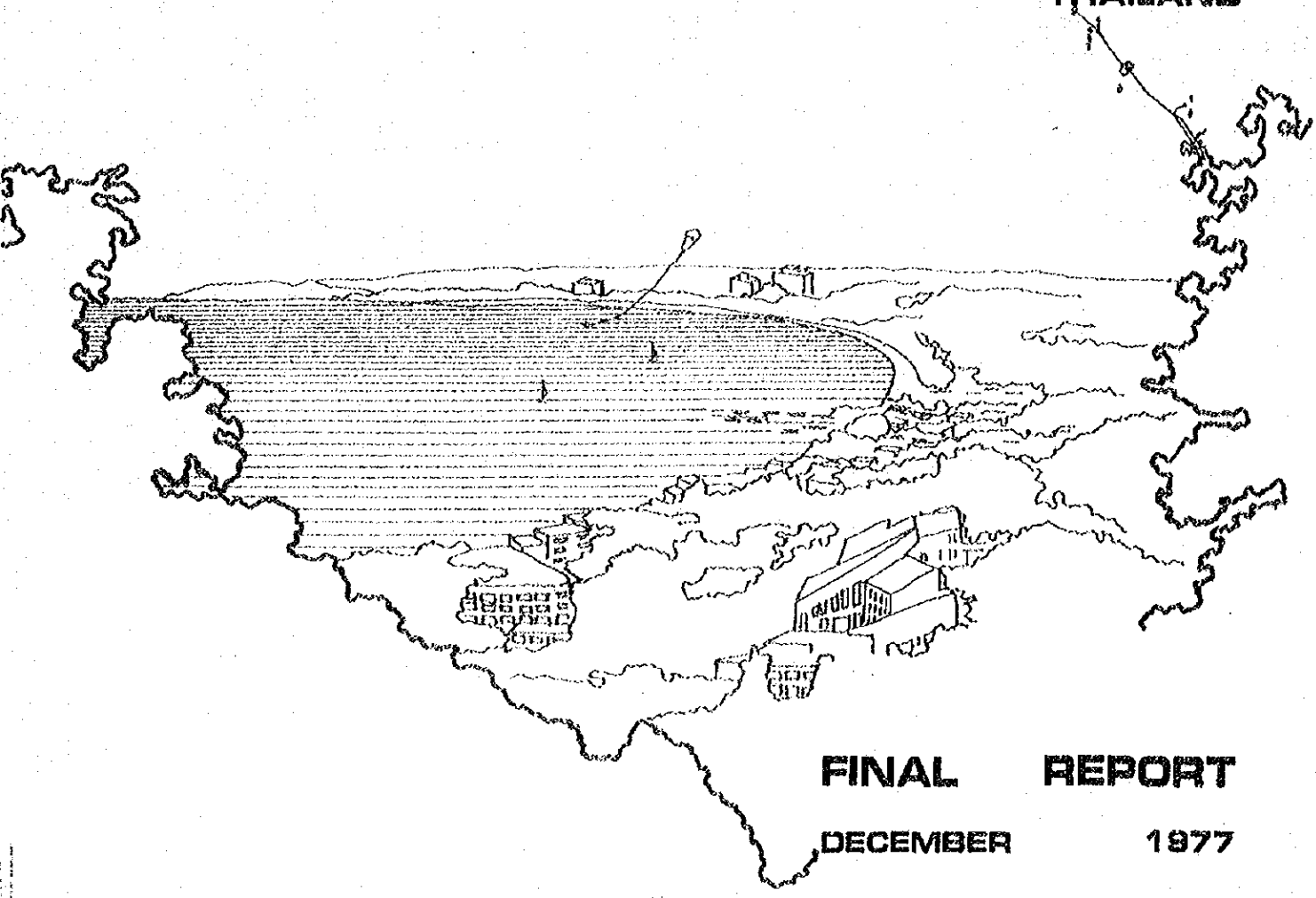
พัทยา

PATTAYA

TOURISM DEVELOPMENT

THAILAND



FINAL REPORT

DECEMBER 1977

JAPAN INTERNATIONAL COOPERATION AGENCY

TOURIST ORGANIZATION OF THAILAND

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P R E F A C E

In response to the request of the Government of the Royal Kingdom of Thailand, the Government of Japan decided to cooperate in the execution of a study for the Pattaya Tourism Development Project which constituted part of the overall tourism development plan for the Kingdom, and the Japan International Cooperation Agency undertook the study.

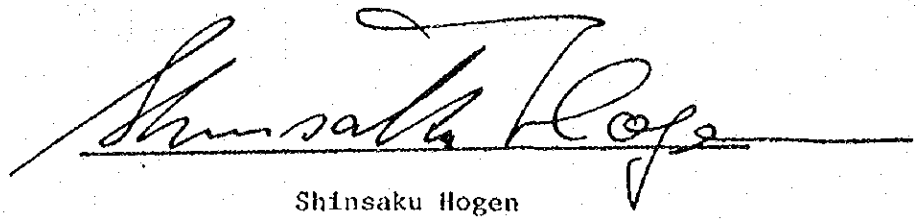
In view of the importance of the study, the Japan International Cooperation Agency dispatched a prefeasibility study team in November, 1976 to define the objectives and scope of the study, and further sent, from January to March, 1977, an advisory team led by Mr. Mikio Sudo, Director of the Japan National Tourist Organization, Tokyo, as well as a study team headed by Mr. Keiichi Fukuoka, to carry out the study. Moreover, teams were also dispatched to Thailand for the discussion with its officials of the interim report as well as for further water quality survey.

The study team held discussions on the project with the Thai authorities concerned and collected available information and data and conducted various field surveys necessary for the planning of the project. Based on these surveys, and taking account of advice and views voiced by competent authorities of various Thai Government departments, the team was engaged in related analysis and studies after returning to Japan. The study is now complete and it is contained in this report.

I sincerely hope that this report would contribute to the socio-economic development in The Royal Kingdom of Thailand and at the same time contribute towards the enhancement of the friendly relations now existing between the two countries.

I wish to express my heartful appreciation to the competent Thai authorities and other parties concerned for the cooperation and hospitality extended to the team during the study period.

December, 1977



Shinsaku Hogen
President
JAPAN INTERNATIONAL COOPERATION AGENCY

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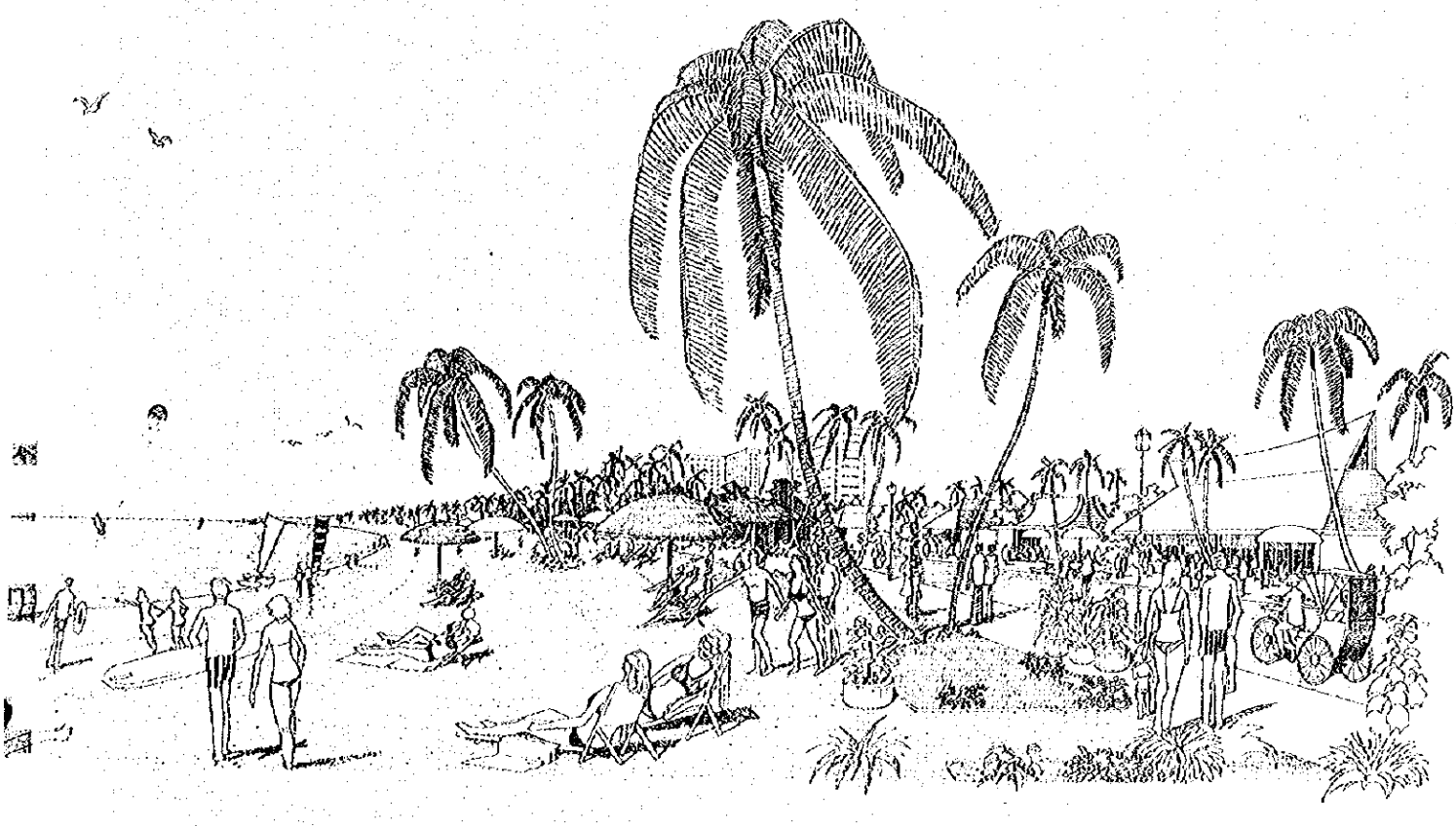
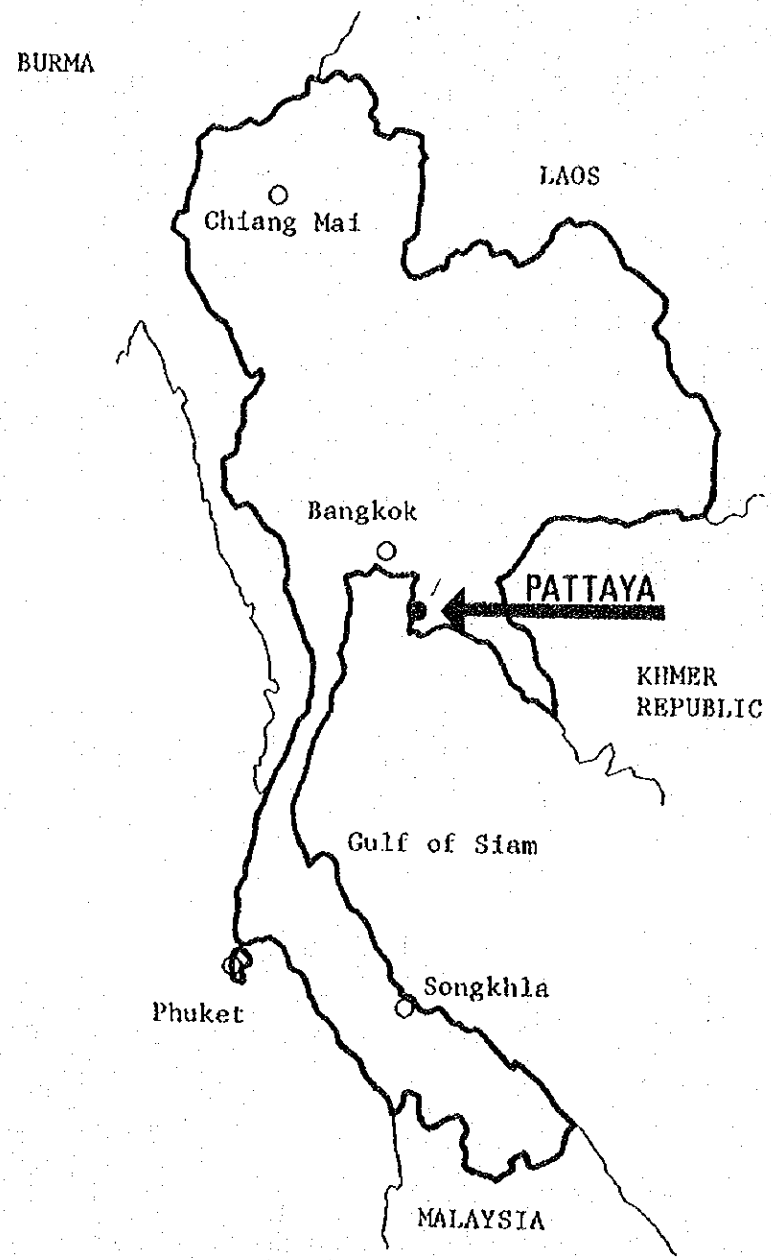



BURMA
LAOS
Chiang Mai
Bangkok
PATTAYA
KHMER
REPUBLIC
Gulf of Siam
Songkhla
Phuket
MALAYSIA

CHAPTER 1 INTRODUCTION

CHAPTER 1 INTRODUCTION

1.1 BACKGROUND OF THE STUDY

Past statistics evidently show the importance of the tourism industry in Thailand. In terms of the volume of international tourists into the Kingdom, it may be seen that in 1965, when tourism industry in Thailand was still at its infancy, only 225 thousand tourists were recorded. However, the number has increased by leaps and bounds to reach 335 thousand in 1967, 469 thousand in 1969 and 638 thousand in 1971. The million mark was exceeded in 1973 when the volume of tourists was recorded at 1.03 million. In 1975, the figure continued to expand to 1.18 million. In the last ten years, the number has indeed increased five folds, at a phenomenal average annual growth rate of over 18%. The revenue receipt from tourists has also increased accordingly from 506 million baht in 1965 to 4.5 billion baht in 1975, for a ten year growth of about 9 times. This growth is all the more significant from the fact that for the same period, the gross national products of the Kingdom had increased only by 3.5 times from 84 billion baht for 1965 to 295 billion baht for 1975. In 1975, the revenue receipt from tourism was vying with 'tapioca' for fourth place in foreign exchange earning of the Kingdom, being exceeded only by 'rice', 'sugar' and 'corn'.

The history of the beach resort of Pattaya is perhaps typical of the history of development of tourism in Thailand. Ten years ago, Pattaya was but a little fishing village along the beach with a small population. However, the potential resources for tourism development was soon recognized and enterprising investors soon flocked in to take advantage of the natural beauty and the abundance of sea-food to develop the tiny fishing village into an international beach resort. Today, Pattaya boasts over 3,600 hotel rooms of which about 3,000 are of international tourist class and the remaining make up of smaller hotels and bungalow type accommodation. There is also a large number of restaurants, night-clubs, souvenir shops and other tourist catering facilities both in South Pattaya and along the main beach road.

This spontaneous increase in tourist facilities is also found in Chiang Mai, Songkhla, Hat Yai, Phuket and other places of tourist attraction.

The pace of development of tourist resorts, mainly by the private sector, has been so rapid in the past years that the public sector has lagged far behind, so that an unbalance in supply particularly in infrastructure becomes an acute problem. Here again, Pattaya may be cited as an example. The hotel room capacity has increased five folds during a short period of 5 years. However, the hotel construction was not carried out according to any overall plan, each investor choosing a site most suitable to him and deciding on the number of rooms, the structure or the height of the hotel, according to his own decision, and each hotel tries to be self-sustaining by providing all tourist catering facilities within the

hotel compound. As a result, high rising hotels are found standing side by side with other lower structures spreading over a wide area, and the effect from the aesthetical point is by no means desirable. Also, the unplanned and uncontrolled development results in an over-supply of not only hotel rooms but also restaurants, night-clubs and other services. Moreover, there are a chronic shortage of water supply, a lack of planned sewerage and drainage system, bringing about pollution of the sea, and a deterioration of the environment. In view of the importance of Pattaya in the tourism industry, and of the undesirable effects without an overall development plan, the preparation of the masterplan for Pattaya is a matter of importance and high priority, and this study is an answer to this urgent need.

The Government of Thailand has long recognized the importance of the tourism industry as well as the necessity of a well concerted overall tourism development plan. The Tourist Organization of Thailand (TOT) was established for the promotion of the tourism industry in 1969. On the planning side, a "National Plan on Tourism Development" was prepared by the Netherland Institute of Tourism Development Consultants (TDC) in 1975, and the recommendations of the report provide a guideline for the overall national development on tourism. The World Bank (IBRD) also showed interest in tourism development of Thailand some years ago when an assessment of the major international tourist resources in Thailand was carried out. A terms of reference was subsequently prepared by the Government of Thailand for tourism development studies on Pattaya, Chiang Mai, and Songkhla/Hat Yai, in that order of priority.

The Japanese Government, as part of its technical cooperation program, has undertaken to carry out the study on the Tourism Development of Pattaya, the project of top priority. In October-November 1976, a Japanese preliminary survey team was despatched to Thailand for field reconnaisance and preparation of the scope of work together with the Thai counterparts. Basing on the agreed scope of work, the Japan International Cooperation Agency (JICA), the Japan executing agency for technical cooperation, appointed a consortium of consultants, consisting of the Pacific Consultants International and Nippon Tetrapod Co., Ltd., to perform the study for Tourism Development of Pattaya. The Consultants, working under the guidance of an advisory committee, dispatched a study team consisting of twelve members to Thailand to commence the performance of the Tourism Development study for Pattaya from 10th January, 1977.

A Progress Report was submitted in March, 1977, which contained the results of the preliminary findings of the resultants after two months of field works in Pattaya and Bangkok. In the report, a preliminary landuse plan and infrastructure plan was presented and a preliminary economic and financial evaluation of the masterplan was also made. Further works were subsequently carried out by the consultants in Japan whereby detailed plan of the landuse was made based on the general policy decided and agreed during the Progress Report stage and the infrastructure plan was also revised from the point of reduction of the capital cost.

During the work period in Japan six members of the Thai counterparts also came to Tokyo for a period of 1 1/2 months, spending much of their time in working together on the study with the consultants.

A draft report was presented to the Thai government by a 6-member report presenting team consisting of those members each from the advisory committee and the study team, who spent a ten-day period from 18 August to 27 August 1977 in Bangkok making the presentation to the Thai panel. In the panel discussion, except for some minor modifications and corrections, the findings of the draft report was basically accepted.

This report is prepared after making the necessary modifications and corrections as brought forward in the panel discussion with the addition of the findings of the additional water quality survey which was carried out by the study team from 10 August to 8 September, 1977.

This report is therefore a product of the joint effort of the Thai counterparts and the consultants in Japan, with the advisory committee providing necessary advice and guidance during the crucial stages of the study. The report presents the final picture of the resort of Pattaya after implementation of the various masterplan projects to fulfill future requirements, both in the landuse and the infrastructure respects. It also gives recommendations on the implementation schedule including proposal on the implementation of the urgent projects. Studies are also made on the organization, legislation and training for the undertaken of tourism development.

It is believed that the report will provide an ample guideline for the development of the important resort of Pattaya to cater to future increase demand of international tourists, and contribute towards the development of the tourism industry in Thailand.

1.2 TEAM FORMATION OF ADVISORY COMMITTEE, STUDY TEAM AND THAI COUNTERPARTS

The formation of the advisory committee, the study team which participated in the field studies and the Thai counterparts who came to Japan are as follows:

(a) Advisory Committee

1.	Chairman	Mr. Mikio Sudo	Executive Director Japan National Tourist Organization
2.	Member	Mr. Yoshiro Hitosugi	Urban Bureau, Ministry of Construction
3.	Member	Mr. Tsuyoshi Kawashima	Tourism Department, Ministry of Transportation
4.	Member	Mr. Yukio Nishida	Harbour Bureau, Ministry of Transportation
5.	Member	Mr. Gokichi Ogawa	Tourism Department, Ministry of Transportation
6.	Member	Mr. Hiromichi Sakamoto	Environment Sanitation Bureau, Ministry of Health and Welfare
7.	Member	Mr. Koichi Shimizu	Ministers Secretariat Ministry of Construction
8.	Coordinator	Mr. Yoichi Seki	Japan International Cooperation Agency

(b) Study Team

(1)	Project Manager	Mr. K. Fukuoka	Pacific Consultant International
(2)	Deputy Project Manager	Mr. K. C. Fan	Pacific Consultant International
(3)	Member	Mr. K. Fujita	Pacific Consultant International
(4)	Member	Mr. M. Amemiya	Pacific Consultant International
(5)	Member	Mr. T. Asakawa	Nippon Tetrapod Co., Ltd.
(6)	Member	Mr. H. Takahashi	Pacific Consultant International
(7)	Member	Mr. A. Takahashi	Pacific Consultant International
(8)	Member	Mr. E. Nishigori	Pacific Consultant International
(9)	Member	Mr. M. Kondo	Pacific Consultant International

(10)	Member	Mr. S. Watabe	Pacific Consultant International
(11)	Member	Mr. E. Matsuura	Nippon Tetrapod Co., Ltd.
(12)	Member	Mr. Y. Miyamoto	Pacific Consultant International

(c) Thai Counterparts

(1)	Mr. Tamasak Rojanasoonthorn	Chief, Planning Division, ToT
(2)	Mr. Amnuey Netayasubha	Planning Division, ToT
(3)	Mr. Montri Jantrupon	Planning Division, ToT
(4)	Mr. Prakarn Meksupa	Department of Town and Country Planning
(5)	Mr. Mana Jotikapanich	Department of Public Works
(6)	Mr. Tanong Tantiteevawit	Office of the National Environment Board

1.3 ACKNOWLEDGEMENT

In the course of the study, much valuable assistance, cooperation, advices and conveniences was accorded the study team during their stay in Bangkok, by the various government departments and agencies and also private enterprises, starting with Col. Somchai Hiranyakit, Director General, TOT, and Mr. Dharmnoon Prachuabnoh, Deputy Director General, T.O.T. Without their cooperation, the study would not have been performed so successful, and we are most grateful to all who contribute to the successful completion of the study. The list of individual names will be too long to be presented here, but we shall endeavor to list the organizations, the members of which we owe our gratitude, in the following:

1. Tourist Organization of Thailand
2. Department of Technical and Economic Cooperation
3. Department of Fisheries
4. Department of Public Works
5. Communication Authority of Thailand
6. Department of Highways
7. Office of the National Environment Board
8. Pattaya Resort Associations
9. Office of The National Economic and Social Development Board
10. Town and City Planning Bureau
11. Department of Harbor
12. Department of Post and Telegraphy
13. Department of Hydrography
14. Head of Bang Lamung District
15. Department of Industrial Works
16. Department of Administration
17. Department of Mineral Resource
18. Marine Police Division
19. Local Water Supply Division

1.4 DESCRIPTION OF THE PROJECT AREA

1.4.1 General

Pattaya, a newly established beach resort of Thailand, is situated on the east coast of the Gulf of Thailand, some 150 km towards the south of Bangkok, from which access to the resort by car takes about two and a half hours. The sand beach which extends in a north-to-south direction for a distance of about 3 km, together with the typical tropical scenery with coconut trees and other tropical Plants lining the hinterland, makes this resort a favorite beach resort for a large number of international tourists, who come flocking to enjoy the 'sun', 'sand' and 'sea' from all over the world.

To cope with this recent rapid growth in demand, the beach resort has been rapidly developed, mainly through investment of the private sector, so that today, tourist class hotels as well as restaurants, night clubs, bars and other tourist facilities are found lining the shore line.

This rapid development without the support of a coordinated provision of infrastructure by the public sector, together with the recent establishment of many tapioca factories in the vicinity, has resulted in the gradual pollution of the environment and the deterioration of the conditions as an international tourist resort.

In this chapter, a brief description shall be made of the various aspects of the present situation of the Pattaya beach resort, together with an in depth look into the problems which are faced by Pattaya.

1.4.2 Physical Characteristics

(a) Geography - See Fig. 1.4.1

1) At present, there are two town centers in the Pattaya development study area, namely Na Klua as a community center and South Pattaya (downtown) as a tourist center.

2) The area along the shore line has been developed but the inland area except a section along Sukhumvit Highway has remained agricultural land.

3) The tourism development area is rather concentrated from central to northern sections of the study area. Commercial, industrial and fishery activities are found at the northern section of study area.

4) There are two main islands in the study area, namely Ko Lan and Ko Phai. Ko Lan Island has about 80 accommodation units (bungalow type and apartment type) and restaurants. Other than one fishing village in Ko Phai Island, the island remains as natural forest.

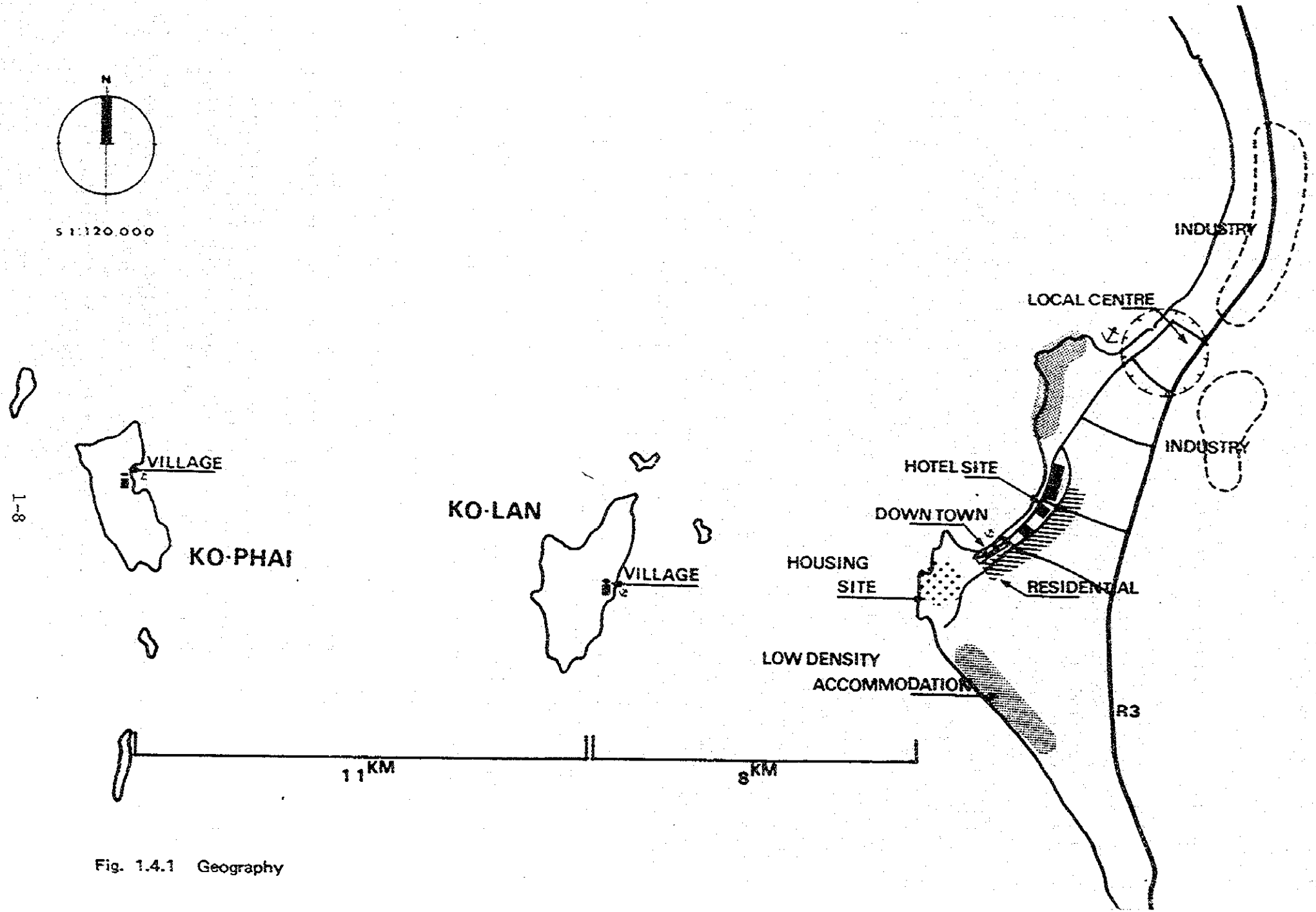


Fig. 1.4.1 Geography

(b) Physical Features - See Fig. 1.4.2

1) The development study area is generally composed of flat land and a gentle slope begins from the middle part of the study area.

2) Pattaya hill, (100 m above sea level) is located along the sea shore at the middle part of the study area and the hill has high potential to be a land mark of Pattaya beach.

3) As a special feature, the middle section of area between Sukhumvit Highway and Highway 3135 is swamp area (±4.0 m) where lotus and other vegetation grow.

(c) Geology

1) The downtown area and southern beach are composed of beach sand and the area behind them is characterized by flat alluvial land.

2) There is granitic hill at the central part of the study area and extends to the inland terrace.

3) Rice fields are located at the rich alluvial soil, and tapioca is cultivated at the rather sterilized field.

(d) Climate - See Fig. 1.4.3

1) The study area is in the tropical rain forest zone and the climate may be clearly defined into a dry season (November-April) and a wet season (May-October).

2) The average temperature is about 27°C and the highest and lowest temperatures are recorded respectively in April and in December.

3) The average temperature of Pattaya is 2° - 3°C higher than Hawaii and Miami, but a little lower than Acapulco, Mexico. The temperature does not vary greatly from the average temperature. The humidity is high all year around and the wet season is long. However, Pattaya beach is well located in the area where the average temperature is about 1°C lower than Bangkok, and the number of rainy day and the amount of rain are comparatively less than other areas in Thailand so that it is suitable as an ocean resort.

4) The prevailing wind direction is in the southern or south western direction for the February-September period and in the Northern direction for the October-January period.

Fig. 1.4.2 Physical Features

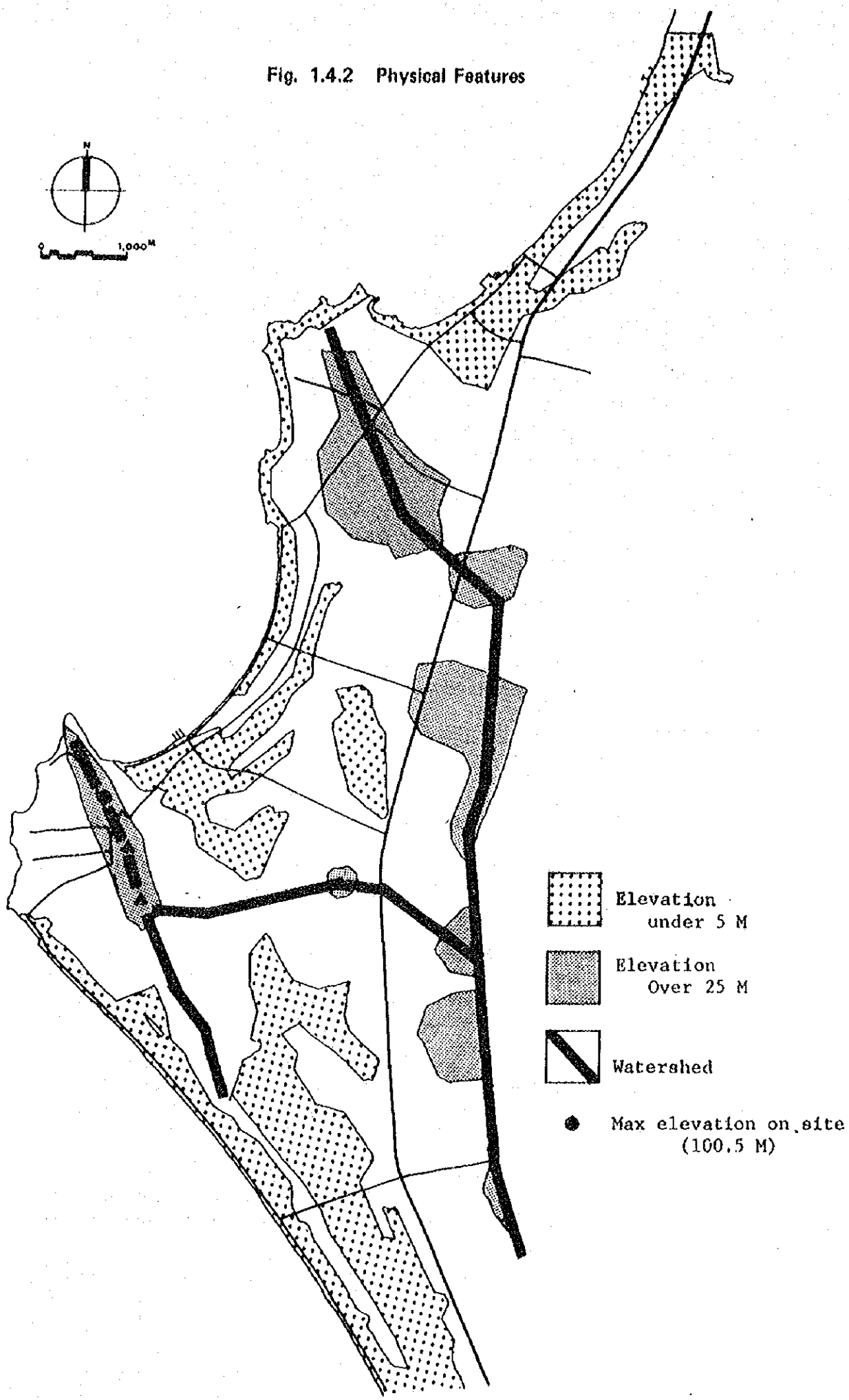
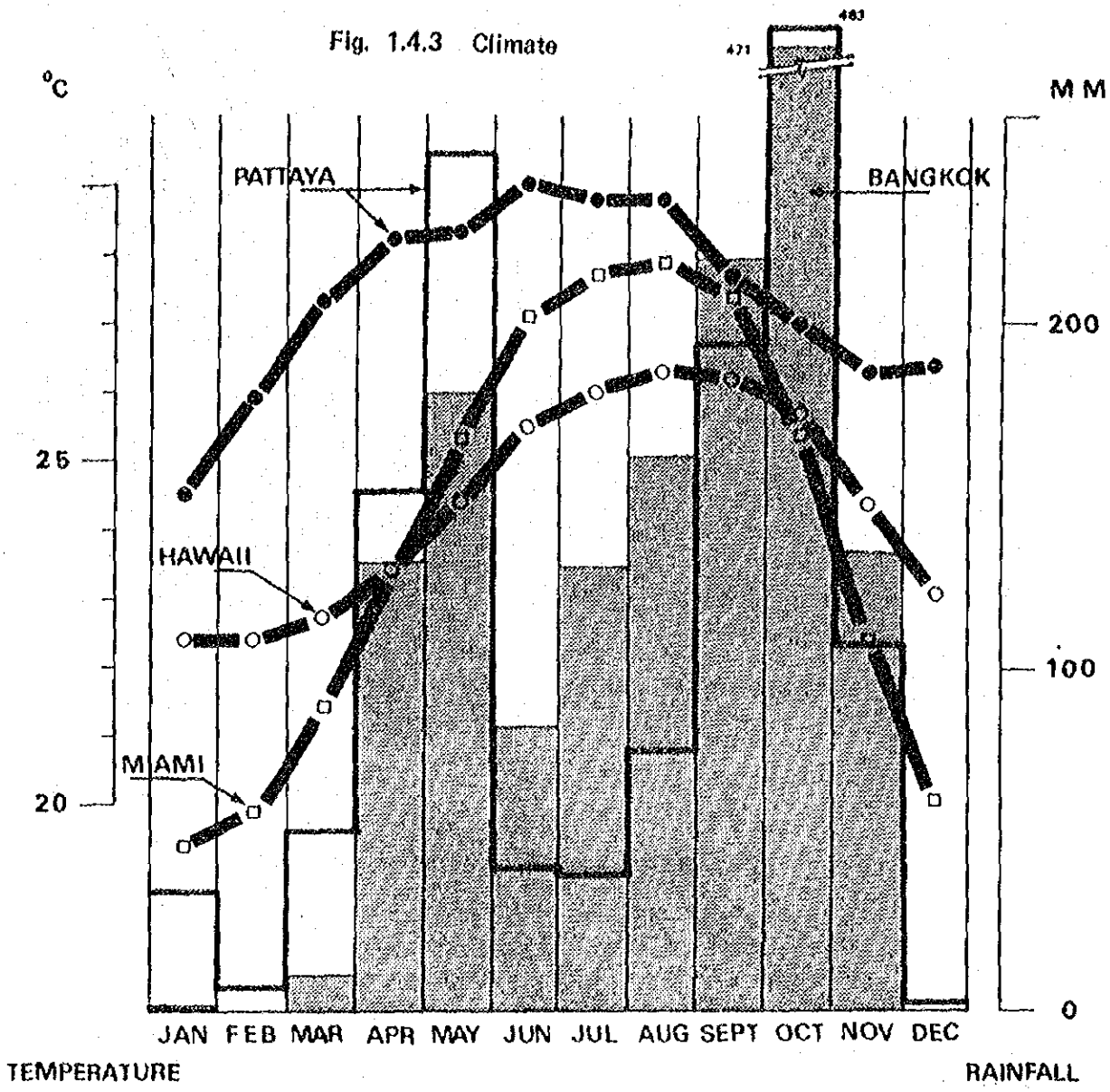


Fig. 1.4.3 Climate



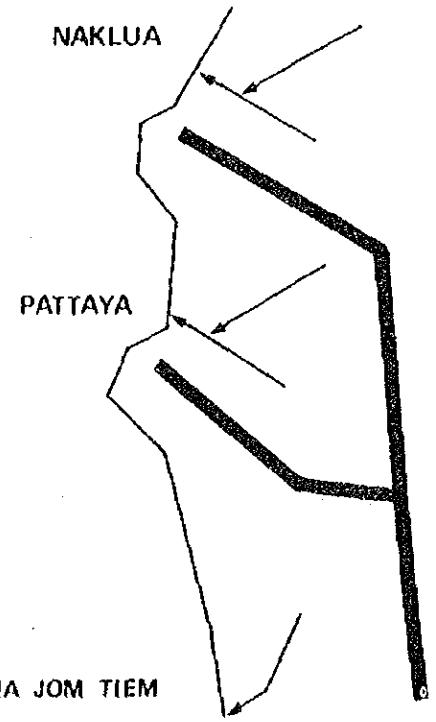
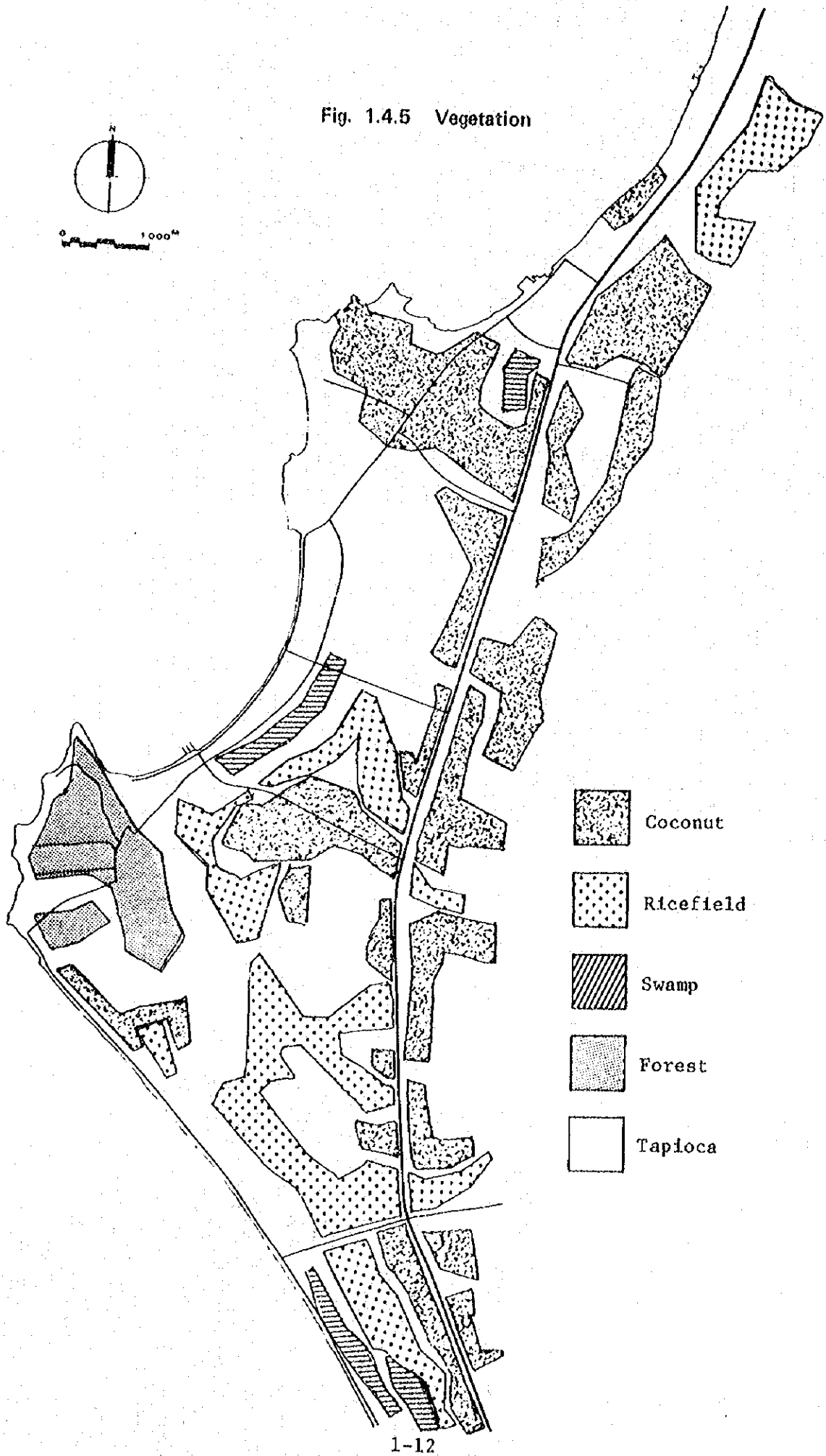


Fig. 1.4.4 Water & Hydrology

Fig. 1.4.5 Vegetation



(e) Water and Hydrology - See Fig. 1.4.4

1) Rain Water is distributed through three rivers (Na Klua River, Pattaya River and Na Jom Tiem River) into sea from three rain catchment areas.

2) These rivers except Na Klua river cover rather limited area and waste water sheds are found within the study area.

(f) Vegetation - See Fig. 1.4.5

Most of the study area is either argicultural land or forests of coconut trees. Natural growing vegetation is only found at the seashore sand area and at the hill which is covered by evergreen forests.
Most of the agricultural land is planted with tapioca. There is no existing irrigation or other facilities for rice field. As an attractive inland feature of the study area, coconut forests are found at various areas to create a natural tropical atmosphere.

(g) Natural Disaster

1) Most tropical typhoons are born in South China Sea during the months of June to December and pass through the northern vicinity of Thailand during June to September and the Southern vicinity during October to December. There is no recorded heavy damage by tropical typhoons on the eastern side of the Gulf, but on the western side, some damages had occurred.

2) There is no recorded damage by typhoon in the study area. Several years ago, flooding in the study area occurred, due more to the human fault than nature. No future natural disaster is anticipated in the study area.

1.4.3 Socio-economic Conditions

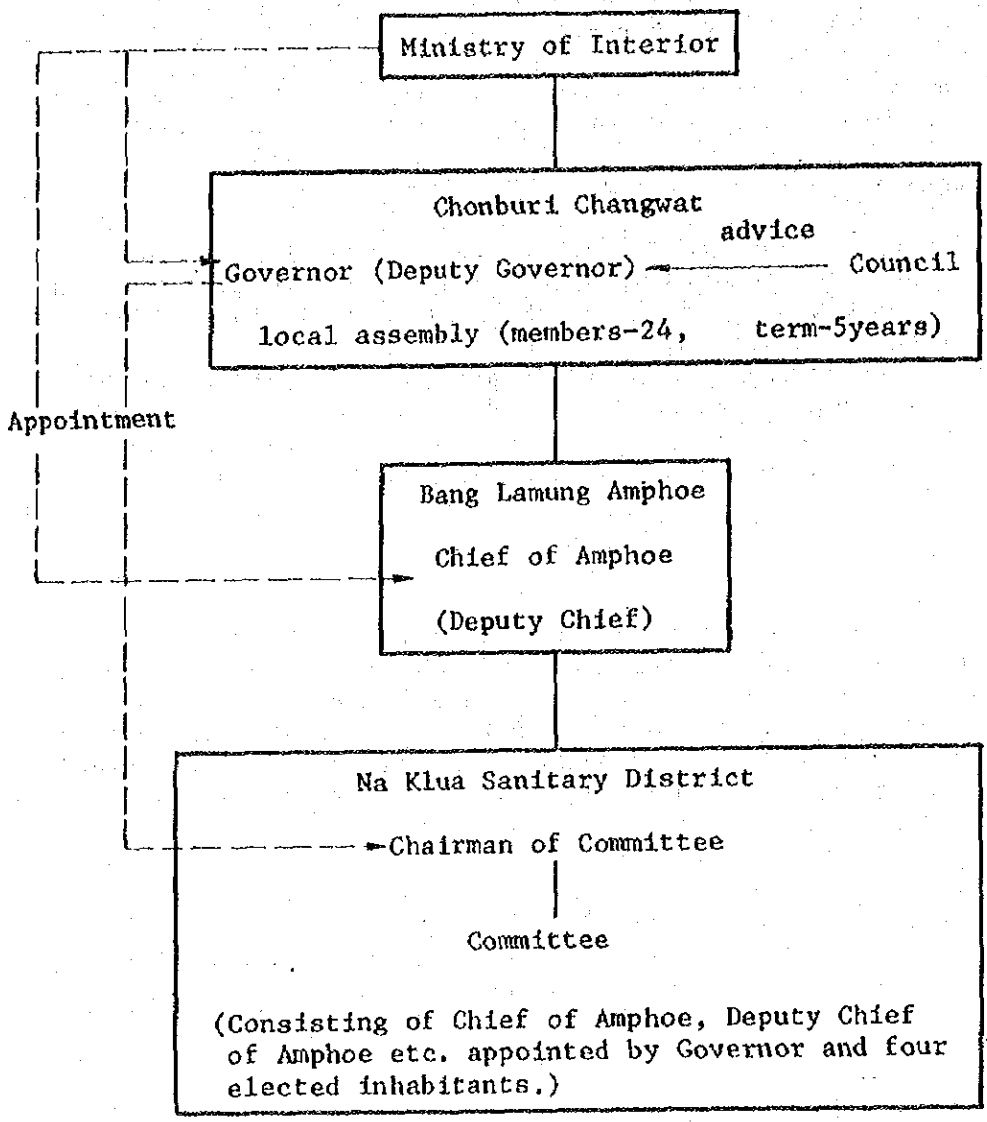
(a) Population

The study area is located inside the boundary of Amphoe Bang Lamung, Chonburi Changwat.

The populations of Chonburi Changwat and Bang Lamung Amphoe were respectively 665,546 persons and 68,677 persons in 1976.

42,531 persons were living in the study area in 1976 and they occupied 62% of Bang Lamung Amphoe's population. The distribution of population in Na Klua Sanitary District is as follows:-

Fig. 1.4.6 Administration System of Chonburi Changwat



Notes: 1. Chonburi Changwat consists of 7 Amphoes and 2 King-Amphoes.

2. Bang Lamung Amphoe consists of 8 Tambons.

3. Na Klua Sanitary District covers parts of Nong Pleu Tambon, Na Klua Tambon and Bang Lamung Tambon.

District	Population
Bang Lamung	6,481
Na Klua	20,842
Nong Pleu	15,208
Total	42,531 persons

According to Bang Lamung Amphoe office survey in 1977, the population per household is about 6 persons.

53% of total Thai population belongs to the age group "15-59" years based on the Interior Ministry's population data of 1975. According to the 1976 survey of age group distribution for the study area, the age group of "15-59" years occupies a high ratio of 60.5% and the percentage of the age group "5-9" years is rather lower than the national average. However, since the "10-30" years age group remains a high percentage of the total local population, the percentage of the younger age group will increase by the provision of stable job opportunities which will encourage local people to remain at Pattaya.

(b) Administration System

The local administration system of Thailand has been developed since the Sukhothai Dynasty in 13th century.

It has been changed and improved many times since then, and has taken the modern and democratic form in some parts. But it is still exceedingly centralized and also very complicated.

The national administration law was promulgated in 1952 to stipulate the system of central and local administration of Changwat (Province) and Amphoe (District), and the sanitary administration law was proclaimed in 1955 to provide the system of Sukhaphiban (Sanitary District)

At present, there are 72 Changwats, about 526 Amphoes, 17 King-Amphoes (smaller than Amphoe), 532 Sukhaphibans and many Tambons (village) and Mubans (smaller communities than Tambon).

The sutdy area is located in Bang Lamung Amphoe of Chonburi Changwat, and it consists of parts of three Tambons (sub-district), namely Bang Lamung Tambon, Na Klua Tambon and Nong Pleu Tambon.

Pattaya beach area is administrated by Na Klua Sanitary District authority.

The administration system of Chouburi Changwat is given in Fig. 1.4.6.

A plan is in hand to raise Na Klua Sanitary District to a higher local administration body named Na Klua Township (or municipality) in the near future which will come directly under the Ministry of Interior.

(c) Local Industries

According to 1976 statistics, there are 17,000 persons (40% of the total population) who are recorded as 'employed' in the study area. The employment structure is as shown in Table 1.4.1.

1,900 persons (11.2%) are fishermen and farmers. A high level of development in labour force structure as found in cities has been in progress as may be seen from the low ratio (11.2%) of farmer and fisherman population to the total labour population of in the study area, against 78.5% in the national level.

Na Klua and Pattaya villages were born and grew as fisherman's villages. As the industrial (tapioca factories) and tourism development took place, the pollution level of sea water has been accelerated and the fishermen are losing their living-base. Most of the boats owned by fishermen have been converted into pleasure and excursion boats.

Regarding agriculture, the population occupies 40% of total labour population in Bang Lamung Amphoe and the agricultural land (about 490 km^2) occupies 63% of the total land area. Agricultural land is composed of the following:

Coconut	12%
Rice field	6%
Tapioca	82%

Table 1.4.1 Employment Structure of Study Area

	Number	Ratio(%)
Farmers & Fishermen	1,900 persons	11.2%
Production process	300	1.7
Technicians & Engineers	1,100	6.2
Service	7,400	43.6
Commercial	4,800	28.4
Clerk	200	1.1
Executive	100	0.7
Transportation	700	4.0
Others, undefined	500	3.2
Total	17,000 persons	100.0%

Source: 1976 Survey data

The high percentage of tapioca growing areas is the same as in Chonburi Changwat because the climatic condition suits the growing of tapioca. Therefore, tapioca is a major product in the agricultural production in Chonburi.

In the study area, most of the agricultural land is tapioca growing fields. There are 17 processing factories in the study area and 27 factories including the surrounding area. The number of employees in tapioca processing plants is estimated at about 300, according to the 1976 survey. Generally the facilities of the tapioca factories are rather small with limited modern processing from raw tapioca to starch or tapioca chip. Many factories are still employing the natural processing methods, using the sun-drying method during the dry season. The problems of sea water pollution and bad smell are greatly due to tapioca processing.

14,800 persons (87% of total employed population) is estimated to be in the service related catagory. Judging from the fact that 5,300 are hotel employees, it can be seen that the major portion of service related industry directly depends upon the tourist industry as an economical base.

There are two active markets in Na Klua Village which also has some highly specialized quality stores. Na Klua is functioning as a central commercial center in Bang Lamung Amphoe. According to interview of consumers, the food supply for hotels is being supplied from markets in Na Klua.

(d) Social characteristics

In the last decade, Pattaya has developed very rapidly into a beach resort from a small fishing village. Today, there are many modern hotels, restaurants, bars, night clubs and ocean sports establishments. This sudden great change had a impact on the life and employment pattern of the inhabitants. However, the major portion of the profit return from the tourism industry does not go to the inhabitants but mostly to the investors in Bangkok. So, it must be said that it is necessary to develop the tourism industry in Pattaya in harmony with the prosperity of the local people.

(e) Employment condition

The employment condition in Pattaya has changed because of the change of the employment structure from mainly agriculture and fishery to commerce and service.

The available data about the employment conditions is scarce so it is difficult to form a complete understanding of the conditions.

According to the field survey which was held by the Town and City Planning Bureau in 1976, the employment rate is 96% and the unemployment rate is 4%. However, it is supposed that a high rate of latent unemployment exist in the form of seasonal unemployment in agriculture.

Although many children are educated up to junior high school level, most of them do not become skilled enough to work in the tourism industry after leaving school, for instance, in their foreign language proficiency.

(f) Problems of the regions

The existing major problems in the study area may be summarized as follows:

1) Lack of development of a social structure.

   i Progression of environmental destruction due to lack of infrastructure.

   ii Tourism development without adequate landuse control.

   iii Limited availability of well qualified labour force due to lack of opportunity for high level education or training.

2) Isolation between local economical development and tourism industry.

   i Immaturity in local investment capital

   ii No harmonious development between local community and tourism development capital.

   iii No adequate contribution to the tourism industry by local labour force.

3) The problems of public security to the tourists have been improved but safety problems in various activities such as accidents by pleasure boats and automobiles, will remain without adequate provisions in safety measures, considering the ever increasing number of tourists.

1.4.4 Tourism Facilities

(a) Accommodation Facilities

Pattaya has rapidly been developed in the past ten years, and at present there are eleven international tourist class hotels which have nearly 2,800 rooms in all and many other bungalows, lodges and motels totalling about 30 units and 800 rooms.

Nipa Lodge Hotel began operating as an international class hotel in 1964, and since then following the rapid increase of visitors to Pattaya, many hotels and bungalows were constructed including 10 international tourist class hotels which began to operate from 1970 to 1976.

All the international tourist class hotels have their own swimming pools, and some of them have private beaches, tennis courts, mini golf courses and bowling alleys.

Present condition of selected hotels in Pattaya

Number of units	11
Number of rooms	2,767
Number of employees	4,363
Average number of employees per room	1.6
Amount of investment	851 million Baht
Average investment per room	308 thousand Baht
Capital	347 million Baht
Average capital per hotel	32 million Baht
Capital structure	1) National capital (100%): 5 hotels
	2) Joint venture with foreign Capital (U.S., Hong Kong, Japan, etc.): 6 hotels
Average room rate	340 Baht

Note: Based on data from the Tourist Organization of Thailand and Pattaya Resort Association.

(b) Sports and recreation

Sport and recreation are the most important elements in an ocean resort and beautiful beach and clean sea water for sun bathing and swimming should be stressed as the most important tourist attractions. Regarding sports activities, ocean activities supplemented by general inland activities for those who might not be able to participate during daily activities would take a major role.

Although Pattaya has all types of sports for participation, some problems still remain on efficiency and safety for participation of these sports.

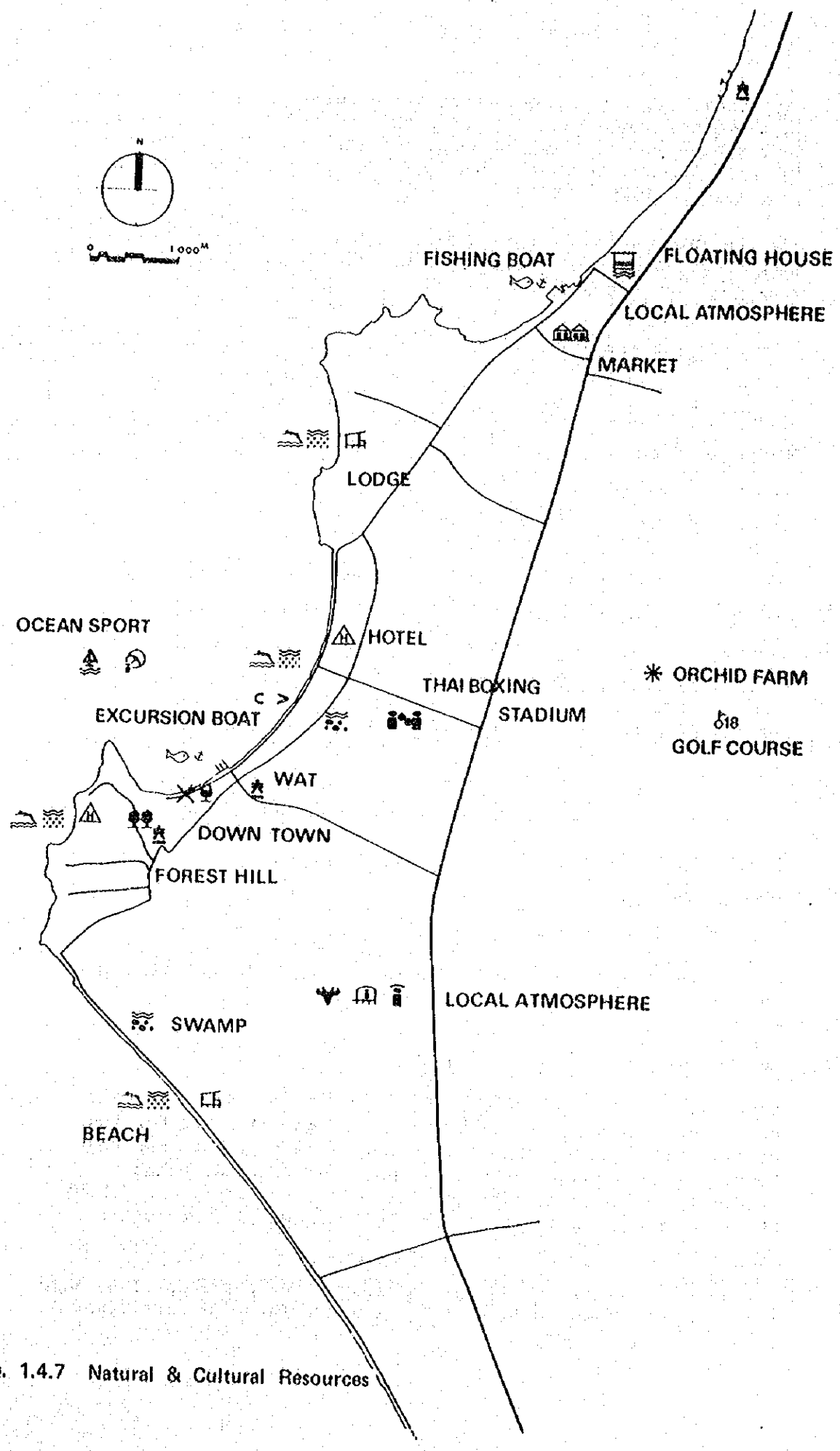


Fig. 1.4.7 Natural & Cultural Resources

(c) Intellectual curiosity

A basic human desire to satisfy intellectual curiosity comes from appreciation and experience of natural resources, local culture, arts, festival and others. In ocean resort, it can be said that fulfilment of intellectual curiosity would be a key factor to make a successful development of Pattaya. The ocean itself would function as an important theme. Presently, cultural tourism assets in Pattaya study area have not been greatly appreciated by most tourists. However simple expression of the custom of local people and the mind of art may be developed through suitable display in the study area.

Local atomosphere

Na Klua Village	- Simple image of fisherman's village
Hinterland	- Natural landscape Scene of farmers
Buddhist College	- Religious
Other small temples	- Religious

(d) Shopping and Eating

Even for an ocean resort, natural living pattern (shopping and eating) cannot be denied. Therefore different forms of pattern have to be supplied like souvenir shops, sea food restaurants and other special attraction.

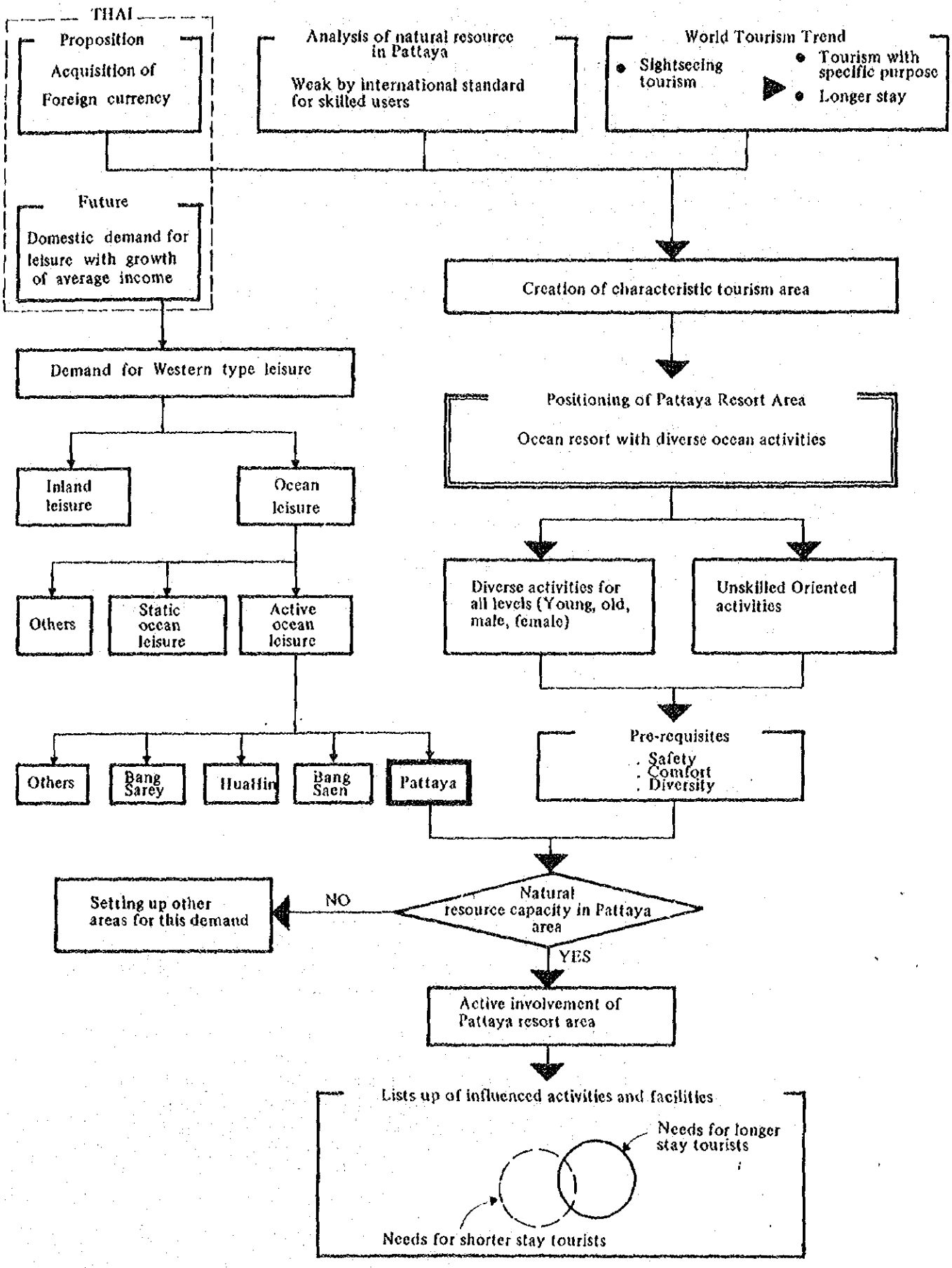
Shopping	Souvenir shops	- Downtown
	Local shops	- Na Klua Village
Eating	Sea food	- Downtown
	Local restaurants and eating stands	

(e) Entertainment

Besides the said tourist attractions which are originated from natural resources, there are attractions which are made possible through artificial displays. In this category will include special events such as beauty contests, music festivals, car races, yacht races, shows in hotels and restaurants.

A well planned special event itself is usually a main attraction to tourist for a tourist resort, and such special events organized at a level compatible to attracting international tourist is in fact one of the necessary elements for an international resort. The Pattaya Festival, held from 25 to 28 March, 1977 for the first time was a good start towards organization of such special attraction and its continuation in the future is highly desirable.

Fig. 1.5.1 Methodological Flow Chart



1.5 METHODOLOGY FLOW CHART

Since tourism industry as a source of foreign currency earner occupies a very high position in Thailand, one of the important objectives in the Pattaya Tourism Development project is "to secure maximum foreign exchange earning". At present, Bangkok is functioning as the main tourist attraction in Thailand to world travellers and Pattaya's position in Thailand's tourism industry is only a side destination from Bangkok like Chiang Mai and Phuket. However, future world tourism trend is going to transfer from sight-seeing tourism to tourism with specific purpose and attraction.

Considering the future position of Pattaya beach as an international ocean resort, it is essential that the development of Pattaya will lead this resort to high level of characteristics and atraction with Thai flavor.

The natural tourism resources in Pattaya are rather weak for developing ocean activities requiring high skill. Taking into consideration the difference between Phuket and Pattaya as ocean resorts, it is an appropriate policy for Pattaya beach to be developed as a station point with diversified activities oriented to less skilled tourists.

On the other hand, with the expected future increase in per capital income of the Thai people, the natural demand for the western type leisure will increase in the future. As mentioned later in our basic developing policy, it is planned to absorb this local demand as an advantageous elements within the limit of physical capacity of the Pattaya beach. However careful attention has to be paid on the role of other beaches related to this demands, such as Bang Saen, Hua Hin, Bang Sarey, Rayong and any future projected new beaches.

Fig. 1.3.1 shows the general flow chart which indicates the stream of philosophy and policy adopted towards the integrated planning of tourism development for Pattaya beach resort.

CHAPTER 2
TOURISM MARKET ANALYSIS IN PATTAYA

CHAPTER 2 TOURISM MARKET ANALYSIS IN PATTAYA

2.1 ANALYSIS OF PAST TOURISM TREND

2.1.1 Trend of International Tourism

(a) World Volume

The growth of international tourism began in the early nineteen fifties and since then it has developed rapidly because of rising productivity, higher income, increased paid holidays, increase and diversity of leisure time, modern transport technology and the creation of new tourism facilities and amenities. International tourism today has grown into a major industry to affect economic, social and political aspects.

International tourist arrivals are estimated at 213 million in 1975 which is about 1.6 times the 131 million in 1966, as shown in Table 2.1.1. The average annual increase rate from 1966 to 1975 was 5.6%, while it was recorded at 7.4% for 1966-1973. The major reason for a slight decrease in 1974 was the world-wide depression after the energy crisis in Autumn, 1973.

International tourist receipts were estimated at US$29 billion in 1974 from US&12.5 billion in 1966. The amount in 1974 was about 2.3 times as much as in 1966, growing at an average annual increase rate of 11.1%. International tourist receipts has increased more greatly than international tourist arrivals because of the increase in average expenditure per person.

(b) Analysis by regions

International tourist arrivals by regions shows that the increase of international tourism has taken place chiefly in the developed, industrialized countries (see Table 2.1.2). The two major tourist receiving regions are Europe and the Americas, so that the share of Europe was 71% and that of the Americas was 22% in 1974. The main reason of the European share being extremely high was that international tours between European countries account for nearly 80% of the total tourist arrivals in Europe. However, the share of Europe showed a decline from 74.6% in 1966 to 71.3% in 1974. On the other hand, the share of Pacific and Asia indicated an increase from 1.9% in 1966 to 3.3% in 1974. The increase of Pacific and Asia in 1966-1974 was nearly 200% and during that period the average annual increase rate was 13.5%. This tendency seems to be due to the diversification of international tourist destinations and lower international fare payments by the mass transportation and spread of chartered travels.

International tourist receipts by regions are given in Table 2.1.3. According to the analysis, some interesting aspects are observed. That is, the share of Europe in tourist receipts was extremely lower than that in international tourist arrivals, the share in tourist receipts being 57.9% while that in tourist arrivals being 71.3% in 1974. On the contrary, the shares of tourist receipts of Pacific and Asia, and Africa were higher than those of Europe or the Americas, and it was more efficient to obtain increased tourist expenditure per person, although especially in Africa this was probably caused by high prices of commodities.

(c) Analysis by major countries

Table 2.1.4 shows international tourists receipts and expenditures by major countries in 1974. The receipts increased in most of the countries while the expenditures decreased in about half of the major countries, and in most industrialized countries tourism has been far less affected by the recession which began in 1973-74 than other industries.

The highest receiving country was the U.S (US$4,032 million), followed by Spain (US$3,188 million), France (US$2,640 million), W. Germany (US$2,325 million) and Austria (US$2,289 million). On the other hand, the highest spending country was W. Germany (US$7,041 million), followed by the U.S. (US$5,973 million), France (US$2,380 million), Canada (US$1,608 million) and the U.K. (US$1,601 million).

International tourist arrivals and receipts by major countries (1971-74) are given in Table 2.1.5. The largest countries in tourist arrivals are European countries, such as Italy, Spain, W. Germany, Denmark, Czechoslovakia, Austria, France, the U.K. etc., and Canada in North America.

A breakdown of tourist arrivals by major tourist-generating countries in 1974 is given in Table 2.1.6. It is obvious that every European country is visited mostly by other European countries.

Table 2.1.1 World volume of international tourist arrivals and international tourist receipts

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
Tourist arrivals (in thousands)	130,597	139,146	141,661	154,230	169,010	181,280	198,000	215,123	209,000	*213,000
% Increase	-	6.5	1.8	8.9	9.6	7.3	9.2	8.6	(-)2.8	1.9
Tourist receipts (millions of U.S. dollars)	12,496	13,482	14,014	15,500	17,950	19,880	24,110	27,610	29,000	-
% Increase	-	7.9	3.7	10.6	15.8	10.7	21.3	14.5	5.0	-

Notes: 1. Source: Tourism Compendium 1975, World Tourism Organization & Tourism White Paper 1976, Japanese Government.

2. * Estimate

3. Tourist receipts exclude international fare payments.

Table 2.1.2 International tourist arrivals by regions

Regions	1966	as % of Total	1969	% Increase 1966-69	as % of Total	1970	% In-crease	as % of Total	1971	% In-crease	as % of Total
Europe	97,392	74.6	116,260	19.4	75.4	126,235	8.6	74.7	136,300	8.0	75.2
America	26,344	20.2	29,390	11.6	19.1	32,400	10.2	19.2	33,700	4.0	18.6
Pacific and Asia	2,543	1.9	4,155	63.4	2.7	5,285	27.2	3.1	5,260	(-) 0.5	2.9
Middle East	2,746	2.1	2,360	(-)14.1	1.5	2,815	19.3	1.7	3,400	20.8	1.9
Africa	1,572	1.2	2,065	31.4	1.3	2,275	10.2	1.3	2,620	15.2	1.4
World Total	130,597	100.0	154,230	18.1	100.0	169,010	9.6	100.0	181,280	7.3	100.0

Regions	1972	% In-crease	as % of Total	1973	% In-crease	as % of Total	1974	% In-crease	as % of Total
Europe	149,200	9.5	75.4	157,123	5.3	73.0	149,000	(-) 5.2	71.3
America	36,000	6.8	18.2	44,600	23.9	20.7	46,000	3.1	22.0
Pacific and Asia	6,430	22.2	3.2	6,700	4.2	3.1	7,000	4.5	3.3
Middle East	3,650	7.4	1.8	3,800	4.1	1.8	4,000	5.3	1.9
Africa	2,720	3.8	1.4	2,900	6.6	1.3	3,000	3.4	1.4
World Total	198,000	9.2	100.0	215,123	8.6	100.0	209,000	(-) 2.8	100.0

Note: Source: World Tourism Organization & Tourism White paper, Japanese Government

Table 2.1.3 International tourist receipts by regions

Regions	1970			1971				1972			
		as % of Total	Average receipts per person(US$)		% Increase	as % of Total	Average receipts per person(US$)		% Increase	as % of Total	Average receipts per person(US$)
Europe	10,840	60.4	86	12,370	14.1	62.2	91	14,600	18.0	60.6	98
America	5,220	29.1	161	5,530	5.9	27.8	164	4,600	8.3	19.1	128
Pacific and Asia	1,200	6.7	227	1,170	(-)2.5	5.9	222	2,610	123.1	10.8	406
Middle East	280	1.6	99	340	21.4	1.7	100	350	2.9	1.5	96
Africa	410	2.3	180	470	14.6	2.4	179	1,950	314.9	8.1	717
World Total	17,950	100.0	106	19,880	10.8	100.0	110	24,110	21.3	100.0	122

Regions	1973				1974			
		% Increase	as % of Total	Average receipts per person(US$)		% Increase	as % of Total	Average receipts per person(US$)
Europe	16,200	11.0	58.7	103	16,800	3.7	57.9	113
America	5,100	10.9	18.5	114	5,500	7.8	19.0	120
Pacific and Asia	3,610	38.3	13.1	539	3,740	3.6	12.9	534
Middle East	400	14.3	1.4	105	460	15.0	1.6	115
Africa	2,300	17.9	8.3	793	2,500	8.7	8.6	833
World Total	27,600	14.5	100.0	128	29,000	5.0	100.0	139

Notes: 1. Based on the data of World Tourism Organization.

2. International fare payments are excluded.

Table 2.1.4 International tourist receipts and expenditures by major countries (1974)

Nations	Receipts	% increase over previous year	Expenditures	% increase over previous year	Balance
W. Germany	2,325	5.1	7,041	7.9	(-) 4,716
U.S.	4,032	18.6	5,973	8.1	(-) 1,941
France	2,640	10.1	2,380	10.1	260
Canada	1,499	15.0	1,608	12.1	(-) 109
U.K.	1,957	16.7	1,601	(-) 4.9	356
Japan	234	12.0	1,358	8.5	(-) 1,124
Netherlands	1,033	7.6	1,346	14.7	(-) 313
Italy	1,915	(-) 19.3	1,228	(-) 12.4	687
Belgium	695	10.8	1,143	9.6	(-) 448
Austria	2,289	26.8	890	31.2	1,399
Sweden	275	25.6	769	7.1	(-) 494
Switzerland	1,415	2.7	665	13.9	750
Denmark	642	11.1	542	5.0	118
Australia	260	26.8	491	14.5	(-) 231
Norway	298	18.0	387	31.5	(-) 89
Mexico	484	66.8	328	27.2	156
Spain	3,188	3.1	326	20.4	2,862
Portugal	443	(-) 13.8	255	9.9	188
New Zealand	132	33.3	251	38.7	(-) 119
Finland	293	3.5	207	6.2	86
Greece	436	(-) 15.3	79	9.0	357
Thailand	190	12.1	82	12.7	109

Notes: 1. Source: Tourism White Paper 1976, Japanese Government and Monthly Bulletin November 1976, Bank of Thailand.

2. Receipts and expenditures exclude international fare payments.

Table 2.1.5 International tourist arrivals and receipts by major countries

Countries visited	Tourist arrivals (in thousands)				Tourist receipts (in millions of U S dollars)				
	1971	1972	1973	1974	1971	1972	1973	1974	Average receipts per person (US$)
Italy [1/]	10,486	10,978	13,158	12,442	1,888	2,396	2,712	2,668	214
Spain	26,758	32,507	34,559	30,343	2,054	2,494	3,227	3,209	106
Germany Democratic Republic	6,491	18,748	16,852	15,229	-	-	-	-	-
Denmark	-	14,600	14,769	14,838	-	-	578	642	43
U. S.	13,595	13,057	13,955	14,123	2,535	2,816	3,417	4,034	286
(of which Hawaii)[2/]	1,808	2,244	2,597	2,763	-	-	-	-	-
Canada	14,880	13,812	14,453	13,759	1,238	1,242	1,435	1,735	126
Czechoslovakia	4,699	11,499	9,479	11,786	61	-	-	-	-
Austria	9,589	10,253	11,359	10,886	1,279	1,667	2,253	2,303	212
France	8,955	9,876	10,426	9,838	1,588	1,952	2,469	2,666	271
U. K.	6,973	7,167	7,724	7,935	1,177	1,378	1,671	1,956	247
Poland	1,865	8,339	6,933	7,893	39	96	130	146	18
Belgium	7,276	6,953	7,435	7,477	378	435	645	719	96
Germany, Fed. Rep. of	7,604	7,565	7,474	6,951	1,534	1,853	2,086	2,338	336
Switzerland	6,920	7,131	6,818	6,222	1,081	1,296	1,674	1,793	288
Yugoslavia	5,239	5,140	6,150	5,458	362	463	631	701	128
Hungary	4,170	3,617	3,811	4,655	97	146	180	240	52
Rumania	2,726	2,903	3,342	3,825	-	-	-	-	-
Bulgaria	2,721	3,007	3,248	3,818	113	138	171	198	52
U. S. S. R.	-	2,317	2,909	3,447	2	-	-	-	-
Mexico	-	2,912	3,239	3,361	1,317	1,493	1,792	2,056	612
Netherlands	2,394	2,594	2,770	2,683	592	739	970	1,039	387
Portugal	3,867	3,925	4,080	2,622	-	418	550	513	196
Lebanon	1,603	1,664	1,504	2,262	175	204	220	415	183
San Marino	-	2,532	2,584	2,202	-	-	-	-	-
Greece	1,981	2,452	2,865	1,956	305	393	515	437	223
Hong Kong	907	1,082	1,292	1,295	261	377	436	476	368
Ireland	1,692	1,458	1,289	1,266	191	176	205	254	201
Singapore	632	880	1,134	1,234	109	151	235	310	251
Morocco	823	1,062	1,341	1,205	150	195	318	349	290
Turkey	926	1,035	1,342	1,110	63	104	172	194	175
Malaysia	765	726	870	1,081	12	16	25	41	38
Thailand	639	821	1,038	1,107	110	136	170	190	172

Notes: 1. Based on the data of Statistical Yearbook 1975, United Nations; Tourism White Paper 1976, Japanese Government and Monthly Bulletin November 1976, Bank of Thailand
2. 1/ Excluding excursionists numbered 18,812 thousand in 1971, 19,864 thousand in 1972, 20,819 thousand in 1973, 18,902 thousand in 1974 and so on.
3. 2/ Including the U. S. tourists

Table 2.1.6 International tourist arrivals of countries by major tourist - generating countries (1974)

(In thousands)

Countries visited	Tourist arrivals by tourist - generating countries							total including others
Italy	W. Germany	U.S.	France	U.K.	Austria	Switzerland	Netherlands	17
	3,315	1,802	1,216	851	684	668	402	12,462
Spain	France	Portugal	W. Germany	U.K.	Netherlands	U.S.	Belgium	
	9,095	4,322	3,607	3,234	1,276	1,213	1,000	30,343
Germany, Democratic Republic	Poland	Czecho	Hungary	U.S.S.R.	Bulgaria	-	-	
	7,000	1,150	218	206	95	-	-	15,229
U. S.	Canada	Mexico	Japan	U.K.	W. Germany	France	Austria	
	8,665	1,843	763	450	296	166	113	14,129
Canada	U.S.	U.K.	W. Germany	France	Japan	Netherlands	Italy	
	12,691	314	132	68	60	57	37	13,759
Czecho	E. Germany	Poland	Hungary	W. Germany	U.S.S.R.	Austria	Yugoslavia	
	5,126	2,689	2,619	341	238	198	136	11,786
Austria	W. Germany	Netherlands	U.S.	U.K.	Switzerland	France	Belgium	
	7,181	669	497	366	319	294	242	10,886
France	W. Germany	Belgium	U.K.	U.S.	Italy	Netherlands	Spain	
	1,807	1,154	1,071	961	775	642	502	9,838
U. K.	U.S.	W. Germany	France	Ireland	Netherlands	Canada	Belgium	
	1,342	969	880	-	522	413	378	7,935
Poland	E. Germany	Czecho	U.S.S.R.	W. Germany	Hungary	Bulgaria	France	
	5,483	916	469	220	203	62	57	7,893
Belgium	Netherlands	W. Germany	U.K.	France	U.S.	Italy	Luxemburg	
	1,810	1,333	1,096	1,057	579	205	165	7,477
Germany, Fed. Rep. of	Netherland	U.S.	U.K.	France	Belgium	Denmark	Sweden	
	1,130	1,074	550	505	437	376	373	6,954
Switzerland	W. Germany	U.S.	France	Italy	U.K.	Belgium	Netherlands	
	1,729	843	728	452	373	309	296	6,222
Yugoslavia	W. Germany	Austria	Italy	France	Netherlands	U.K.	Hungary	
	1,632	573	574	326	278	257	245	5,458
Hungary	Czecho	Yugoslavia	Poland	E. Germany	W. Germany	Austria	U.S.S.R.	
	1,665	577	534	502	301	230	179	4,655
Rumania	Yugoslavia	Czecho	Poland	Bulgaria	Hungary	U.S.S.R	W. Germany	
	894	598	431	380	361	333	240	3,825
Bulgaria	Turkey	Yugoslavia	Czecho	Poland	U.S.S.R	W. Germany	E. Germany	
	1,350	501	327	251	238	210	182	3,818
U.S.S.R.	Finland	Poland	E. Germany	Czecho	Bulgaria	Hungary	Rumania	
	698	641	311	262	234	146	119	3,447
Netherlands	W. Germany	U.K.	U.S.	France	Belgium	Sweden	Switzerland	
	707	370	364	216	132	94	75	2,683
Portugal	Spain	U.K.	U.S.	W. Germany	France	Italy	Canada	
	1,169	383	218	167	153	84	39	2,622
Lebanon	Syrian	Jordan	Egypt	Iraq	Saudi Arabia	U.S.	France	
	812	265	194	121	96	96	51	2,262
San Maino	Italy	W&E Germany	France	Switzerland	Belgium	Austria	Netherlands	
	1,857	161	49	34	25	21	12	2,202
Greece	U.S.	U.K.	W. Germany	Yugoslavia	France	Switzerland	Italy	
	372	245	234	138	128	90	64	1,956
Hong Kong	Japan	U.S.	Australia	Thailand	Malaysia	U.K.	Singapore	
	423	231	105	59	46	43	43	1,295
Ireland	U.K.	U.S.	W. Germany	France	Canada	Netherlands	Australia	
	818	219	42	36	35	25	12	1,266
Singapore	Malaysia	Australia	Indonesia	Japan	U.S.	U.K.	New Zealand	
	260	184	172	109	104	83	27	1,234
Morocco	France	U.S.	U.K.	W. Germany	Spain	Netherlands	Denmark	
	216	173	108	82	70	34	29	1,205
Turkey	W. Germany	U.S.	Yugoslavia	U.K.	France	Italy	Bulgaria	
	139	92	69	66	65	45	25	1,110
Malaysia	Australia	Singapore	Thailand	U.S.	Japan	India	Indonesia	
	230	228	151	64	64	46	34	1,081
Thailand	Malaysia	U.S.	Japan	Australia	W. Germany	U.K.	France	
	198	157	133	76	69	65	43	1,107

2.1.2 Trend of Tourism in Thailand

(a) Growth as an international tourist-receiving country

Thailand has developed as one of the major destinations of international tourists in Southeast Asia in the recent years. The total number of foreign arrivals increased from 225,025 in 1965 to 1,098,442 in 1976, implying an average annual rate of growth of 15.5%. As a result, Thailand has occupied about the 30th rank in international tourists arrivals of the world in 1974, as may be seen from preceding Table 2.1.5.

The major attractions of Thailand for the foreign visitors are an exotic image of the Orient and the south sea, low prices, excellent cuisine, many cultural and histroic sites, and Bangkok's strategic position on major world airlines routes, there being abbut 31 scheduled international airlines flying into Bangkok (see Table 2.1.7).

(b) Comparision Among Major Countries of Pacific and Asia

The statistics of Table 2.1.8 indicate that Thailand holds the fourth position in international tourist arrivals in 1975 and the fifth in international tourist receipts in 1974. For the year 1972, Hongkong topped the million tourists mark holding its position as the regional leader, but in 1975, Hongkong has been overtaken by Singapore with 1,324,000. Thailand reached more than a million visitors in 1973, holding the third place, in Pacific and Asia but in 1975 it was exceeded slightly by Malaysia.

According to the data of tourist arrivals by leading tourist-generating countries given in Table 2.1.9, the shares from one single tourist-generating country are Korea 57.9% by Japan, Hongkong 32.7% by Japan, Malaysia 21.3% by Australia, Singapore 21.1% by Malaysia, and Thailand 17.8% by Malaysia. So the shares of tourist-generating countries to Thailand are rather spread in comparison with those of other countries of Pacific and Asia.

(c) International Tourist Receipts and Expenditures

International tourist receipts of Thailand increased from 832.3 million Baht in 1966 to 4,482.2 million Baht in 1975 for an average annual growth rate of 20.6%. On the other hand, international tourist expenditure increased too, from 565.7 million Baht in 1966 to 2,735.3 million Baht in 1975 for an average annual rate of 19.1% due to the growth of foreign travel by Thai people, whose major destination is Malaysia as shown in Table 2.1.10. Consequently, the credit balance showed an increase from 266.6 million Baht in 1966 to 1,746.9 million Baht in 1975 implying an average annual growth rate of 23.2% (see Table 2.1.11).

International tourism has been contributing to the economic development of Thailand by earning foreign exchange as seen in Table 2.1.12. It occupied 10% of total export earnings in 1975 and made tourism the fifth largest source of foreign exchange after rice, maize, sugar and tapioca.

(d) Analysis of Foreign Visitors

1) A breakdown of visitor arrivals by tourist-generating countries for 1965-1976 is given in Table 2.1.13.

The number of visitors from the U.S. was fluctuating from 20% to 30% of the total arrivals from 1966 to 1971. The large portion of the U.S. demand represented "rest and recreation" travel for military personnel involved in the Viet-Nam conflict, the largest arrival number being 70,737 in 1969. But with the withdrawal of troops in 1974, the share of the U.S. has relatively diminished, recording 10% in 1976.

On the contrary, Malaysia, one of the neighboring countries, has been the largest single source of foreign arrivals in Thailand instead of the U.S. since 1972, although it showed a decrease in share in 1976. The primary cause of the increase was the improvement of road and rail connections with Malaysia in 1970.

Japan exceeded the U.S. in 1975 and has occupied the second position as foreign arrival source because of the rapid growth in economic and per capita income, and in the holiday overseas travel since the mid-'60's.

The European countries, such as W. Germany and France, have particulary emerged as leading sources of long-distance travel to Thailand, mainly as a result of development in charter flight and group travel operations. Likewise, Australia has been rapidly growing in importance largely due to the availability of group fares on Qantas.

2) Seasonal Fluctuation

Fig. 2.1.1 and 2.1.2 show the seasonal fluctuation of visitors to Thailand. In general, foreign arrivals are rather evenly spread throughout the year, although the arrivals of bottom months, such as June and September indicate about a 30% decrease compared with the peak months of January through April and August, November and December. This somewhat even pattern comes from offsetting seasonal patterns of the major generating countries. For example, winter is the peak season for European countries such as W. Germany, Sweden, while summer is the peak season for Japan and the U.S. to visit Thailand.

3) Other characteristics of foreign visitors are given in Table 2.1.14 by sex (68% are male), age (about half of the visitors are between 26 and 45 years old), reason for visit (83% are on holiday), type of accommodation (92% require hotel lodging), mode of transportation (83% arrive by air), port of embarkation (Hongkong, Singapore and Tokyo occupy nearly half of all ports) and occupation (employee, executive, commerce and housewife make up about half of the total).

The average length of stay, given in Table 2.1.15 has increased somewhat from three days in 1960 to five days in 1976.

The Tourist Organization of Thailand (TOT) has conducted three expenditure surveys in the past (1964, July 1970-June 1971 and Mar. 1974-Feb. 1975), and the results are shown in Table 2.1.16 & Fig. 2.1.3. The average daily expenditure increased from US$30.00 in 1964 to US$37.85 in 1975, indicating a remarkable price stability in Thailand in comparison with many other destinations. In 1975, the highest spending visitors were successively the American (US$47.16), Australian (US$44.66), Canadian (US$44.42) and French (US$44.35).

Of the total expenditure per day in 1975, nearly 50% went for food and accommodation, about 26% for shopping, another 17% for sightseeing and transportation, and the remaining 7% for other goods and services, the composition of which is almost the same in comparison with that of 1964 or 1971.

Table 2.1.7 International airlines in Bangkok

Airlines	Weekly flight	Routes
1. Aeroflot Soviet Airlines	2	Bangkok, Moscow
2. Air Ceylon	1	Bangkok, Columbo, Karachi, Frankfurt
3. Air India	7	Bangkok, Culcutta, Bombay, New Delhi, Karachi, London, Frankfurt, Geneva, Paris, New York
4. Air France	9	Bangkok, New Delhi, Bombay, Teheran, Tel Aviv, Paris, Hong Kong, Manila
5. Air Alitalia	4	Bangkok, Tokyo, Hong Kong, Athens, Rome
6. British Airways	4	Bangkok, Hong Kong, Bombay, Rome, London, Frankfurt, Sydney, Melbourne
7. Bangladesh Biman	2	Bangkok, Decca
8. Cathay Pacific Airways	7	Bangkok, Tokyo, Taipei, Hong Kong, Singapore
9. China Airlines	9	Bangkok, Taipei, Hong Kong, Singapore
10. Egypt Air	4	Bangkok, Tokyo, Cairo
11. Indonesian Airways	4	Bangkok, Singapore, Bombay, Jakarta, Denpasar, Rome, Frankfurt, Amsterdam
12. Iraqi Airways	3	Bangkok, New Delhi, Bombay, Karachi, Dubai, Baghdad, Bahrain
13. Japan Airlines	15	Bangkok, Tokyo, Osaka, Manila, Hong Kong, New Delhi, Bombay, Karachi, Rome, London, Paris, Athens
14. KLM Royal Dutch Airlines	13	Bangkok, Tokyo, Manila, Singapore, Jakarta, Sydney, Melbourne, Karachi, Kuala Lumpur, Dubai, Frankfurt, Amsterdam, London, Paris, Vienna, Zurich, Athens, Rome
15. Koreen Airlines	3	Bangkok, Seoul
16. Lufthansa	6	Bangkok, Kuala Lumpur, Penang, Singapore, Jakarta, Perth, Melbourne, Sydney
17. Malaysian Airlines System	19	Bangkok, Kuala Lumpur, Penang, Singapore, Jakarta, Perth, Melbourne, Sydney
18. Pakistan International Airways	4	Bangkok, Tokyo, Manila, Frankfurt, Paris, London
19. Pan American Airways	14	Bangkok, New York, San Francisco, Tokyo, Hong Kong, Karachi, Teheran, Frankfurt, London
20. Philippines Airlines	2	Bangkok, Amsterdam, Frankfurt, Rome, Karachi Tokyo, Taipei, Singapore, Hong Kong, Manila, Sydney, Melbourne, San Francisco, Honolulu
21. Qantas Airways	13	Bangkok, Singapore, Sydney, Melbourne, Teheran, Bahrain, Frankfurt, London, Athens, Rome
22. Royal Nepal Airlines	3	Bangkok, Katmandu, New Delhi
23. Royal Jordanian Airlines	3	Bangkok, Bahrain, Amman, Abudhabi, Paris, London, Amsterdam, Brussels, Copenhagen, Frankfurt, Vienna, Rome, Athens
24. Scandinavian Airlines System	N.A.	Bangkok, Tokyo, Manila, Calcutta, Karachi, Teheran, Baghdad, Copenhagen, Athens, Rome, Zeuich, Frankfurt
25. Sabena Belgium World Airlines	3	Bangkok, Tokyo, Brussels, Dubai
26. Singapore Airlines	45	Bangkok, Osaka, Taipei, Seoul, Hong Kong, Singapore, Jakarta, Sydney, Melbourne, Perth Bahrain, Rome, Frankfurt, London, Paris, Amsterdam
27. Swiss Air	N.A.	Bangkok, Tokyo, Manila, Hong Kong, Karachi, Bombay, Bahrain, Athens, Geneva, Zurich, Vienna, Paris, Rome, Frankfurt, London, Amsterdam
28. Thai Airways	10	Bangkok, Penang
29. Thai International	36	Bangkok, Tokyo, Osaka, Manila, Taipei, Hong Kong, Kuala Lumpur, Penang, Singapore, Sydney, Jakarta, Denpasar, Decca, Rangoon, Calcutta, Colombo, New Delhi, Bombay, Karachi, Athens, London, Rome, Frankfurt, Copenhagen
30. Union Burma	7	Bangkok, Rangoon
31. Union Transports Airlines	2	Bangkok, Bahrain, Paris

Note Source: Tourist Organization of Thailand

Table 2.1.8 Comparison of international tourist arrivals and receipts among major countries of Pacific and Asia

Countries visited	Tourist arrivals (in thousand)										Tourist receipts (in millions of US dollars)							
	1970	1971	% *2	1972	% *2	1973	% *2	1974	% *2	1975	% *2	1971	1972	% *2	1973	% *2	1974	% *2	Average Receipts *3
Singapore	522	632	21.1	880	39.2	1,134	28.9	1,234	8.8	1,324	7.3	109	151	38.5	235	55.6	310	31.9	251
Hong Kong	928	907	(-)2.3	1,082	19.3	1,292	19.4	1,295	0.2	1,301	0.5	261	377	44.4	436	15.6	476	9.2	368
Malaysia	76	765	906.6	726	(-)5.1	870	19.8	1,081	24.3	1,183	9.4	12	16	33.3	25	56.3	41	64.0	38
Thailand	629	639	1.6	821	28.5	1,038	26.4	1,107	6.6	1,180	6.6	110	136	23.6	170	25.0	190	11.8	172
Japan	854	661	(-)22.6	724	9.5	785	8.4	764	(-)2.7	812	6.3	172	201	16.9	209	4.0	234	12.0	306
Australia	338	389	15.1	426	9.5	472	10.8	533	12.9	-	-	157	161	2.5	207	28.6	260	25.6	488
Korea	173	233	34.7	371	59.2	679	83.0	518	(-)23.7	-	-	31	75	141.9	265	253.3	154	(-)41.9	297
Philippines	144	144	-	166	15.3	243	46.4	410	68.7	-	-	32	38	18.8	68	78.9	124	82.4	302
India	281	301	7.1	343	14.0	410	19.5	423	3.2	-	-	40	48	20.0	90	87.5	96	6.7	227
Indonesia	129	179	38.8	221	23.5	270	22.2	313	15.9	-	-	10	18	80.0	21	16.7	-	-	-
New Zealand	161	220	36.6	255	15.9	218	(-)14.5	259	18.8	-	-	47	62	31.9	99	59.7	131	32.3	506
*1 Hawaii	1,596	1,808	13.3	2,244	24.1	2,597	15.7	2,763	6.4	-	-	-	-	-	-	-	-	-	-

Notes: 1. Based on the data of Statistical Yearbook 1975, United Nations; Tourism Compendium 1975, World Tourism Organization; Tourism White Paper 1976, Japanese Government and Monthly Bulletin November 1976, Bank of Thailand.

2. Tourist receipts exclude international fare payments.

3. *1 Including the U.S. tourists

4. *2 % increase

5. *3 Average receipts per person (US$)

Table 2.1.9 International Tourist arrivals to major countries of Pacific and Asia by leading tourist - generating countries (1974) (in thousands)

Countries visited	Tourist arrivals by tourist - generating countires							Total including others
Singapore	Malaysia	Australia	Indonesia	Japan	U.S.	U.K.	New Zealand	
	(21.1) 260	(14.9) 184	(13.9) 172	(8.8) 109	(8.4) 104	(6.7) 83	(2.2) 27	1,234
Hong Kong	Japan	U.S.	Australia	Thailand	Malaysia	U.K.	Singapore	
	(32.7) 423	(17.8) 231	(8.1) 105	(4.6) 59	(3.6) 46	(3.3) 43	(3.3) 43	1,295
Malaysia	Australia	Singapore	Thailand	U.S.	Japan	India	Indonesia	
	(21.3) 230	(21.1) 228	(14.0) 151	(5.9) 64	(5.9) 64	(4.3) 46	(3.1) 34	1,081
Thailand	Malaysia	U.S.	Japan	Australia	W. Germany	U.K.	France	
	(17.8) 198	(14.2) 157	(12.0) 133	(6.8) 76	(6.3) 69	(5.9) 65	(3.9) 43	1,107
Japan	U.S.	Korea	China	U.K.	Australia	W. Germany	Philippines	
	(37.4) 286	(9.2) 70	(9.0) 69	(5.4) 41	(3.9) 30	(3.4) 26	(3.1) 24	764
Australia 1/	New Zealand	U.S.	U.K.	Japan	Canada	Singapore	W. Germany	
	(27.3) 129	(17.2) 81	(14.0) 66	(3.8) 18	(3.2) 15	(2.3) 11	(2.1) 10	472
Korea	Japan	U.S.	U.K.	W. Germany	Canada	Thailand	Malaysia	
	(57.9) 300	(15.6) 81	(1.0) 5	(0.8) 4	(0.6) 3	(0.4) 2	(0.4) 2	518
Philippines	Japan	U.S.	U.K.	Australia	W. Germany	Canada	Italy	
	(41.3) 165	(13.5) 54	(5.5) 22	(2.5) 10	(1.8) 7	(1.3) 5	(1.0) 4	400
India	U.K.	U.S.	W. Germany	France	Malaysia	Japan	Australia	
	(14.9) 63	(13.7) 58	(6.9) 29	(6.4) 27	(4.3) 18	(4.3) 18	(3.5) 15	423
Indonesia	U.S.	Australia	Japan	U.K.	Malaysia	Singapore	Netherlands	
	(17.3) 54	(15.0) 47	(11.8) 37	(9.3) 29	(8.0) 25	(7.7) 24	(7.0) 22	313
New Zealand	Australia	U.S.	U.K.	Canada	Japan	W. Germany	Netherlands	
	(48.8) 144	(13.6) 40	(5.4) 16	(3.1) 9	(2.0) 6	(0.7) 2	(0.3) 1	295

Note. 1. Based on the datas of Statistical Yearbook 1975, United Nations and Tourism White Paper 1976, Japanese Government.

2. 1/ Arrivals in 1973.

Table 2.1.10 Destinations most frequented by Thai people (1970-74)

(in units)

Countries visited	1970	1971	1972	1973	1974
Malaysia	-	-	-	115,512	151,420
Hong Kong	29,975	29,909	33,688	50,020	58,718
Singapore	-	6,618	14,631	16,602	20,155
Japan	-	10,197	10,256	10,001	10,694
Korea	-	1,220	2,162	3,159	2,488
Australia	2,182	2,661	2,491	2,181	-
Laos	-	-	-	3,350	-
Cambodia	-	901	2,045	-	-
Vietnam	-	2,129	1,231	2,684	-
Philippines	-	1,536	1,563	1,351	1,716
Indonesia	-	-	-	730	950
Nepal	-	-	269	293	334
Total	32,157	55,171	68,336	205,883	246,475

Note: Source: Tourist Organization of Thailand

Table 2.1.11 International tourist receipts and expenditures of Thailand (1966 - 75)

(Millions of Baht)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
Receipts	832.3	1,211.7	1,255.8	1,768.0	2,170.0	2,208.9	2,718.0	3,393.8	3,805.1	4,482.2
% Increase	132.0	45.6	3.6	40.8	22.7	1.8	23.0	24.9	12.1	17.8
Average receipts per visitor (Baht)	2,919	3,608	3,329	3,763	3,452	3,458	3,312	3,270	3,437	3,798
Expenditures	565.7	715.3	874.2	1,001.5	1,267.4	1,294.5	1,286.8	1,449.4	1,634.0	2,735.3
% Increase	11.2	26.4	22.2	14.6	26.6	2.1	(-)0.6	12.6	12.7	67.4
Balance	266.6	496.4	381.6	766.5	902.6	914.4	1,431.2	1,944.4	2,171.1	1,746.9

Note. Source: Monthly Bulletin November 1976, Bank of Thailand

Table 2.1.12 Comparison of international tourist receipts and other exports of Thailand

(Millions of Baht)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975
Rice	4,001	4,653	3,775	2,945	2,516	2,909	4,437	3,594	9,778	5,852
Maize	1,577	1,431	1,647	1,767	1,969	2,286	2,085	2,969	6,078	5,705
Sugar	82	37	-	47	94	382	1,264	1,161	3,757	5,696
Tapioca	644	726	772	876	1,223	1,240	1,547	2,537	3,836	4,597
Rubber	1,861	1,574	1,816	2,664	2,232	1,905	1,862	4,573	5,035	3,474
Tin	1,316	1,822	1,510	1,631	1,618	1,569	1,664	2,035	3,097	2,247
Shrimp	191	259	278	270	224	247	340	803	602	891
Jute & Kenaf	1,614	866	674	780	719	935	1,087	1,054	845	643
Tobacco	115	147	199	149	197	236	284	309	445	569
Exports Total including others	13,817.2	13,808.1	13,227.6	14,254.2	14,269.7	16,692.1	21,750.2	31,252.5	49,002.4	44,364.5
Tourist receipts	832.3	1,211.7	1,255.8	1,768.0	2,170.0	2,208.9	2,718.0	3,393.8	3,805.1	4,482.2
As % of Exports Total	6.0	8.8	9.5	12.4	15.2	13.2	12.5	10.9	7.8	10.1

Note. Source: Monthly Bulletin November 1976, Bank of Thailand

Table 2.1.13 Visitors to Thailand by Nationality (1965 - 1976) (in units)

Countries of Nationality	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
OVERSEAS VISITORS												
North America:												
U.S.A.	78,297	90,300	89,486	103,592	133,327	159,216	147,066	151,602	161,444	156,818	116,190	116,656
Canada	2,995	3,299	3,219	4,571	5,516	10,514	6,213	7,522	8,665	9,959	11,157	13,113
Central America	-	-	906	1,787	3,238	5,565	2,512	3,051	3,142	3,185	3,240	4,035
South America	-	-	967	1,829	3,234	4,854	2,576	2,669	2,973	3,074	4,268	5,168
Europe:												
Austria	568	91	718	1,269	1,500	2,232	2,227	3,834	7,257	5,906	6,949	7,628
Belgium	383	127	847	1,225	2,140	3,372	2,540	3,737	5,883	6,519	7,784	11,435
Denmark	828	131	1,669	2,888	3,871	4,399	4,253	5,483	6,864	7,772	7,299	9,484
Finland	-	-	248	539	724	552	703	1,376	1,795	2,283	2,786	3,220
France	6,679	7,770	9,823	10,433	12,725	21,059	17,864	31,749	44,974	42,572	46,986	48,540
Greece	-	-	265	737	770	1,070	1,348	1,459	2,087	1,956	1,365	2,188
Germany	7,385	7,978	11,654	15,084	20,190	28,023	35,801	52,712	62,673	69,394	78,150	85,956
Ireland	148	27	192	445	681	780	657	960	1,140	1,560	1,695	1,784
Italy	2,437	2,727	3,495	4,537	6,188	11,031	9,174	13,836	19,974	23,818	31,069	28,498
Luxambourg	-	-	33	68	72	89	109	173	146	236	249	329
Netherland	2,468	2,355	3,741	5,098	6,020	6,898	8,161	10,099	12,167	12,769	15,019	20,399
Norway	303	23	677	1,593	1,813	2,268	2,049	2,927	3,913	3,832	4,319	5,784
Portugal	88	27	239	516	751	2,048	1,507	1,178	2,104	1,800	1,389	1,302
Spain	251	13	511	798	1,422	2,555	1,690	3,055	5,130	5,173	8,416	10,158
Sweden	1,943	1,970	2,312	3,799	5,339	5,627	5,313	8,053	9,973	11,210	12,165	16,142
Switzerland	2,852	4,050	5,653	7,372	8,143	12,805	9,904	15,182	23,763	26,368	25,598	22,486
U.K.	20,296	18,370	22,165	26,434	31,331	36,977	37,728	46,855	58,304	65,444	76,407	72,744
Africa	-	-	632	2,347	3,288	4,237	3,233	3,635	5,471	5,021	6,516	7,971
Middle East	537	85	1,609	3,352	4,279	6,945	6,910	7,156	8,297	8,912	11,790	16,137
Pacific & Asia:												
Australia	10,082	9,045	11,380	17,394	22,247	28,185	26,422	31,899	48,222	75,800	78,907	80,470
China	4,916	8,125	10,148	12,650	14,642	16,963	21,270	29,226	34,923	43,286	52,861	36,784
Ceylon	181	87	300	779	1,062	1,455	1,348	1,478	1,447	1,461	1,935	2,169
India	4,992	5,392	7,181	9,961	11,957	21,111	16,961	16,663	18,898	21,765	22,201	20,544
Indonesia	4,534	3,944	6,604	6,133	6,899	11,026	9,795	11,030	13,231	16,487	18,593	20,566
Japan	17,296	14,935	24,124	31,548	42,872	46,952	55,777	93,534	151,947	132,660	146,986	150,464
Korea	350	74	915	2,507	2,838	3,622	4,132	4,790	5,103	6,178	8,776	10,165
Nepal	-	-	461	1,090	1,517	1,476	1,566	2,279	2,466	2,819	3,585	6,229
New Zealand	1,111	151	1,673	2,874	3,424	4,849	3,746	4,199	5,782	7,563	8,613	6,769
Pakistan	1,061	162	1,610	2,938	3,602	5,142	3,645	7,132	8,057	4,635	5,420	6,593
Philippines	4,441	5,884	5,726	8,151	8,913	8,997	10,481	10,262	8,970	10,143	11,141	10,721
Others	12,198	20,009	17,600	1,508	1,780	2,472	2,311	3,559	6,004	8,069	10,815	14,861
Total Overseas	189,620	207,111	244,283	297,856	378,315	485,366	465,992	594,348	763,189	806,447	850,459	877,528
Neighboring Visitors												
Burma	744	14,083	3,246	4,100	2,280	2,463	1,646	2,557	1,720	7,349	19,935	15,660
Cambodia	-	-	-	-	-	829	4,359	11,958	16,011	25,024	9,897	90
Laos	15,613	22,822	35,690	18,302	16,022	20,155	21,570	23,969	30,128	26,576	21,509	1,687
Malaysia	18,446	38,821	46,712	47,235	59,621	105,037	128,989	162,566	190,827	197,508	227,826	161,183
Singapore	-	1,579	3,895	7,013	9,953	11,586	13,185	22,270	31,754	39,638	46,531	41,833
Vietnam	602	701	2,019	2,756	3,953	3,235	2,997	3,090	4,108	4,850	3,918	461
Total Neighboring	35,405	78,006	91,562	79,406	91,469	143,305	172,746	226,410	274,548	300,945	329,616	220,914

Fig. 2.1.1 Visitors to Thailand by Classified Countries Fig. 2.1.2 Visitors to Thailand by Major Countries

Fig. 2.1.1 Visitors to Thailand by Classified Countries and Month of Arrival

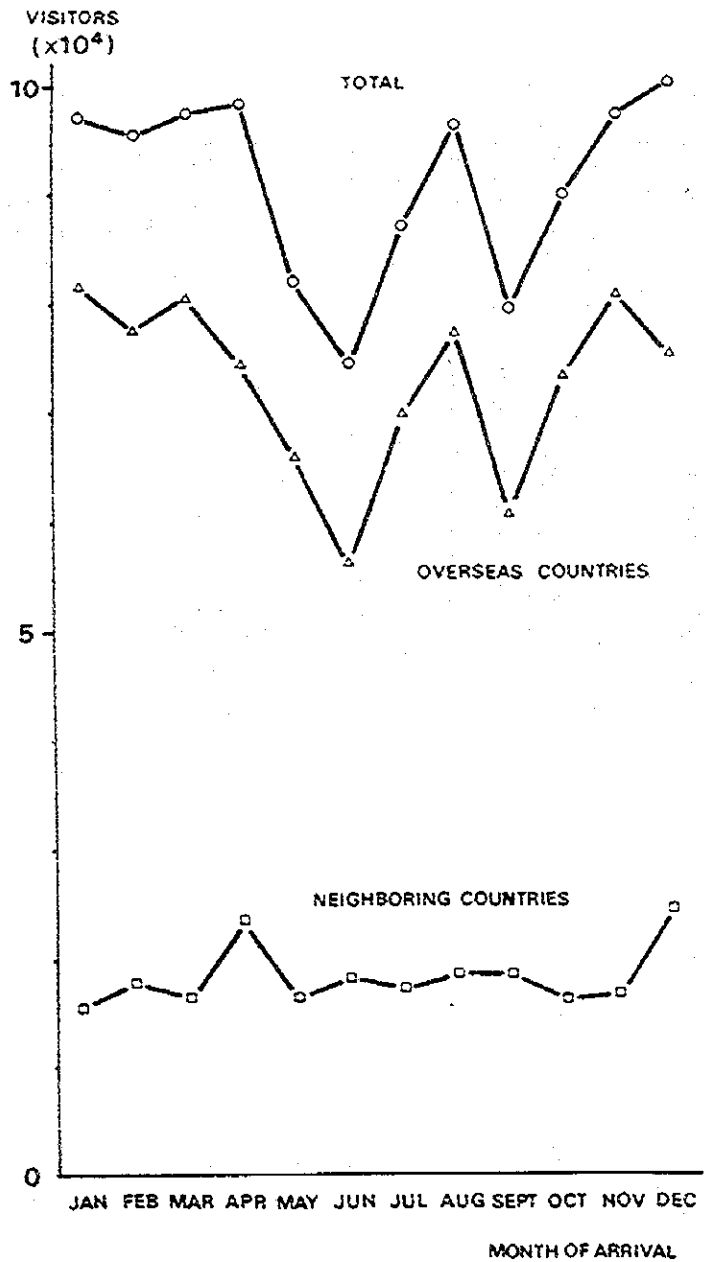
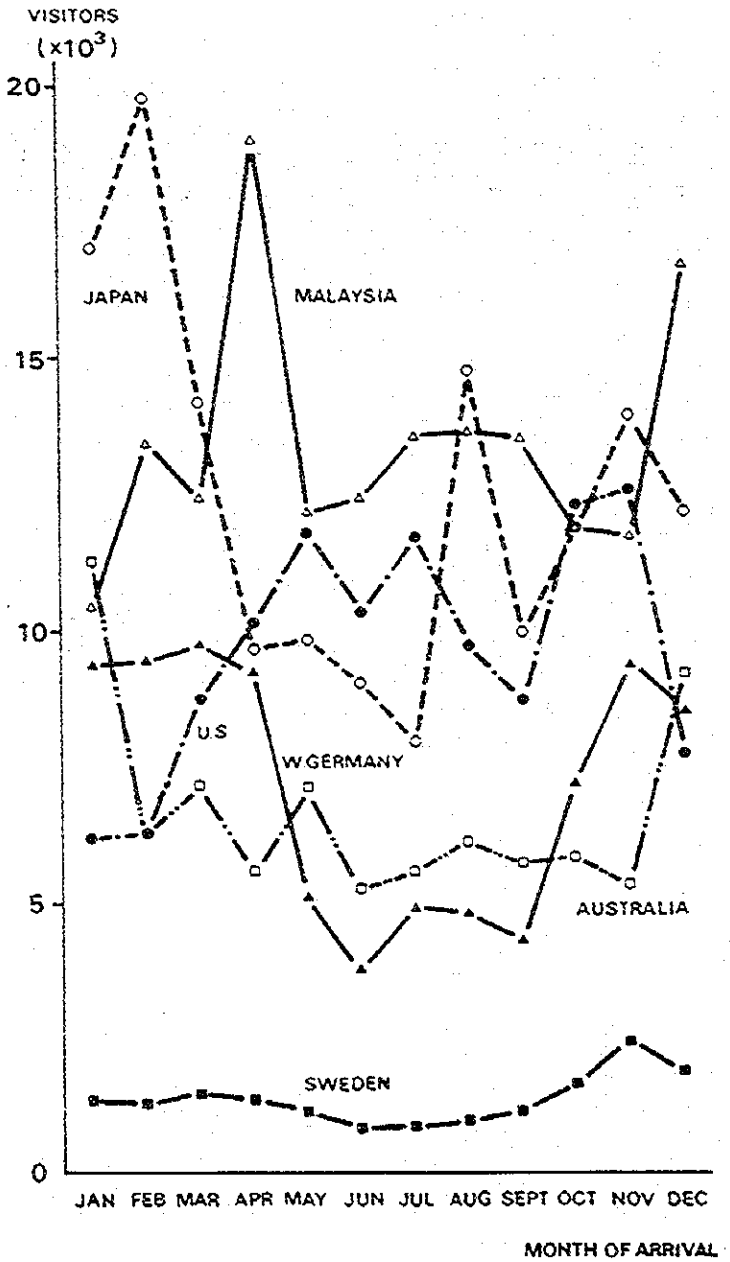


Fig. 2.1.2 Visitors to Thailand by Major Countries and Month of Arrival (1976)



Source: Based on the data of Tourist Organization of Thailand

Table 2.1.14

Thailand

Percentage distribution of visitors profile (Jan. - June 1976)

1. By sex

Male	67.62
Female	32.38
Total	100.00%

2. By age

0 - 15	2.60
16 - 25	13.02
26 - 35	28.08
36 - 45	22.46
46 - 55	18.25
56 - 65	11.07
Over 65	4.52
Total	100.00%

3. By reason for visit

Holidays	83.12
Business	6.83
Others	10.05
Total	100.00%

4. By type of accommodation

Hotel	92.33
Friend's house	2.49
Others	5.18
Total	100.00%

5. By mode of transportation (Jan. - Dec. 1976)

Air	82.70
Land	16.56
Sea	0.74
Total	100.00%

6. By port of embarkation (Jan. - Mar. 1976)

Hong Kong	18.51
Singapore	15.61
Tokyo	11.34
Frankfurt	6.61
Kuala Lumpur	3.40
Penang	3.21
Osaka	3.17
Others	38.15
Total	100.00%

7. By occupation

Employee	20.35
Executive	11.99
Commerce	10.11
Housewife	9.80
Engineer & technician	5.95
Professor & teacher	3.73
Doctor	1.64
Artist & architect	0.94
Transportation & Communication	0.64
Other professional career	14.32
Student	5.30
Government official	3.28
Retired	2.74
Agricultural	0.83
Others	8.38
Total	100.00%

Note. Source: Tourist Organization of Thailand

Table 2.1.15 Average Length of stay in Thailand

Country of Nationality	1968	1969	1970	1971	1972	1973	1974	1975	1976 Jan. - June
OVERSEAS VISITORS									
U. S. A.	4.22	4.61	5.45	3.44	4.14	4.10	3.94	4.96	4.46
Japan	3.83	4.72	4.85	4.50	4.03	3.87	4.20	4.67	3.47
Australia	3.46	4.11	4.17	3.91	4.70	4.85	4.14	4.89	5.22
W. Germany	4.20	5.03	4.81	3.95	4.36	4.92	4.46	4.93	5.87
U. K.	4.07	5.23	5.20	5.16	5.21	4.90	4.77	5.56	5.05
China	5.01	5.90	6.31	5.05	4.69	4.95	4.69	5.24	5.64
France	3.91	4.25	3.88	4.21	4.14	4.71	4.42	5.65	5.13
Italy	4.10	4.33	4.44	4.82	3.68	4.37	4.50	5.78	5.12
Switzerland	4.39	5.20	4.90	6.30	6.75	5.48	4.59	4.89	6.17
India	4.39	4.83	4.82	4.37	4.86	2.98	4.51	4.56	4.31
Indonesia	3.86	4.80	5.38	2.54	3.69	3.37	5.17	4.48	2.76
Netherlands	3.59	4.98	4.75	4.34	3.97	3.60	4.36	4.48	4.84
Sweden	4.11	5.23	5.21	6.05	4.94	4.70	4.00	4.88	5.77
Canada	3.70	4.56	4.14	5.21	4.73	4.70	4.60	4.76	4.95
Philippines	4.05	4.74	5.07	2.80	3.97	3.36	4.94	4.64	3.29
Korea	2.77	5.49	5.61	6.24	4.14	2.95	4.50	5.44	4.07
Total Overseas including others	3.77	4.48	4.56	4.35	4.29	4.15	4.47	5.17	4.62
NEIGHBORING VISITORS									
Malaysia	4.10	4.16	5.31	5.49	6.80	6.85	6.37	5.10	4.10
Singapore	3.83	5.03	4.90	4.30	5.73	5.74	5.11	5.16	4.23
Laos	5.73	4.56	3.40	5.33	5.96	5.13	5.43	4.63	2.79
Total Neighboring including others	4.70	5.28	5.08	5.39	5.57	5.25	5.19	5.00	5.50
Grand Total	4.23	4.88	4.82	4.87	4.93	4.70	4.83	5.09	5.06

Year	Days
1960	3.0
1961	3.0
1962	3.0
1963	5.7
1964	4.5
1965	4.8
1966	5.0
1967	4.6
1968	4.23
1969	4.88
1970	4.82
1971	4.87
1972	4.93
1973	4.70
1974	4.83
1975	5.09
1976 Jan. - June	5.06

Note.

Source: Tourist Organization of Thailand

Table 2.1.16 Thailand

Distribution of tourist expenditures by type of major expenditure (US$)

(i) Average expenditure per day/person

1964 - 69	30.00 US$	(Census 1964)
1970 - 73	36.70 US$	(Census 1971)
1974 - 75	37.85 US$	(Census 1975)

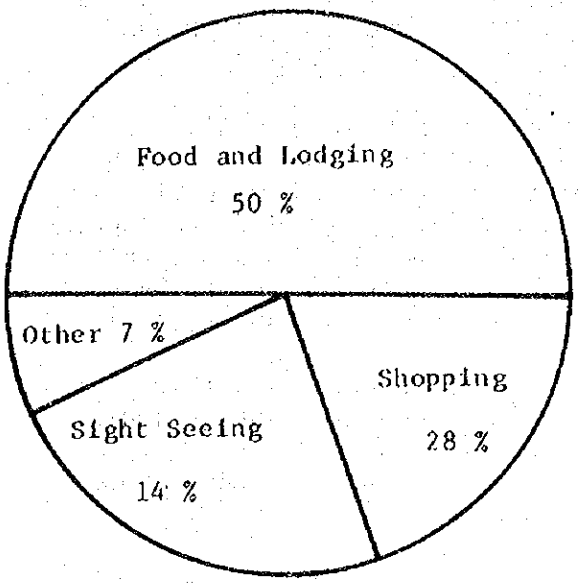
(ii) Census 1975

Countries of nationality	Lodging	Food	Transportation & sightseeing	Shopping			Others	Average expenditure per day/person
				Thai silk	Others	Total		
Total	11.60	7.19	6.55	1.40	8.59	9.99	2.52	37.85
Overseas visitors								
North America								
U. S.	13.94	8.70	7.56	2.38	11.54	13.92	3.04	47.16
Canada	13.65	7.93	7.76	2.15	9.97	12.12	2.96	44.42
Europe								
U. K.	13.45	8.00	7.29	1.15	8.06	9.21	2.92	40.87
France	13.49	7.95	7.20	0.52	12.45	12.97	2.74	44.35
W. Germany	13.56	8.71	8.03	2.06	8.59	10.65	3.02	43.97
Netherlands	13.36	7.45	7.38	2.42	9.47	11.89	2.64	42.72
Switzerland	13.22	7.02	7.26	1.57	9.68	11.25	2.48	41.23
Others	12.96	8.04	6.95	1.59	8.55	10.14	2.84	40.93
Pacific & Asia								
Australia	13.17	7,84	8.02	2.31	10.22	12.53	3.10	44.66
China	10.44	6.10	5.88	1.25	6.35	7.60	2.55	32.57
India	9.78	5.82	4.97	1.08	5.68	6.76	1.85	29.18
Japan	13.08	8.39	7.13	1.30	10.26	11.56	2.10	42.26
New Zealand	13.53	7.85	7.26	1.38	11.26	12.64	2.80	44.08
Philippines	11.42	6.19	5.92	1.74	5.59	7.33	1.73	32.59
Others	9.94	6.05	5.59	1.76	8.21	9.97	1.64	33.19
Neighboring visitors								
Malaysia	7.05	5.00	4.27	0.52	5.04	5.56	2.28	24.16
of which visitors by land	6.67	4.80	4.05	0.45	4.58	5.03	2.31	22.86
of which visitors by air	10.32	6.64	6.17	1.11	8.75	9.86	2.04	35.03
Singapore	9.57	6.11	5.91	1.09	6.38	7.47	2.16	31.22
of which visitors by Land	7.71	6.05	5.60	0.90	4.86	5.76	2.20	27.32
of which visitors by air	11.16	6.16	6.17	1.27	7.67	8.94	2.13	34.56
Others	10.45	5.95	6.40	0.55	8.86	9.41	1.86	34.07
Others	11.45	6.42	6.26	1.39	8.35	9.74	2.38	36.25

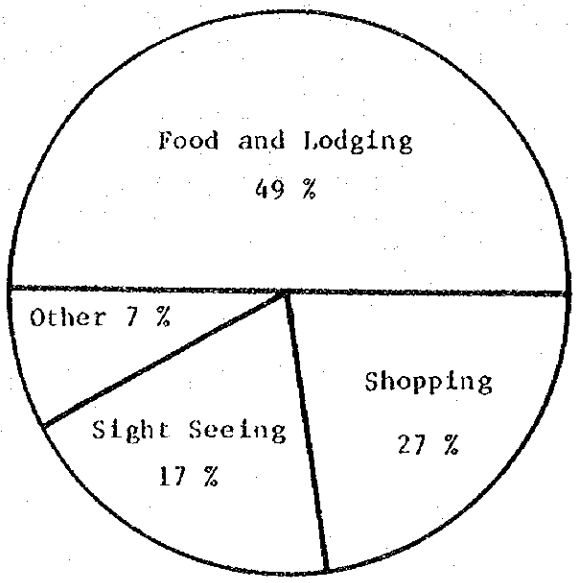
Note. Source: Turist Organization of Thailand

Fig. 2.1.3 Tourist Expenditure Survey

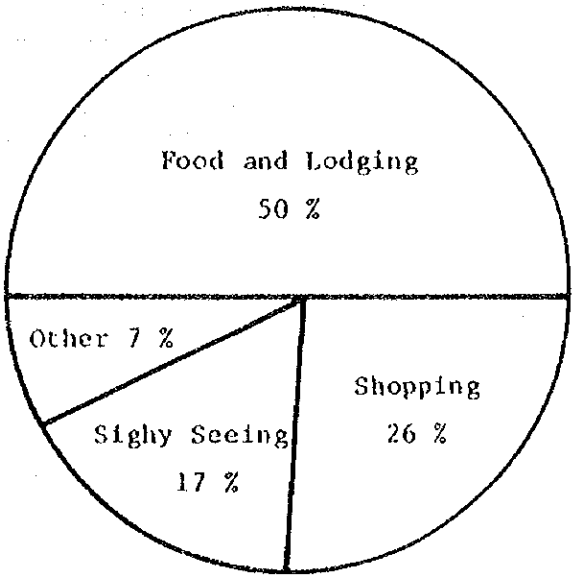
Census 1964



Census 1971



Census 1975



Note. Source: Tourist Organization of Thailand

2.1.3 Trend of Tourism in Pattaya

(a) Volume of Tourists

It is somewhat difficult to form a complete understanding of the transition of arrivals to Pattaya over a long period due to lack of available data, but according to the survey which was held in 1976 (see Table 2.1.17) the hotel arrivals were counted at about 280,000 in 1973, 360,000 in 1974 and estimated at about 400,000 in 1975 and 1976.

At the beginning of the development in Pattaya more than ten years ago, the major visitors were rest and recreation trips of U.S. military personnel involved in the Viet Nam conflict and from the army bases of Sattahip and Utapao which are located about 30 Km to the south of Pattaya. Table 2.1.18 shows that rest and recreation personnel occupied a large part of the U.S. visitors and overseas visitors to Thailand from 1966 to 1971.

But nowadays, the major visitor-generating countries to Pattaya are Japan, W. Germany, U.S.A, Australia, Switzerland including both the foreigners residing in Thailand and the tourists. The domestic arrivals to Pattaya are increasing although most of them belong to the wealthy class.

(b) Pattern of Tourists to Pattaya

The greater part of arrivals to Pattaya are foreign tourists, but the arrivals of foreign residents and domestic people who live mainly in Bangkok have gradually increased. Generally speaking, the foreing residents and domestic people pass the weekends with their families at Pattaya which is located within easy driving distance of Bangkok.

The seasonal fluctuation of Pattaya is rather conspicuous as shown in Table 2.1.19 and Fig. 2.1.4 as compared to that of visitors to Thailand. The number of visitors at peak months such as January or December, is nearly three times as large as those of bottom months such as June or September. This seems to be a characteristic of a beach resort.

Table 2.1.17 Hotel Arrivals in Pattaya by Nationality

Nationality	1973	as % of Total	1974	as % of Total	1975 (Partial)	as % of Total
Japan	53,427	19.1	58,623	16.1	27,801	10.9
W. Germany	51,315	18.4	39,568	10.9	24,132	9.5
U.S.	21,840	7.8	39,466	10.8	31,039	12.2
Australia	23,767	8.5	29,612	8.1	12,057	4.7
Switzerland	28,403	10.2	22,580	6.2	3,363	1.3
Thailand	14,997	5.4	23,972	6.6	25,139	9.9
France	20,443	7.3	13,668	3.8	5,480	2.2
U.K.	15,975	5.7	12,806	3.5	8,284	2.3
Italy	11,869	4.2	12,704	3.5	9,826	3.9
Sweden	10,082	3.6	7,261	2.0	5,717	2.3
Other Scandinavian	-	-	11,454	3.1	12,002	4.7
Hong Kong	-	-	8,376	2.3	9,468	3.7
China	6,647	2.4	5,858	1.6	4,500	1.8
Finland	-	-	1,178	0.3	1,507	0.6
Ohters	20,513	7.3	76,684	21.1	73,751	29.0
Total	279,278	100.0	363,815	100.0	254,066	100.0

Notes: 1. Source: Tourist Organization of Thailand (TOT).

2. TOT made survey in 1976 by collecting data from 19 major hotels in Pattaya for the year 1973 and 1974; and 7 hotels for the year 1975.

3. The above figures include foreign and local residents in Thailand as well as foreign tourists.

Table 2.1.18 Proportion of Rest & Recreation Personnel among Visitors to Thailand

(in Units)

	1966	1967	1968	1969	1970	1971	1972	1973	1974
Overseas visitors 1/ (A)	207,111	244,283	297,856	378,315	485,366	465,992	594,348	763,189	806,447
of which U.S. (B)	90,300	89,486	103,592	133,327	159,216	147,066	151,602	161,444	156,818
of which R&R personnel (C)	33,000	54,000	69,070	70,737	44,287	26,614	7,707	1,447	3,530
% $(\frac{B}{A})$	43.6	36.6	34.8	35.2	32.8	31.6	25.5	21.2	19.4
% $(\frac{C}{B})$	36.5	60.3	66.7	53.1	27.8	18.1	5.1	0.9	2.3
% $(\frac{C}{A})$	15.9	22.1	23.2	18.7	9.1	5.7	1.3	0.2	0.4

Note: 1. Based on the data of Tourist Organization of Thailand.
2. 1/ Excluding the visitors from the neighboring countries such as Malaysia, Singapore, Burma, Cambodia, Laos and Vietnam.

Table 2.1.19 Hotel Arrivals in Pattaya by Month

(in Units)

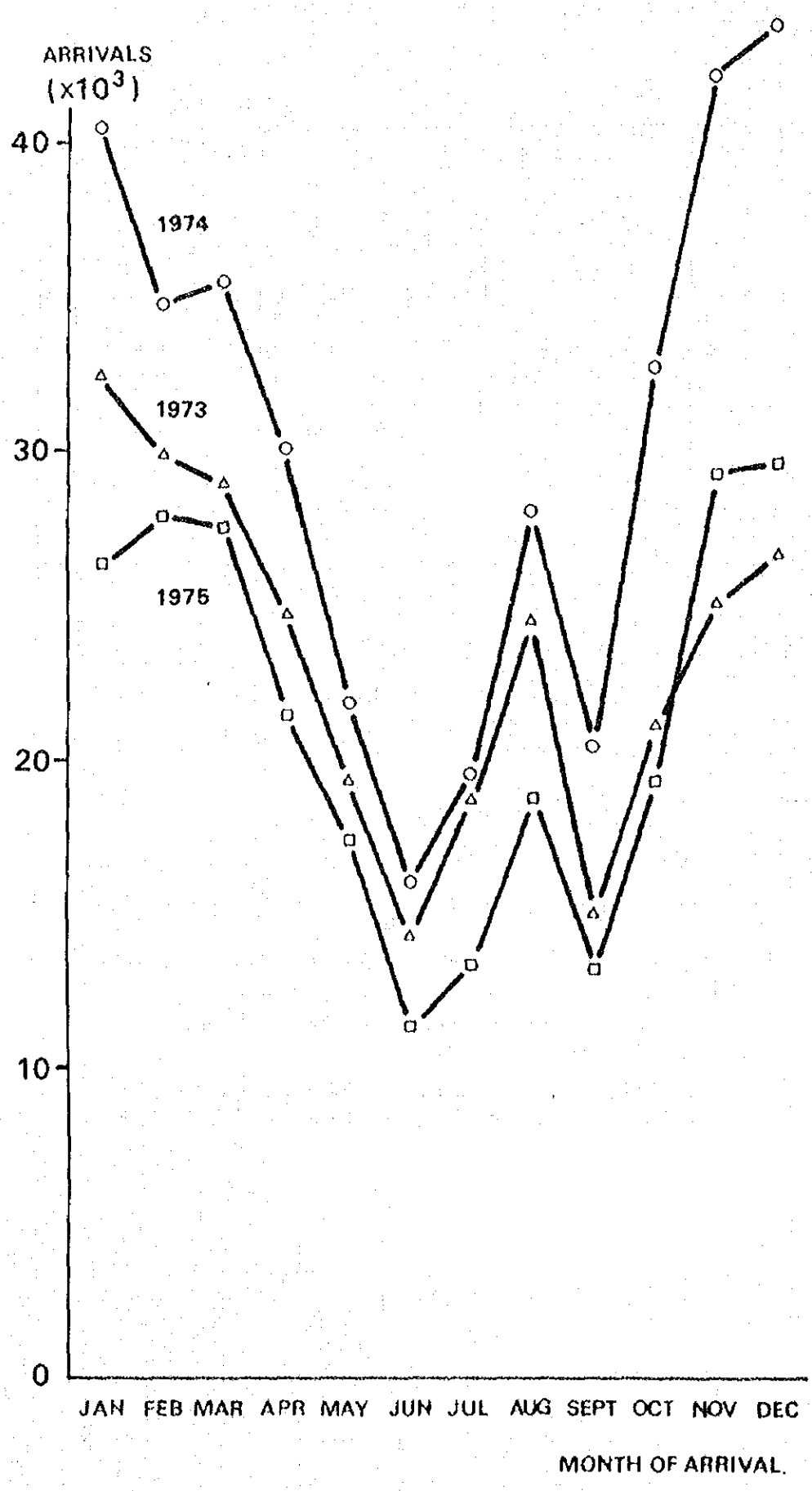
Month	1973	1974	1975
January	32,569	40,500	26,293
February	29,923	34,671	27,867
March	28,983	35,433	27,559
April	24,646	29,729	21,370
May	19,056	21,794	17,312
June	14,014	15,902	11,241
July	18,459	19,533	13,239
August	24,562	27,961	18,629
September	14,834	20,278	12,954
October	20,841	32,455	19,192
November	24,806	41,964	29,111
December	26,585	43,595	29,299
Total	279,278	363,815	254,066

Notes: 1. Source: Tourist Organization of Thailand (TOT).

2. TOT surveyed in 1976 by collecting the data from 19 major hotels in Pattaya as to 1973 and 1974; and 7 hotels as to 1975.

3. The above figures include foreign residents in Thailand as well as foreign tourists.

Fig. 2.1.4 Hotel Arrivals in Pattaya



Source: Tourist Organization of Thailand

2.2 FORECAST OF FUTURE TOURIST DEMAND

2.2.1 Perspective of World Volume

International tourist arrivals have been increasing at an average annual rate of 5.6% from 1966 to 1975 as stated above. Although there was a slight decrease in 1974 due to the global recession caused by the energy crisis, this has already recovered now.

The long-term prospects for world volume are difficult to forecast because of difficulty in estimating the prospects of the growth in per capita real income of all nations in the world, changes of the competitiveness of world destinations and other uncertain future factors.

The World Tourism Organization made a forecast of the future world tourist volume in its "Pilot Study on Long-Term Forecasts" and the results are summarized below.

International tourist arrivals forecast in the world

(by World Tourism Organization)

(in thousands)

	1975 (actual)		1980	1990
Arrivals	213,000		261,000	350,000
	1966-75	5.6	1975-80	1980-90
	1970-75	4.7	4.1	3.0

Taking into account the forecast figures and the analysis of economic indices of tourist-generating countries such as growth of gross domestic product, per capita national income, population and international balance of payments, (See Table 2.2.1), the international tourists arrivals for the year 1996 is forecast at 417 million implying an average annual increase of 3.3% from 1975 to 1996.

Forecasting arrivals by region, it is predicted that Europe and the Americas will continue to be major tourists-receiving countries but the position of Pacific and Asia will increase somewhat as the countries of the region grow economically.

2.2.2 Perspective of Tourism in Thailand

Regarding the prospects of growth in tourist arrivals to Thailand over the next five years, many studies have been carried out so far, which are shown in Table 2.2.2.

Table 2.2.1 · Economic indexes of major tourist - generating countries

Nations	Per capita national income in market prices (US$)						Average annual rate of growth of GDP at constant prices (%)		Population		Density (persons/km²)	Exports (f.o.b.)	International reserves	International tourist expenditures 1974 (millions of US dollars)
	1960	1963	1970	1972	1973	1974	1960-70	1970-74	Misyear estimates 1974 (thousands	Annual rate of increase 1970-74 (%)	1974	1974 (millions of US dollors)	End of 1974 (millions of US dollors)	
W. Germany	1,210	1,529	2,752	3,765	4,973	5,461	4.6	3.2	62,041	0.6	250	90,590	32,399	7,041
U.S.	2,559	2,856	4,289	4,984	5.554	5,941	4.9	5.1 (70-73)	211,909	0.8	23	97,144	16,058	5,973
France	1,202	1,570	2,477	3,349	4,269	4,486	5.7	5.2	52,507	0.8	96	45,852	8,851	2,380
Canada	1,909	1,958	3,266	4,260	4,819	5,672	5.9 (61-70)	5.5	22,479	1.3	2	32,912	5,825	1,668
U.K.	1,261	1,473	2,014	2,565	2,868	3,072	2.8	3.2 (70-73)	55,968	0.2	229	38,639	6,939	1,601
Japan	417	625	1,636	2,418	3,286	3,562	10.5	6.8	109,671	1.3	295	55,536	13,519	1,358
Netherlands	880	1,092	2,232	3,139	4,050	4,694	5.4	4.0	13,341	1.0	332	32,810	6,958	1,540
Italy	637	896	1,586	1,998	2,310	2,442	5.3	3.8	55,361	0.8	184	30,253	6,941	1,228
Belgium	1,126	1,354	2,417	3,345	4,297	5,029	4.7	5.2	9,772	0.3	320	28,328[1/]	5,345	1,144
Austria	798	991	1,730	2,427	3,233	3,916	4.5	5.6	7,545	0.5	90	7,161	3,430	890
Sweden	1,678	2,102	3,719	4,649	5,579	6,150	4.4	2.8	8,161	0.4	18	15,937	1,735	769
Switzerland	1,430	1,829	2,963	4,252	5,671	-	4.0 (60-69)	3.2 (65-69)	6,443	1.0	156	11,788	9,011	665
Denmark	1,191	1,539	2,698	3,795	4,961	5,402	4.7	3.2	5,045	0.6	117	7,718	935	542
Australia	1,438	1,649	2,656	3,485	5,025	-	5.4	4.8 (70-73)	13,339	1.6	2	10,785	4,269	491
Norway	1,093	1,364	2,455	3,234	4,158	4,911	4.9	4.4	3,985	0.7	12	6,274	1,929	387
Mexico	313	368	632	-	-	-	7.3	6.2 (70-73)	58,118	3.5	29	3,545	1,395	328
Spain	317	481	884	1,240	1,605	-	7.2	7.3 (70-73)	35,225	1.1	70	7,059	6,485	326
Brazil	194	254	464	575	723	-	5.5	11.0 (70-73)	104,243	2.8	12	7,952	5,252	314
Portugal	297	359	677	945	1,274	1,469	6.3	7.5 (70-73)	8,735	0.2	95	2,301	2,354	255
New Zealand	1,445	1,647	2,030	2,880	3,691	4,043	-	-	3,027	1.9	11	2,436	640	251
Finland	1,001	1,273	1,998	2,549	3,348	4,184	4.6	5.3	4,688	0.4	14	5,527	634	207
Venezuela	859	715	955	1,104	1,315	2,052	5.7 (60-69)	4.3 (65-69)	11,632	3.1	13	14,897	6,513	164 (1972)
Turkey	178	236	348	435	-	-	6.0	6.9 (70-73)	38,270	2.4	49	1.532	1,861	152

Table 2.2.2 Forecast of visitors to Thailand (1975 - 1980)

(in thousands)

		(Actual) 1975	1980	Average annual increase (%) 1975 - 80
World Bank		1,180	2,020	11.4
PATA Development Authority		"	2,175	13.0
Netherlands Institute of Tourism Development Consultants		"	2,200	13.3
Dr. Bullockas		"	3,650	25.3
Boeing	Low Estimate	"	2,716	18.1
	High Estimate	"	3,674	25.5
Dr. Baron	Low Estimate	"	1,550	5.6
	Medium Estimate	"	1,900	10.0
	High Estimate	"	2,550	16.7
Tourist Organization of Thailand		"	1,733	8.0

Note. Source: Tourist Organization of Thailand

Table 2.2.3 Long-term forecast of international tourist arrivals

(in thousands)

	(actual) 1966	(actual) 1971	1975	1976	1981	1986	1991	1996
World (A)	130,597	181,280	213,000 1/	221,700 2/	268,300	309,300	360,500	417,000
% Average annual increase	-	1966 - 71 6.8	1966-75 5.6 1970-75 4.7 1971-75 4.1	1975 - 76 4.1	1975-80 4.1 1980-81 2.8 1976-81 3.9	1980-85 2.8 1985-86 3.1 1981-86 2.9	1985-90 3.1 1980-90 3.0 1990-91 3.0 1986-91 3.1	1990-95 3.0 1995-96 3.0 1991-96 3.0 1975-96 3.3 1976-96 3.2
of which Pacific & Asia (B)	2,543	5,260	7,130 3/	7,420 4/	9,000	11,000	13,500	16,000
% Average annual increase	-	1966 - 71 15.6	1974-75 1.9 1971-75 7.9	1975-76 4.1	1976-81 3.9	1981-86 4.1	1986-91 4.2	1991-96 3.5 1975-96 3.9 1976-96 3.9
% $\frac{B}{A}$	1.9	2.9	3.3	3.3	3.4	3.6	3.7	3.8
of which Thailand (C)	285	639	1,180 5/	1,098 6/	1,600	2,000	2,500	3,000
% Average annual increase	1965 - 66 26.7	1966 - 71 17.5	1971 - 75 16.6	1975 - 76 (-) 6.9	1976 - 81 7.8	1981 - 86 4.6	1986 - 91 4.6	1991-96 3.7 1975-96 4.5 1976-95 5.2
% $\frac{C}{B}$	11.2	12.1	16.5	14.8	17.8	18.2	18.5	18.8

Notes:

1. 1/ Actual
2. 2/ Estimate by 4.1% increase rate from 1975 to 1976
3. World arrivals are estimated 261,000 thousand in 1980, 300,000 thousand in 1985 and 35,000 thousand in 1990.
4. 3/ Estimate by 1.9% increase rate over the previous year, which is the same rate as World arrivals increase from 1974 to 1975.

According to this, the highest estimate for 1980 shows 3,674 thousand arrivals by Boeing and the lowest estimate is 1,550 thousand by Dr. Baron. Some of these high estimates were due to the fact that the studies were carried out in the highly prosperous days before the energy crisis, before the economic activities settle down to the present stabilized pace.

On the basis of the above analysis, the long-term perspectives for international tourist arrivals of the world, Pacific and Asia, and Thailand are shown in Table 2.2.3. According to this forecast, tourist arrivals for Thailand are estimated to reach 1,600 thousand in 1981, 2,000 thousand in 1986, 2,500 thousand in 1991, and 3,000 thousand in 1996 from 1,098 thousand in 1976, implying an average annual increase of 5.2% from 1976 to 1996.

2.2.3 Tourism Resources in Thailand

(a) Major international tourists area

Tourism resources for international tourism in Thailand may be classified into 3 groups - historical, natural and contemporary, corresponding with the interests of different categories of tourist, namely, leisure, cultural and fact-finding tourists.

1) Natural assets -- National parks, beaches, botanical gardens, waterfalls, etc.

2) Historical and religious assets -- archaeological sites, historical buildings and monuments, temples, etc.

3) Contemporary human products and activities: handicraft, folklore, cultural, technical, typical-way-of-life activities, etc.

At present, major international tourists area are categorized into following groups

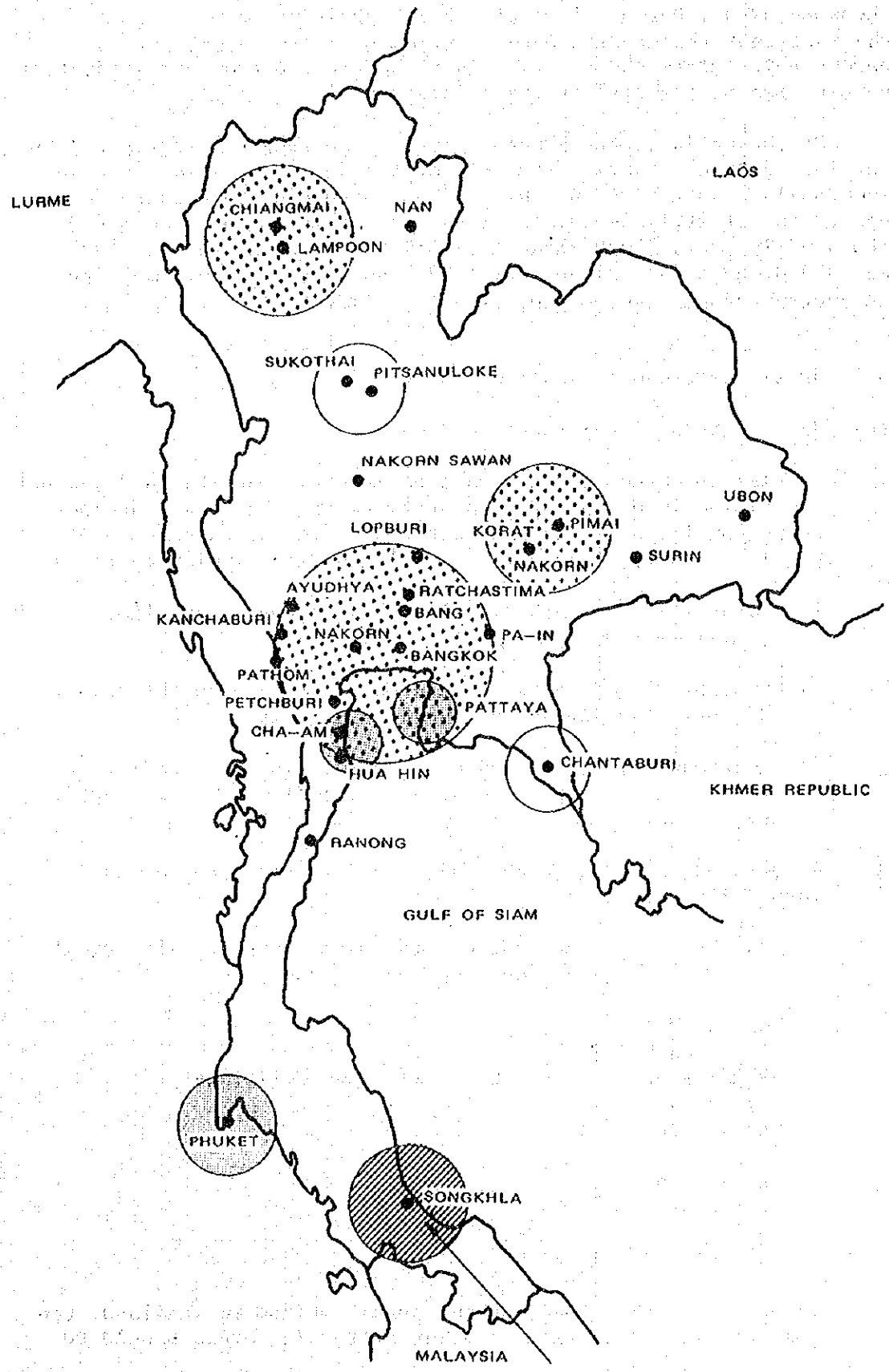
Bangkok -- Urban type tourism with waterway, historical sites, entertainment sector, etc.

Chiang Mai
Lam Poon
Pimai-Korat
Ayudttya
Bang Pain
——— Historical and religious

Bang Saen
Pattaya
Phuket
Hua Hin
——— Beach resorts

In order to strengthen international tourism in Thailand, the characteristics of these tourist attraction areas should be

Fig. 2.2.1 Tourism Resources in Thailand



clearly defined and strengthened to increase the appeal to international tourists. Pattaya beach resort area is in this sense characterized as a major tourism partner with Bangkok, providing the tourists to Bangkok what the capital metropolitan cannot offer.

(b) Ocean tourism in Thailand

Thailand is located in the tropical region and many foreign visitors come to enjoy the sun, sea and sand. Hundreds of beautiful beaches and islands never disappoint their expectation.

These beach resorts are scattered throughout the coastline of the Gulf of Thailand and the Andaman Sea as shown in Fig. 2.2.1.

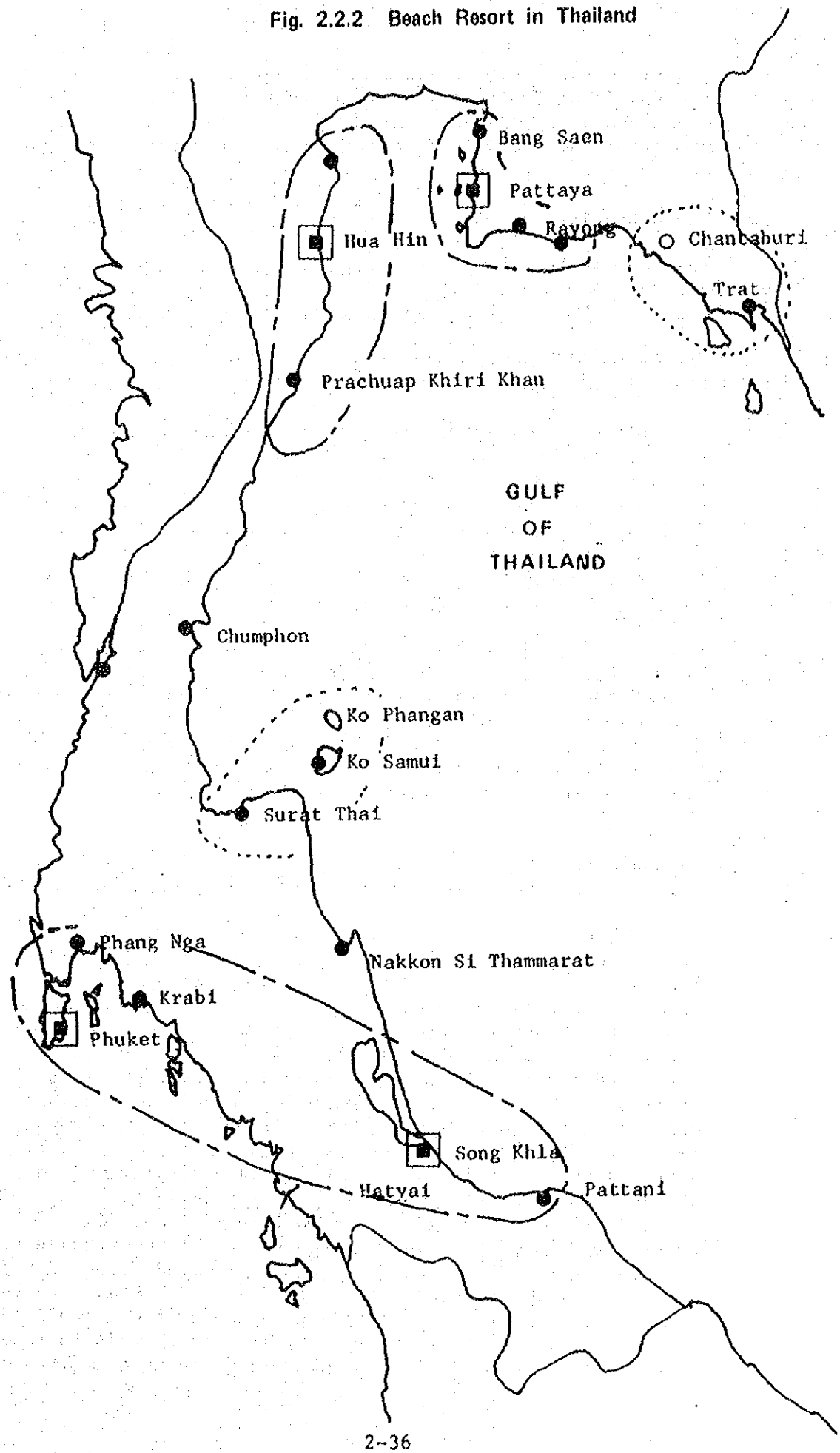
The role of beach resort in Thailand's tourism is very important and it is expected that approximately 30 percent of all foreign tourists time will be spend at beach resorts. This fact can be seen by comparative distribution of forecast hotel rooms in future made in subsequent chapters.

Thus sun, sea and sand will become a focal point not only for tourism promotion but also for recreational use of the Thai people. The value of the sea and beautiful scenery of the coastline should be recognized as the national treasure of Thailand. It is of high priority to preserve, protect, and where possible, to restore the resources of the coastal zone for the enjoyment of the current and succeeding generations. Without a policy and plan for the orderly, balanced utilization and preservation of seaside and marine resources, the bright future of beach resorts of the country cannot be realized.

As shown in Fig. 2.2.2, there are many beach resorts in Thailand, some of which are already well known among foreign tourists.

From the point of the destination of foreign tourists, Thailand's beach resorts can be divided into three regions. One is the east coast beach resort, of which Pattaya is a typical one. Another is the south coast beach resort which includes Phuket and Songkhla, while the third is the west coast beach resort including Hua Hin, as shown in Fig. 2.2.2. The east coast and south coast beach resorts are already known as international beach resorts. The west coast is rather for domestic use. Pattaya is the most important of all beach resorts. Indeed, the entire east coast beach resort will play a very important role in Thailand's tourism. The Gulf of Thailand is very calm, especially in the east coast of Thailand, and this creates very delicate and beautiful coastline. The natural beauty of the east coast seems to be too fragile to cope with a hasty development. But the demand of beach resort tourism is rapidly increasing in this area. Pattaya was a small collection of straggling houses south of the small fishing village of Na Klua. Now 400,000 tourists visit Pattaya annually and it is widely acknowledged as being overdeveloped.

Fig. 2.2.2 Beach Resort in Thailand



The tourism resources of Pattaya are limited and it is so delicate and fragile both in scenic beauty and marine environment. Overdevelopment would reduce the attractiveness of Pattaya. Too much concentration of tourists should be avoided in Pattaya beach and Ko Lan and it is necessary to enhance other tourism resources that would be connected with Pattaya beach. From the view point of ocean tourism, more wider region which include not only Pattaya, Ko Lan and Ko Phai but also the coast-line from south of Pattaya to Bang Sarey should be considered as a unified tourism resource.

2.2.4 Future Tourist Demand in Pattaya

(a) Future Tourist Volume

Pattaya will contain the possibility of further development as a resort area, especially southward, on the premise of appropriate development control.

The visitors to Pattaya can be roughly classified into two kinds, namely foreign tourists and residents that consist of foreign residents and domestic citizens who live mainly in Bangkok. According to the analysis of the destinations in Thailand of foreign visitors which is based on the expenditure survey by the Tourist Organization of Thailand from March 1974 to February 1975, about 19% of the visitors to Thailand went to Pattaya. At this ratio, the number of staying foreign visitors to Pattaya is estimated at 210 thousand in 1976, and consequently the number of staying residents that include foreign residents and domestic is deduced to be at 190 thousand.

It is difficult to estimate the percentages of foreign and domestic residents, but the greater part is conjectured to be made up of foreign residents. Table 2.2.4 shows that the aliens registered were more than 350,000 in 1972, but in reality there must have been more because there are many aliens of relatively short stay who do not register.

The number of domestic visitors who enjoy holidays at Pattaya is apt to increase following the increase of holidays and per capita income of the Thai people.

On the basis of the analysis above, the hotel staying visitors to Pattaya are forecast to increase to 1,200,000 (of which, foreign tourists number 660,000 and residents 540,000) in 1996 from 400,000 in 1976 implying an average annual increase of 5.6%, as shown in Table 2.2.5.

(b) Future Tourist Pattern

At present, the seasonal fluctuation of visitors to Pattaya is more remarkable than that of visitors to Thailand because of its attraction mainly as beach resort.

Table 2.2.4 Aliens registered, by nationality and sex

(in Units)

Country of Nationality	1969			1972		
	Male	Female	Total	Male	Female	Total
U.K.	3,287	1,279	4,566	3,550	1,472	5,022
Portugal	657	544	1,201	645	551	1,196
Germany	430	272	702	635	384	1,019
France	450	244	694	597	314	911
Switzerland	252	120	372	303	159	462
Italy	203	103	306	256	127	383
Other Europe	1,654	925	2,579	1,807	1,145	2,952
U. S.	1,077	847	1,924	1,348	990	2,338
Japan	701	466	1,167	1,041	548	1,589
Sub-Total	8,711	4,800	13,511	10,182	5,690	15,872
China	220,164	112,704	332,868	211,961	109,258	321,219
India	4,761	1,444	6,205	5,037	1,492	6,529
Vietnam	1,998	1,090	3,088	1,888	1,076	2,964
Burma	570	365	935	640	413	1,053
Laos	48	51	99	60	57	117
Cambodia	19	9	28	26	18	44
Other Asia	2,172	1,042	3,219	2,777	1,417	4,194
Others	484	348	826	619	503	1,122
Total	238,926	121,853	360,779	233,190	119,924	353,114

Note: 1. Source: Statistical Yearbook Thailand 1974-75, National Statistical Office.

Table 2.2.5 Long-term Forecast of Hotel Visitors in Pattaya

(in thousands)

	(actual) 1973	(actual) 1974	1975	1976	1981	1986	1991	1996
Foreign tourists (A)	-	-	-	210	352	500	588	660
% Average annual increase	-	-	-	-	1976-81 10.9	1981-86 7.3	1986-91 3.3	1991-96 2.3 1976-96 5.9
Visitors to Thailand (B)	1,038	1,107	1,180 1/	1,098	1,600	2,000	2,500	3,000
% $(\frac{A}{B})$	-	-	-	19.1	22.0	25.0	23.5	22.0
% $(\frac{A}{D})$	-	-	-	52.5	58.7	62.5	58.8	55.0
Residents (C)	-	-	-	190	248	300	412	540
% Average annual increase	-	-	-	-	1976-81 5.5	1981-86 3.9	1986-91 6.9	1991-96 5.6 1976-96 5.4
% $(\frac{C}{D})$	-	-	-	47.5	41.3	37.5	41.2	45.0
(A + C) Total (D)	279	364	400 2/	400 3/	600	800	1,000	1,200
% Average annual increase	-	1973-74 30.5	1974-75 9.9	-	1976-81 8.4	1981-86 5.9	1986-91 4.6	1991-96 3.7 1975-96 5.4 1976-96 5.6

Notes: 1. 1/ Actual
2. 2/ Estimated by the arrivals numbered 254,066 of 7 hotels which have 1,643 rooms in all.
3. 3/ Assumed remained on the same level as 1976.

But in the future, it should be possible to spread the visitors more evenly throughout the year by arranging inland activities in addition to ocean resort facilities. Besides, with the increase of resident visitors, Pattaya will also function as a resort for the domestic people in harmony with the international tourists.

2.2.5 Hotel Quantity Requirement

The number of rooms of hotels in Pattaya has expanded rapidly especially in the last three years. (See Table 2.2.6). It is estimated to have about 3,600 rooms in total which include nearly 2,800 rooms of international tourist class hotels and other rooms of bungalows etc. At present there is considerable excess capacity because the pace of growth of supply has exceeded that of demand.

On the basis of the forecast of arrivals in Pattaya stated above, the additional hotel rooms required are forecast in Table 2.2.7. According to this, it is estimated that no more rooms will be required until 1981, and there will be need for rooms required to a total of 8,700 rooms by 1996.

Table 2.2.6 Rooms of Selected Hotels in Pattaya

	1972	1973	1974	1975	1976
Number of units	19	22	26	26	27
Number of rooms	1,071	1,258	1,884 2/	2,484 3/	3,365 1/
% increase	-	17.5	49.8	31.8	35.5
Hotel arrivals in Pattaya (in thousands)	-	279	364	400	400
% increase	-	-	30.5	9.9	-

Notes: 1. Based on the data of Tourist Organization of Thailand.

2. 1/ In addition, other rooms of bungalows etc. numbered more than 200, so total number of rooms is estimated to be 3,600.

3. 2/ Major cause of increase comes from the opening of new hotels, such as Regent Pattaya, Asia Pattaya and Royal Cliff.

4. 3/ Increased mainly by the openings of Siam Bayshore and more establishments of Royal Cliff and Asia Pattaya.

5. 1/ Increased mainly by the openings of Holiday Inn, Sands and Weekender; and more establishments of Royal Cliff and Siam Bayshore.

Table 2.2.7 Additional Hotel Rooms Required in Pattaya

Year	1976	1981	1986	1991	1996
(in thousand) Visitor arrivals	400	600	800	1,000	1,200
of which Foreign tour	210	352	500	588	660
of which Residents	190	248	300	412	540
(nights) Average length of stay	-	1.8	2.5	3.1	3.4
Foreign tourists	-	2.0	3.0	4.0	4.5
Residents	-	1.6	1.7	1.85	2.0
(annual average) Room occupancy(%)	-	80	80	80	80
Average of peak month (%)	-	95	95	95	95
Average of bottom month (%)	-	50	50	50	50
(person/room) Double occupancy	-	1.6	1.6	1.6	1.6
Total rooms required	-	2,300	4,300	6,600	8,700
Increase of rooms from 1976	-	-	700	3,000	5,100

Notes: 1. The total number of existing hotel rooms is estimated at 3,600 in 1976.

2. The average length of stay is calculated by the weighted average of foreign tourists and residents.

2.2.6 Forecast of Future day-trip Visitors

A rough estimate of day trip visitors is calculated in the following day.

(1) Population of Thailand (1977): about 40 million

(2) Population of Bangkok (1971): about 4 million (10% concentration rate)

(3) 2.8% natural population increase.

(4) Rough estimated of population of Thailand in 1996: 69 million.

(5) Estimated population of Bangkok in 1996: 6.9 million to 10.4 million (Concentration rate: 10% - 15%).

(6) Using the results of the survey by Ministry of Transportation of Japan in 1969 as reference, the participation rate of the population of Bangkok of recreational facilities is as follows:

(i) One-day recreational participation rate: about 45%

(ii) Half of them going to the beach.

(iii) 5 times/year participation.

(iv) 2.5 times/year participation to the beach recreation.

(v) Number of day trip visitors to beaches: 3.9 million visitors/year to 5.9 million visitors/year.

(7) Assuming a 6 month beach seasons and a concentration rate 75% (peak month rate - about 12%), the number of day trips in a peak month: 470,000 trips - 710,000 trips.

(8) Concentration rate on Saturday and Sunday: 80%.

(9) Peak day visitors: 48,000 persons/day - 71,000 persons/day.

(10) Assuming 20 - 30% of them come to the Pattaya Beach.

10,000 persons from Bangkok

2,000 persons from other area

12,000 persons/day (Maximum day trip visitors to Pattaya)

(11) Total one-day visitors to Pattaya for 1996: about 960,000 persons

Year		1981	1986	1996
Number of visitors (persons)	For the year	458,000	625,000	960,000
	Max. per day	5,500	7,500	12,000
	Average per day for the whole year	1,300	1,700	2,600

CHAPTER 3
MASTER PLAN FOR TOURISM DEVELOPMENT

CHAPTER 3 MASTER PLAN FOR TOURISM DEVELOPMENT

3.1 BACKGROUND OF PATTAYA TOURISM DEVELOPMENT

3.1.1 Comparative study on the alternative types of development

It was seen in the chapter on tourism demand forecast that besides an increase in the number of tourist to Pattaya, there will also be a trend of gradual increase in the length of stay of the tourists so that it is estimated that the hotel room requirement will increase from the present 3,600 rooms to above 8,700 rooms by the year 1996. Development of Pattaya on a large scale is therefore necessary to cope with such demand. Here, a comparative study of the various alternative patterns of development is made, taking into consideration also the possible development of other tourist resorts. Fig. 3.1.1 lists the concepts of the various development patterns briefly described below:

Alternative 1

Concept: New hotel area will be developed towards the adjacent south of the existing built up area.

Merit :
1. Securing of wide sand beach and hinterland is possible.
2. The totality of the whole of Pattaya is maintained, and, with a variety for choice by tourist, will enhance the attraction of the resort.
3. Greater effectiveness of investment.

Demerit:
1. It will be necessary to improve the potential of the hinterland between the north and the south of development area.

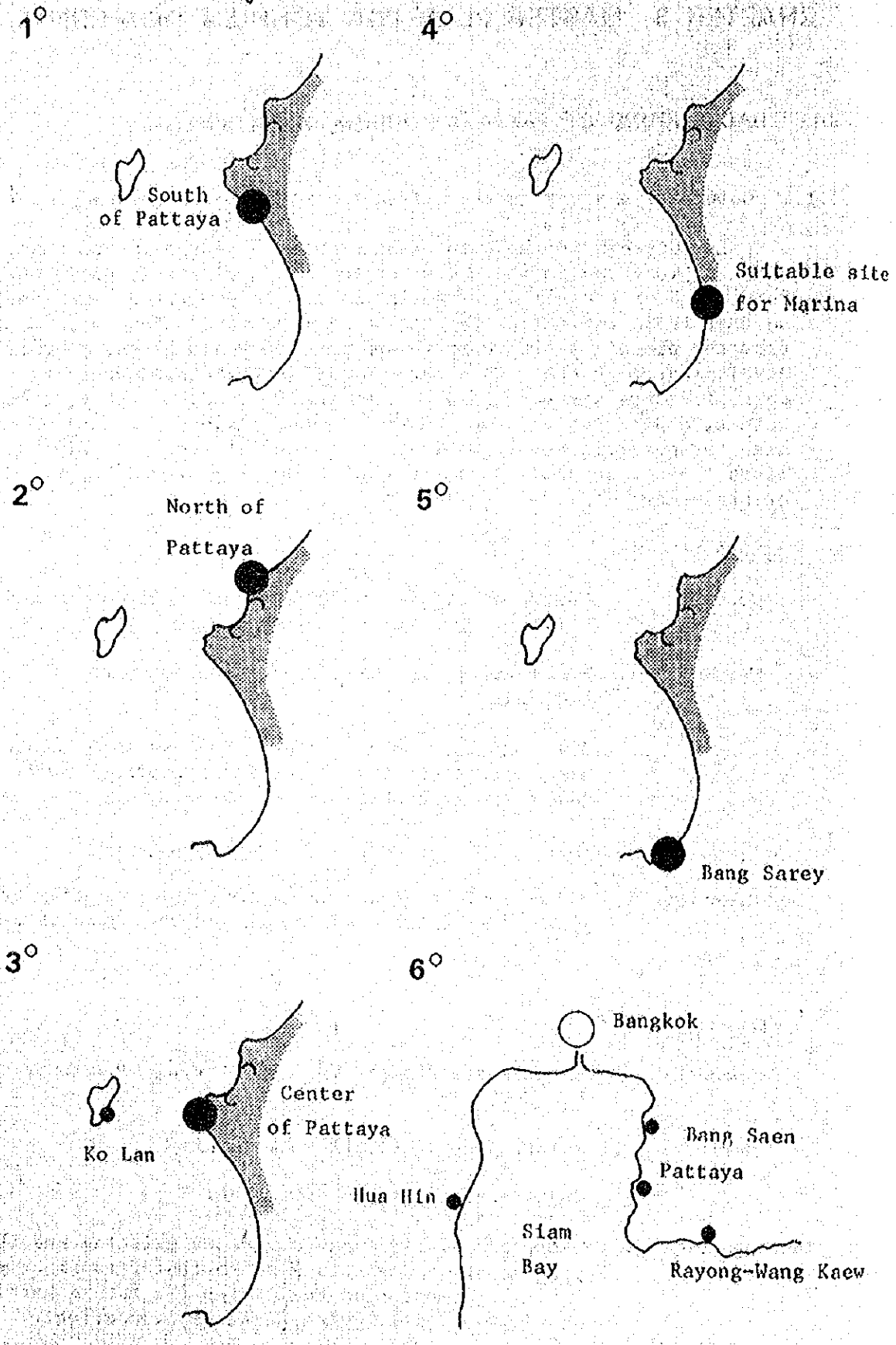
Alternative 2

Concept: Large scale renewal of the existing bungalow area at the north.

Merit :
1. Maintenance of totality is simple.
2. Investment is highly effective.

Demerit:
1. There are already many bungalows existing and the present environment is good so that removal of existing accommodation facilities for future hotel development will invite negative side effect.

Fig. 3.1.1 Alternative



2. Although the shoreline is rich in variety, the capacity of the beach is small.

Alternative 3

Concept: New development of the vicinity of Royal Cliff Hotel and Ko Lan Island.

Merit : 1. Most attractive in terms of locationing of hotels.

Demerit: 1. Although shoreline is rich in variety there is lack of continuity of beach.

2. Development of Ko Lan Island will lower natural attractiveness of island.

3. Capacity of island is small.

4. Investment cost on infrastructure is high.

5. Hinterland of Royal Cliff Hotel already developed for residential use, and there is little ground for further development.

Alternative 4

Concept: New development at the suitable site for marina towards the south.

Merit : 1. Good natural environment and suitable for marina construction.

Demerit: 1. Difficult to maintain totality.

2. Marina depends greatly on private investment and the volume of future domestic demand on marina is doubtful.

3. Since large scale marina development is unnecessary, it is difficult to justify marina oriented development.

4. Less effectiveness in investment.

Alternative 5

Concept: New demand to be met by development of Bang Sarey.

Merit : 1. Bang Sarey is already established as a base for deep sea game fishing.

Demerit: 1. Investment effect is dispersed.

2. Difficult to maintain totality.

3. The land south of Bang Sarey is owned by navy, and expansion of development is difficult.

Alternative 6

Concept: Disperse new demand to Hua Hin, Rayong and other resorts.

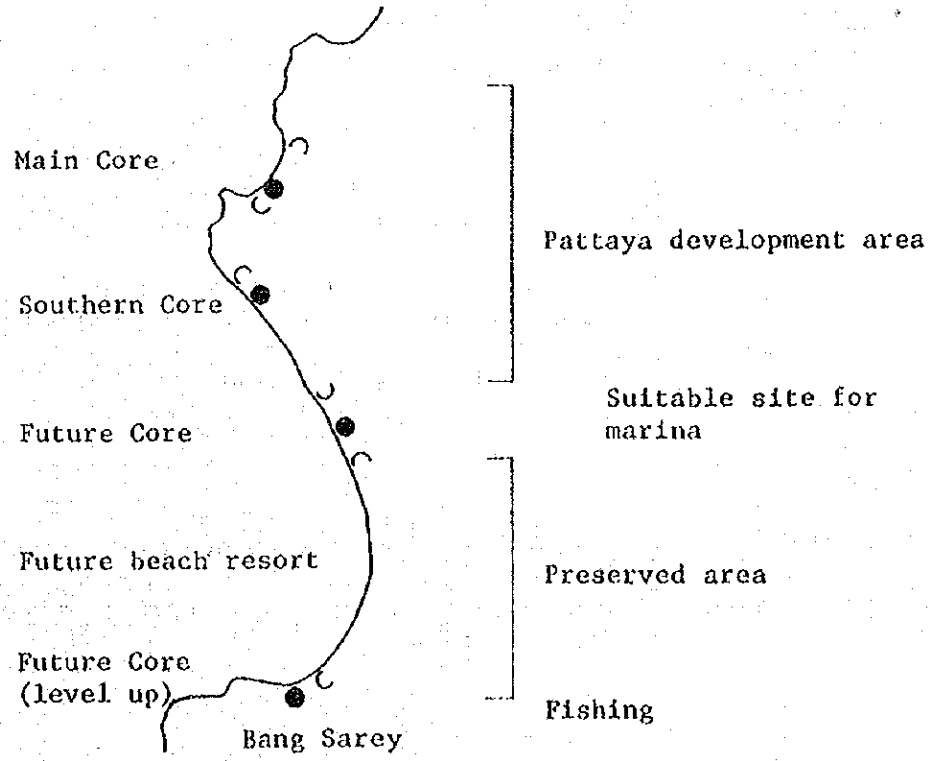
Merit : 1. Various beautiful beaches are available.

Demerit: 1. With such dispersal of facilities, stimulation of spontaneous response on development is difficult.

2. Investment effectiveness is greatly lowered.

It is seen that alternatives 5 and 6 extend the scope of study far beyond the project area of Pattaya. Bang Sarey, a new resort south of Pattaya, is already well known as a centre for deep-sea game fishing, and with the anticipated future development, may together with Pattaya, form a continuous beach resort belt. In the same sense, the concept of alternative 4 which stresses the importance of suitable site for marina construction, should also be considered within the scope of an overall planning of the Bang Sarey - Pattaya resort belt. Fig. 3.1.2 illustrates possible pattern of beach resort belt for Bang Sarey - Pattaya in the future.

Fig. 3.1.2 Concept of Bang Sarey -- Pattaya Resort Belt



Hua Hin and Bang Saen are already established domestic beach resorts, and it is not considered desirable to improve these resorts to cater for the needs of international tourists, since it is expected that domestic tourism demand will greatly increase, so that these established domestic resorts which are within the sphere of one-day movement from Bangkok should be reserved to cater for future growing domestic 'day-trip' tourism demand.

The beach in the vicinity of Rayong up to Wang Kaew has very high potential for tourism development. However, if the beach is to be developed in conjunction with Pattaya beach, it will be very difficult to stress the interdependence in character of the two, considering the relative location of each other. Thus it is more desirable that the development of the Rayong beach be carried out independently in future, to form a beach resort of different character from Pattaya, so that the two may have different functions.

From these considerations, it was decided that the development of Pattaya should be along the concept of Alternative 1, which stresses utilization of the existing established resort and provides allowance for future expansion towards the immediate south of the present resort. This alternative allows diversified use of the beach and also has ample room for development of inland activities.

3.1.2 Promotion of tourism resources in Pattaya region.

(a) Inland tourist networks.

From the point of promotion of tourism route, it is necessary also to extend the possibility of development beyond the project area to the vicinity. This will further strengthen the position of Pattaya as a base for long staying tourists who may extend their activities to the vicinity, with Pattaya as the base. The following summarizes the potential tourist attractions in the vicinity of Pattaya, and their locations are shown on Fig. 3.1.3.

a. To the North.

1. The Khao Keo Wild life Park
(Emphasis on living wild tigers on mountains).

2. The Bang Phra Reservoir.

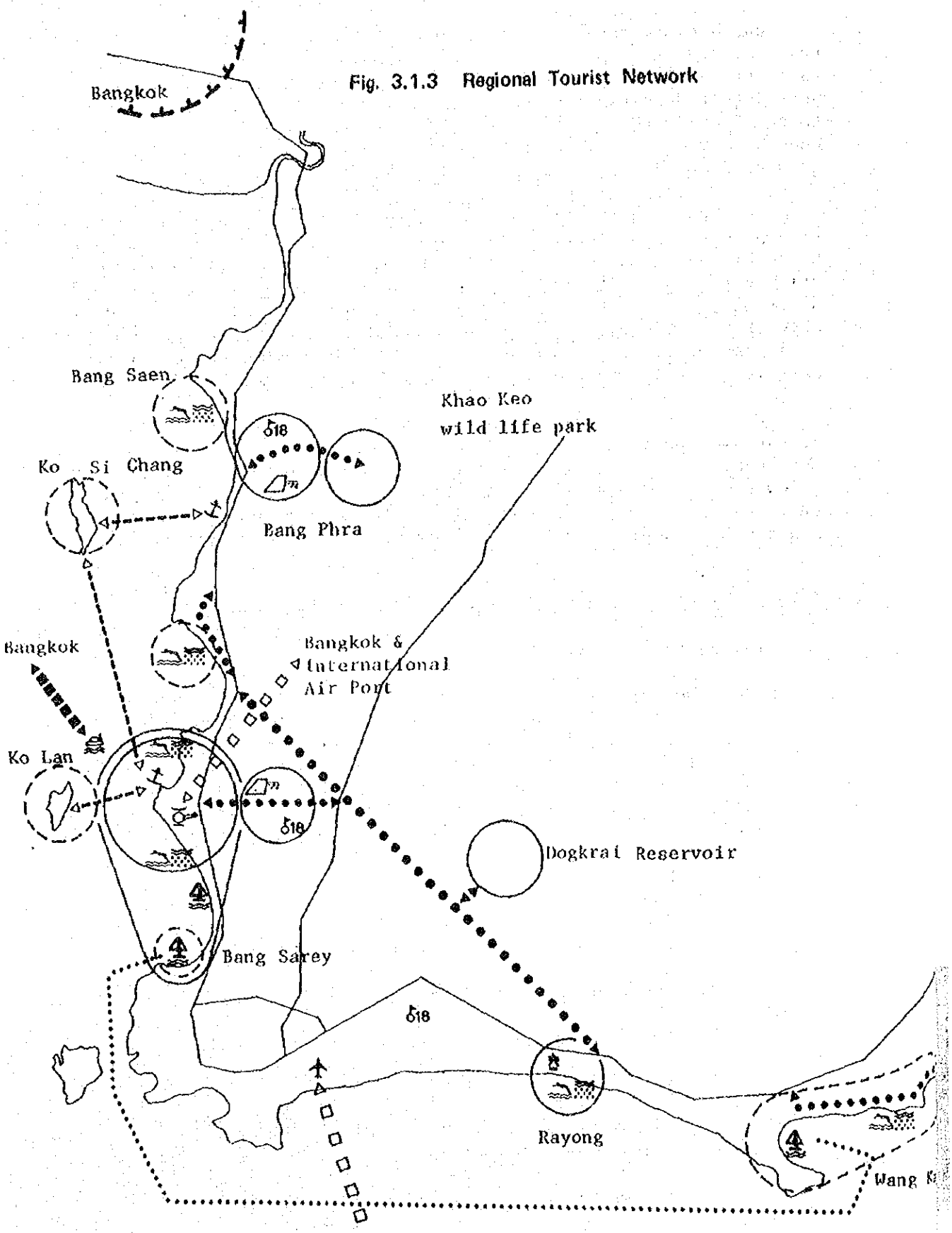
3. The Bang Saen Beach.

4. The Ko Si Chang Island off Sri Racha.

5. The drive along the beach between Laem Chabang and Bang Lamung.

6. The orchid farm near Bang Phra.

Fig. 3.1.3 Regional Tourist Network



b. To the South.

1. The future Mabprachan Reservoir.
2. The Bang Sarey Beach and off-shore islands.
3. The Dogkrai Reservoir.
4. The town and beach of Rayong.
5. The beach at Wang Kaew including Ko Thaloo Island.

c. Golf courses.

1. Bang Phra Golf Course.
2. Utapao Golf Course.
3. Siam Country Club Golf Course.

(b) The use of the water surface (Fig. 3.1.4 to Fig. 3.1.6).

a. The area for ocean activities will be the entire water surface from Pattaya to Bang Sarey, extending out to include Ko Lan Island and Ko Phai Island.

b. The sea between Ko Kram and Ko Phai is most suitable for deep-sea game fishing, with Bang Sarey serving as the base for this ocean activity.

c. The sea around Ko Lan and the water off South Pattaya is suitable for coastal fishing.

d. The sailing (yachting) zone will be the sea surface that is between Pattaya and Bang Sarey, and following the long future needs for marina, the suitable locations for marina construction are identified as 2 at Pattaya, 1 at Ban Pak Khlong 1 at Ko Lan and 1 at Bang Sarey for a total of 5 locations.

Fig. 3.1.4 Ocean Related Network

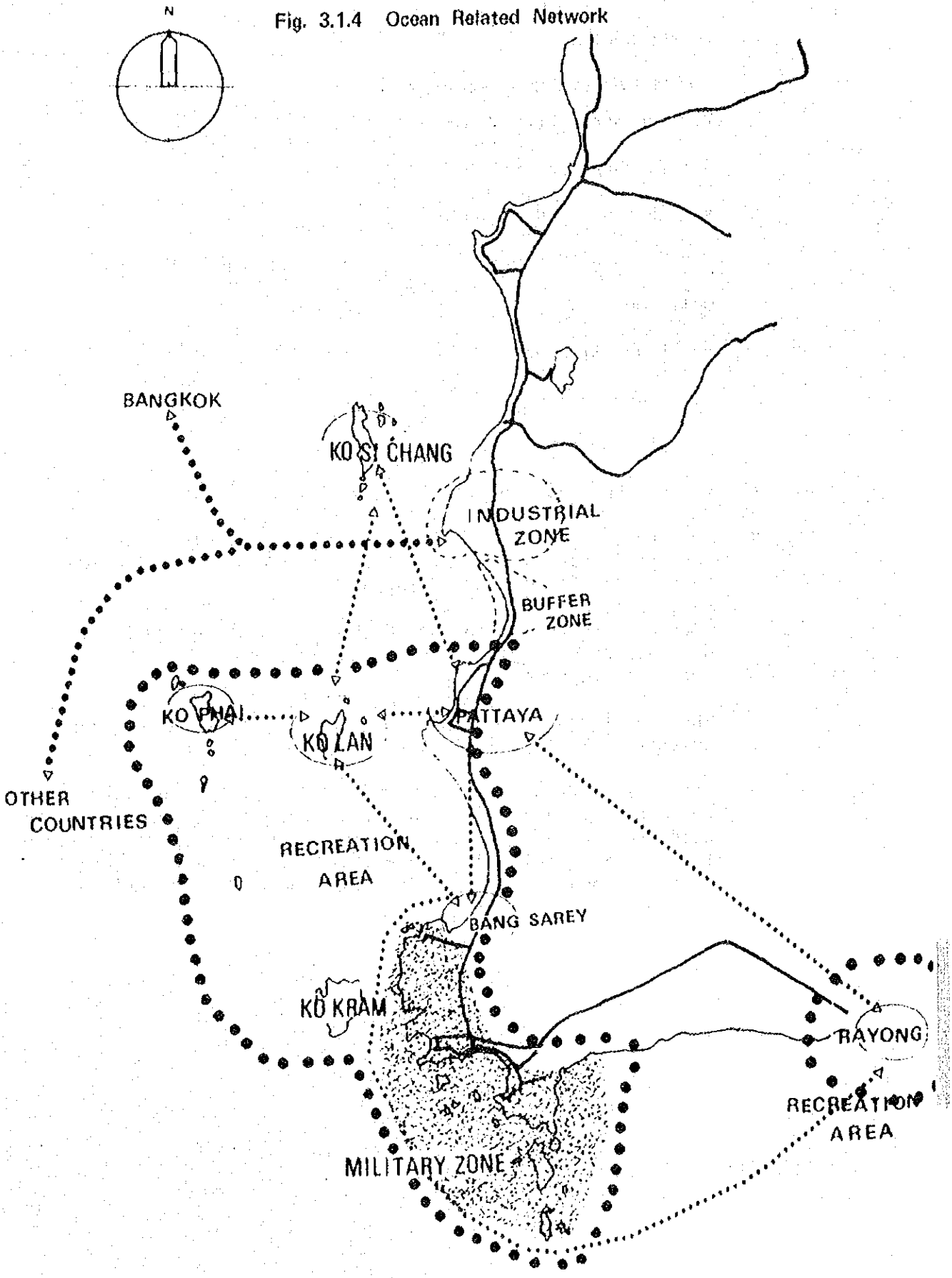


Fig. 3.1.5 Sailing – Zone & Marina

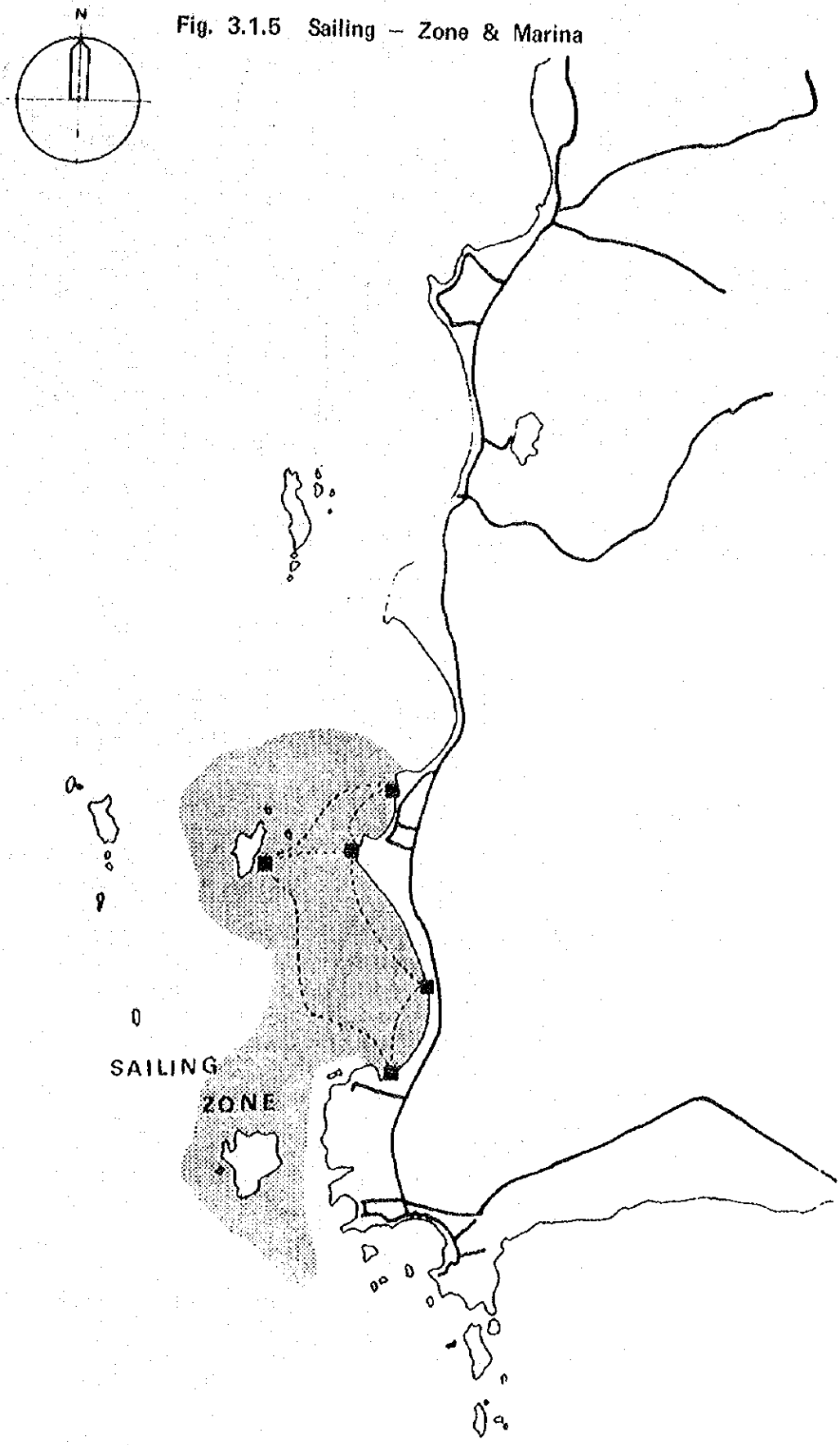
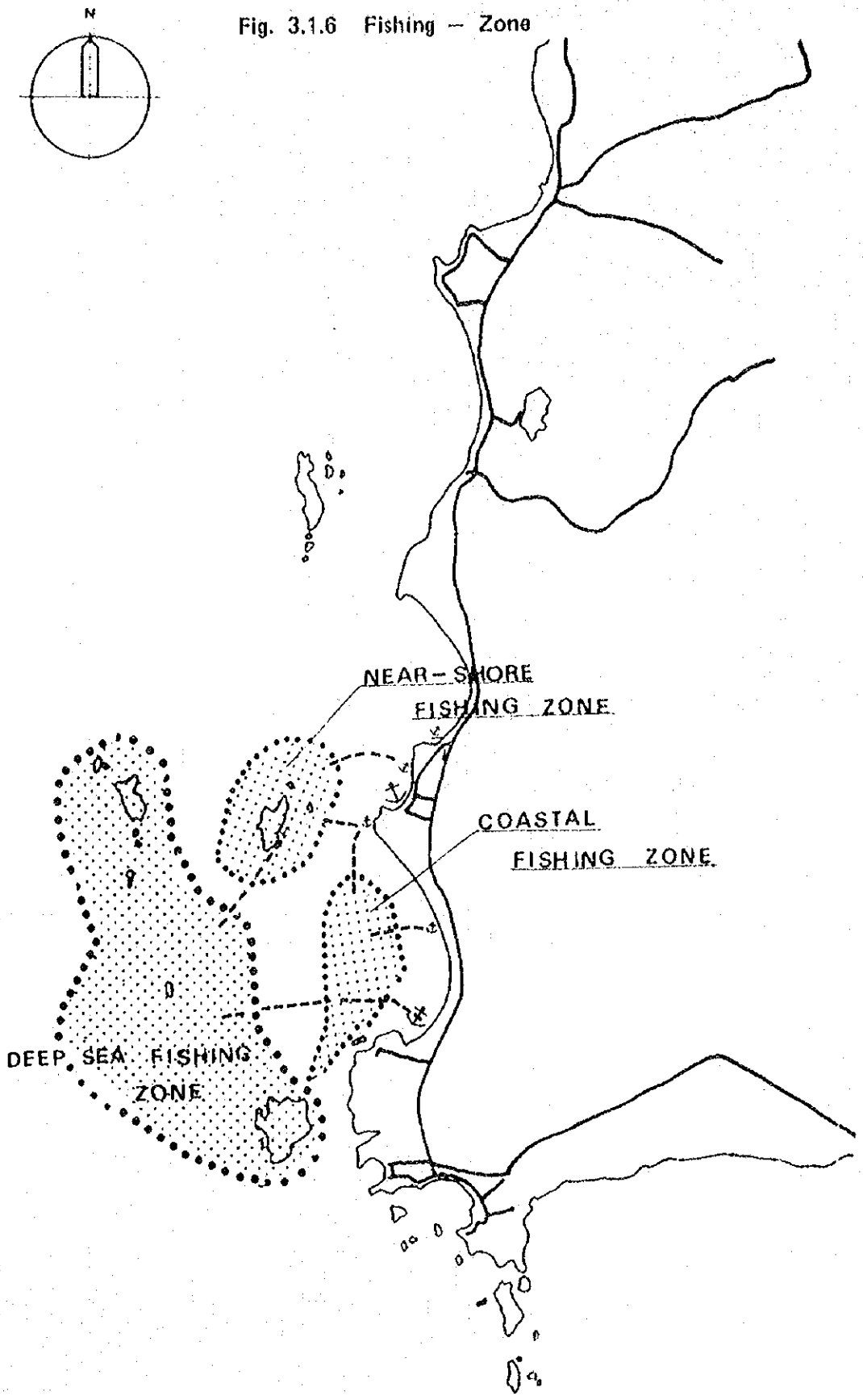


Fig. 3.1.6 Fishing – Zone



3.1.3 Inter-regional Transportation System

At present, Pattaya beach area is connected with the external areas only by Sukhumvit Highway. Most foreign tourists arrive by this inland route. There is no major destination beyond Pattaya from Bangkok. Transportation system to the Pattaya beach has to be expanded in perspective in order to attract more tourists. The following transportation development should be taken into consideration.

(a) Road.

Widenning of Sukhumvit Highway from 2 lanes to 4 lanes is presently underway. The access to Pattaya beach would be considerably improved after completion of the above project. However tourists have to pass through very congested Bangkok urban area from the Don Muang Airport. It may be desirable to construct a bypass route to connect directly Bangkok international airport with Pattaya beach for the benefit of those tourists whose sole destination is Pattaya.

(b) Railway.

A new railway line is now being planned in the vicinity running from Chachoengsao to Sattahip. It is anticipated to be completed within 5 years. This railway might be utilized by tourists, especially by day-trip visitors from Bangkok in the future.

(c) Air Transportation.

There is Utapao air base near Sattahip which is about 30 Km south of Pattaya. At present, Utapao air base is under the military operation. It may be possible that part of the air base can be transformed into the commercial airline use for foreign visitors, especially for Pattaya visitors, as well as for domestic flights. This development will considerably benefit Pattaya beach. However since great investment would be required to construct new terminal facilities, the pros and cons of the new commercial airport have to be studied within the framework of overall national air transport policy of Thailand.

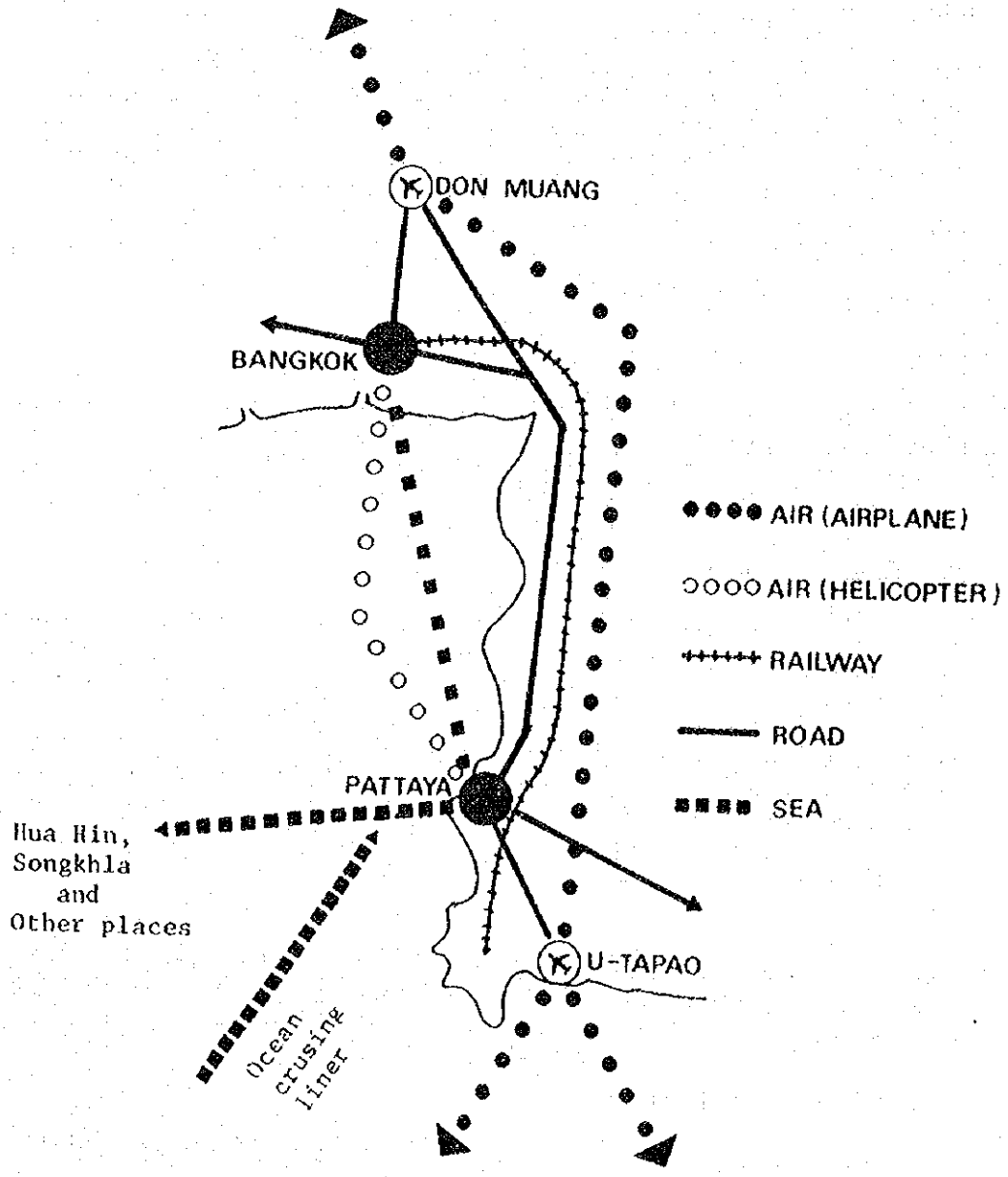
As other means of air transportation, helicopter may be utilized for improving connection between Don Muang Airport, Bangkok and Pattaya.

(d) Ocean Transportation.

1. Liner transport in the Gulf of Thailand. (Bangkok-Pattaya etc.).

Ocean liner transport may also be considered as one of the best methods of mass transportation for future demand together with rail traffic. In addition, an ocean liner transport will greatly bolster the image of Pattaya as a ocean resort. Some facilities for ocean liner transport will be provided at

Fig. 3.1.7 Inter-Regional Transportation System



Main Pattaya port and Ban Na Klua, and may be included as a part of the program for redevelopment and rehabilitation of Na Klua. In future, the introduction of service of ocean liner transport bound for other places, like Bangkok, Songkhla, Hua Hin and other places, may be needed following the increase in the number of tourists who use Pattaya as their tour key-station. Therefore, the vessels of ocean liner in Pattaya should be capable of functioning as follows:

(I) To be able to transport plenty of people at one trip.

(II) To be able to cruise with safety and comfort.

(III) To be able to travel at high speed.

(IV) To require only simple facilities for mooring.

(V) To be able to provide scheduled service.

The hovercraft, hydrofoil boat and high speed ferry boat are some of the vessels which are able to satisfy the above demand.

2. Ocean cruising liner.

In future, Pattaya beach resort will be more established among the international resorts of the world. The possibility of access to a port of Pattaya by ocean cruising liner should be studied. Compared with the requirement of the great investment for construction of the new harbor facilities, the effects of regional economic from the ocean cruising liner is not so great. But the indirect effect is great in terms of boosting the image of Thailand as a tourist destination, particularly since the tourists on ocean cruising liner is generally the type who enjoy their tours. This kind of tourists have a great influence on the effect of public relation on other tourist. In thhis master plan, the suggested mooring system for the ocean cruising liner is shown on the following diagram.

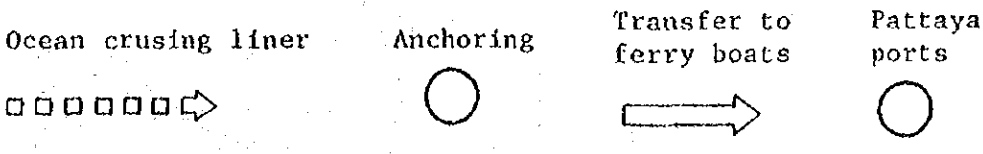
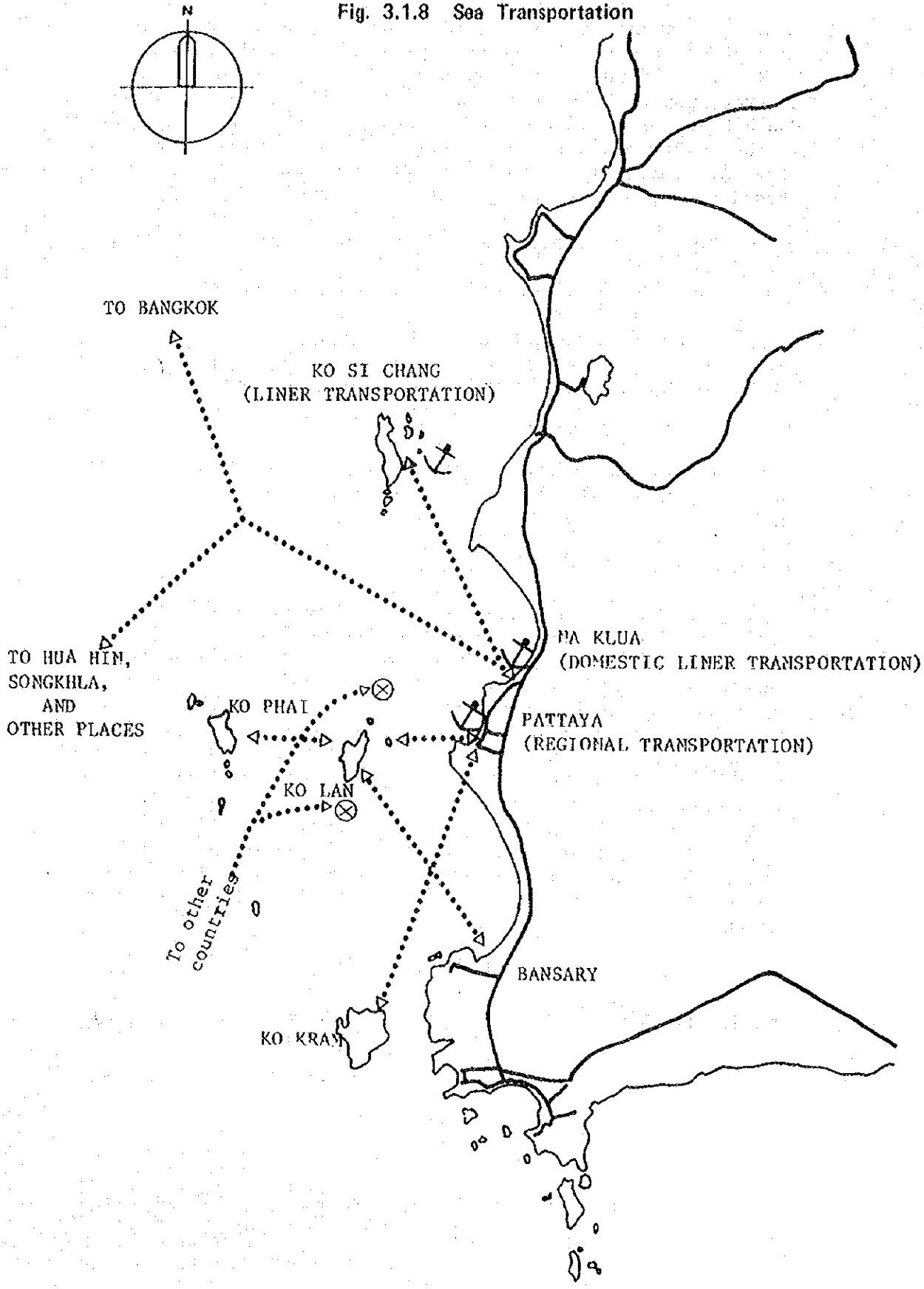
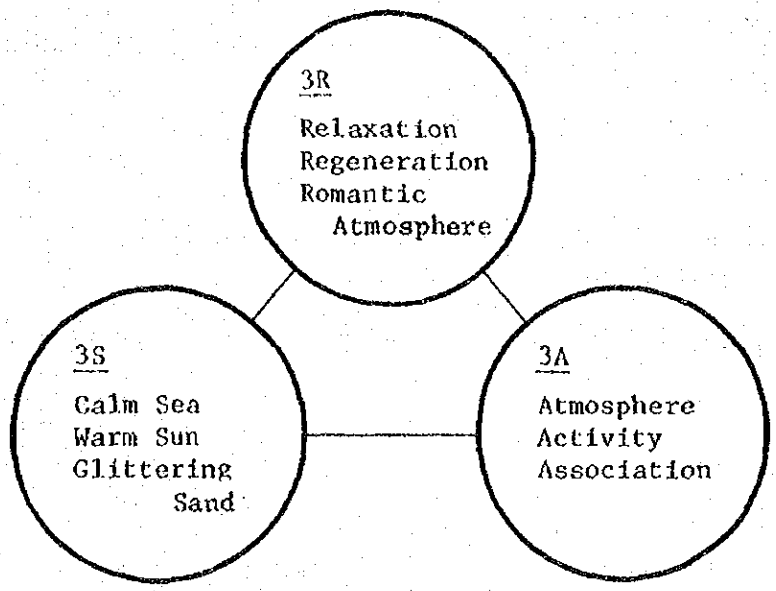


Fig. 3.1.8 Sea Transportation



3.2 DEVELOPMENT CONCEPTS

3.2.1 Development Themes.



The future tourism trend will be made out of natural outcome of the human need to search for peaceful balance of mind, escaping from the mechanized urban environment. Taking into consideration such a needs for the future tourism, Pattaya development theme have to respond to needs and the development policies are tasks for the real development.

(a) 3S - Sea, Sun, Sand.

Calm sea, warm sun and glittering sand are outstanding features of natural setting. No facilities and activities are allowed to overpower this natural gift, so that the relaxing natural setting will embrace the various facilities and activities.

(b) 3A - Atmosphere, Activity, Association.

Under the above mentioned natural setting, our response to these human side quality will greatly attribute to the image and impression of the Pattaya resort. Exotic Thai atmosphere will satisfy the quiet side of human curiosity. Activity will meet the need for physical participation. Association among people and association with the nature will fulfil the human desire to be communicated. Overall harmonious setting between 3S and 3A will give best opportunity to arrive at the objectives of tourists, namely 3R.

(c) 3R - Relaxation, Regeneration and Romantic Atmosphere.

The future demands for the quality - 3R - will be ever increased as the future tourism trend indicates. Relaxation stands for physical release and regeneration refers to the acquisition of mental peace. Romantic atmosphere will give imagination and flavor to this resort.

3.2.2 Development Policy

The basic policy for the tourism development of Pattaya may be summed up as follows:

(a) To maintain Pattaya as an international tourist resort.

At present, Pattaya is already an international tourist resort with adequate accommodation facilities to cater for international tourist demand. Unfortunately, the rapid expansion without an overall plan has resulted in an unbalance in supply particularly in the infrastructure sector and a consequent deterioration in environment. The most important policy in the future plan is therefore the provision of balanced facilities to maintain the tourist resort at a level compatible to international tourist requirements.

(b) To develop Pattaya into a resort with diversified ocean activities catering to all levels of ocean activity demands.

The ocean is already the main attraction of Pattaya and there is no doubt that in the future, the emphasis on the development of Pattaya remains with the ocean and ocean activities. Moreover, the emphasis should not be on expert ocean lovers but should be on the variety of ocean activities, which will cater for all levels of ocean activity demands, both in the level of skill and in the level of age.

(c) To provide adequate supplementary inland activities.

While the emphasis is on ocean activities, in view of future increase in number of tourists, it is important also to provide sufficient supplementary inland activities which will also serve to introduce some "Thai flavor" to foreign tourists. The inland activities will also divert non-ocean-activity participants away from the beach.

(d) To cater also for the domestic Thai tourist.

Although the resort is basically planned as an international tourist resort, it is anticipated that following the gradual increase in personal income of the Thai, more and more domestic tourist will also share the facilities being planned for international tourists. The overnight domestic tourists will no doubt be entitled to all facilities at the resort. Effort will

also be made to cater for the 'day-trip' domestic tourists by provision of adequate facilities, provided that the number will not exceed the capacity of the resort, thus resulting in the deterioration of the environment.

3.2.3 Development Goals

Basing on the above development policy, the development goals have been established as summarized below:

(a) To maintain an environment compatible to international requirements.

The ocean is the main attraction of tourist to Pattaya, as has been verified by the questionaire survey carried out during this study. The maintaining of the sanitary quality is therefore the main theme for environment preservation. Indeed, pollution of the ocean may even affect the survival of Pattaya as a tourist resort, and no words of description will over emphasize the importance of ocean environmental control and preservation.

Besides the ocean, the beach, the local community etc. should also be maintained to a high level of standard capable of attracting international tourists.

SOLUTIONS:

1. Provision of adequate sewerage and drainage facilities and prevention of indiscreet discharge of waste water directly into the ocean.

2. Provision of planned solid waste disposal system.

3. Improvement of the beach of Pattaya.

4. Planned redevelopment of the existing facilities.

(b) Ensuring the safety and convenience of tourist.

Since the policy is to develop Pattaya into a diversified ocean activity resort catering to all levels of ocean activity demand, great stress has to be made on the safety and convenience of the ocean activity participants.

SOLUTIONS:

1. Regulation of mooring of boats along the beach.

2. Segregation of vehicle traffic from pedestrian traffic.

3. Regulation and control of the use of water surface.

4. Provision of life-guards and other safety facilities along the beach.

(c) Provision of ample supply to meet requirements.

To maintain the resort at a high standard, the supply at all sectors should always meet the requirements at all times.

SOLUTIONS:

1. Planned construction of hotels and bungalows to provide ample accommodation facilities.

2. Coordinated improvement and provision of infrastructures (water supply, electricity, communication and transportation).

3. Planned and controlled development of amenity cores.

4. Coordinated and regulated development of residential and commercial zones in the project area.

(d) Control of the 'day-trip' domestic tourists.

While the basic policy is to take in the domestic tourists, special attention has to be paid to the 'day-trip' domestic tourists who form very sharp 'peaks' at particular days of the year or week and whose stay in the resort is short. The influx of these 'day-trip' tourists should not overly cause interference or disturbance to the normal activities of the resort.

SOLUTIONS:

1. Provision of adequate car parking facilities and strict regulation of no parking on the streets surrounding the accommodation area.

2. Designation of facilities at the beach for catering to 'day-trip' tourists.

3. Provision of diversified inland activities to divert the 'day-trip' tourists.

4. Planning of other tourist resorts in the vicinity to diversify the 'day-trip' tourist destinations.

(e) Emphasis on Thai atmosphere.

Although the main purpose of the tourists will be on ocean activities, it is also important that the tourists should be able to enjoy a glimpse of the Thai tradition or culture while they are at the resort.

SOLUTIONS:

1. Development and preservation of traditional, historical, religious or cultural resources in the area.

2. Provision of activities of "Thai flavour" in the planning of the inland activities.

3.2.4 Basic planning policy.

In the formation of the plan for the Pattaya tourism development, the following basic policies were established.

(a) The creation of the character of Pattaya.

The basic policy is, as previously described, to develop the resort into an international ocean resort with diversified ocean activities to cater for all levels of demand. Another important aspect is to blend the natural environment, landscape architecture, architecture, culture, and hospitality of Thailand and the Thai people to display a Thai atmosphere so that its existance will be unique among other competing ocean resorts.

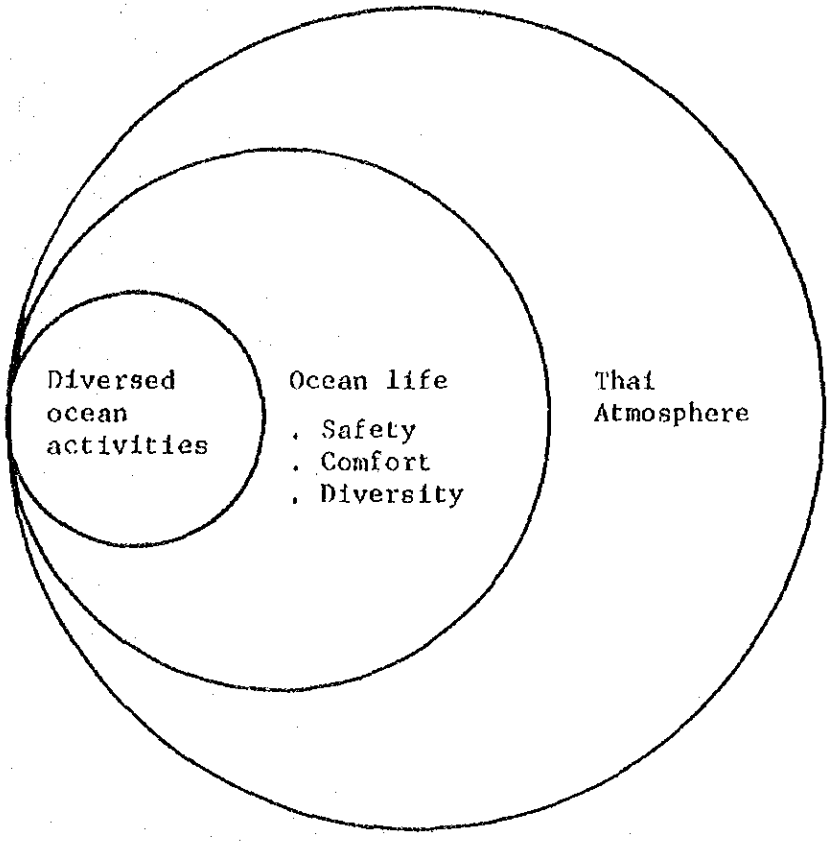
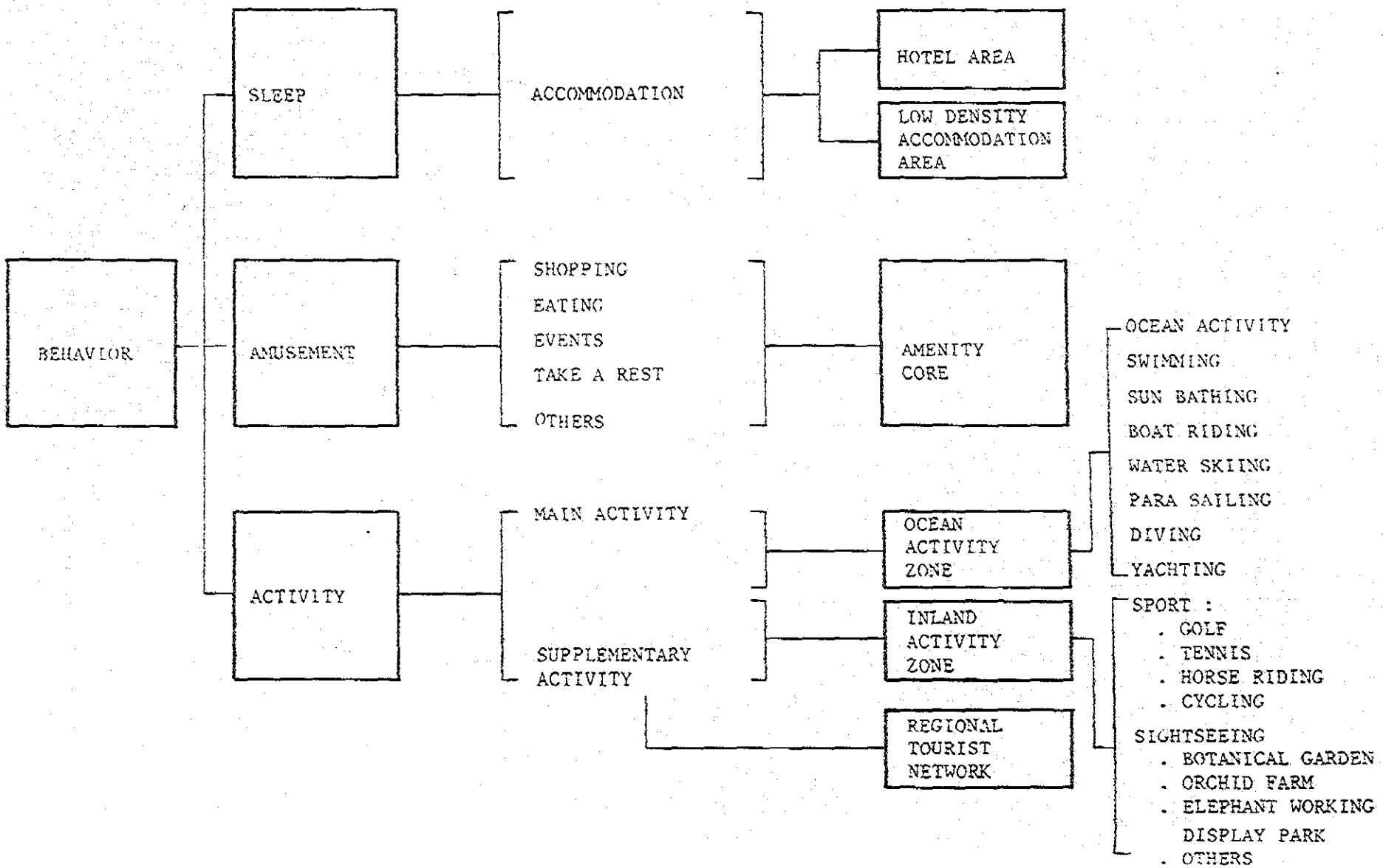


Fig. 3.2.1 Concept of Pattaya Ocean Resort Development

Fig. 3.2.3 Visitor Behavior & Tourism Facility



(b) The preservation and restoration of natural resources.

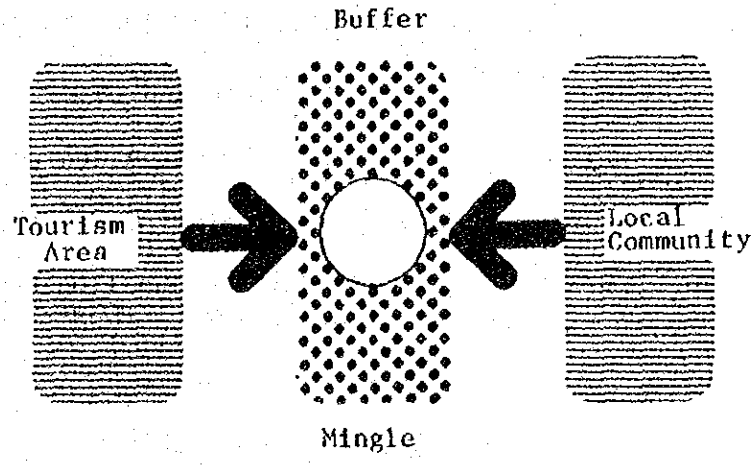
Pollution of the sea water at Pattaya is a major problem now due to the lack of adequate infrastructure, and any further deterioration will affect the survival of Pattaya as an ocean resort. The basic problem is therefore in the restoration of the beautiful sea water and beach.

On the inland side, little is being done at present, and the future preservation and restoration in this respect will be also of great importance.

(c) Harmony with local community.

The local community will greatly be dependent on tourism industry as the base of its economic activities. Conceptually, the tourist and the local community should be so planned as to mingle together. However, due to great difference in behavior of tourist and local community, it is desirable that a space is provided between the two to avoid disturbance of each other, by provision of some kind of buffer zone which will also serve as the contact zone between the tourist and the local community.

Fig. 3.2.2 Concept of Spatial Relationship



3.2.5 Promotion concepts of Pattaya tourism resources.

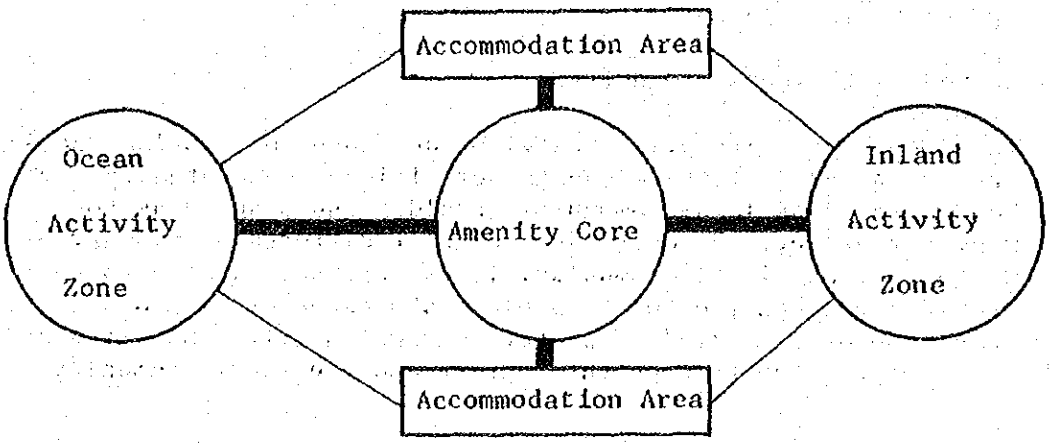
(a) The behavior and zoning of ocean life in Pattaya.

The behavior of ocean life to be provided in Pattaya may be classified and zoned as shown Fig. 3.2.3 and the promotion concept shall be on the display of an image compatible to an international ocean resort.

(b) The space composition concept of tourism facilities.

From the classification of tourist behavior at an ocean resort shown in the previous paragraph, the space composition of the tourism facilities is developed according to the following concept.

Fig. 3.2.4 Concept of Space Composition



(c) The development of Pattaya beach.

The concept on the development of the Pattaya beach will be as follows:

1) Restoring the beauty of the beach and water.

2) Making provision for enjoying swimming and sunbathing.

3) Providing safe and easily accessible ocean related sports.

4) Provision of joyful, colorful and bustling atmosphere befitting an international beach resort. (Northern Pattaya beach).

5) Establishment of sea life park, aquarium and other facilities.

(d) The use of Ko Lan, Ko Phai and Bang Sarey.

1) Ko Lan

- Emphasis on the natural beauty of Ko Lan.

  White coral sand
  Coral reef
  Scenery of the island

- Ocean sport facilities for skilled participants

  Diving
  Fishing

- Provision of man-made artificial facilities will be kept to the minimum.

2) Ko Phai.

- Emphasis on preservation, limiting facilities only to camping or other casual activities.

3) Bang Sarey.

- Bang Sarey will supplement Pattaya in catering for ocean related sports, particularly fishing.

- It is expected that the ocean sports facilities in Bang Sarey will be more private and sophisticated in character.

3.2.6 Concepts of functional layout.

The functional layout for the development of Pattaya will be along the following concepts.

(a) The existing hotel zone in North Pattaya will continue to form a hotel complex area with further intensification of such characteristics.

(b) To boost the attraction of this northern hotel complex area, the downtown area will be redeveloped to form a distinct amenity core with the establishment of a sub-core in the north. An inland activity zone will be established towards the east of the hotel zone.

(c) The beach will be restored of its beauty and function and the existing beach road will be functionally converted to a "human scale mode." The boats which at present disorderly line the shore will be concentrated at some designated areas, thus returning the water surface to the disposal of the ocean activities participants.

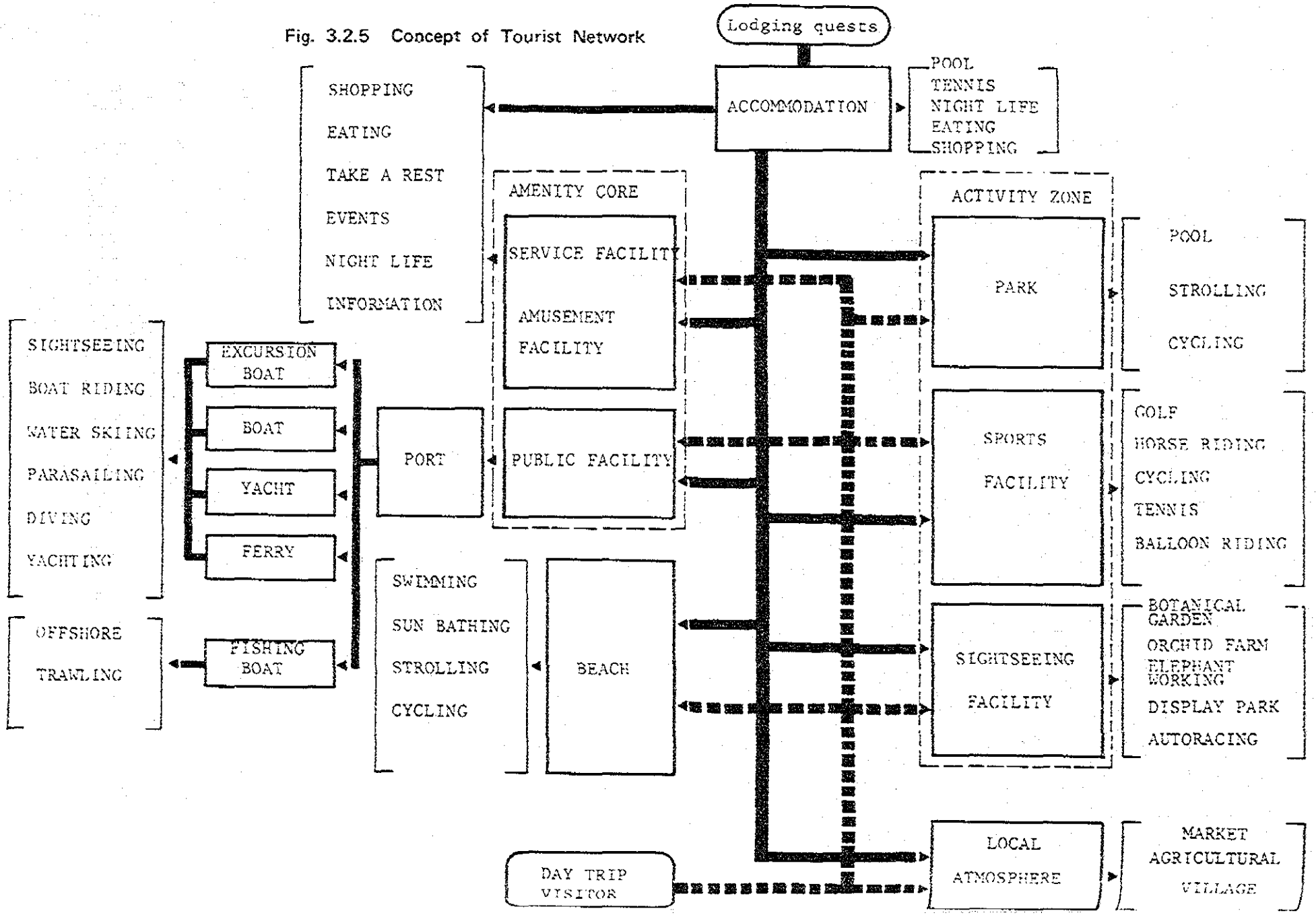
(d) The amenity core and the sub-core will have easy access to the ocean activities through the provision of piers, so that a tourist network comprising of the mainland, the ocean and the islands may be established.

(e) The development of the southern part of Pattaya (South of the Pattaya Hill) will be implementative only after 1986.

(f) Basically, hotels and bungalows will be planned along the shoreline for the southern part.

(g) To stimulate the development of the southern part, a 'southern core' will be established in the southern high density accommodation area (hotel complex area).

Fig. 3.2.5 Concept of Tourist Network



(h) The southern core is planned to be a continuation from a park on the beach, and in order to attract 'day-trip' domestic tourist, attractive public facilities will be provided.

(i) Thus, in character, the northern amenity core will be an urbanized core centred around the downtown area, while the new southern core will emphasize on the atmosphere of nature and vastness.

(j) The inland activity zone will be located at the back of the tourist accommodation area to supplement the amenity core and to form a buffer zone as well as contact zone between the tourist and the local community.

(k) The part of the inland activity zone which is east of the Pattaya hill and which is at the meeting point of the extension of the two amenity cores will serve as area for displaying the totality of the inland of the two Pattaya regions.

(l) The rehabilitation of the local community will centre on the population related to tourism services, with provision of new towns at the back of the tourist accommodation areas both in the north and south. These new towns will be of high amenity zones with service facilities provided for the population within the areas. The village of Na Klua will cater for any further requirements which may not be fulfilled within the new town.

(m) Provision of adequate parking facilities at the designated area (main amenity core, northern core, southern core) will be made along with no parking regulation wherever necessary to control the influx of the day trip visitors and to preserve appropriate density of beaches for staying tourists.

3.3 LANDUSE PLAN

3.3.1 Landuse policy.

Besides the existing hotel complex area and bungalow areas, there are at present in the study area the local community town of Na Klua to the north and some agricultural families dispersed over the area, and the characteristics are greatly different from one another.

The major part of the unbuilt-up area is planted with tapioca or coconut trees, so that the overall land utility may be said to be of high intensity. Under such present situation, the following landuse policy was established.

(a) The inland area will be preserved as much as possible as an element for display of natural environment. Moreover, as explained in the planning concept in the functional allocation, the swamps and physical features of the study area will be efficiently utilized.

(b) The local community dispersed in the study area will be rationally encompassed in the development plan.

(c) 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.

3.3.2 Summary of framework of development

(a) Area of development study

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

Pattaya (mainland)	4,234 ha
Ko Lan Island	522 ha
Ko Phai Island	500 ha
Total	5,256 ha

(b) Development phase

The development plan is prepared with the year 1976 as the base year and for a period of 20 years up to 1996. This is divided into two phases as follows:

Phase 1 (Stage 1)	1977 to 1981
Phase 1 (Stage 2)	1982 to 1986
Phase 2	1987 to 1996

(c) Accommodation facilities requirement.

There are at present about 3,600 hotel rooms in the study area, and requirements for additional accommodation facilities are as follows:-

Phase 1	700 rooms
Phase 2	4,400 rooms

(d) Number of tourists.

The number of tourists for the key years are as follows:-

	Number of tourists per year	
	Accommodating	Day - trip
	(1,000 person-night)	(1,000 person-day)
Year 1986	2,000	625
Year 1996	4,080	960

(e) Local population.

The population of the local community is about 42,500 at present, and the future population is estimated as follows:-

Year 1986	58,100 persons
Year 1996	80,200 persons

(f) Utility Supply.

The utility supplies for 1996 are estimated as follows:-

Water supply	51,200 m^3
Electricity	44,200 kw

(g) Disposal volume.

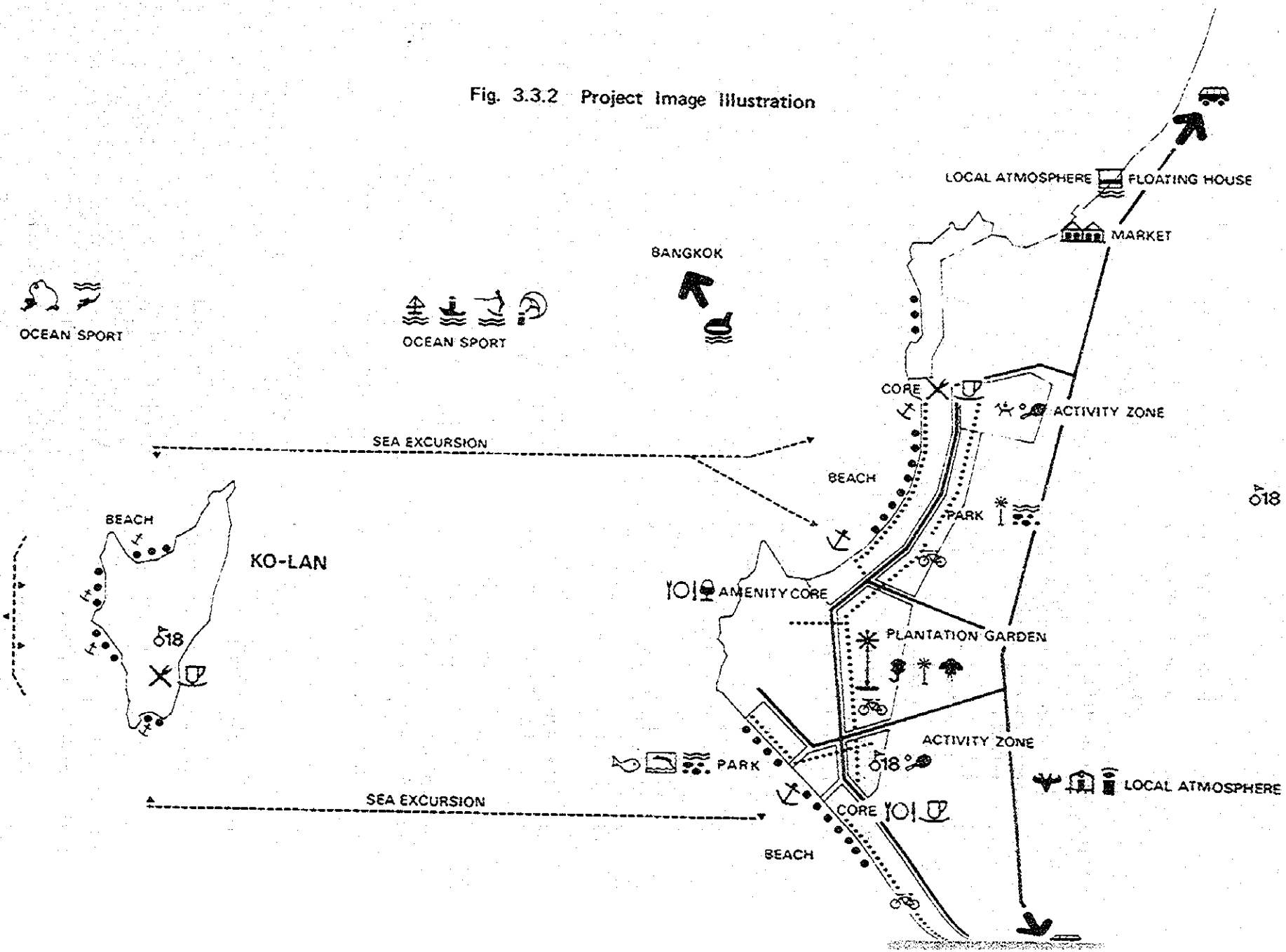
The volume of disposal for 1996 are as follows:-

Sewage	41,800 m^3/day
Solid waste	210 ton/day

(h) Area by Landuse.

The area by land use is summarized in Table 3.3.1.

Fig. 3.3.2 Project Image Illustration



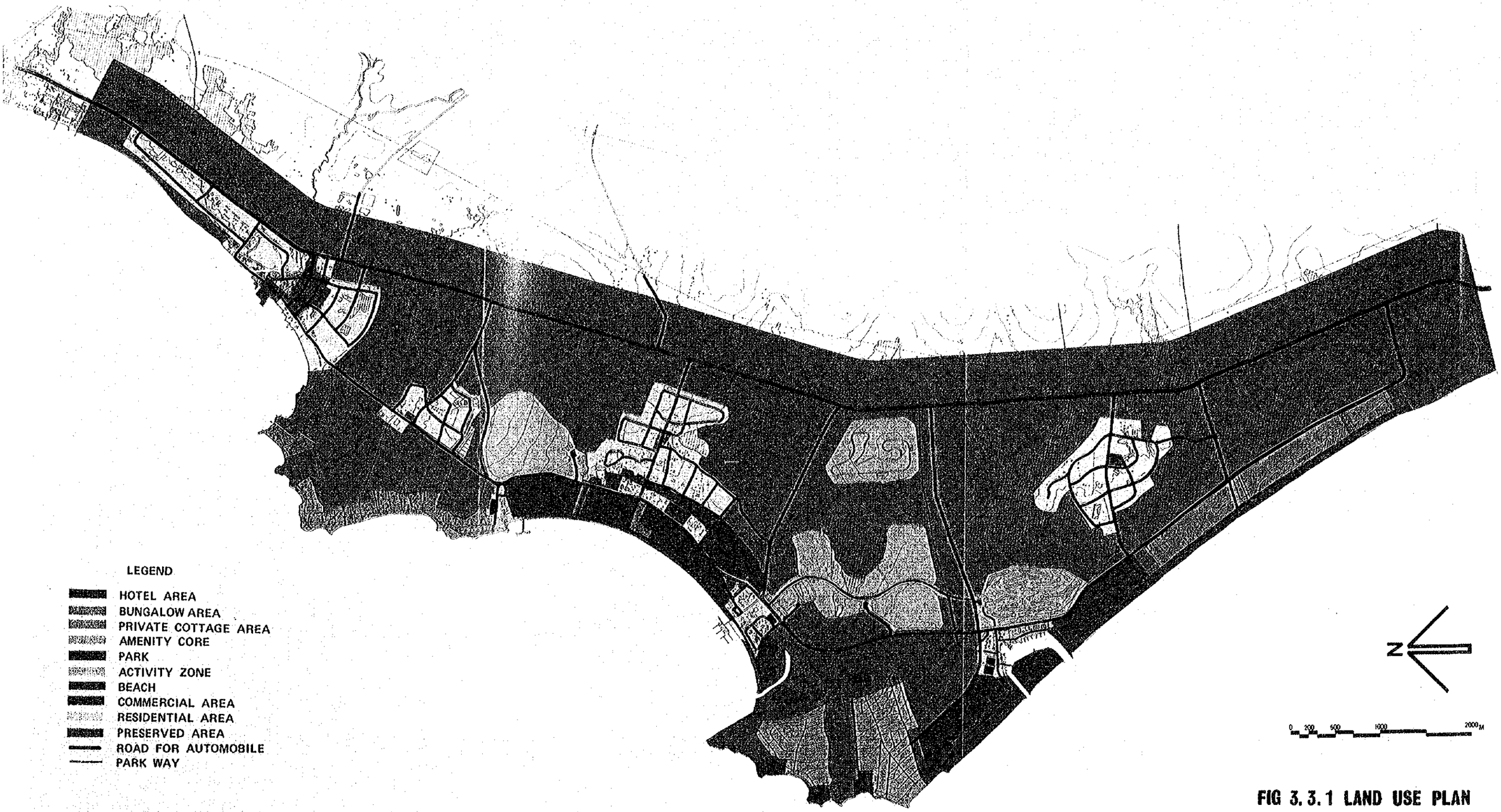


FIG 3.3.1 LAND USE PLAN

Table 3.3.1 Area list of Landuse Plan

in ha

	Phase 1		Phase 2
	Stage 1	Stage 2	
Accommodation area			
Hotel	50.3	55.3	116.3
Bungalow	-	-	84.0
Sub-total	50.3	55.3	200.3
Private cottage area			
Northern	106.0	106.0	106.0
Central	98.0	98.0	98.0
Sub-total	204.0	204.0	204.0
Amenity core			
Northern core	3.7	7.4	7.4
Main core	17.1	24.1	25.5
Southern core	-	-	10.9
Sub-total	20.8	31.5	43.8
Activity Zone			
Northern A. Z.	40.0	80.0	80.0
Central A. Z.	70.0	89.0	195.0
Southern A. Z.	-	-	45.0
Central Park	-	40.0	40.0
Southern Park	-	-	20.0
Sub-total	110.0	209.0	380.0
Residential area			
Na Klua Town A	101.1	123.1	179.0
Na Klua Town B	25.0	50.0	50.0
Northern New Town	36.0	74.0	120.0
Southern New Town	-	-	106.0
Sub-total	162.1	247.1	455.0
TOTAL	547.2	746.9	1,283.1

* Excluding Ko Lan Island

3.3.3 General Explanation of Landuse Plan

In the preparation of landuse plan, the land allotment and the designation of character of each area is made in the following manner.

(a) Accommodation area.

1) Hotel area.

a. Northern hotel area.

The additional room requirement for the phase 1 period is only 700 rooms and it is possible to absorb such requirement within the existing hotel complex area. In this area are now clustered besides hotels, the bungalows, restaurants, and in the Phase 1 development the area will be developed centering on hotel accommodation facilities.

b. Southern hotel area.

The hotel area towards the south will be developed in Phase 2. The hotel site will basically be facing the beach. However, in order to secure sufficient sand beach, the construction will be limited to 100 m from the shoreline.

The character of the southern hotel area will be different from that of the northern hotel area with ample control made of the density, structure, and aesthetics of the hotel construction.

2) Low density accommodation (bungalow) area.

This area is located at the south of southern hotel area.

The density of the hotel area is planned at 200 m^2/room, whereas the density of this low density area for future development is proposed at 600 m^2/room. This area will therefore basically be a bungalow area to be developed in Phase 2.

(b) Private cottage area.

1) Northern area.

This is an area exclusively with existing bungalows and private cottage at a low density and in future the good environmental condition will be preserved.

2) Central area.

This is the area on the western slope of Pattaya hill and commands a good view of the sea.

Development has already been implemented for private bungalows and resort houses at lots of 400 m^2 - 1,600 m^2 in area per lot. From the point of aesthetics and environment, it is important to regulate the land cover rate and height of buildings to maintain this area at a low density.

(c) Amenity core

1) Main amenity core.

The main amenity core will be established through redevelopment and rehabilitation of the existing downtown area to provide services for tourist information, eating, enjoyment, shopping and holding of special events in order to enable tourists to enjoy diversed tourist services.

Also, a public pier will be provided in the area to emphasize the importance of the area as a nodal point in the tourist network for transport to the ocean and the islands. The redevelopment of this downtown area is one of the most urgent jobs of the development plan and it is planned that 80% of the redevelopment and rehabilitation be completed within the Phase 1 period.

2) Northern core.

A northern core will be planned at the northern end of the northern hotel area, with a pier to serve as a base for ocean activities, and with other specialized supplementary service facilities.

3) Southern core.

The southern core will be the main point in the Phase 2 development of southern part of Pattaya, and will be planned as a core connected to the park which continues from the beach. Urbanization will be kept to the minimum and efforts will be made to create an unique atmosphere.

(d) Residential area for local community.

1) Na Klua town.

The town is now the commercial center of the local community with relatively high concentration of population.

In the future, this town is estimated to increase in population to about 13.3 thousand by 1986 and 20.6 thousand by 1996, and will be a source for supply of labor for tourism service.

New residential area will be the flat land to the south of the existing town. It is planned that redevelopment be carried out for the existing commercial centre so that the future average population density for the commercial area

will be maintained at 180 persons/ha and that for residential area at 120 persons/ha.

As preferential policy, the several tapioca factories within this vicinity will be gradually removed to other suitable site through a ten year period.

2) Northern new town.

This new town is planned to absorb the tourism related population of the northern part of the study area.

The population of the newtown is planned at 7.4 thousand by 1986 and 12.0 thousand by 1996 and the average population density is 100 persons/ha. Schools, shops and stores, branch offices of government agencies and parks will be planned to serve the community. The area will be provided with cul-de-sac type street network with abundance of green area in order to create a favorable atmosphere for living.

3) Southern newtown.

The southern newtown is planned for Phase 2 to accommodate a population of 10.6 thousand by 1996. The same average population density of 100 persons/ha as the northern newtown is planned and the same consideration for creating a comfortable living environment will be made.

(e) Inland activity zone.

The hinterland which extends from the northern hotel area to the southern hotel area will be developed as an activity zone for inland activities.

The basic direction of development will be to display the tropical atmosphere through the coconut and palm trees, accentuated with tropical flowers, and in the midst of this atmosphere, facilities for activities and sight-seeing will be allocated.

1) Northern activity zone.

This will be the development and utilization of the swamp to the rear of the northern hotel area, by planning it into a park with pedestrian and bicycle path and with service spots for tennis courts or horse-riding course towards the north. The 40 ha of park in this zone together will 80 ha designated for activities will be wholly developed in Phase 1 of the plan.

2) Central activity zone.

This zone is located east of Pattaya hill and serves as a link between the main core and the southern core and this area of 195 ha will serve as the centre of the inland acti-

vity area. Here, botanical garden, orchid farm, elephant round-up will be planned. Also the existing racing circuit will be improved so that not only auto-racing but also such events as horse racing, trot racing may be held, in order to provide amusement to attract visitors.

The development of this zone will be mainly implemented in Phase 2 in conjunction with the development at the south, but for the first ten years, about 20% will be developed to supplement the amenity at the northern zone.

3) Southern activity zone.

This is the zone that encircles the southern amenity core, and emphasis will be a park provide with public open space and also include a lagoon, pier, and public swimming pool along the coast. On the inland side facilities such as tennis courts, golf course and a public pool will be provided. The implementation will be in Phase 2.

(f) Preservation area.

The area designated for preservation will be strictly regulated in any form of development activities in order to preserve the flora and fauna, the scenery and landscape of the area. The landuse in the preservation area will be basically agriculture and horticulture and alteration of existing situation is prohibited.

3.3.4 Transportation network.

Functional aspects of various transportation are briefly described as follows and also shown conceptually in Fig. 3.3.3.

(a) Highway.

- An arterial road
- High speed through-traffic road

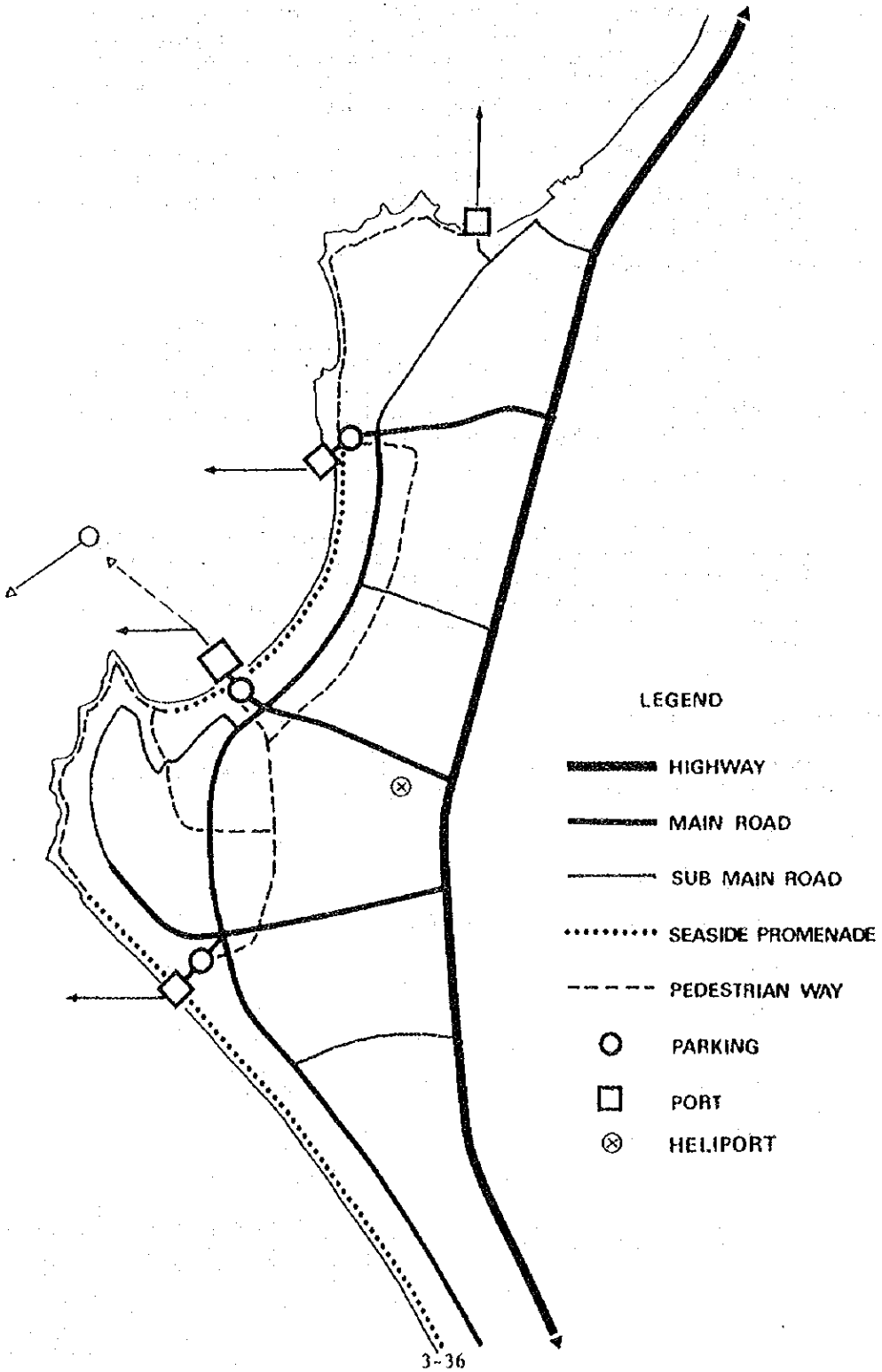
(b) Main Road.

- Access roads to cores
- Service roads to the hotels
- Important roads to improved the image of Pattaya beach

(c) Secondary main road.

- Roads for local community

Fig. 3.3.3 Transportation Network



(d) Seaside Promenade.

- Pedestrian
- Bicycle (Promote as major transportation means)
- Human scale mode of public transport.

(e) Pedestrian way.

- Pedestrian network system which connect various attractions and activity zones of seashore inland activity zone and Pattaya hill.
- Providing space for bicycle network together with pedestrian way.

(f) Parking.

- Establishment of bus terminals
- Public parking lots

(g) Port.

- Main gateway to the Ko Lan islands, to Bangkok, and to Hua Hin etc.

(h) - Ocean crusing liner station.

(i) - Heliport.

3.3.5 Action program.

A summary of phasing is shown on Fig. 3.3.4 and Fig. 3.3.5.

The basic concepts for phasing is summed up as follows:

(a) Phase 1 (1977 - 1986)

Demands for hotel facility will be adequately met by the existing hotel capacity. Therefore the main objectives of phase 1 development is to solve the existing problems and to raise the potentiality as a competitive international resort.

1) Stage 1. (1977 - 1981)

This is the first stage development for problems solution. The improvement and new construction of roads and other basic items will be carried out in this stage according to the direction established in the masterplan.

2) Stage 2. (1982 - 1986)

As the basic facility construction is in progression, substantial improvements and completion of the amenity cores, and activity facilities will be taken care of to further boost the potentiality of the tourist resort.

(b) Phase 2 (1987 - 1996).

This is the period when the demands for hotel accommodation will be expected to increase. The increased demand shall be met by the southern area development which includes such facilities as hotels, southern amenity core and bungalows. The main amenity core and the southern inland activity area will also be improved and expanded is pace with increased demand. The final scope of works proposed by masterplan will be completed in 1996.

Fig. 3.3.4 ACTION PROGRAM PHASE 1

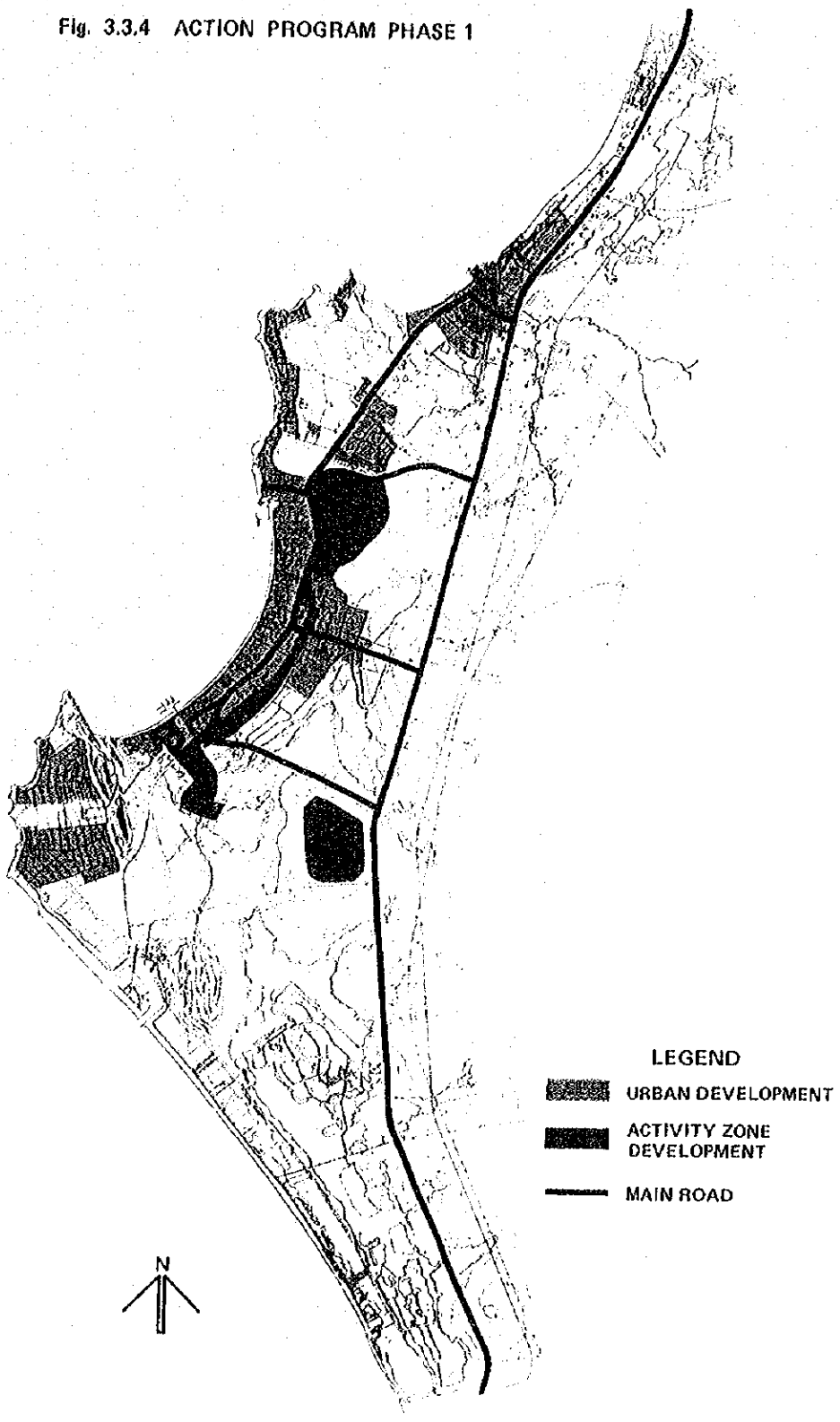
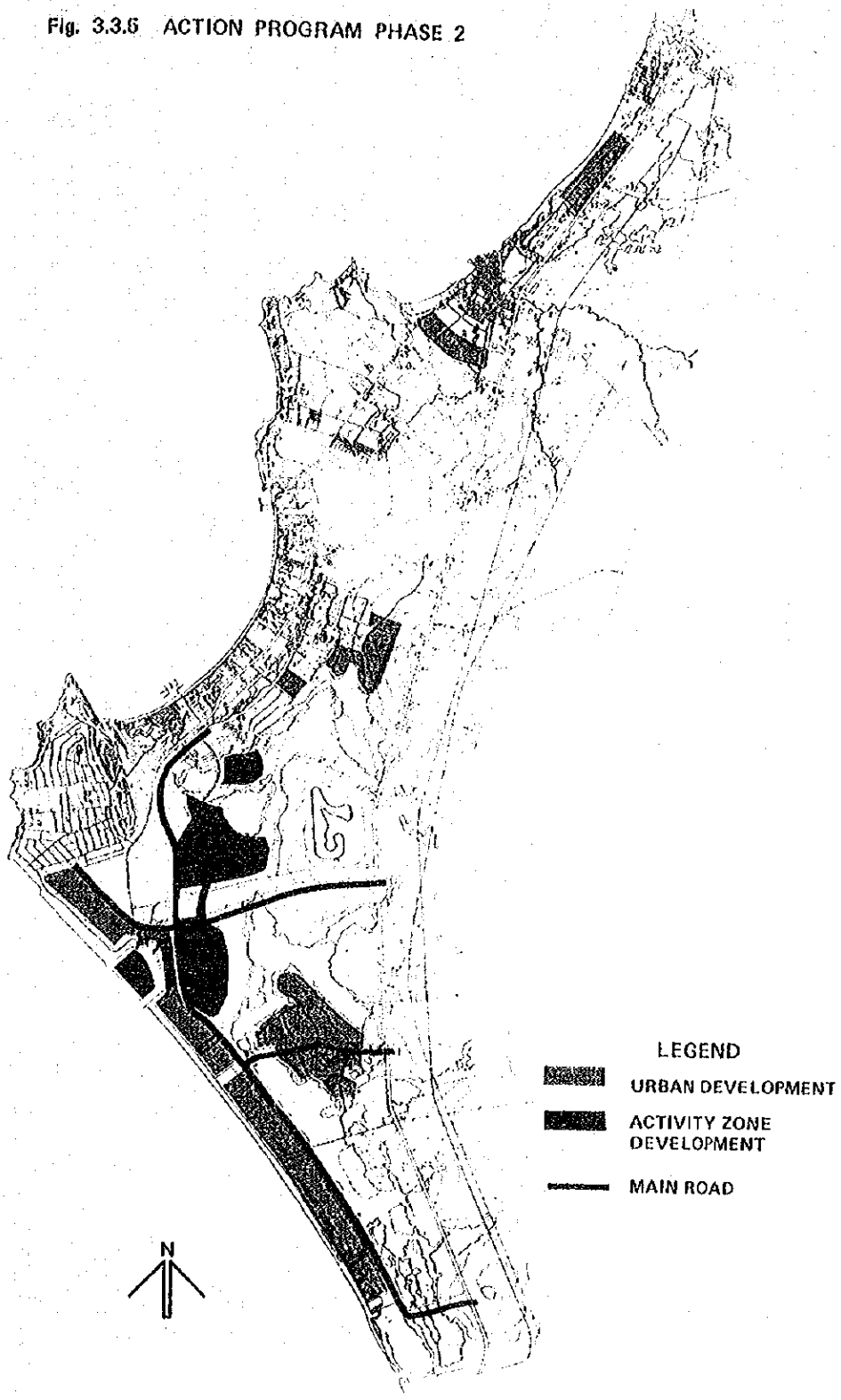
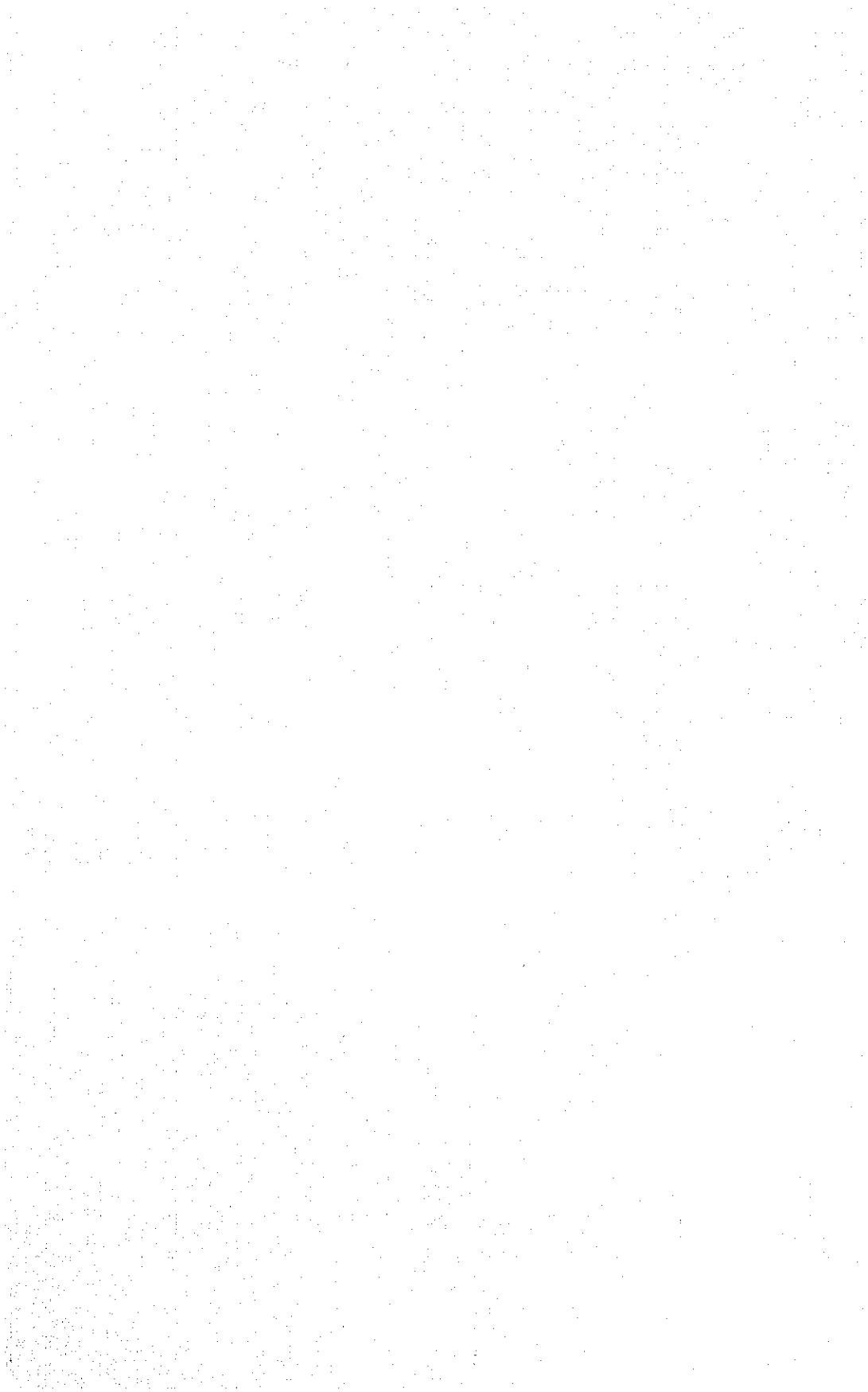


Fig. 3.3.6 ACTION PROGRAM PHASE 2





3.3.6 Surrounding landuse study.

To maintain the function of the development area as a tourist resort in a long term, it is important also to make some regulation on the landuse of the vicinity. The vicinity which has an impact on the study area extends from the north of Na Klua down south to Bang Sarey. Here a suggestion is made of the regulations which are essential for maintaining the environment of Pattaya as a tourist resort.

(a) A plan is said to be in hand for the construction of a railway line in the north-south direction towards the east of the Sukhumvit Highway. Following the increase in potential of the land, the vicinity of the railway stations along the study area will be permitted to be developed only as residential, commercial and warehousing area.

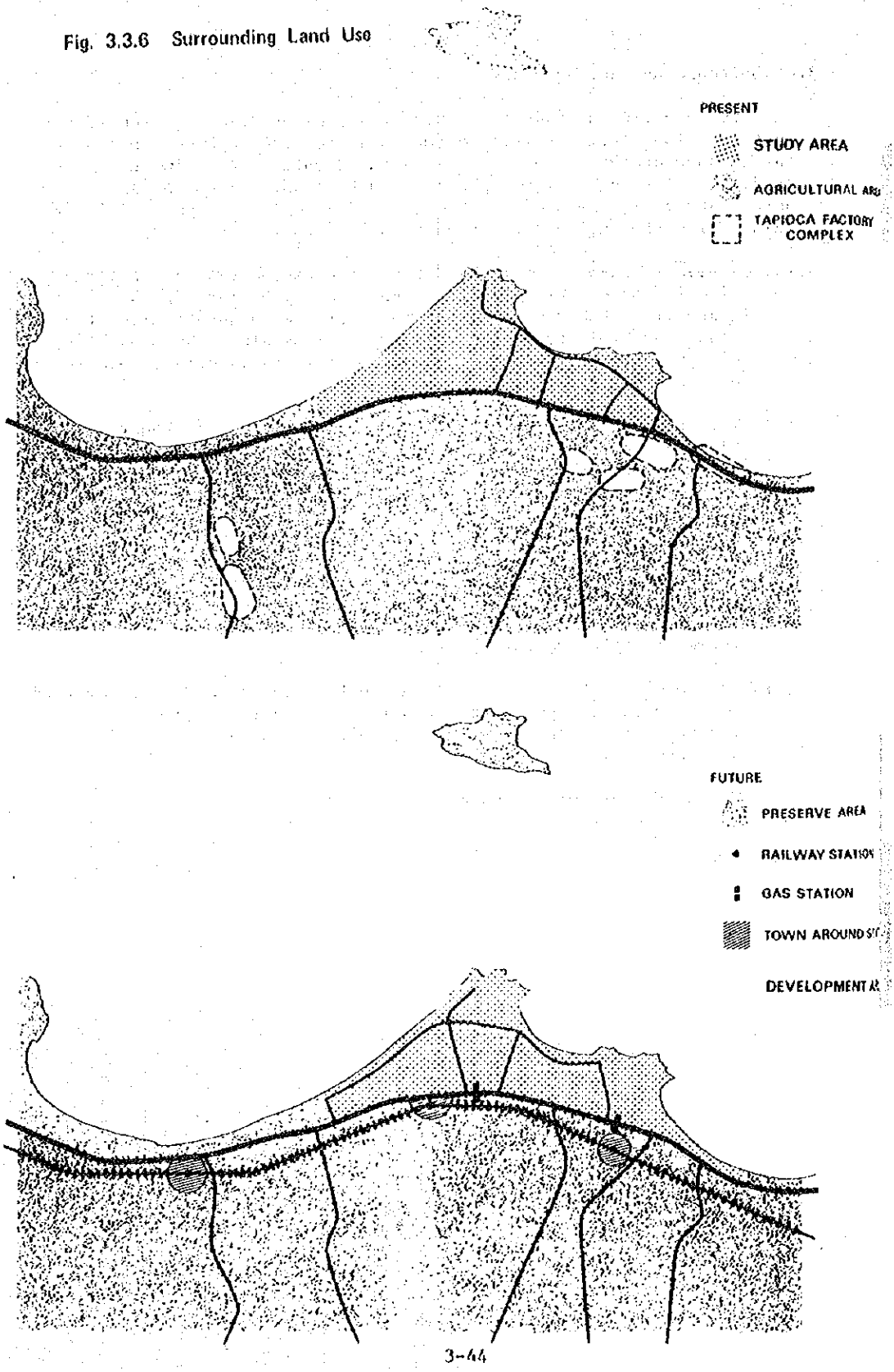
(b) The area extending about 3 km. to the east of the Sukhumvit Highway comes under the same catchment area as the study area, so that this area should also be designated as preservation area open only to agricultural use from the point of prevention of pollution.

(c) Immediate steps should be taken on the treatment of waste water from the tapioca factories in the vicinity, which is the main factor in water pollution of the region and in a long term, a coordinated plan should be made to gradually remove these factories to other suitable sites.

(d) The beach from the study area up to Bang Sarey should be reserved for future development as ocean resort, and the inland area from the beach to Sukhumvit Highway should also be preserved for the same purpose.

The above concept is shown in Fig. 3.3.6.

Fig. 3.3.6 Surrounding Land Use



3.4 ACCOMMODATION AREA

3.4.1 Analysis of types of hotel.

(a) General.

There are two basic types of resort hotels, although it is very hard to classify into two types with clearly defined distinction.

a) Resort hotels for recreation near a big city.

b) Resort hotels for tourists in rural area.

It is not necessary for the projected hotel complex to be more or less identified as "a" type despite of Pattaya's proximity to Bangkok, considering local atmosphere expectation by the foreign visitors. The planner's recommendation to the hotel classification is to be closely identified as type "b" with emphasis on tropical Thai features.

(b) Scale.

The scale of a hotel is determined by the number of rooms. The final decision comes entirely from investors managerial intentions, the scale of investment, site capacity and estimated number of visitors to the location. There are four grades of hotels, namely having 100, 300, 500, 1,000 rooms as basing on existing examples. Each group represents an economical unit with fixed qualities of service which correspond to the scale of investment.

Hawaii and Miami represent example of high rise hotel images with cluster of hotels which have over 1,000 rooms. Relatively newly established resorts like Tahiti and Guam have hotels which are rather small in scale. (200 rooms - 300 rooms).

The scale of the existing major hotels in Pattaya are as following.

1. Average of low rise hotels: 165 Rms/hotel
2. Average of high rise hotels: 357 Rms/hotel
3. Average of all hotels: 261 Rms/hotel

After taking into consideration the above internal and external elements for making a recommendation, in addition to the specific location and nature of the development area of Pattaya resort, a suitable scale would be the following three types:

Type A 400 Rms + 50 Rms = 450 Rms

Type B 250 Rms + 50 Rms = 300 Rms

Type C 100 Rms + 50 Rms = 150 Rms

A combination of these three types of hotel would add more attraction and fit better into the existing natural condition, and will also greatly boost the competitiveness of the resort in the international resort competition.

Bungalow as supplemental accommodation facilities to the main hotels would be provided, which would give variety of accomodation facilities to attract family vacationers and privacy oriented long staying vacationers. Two scales of bungalows are proposed.

Type A	20 - 25 bungalows
Type B	40 - 50 bungalows

Most bungalows are constructed with one or two storeys as individual units, therefore requiring much larger sites. It is proposed that the bungalow area be located at further south from the hotel area which is relatively less expensive in land cost.

(c) Class of hotel.

Some correlation may be established between the scale and the class of the hotel. However, a small scale hotel does not mean a lower class hotel. The success of a hotel would come from not only the physical facilities, but also the soft service created by the management. The southern cluster of hotels and bungalows will be promoted to relatively higher class image, compared with existing northern hotel area.

(d) Location.

Hotel and bungalow location would be the first most important major item which the investors always care for. Their investment decision will be made after an analysis and evaluation of the two main factors; the macroscopic factor of selecting Pattaya beach area and the microscopic aspect of selecting one of the sites prepared in the area. The criteria for site selection are classified into two groups as follows:

a. General conditions in the Pattaya beach area.

1. Estimated number, variety and classes of visitors expected in the Pattaya beach resort area.

2. Safety of the natural and social condition.

3. Locality and living standards of the area.

4. Condition of employment.

5. Condition of the transportation system.

6. Correlation of the conditions to other assets.

b. Required conditions for a site in the Pattaya beach resort.

1. View.
2. Perspective.
3. Privacy.
4. Safety.
5. Beach.
6. Accessibility to service facilities.
7. Existing vegetation.
8. Soil condition.

The above mentioned criteria will be carefully considered in the subdivision study of the accommodation facility sites.

(e) Density of hotel rooms and bungalows.

In order to maintain a tropical atmosphere for the hotel area, a suitable density of hotel rooms and bungalows has to be determined with the study on various elements. There are two different factors, namely the price of land and the environmental conditions. The price of land comprises only 10% - 20% of total investments. Thus more emphasis should be put on environmental conditions.

Table 3.4.1 shows the existing hotel rooms in relation to land area of some major hotels in Pattaya. It can be seen that the existing hotels may be roughly classed into the high rising and the low rising hotels.

Table 3.4.1 Number of Rooms & Area of Existing Major Hotels

	Hotel	Rooms	Area(ha)	Area/room(m^2)	
1.	Orchid Lodge	172	5.43	315	Low
2.	Hyatt Pattaya	220	1.60	75	High
3.	Tropicana	116	3.47	299	Low
4.	Holiday Inn	369	2.37	65	High
5.	Regent Pattaya	276	3.20	115	High
6.	Nipa Lodge	147	2.16	145	Low
7.	Ocean View	114	2.17	190	Low
8.	Siam Bayshore	279	4.62	165	Low
9.	Royal Cliff	650	5.03	75	High
10.	Asia Pattaya	270	2.20	80	High
	Total	2,613	32.25	123	

1. Average of all hotels 123 m^2/room
2. Average of low hotel 215 m^2/room
3. Average of high rising hotel 80 m^2/room

There are also many bungalow type accommodation facilities which also cater for tourist. Each bungalow averages 1,000 - 1,200 m^2 and has an average of 2.5 rooms per unit.

Comparing with Waikiki beaches hotel room density of 300Rms/ha and Miami beach of 280Rms/ha, the existing density of Pattaya beach hotel rooms is low. However, high density of hotel rooms can only be justified by the populations that feed on these area. As mentioned before, the image which the planners think most desirable for Pattaya area is low density hotel clustering at remote area. Therefore it is recommended that the most suitable gross density of hotel rooms is as follows:

	Area/room(m^2)	Persons/room	Guest/ha	Total Persons/ha
Hotel	200	1.6	80	155
Bungalow	600	1.6	27	52

* Note: (1) Assuming an average of 2.5 rooms per bungalow, the total area per bungalow will be 600 m^2 x 2.5 = 1,500 m^2.

(2) Total person includes both guests and hotel service employees.

(f) Building Form.

The height limitation of hotel should be considered especially under conditions of its location and physical feature of the sites. The most desirable height of buildings "under 15m" which would hide the buildings behind the coconut trees would require detail examination from the sides of investors.

Generally speaking, a 300 or more room hotel within the limitation of the 3 - 4 storeies building will be very difficult because service function would become too expensive for the operator. According to the survey by Prof. Frank Harrison Randolk of Connell University, a 300 room hotel has an average of 12 storeys. However, as mentioned in the above sections, a low hotel cluster is recommended to maintain the image of Pattaya resort as low rise and low density coconut tree covered resort. In the case of a 450 room hotel, hotel management must invest a new operation system adequate to cater for 450 room in 3 or 4 floors.

It is difficult to device a proper solution to this problem from the planner's level but the solution depends upon the marketability of the Pattaya resort area and its development policy. Therefore it is recommended that operation research of the cor-

relation between the regulations of the building height and the possibility or expected amount of investment should be conducted urgently.

3.4.2 Outline of the development of the hotel.

(a) Additional rooms and area required.

Based upon survey teams' analysis of tourist, the accommodation facilities, additional room requirement and the area for the future twenty years is as follows:

Table 3.4.2 Additional hotel rooms and area required

	1981	1986	1991	1996
Total hotel rooms required	(3,600)	4,300	6,600	8,700
Additional rooms required (room)				
Hotel	0	700	1,600	1,400
Bungalow	0	0	700	700
Total	0	700	2,300	2,100
Gross Area Required (ha)				
Hotel	0	14	32	28
Bungalow	0	0	42	42
Total	0	14	74	70

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

In the phase 2 (1987 - 1996), 3,000 additional hotel rooms will be added on the southern development area. Since the new development area is virgin land, zoning and other factors will be carefully taken into consideration to achieve a projected true characteristics of tropical nature as international resort hotel area.

Regarding bungalow development, at present, the share in number of rooms of bungalows is about 15%, it is planned that this share will gradually increase in future to cater for long-staying guests.

(b) Outline of the location.

1) Central hotel and bungalow area.

The central hotel and bungalow area has about a 3 km long beach with continuous low height palm trees. The lodge accommodation area is 200m to 400m width from the beach road. The concentrated hotel area is located at the northern half and bungalows and private resort houses are located at 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 sea line except some high rise hotels.

2) Proposed southern accommodation area.

This area consists of a long coastline up to Bang Sarey and coconut and other trees form the background. Sandy area creeps deeply into inland area, which gives high potential to secure wide beach area. A 100m set-back regulation should be imposed for future development. The most impressive feature of this area will be a natural coastline and undisturbed nature as a background scene. The central section of hotel area will be accentuated by an artificial lagoon with an activity center.

(c) Phasing.

Phase 1 (1977 - 1986)

As indicated in the hotel distribution section, 700 hotel rooms will be constructed in the existing central hotel area during the first phase. Hotel lots study will reflect the requirement of estimate number of hotel sites. In addition, the following presently proposed hotel sites on the board by various hotel investors are examined in this study:

Marina hotel 100 rooms, Hotel at Ko Lan Island 250 rooms, Hotel Tropicana expansion 200 rooms.

Phase 2 (1987 - 1996)

A total of 3,000 rooms is projected in the southern hotel area. In order to meet actual demands at the specific time, flexible planning has to be applied to the site developments. The established principle of landuse pattern will not be changed when unexpected demands arises in future. Site development study will deal with the above mentioned problems.

3.4.3 Subdivision of hotel lots.

(a) The need of flexibility in subdivision.

In order to meet the investor's demand, recommended subdivision hotel lots should be flexible. The recommendation to deal with

this very difficult problem is achieved by the application of the following two approaches.

1) To correspond with the variation of the investor's investment scale, the first solution is to raise the density to a certain extend within acceptable scale at the original site. Therefore addition of 50 extra rooms will be allowed to each hotel type.

Type A	400 rooms to 450 rooms
Type B	250 rooms to 300 rooms
Type C	100 rooms to 150 rooms

2) Investor's demand will be met by increasing lot size, keeping the density of the rooms steady.

(b) Phase 1 development (1977 - 1986)

1) Alternative study.

There are three possible sites along the beach road for high class hotels and three alternative sites along the inland park activity zone. Taking into consideration the three projects presently in the planning stage for 550 rooms, only 150 rooms would be needed during the next 10 year period. However, planner's opinion is that if the above three proposed hotels are built on the recommended alternative sites, the overall effect on the Pattaya beach resort will be more favourable, compared with dispersed development (250 rooms for Ko Lan Vacation Hotel, Marina Hotel with 100 rooms in between Royal Cliff Hotel and Asia Pattaya Hotel, Hotel Tropicana's 200 rooms addition at present sites which creates rather high density). In this hotel site analysis, priority of hotel sites would be established and it is hoped that these hotel investors will reinvestigate the proposed sites as alternatives. The proposed hotel sites are broadened to include the total requirement of 700 rooms.

(i) Site A

Area	44,500m^2 (approx.)
Recommended Rooms ($200m^2$/room)	223 rooms

Merits:
1. Vacant lots and no demolition of existing houses.
2. Next to existing hotel cluster area.
3. Better access to the inland activity zone.
4. Appropriate distance to the boat mooring location.
5. Flexible hotel site plan possible.

Demerit: A little too far way from the main amenity core and the northern shopping area.

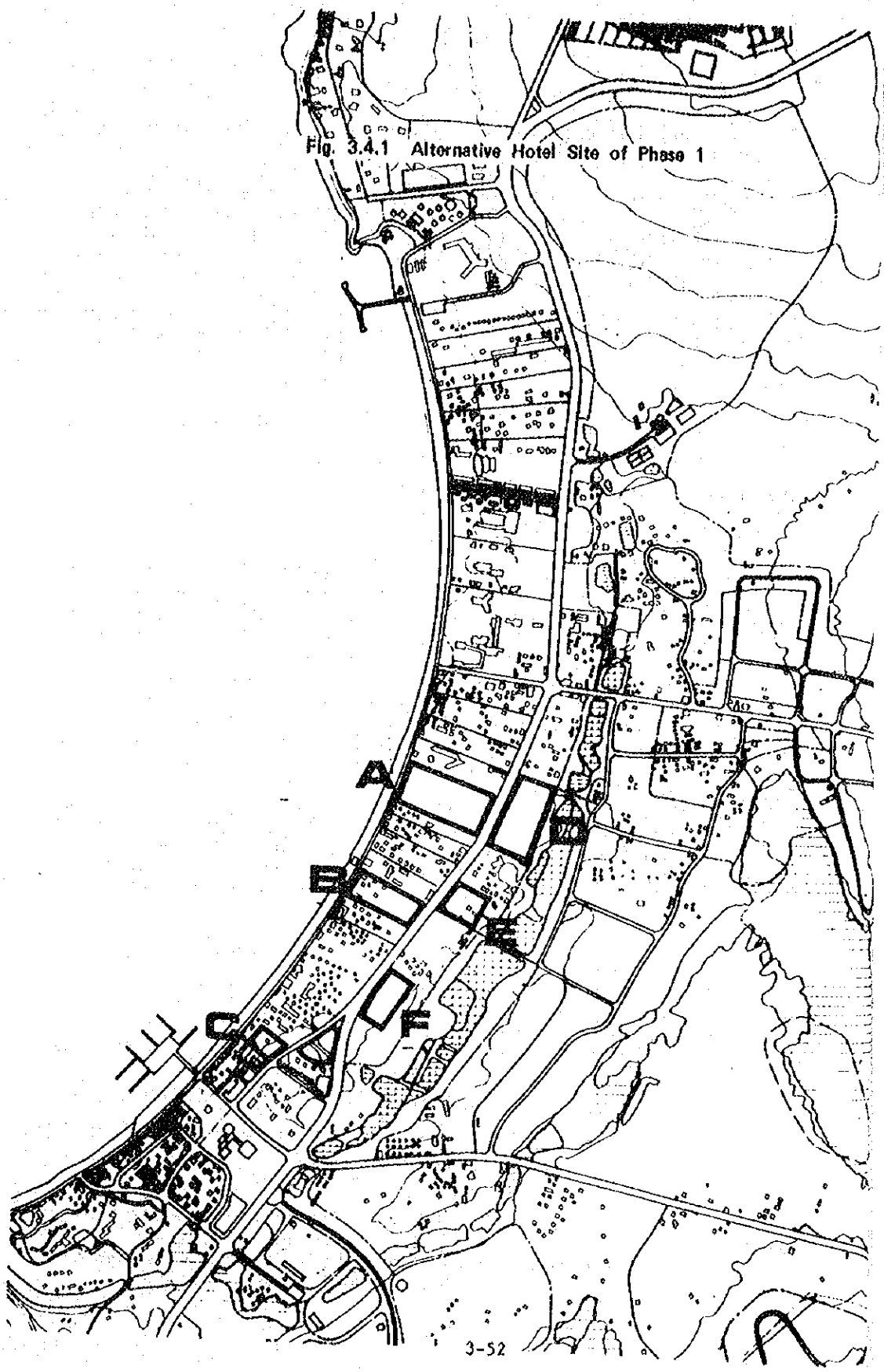


Fig. 3.4.1 Alternative Hotel Site of Phase 1

(ii) Site B Area 27,000m^2

Recommended Rooms (200m^2/room) 135 rooms

Merits:
1. Less congested beach available because of the location.
2. Better access to inland activity.

Demerits:
1. Demolition of 9 existing houses necessary.
2. Separated from main hotel area.

(iii) Site C Area 11,600m^2

Room 58 rooms

Merits:
1. Walking distance to amenity core.
2. Good access to inland activity.

Demerits:
1. Site too small for a hotel.
2. Beach is congested.
3. Less privacy on the sites.

(iv) Site D Area 29,000m^2

Rooms 145 rooms

Merits:
1. Within the inland park activity area.
2. Less expensive in land cost compared with the site along the beach.
3. Vacant site.

Demerits:
1. No view to the sea.
2. Too far away from the beach.
3. Far away from the amenity core.

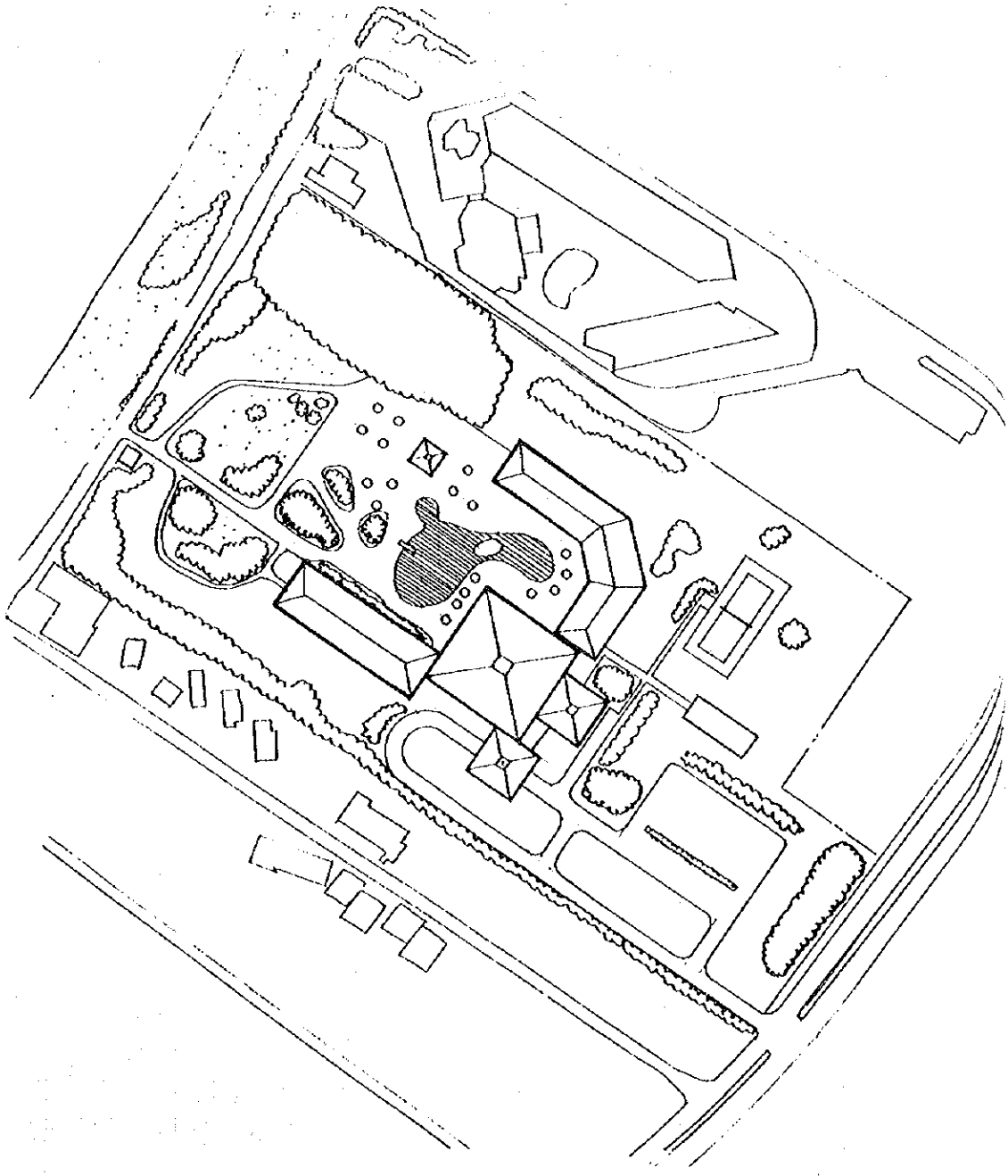
(v) Site E Area 23,000m^2

Rooms 115 rooms

Merits:
1. Within the inland park activity zone.
2. Less expensive in land cost.
3. Vacant site.

Demerits:
1. No view to the sea.
2. Too far away from the beach.

Fig. 3.4.2 Development Illustration of Site A



(vi) Site F Area 36,000m^2

Rooms 180 rooms

Merits:
1. Inland park activity zone.
2. Less expensive in land cost.
3. Vacant site.
4. Close to the Amenity core.

Demerits:
1. No view to the sea.
2. Too far away from the beach.

2) Recommendation

Site "A" is recommended as the best hotel site to meet the 150 rooms requirement in Phase 1 development and the construction of a hotel at this site will strengthen the existing hotel area. This site will also give flexibility to the investor, in that an addition of 50 rooms will be possible.

Regarding with the preference order of the site, the following list is recommended if all the 700 rooms requirements should be considered.

1. Site "A"
2. Site "B"
3. Site "D"
4. Site "E" and Site "F"

Sites D, E, F are suitable for more economy class hotels. Therefore under the circumstances of lower quality demand, these three sites should be taken into consideration. Another important consideration is that the existing bungalow area in southern half of the accommodation area can be changed to hotel area if the owners agree to relinquish the land or the owners would like to build a hotel in their lot. However, the actual demands of total hotel rooms in the Pattaya resort area should be respected to avoid over investments.

(c) Phase 2 development (1987 - 1996)

	1991	1996
Hotels (Room)	1,600	1,400 rooms
Bungalows (Room)	700	700 rooms
Total (Room)	2,300	2,100 rooms

1) Hotel

Density	$200m^2$/room	
1991	1,600 rooms	$320,000m^2$
1996	1,400 rooms	$280,000m^2$

1,600 hotel rooms will be located at the northern section from the southern amenity core and 1,400 rooms at the southern section, taking advantage of the phasing of construction of the hotels in conjunction with the construction of the southern amenity core.

Study of the subdivision of hotel lots in the northern section is proceeded as follows.

a. Combination of the scale of hotel.

Table 3.4.3 Examples of site variation study

	TYPE "A" (100 - 150)	TYPE "B" (250 - 300)	TYPE "C" (400 - 450)	TOTAL 1,600 rooms
1)	0	250 x 1	450 x 3	1,600
2)	125 x 2	0	450 x 3	1,600
3)	100 x 1	300 x 2	450 x 2	1,600
4)	(150 x 2, 100 x 1)	300 x 1	450 x 2	1,600
5)	0	300 x 4	400 x 1	1,600
6)	150 x 2	300 x 3	400 x 1	1,600
7)	150 x 4	300 x 2	400 x 1	1,600
8)	(150 x 2, 100 x 3)	300 x 2	400 x 1	1,600
9)	100 x 2	300 x 2	400 x 2	1,600
10)	150 x 2	250 x 2	400 x 2	1,600
11)	100 x 3	250 x 2	400 x 2	1,600

There are other variations in addition to the above. In order to project adequate subdivision, the following development concepts of the southern hotel area have been established.

1. The hotel area should have variety of scale within the frame of rural low density hotel image.

2. Hotel investor should have choice of the lots with the different scale according to their financial availability.

3. Overall hotel development should have flexibility according to the actual demands.

The following three main groupings of hotel subdivision were examined.

1. 3 hotel sites with 400 - 450 rooms
2. 2 hotel sites with 400 - 450 rooms
3. 1 hotel site with 400 - 450 rooms

Judging from the 3 basic concept, one hotel site with 400 - 450 room group is most satisfactory. From the groups (5) to (8) in these category, the grouping of (7) which has 4 of 150 rooms, 2 of 300 rooms and one of 400 rooms will be planner's recommendation.

In the southern hotel area which will be constructed during 1992 - 1996, the similar approach to the hotel site subdivision should be taken. Since total hotel room required at 1996 is 1,400 rooms, one total sites with 400 - 450 rooms is similarly best fitted is this area.

The planner's recommendation is as follows:

Phase 2

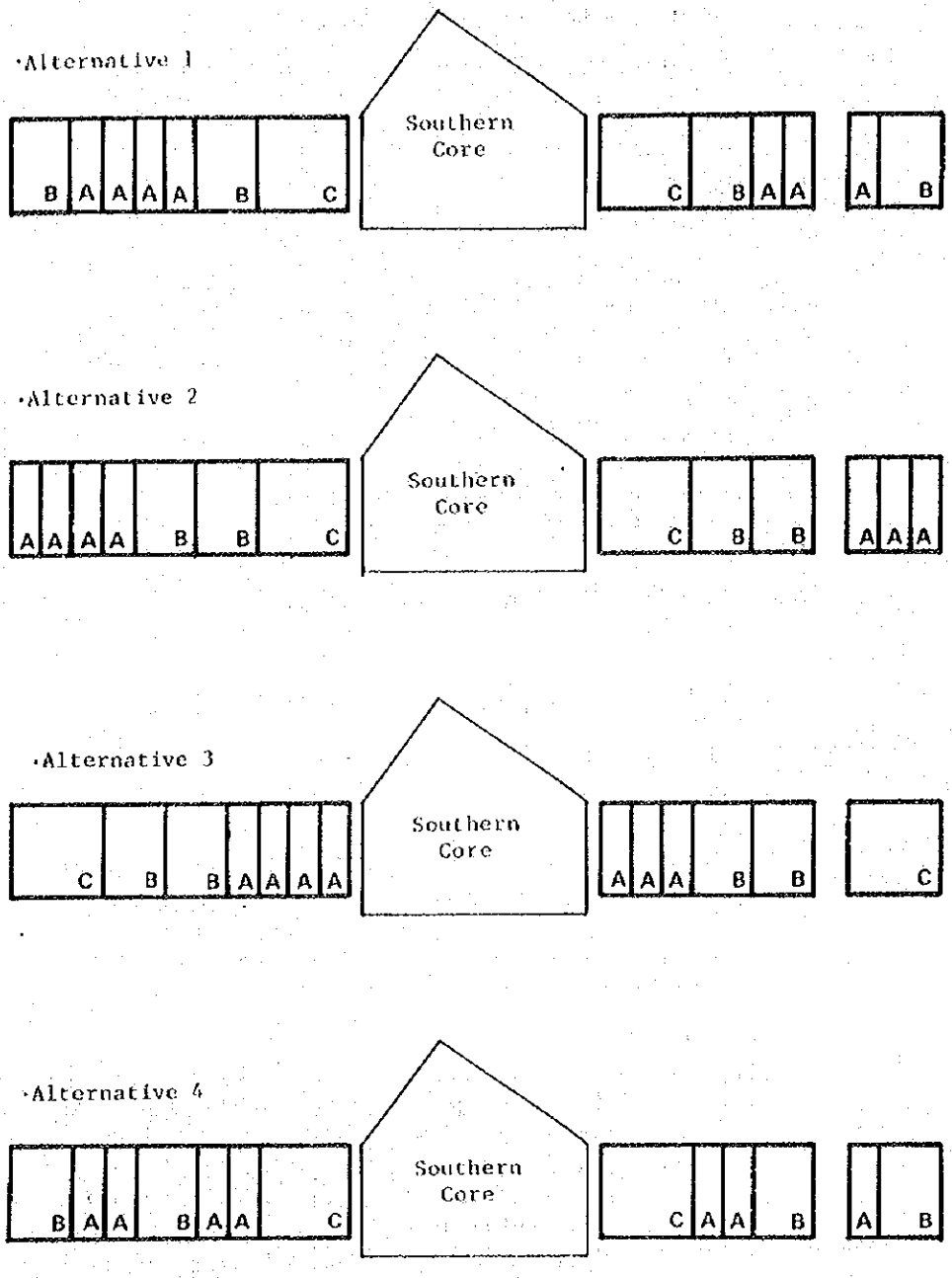
	TYPE "A"	TYPE "B"	TYPE "C"	TOTAL
Northern development	150 x 4 (3ha x 4)	300 x 2 (6ha x 2)	400 x 1 (8ha)	1,600 rooms (32ha)
Southern development	150 x 3 (3ha x 3)	250 x 1 (5ha) 300 x 1 (6ha)	400 x 1 (8ha)	1,400 rooms (28ha)

b. Alternative study of subdivision of 3 hotel types at the southern development area of Phase 2.

Alternative One

Merit:
1. The closer location of the bigger hotel Type "C" and "B" to the southern core area will give more mutual advantage to each other.
2. Intermediate hotel size, type "B" at the end of hotel area will define the clear boundary of the hotel section.
3. Clustering of hotel type "A" will give investor more flexibility in the planning and the images of smaller hotel will also be stressed.

Fig. 3.4.3 Alternative Study of Sub-division at Southern Hotel Area



4. More flexible in planning to control privacy of hotel in bigger lots, Type "C" at the corner site next to the southern sub core.

5. Shape of the end site fits better to the Type "C".

Alternative Two

Merit: 1. The image of small scale hotels will be stressed.

2. The closer relationship between bigger hotels and the subcore will be emphasized.

Demerit: 1. Rather unbalanced development will take place.

2. Southern development area will not be fitted at its best.

Alternative Three

Demerit: 1. Type "A" hotel will not be suitable for the shape of site.

2. The opposite effects of alternate one will result.

3. Unbalanced development.

Alternative Four

This alternative is similar to the alternative "one". However, more balanced development can be achieved.

Recommendation

Although there are many other alternatives, the above mentioned 4 basic alternatives are sufficient for evaluation of subdivision. In comparing the above four alternatives, the best alternative which will provide the most attractive and balanced developments is considered to be Alternative Four. As other important recommendation, property lines are moved above the slopping area to give wide beach to the public in addition to the 100 meter setback from the sea.

2) Subdivision of Bungalows.

Bungalows (room) 1991: 700 rooms (280 bungalows)

1996: 700 rooms (280 bungalows)

Area	1991:	42 ha
	1996:	42 ha
Density		$600m^2$/room
		$1,500m^2$/bungalow
Type A	about 25 bungalows (about 3.75ha)	
Type B	40 - 50 bungalows (6ha - 7.5ha)	

Although certain grouping of bungalow types may not have strong impact on overall character of the bungalow area, it is recommended that about same number of Type "A" and Type "B" be provided and that they are more or less evenly mixed to provide balanced developments. However, strict control of this ratio will not be applied on this area since considerable small investors are involved. Judging from existing bungalows constructed on narrow strip sites, the planners prefer Type "B" bungalows to be constructed at a higher percentage than Type "A", to provide attractive site plans on wider lots. Exact bungalow type grouping is not defined in this masterplan for more flexibility to the small investors and also, this flexible subdivision will be adequate to cope with existing property subdivision and will reduce the friction minimum at the realignment of the property line.

3.5 AMENITY CORE

3.5.1 Condition of existing service facilities

(1) Many restaurants are concentrated in the downtwon area where most popular sea food restaurants are located. There are also some restaurants for local residents along the beach side. Many bars, disco and night clubs are already established mainly along the beach road in the downtown area.

(2) The main shopping area is also located in downtown in a disorderly manner, intermingling with restaurants. Another shopping area for visitors is clustered around the new international market located between Hyatt Pattaya Hotel and Tropicana Hotel.

(3) As attraction facilities, there are 3 movie theaters and a Thai boxing stadium with rather low patronage by tourists, and the establishments are not functioning as an unified amusement center because of their dispersed locations.

(4) Transportation facilities

Almost no transportation facilities exist at present, except two bus parking locations. Unified parking system with amenity facilities are needed.

(5) Tourist information facilities

Since T. O. T. office has just been opened recently, it has not yet functioned fully as a tourist center in a high level of service. Most arrangements for ocean and inland activities are done by agents in hotels. In future a central information tourist center should be developed.

(6) Commercial facilities

Many tourists make use of the 3 bank facilities and two currency exchanges in the area.

On the whole, service facilities in Pattaya beach are not well planned for an international ocean resort. Therefore, well coordinated amenity cores and service facilities outside of hotels are strongly recommended for the successful development of Pattaya resort.

3.5.2 Function and location of amenity cores

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

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

(a) Main amenity core

i) As symbol zone

ii) As a starting base of inland activities

iii) As a departing base for Ko Lan island and other islands

iv) As a main entrance to the Pattaya beach resort area for foreign and local visitors

v) As an action center

vi) As a cultural display center

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

(b) Northern core

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

i) As ocean related activity center

ii) Marine facilities

iii) Beach facilities

iv) Other marine related facilities

2) A northern shopping center will serve as a new international market shopping center for foreign tourists only. No after dark or entertainment facilities are recommended in the section. Basically this place is oriented for family, couple and other non-action-seeking tourists. The existing physical and architectural character does not match with the type of the projected customers. Future addition to this shopping center should be carefully studied to modify existing uninviting buildings so as to achieve an interesting shopping center with specific character.

(c) Southern core

i) As an amenity service center to the Phase 2 developments of the accommodation facilities.

ii) As a recreational and educational center for day-trip visitors

iii) As a big scale beach park

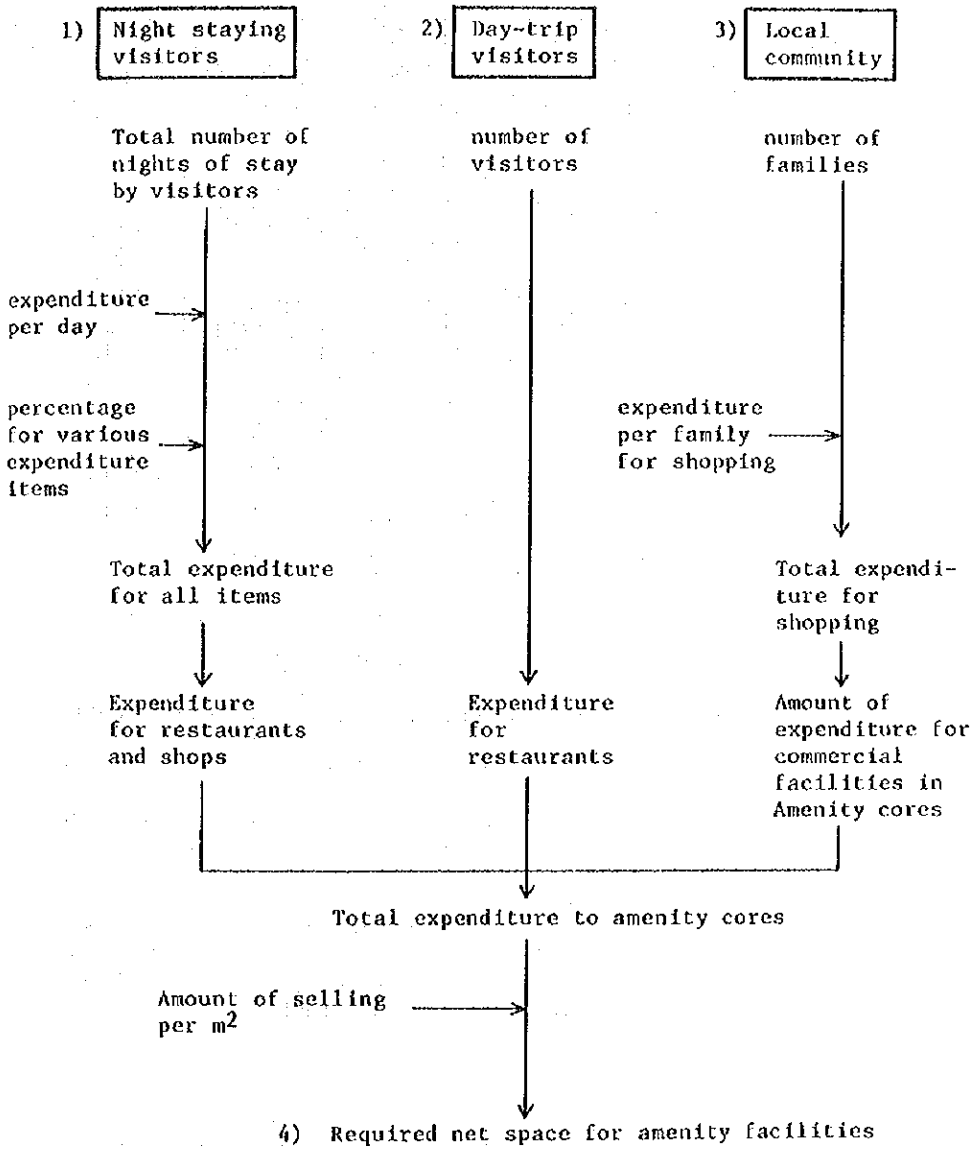
iv) As a base for southern ocean activity

v) As a base for the inland activity

3.5.3 Estimation of the facility scale

(a) The scale of the commercial facilities

The following calculation methods are applied for the scale estimation of restaurants, gifts shops and other commercial facilities.



1) Night staying visitors

* Estimated total number of nights stayed by visitors

	1986	1996
Foreign visitors	1,500,000	2,970,000
Resident	510,000	1,080,000

* Expenditure per person per day

Foreign visitor	740 Baht
Resident visitor	520 Baht

* Total expenditure by visitors per year

  1,375 million bahts in 1986

  2,759 million bahts in 1996

* Expenditures for various items are estimated as follows, taking into consideration the average expenditures by foreign visitors in Thailand and the local condition of Pattaya resort.

	Foreign		Residents	
Hotel	259 baht	(35%)	208 baht	(40%)
Food	185	(25%)	156	(30%)
Transportation & sightseeing	111	(15%)	78	(15%)
Shopping	148	(20%)	78	(15%)
Others	37	(5%)	0	(0%)

* Food expenditure is further divided into the percentages of breakfast 20%, lunch 25% and dinner 55%. Percentage spent for food outside of the hotels are estimated as follows breakfast 0%, lunch 30% and dinner 60%. Therefore total expenditure for restaurants in amenity cores is estimated at 145 million bahts in 1986, and 291 million bahts in 1996.

* The shopping expenditure at the amenity cores is calculated to be 131 million baht in 1986 and 262 million baht in 1996, basing upon the assumption that 50% expenditure will be spent in hotel shopping facilities.

2) Day-trip visitors

Fifty percentage of day-trip visitors are estimated tc spend 12 million bahts in 1986 and 19 million bahts in 1996 for lunch expenditure.

3) Local community

According to the Thai national survey, the average living expenditure by a family is 2,250 bahts per month, which include 250 bahts for eating at the restaurant and 1,220 bahts for shopping. 10% of the food and shopping expenditure is assured to be spent at the amenity core. Therefore the results are as follows:

	1986	1996
Restaurants	5 million bahts	6 million bahts
Shopping	24 million bahts	31 million bahts

4) Required space for commercial facilities

Summary of Expenditures at Restaurants and Shops

1976	1986	1996
Restaurants (54)	162 million bahts	316 million bahts
Shops (55)	155 million bahts	293 million bahts

The following estimated figures (Bahts/m^2) come from the evaluation of the data of Bali Tourism development as well as related data in Japan and average living cost in Thailand.

10,000 Bahts/m^2	1976
15,000 Bahts/m^2	1977 - 1986
20,000 Bahts/m^2	1987 - 1996

Required net space for commercial facilities

	1976	1986	1996
Total (m^2) *	16,900	38,400	61,100

* figures based upon the following percentage of the service area

Restaurant 40% Shops 30%

5) Net area distribution of Amenity facilities in m^2

The major parts of main amenity core and northern core will be constructed by 1986 and expansion of main amenity core and new Southern core will be developed from 1987 to 1996.

	1976	1986	1996
Main Amenity core	13,000	19,400	25,100
Northern core		5,000	5,000
Southern core			17,000
New International market		8,000	8,000
Others	3,900	6,000	6,000
Total	16,900	38,400	61,100

6) Gross area distribution for amenity facilities in m^2

	Building Coverage ratio	1986	1996
Main Amenity core	40%	4.9ha	6.3ha
Northern core	30%	1.7ha	1.7ha
Southern core	30%	0	5.7ha
New International Market	30%		2.7ha
Others			

(b) Parking and Bus terminal

1) Total number of arrivals of tourists

		1986	1996
Foreign		500,000	660,000
Resident		300,000	540,000
Average per day :	Foreign	1,370	1,808
	Resident	822	1,479
Average Peak day :	Foreign	1,627	2,147
		976	1,756

Ratio of vehicle type		Scheduled bus	Chartered bus	Private cars
	Foreign	10%	60%	30%
	Resident	20%	10%	70%
Number of passengers per vehicle		30	50	3
Number of vehicles per day	1986	13	22	391
	1996	20	30	625
Parking for Hotel (@ 1 parking lot/4.5 room)	1986		64	877
	1996		125	1,788

2) Day-trip visitor (at peak days)

	Total visitors	Scheduled bus	Chartered bus	Private cars
1986	7,500	10%	20%	70%
		750 persons	1,500 persons	5,250 persons
1996	12,000	10%	20%	70%
		1,200 "	2,400 "	8,400 "
		50 persons/ bus	50 persons/ bus	6 persons/ car
1986		15	30	875
1996		24	48	1,400

80% capacity of parking will be provided at the peak days.

1986	12	24	700	parking lots
1996	20	39	1,120	

3) Summary of parking requirements

Public parking				
1986	12(13)	24	700	parking lots
1996	20(20)	39	1,120	
Hotel site				
1986	-	64	877	
1996	-	125	1,788	

1/3 of scheduled buses will be parked at the bus parking space in Pattaya. Therefore the required spaces for buses will be as follows:

1986	9 spaces
1996	14 spaces

Required net parking space ($100m^2$/bus, $30m^2$/car)

1986	$24,300m^2$
1996	$36,900m^2$

Required gross parking space

1986	3.1ha
1996	4.6ha

4) Distribution of parking space

3.1 ha of parking space will be distributed at the main amenity core and northern core.
Distribution ratio of main and northern core is 2:1.

in 1986

Main amenity core	2.1 ha
Northern core	1 ha

in 1996

Southern core	1.5 ha

(c) Other facilities

1) Beach facilities - toilets, shower rooms, locker rooms and others

3,000m^2 for 12,000 visitors are provided as beach facilities at the following distribution:

Main amenity core	1,100m^2
Northern core	750m^2
Southern core	1,150m^2

2) Amusement facilities

a) Multi purpose hall

* Estimation of Number of Visitors

1,800 visitors in 1986 and 2,500 visitors in 1996 per day are estimated to participate in this facility based upon the participation per trip for foreign visitors at one participation per five trips. The figures represent 33% and 22% of average night staying visitors.

* The scale of the Multi-purpose Hall

Assuming a show schedule of 2 time per day in 1986 and 3 times per day in 1996, the capacity of the hall will be 900 audiences. General space requirement for the multi-purpose hall is 1.5m^2 - 3.0m^2/person. Net area of the hall recommended will be 1,800m^2.

b) Handicraft center and museum

The following steps are applied to estimate the scale of these facilities. The inputs for the calculation at each steps are as follows.

* 1 participation per 2 trips by foreign tourists
" " " 10 trips by resident visitors

* Total entries of the night staying visitors.

  280,000 in 1986
  384,000 in 1996

* Total entries of day-trip visitors

  432,000 persons in 1996 based on 5% participation rate

* Average number of entries per day.

  1,380 persons

* Participation rate at the same time

  10%

* Number of people for these facilities

  140 persons

* The scale of the facilities with other ancillary facilities

  3,000m^2 based on general space requirement of 10m^2 per person

c) Aquarium and Ocean museum

The same scale, 3,000m^2 is proposed for aquarium and ocean museum. The similar calculation method as handicraft center and museum is used for determining the scale.

3) Tourist service facilities

The main service and information center will be located in the main amenity core. The following facilities are included:

- Tourism information counter
- Bus travel agents offices
- Air travel agents offices
- Tourist police office
- Others

Facility scale about 500m^2

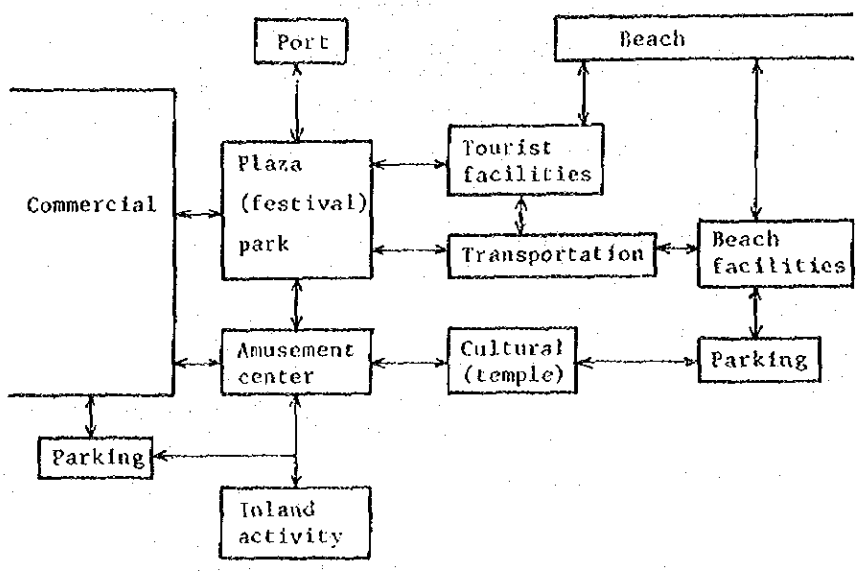
3.5.4 Main amenity core

(a) Skeleton of amenity core

The existing downtown area designated as the future main amenity core has already been developed in a rather large scale, so that whatever new development to be undertaken, various approaches have to be examined and evaluated to avoid the inadequate extension of existing development pattern and character and to maintain the principles and objectives of the landuse plan. Keeping these points

in mind, planners established the functional relationships of the various facilities for selection of appropriate facility locations in the amenity core area as illustrated below:

Fig. 3.5.1 Skeleton of Amenity Core



(b) Planning of the facilities

1) Transportation

There are two feasible alternatives for improvement of the main road in the amenity core area. The route of the main road will determine the amenity core development pattern and its character. Therefore in this section, the following major impacts points are listed under the alternative study.

A. Expansion of the existing main road.

Main outcome from this alternatives is that the proposed amusement facilities at the existing location of the elementary school will be divided from the commercial and plaza areas. However, a close relation to the inland activity zone will be stressed.

B. Provision of a new route for the main road.

In the contrary to the alternative "A", the functional relationship between the amusement facilities and commercial facilities and festival park will be emphasized with the provision of new route which is located along the inland side of existing temple.

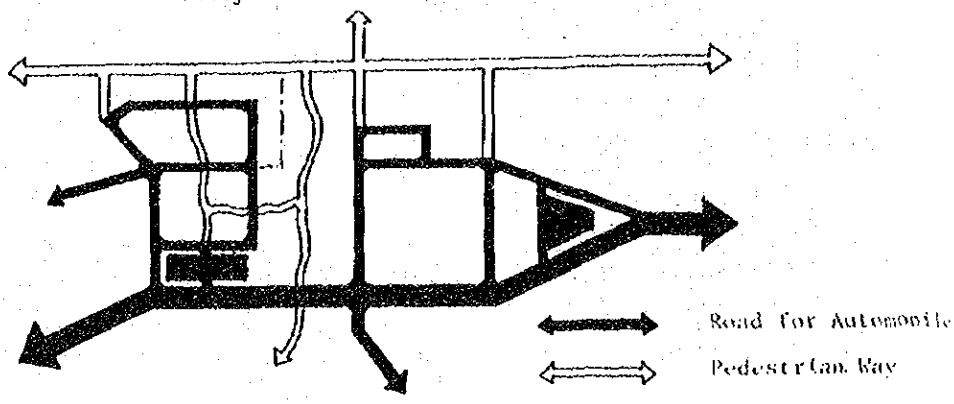
Summary of merits and demerits for the two alternatives are as follows:

	Alternative A	Alternative B
Merits	- harmonious development of amusement area and inland activity area	- harmonious development of commercial, amusement and festival park facilities
	- possibility of utilizing connection roads in existing condition	- Creation of space for truly pedestrian oriented park at amenity core
	- Expansion of the main road can be feasible regardless of the progress of the construction of amusement facilities	- Cost for the construction of the road is comparatively less
Demerit	- separation of amusement facilities from the commercial areas, festival parks and port	- removal of the elementary school may be required during construction of the new main road.
	- A higher cost for acquisition of land and construction of the road.	- requirements of extra connection roads.

Basing upon the evaluation of the merits and demerits of A and B alternatives, Alternative B is more suitable and advantageous for the development of an attractive amenity core. That is to say, major pedestrian promenade axis connecting various facilities (port - park (festival plaza) - amusement facilities) will be open to the sea and the inland activity zone. The following detail study will be undertaken for the alternative "B".

A new main road will be constructed at 400 meter away from the beach. However, it is too far to promote the pedestrian walk ways. Therefore a new connection roads system is established as shown on the diagramatic sketch.

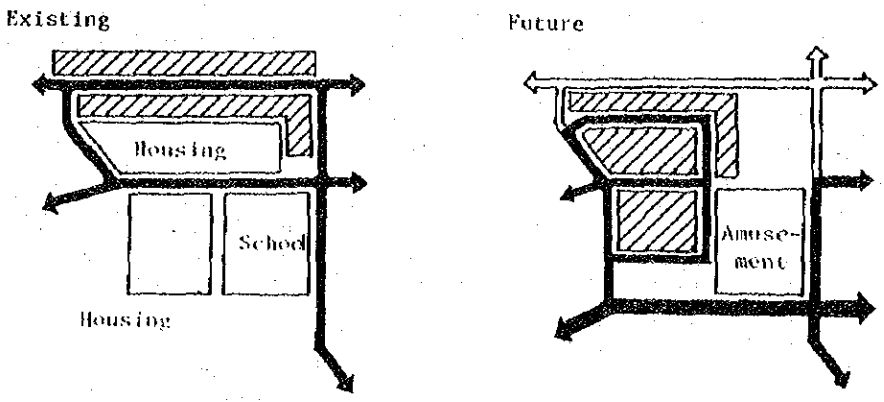
Fig. 3.5.2 Road System of Amenity Core



2) Commercial

The existing commercial development pattern is observed to be linear one which extend almost 700m along both sides of the beach road. Since it is a very important point to preserve comfortable beach density under the condition in the limited natural capacity of beach and also to accelerate the healthy and harmonious tourists commercial development, another type of development pattern, the area development is needed. The above mentioned development concepts are shown in the following diagrams.

Fig. 3.5.3 Comparison of the Commercial Area



In addition to the development pattern, the other main goal is to achieve the separation of shopping pedestrian flow from the automobile flow, so that the safety and comfort of the shoppers are maintained.

3) Amusement facility area

Although the main function of the facility will remain as supplementary to the ocean activities, the important factors

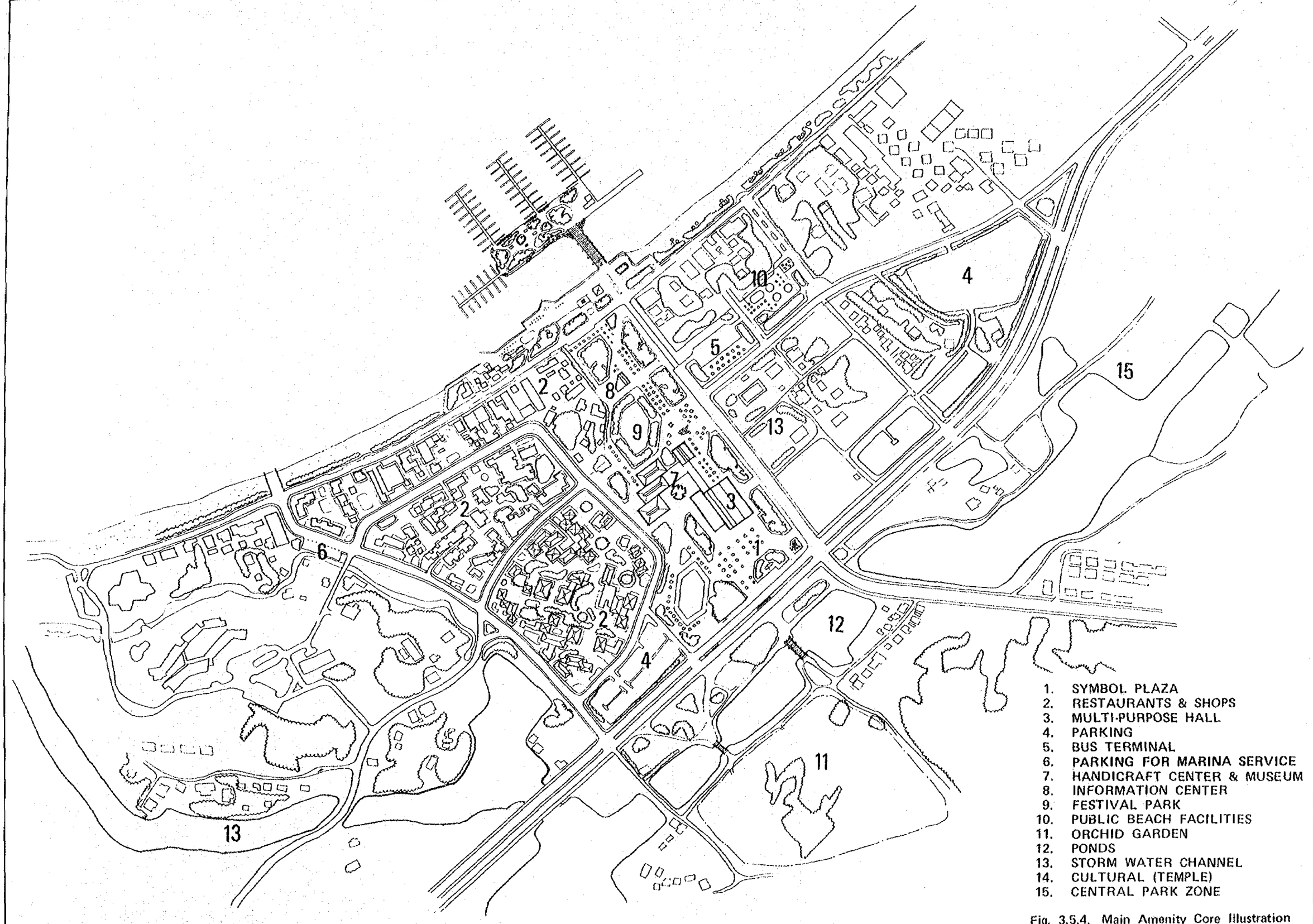


Fig. 3.5.4. Main Amenity Core Illustration

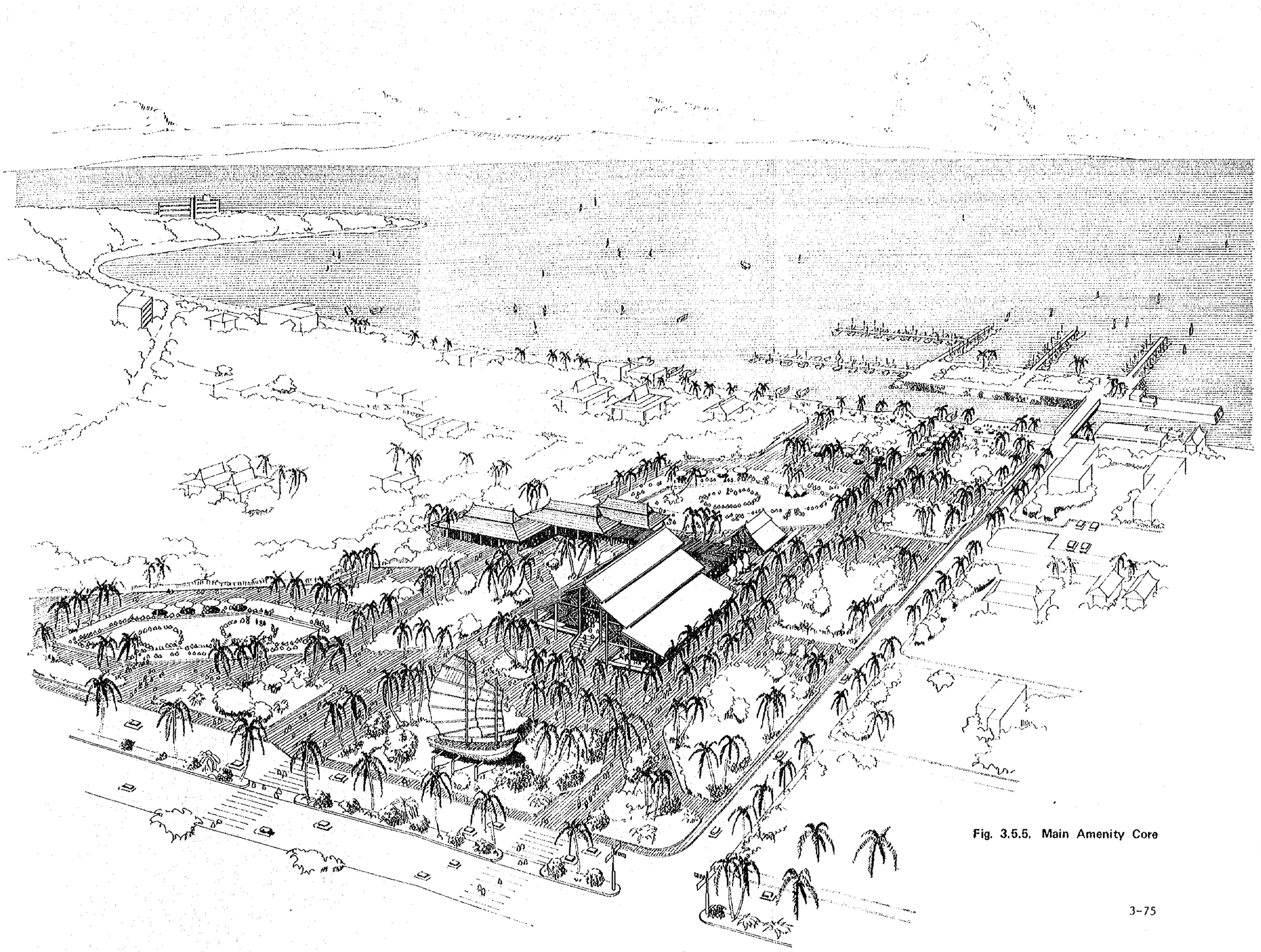


Fig. 3.5.5. Main Amenity Core

of introducing tropical, Thai natural atmosphere to the visitors are taken into consideration for promotion of the entertainment function.

a. Multi purpose hall

Thai Dance, Thai boxing, various shows and contests, convention and other events are to be held in this hall.

b. Handicraft center

Silk and wood handicraft processes are exhibited and the products of handicrafts can be sold. Rather than just exhibition, this function can be developed into a local industry which is able to contribute to the welfare of local industry and people.

c. Museum

Thai cultural and historical assets and Pattaya related records are preserved and exhibited to tourists and Thai visitors.

d. Temple

An existing temple is located at the center of the amenity facilities. The facilities of the temple are recommended to be used positively as a religious tourism resources.

e. Other facilities

Tourist facilities and beach facilities are located in the vicinity of the amenity, however not in the center of amenity facility area but in the surrounding vacant lots as shown on illustration.

(c) Implementation schedule

The main amenity facilities are recommended to be completed before 1986 and the expansion plans of commercial facilities shall be followed after 1986.

Phase 1

(Stage 1) 1976 - 1981

- Provision of main road
- connection roads in the commercial area
- Traffic terminal
- Parking
- Port
- Beach facilities

(Stage 2) 1982 - 1986

- Park (festival plaza)
- Amusement facilities
- Tourist facilities
- Remolding and expansion of commercial facilities

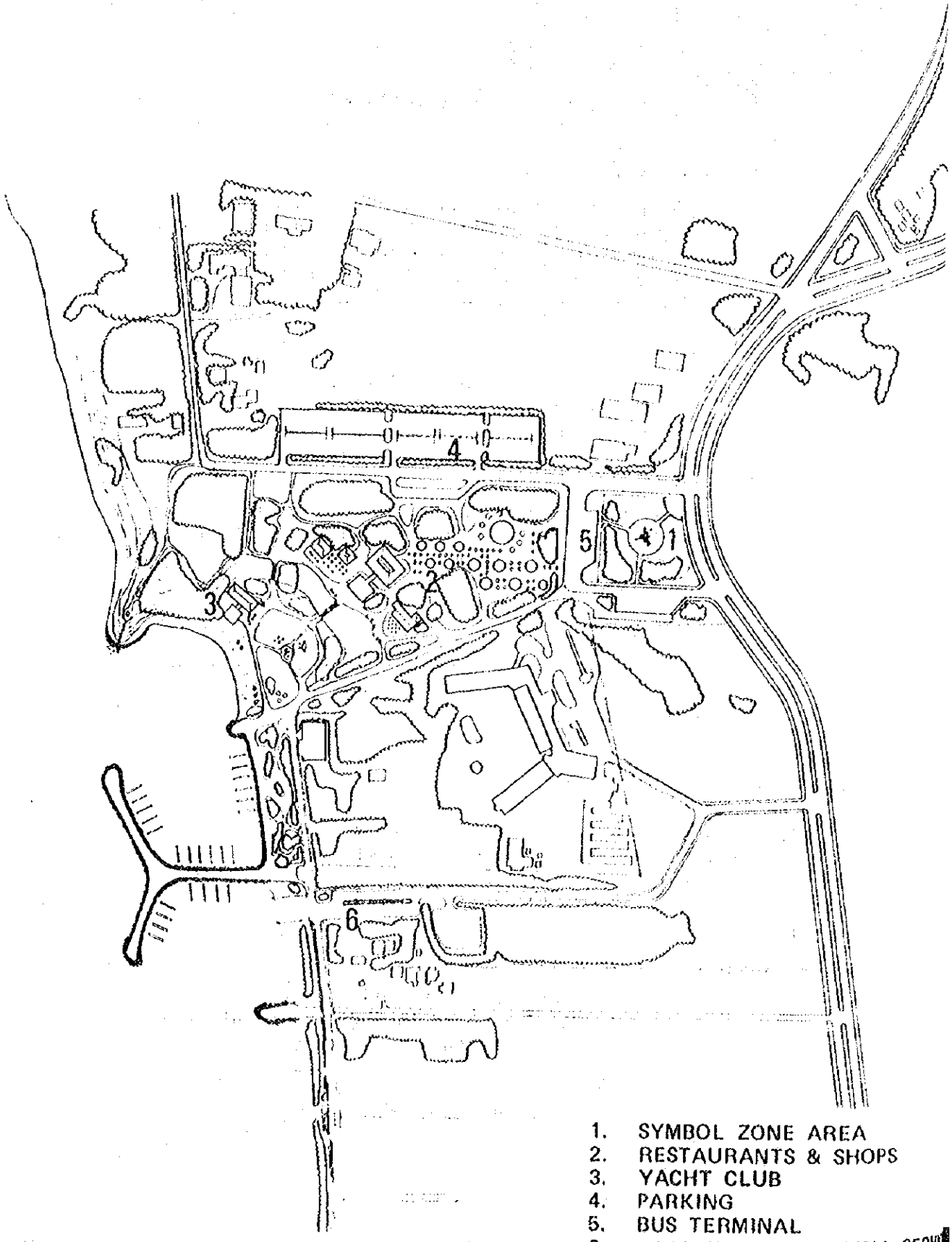


Fig. 3.5.7 Northern Core Illustration

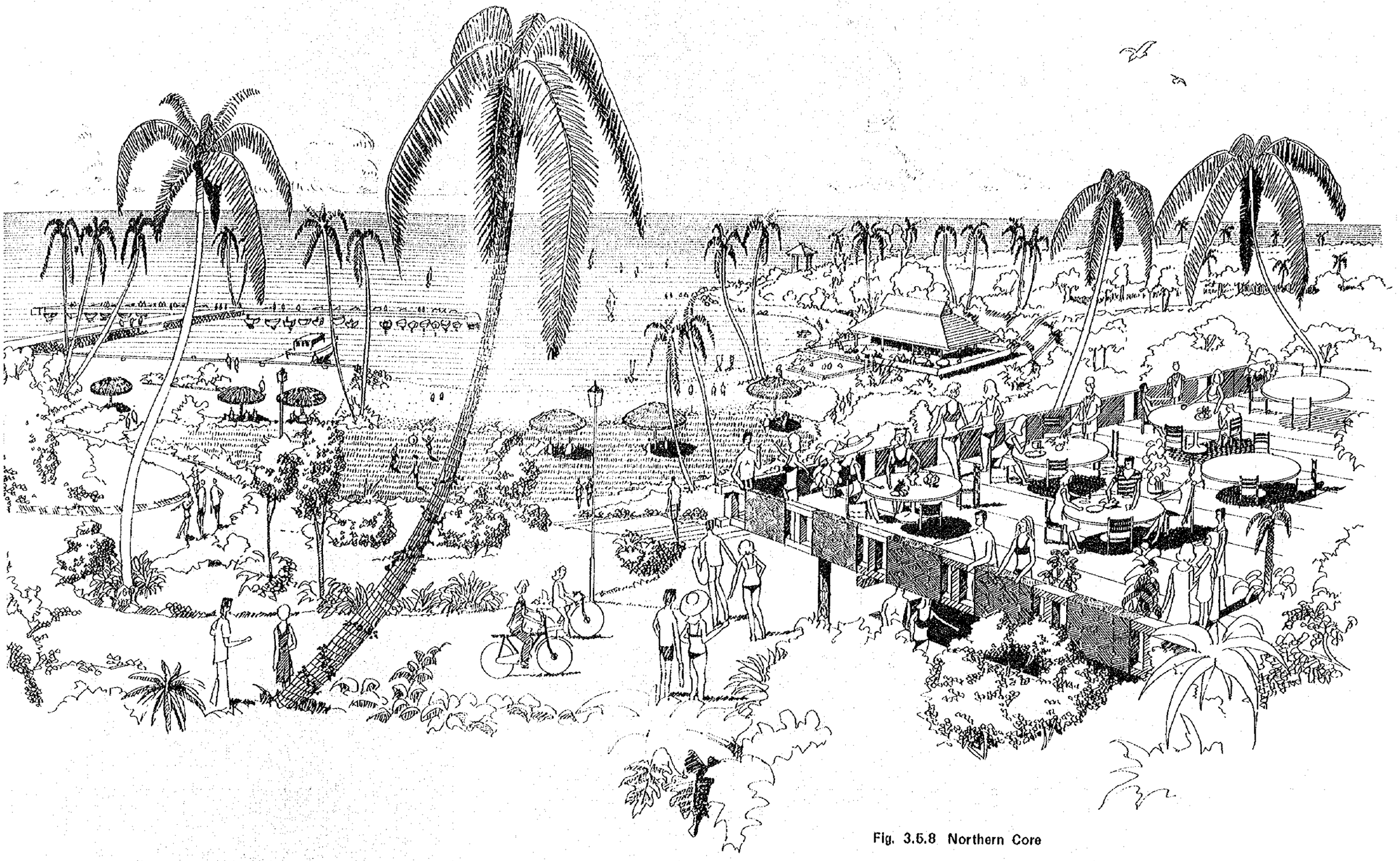


Fig. 3.5.8 Northern Core

Phase 2 1987 - 1996

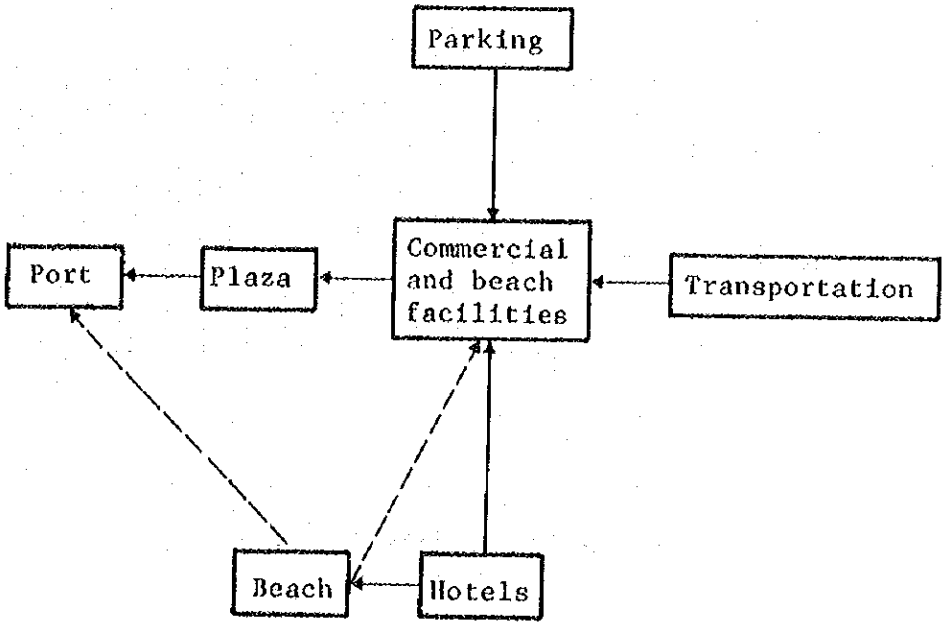
- Expansion of commercial facilities
- Expansion of amusement facilities

3.5.5 Northern core

(a) Skeleton of Northern core

Since northern core will be located at the presently vacant lot, the land should be reserved and regulated for future amenity core use. The following function relationship diagram is established for the future design development.

Fig. 3.5.6 Skeleton of Northern Core



(b) Planning of the facilities

1) Plaza

Planned site with valley like low land will be developed as visitor's gathering and meeting place which lead to the port facilities and to the restaurant facilities on the hill. Limited facilities are allowed in this area to give open space for pedestrians and bicycle riders.

2) Park

This area is located at the high land with good view to the sea. This park's character will be defined as a small ocean park. Viewing terrace should be provided for the visitors who come for shopping and eating.

3) Commercial and beach facilities

Since there is no lot line established in this area, some regulations for controling the new lots are recommended to create a park-like shopping area with Thai and tropical features.

4) Transportation

The main road passes along the east side of northern core. A symbol zone and a bus terminal will be added to strengthen the image for the entrance to the resort. Service roads are located at the north side to minimize the interruption between the core and hotel area and parking facilities are located at the north side of the service road as shown in the illustration.

(c) Implementation schedule

The following development method should be considered among other ways. Northern core could be developed by the public sector and leased to the private sector.

Phase 1

(Stage 1) 1976 - 1981

- Main road construction
- Terminal
- Plaza
- Service roads
- Parking
- Port
- Beach facilities
- Commercial facilities

(Stage 2) 1982 - 1986

- Plaza
- Park
- Commercial facilities

3.5.6 Southern core

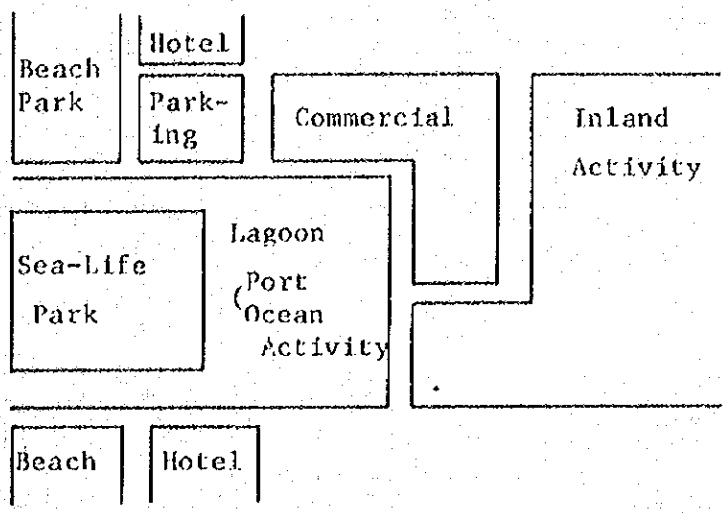
(a) Skeleton of Southern core

Well coordinated construction of the southern core in pace with the development of hotels is required to make phase 2 development successful.

The southern core is situated at the middle of the coast line without limitation of natural geographical condition. However, it seems to be too plain and simple for an attractive ocean resort. It is proposed that a man-made lagoon will provide the attraction to the aesthetical feature of landscaping and moreover the lagoon will serve as ocean activity station to

protect activity zone against unfavorable sea conditions during the wet season. The island, side product of the man-made lagoon will be used as a large scale ocean park with various ocean facilities.

Fig. 3.5.9 Skeleton of Southern Core



(b) Planning of the facilities

1) Lagoon

Lagoon will be constructed in the existing swamp area and the two main functions of lagoon are explained here.

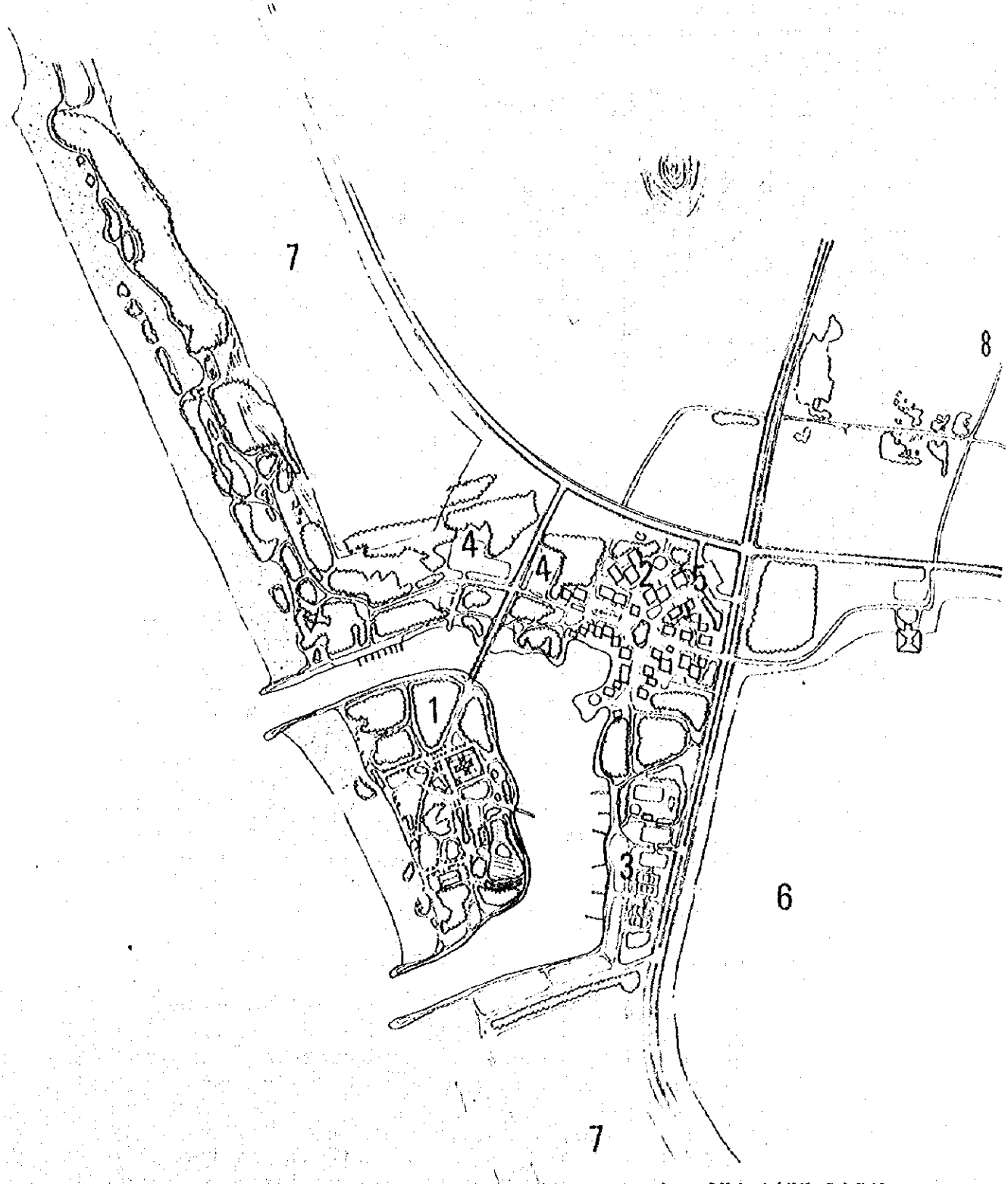
a. Activity and accent to the natural contour of the land

Southern core will be promoted as the base for the ocean activity center. At the same time, examining the natural conditions and aesthetic features of the land, the additional improvement in natural physical sense is great to obtain a charming hotel development area. It will increase potentiality of natural amenity to a full extend.

b. Function as port facilities and ocean activity

Over 4,400 hotel rooms are to be constructed during phase 2 development. There are great demands for a new port in the southern development area. As mentioned previously, the southern beach is influenced by strong wind and high wave during wet season. Therefore the new port requires a large scale wave breaker in the coastal line which tends to destoy the natural contour of the beach. Proposal of man-made lagoon is an appropriate alternative in spite of requirement of greater investments.

In order to satisfy the above-mentioned functional needs, lagoon should have two accesses from the sea.



1. SEA LIFE PARK
2. RESTAURANTS & SHOPS
3. TENNIS COURTS & A PUBLIC
4. PARKING
5. BUS TERMINAL
6. GOLF COURSE
7. HOTEL AREA
8. CENTRAL ACTIVITY ZONE

Fig. 3.6.10 Southern Core Illustrative

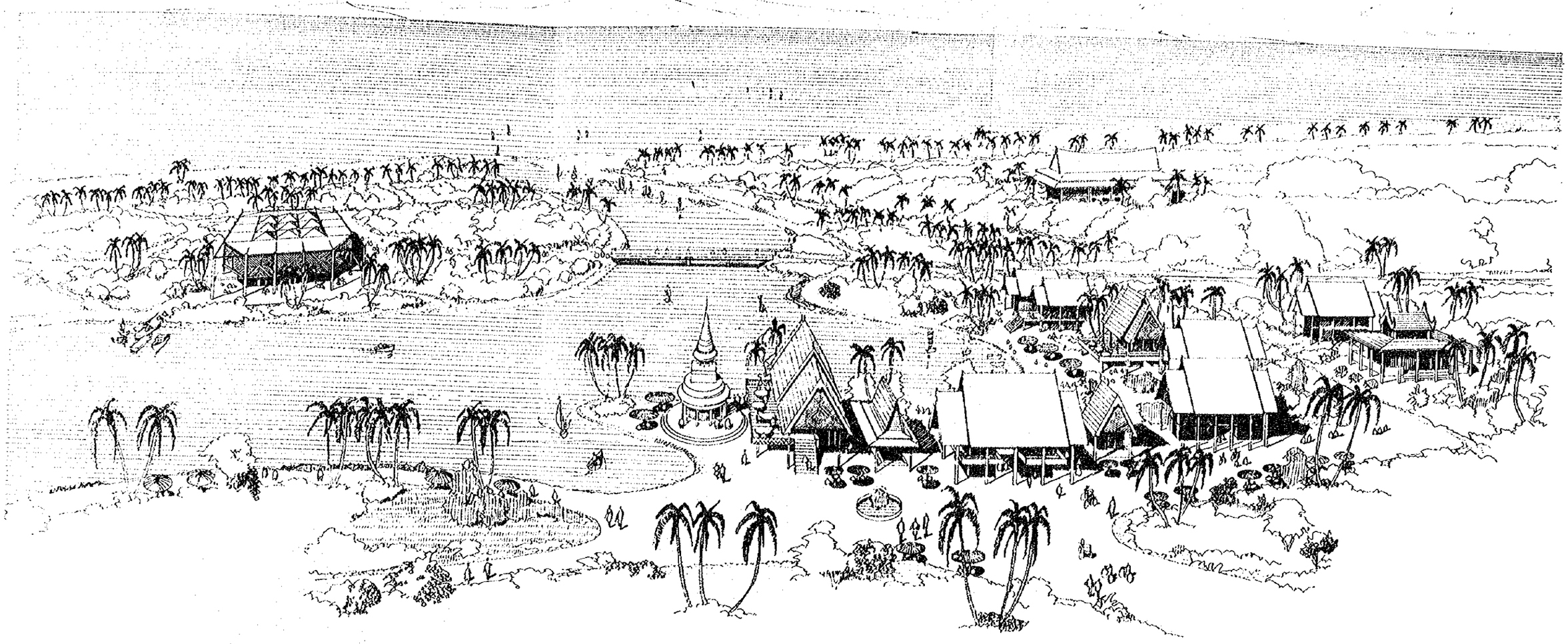


Fig. 3.5.II Southern Core

One access is used for boat entrance. The other access will give better sea water circulation to maintain clean water in the lagoon. Half of lagoon is to be utilized only for in-lake water activities.

2) Sea life park

Provision of a sea life park is expected to fulfil one of the goals of providing an "ocean resort with diversified activities".

A cluster of sea life related facilities is to be located in this island. The main facility will be an aquarium. Other facilities around the aquarium such as marineland, shark channel, and ocean museum are provided with the public beach as shown on the illustrated plan. Automobile flow is prohibited in this island except the approved service vehicles.

3) Commercial facility area

The commercial facilities in the southern core are best represented in the manner of park-like shopping area with generously landscaped open space. Restaurant areas are reserved along the lake side as illustrated in the drawing.

4) Transportation

Since southern core will be newly developed, the separation of automobile and pedestrian flow should be implemented. The areas along the lagoon are to be opened for pedestrians and facility area for automobiles should be served in cul-de-sac form. Parking facility is located at the strategic area which does not interrupt the comfortable pedestrian way network as illustrated in the drawing.

(c) Implementation schedule

Phase 1 (Stage 2) 1982 - 1986
- Construction of man-made lagoon
- Completion of part of road
- Part of commercial facility

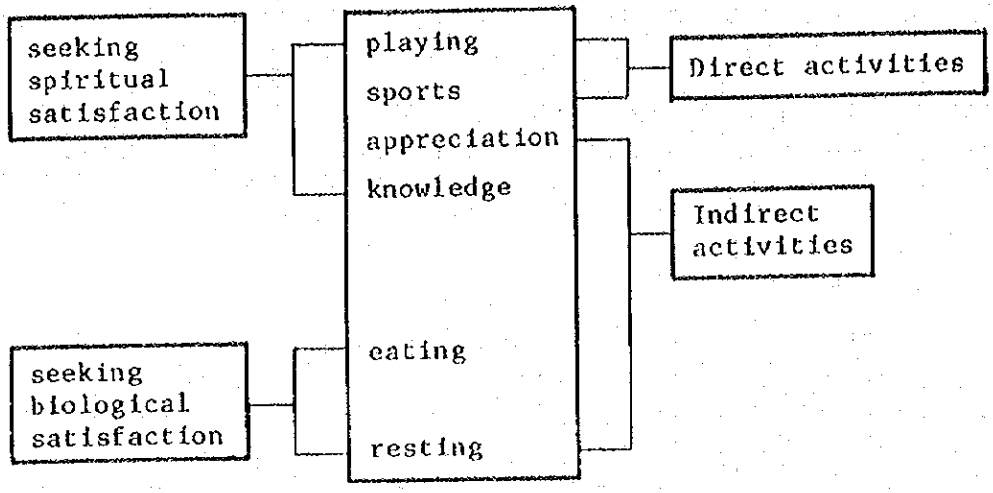
Phase 2 1987 - 1996
- Parking
- Sea life park
- Commercial facilities

3.6 ANALYSIS OF TOURIST ACTIVITIES

3.6.1 Tourist Activities

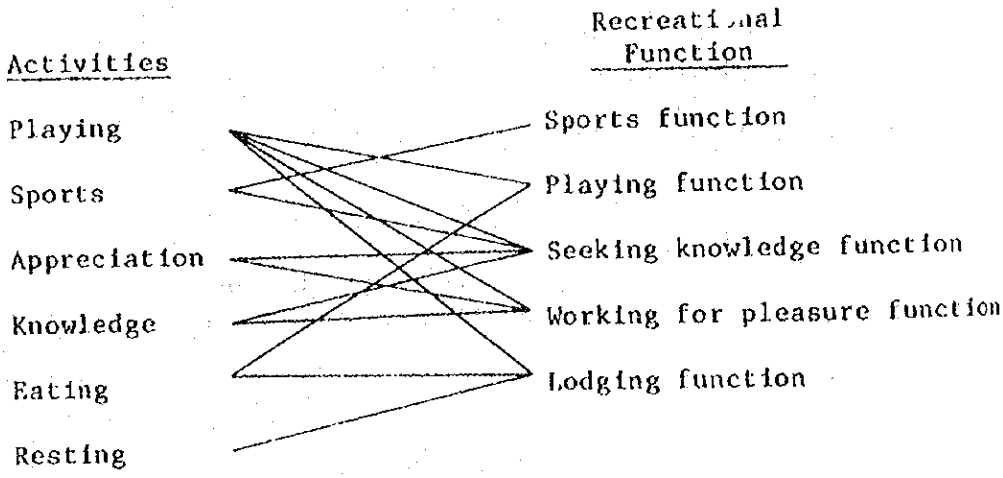
(a) Recreational activities

Recreational activities are originated from two essential human needs and desires, namely, spiritual and biological

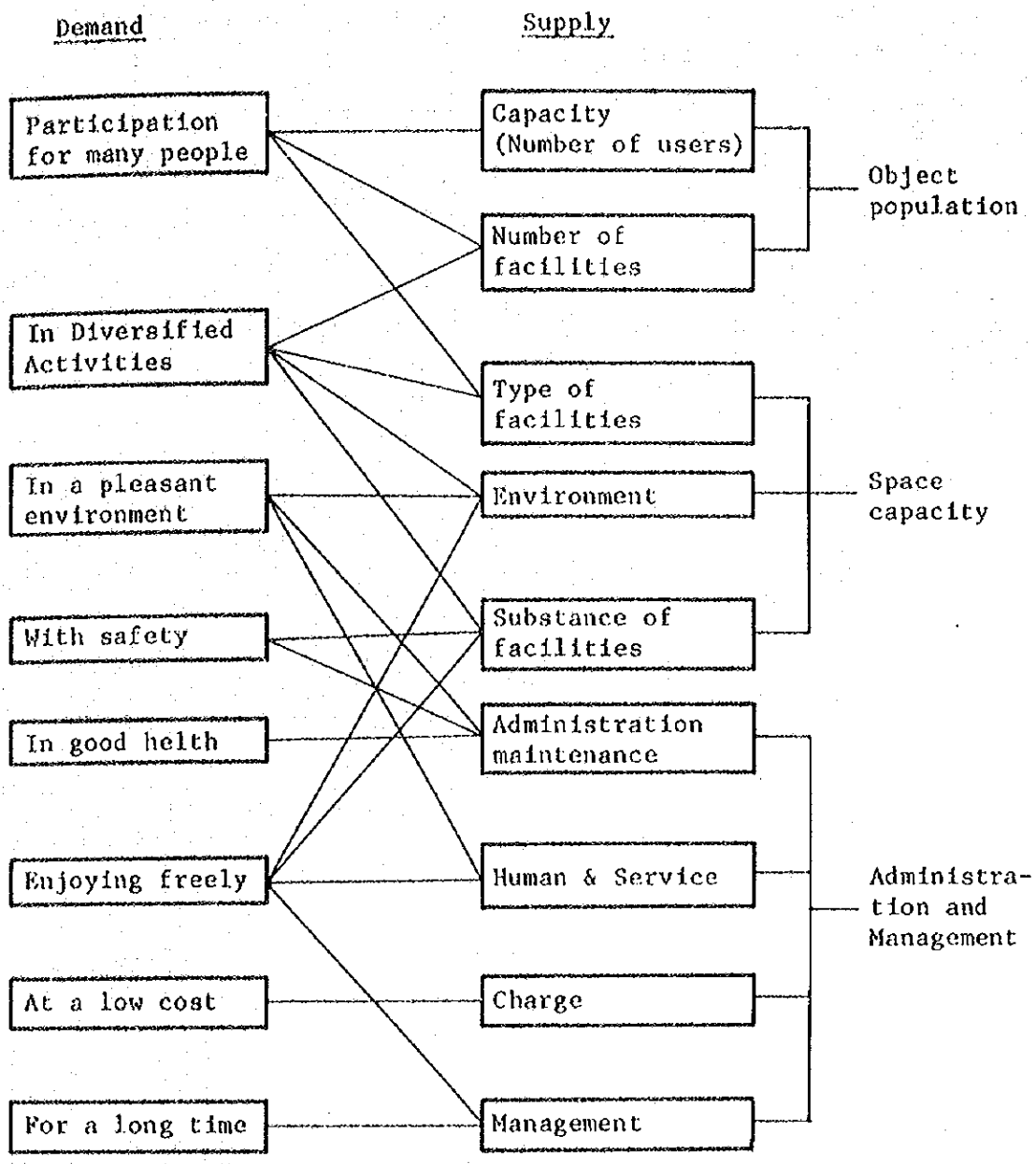


(b) Fundamental activities

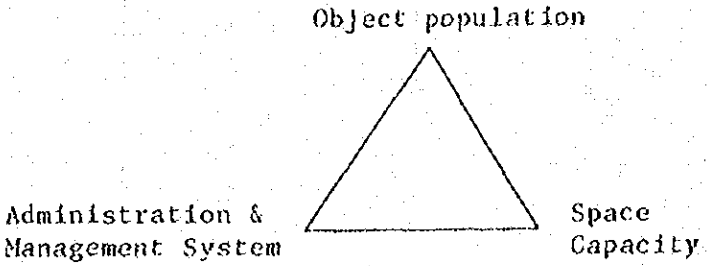
Fundamental activities and recreational function are mutually interrelated.



(c) Supply and Demand relationship of recreational activities at the resort area.



In other words, the activity facilities at a resort, is merely a layout of the human activity as recreational function, which is composed of those elements of "Object population", "Administration and management system" and "Space capacity".



(d) Studies of activities to be introduced

With understanding of basic nature of activities, the next important step should be the selection of activities and the appropriate display of the activities which are mutually supplementary, in accordance with the basic development policy established for the study area.

There are two methods to arrive at the demand and supply analysis of activities namely, supply analysis of tourism resources and its usage conditions and infinitive application in development direction and image making process.

The following activity flow chart has been established with thoughtful evaluation of various activities checking against development policies and natural physical conditions.

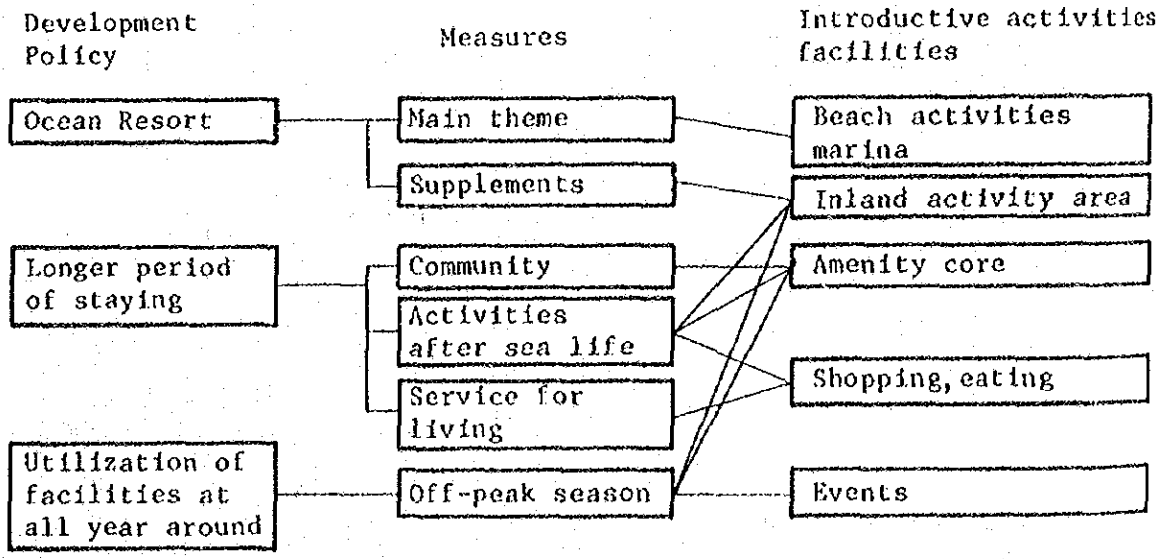


Table 3.6.1 shows the relationships between the various activities and the requirement of natural conditions.

Table 3.6.1 List of condition for resort activities

Various activities \ Condition of national resources	SLOPE	SAND BEACH	ROCK BEACH	EARTH SURFACE	TEMPERATURE	WATER TEMPERATURE	TIDE	WAVE	WIND	SUNSHINE	AREA	SEA WATER QUALITY	OBJECT RELATED ATTRACTION	VEGETATION
SWIMMING (SEA)		A			A	A	B	A		A	B	A		
BOATRIDING					B	B	A	A			A	B		
YACHTING					B	B	A	A	A		A	B		
WATERSKIING					A	A	A	A			B	A		
FISHING								A			A		A	
DIVING		B	B		B	B	A	A				A	A	
EXCURSION (SEA)					B		B	A			A	B	A	
APPRECIATION OF CORAL REEF								A				A	A	
SKIN AND SCUBA DIVING												A	A	
DAY CAMPING	B	A	A	B	B								B	B
PICNIC	B	B	B								B		B	A
HORSE-RIDING	B	B									B			
GOLF	A								B		A			B
CYCLING	A	A									B		B	
SWIMMING (POOL)					A	A				A		A		
TENNIS	A								B					
CAMPING	B	A	A								B			B
BALLOON RIDING									A		A			
DRIVING											A		A	
SIGHTSEEING													A	
NIGHT ACTIVITIES													A	
SHOPPING													A	
EATING													A	
GAMBLING													A	
EVENTS													A	

A : Restrictive Condition for activities
B : Supplementary Condition for activities

3.6.2 Analysis of Activity Demand

The scale of facilities has been determined by the analysis and evaluation of demand, supply and service standards of the various activities.

(a) Distribution of activity demand

The volume of tourists previously estimated is distributed to the various classified activities to obtain an estimate of the demand for each facility. The volume of tourist is as shown in Table 3.6.2 and the estimated demand for each facility is shown in Table 3.6.3.

Table 3.6.2 Number of visitors

	Night Staying Visitors		Day-trip Visitors	
	1986	1996	1986	1996
A year	2,000,000	4,080,000	625,000	960,000
per peak day	8,600	17,400	7,500	12,000
Average per day	5,500	11,200	1,700	2,600

Table 3.6.3 Distribution of Activity Demands

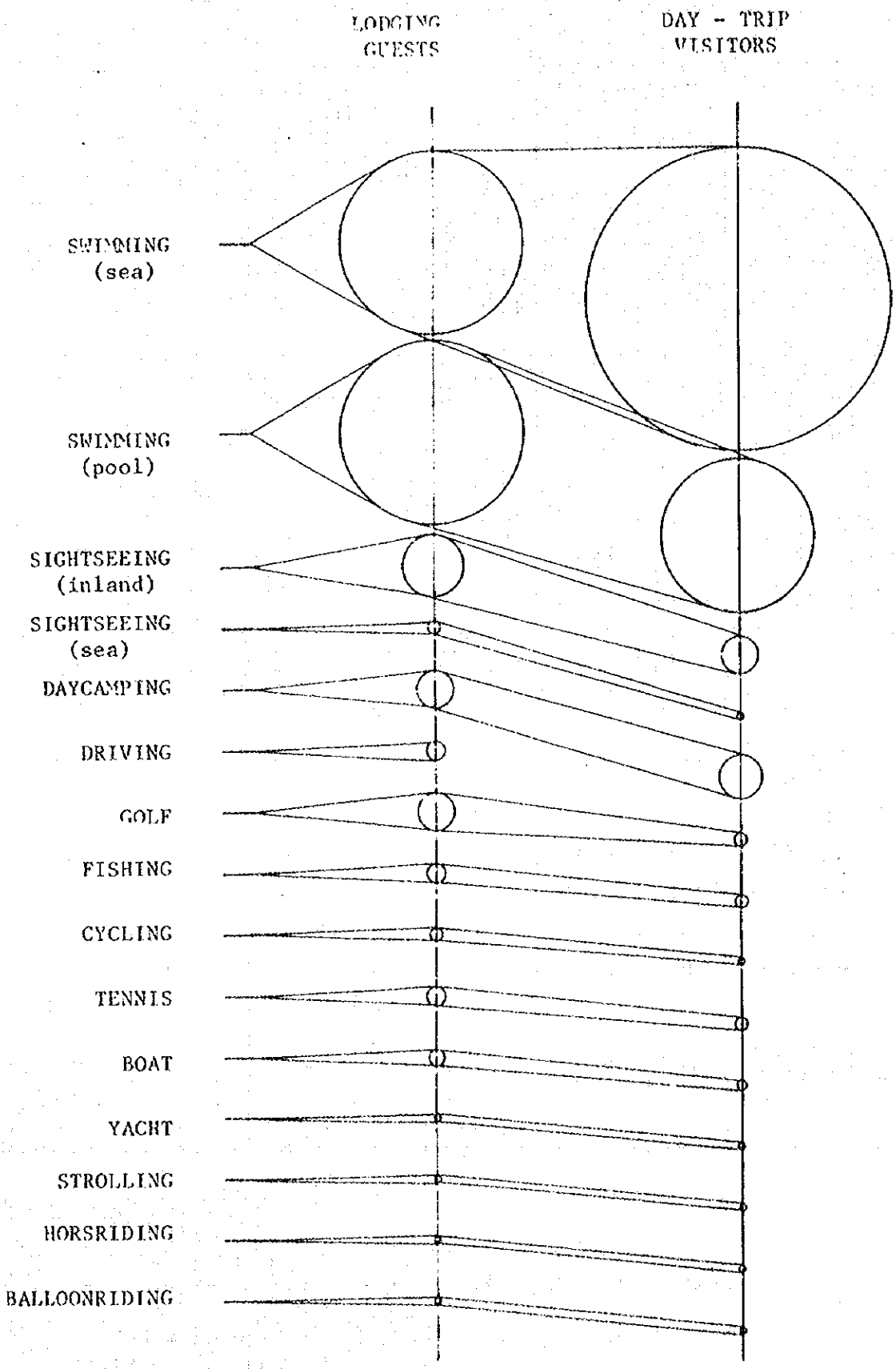
	Participation rate in activities (%)		Number of participating visitors in activities at one time					
			1986			1996		
	A	B	A	B	Total	A	B	Total
Swimming (sea)	30.0	50.0	1,806	2,250	4,040	3,654	3,600	7,250
Swimming (pool)	30.0	25.0	1,806	1,125	2,930	3,654	1,800	5,450
Sightseeing (inland)	10.0	6.0	602	270	870	1,218	432	1,650
Sightseeing (sea)	2.0	1.0	120	45	170	244	72	320
Day camping	6.0	7.0	361	315	680	731	504	1,240
Driving	3.0	-	181	-	180	365	-	370
Golf	6.0	2.0	361	90	450	731	144	880
Fishing	3.0	2.0	181	90	270	365	144	510
Tennis	2.0	1.0	120	45	170	244	72	320
Cycling	3.0	2.0	181	90	270	365	144	510
Boat riding	1.0	0.7	60	32	90	122	50	170
Water skiing & parasailing	1.0	0.6	60	27	90	122	43	170
Diving (sea)	0.5	0.2	31	9	40	61	14	80
Yachting	0.4	0.3	24	14	40	49	22	70
Strolling	0.3	0.2	18	9	30	37	14	50
Horse riding	0.6	0.3	36	14	50	73	22	100
Balloon riding	0.1	0.1	6	5	10	12	7	20
Others	1.1	1.6	66	72	140	134	115	250
Non participant in activities	30.0	40.0	2,580	3,000	5,580	5,220	4,800	10,020
TOTAL	-	-	8,600	7,500	16,100	17,400	12,000	29,400

A: Night staying visitors
B: Day-trip visitors

* Activity rate: A : 70%, B : 60%

* Number of participants: Total No. of tourist x Participation rate in activities x activity rate

Fig. 3.6.1 Distribution of Activity Demand



(b) Demand at facilities

The demands of facilities of each key year are estimated as follows:

Beach

Activity	Swimming (sea), sightseeing (sea) Day camping, Boat riding, Water skiing Diving, Yachting, Sunbathing	
Basic Unit	Whole day participants 80% Density 10m^2/person	
	1986	1996
Total Users	7,950 persons/day	14,300 persons/day
Beach Area	63,600 m^2 Width 30 m Length 2,100 m	114,400 m^2 Width 30 m Length 3,800 m

Pool

Activity	Night staying - Hotel facility Day-trip visitor - Public pool	
Basic Unit	Whole day participants 80% Pool Area Density 2.4 m^2/person Deck Area = Pool Area X 3.5	
	1986	1996
Total Users		
Hotal	2,300 persons/day	4,600 persons/day
Public	1,400	2,300
Pool Area		
Hotel	4,400 m^2	8,800 m^2
Public	2,700 m^2	4,400 m^2

Sightseeing Facility (inland)

Activity	Gardens etc.
Basic Units	Whole day participants 60% Rotation 2 times/day Density 300 m^2/person

	1986		1996	
Total users	Peak	Average	Peak	Average
Night staying	1,200	760	2,440	1,560
Day-trip visitors	540	120	860	180
Area (m^2)	313,000	158,000	594,000	313,000

Sightseeing Facility (sea)

Activity	Excursion Boat (to Ko Lan: 50%)			
Basic Units	Rotation 1.5 times/a day 5 persons/boat			
	1986		1996	
Total users	Peak	Average	Peak	Average
Night staying	180	120	360	230
Day-trip visitors	80	15	105	20
Excursion Boats	43	23	78	42
User to Ko Lan	130	70	230	125

Day Camping Facility

Activity	Ko Phai: Ko Lan: Pattaya & others 5 : 80 : 15			
Basic Units	Rotation 1.5 times/day (Ferry Rotation 2 times/day) Excursion boat 10 persons/boat Ferry boat: large size: 80 persons/boat small size: 45 persons/boat			
	1986		1996	
Total Users	Peak	Average	Peak	Average
Night staying	1,080	690	2,190	1,410
Day-trip visitors	960	210	1,500	330
Ferry boats				
large-size	2	1	4	2
small-size	4	2	7	4
Excursion boats	108	42	189	84

Driving

Activity	Rented car			
Basic Units	2.5 persons/car			
	1/4 rental usage			
	1986		1996	
	Peak	Average	Peak	Average
Total Users	180	120	370	240
Rented car	18	12	37	24

Golf Course

Activity	18 hole golf course			
Basic Units	200 persons/day/course			
	1986		1996	
Total Users	Peak	Average	Peak	Average
Night staying	360	230	730	470
Day-trip visitors	90	20	140	30
Golf Course	2.3	1.3	4.4	2.5

Fishing Boat

Activity	Offshore Fishing : Trawling				
	8 : 2				
Basic Units	offshore 5 persons/boat				
	trawling 3 persons/boat				
	1986			1996	
Total Users		Peak	Average	Peak	Average
Night staying	O	140	90	290	190
	T	40	25	70	45
Day-trip visitors	O	70	15	110	25
	T	20	4	30	7
Boat					
Night staying	O	28	18	58	38
	T	13	8	23	15
Day-trip visitors	O	14	3	22	5
	T	7	1	10	2

Cycling

Activity	Cycling, rented bicycle			
Basic Units	Whole day participants 80%			
	Rotation 2 times/a day			
	Course density 30m/bicycle			
	1986		1996	
Total Users	Peak	Average	Peak	Average
Night staying	360	240	730	455
Day-trip visitors	180	40	290	60
	1986		1996	
Bicycles	Peak	Average	Peak	Average
Night staying	144	96	292	182
Day-trip visitors	72	16	116	24

Tennis Court

Activity	Tennis			
Basic Units	Whole day participants 50%			
	Rotation 3 times/a day			
	3 persons/team/court			
	1986		1996	
Total Users	Peak	Average	Peak	Average
Night staying	360	230	730	470
Day-trip visitors	135	30	215	45
Tennis Court	28	14	53	29

Boat

Activity	Boat riding, water skiing, yachting, Diving & parasailing		
Basic Units	Boat riding	2.5 persons/boat	Rotation 2 times/day
	Water skiing	2.0 persons/boat	
	Yachting	1.5 persons/boat	
	Diving	2.5 persons/boat	1 time/day

	1986		1996	
Total Users	Peak	Average	Peak	Average
Boat riding				
Night staying	120	80	240	160
Day-trip visitors	60	14	100	22
Water skiing				
Night staying	120	80	240	160
Day-trip visitors	60	14	80	18
Yachting				
Night staying	60	36	100	64
Day-trip visitors	30	6	40	8
Diving				
Night staying	60	40	120	80
Day-trip visitors	20	4	30	6
Number of Boats				
Boat riding Boats	36	20	68	36
Water skiing Boats	46	24	80	84
Yachts	26	12	46	24
Diving Boats	32	18	60	34

Horse riding Course

Activity	Horse riding
Basic Units	Whole day participants 40% Rotation 2 times/a day

	1986		1996	
Total Users	Peak	Average	Peak	Average
Night staying	70	40	140	90
Day-trip visitors	30	6	40	8
Horse	20	10	36	20

Balloon riding

Activity	Balloon riding
Basic Units	Rotation 2 times/day 2.5 persons/Balloon/day

	1986		1996	
Total Users	Peak	Average	Peak	Average
Night staying	12	8	24	16
Day-trip visitors	10	2	14	4
Balloon	4	2	8	4

3.6.3 Proposed Activity Facilities

To meet the demand for the various facilities as estimated in the previous section, the facilities are planned taken into consideration the existing facilities and the service level, and the results are summarized in Table 3.6.4. This will form the basic quantity for planning and the details of the plan are described in sections 3.7 and 3.8.

Table 3.6.4 Proposed activity facilities

Facility		1976 Phase I	1986 Phase II	1996
Ocean Activities	Beach	Pattaya north (Width 30m, Length 2,000m)		
			Pattaya south (Width 30m, Length 3,000m)	
		Ko Lan (Length 2,000m, Area 34,000m^2, 50% availability at any time)		
	Pool	Hotel Facility (also for public use)	Public Pool (Pool 3,000m^2, Deck 10,500m^2)	
	Excursion Boat	100 boats	70 boats	Total 170 boats
	Ferry Boat	Small-size 4 boats (40 persons in capacity)		
		Large-size 1 boat (80 persons in capacity)	Large-size 3 boats	Total (Small-size 4 boats, Large-size 4 ")
	Fishing Boat	Offshore 30	Offshore 30	
		Trawling 10	Trawling 10	Total (Offshore 60 boats, Trawling 20 ")
	Boat	Boat riding 30	Boat riding 30	
		Water skiing 40	Water skiing 130	
		Yacht 20	Yacht 20	
		Diving 30	Diving 20	Total (Boat riding 60, Water skiing 70, Yacht 40, Diving 50)

Inland Activities	Sightseeing Facility	←Garden 250,000m²→	←Garden 233,000m²→
	Golf Course	←To maintain the existing 36 holes→	←18 holes→ Total (54 holes (3 courses)
	Tennis Court	←Hotel 5→ ←Public 4→	←Hotel 15→ ←Public 6→ Total (Hotel 33 Public 10 (including existing ones)
	Cycling	←*180 5,400m→	←*140 4,200m→ Total (320 9,600m * This figure will be much bigger if the bicycle riding is also promoted as a means of transportation.
	Horse riding	←25,600m 16 horses→	←22,400m 14 horses→ Total 30
	Balloon	←4→	←2→ Total 6

* Facility Supply based upon the following service level.

Night staying: Average occupancy rate 75%

Day-trip visitor: Service Level at the peak day 70%

3.7 BEACH AND OCEAN ACTIVITY AREA

3.7.1 Conditions of Existing Beach and Ocean Activity

Existing usage pattern of Pattaya beach and Ko Lan is on the rule of convenience first, both in 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 foods from hawkers without moving and do not have to walk more than 10 m to enjoy boat-riding because motor boats and excursion boats are directly launched from the beach.

This could be a great merit to Pattaya if it was not crowded as a beach resort. But with the growth of tourists, 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 selfish mooring and boating of tourist boats. The rule of convenience first should be replaced by comfort and safety first.

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

The problems identified in this study are as follows:-

(a) Beach road

The road and parking lots are so close to the beach that they make the beach narrow and cause noise problem to sun-bathing activities. Pattaya beach does not have buffer green.

(b) Side-walk and buildings on beach

Side walk and buildings on the beach are too close to shoreline. This may cause some erosion problem from reflecting wave. Also sun-bathing tourists are disturbed by pedestrians.

(c) Beach usage

There is no facility to guard swimmers and boats against accidents. Rubbish bins are installed at some distances, but dangerous materials such as broken beer bottles and glass cups are found lying on the beach.

Hawkers, runners for horse riding and boating and disorderly placed boats will disturb the enjoyment of swimmers and sun-bathers.

(d) Sea surface usage

Excursion boats, motor boats, scooter boats and sailing boats are moored and driven without rules. The designation of specific area for each ocean related activity is important for safety and enjoyment. Mooring facilities should be provided at suitable places to avoid boats being placed on the beach.

3.7.2 Natural Physical Conditions of Ocean & Beach

(a) Wind and Wave

The predominant wind direction is generally from the northeast in winter and the southwest in summer, showing the monsoon type conditions in the Gulf of Thailand. A graphical representation of the frequencies of wind velocities and directions observed at Bangkok, Ko Sichang and Hua Hin are shown in Fig. 3.7.1. These data at three locations indicate almost similar wind characteristics, especially with regard to wind direction. The wind speed data available from the observation station at Chonburi and Ko Sichang which belong to the Meteorological Department of the Ministry of Communications as shown in Fig. 3.7.2. According to these data, the mean wind speed is about 3.5 - 4.5m/sec., while the highest wind velocity is 20m/sec.(W) at Ko Sichang and 31.5m/sec. (S) at Chonburi. The distribution of wind speed is that mild wind conditions of 2 - 8m/sec account for 12.8% and 82.6%, respectively, while 8.5 - 13.5 m/sec and higher than 13.5 m/sec. account for 4.4% and 0.2%, respectively.

The seasonal changes affect the sand movement and also the beach usage. Wave records through visual observation are available from the Meteorological Station of Ko Phai which is located about 20 km off the Pattaya beach. Fig. 3.7.3 shows the frequency of occurrence of wave height monthly compiled by A.I.T. The wave data along the east coast of the Gulf of Thailand were measured by the Hydrographic Department (1968). The maximum significant wave height measured are as follows:

Location	Significant Wave Height
Ko Si Chang	1.5 m
Pattaya	1.3 m
Sattahip	1.6 m
Rayong	1.4 m

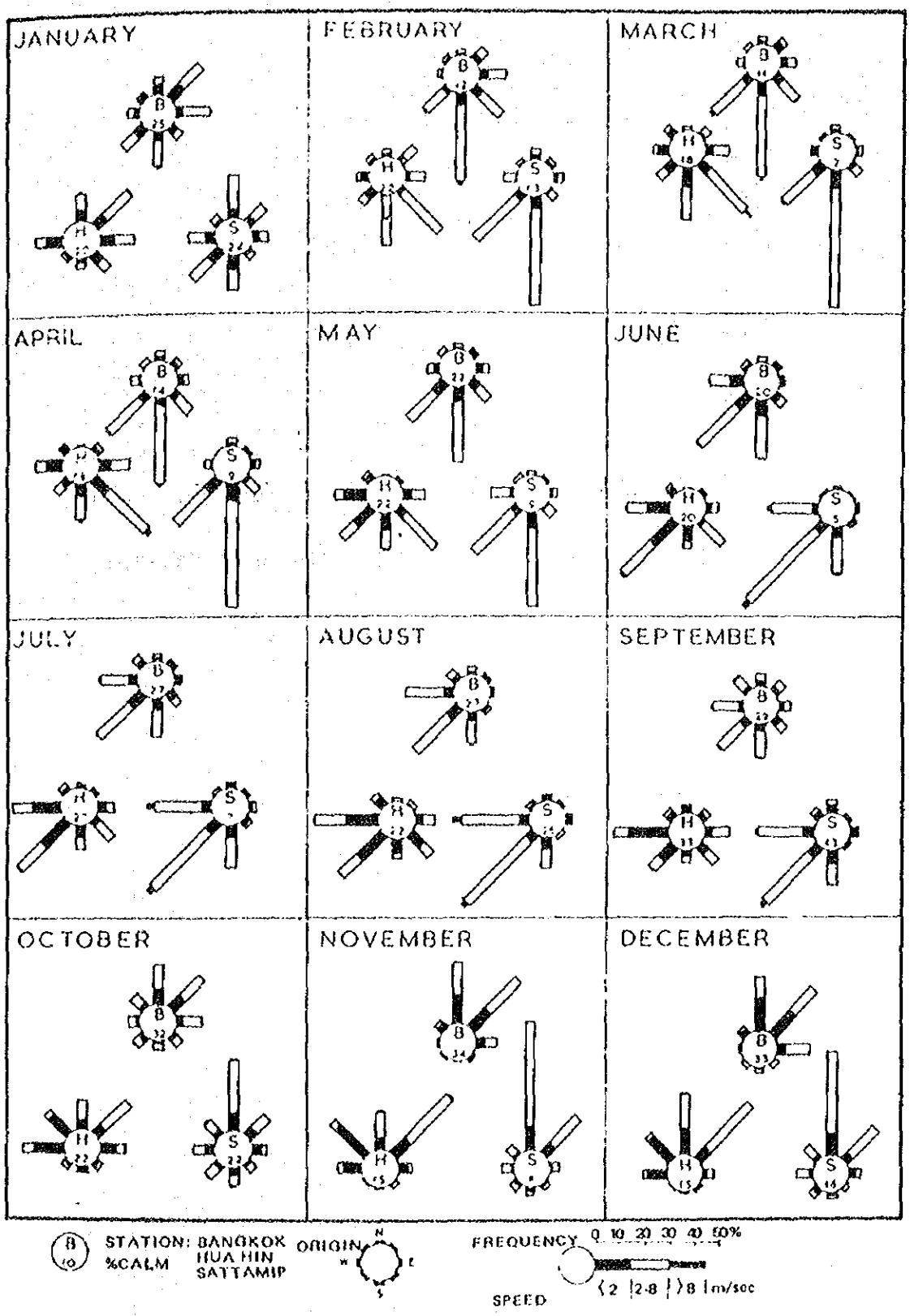
(Wave poles for measurement were set 5 to 10 miles offshore)

From these data, the design wave height can be assumed to be of the order of 1.5 m at Pattaya.

For reference, the calculation of wave height tried in this study is about 3 m on the assumption of 20 m/sec. wind speed without consideration of refraction and sheltering effect. Taking account of refraction and sheltering effect, 1.5 m wave height would be reasonable at Pattaya beach.

According to TORC's data, the sea surface is calm on 212 days per year and smooth (0.1 - 0.5 m) on 118 days per year.

Fig. 3.7.1 Frequencies of the Direction and the Velocity of the Wind



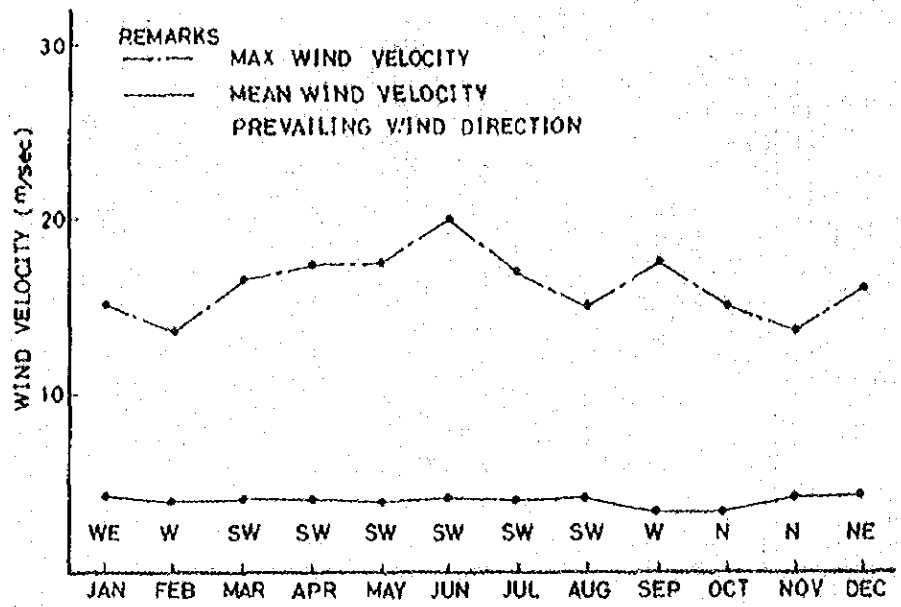


Fig. 3.7.2 Records of Wind (Ko Sichang) 1958–1970

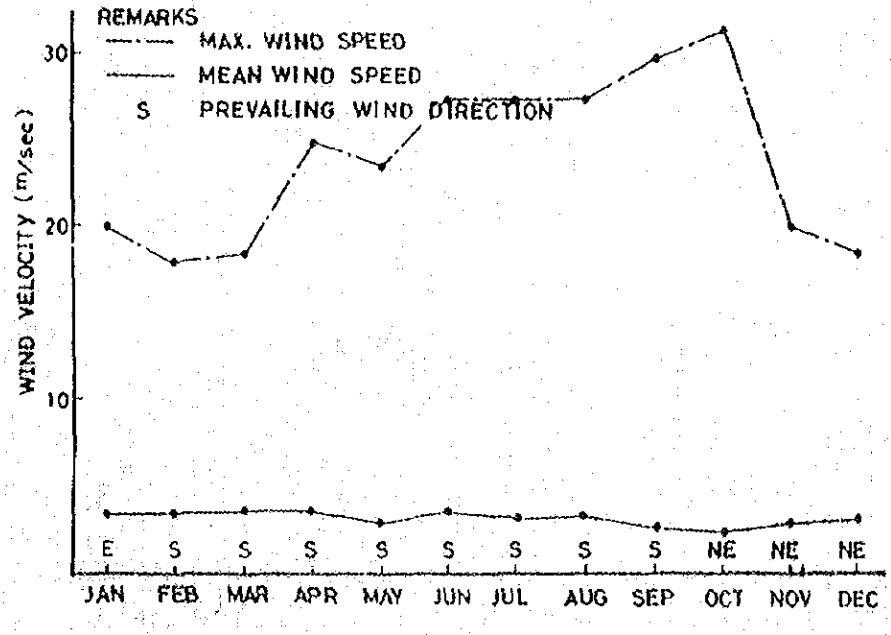
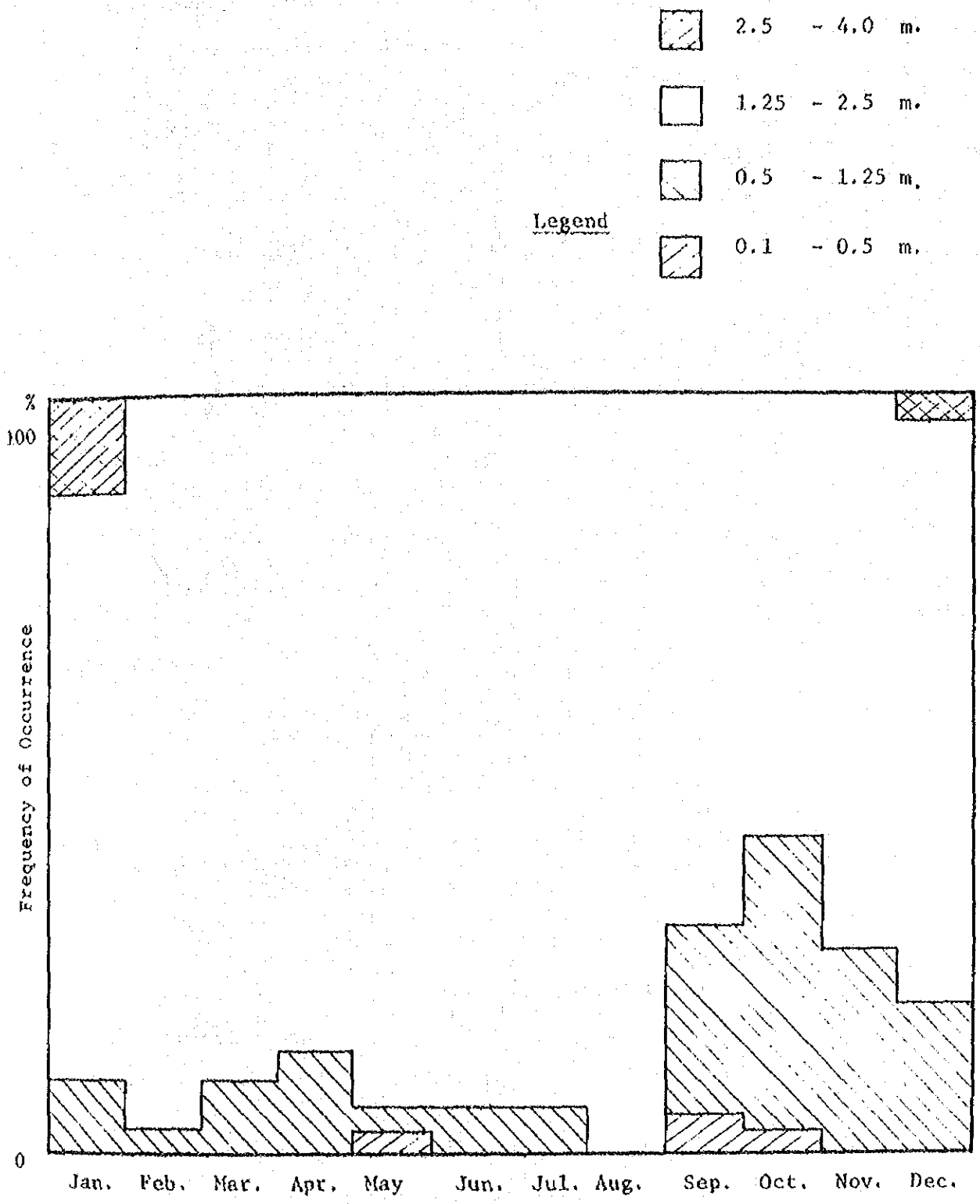


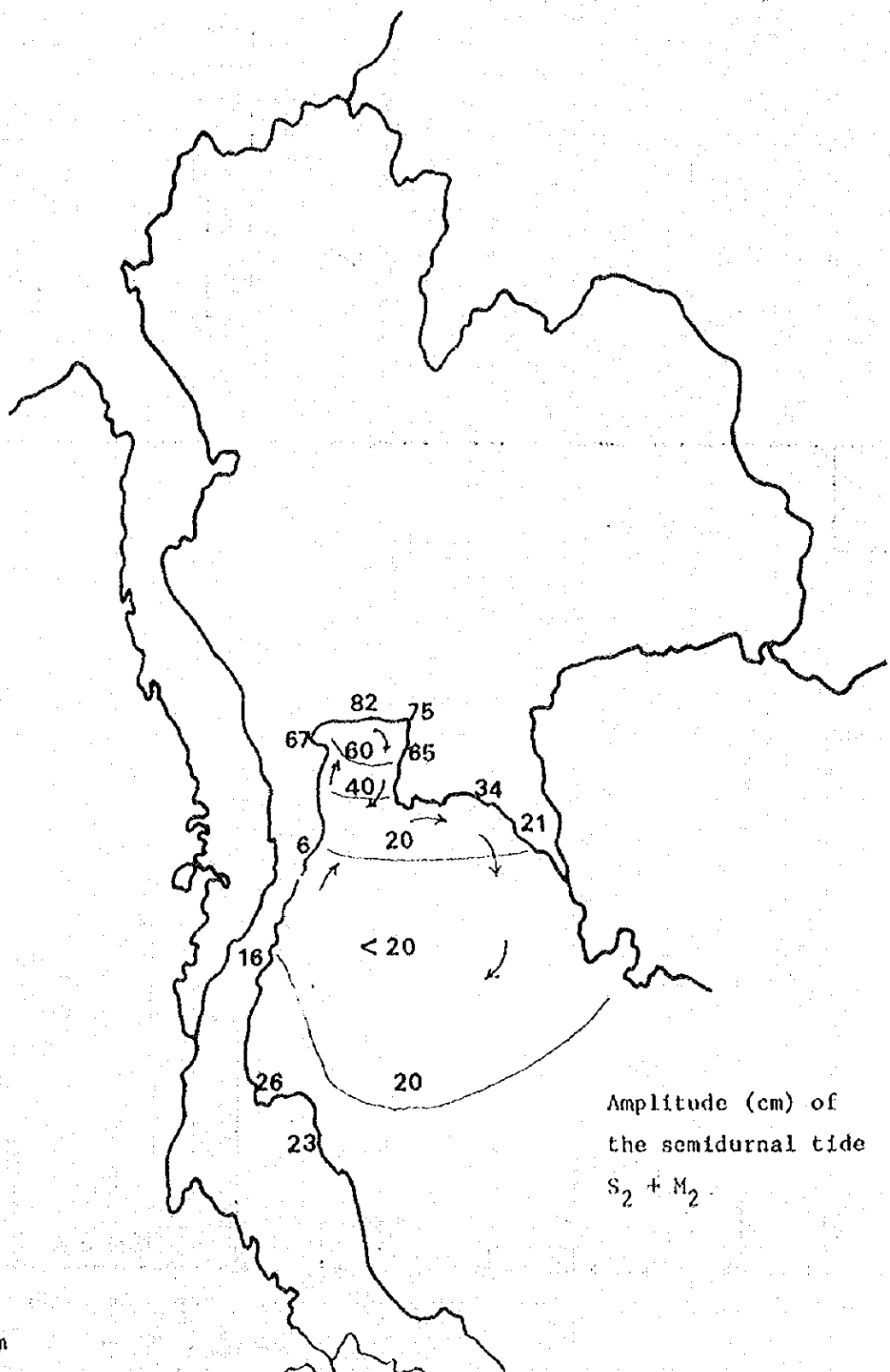
Fig. 3.7.2 Records of Wind (Chonburi)

Fig. 3.7.3 Wave Heights of the Upper Gulf at Ko Phai, 1967



Source: A.I.T.

Fig. 3.7.4 Tide & Tidal Current



Amplitude (cm) of
the semidurnal tide
$S_2 + M_2$

From

Physical Oceanography of the Southeast-Asian Waters, by K.Wytrki. (1961) and The Type of Tide and Currents in the gulf of Thailand by the Hydrographic Department, 1968.

(b) Sand movement

There are little data to estimate the sand movement characteristics. From the wind and wave characteristics, aerial photograph, site-inspection and hearing from people who know well about historical changes of the Pattaya beach, the survey team roughly characterized the sand movement direction as follows.

1) The direction of the sand movement of the Pattaya beach is considered to change seasonally because of the waves generated by the monsoon type wind.

2) Southward direction slightly predominate over northward.

The fluctuation of bottom contour was surveyed by A.I.T. at the proposed nuclear power plant site which is located about 20 km north of the Pattaya beach. The wave condition at the Pattaya beach is about similar to this surveyed area. This result shows that the fluctuation of sea bottom is less than one meter. The quantity of sand movement was not estimated because of lack of available data. But the stability of the coastline at Pattaya was evaluated by A.I.T. and it is found that a geometric equilibrium of the coastline has been developed which proves that the beach is relatively stable.

(c) Tide and current

The coastline of Chonburi province stretches between the Bang-Pakong River in the north and Sattahip to the south.

Coastal waters are defined as being those saline and fresh water estuaries along the coast between Bang Saen and Sattahip. These include the drainage basins of Khlong Bang Prong, Khlong Tai and Khlong Nan Amphoe. Larger drainage basins draw waters from the eastern side of the mountain range discharging into Khlong Phan Thong in the north and Khlong Ban Phai in the south. Although both of these larger rivers discharge at points outside the province of Chonburi, only Khlong Phan Thong lies largely within the confines of the province. The coastline forms the eastern border of the upper gulf of the Gulf of Thailand. It is approximately 100 km long and consists of 3 long beaches (Ao Bang Samiae, Ao Bang Lamung and Ao Bang Sae) divided by rocky headlands at Bang Ang Sila, Ban Laem Chabang, Ban Pattaya and Sattahip. All of the beaches are sandy; a mud flat exists in the north between Ang Sila and the Bang Pokong river.

This River, although outside the province of Chonburi, has a dominating effect over the northern coast. The coastal sea currents have not been well defined. As illustrated in Fig. 3.7.4 the tides on the main Gulf of Thailand currents have an overbearing effect. All along the coast, the tidal currents move the waters in a spiral pattern, one cycle per tide. The vector sum of tidal currents do not close which provide for a daily movement of coastal waters. This constant velocity com-

ponent may be in the order of 2 cm per second. Wind drift is not regarded as being important, apart from the wind effects during the dry season which do drive coastal Chonburi waters towards the west coast of the upper Gulf, the Bang Pokong River discharges fresh water during the rainy season and shortly thereafter into the marine environment thus affecting the quality of water all the way down the coast to Pattaya. With the onset of the dry season, the river influence diminishes and fresh sea water seems to enter from the south. These coastal water changes have a bearing on the effects of pollutions entering the sea from the urban centers and industries all along the coast.

3.7.3 Development Policy

Taking into consideration tourism resources of Pattaya as ocean resort previously mentioned the following three axes may be set to enhance beach and ocean activities in Pattaya.

1. Rest and relaxation
2. Water-contact activities
3. Education

(a) Rest and relax

The impression of Pattaya beach is very peaceful and gentle with calm sea, white coral reef sand and coconut trees. There is no doubt that Pattaya beach resort can provide comfortable place for rest and relaxation on the beach with harmonized use with natural resources. As there are some confusions in existing usage pattern, this excellent factor is not utilized effectively.

(b) Water-contact activities

A very calm sea condition and a gentle beach slope can also be most suitable for ocean activities. If well organized instruction system is established, even beginners are able to enjoy water-contact sports easily and safely.

(c) Education

Pattaya beach is the most popular beach resort in Thailand and has convenient access from Bangkok. For the Thai people, Pattaya is a place to become familiar with water-contact activities and to learn about the ocean. If education institute on ocean is established in Pattaya and part of facilities open to public, it will become a good attraction to both the foreigners and the Thai.

The above-mentioned development concepts are summerized as follows:

Promotion Axis	Target	Measures
Rest & Relaxation	Comfortable beach for sunbathing and swimming	Beach improvement
	Enjoyable strolling through beach promenade	Sea surface usage control
Water-contact activities	Unskilled tourists can enjoy water-contact sports easily and safely	Sea surface usage control
		Well organized instruction system and safety provisions for ocean activities
Education	Gaining of knowledge about ocean	Ocean institute
		Ocean museum
		Aquarium
		Sea life park

Basing on the above-mentioned axis, the development policy for beach and ocean activity improvements may be summarized as follows:

1) Creation of attractive and restful first class beach resort with Thai atmosphere.

   Pattaya beach need a comprehensive improvements plan which act as catalytic agent to combine and create a true attractive international beach.

2) Well controlled water surface usage plans.

   At present, there are so many conflicts of ocean activities in Pattaya. Most of these conflicts are caused by the lack of water surface control. Appropriate control of the sea surface usage will contribute greatly towards safe and convenient activities of the users.

3.7.4 Planning Policy

(a) Basic objectives

Basing on the above-mentioned development policy, basic objectives of planning may be summarized as follows:

1) Beach activity improvements are composed of the three components for area development

- Beach activity space on sea shore
- Beach promenade space
- Intermediate access space

2) Sea surface control plans are composed of the five sea surface control measures

- To limit the mooring area of excursion boats.
- To establish zone control of water surface usage by buoy.
- To control and monitor the water surface usage by coast guard.
- To establish the no-sailing, no-boating zone for preserving safety of human-life and marine biology.
- To establish the boating activities without-engine as establishment of new Pattaya beach image. In addition, limited activities zone for motor boats is set up.

(b) Explanation of the main development components

1) Beach activity space on sea shore

Development of beach activity space on sea shore are composed of the four items as follows:

- The preservation of tourism resources
- The promotion of scenic beauty
- The promotion of kinetic space
- The promotion of pleasure

* The preservation of tourism resources

Tourism resources of Pattaya are to be preserved to maintain the scenic beauty, such as Pattaya Hill, the slope at the northern part and the long spiral beach and white coral reef sand.

* The promotion of scenic beauty

The promotion of scenic beauty is the most important point for planning the beach park and beach promenade. The scenic points consist of two parts. One is the

landmark view like Pattaya Hill from Pattaya beach area. The other is the landscaped area along the beach park and beach promenade.

* The promotion of kinetic space.

When the people ride on bicycle along the beach and the beach park or pedestrian pass, it is necessary that they can watch and enjoy the well planned promenade and plantation. Well controlled promenade and plantation along the beach will heighten the delight and interest of the tourists.

* The promotion of pleasure

The types of pleasure on beach consist of swimming, sunbathing and other ocean related activities. The promotion of pleasure are composed of four elements as follows:

- Well controlled beach in respect of beach privacy
- Variety of physical and spacial arrangements on the beach activities
- Control of street venders on beach
- Mooring of boats, scooters and yachts at the designated locations.

2) Beach promenade space

Beach promenade is composed of four components as follows:

- To control the privacy for sunbathing and relaxation on beach.
- To improve the service on the beach to international tourist.
- To introduce the new transportation system from northern core to main amenity core.
- To improve the new fashion road in the more natural way along the hotel site.

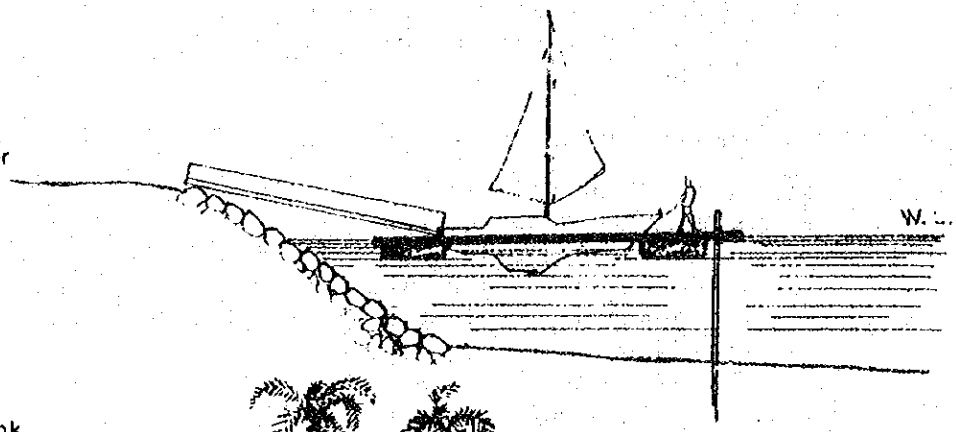
3) Intermediate access space

There are five kinds of intermediate access road.

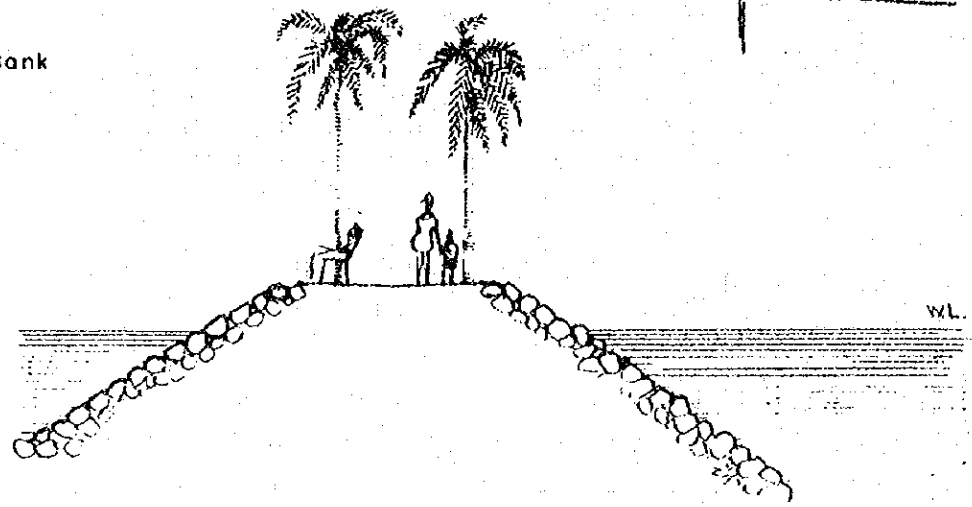
- Automobile circulation roads excluding buses as a temporary solution.
- Pedestrian and bicycle road with adequate landscaping.
- New development of access road should have adequate road width to handle future increased volume of traffic.
- Adequate lighting has to be provided for the convenience of users of taxis.
- Charming landscaping would be implemented to boost the image making at the entry to hotel area.

Fig. 3.7.5 Sand Beach to Sea

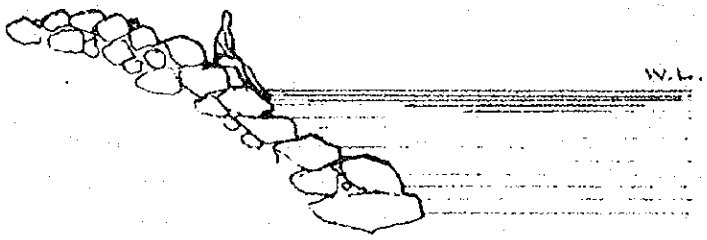
Ⓐ Pier



Ⓑ Bank



Ⓒ Rock Formation



Ⓓ Sand

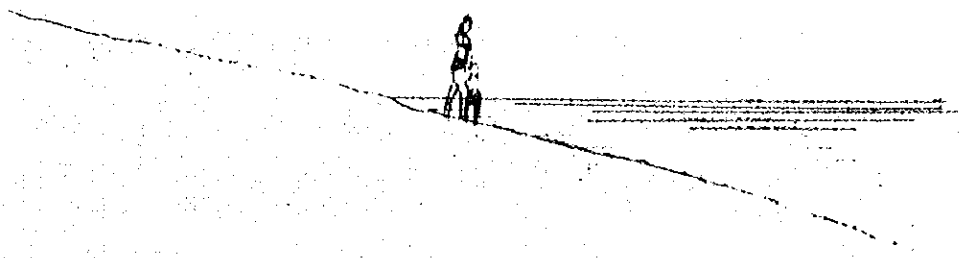


Fig. 3.7.6 Middle of Sand Area

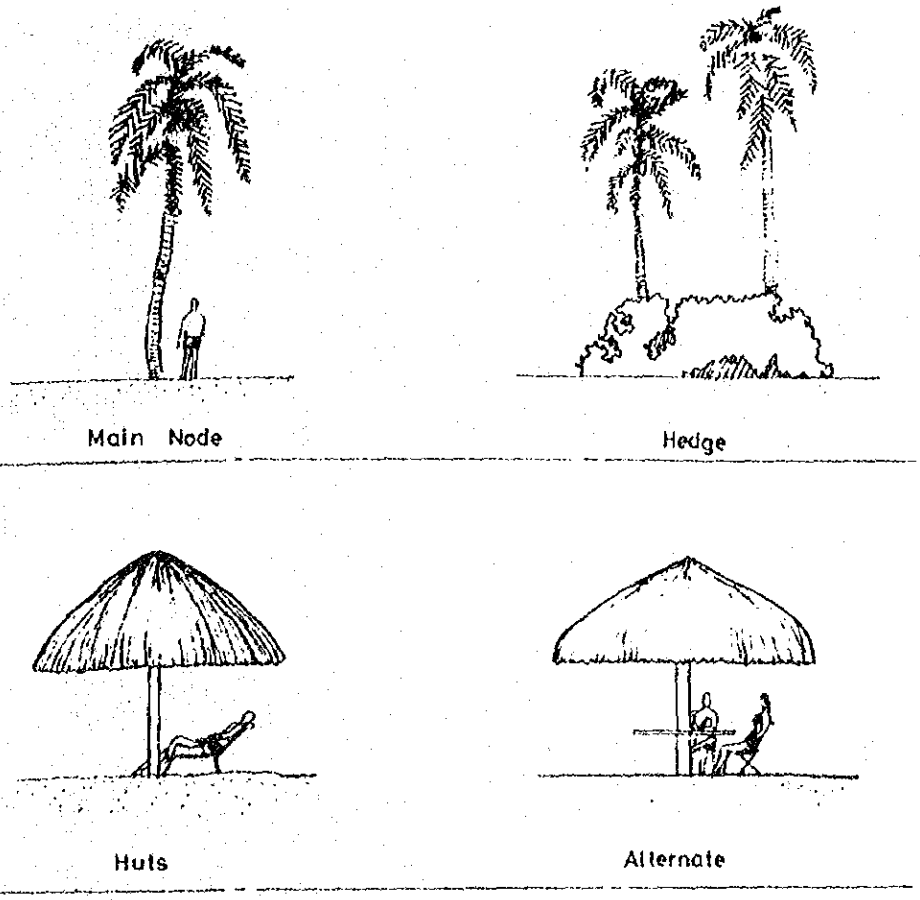
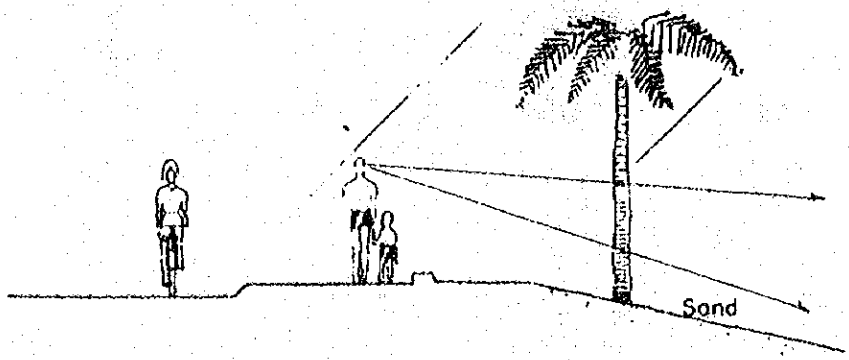


Fig. 3.7.7 Sand Beach Area to Beach Circulation

Ⓐ



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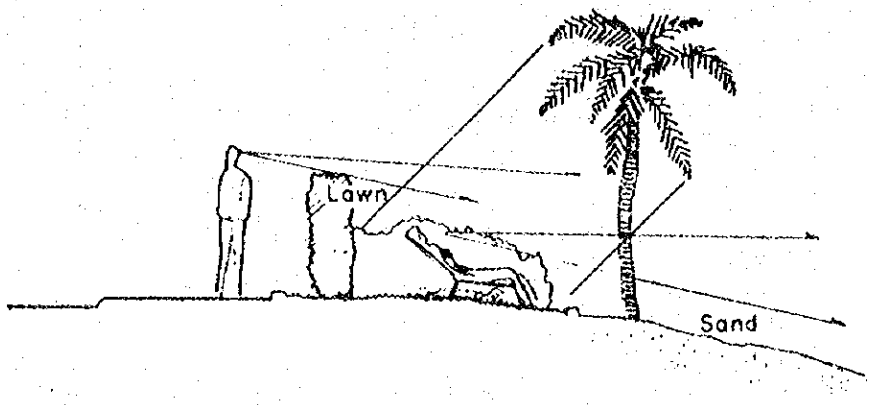

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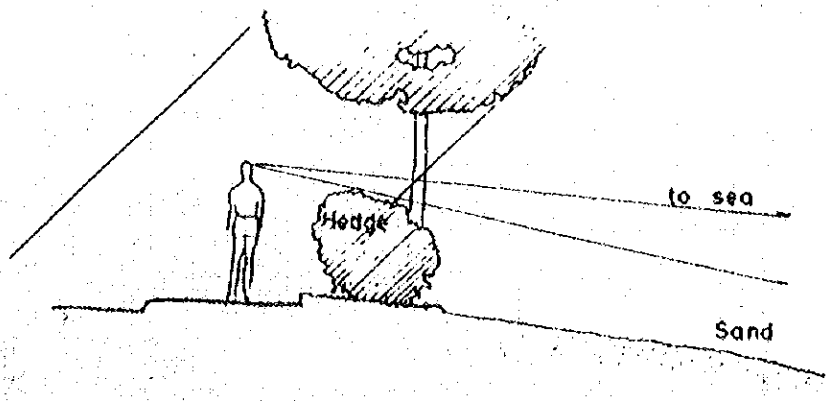


3.7.5 Beach Improvements

(a) Prerequistes of beach improvement planning are as follows:

1) Realistic and feasible solution as first priority by careful phasing.

2) Creation of attractive and restful first class beach resort with Thai atomosphere.

3) Construction of beach with choices for various demands regarding privacy and activities.

4) Adequate beach activity system to be implemented to solve the existing problems.

(b) Basic solution findings

1) Well controlled beach in respect of beach privacy

It is preferable for foreign visitors to have a choice of the degree of privacy and rate of intermingling with the Thai according to their desire, since Pattaya beach will be expected to have more day-trip visitors in the future. Therefore, the natural behavior of activity participants from hotel to beach and day-trip visitors' parking and bicycle parking are carefully manipulated to take advantage of creating private spaces in the final outcome of beach character. The beach width should be expanded to allow more flexible planning and to achieve lower density on beach.

- Removal of existing parking area on the beach
- Filling in of sand at strategic area to create a more comfortable and private beach space.

2) Beach circulation space

Taxis and buses running at high speed on the beach road is creating detrimental effects to smooth and safe pedestrian flow from hotels to beach activity areas. A solution to this problem will be the replacement of the high speed traffic by slow moving transportation and the main emphasis on the beach road is to be on the pedestrian flow. Service facility station will be located strategically along the seaside promenade which include bicycle parking, showers, lockers, toilets, bus stops, swimming shops, tables and other facilities.

3) Variety of physical and spacial arrangements in the beach activities.

- Sand beach to sea — See Fig. 3.7.5.
- Middle of sand beach area — See Fig. 3.7.6.

- Sand beach area to beach circulation

Appropriate combination of the 3 types will make interesting activity space to meet different requirements for various demands. (See Fig. 3.7.7.)

4) Control of street venders on beach

There are many street venders on the beach. This creates unfavorable atmosphere for sunbathing and relaxation. Therefore, shops for these street venders are proposed at the specific areas behind the beach along the promenade.

5) Mooring of boats, scooters and yachts at designated locations.

6) Cleaning of beach area

a. Promenade and sunbathing area

Collection and disposal of refuge are carried out by receptacles conveniently located along the beach promenade. Presently Pattaya beach is cleaned voluntarily by each hotel. Although this procedure is now working out satisfactorily to some extent, T.O.T and the local government office should make a strong campaign for cleanliness and take the initiative in operation.

b. Swimming area

A careful attention should be paid to the growth of seaweed in the water which was recognized during the field survey. The tourists would feel that seawater of Pattaya beach is dirty and polluted and will consider the beach unsuitable for swimming.

One possible measure to clean up the seaweed is through screening and also covering the dirty area with clean white coral sand. This problem should be dealt with as an urgent program for beach improvement.

(c) Main beach improvement

1) Improvement concept

The key points of improvement of the main beach are composed of the following concepts.

a. The promotion of scenic beauty in Pattaya

- The length of pier of main port and northern port should be so arranged as not to have sheltering effects of the scenic beauty from viewers on the beach.

- Mooring of boats, scooters and yachts to the designated locations.

- Relocation of palm trees close to the pedestrian way to give more space for sunbathing in front of the sea.

- Pier should be constructed to enable viewing scenic spots from designated locations.

- Beach facilities like huts, benches, showers and other service facilities to be provided at the appropriate locations with Thai atmosphere, such as related to day-trip visitors, entrances to hotels, pedestrian walks and bicycle parking area.

b. The promotion of kinetic space in Pattaya

- The section from northern core to intermediate access road will have the characteristics as hotel area. The promotion of this kinetic space will enhance the more colorful tone and light touch with domestic atmosphere.

- The section from intermediate access road to the middle of lodging zone will have the accent of vegetation at the approach to the center.

- The main amenity core area should be identified as the most colorful area with Thai atmosphere. The main amenity core contains the various amenity facilities and the main port. This area will show vitality and sophistication in character with intensive participation of both foreigners and domestic tourists.

- The end of this kinetic space will be the promenade to Pattaya Hill. Pattaya Hill should be preserved at the natural condition. At Pattaya Hill should be provided a nature trail along the slope to the top of the hill. The top of the hill with a panorama view terrace will be connected to the inland activity zone by a pedestrian route.

2) Site plan

Fig. 3.7.8 shows the site plan of main beach improvement, which include the promenade, plantation and sand area. The promenade is converted from the existing road and is provided with well controlled pedestrian routes and plantation and other accessories. The end of the promenade at northern section is the amenity core and the north port. This north port should be with two parts, one for the small crafts for ocean activity and the other for the mooring of excursion and ferry boats.

The main port will cater for more than half of the requirement for mooring. This port will be expected to function

Fig. 3.7.8 Main Beach Plan

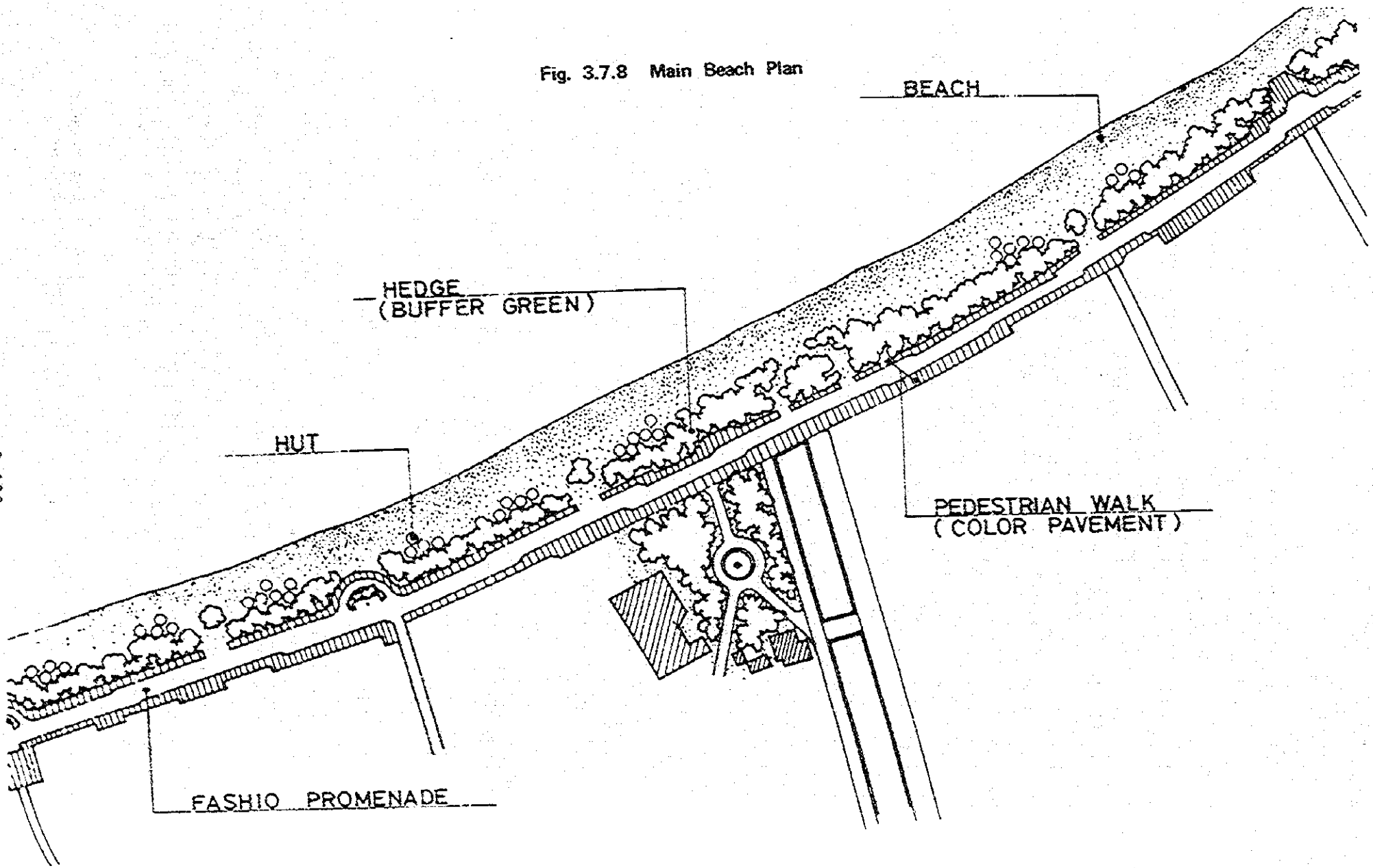
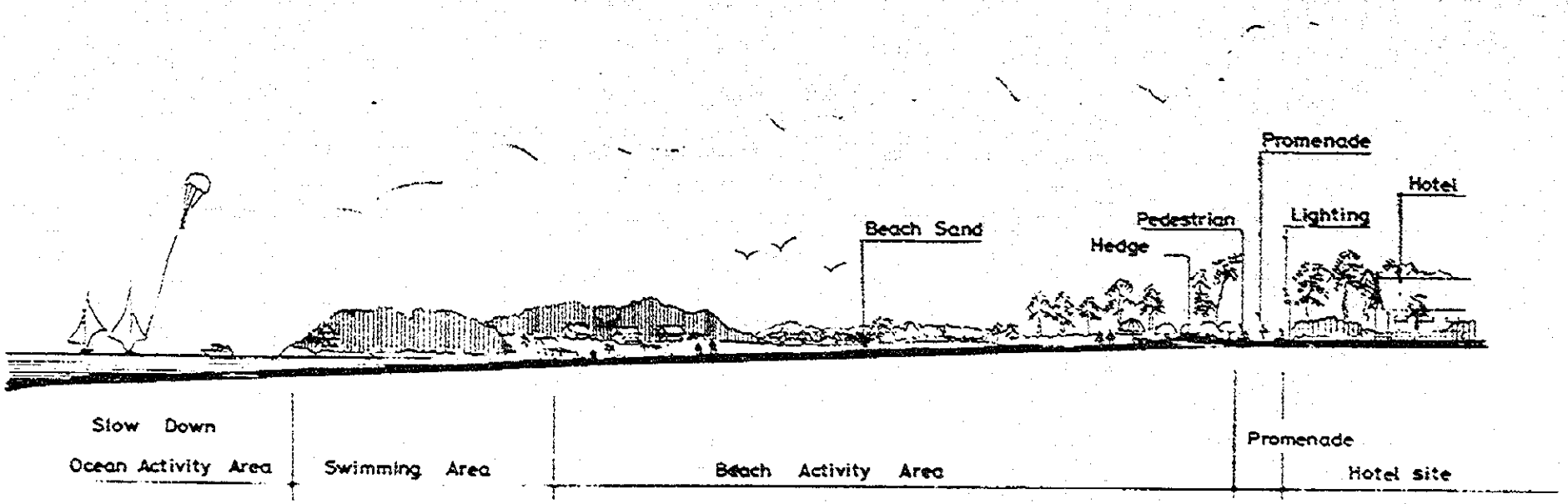


Fig. 3.7.9 Beach Activity Area (Section)



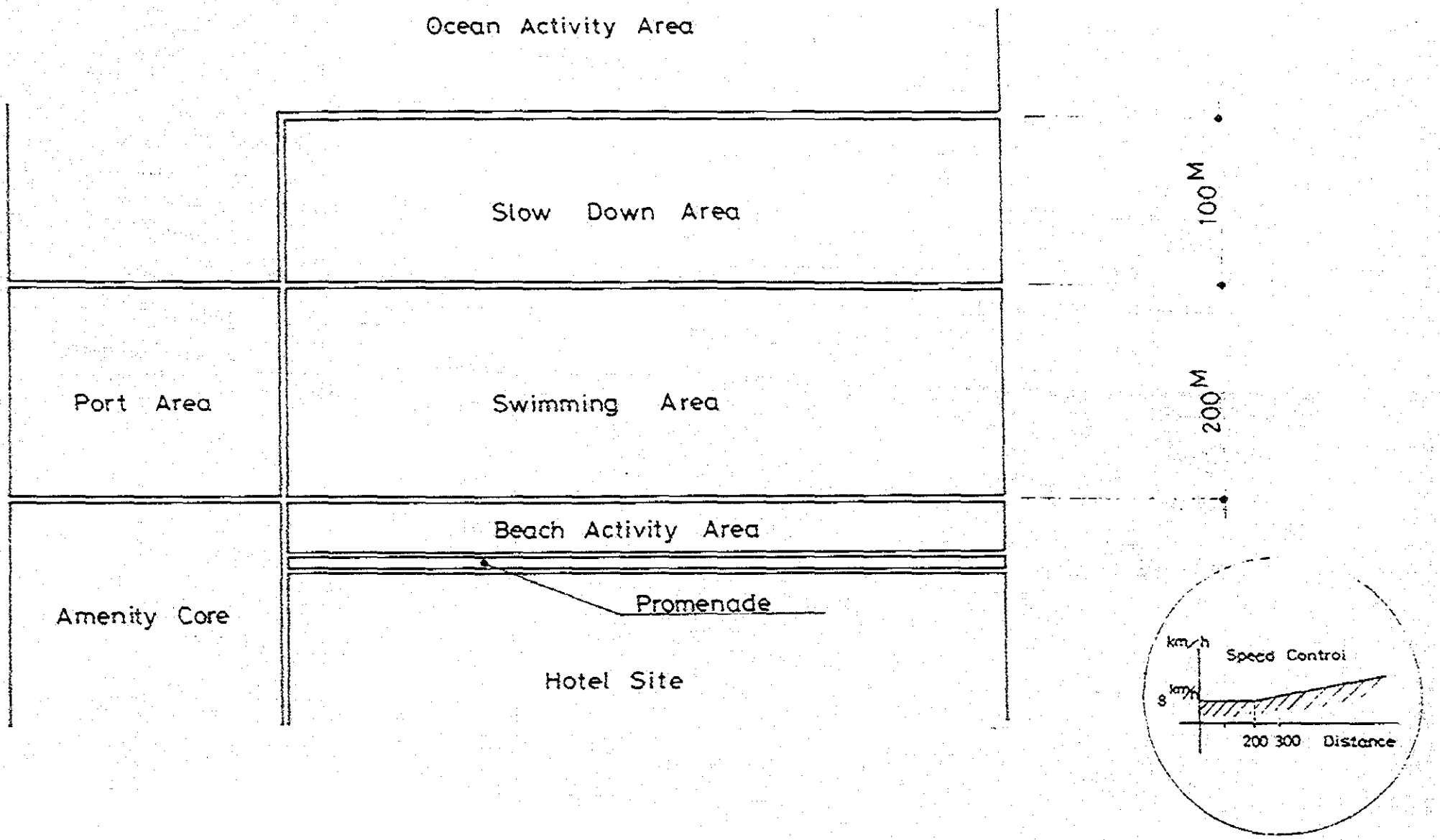


Fig. 3.7.10 Diagram of Water Surface Usage

harmoniously with the main amenity core. The character of this port should be expressed as the main gate of Pattaya resort and the starting point for sea excursion to the islands.

The sand area should consist of the open space for rest and relaxation for swimmers, and will be provided with huts, benches, showers and other beach facilities.

(d) Southern beach improvement

1) Improvement concepts

If the foreign and domestic tourists should stand at the top of the Pattaya Hill, they can watch the long and large scale white coral reef sand beach continued from the end of Asian Pattaya Hotel to Bang Sarey. The beach will be a panorama view with the calm sea and the white waves. Therefore, this area is proposed to be more quieter and larger in scale as compared with main beach. In addition to the above mentioned, the beach of southern area will be provided with the widen white coral reef sand beach and with tropical plantation in the hinterland. Especially, the amenity core will be located at the middle section of this study area. This southern core is composed of the island and water front community. This island will be developed as a natural park with aquarium and sea life facilities. The material of the bulkhead should consist of rock.

2) Site plan

Fig. 3.5.10 shows the site plan of south amenity core. This beach should provide the widely spaced sand beach and tropical plantation along the beach side road.

3.7.6 Water Surface Control Plan

(a) General

Fig. 3.7.10 shows the diagram for controlling the water surface usage pattern. The proposed water surface control plan consist of three component areas.

1) Swimming area

This area need to be free of sailing and other boat riding activities and will be opened only for swimmers.

2) Slow activity area

Speed restriction for motor boats and other water vehicles is enforced in this area. Special provisions have to be implemented for smooth control of high speed motor boats and other vehicles.

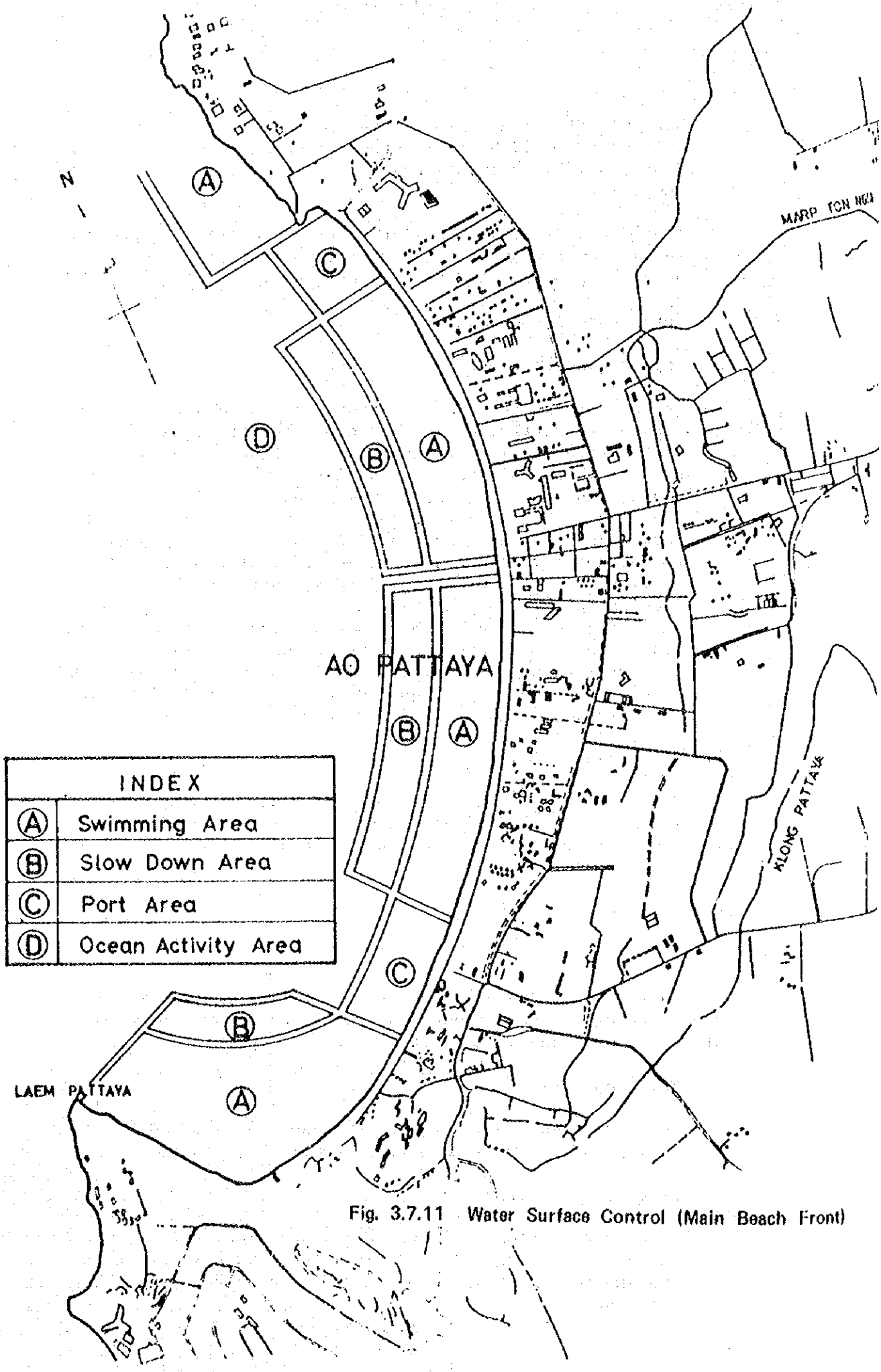


Fig. 3.7.11 Water Surface Control (Main Beach Front)

3) Ocean activity area

No speed limitation of boats is applied in this area, which is opened for more high-speed pleasure-boat riding, sailing, scooter riding and game fishing.

(b) Main beach front

This area requires the most strict control of the water surface usage since it is the most important area in Pattaya beach resort.

Fig. 3.7.11 shows the water surface control zoning plan. The basic idea of this zoning plan is as follows:

- To divide the area for swimming and for boat riding.
- To provide a quiet zone along the landuse plan.
- To establish a harmonious use of water surface.

(c) Southern beach front

Basically, this area is a preservation area. The use of this area will be swimming, yachting, boat riding and off-shore game fishing.

(d) Regulation for control of water surface usage.

The regulations required for enforcement of the zoning plan are proposed as follows:

1)	Swimming zone	Prohibition of all vessels
2)	Quiet zone	Prohibition of motor boats riding
3)	Slow activity zone	The speed of motor boat is to be less than 40 km/h
4)	High speed zone	Offshore from beach
5)	Caution zone	Slow down area for safety of swimmers
6)	Water skiing & para-sailing zone	For water skiing and parasailing

In addition to preservation and safety for swimmers, the following will be required.

- No motor boats should come to closer to 30 m from swimmers.
- In the area for swimming, jumping facility for swimmers and at the pier of port, all motor boats cannot travel at more than 8 km/h. Especially, a safety zone will be provide for a width of 60 m from the above area.

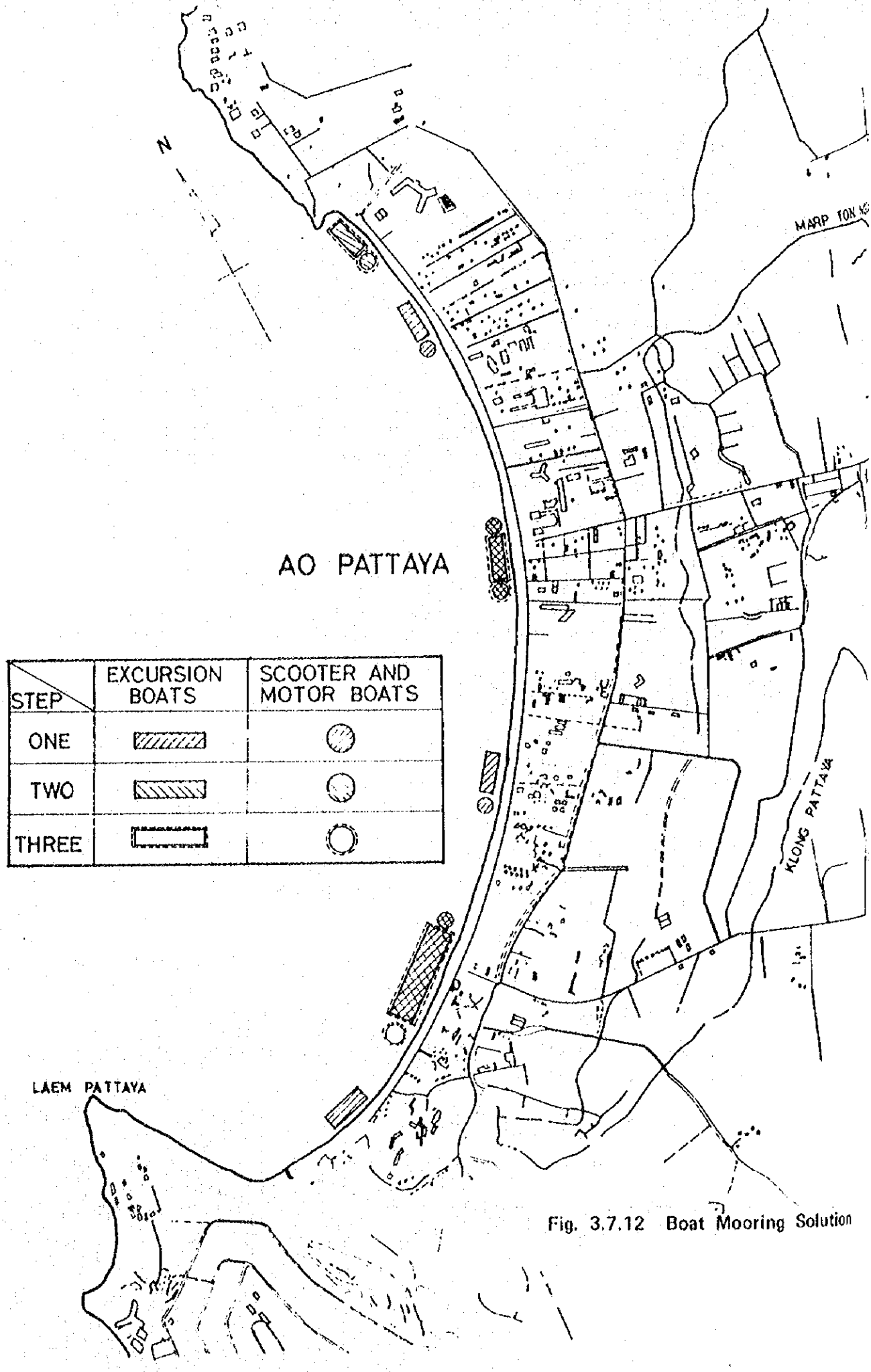


Fig. 3.7.12 Boat Mooring Solution

(e) Organization for control of water surface usage

The water surface control plan will be complemented by the following personnel and its organization.

1) Coast guard

An organization like the coast guard will be proposed for enforcement and maintenance of the water surface control plan.

2) Trained instructers

Train instructors stationed at the beach will not only provide necessary guidance to the users of ocean activities but also improve public relation with the public and an institute of such instructors will be highly useful.

3.7.7 Phasing Analysis - Problem Solution Process

Basing on the previously listed beach improvement and water surface control plan, the phasing analysis may be summed up as follows:

1. Boat mooring
2. Beach and beach facilities improvements
3. Access road transfer phasing

(a) Boat mooring

Boats mooring phasing analysis consist of three steps as described below and shown by Fig. 3.7.12.

Step-1 Before completion of piers, concentrating various boats at 5 different designated locations.

Step-2 Completion of pier construction at three different locations.

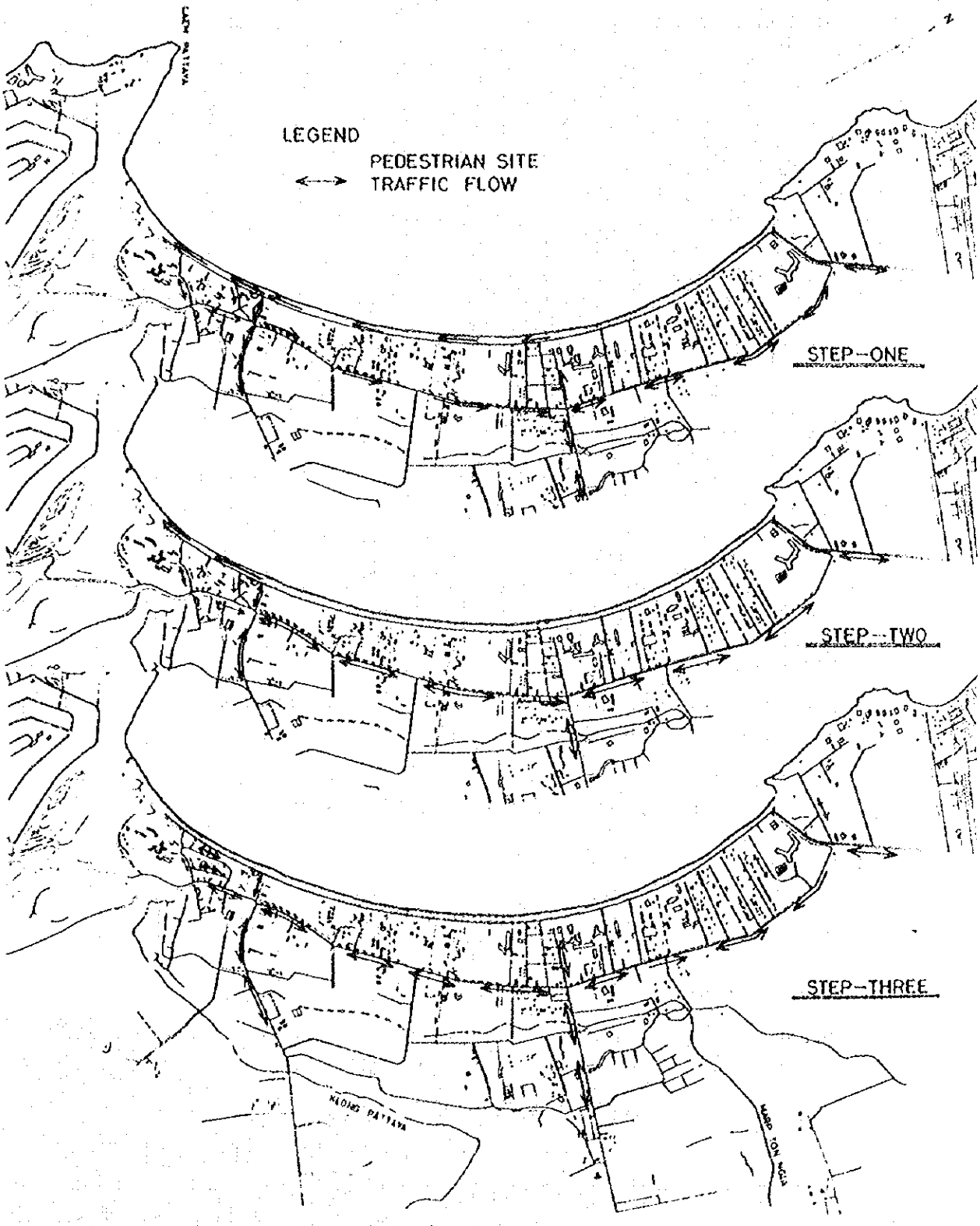
Step-3 Completion of port construction at main amenity core.

(b) Beach and beach facilities improvement

Beach and beach facilities improvement will consist of nine items as follows:

- Removal of existing parking on beach
- Construction of pedestrian way
- Fill up existing parking area with sand
- Planting of new palm trees and relocation of some existing vegetation (include promenade landscaping)
- Relocation and new provision of shading huts on beach

Fig. 3.7.13 Transfer Solution



- Beach facilities, bicycle parking, shower facility and snack stands.
- Regulation of horse riding on the beach
- Coast guard to enforce the zoning regulations and to maintain safety of users.
- General location and course setting for para-sailing

Table 3.7.1 shows the scheduling for these items.

(c) Access road transfer phasing

Access road transfer phasing will consist of the following seven items.

- Transfer existing access beach road to the back side of hotels.
- Adjusting entrance way to the hotel.
- Parking facilities at the new access road.
- Improvements of promenade road accessaries. (lighting system, signal system etc.)
- Storm water drainage system.
- Expansion of new access road and new connection roads in the amenity core.
- Introduction of new human scale mode transportation on beach road.

Table 3.7.2 shows the scheduling of the access road transfer phasing.

This phasing follows the steps for solution of traffic control as described below:

Step-1 Fig. 3.7.13-1 shows the regulating of traffic on the beach road from Tropicana Hotel to Orchid Lodge. At this stage the pedestrian way from Tropicana to Orchid Lodge will be constructed.

Step-2 Fig. 3.7.13-2 shows that the beach promenade from Orchid Lodge to main port will be opened only for pedestrian, bicycle and other specific slow mode of transportation after partial completion of the new access road.

Step-3 Fig. 3.7.13-3 shows that the whole beach promenade will be opened only for pedestrian, bicycle and other specific slow mode of public transportation after completion of the new access road.

Table 3.7.1 Beach & Beach Facilities Improvements

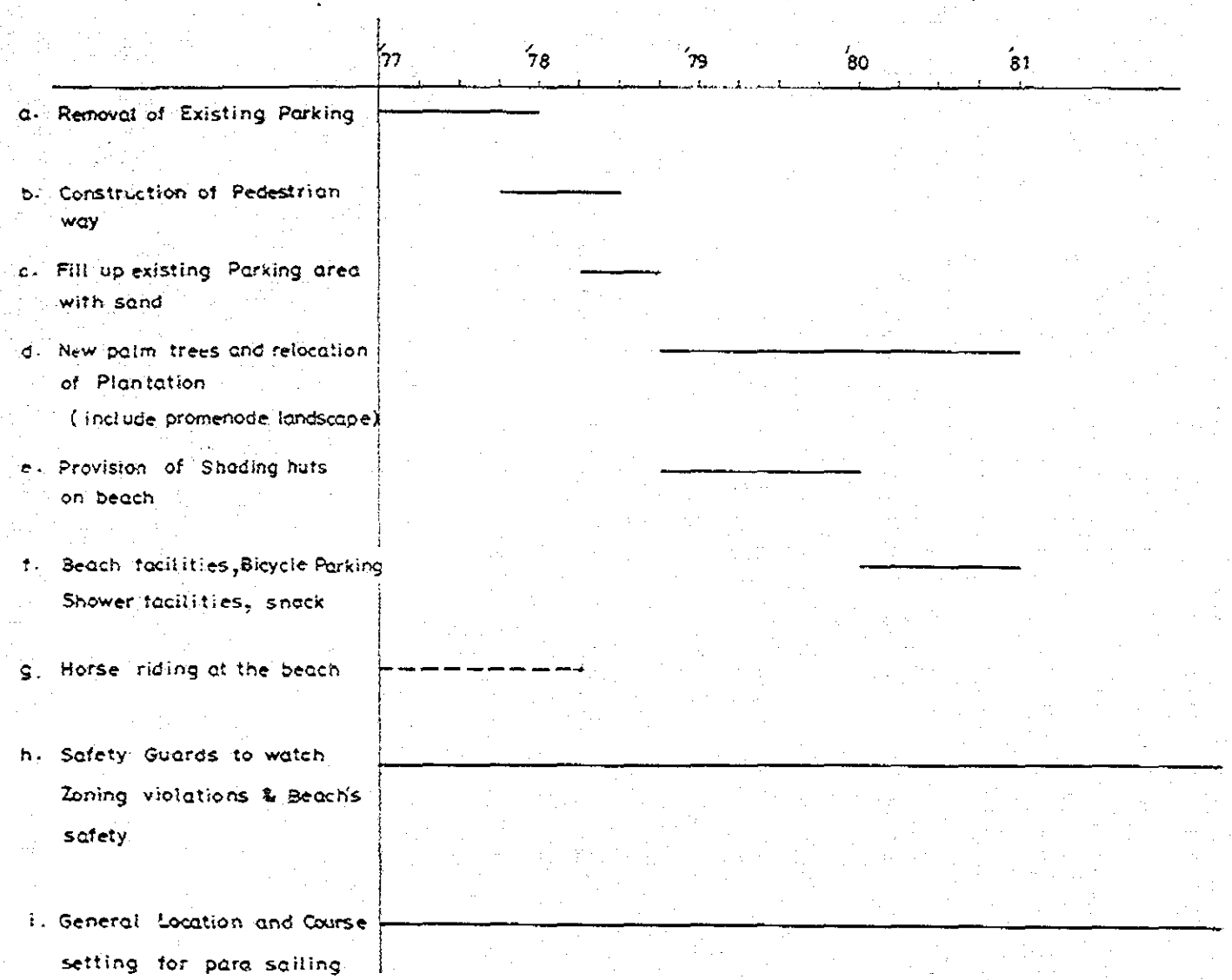
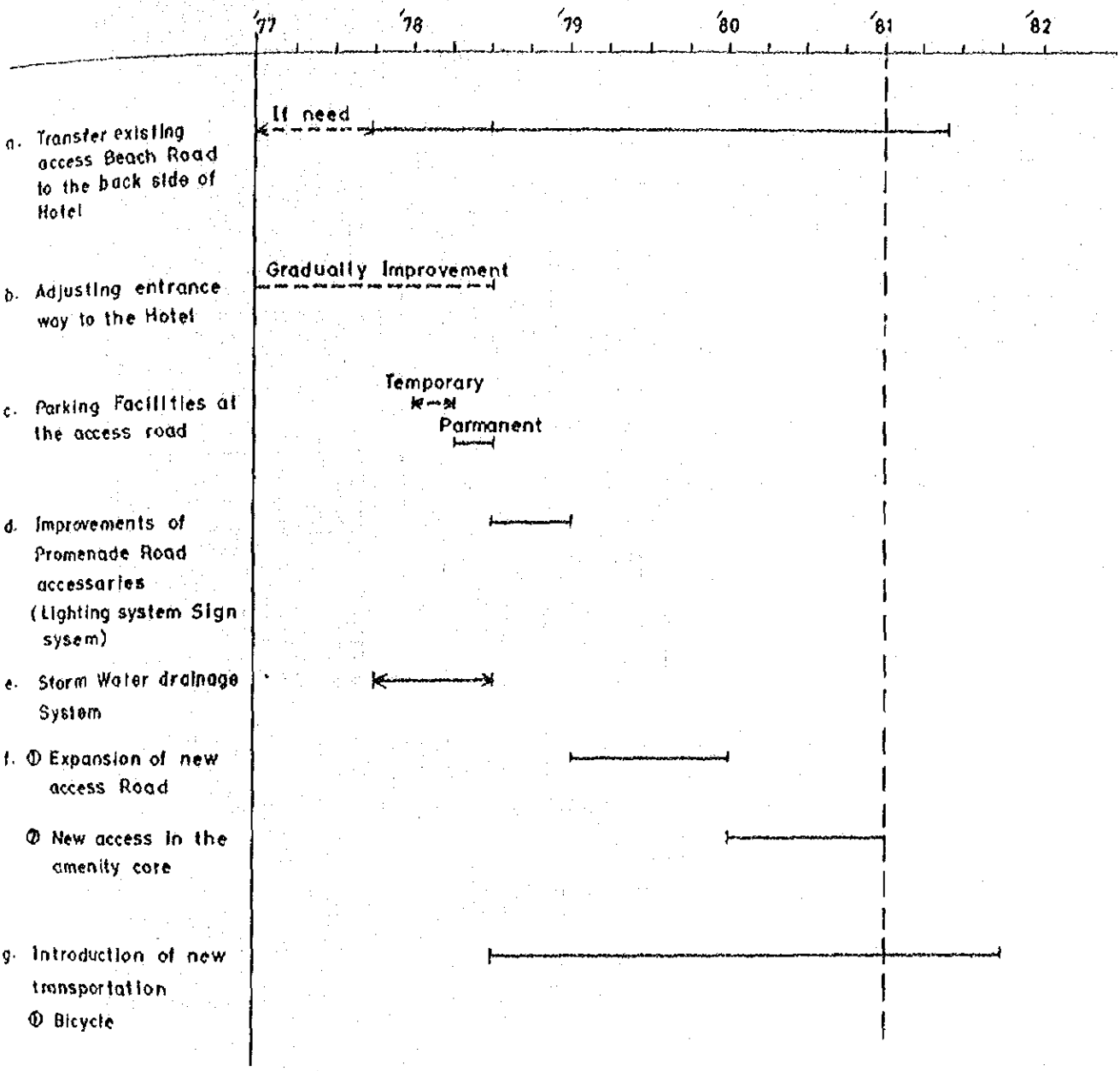
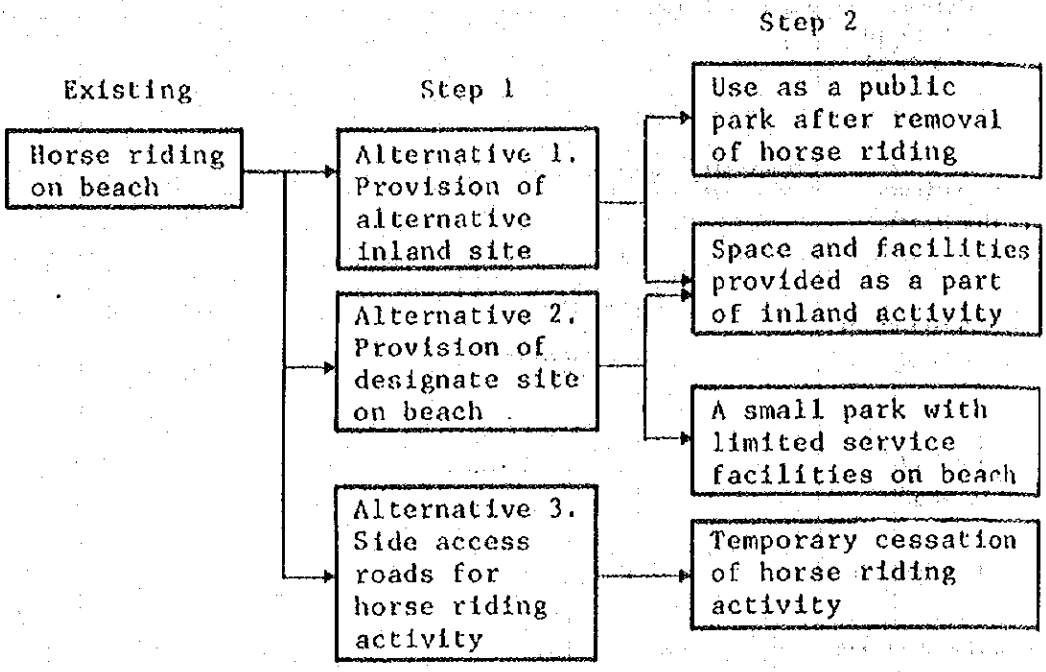


Table 3.7.2 Beach Promenade Improvements



(d) Regulation of horse riding on the beach

Improvement of existing sanitary conditions by regulating the movement of horses on the beach is an urgent item. The following steps for improvement is proposed.



Since the main objections to horse riding on the beach are from sanitary reason as well as from the point that it is an uninviting activity against sunbathing on the beach, no horse riding activity will be allowed on the beach road. Alternative one as step one solution is a preferable one. However this solution may encounter the problem of land aquisition and problem of attracting riders. Alternative 2 will be a more feasible solution. The location of horse riding sites are difinitely defined with physical barriers at the designated area. Some possible sites are the areas used as existing car parks behind the temporary boat mooring areas.

However alternative 2 solution still remain as a visual and physical solution source on beach even in temporary measure. Alternative 3 provide most direct solution to the problem by positioning the activity into the least favorable area for the business, so the horse riding activity will be kept at the minimum scale until the provision of the horse riding field in inland activity zone.

3.8 INLAND ACTIVITY AREA

3.8.1 Development Policies

(a) As supplementary activity to the ocean activity

The physical potentiality for ocean activity is unfavourable for diversified professional ocean sports lovers. But the need to extend the number of nights of stay is ever increasing in the future development of Pattaya beach, so that adequate inland activity development is required.

(b) Inland activity with Thai favor.

In order to develop attractive inland activity zone, definite Thai atmosphere has to be introduced in the activity zone.

(c) Availability to the local community and day-trip visitors.

From the standpoint of community development in the tourism development objectives, inland activity facility have to contribute to the improvement of community life.

3.8.2 Evaluation of Suitable Inland Activity Zone

(a) Physical features

Concentrated tourism development is recommended in this project. Inland activity area should be conveniently located near the lodging area and community area. Since most of the foreign visitors arrive by buses, the inland activity area has to be accessible by walking or bicycle.

From the point of conservation of natural resources, the appropriate policy for the swamp and land of high elevation is to increase the potential beauty of the area instead of eliminating these area for other purposes. One way to achieve the above objectives is that development of park-like inland activity should be the first priority for the swamp area and horse riding and other appropriate activities be located at the high elevation area.

With the above mentioned criteria in mind the selection of suitable inland activity location is made.

(b) Social feature

The approach to successful tourism development rely on adequate control between tourist oriented area and local community area. The detrimental effects of tourism developments to the local community are easily pointed out in the other international resort. It is a firm belief that the best solution to the above problem is to set up some kind of buffer zone which will also

serve as the contact zone in the form of inland activity area between the tourist and local people. Moreover, local community will be able to benefit from the inland activity facilities and its space. The social and economical conditions of the future community will be greatly improved and tourist oriented area will be less disturbed. The existing open space, including the swamp area along the backside of the hotel area should be implemented as inland activity area.

3.8.3 Planning Concepts

(a) Establishment of inland activity corridor to combine various activities

(b) Characterization of 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

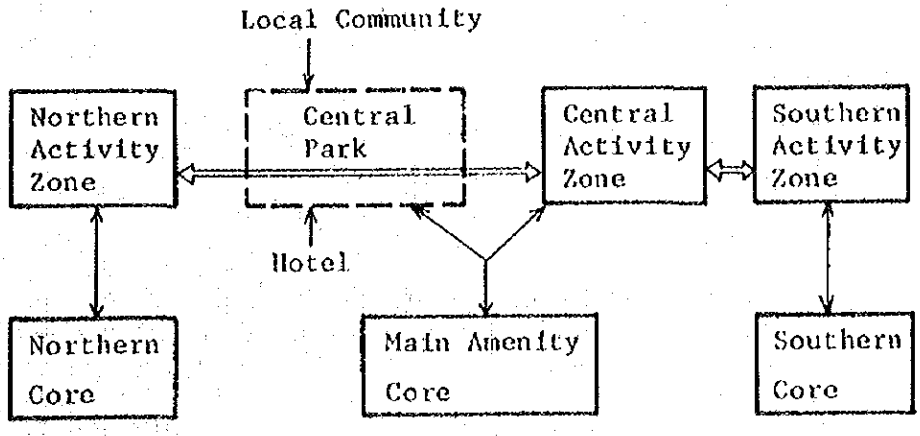
(c) The above mentioned activity zones are connected with park-like natural open space. Various resting areas, playgrounds, picnic areas, fishing areas are inter-connected with pedestrian and bicycle paths which go around swamp and ponds.

(d) Converting existing swamp area into pond and water surface with tropical water flowers and vegetations.

(e) Development of the passage ways for the local people from the residential area to the hotel through inland activity park zone to the benefit of local people.

(f) Appropriate access way to inland activity corridor for participants from hotel area and other areas.

Fig. 3.8.1 Inland Activity Corridor



3.8.4 Development Plan

(a) Criteria

1) Easy phasing
2) Economical feasibility
3) Preservation of nature
4) Safety and comfortability
5) Variety in special experiences
6) Easy access
7) Tropical atmosphere
8) Clarification and definition of the various activity zone requirement

(b) Summary of inland activities

The financial feasibility studies for inland activities other than park zone activity are suggested before implementation.

Table 3.8.1 List of Inland Activity (Unit: ha)

	Phase 1	Phase 2	Total
Northern Activity Zone	80	-	80
Sport zone	10	-	10
Natural zone	70	-	70
Central Activity Zone	19	176	195
Orchid garden	4	-	4
Elephant-at-work display	4	-	4
Animal park	5	10	15
Botanical garden	6	6	12
Natural park	-	20	20
Fruit farm	-	70	70
Racing circuit (existing)	-	-	70
Southern Activity Zone	-	45	45
Golf course	-	40	40
Sport zone	-	5	5
Central Park	40	-	40
Southern Park	-	20	20
Total	139	241	380

(c) Northern activity zone

1) Concepts in zoning of activity

There are two main activity zones which are the sport oriented activity zone and the natural field zone

a. Sport oriented activity zone (activity center)

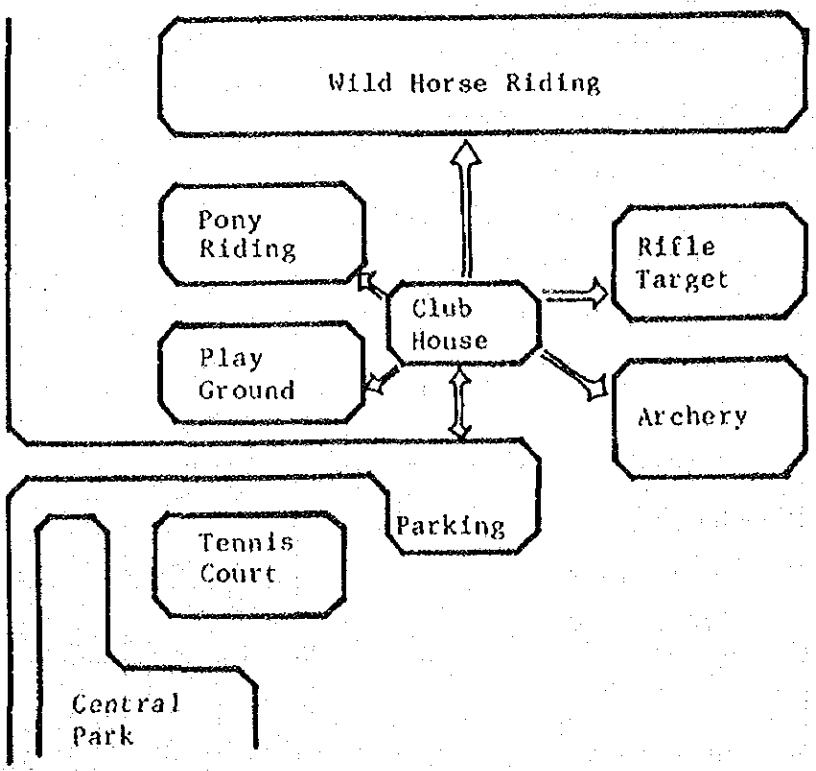
The following activities are recommended in this activity zone: Tennis courts, pony riding, archery, rifle shooting etc.

b. Natural field zone

Horse riding areas, cycling courses are provided according to the natural contour of the land.

The functional relationship of the above mentioned activities are shown in Fig. 3.8.2.

Fig. 3.8.2 Functional Relationship of Northern Activity Zone



2) Site plan study of northern activity center

Alternative "A"

Merits
1. Available open space for expansion of activity center
2. Stronger relation to the northern core

Demerits
1. Too far to the edge of central activity area and the hotel area.
2. Natural amenity in natural condition is rather weak
3. Not good location for the local community participation
4. Too far away from shopping area

Alternative "B"

Merits
1. Closer relation to the center of hotel area
2. Strong linkage to the existing shopping area
3. Fair natural amenity condition with pond
4. Ample open space for future expansion of activity
5. Better location of the activity center for the local community

Demerits
1. Less emphasis on the linkage between the activity center and northern subcore.

Alternative "C"

Merits
1. Better amenity in natural condition
2. Better location for the local community participation
3. Fair location to the hotel area

Demerits
1. Limited open space for activity
2. Too far away from northern core and northern shopping center
3. Weaken the northern park zone from the activity center

With careful examination of above merits and demerits in the three alternatives, it is recommended that the alternative "B" is the best location as the northern activity center.

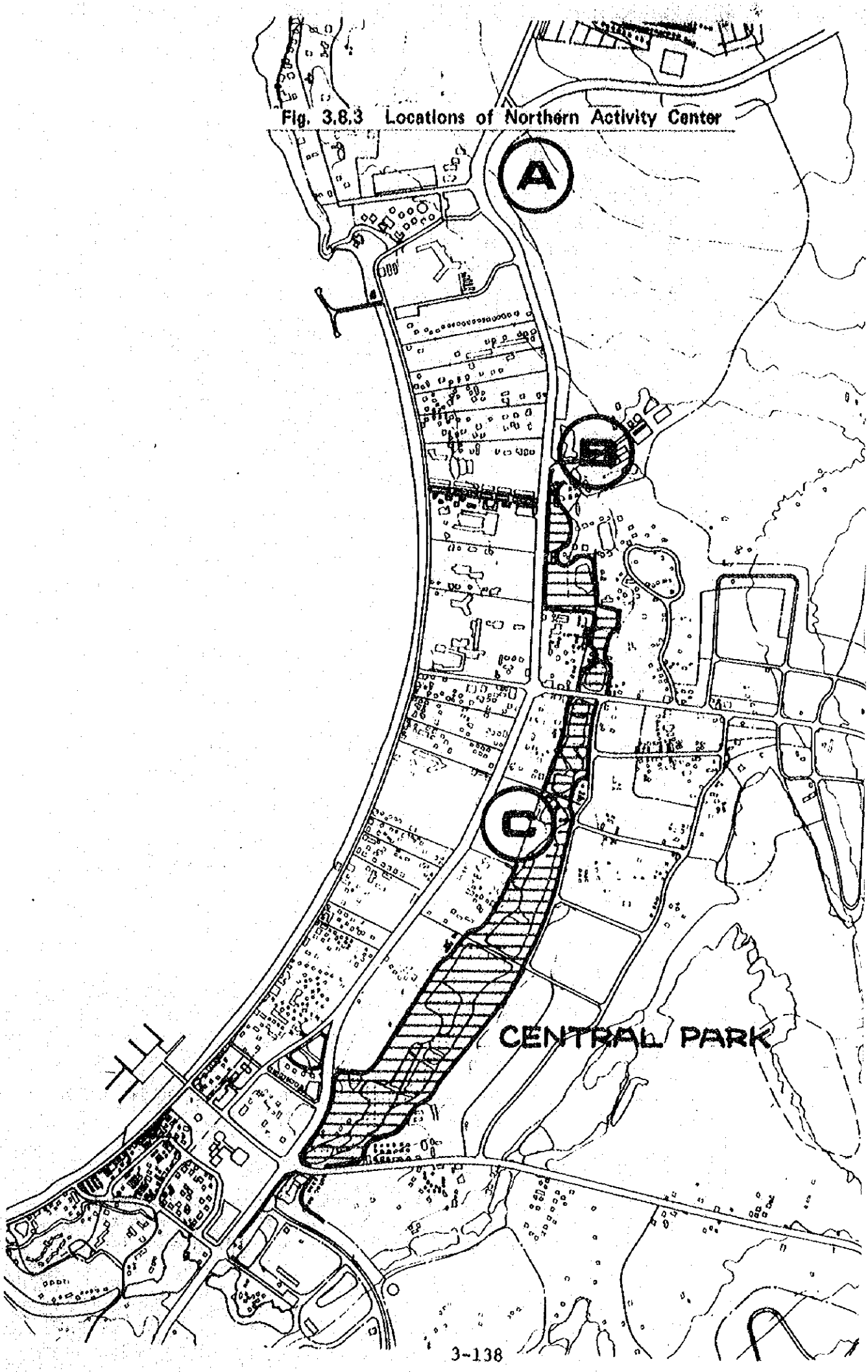
(d) Central activity zone

The following activities are considered in the central activity zone.

1) Orchid garden

Orchid are not only displayed, but may also be sold to the visitors on the site, so that it will not only serve as a tourist attraction but will be self sustaining as a local industry.

Fig. 3.8.3 Locations of Northern Activity Center



2) Elephant-at-work display

Field works by elephants will be shown in the elephant park.

3) Animal park

Tropical animals such as reptiles are displayed in the more natural settings with Thai atmosphere.

4) Botanical garden

Emphasis on the collection of tropical plants.

5) Natural park

The function of the park will be for appreciation of natural forests by pedestrians and bicycle riders. This will also become a reserved area for future expansion for other activities.

6) Fruit farm

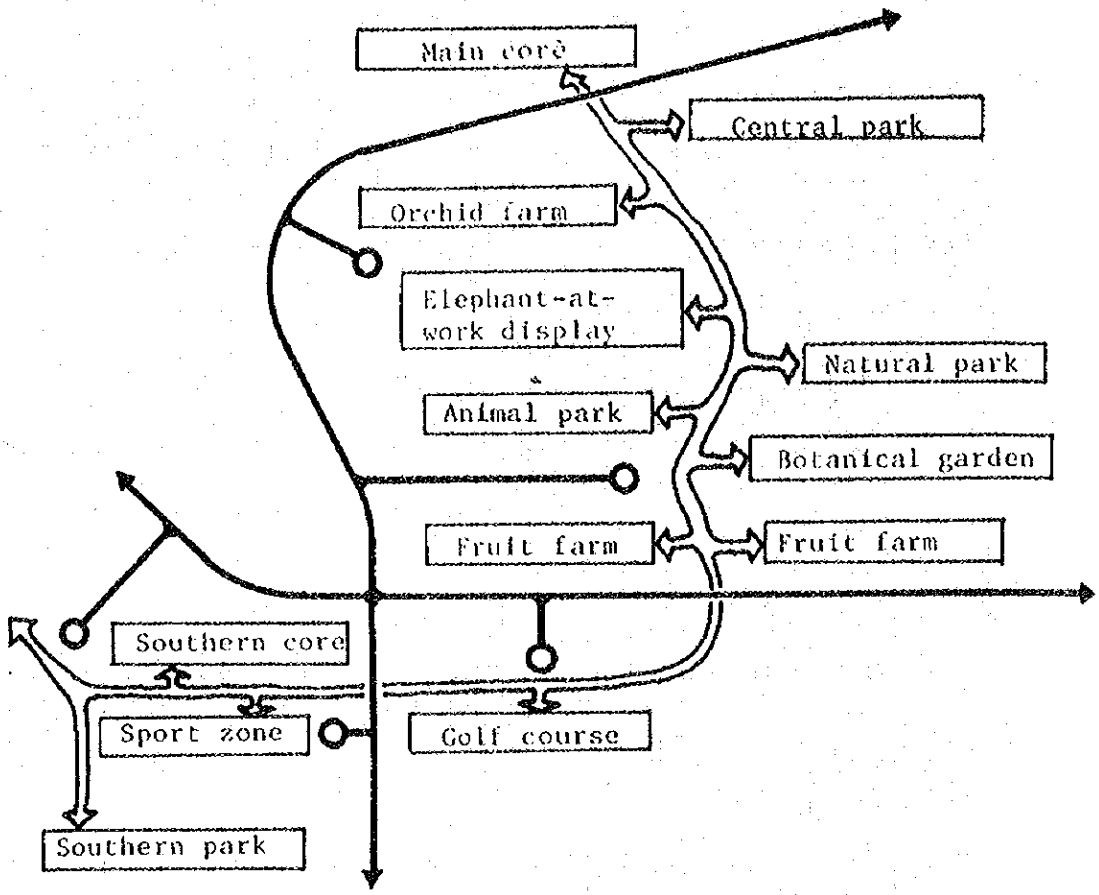
Thai cultivated special fruits are displayed and may be sold to the visitors. The products from the farm may be supplied to the hotels and restaurants in Pattaya.

7) Racing circuit

Improvement of existing facility is to be done for more effective use as tourist facilities.

The functional relationship of the central activities are indicated in Fig. 3.8.4.

Fig. 3.8.4 Functional Relationship of Activities in the Central and Southern Activity Zone



(e) Southern activity zone

The utilization of the slope facing the sea is taken into consideration in the planning consideration of a 18 hole golf course. Tennis courts and a public pool are also provided along the lagoon as shown on the illustrated plan.

(f) Central park-zone

1) Concepts in the usage of the central park.

The inland area behind the existing accommodation zone contain, continuous swamps and ponds. In the respect of drainage of the storm water, adequate storm water channels have to be provided. Overall development of park including pedestrian ways, bicycle paths and resting facilities along the ponds, swamps and channels with water flowers and vegetations should be promoted to be used by the visitors and local people alike.

2) Alternative solution of central park

There are four possible solutions to improve the existing open space for inland activity park zone.

Solution "A"

Improvement of existing swamp area to remain as natural swamp and pond with tropical flowers and vegetation.

Merits
1. Most economical solution
2. Preservation of natural condition
3. Best effect for aesthetics
4. Creation of best scenery walkway and pedestrian path.
5. Advantageous to the natural cleaning process of waste water from hotel area
6. Acting as reservoir for storm water drainage
7. Prevention of discharge of dirty rain water into the sea during heavy rains
8. Acting as a definite physical buffer zone between hotel and residential areas.

Demerits
1. Requires a careful site development and engineering study to control water level.

Solution "B"

Introducing sea water into swamp area for developing inland lakes.

Merits
1. Dynamic aesthetical creation for park activity
2. Clean water would flow into lakes to maintain quality of water
3. Possibility of inland beach area and marina area

Demerits
1. Vast investments required
2. Possibility of affecting ecological condition around the area
3. Possibility of affecting surrounding underground water condition
4. Requires delicate engineering study to keep sea water clean
5. Large scale demolition of existing local houses necessary

Solution "C"

Filling in swamp area to create park with storm water channel.

Merits
1. Simple feasible solution to take care of storm water problem
2. Producing more open space for actual activity facilities

Demerits 1. less attractive and monotonous activity park zone
2. Requires rather large scale investments
3. Unattractive channel existance
4. Less possitive solution as buffer zone
5. Problem of dirty storm water flowing into the sea during heavy rains.

Solution "D"

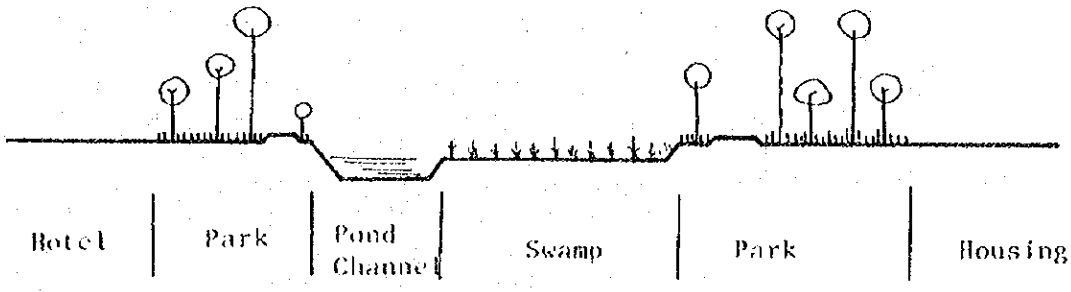
Using existing open swamp area to make park zone with minimum improving.

Merits 1. Least investments required
Least disturbance of ecological condition

Demerits 1. Existing swamp requires some improvement for park zone activity
2. Rather limited aesthetical improvements for the activities
3. Requirements of engineering solution to the problem of storm water drainage
4. Less variety in promotion of activities.

After careful consideration, it is recommended that solution "A" is the most desirable alternative.

Fig. 3.8.5 Section of Central Park



(g) Southern park

The island formed in the process of lagoon construction will be developed as the sea life park. This sea life park includes various facilities like aquarium, shark channel, ocean museum, marine land which give attraction to the foreign visitors and which also fulfil educational purpose to day-trip visitors. Provision of beach on this island will also satisfy the need of day-trip visitors.

3.9 ISLANDS

3.9.1 Development Policy

(a) Ko Lan Island

1) Emphasis on the natural beauty.

- White coral sand
- Coral reef
- Scenery of the island

2) Promotion of activities

- Ocean activities
- Swimming
- Day camping
- Sightseeing
- Fishing
- Diving
- Supplemental inland activities
  - Hiking
  - Sunbath camp
  - Golfing

3) Man-made facilities to be kept at the minimum

(b) Ko Phai Island

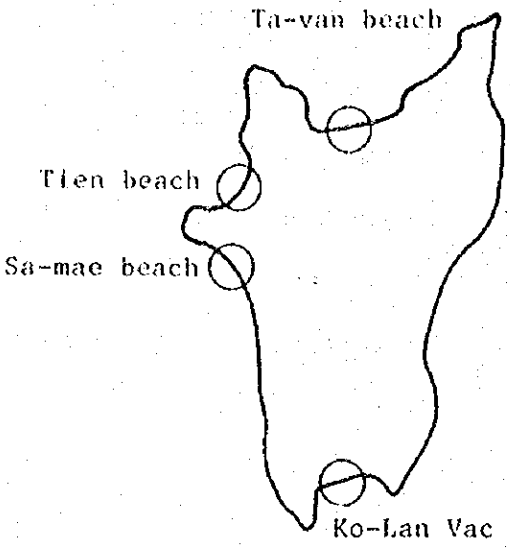
1) Emphasis on natural preservation limiting facilities only to camping or other casual activities.

3.9.2 Development Concept for Ko Lan Island

(a) Background

As shown in Fig. 3.9.1 the island has four small beaches along the coast and a 200m high mountain in the middle. Overall effects of the beaches and the mountains show beautiful nature of the island. Permanent local population in 1976 was about 1,420 people and almost all of them live in the fisherman village of Ban Ko Lan.

Fig. 3.9.1 Beach Location of Ko Lan



The beach located at the farthest southern part of the island has been developed by a private investor (Ko Lan Vac) and a future development plans for the property have been prepared which includes a 250 room hotel and various other facilities and activities. As long as the proposed facilites are adequate scale and in line with the principle of the development policy, Ko Lan Vac proposal would be implemented as a part of the developments of the island. However, the proposal of seaquirium facilities should be discouraged to avoid duplication with similar facilities on the mainland.

(b) Development concepts

1) Promotion of tranquil beaches

Essential usage of the beaches is aiming for day camping function, and service facilities are recommended to be minimum scale. Accommodation facilities are provided only at the Ko Lan Vac development area and other service facilities are located in the manner based on the principle of planning shown on illustration.

Transportation facility	- Pier
Beach facility	- Locker room Changing room Shower room Toilets
Safety facility	- Police box First aid station
Amenity facility	- Shops Restaurants

Clustered service facilities are provided at the area closer to the pier to allow the unified service development and to reserve the tranquil private beach space for day campers. The service center planned to be located between Sa Mae beach and Tien beach are utilized by visitors on both beaches which make possible two beaches to be used all year round. Ko Lan Vac beach services are privately provided by the developer.

2) Safety measures

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

3) Provision of inland strolling routes

Establishment of strolling network as extension of day camping activities will add attraction to the beach activity. Strolling routes and view terraces are strategically selected to appreciate the natural beauty of sourrounding resources.

4) Provision of transportation system

The accessibility by ferry boats to the mainland Pattaya will be improved and the unnecessary expansion of mooring area by the ever increasing uncontrolled boats ought to be avoided by the means of pier and regulation.

5) Ban Ko Lan as a service town

Until now, Ban Ko Lan village has been growing as a fisherman village. However, taking into consideration of the trend of movement of tourism related population to this village, service function to the tourism industry will be added to the fishery function of the village.

3.9.3 Scale of Beach Service Facilities

(a) Projection of the volume of visitors to Ko Lan Island

In order to determine the distribution of the Ko lan visitors to the three beaches, the following seasonal usage pattern of the beaches are defined.

Period used	Beach
March to September (wet season)	- Ta Van beach - Tien beach - Ko Lan Vac beach
October to February (dry season)	- Sa Mae beach - Ko Lan Vac beach

Estimation of total visitors to Ko Lan Island

	1981	1986	1996
Arrivals/day	1,600	2,000	2,900

Distribution of the visitors to the 3 beaches is made considering the density of the beaches.

From March to September

	1981	1986	1996
Ta Van beach	900	1,120	1,630
Tien beach	380	480	690
Ko Lan beach	320	400	570
Total	1,600	2,000	2,900

From October to February

	1981	1986	1996
Sa Mae beach	1,260	1,570	2,280
Ko Lan Vac beach	340	430	620
Total	1,600	2,000	2,900

The total number of visitors at the three beaches are well under control from the point of beach density criteria, which are 15 m^2/person on average days and 10 m^2/person on peak days.

(b) Study of beach service facilities

Provision of the beach service facility are studied for Ta Van beach and Sa Mae beach.

1) Changing rooms, shower rooms, lockers, toilets

		Arrivals	Building area (m^2) Changing room, Shower	Locker	Toilet	Total area (m^2)
Sa Mae beach	1981	1,260	162	67	114	343
	1986	1,570	201	84	141	426
	1996	2,280	294	122	204	620
Ta Van beach	1981	900	117	48	81	246
	1986	1,120	144	60	102	306
	1996	1,630	210	87	147	444

The above results are calculated based on the following unit data

	Changing room	Locker
Occupancy rate	90 %	40 %
Rotation rate	21 times/day	1.5 times/day
Unit area requirement	3 m^2/person	0.2 m^2/person

Toilet 3 compartments/100 persons
3 m^2/compartment

2) Police and first aid station

The facility combining the police and first aid station is located at the service area of Ta Van beach and Sa Mae beach. The service of police is done by field inspection.
Area of the facility : 30 m^2

3) Shops and restaurants

Service facilities of shops and restaurants will be controlled, and visitors coming with self-prepared food and drinks will be encourage. The facility scales are determined, on the assumption that 20% of visitors eat and shop at the restaurants and stores and their expenditure is estimated at about 80 Bahts/person.

October to February

Building area (m^2)	1981	1986	1996
Sa Mae beach	1,280	1,610	2,310

March to September

Building area (m^2)	1981	1986	1996
Ta Van beach	900	1,130	1,620
Tien beach	380	480	690

Basic units

Restaurants

Patronage rate	20 %
Rotation	5 times/day
Unit area	15 m^2 per/person

Shops

Net shopping area per unit of sales	10,000 Bahts/m^2 per year
Net and gross ratios	70 %

4) Summary of service area

Sa Mae beach service area

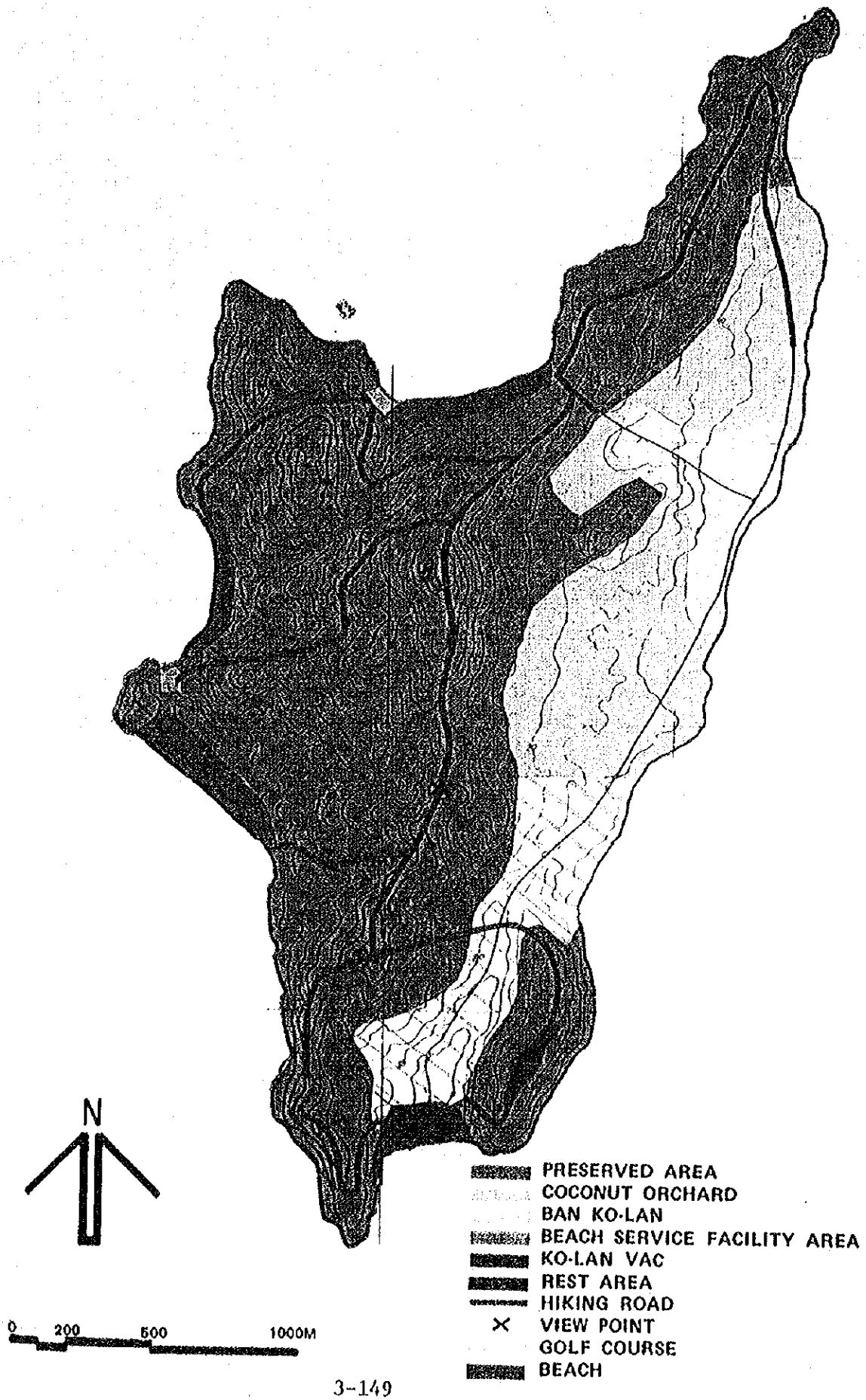
	Area in m^2		
Facilities	1981	1986	1996
- Shops & restaurants	1,280	1,610	2,310
- Police & first aid station	30	30	30
- Bath house	348	426	620
Total building area	1,653	2,066	2,960
Total land area	4,100	5,200	7,400

Ta Van beach service area

Facilities	1981	1986	1996
- 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

Service facilities are functionally located between piers and beaches and lower building coverage ratio of the facilities is proposed to preserve the image of Ko Lan as an island of natural aesthetic beauty.

Fig. 3- 2 Development Plan of Ko-Lan



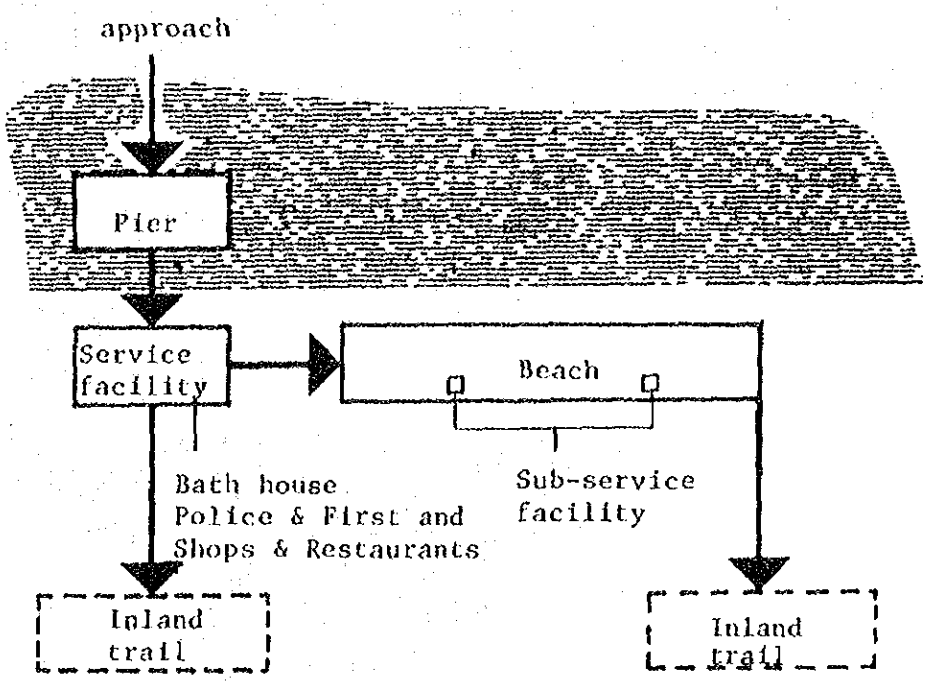
3.9.4 Development plan

(a) Improvement plan of beach area

1) Design principles of pier and service facilities

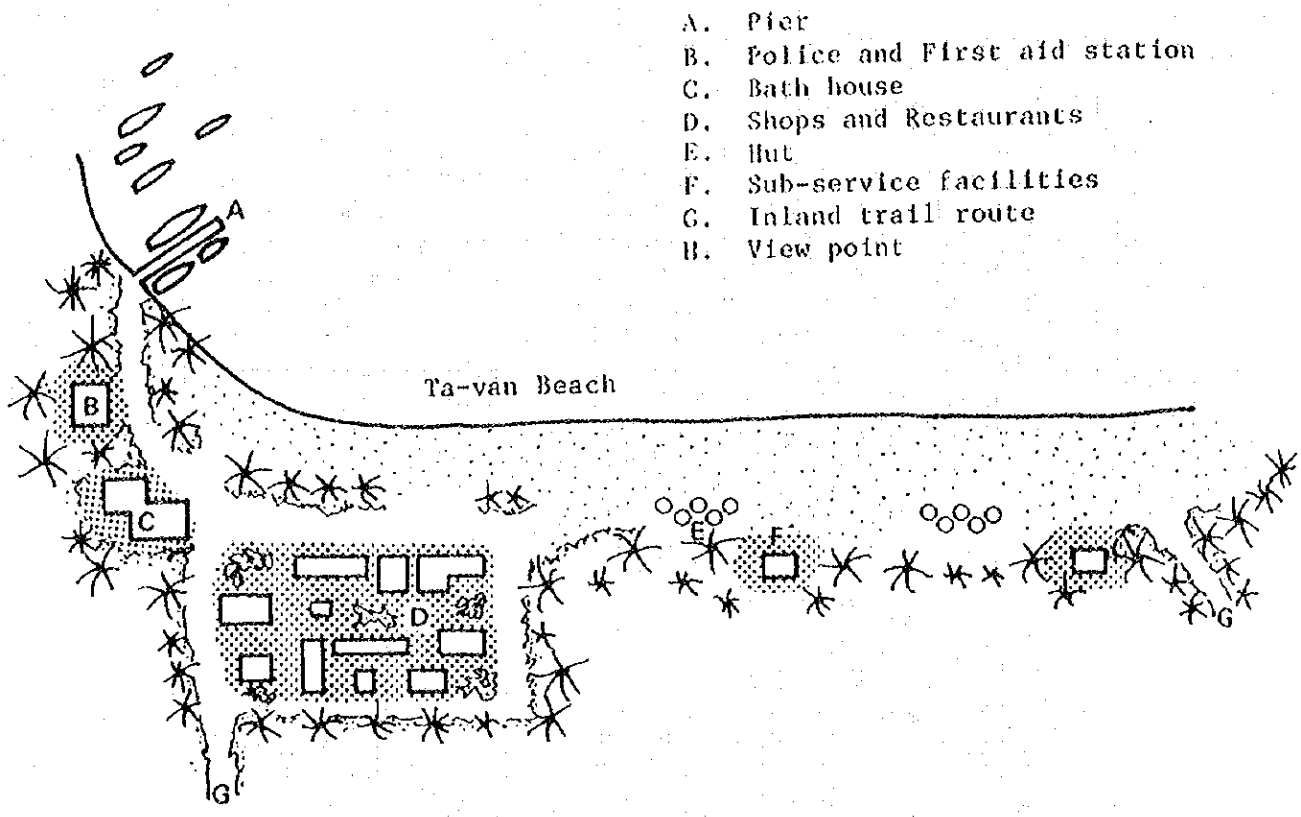
Service facilities are clustered around the pier to reserve open beach and day camping area. Observing the existing condition of service facilities which occupy the whole space behind the beach, it is considered necessary to rearrange the service facilities and to lease the open space for day camping activities instead of narrowing the limited beach area. The cluster solution is considered superior to the set back solution of the facilities. The concepts are shown as follows:

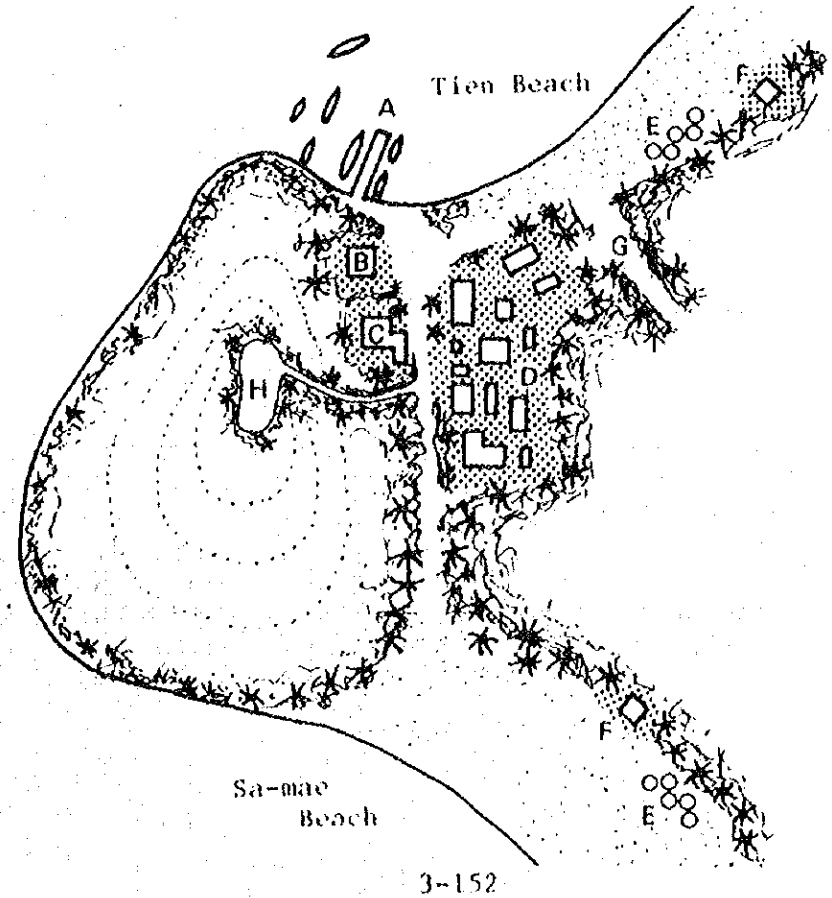
Fig. 3.9.3 Design Principle



In order to control unnecessary development of service facilities, only one service core is provided at the area between Tien beach and Sa mae beach. This service core will be catering for both beaches. Park-like shopping and restaurant area will give best atmosphere in this development area. Careful site plan analysis of various service facilities has to be made in the design development stage. Tentative illustration plans are shown in Fig. 3.9.4.

Fig. 3.9.4 Illustration of Beach





2) Zoning of water surface

Zoning control regulations will cover the six zoned areas as follows; swimming zone, quiet zone, slow activity areas, high speed zone, caution zone and water skiing zone, the definition being the same as that for the mainland Pattaya beach. Physical application of zoning is shown in Fig. 3.9.5.

3) Police box and first aid stations.

It is of great importance to guarantee visitor's safety in order to maintain international standard of the resort. Facilities of police and first aid stations are located at each beach. Police service is carried out by field inspection. Regarding the first aid service, coordinated plans to deal with serious injuries have to be established in advance, such as relaying patients to Ban Ko Lan or polyclinic and hospital in the mainland.

(b) Development concepts of inland activity

Major developments of inland activity have been carried out by Ko Lan Vac. Future expansion of inland activity will be studied for their concurrence with the development concepts. The following facilities utilizing the natural mountainous area shall be provided. They are picnic area, sunbath camp, cable car, mountain-top restaurants, and other strolling routes connecting beach areas and mountain tops leading to viewing terraces.

(c) Ban Ko Lan development

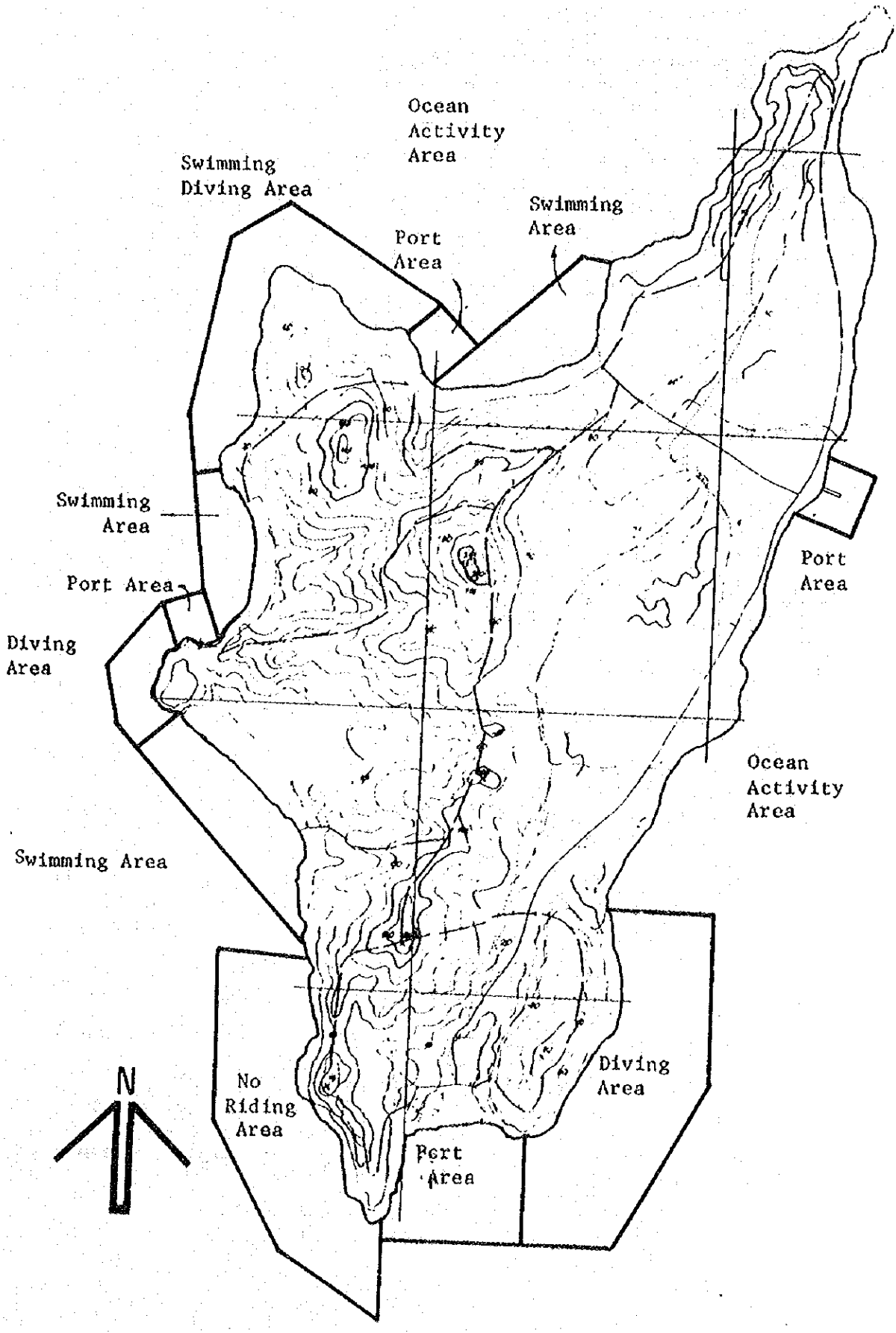
1) Projected population of Ban Ko Lan.

The estimated existing population on Ko Lan Island is about 1,420 persons, of which 1,200 persons are related to the local industry and the remaining 220 are related to the tourism industry. In future, tourism related population will increase as the number of visitors to Ko Lan grows. Assuming 20% of visitors will spend an average of 80 Bahts for lunch and shopping and 20 bahts for inland activities. The number of employees to the tourism industry will be as follows:

	1981	1986	1996
Shops and restaurants	260	340	480
Other facilities	60	90	110
Hotel employees	120 *	380**	380
	440	810	970

* 78 unit x 1.5 person/unit
** 250 room x 1.5 person/room

Fig. 3.9.5 Zoning of Water Surface



Total population of tourism related industry based on the employment of ratio 50% will be as follows:

	1981	1986	1996
Population	880	1,620	1,940

Assuing that the scale of existing local industry is maintained as it is the total population of the island will be as follows:

	1981	1986	1996
Population	2,080	2,820	3,140

The above projection includes an assumed 300 persons provided with housing facilities by Ko Lan Vac for service staff of their hotel in the second phase development. The adjusted population of Ban Ko Lan excluding the 300 will be as follows:

	1981	1986	1996
Population	2,080	2,520	2,840

2) Provision of Ban Ko Lan facilities.

a. Small scale service town development around the existing village.

Recommended gross density: 150 persons/ha

b. Service facilities and infrastructure service provision will be kept to the minimum.

- provision of infrastructures
- a primary school
- a polyclinic
- a town hall
- other service facilities

3.10 RESIDENTIAL AREA

3.10.1 Forecast of Future Population

(a) Tourism industry and local community

There are at present about 42,500 permanent residents living in this study area. 40% of the population are employed. The employment structure is summarized as follows.

Agriculture and fishery	11.2%
Production process	1.7%
Service	87.1%

Considering future development of Pattaya, service function will increase in importance. From the stand point of local area development, Pattaya tourism development would have to keep improving following relationship in order to produce advantage on multiplier effects.

1) Relationship to the local commercial enterprise.

As the number of tourist arrival increase, tourist service function will be accelerated. Simultaneously the potentiality of local community service function would be raised and developed into the high level of economical structural development. Especially future Na Klua commercial center will function not only as a local community center but also as a central commercial center of the whole tourism study area.

2) Absorption of labour force

As the tourism development progresses, demand for labour force and employment opportunity will be increased. At present, around 80% of hotel employees are brought into Pattaya from Bangkok. It is also understood that good, trained labour is hard to find in the local community. Therefore it is necessary to provide a good education and training opportunity for the local population. As a result, mobility of the local population will be stable and local community will benefit from the tourism development.

3) Redevelopment of local community

Since the economical base of the local communities relies heavily on tourism industry, in order to prevent failure in coping with the population increase by social development, new town planning approach has to be taken, with the following two objectives:

1. Avoiding confusion and disturbance between tourism area and local community area.

2. Providing comfortable, well planned functional community development.

The community towns are planned to locate near the hotels. These communities have their own service core to support their essential daily needs and supply the cultural stimulation. But these cores should have clearly defined different function from the Na Klua commercial center. These community development considerations will promote community awareness in spiritual and economical participation which naturally will lead the Pattaya tourism development to become more exciting international resort with a local atmosphere.

(b) Estimates of future population

The estimation process of hotel related service population is based on frame work flow chart as shown in Fig. 3.10.1.

1) There are 1,900 farmers and fishermen in the study area at present. Taking into consideration future development of sophisticated economical structure, local industry population would gradually absorb the major portion and it is assumed that the agriculture and fishery population will be reduced to 1,000 in the year 1996.

2) Regarding the production process, there are 300 persons employed in the tapioca factories. Considering the detrimental effects to the tourism development of Pattaya, it is preferred that none will remain for production industry in the surrounding of the study area by 1996.

The frame work of future local community population is estimated as shown in Table 3.10.1.

Fig. 3.10.1 Frame Work Flow Chart

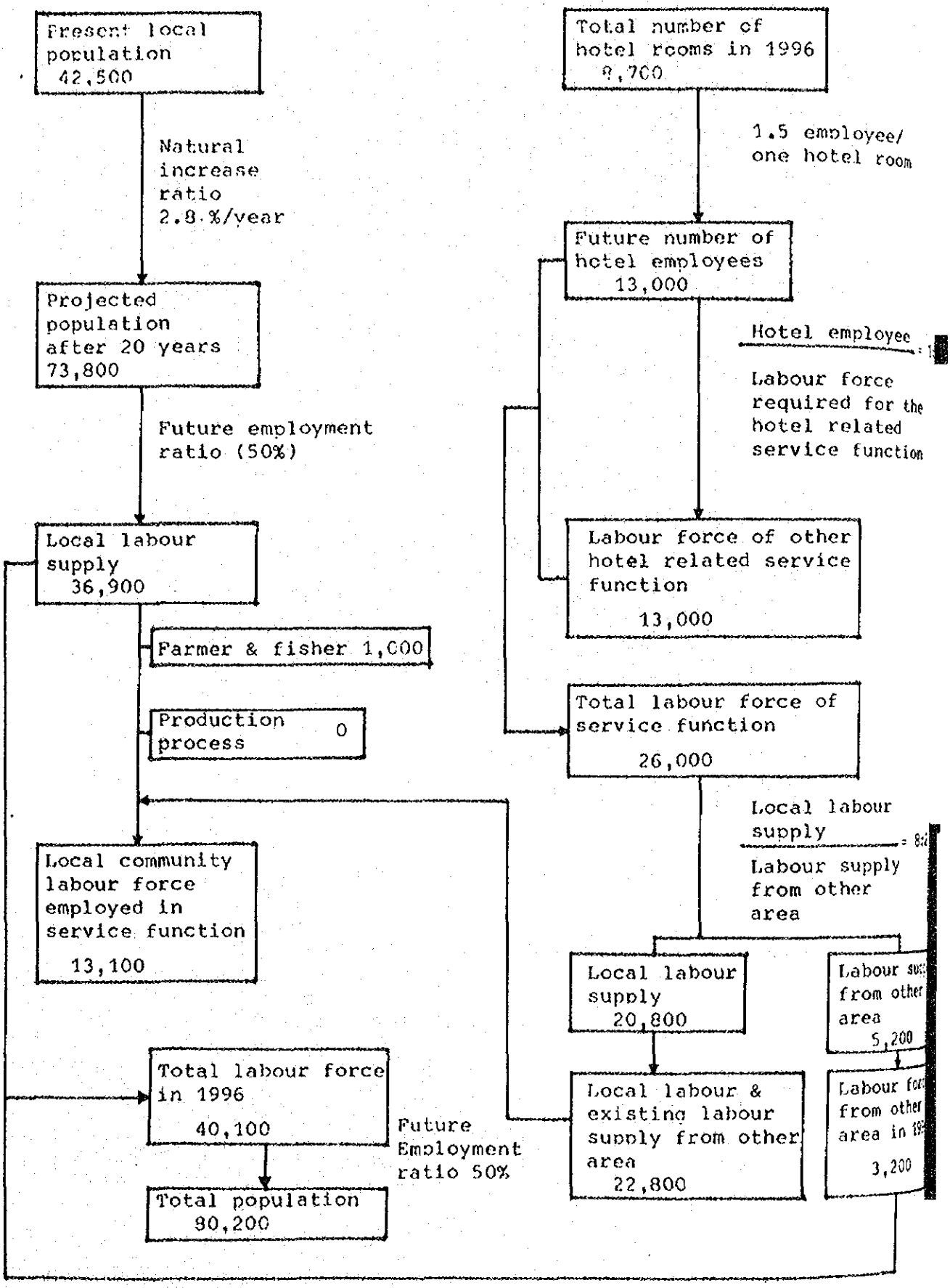


Table 3.10.1 Future population for local community

Items	1976	1986	1996
Total population (persons)	42,500	58,100	80,200
Total employed population	17,000	26,100	40,100
Farmers & fishermen	1,900	1,500	1,000
Production process workers	300	300	0
Service workers for local community	14,800	11,300	13,100
Service workers for tourists		13,000	26,000

Note: The employment ratio for 1986 is assumed at 45% and that for 1996 at 50%.

3.10.2 Development concepts of residential area

(a) Development policy

The following are the main extracted policies related to the development of the selected residential area in the process of the tourism development of Pattaya resort.

1) Separation of the international tourist complex and local residential area.

The activity park zone and green belt zone shall serve to maintain both high quality of local community life and tourist oriented activities. These buffer zones will also serve as the contact zone for mutual communication between the tourist and community.

2) Improvement of the living environment

To eliminate the future expected disparity in the living standard between Pattaya beach hotel area and community residential area, improvement of the living environment would be streesed. For example, community core development with well planned school system, recreational park, public service and other improvements will be provided.

3) Conservation of natural beauty

The existing vegetation, swamp, ponds, rice field and other natural resources will be conserved or utilized as the tourism assets. In undertaking the designing of road networks and sub-division of lots, careful approach would be taken to avoid unnecessary destruction of natural amenity.

4) Less disturbance on the existing property line

In order to reduce frictions during development stage, the existing road network which is closely related to the property division establishment is to be respected unless the road network system is not functioning properly in the overall traffic system.

5) Suppression of the social mobilization of population

An expected population inflow will exert a great impact to the economic, social and physical order of the villages. Therefore the suppression of an unorderly migration of the population will be a key factor in ensuring the orderly implementation of the masterplan.

6) Variety of housing types and low density appearance of the housing area

As a part of tourism complex, the appearance of residential area is a matter of concerned. The harmonious mixture of various housings types to meet the future demand will be a great asset. The low density traditional Thai appearance of the housing area will strengthen the image of rural character of the Pattaya beach resort.

(b) Evaluation of residential location.

Various locations of residential areas which meet the future demand of population increase are studied. There are 9 possible alternative locations in the study area as shown on the drawing, judging from the existing housing distribution and development by private sector.

The following 3 sectors are established for housing area and evaluation will be proceeded accordingly.

a. Na Klua sector:

Area (1) is an appropriate expansion area to absorb the population increase of Na Klua village. Area (2) is recommended to be kept at minimum population to assist healthy development of northern new town. For the same reason, area (3) should not be considered as a development site.

b. Northern sector:

There are four possible areas in this section. Areas (5) and (6) are located most conveniently to the place for work. However they are located contrary to the concept of separation of the tourist related facility and the residential area. Both areas also have limited capacity for future expansion. Area (7) also conflicts with the planning concept of separation of community entrance road and tourist entrance road.

Area (4) has the most potential possibility for a new town development based upon the following merits.

a) Central location in relation to the hotel area

b) Available land for future expansion

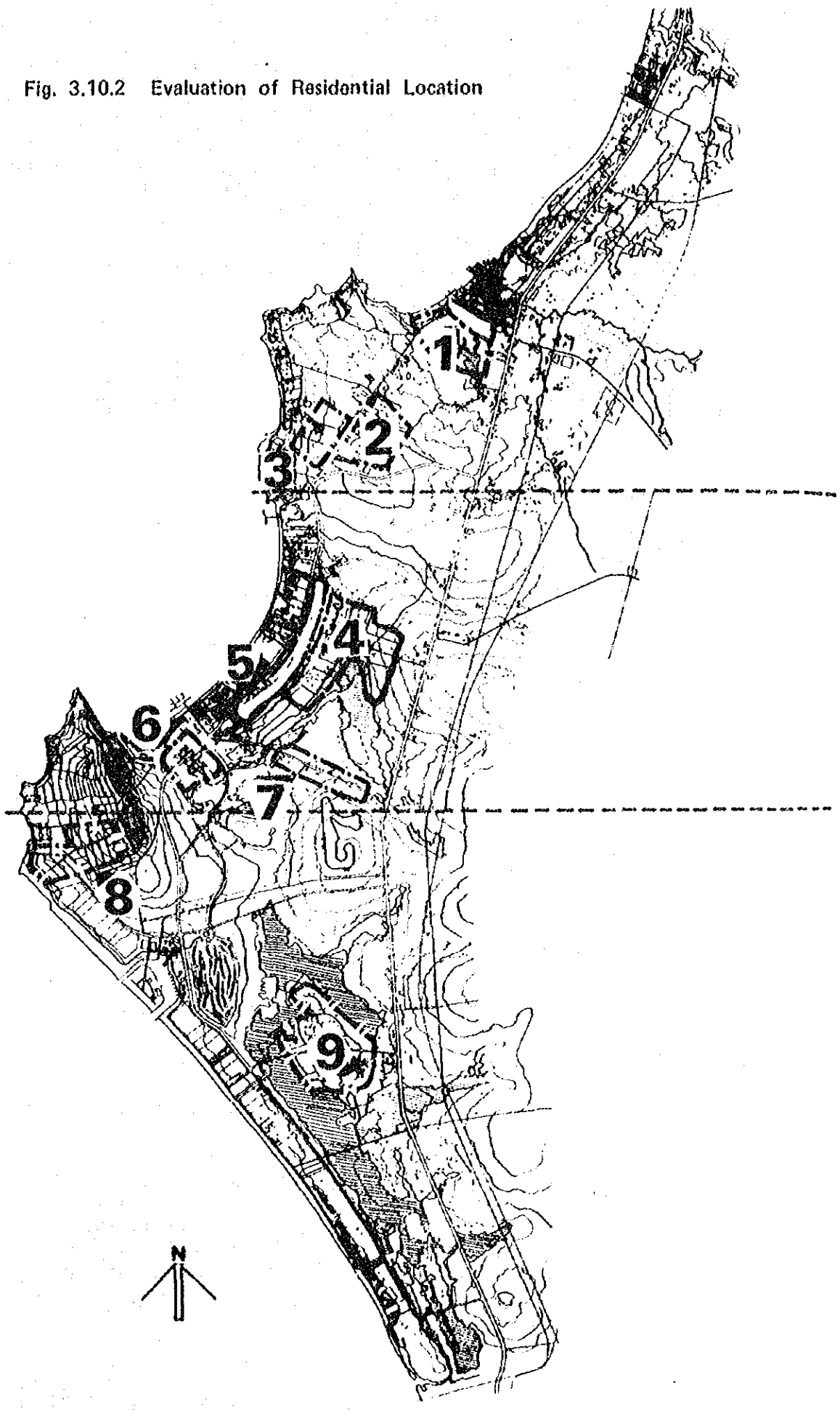
c) Strategic location to the inland activity park zone

d) Efficient infrastructure investment because highly clustered residential area is already existing.

c. Southern sector:

There are two possible alternative areas. The area (8) is located near the hotel area for convenience to the working destination.

Fig. 3.10.2 Evaluation of Residential Location



However land value of this area is probably too high for local residence development. Visual impact of this area is very crucial because of its central location in the resort. This area should be reserved for second-house development. Area (8) location is advantageous for easy access to the working destination but it interrupts the inland activity network. Area (9) is the most feasible location for the southern new town because of its proximity to the working destination and the availability of adequate open space.

Summing up the above evaluation study of locations as housing areas, the expansion of the existing residential area in Na Klua village and developing of area (2) by private sector are recommended for new town development area in Na Klua sector. Area (4) in northern sector and area (9) in southern sector are proposed as the most suitable locations for new residential towns to serve the tourism related facility area.

3.10.3 Frame work of planning

(a) Distribution of existing population

Distribution of population in the study is estimated as shown in Fig 3.10.3. The number is calculated from the total population and the number of housing on the map. The existing population of the concentrated housing area is as follows:

Na Klua	7,700 persons
Hotel area and downtown	8,000 persons

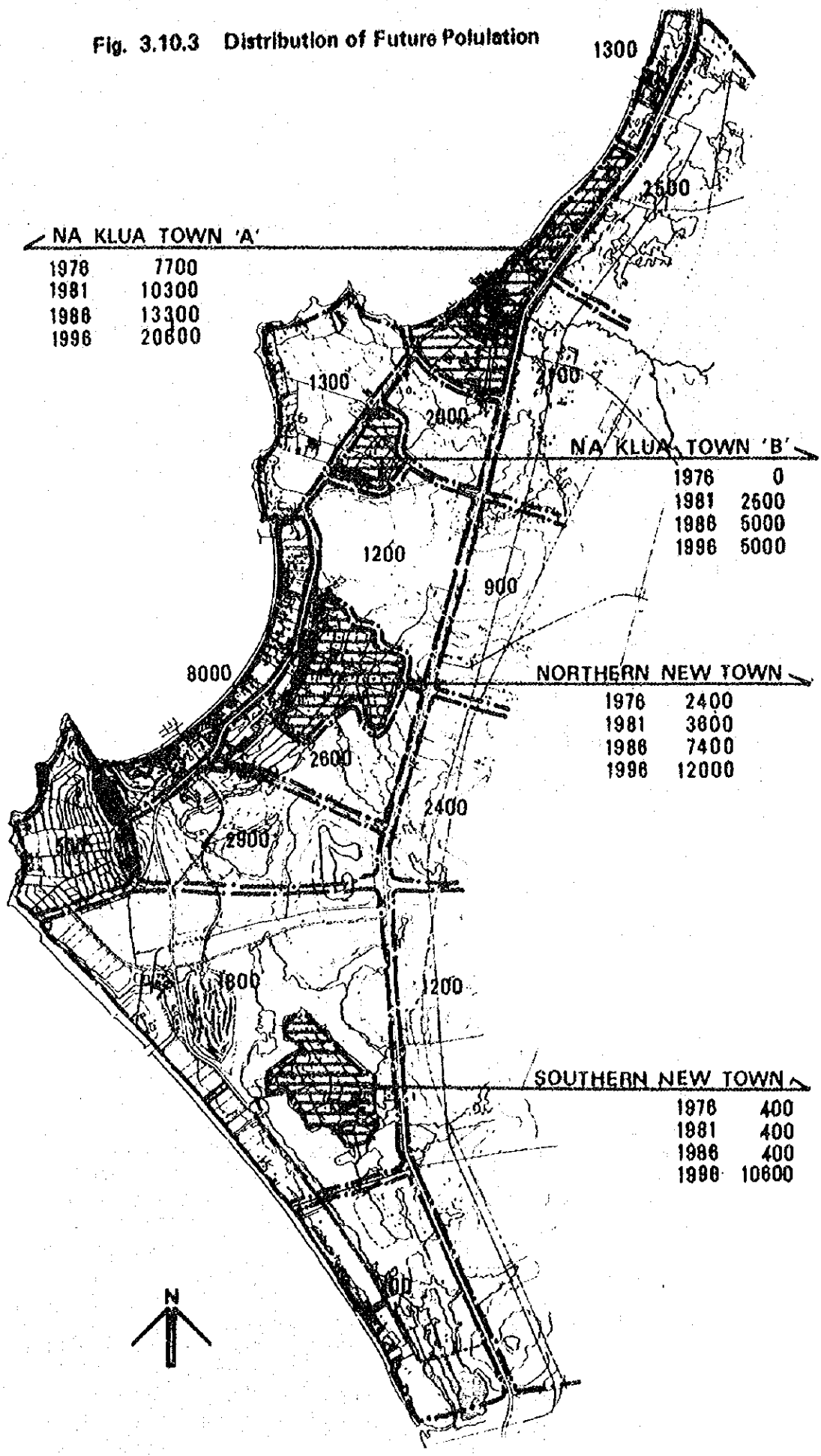
(b) Frame work of planning

1) Distribution concepts of future population

The way to absorb the future population increase in the study area is a critical item to be studied and examined. The outcome of planning will influence the environmental condition of the tourism area, affecting public investments on infrastructure and the level of welfare of local community and convenience to working destinations. Attention has to be paid on the location factors, population distribution pattern and existing housing distribution characteristics. Recommendations are made based on the overall examination of the factors and evaluation of outcomes.

Basically there are two areas of housing development to absorb population increase. One is expansion of Na Klua village. The other is service town developments at the area behind hotel area. In regard with the dispersed population, the removal and transfer of the population

Fig. 3.10.3 Distribution of Future Polulation



into new towns would not be enforced, but rather existing housing areas will be maintained at present status.

Basic direction of future population distribution is as follows:

1. Natural population increase in Na Klua area up to 1996 will be absorbed by the Na Klua town "A".

2. Natural and social population increase around northern hotel area and southern area during first 10 years will be accomodated in northern new town and Na Klua town "B".

3. Natural and social population increase in the southern development area during 1987 to 1996 will be absorbed by southern new town.

4. Half of the natural population increase in the northern hotel area during 1987 to 1996 will be absorbed by northern new town and the other half by southern new town.

2) Population projection

The summary of population projection for each new town, basing on the result of distribution study of projected population is shown on table 3.10.2 and fig. 3.10.3.

Table 3.10.2 Population projection

Year	Total	Na Klua Town A	Na Klua Town B	Northern New Town	Southern New Town	Other
1976	42,500	7,700	0	2,400	400	32,000
1981	48,800	10,300	2,500	3,600	400	32,000
1986	58,100	13,300	5,000	7,400	400	32,000
1996	80,200	20,600	5,000	12,000	10,600	32,000

3) Necessary area of residential area

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

	New Towns	Na Klua Town A
Residential area	65.0	46.0
Commercial	3.0	11.0
Public Facility	7.0	17.0
Open Space	8.0	9.0
Street	17.0	17.0
Total	100.0%	100.0%

c. Area in 1996

Na Klua Town A	180 ha
Na Klua Town B	50 ha
Northern New Town	120 ha
Southern New Town	110 ha

3.10.4 Concepts of planning

(a) Planning Policies

The following are the major projects extracted from the master-plan established for the development of new towns.

1) Establishment of the skeletons of the new towns.

To establish the skeletons of the new town, the upgrading and extending of the major and collector street and the provision of the underground public utility facilities will be carried out, so that the optimum urban growth and the structure of the new towns would be obtained.

2) Provision of public utility service

To establish the major networks of water and electrical power supplies, and sanitary sewage services as a first step for gradually improving the living standard.

3) Formation of the community core

To function as a self sustained service community area, the establishment of community cores which include commercial, public, recreational and institutional facilities will be implemented. The character of the community core is summarized as a center of cultural, social and economical activities of the new towns.

4) Establishment of the public park and pedestrian network

Special provision should be made for establishment of the

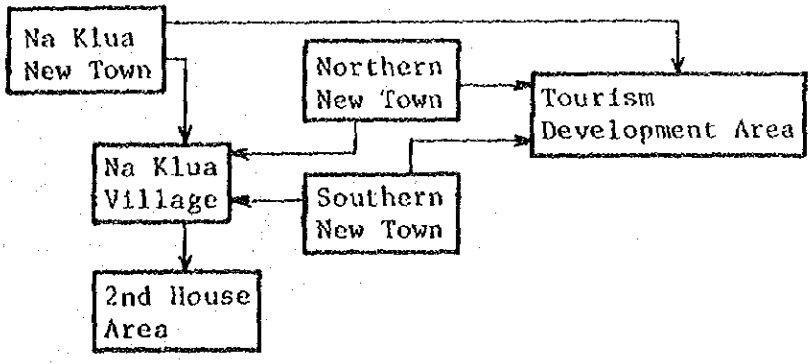
public parks and the pedestrian network from the houses to the working destinations, schools, public park and also to the community core.

(b) Concepts of community structure

Hierarchial organization based on the following social module.

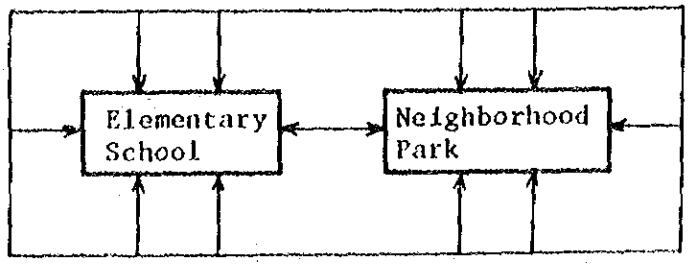
1) Future new town formation

Na Klua village is to be developed as a center of community villages with various special facilities required by over eighty thousands local population. Other new towns are projected to be self-sufficient service towns for the tourism development area.



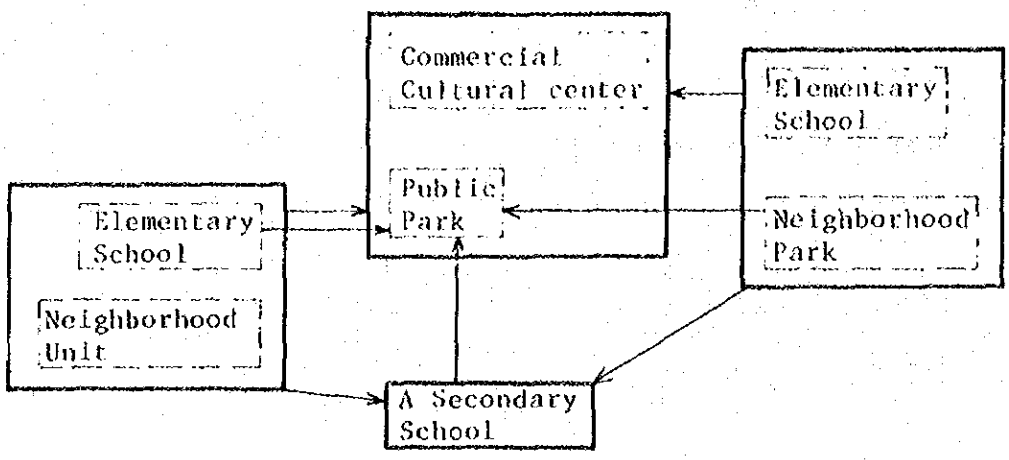
2) Neighborhood units

- Basically, the neighborhood unit will include an elementary school as its community core and a neighborhood park
- Consideration will be made for its recreational center



Neighborhood units (within 500 m walking distance)

3) Secondary neighborhood units



A commercial and cultural center is located at the center of each new town and a secondary school is also located at the close distance to the center to formulate a secondary neighborhood unit within a relatively large public park. The neighborhood parks and the public park are connected with the pedestrian network system, which alternatively contribute towards the formation of secondary neighborhood development.

(c) Development phasing

In the phasing development, the following criteria have been considered.

1) Efficient provision of infrastructure

Existing clustered housing area is taken into consideration for initial development from the point of efficient infrastructure investment.

2) Locating the commercial and community facilities at the center of the new town

In order to function as a center of social, economical and cultural activities, establishment of the core at the central location of the new town is vital for harmonious development.

3) Phased development around the commercial and community development

4) Segmentation of the phased development areas by the main collector roads

This method of development makes it easy to define the area to be developed and to control density and character of the blocks.

5) Formulation of adequate school district and park district.

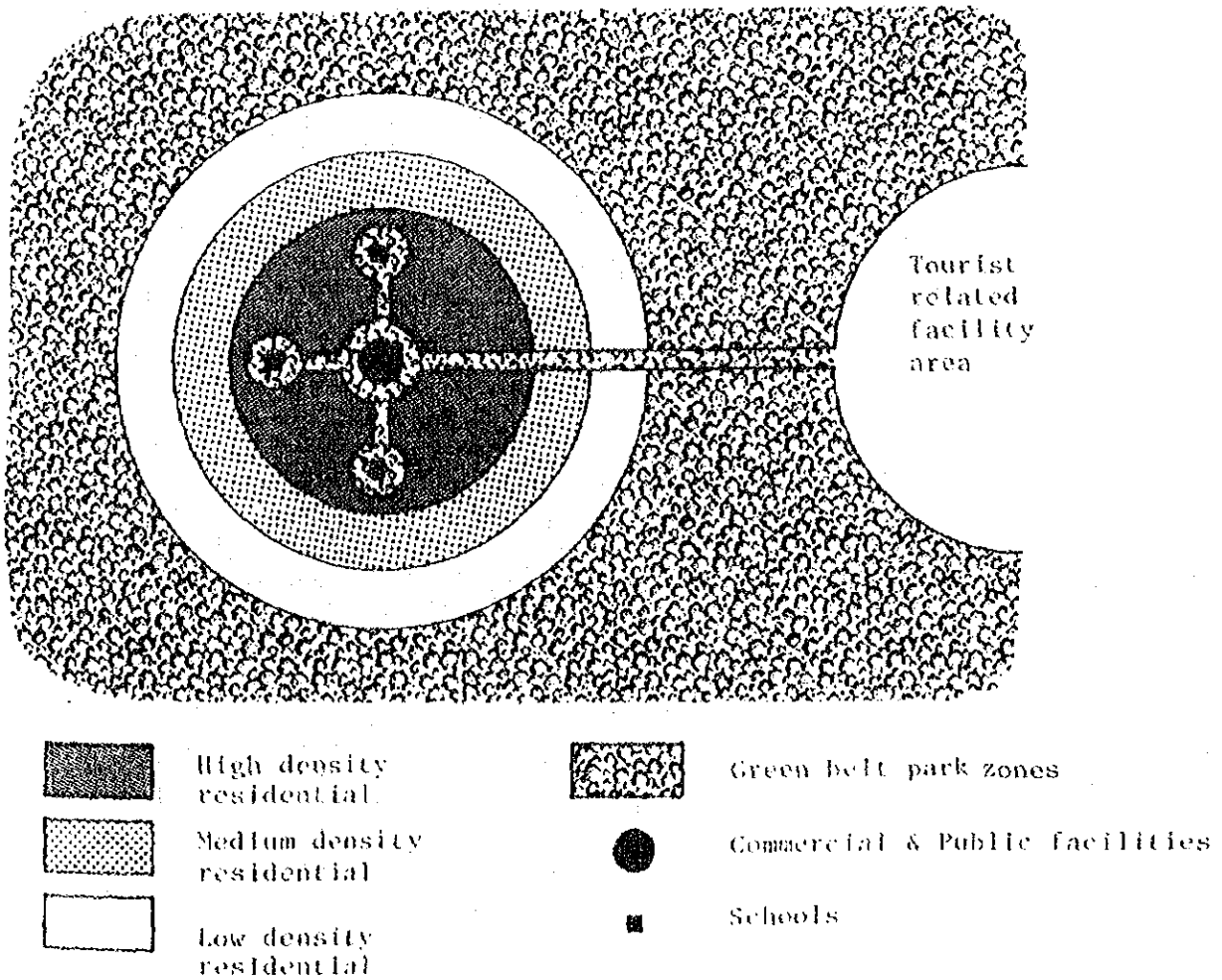
The adequate scale of school district has to be determined to the population distribution at the area. In this case, an elementary school per 5,000 persons and at 500 m walking distance to a school have been established for new town development.

6) Various housing type development at the designated area.

To meet the various demands to the different housing types at each phase, each area has been defined after careful examination of physical and natural conditions and their relation to the other areas to formulate a harmonious new town development.

3.10.5 Physical planning

Fig. 3.10.4 Diagramatic Illustration of Neighborhood Planning



(a) Community core

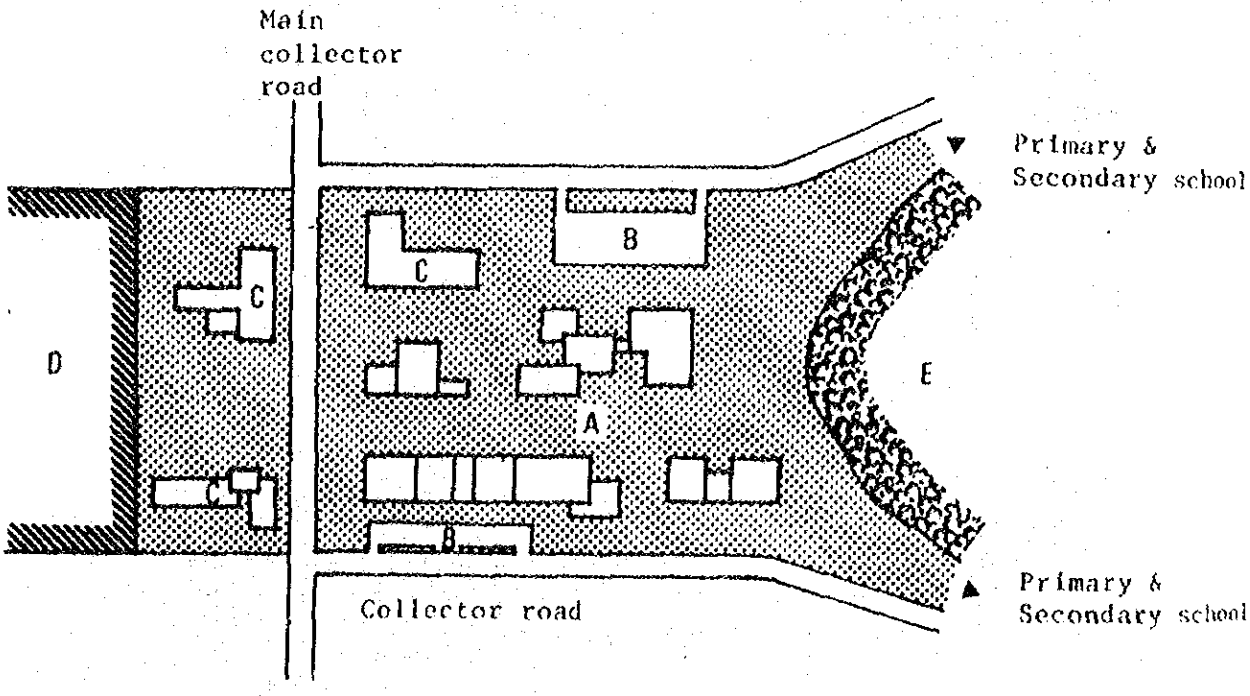
A core area will be defined inside the daily living environment where public facilities indispensable to the neighborhood unit are gathered. It will include such facilities as administrative, educational, medical, neighborhood parks, markets and commercial facilities. Accessibility is the deciding factor for the selection of the location. Walking distance is to be less than 800 m. Other deciding factors to be considered are as follows:

1) Close location to the existing and phase 1 housing clusters.

2) Availability of the site with natural amenity for schools and parks

The cluster of building of generally two storeys and exceptionally 3 storeys make it possible for the entire complex to be visually hidden among dwelling units. However, open space is provided around open shopping area with clear distinction and identification from surrounding dwelling units. Since the community core is the source of identity to the local residences, it is located along the major collector road.

Fig. 3.10.5 Model Plan of Community Core



A Plaza for open market

B Parking

C Public buildings

D Primary school

E Public park

(b) Residential area

In addition to the livelihood community structure, three basic housing areas are introduced in the town structure to meet various housing needs.

1) Housing types

Type one: High density residential area.
Gross density to be approximately 150 persons/ha.
Net density = 222 persons/ha.

This area includes row houses (two storeys) and garden apartments (2 storeys). Open space for playgrounds and landscaping are carefully considered to eliminate urban slum appearance. Apartments and row houses in small groups are provided around the commercial area to give a better transition between the commercial areas and the lower density residential area. Each cluster should have no more than 10 units in one group and located around a courtyard.

Type two: Medium density residential area.

Independent houses or semi-detached houses are included in this area, which preferably will be located around courtyards. Cul-de-sac or loop streets will be provided to avoid monotonous appearance.

Gross density	100 persons/ha
Net density	148 persons/ha

Type three: Low density residential area

Gross density	80 persons/ha
Net density	118 persons/ha

Single family detached houses are located in this residential type area. This housing type is generally located at the outer frame of the new town, since these people will have a better means of transportaion. For the development pattern in this area, courtyard, cul-de-sac or loop street system are recommended wherever applicable.

2) Distribution of various housing types

The recommended approximate ratio of the three types of housing in 1996 is as follows:

High density residential area	50%
Medium " " "	30%
Low " " "	20%

Undertaking this sensitive step for projecting the proportion of the three types of housing, the family formation, family size, income level, land cost, housing costs, taxes, transportaion and other elements have to be thoughtfully

examined. It is proper to say that more detached housing and semidetached housing demands will gradually increase as the resort is developed and the income level of the community will be upgraded. Therefore in the initial stage of the housing development, more high density housing areas are constructed and in the later stages, more medium and low density housing area are added.

(c) Public open space

The area around the new towns will be covered with the green area, the park zone and buffer zone. Neighborhood parks are provided in all the residential sectors. A public park is also provided with the commercial and public facilities. Considering the scale of the new towns (10,000 - 20,000), various playgrounds with different sizes are located at strategetic areas in the residential sectors. Open space reserved for parks is calculated from the assumed requirements of 8 m^2 per person.

(d) Reserved area for urban expansion

This is an adjustment area provided to cope with future population growth and other unpredictable conditions.

(e) Schools

Recommended primary and secondary school district population is about 2,500 and 10,000 - 18,000 respectively. Major planning principles are as follows:

1) General location shall be approximately to the center of the new town and close to the commercial and public center.

2) Some facilities in the school will be utilized as a community center for the social and cultural development of the residents.

3) Walking distance to schools is about 500 m for elementary schools, 1,000 m for secondary schools, 300 m for kindergartens.

4) Park system will be interconnected with the pedestrian network to the schools.

5) The school district will not cross over the main collector roads.

6) Considering that with the future economical developments, the demand for secondary schools will be increased, the existing capacity of the secondary school is considerably raised.

Table 3.10.3 Proposed school system for 10,000 population

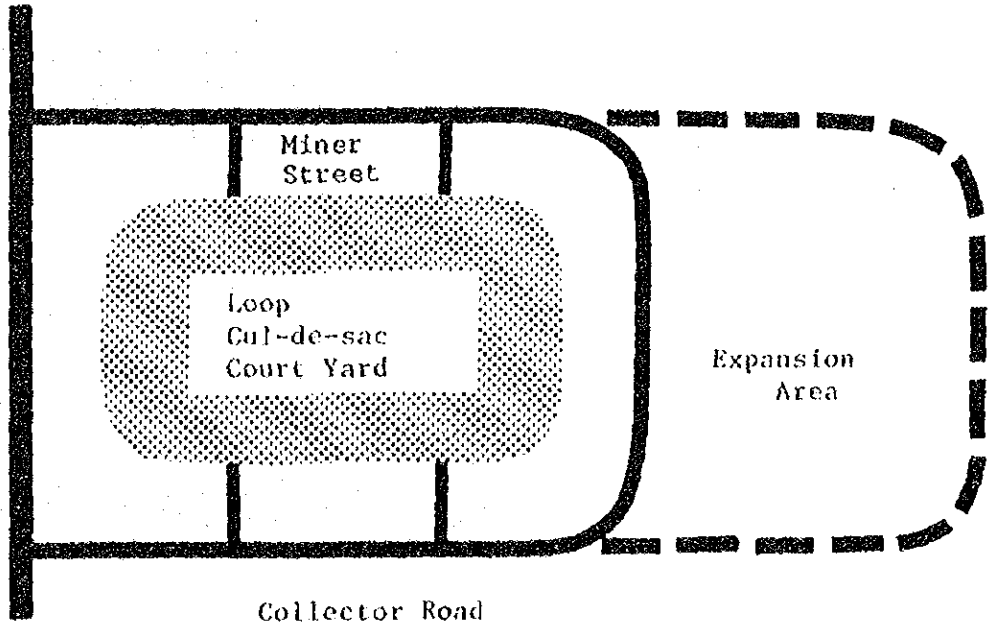
	No. of Students	School district population	No. of School	Area for public school
Primary	2,000	2,500 - 5,000	4	6.4 ha (including kinder-garten and nursery)
Secondary	300	10,000 - 18,000	1	1.6 ha

Note: 1,600 m^2/100 students
Initial 16,000 m^2 for 500 students.

(f) Street network

The planning principle for the street network is shown diagrammatically as follows:

Fig. 3.10.6 Street Network for Automobiles



Main Collector Street

1) A main collector street in a new town will serve only for the local community and will be separated from the tourist approach road.

2) The street pattern within the area should be designed to discourage through traffic.

3) The width of the interior minor streets are consistent with their function and the density of the housing they serve and should be no greater than necessary in the interest of safety and economy of installation and maintenance.

4) Separation of automobile and pedestrian is provided along the major streets.

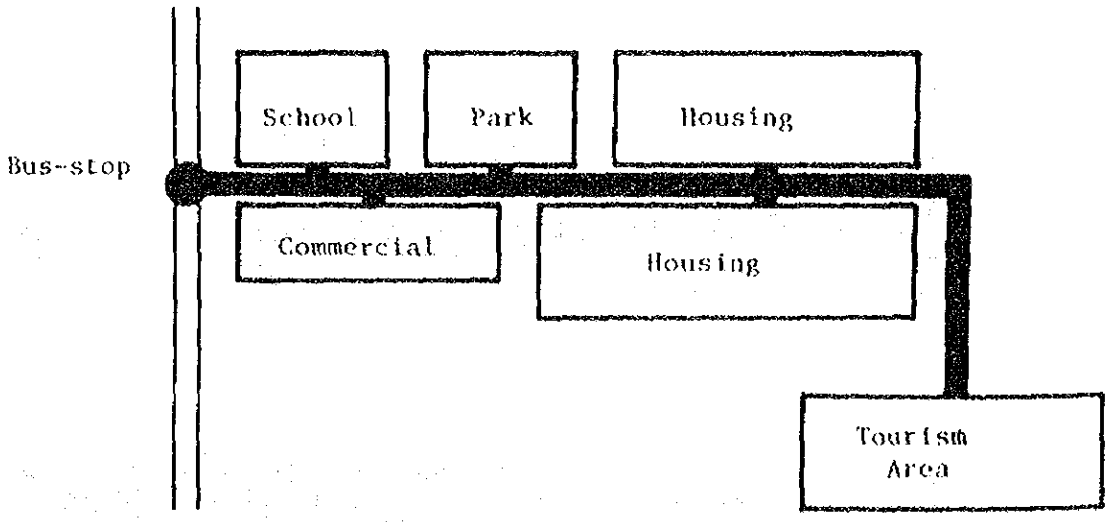
5) The following general requirements are taken into consideration:

* The detail layout of the street system
* The maintenance of adequate distance between the intersections to the main collector road.
* 90° intersection
* Slope of streets is less than 9%
* 60 m minimum sight distance
* Cul-de-sac: 150 m maximum length
* Turn-arounds: 13 m minimum curb radius without parking

(g) Pedestrian street network

Since the greater percentage of the residents are not estimated to own cars in the near future, the provision of the pedestrian network system has to be emphasized for the safety of the population.

Fig. 3.10.7 Pedestrian Street Network



1) Main routes from the living quarter to the various key destinations such as shopping areas, schools, bus stops, public facilities, parks and working places have to be established.

2) These main routes are either the independent pedestrian way or the side walks along the street.

3) Adequate amenity along the pedestrian way are provided to provide attractiveness and safety for the users.

Table 3.10.4 Area list of new towns

		1981	1986	1996
Na Klua Town "A"	Residential area	41.7	52.2	80.8
	Commercial area	13.2	15.0	20.0
	Public facility area	21.6	25.1	31.1
	Open space	8.3	10.6	16.5
	Streets	16.3	20.2	30.6
	Total area (ha)	101.1	123.1	179.0
Na Klua Town "B"	Residential area	14.8	32.8	32.8
	Commercial area	0.8	1.6	1.6
	Public facility area	3.2	3.2	3.2
	Open space	2.0	4.0	4.0
	Streets	4.2	8.4	8.4
	Total area (ha)	25.0	50.0	50.0
Northern New Town	Residential area	24.2	49.0	77.9
	Commercial area	1.2	2.5	4.0
	Public facility area	1.6	4.1	8.2
	Open space	2.9	5.9	9.6
	Streets	6.1	12.5	20.3
	Total area (ha)	36.0	74.0	120.0
Southern New Town	Residential area	-	-	67.9
	Commercial area	-	-	3.5
	Public facility area	-	-	8.2
	Open space	-	-	8.5
	Streets	-	-	17.9
	Total area (ha)	-	-	106.0

Table 3.10.5 Summary of main public facilities

		1981	1986	1996 (m^2)
Na Klua Town "A"	Town Hall	600	1,200	5,700
	Post Office	300	300	600
	Police Station	500	1,000	1,500
	Administration	28,000	28,000	28,000
	Fire Station	500	1,000	1,500
	Hospital	-	6,500	13,000
	Open Space	83,000	106,000	165,000
	Primary School	62,000	89,000	121,000
	Secondary School	16,000	16,000	32,000
	Streets	163,000	202,000	306,000
	Grave Yards	108,000	108,000	108,000
	Total	461,900	559,000	782,300
Na Klua Town "B"	No public facilities will be developed in this area since this new town is located near the main Na Klua new town and the scale of this town is not large enough to warrant the provision of public facilities besides existing facilities.			
Northern New Town	Town Hall	0	600	1,200
	Post Office	50	50	100
	Police Box	-	40	80
	Polyclinics	-	500	1,000
	Primary School	16,000	32,000	64,000
	Secondary School	-	8,000	16,000
	Open Space	28,800	59,500	96,000
	Street (Gross 16.9%)	60,800	125,000	203,000
	Total	105,650	225,390	381,380
Southern New Town	Town Hall	-	-	1,200
	Post Office	-	-	100
	Police Box	-	-	80
	Polyclinics	-	-	1,000
	Primary School	-	-	64,000
	Secondary School	-	-	16,000
	Open Space	-	-	84,800
	Streets (Gross 16.9%)	-	-	179,000
	Total	-	-	346,900

Fig. 3.10.8 Model Plan of Na Klua Town "A"

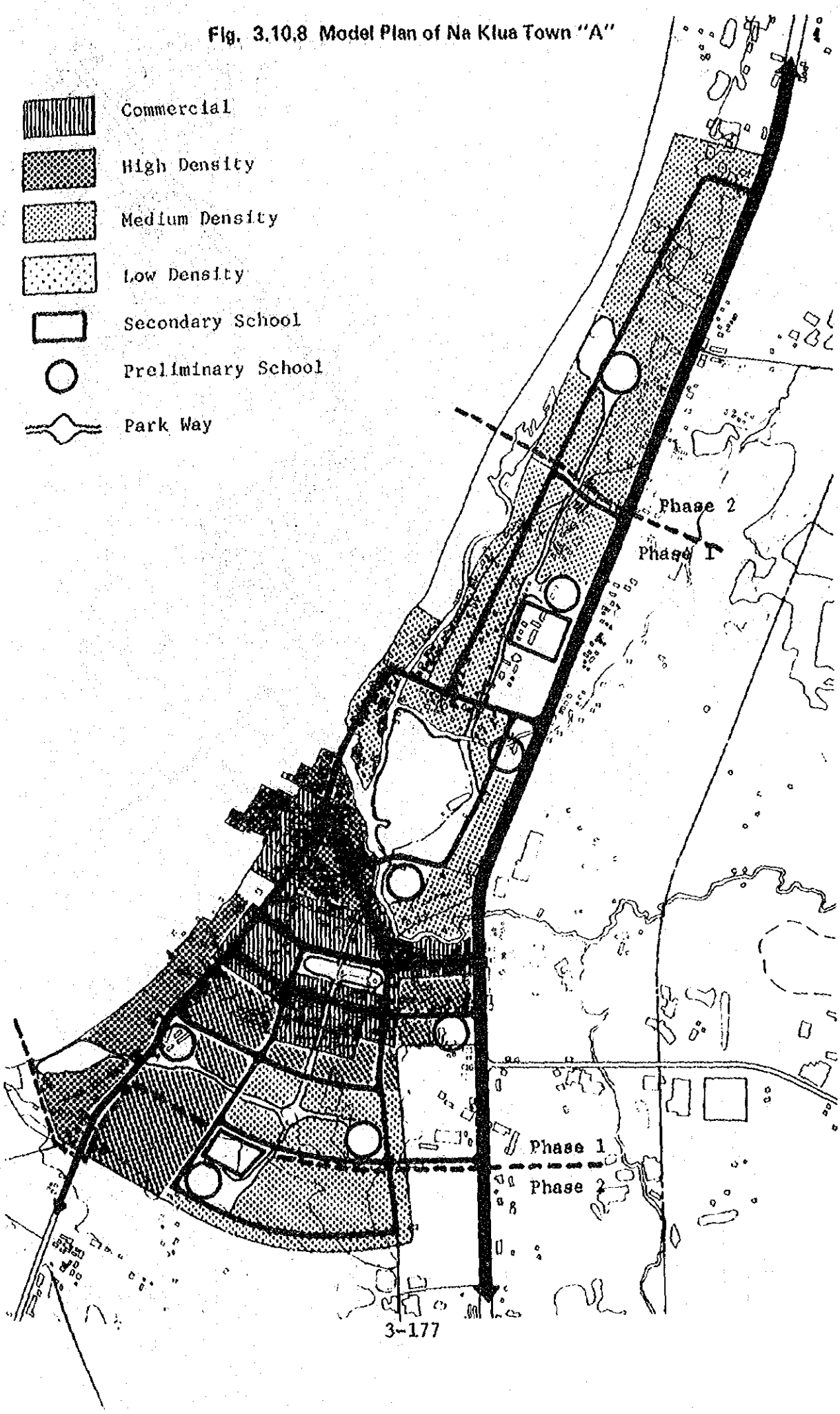


Fig. 3.10.9 Model Plan of Na Klua Town "B"

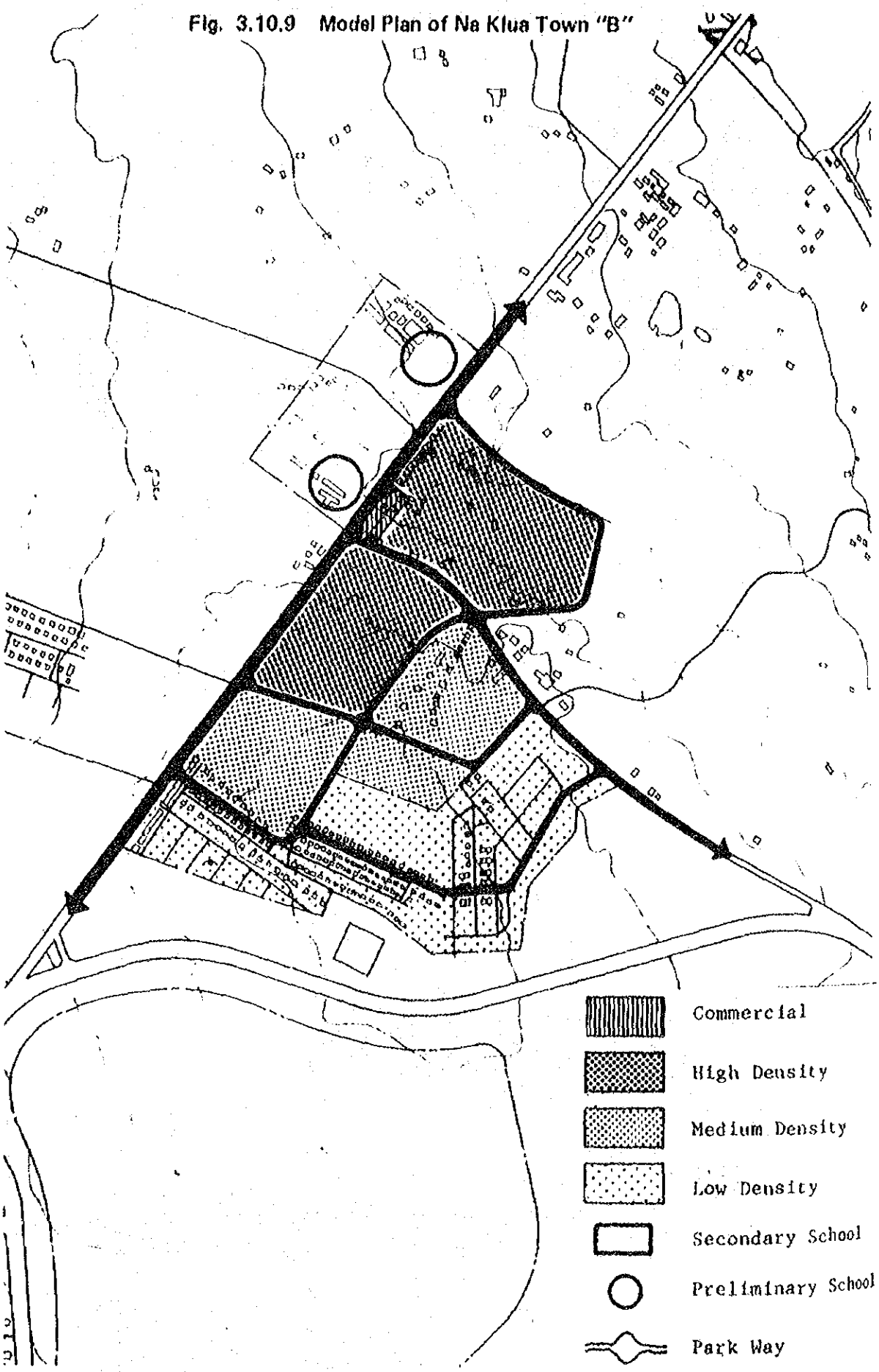


Fig. 3.10.10 Model Plan of Northern New Town

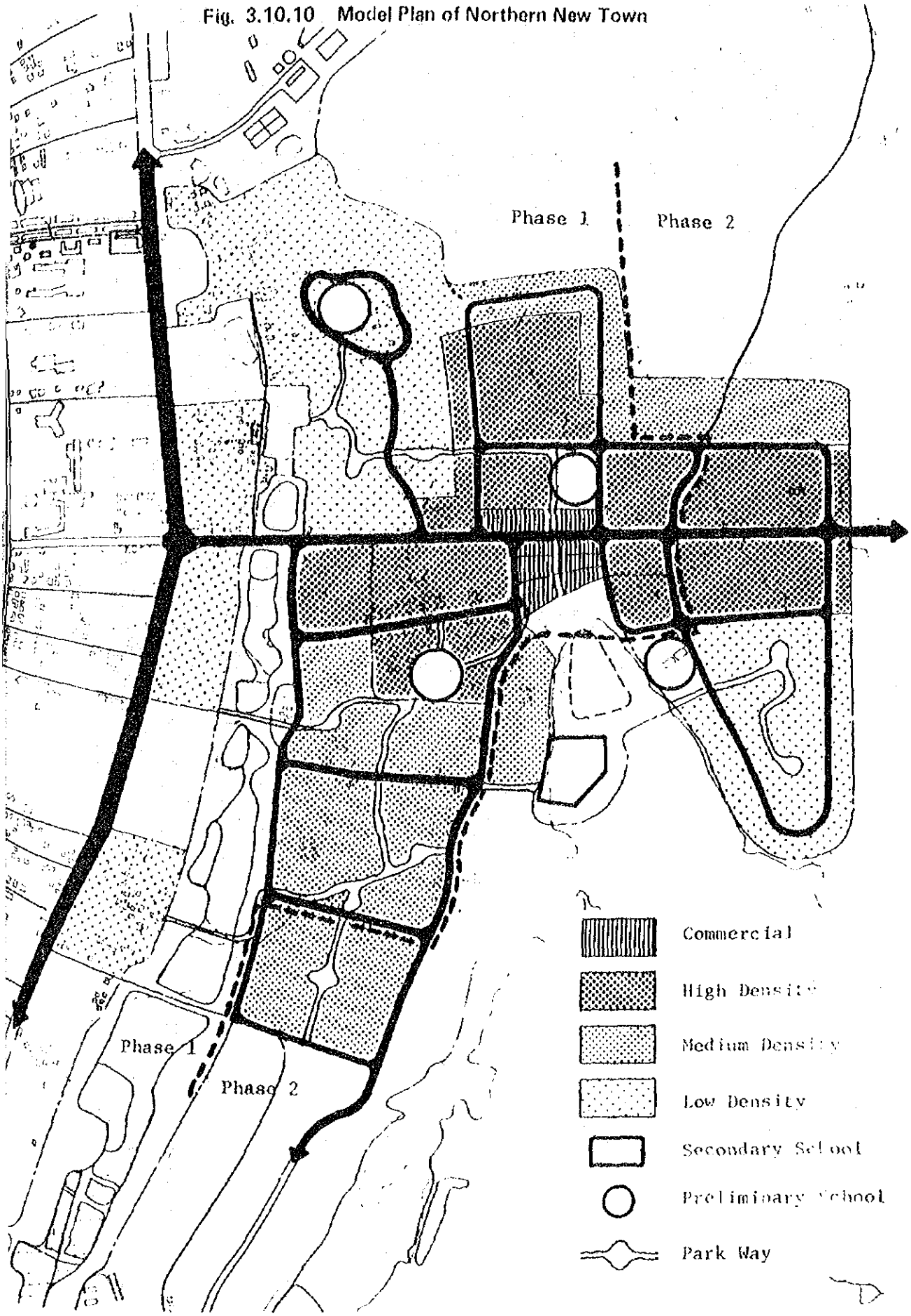
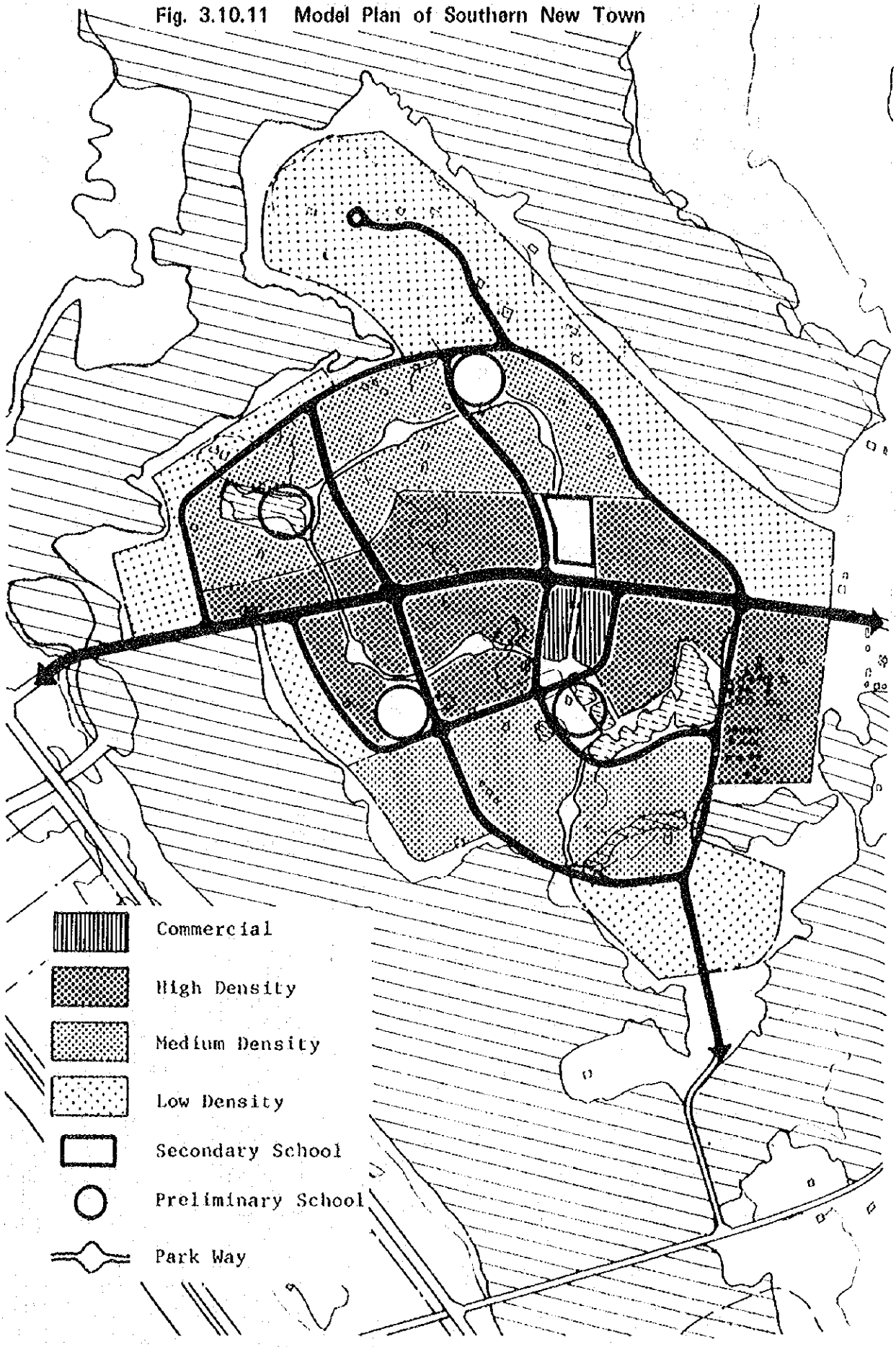


Fig. 3.10.11 Model Plan of Southern New Town



3.11 ZONING REGULATION

3.11.1 Necessity of zoning

Effectiveness of landuse plan is limited to the expression of the ideal development picture in the long future. Landuse plan itself does not yield the realistic power without assistance of legal enforcement of zoning regulation. Therefore establishment of zoning is of upmost importance to make the essential message of the landuse plan to be carried out.

There are two potential feasible development methods. One is the development by the public body which acquires the total land and lease the land to private investors. The other is the development carried out mostly by the private investors. Since large disorderly development has already been taken place in the study area, the zoning regulation is urgently needed to control the complexity of the urban tourism development provided with the adequate public and private mixed development method.

The objectives of the zoning regulation are summarized as follows:

1. Creation and preservation of a fine environment
2. Effective public investment
3. Planned private investors to participate in the development
4. Promotion of tourism resources
5. Safety measures

3.11.2 Basic policies of zoning regulation

Basing upon the understanding of the difficult problems contained in the study area, the appropriate type of zoning regulation has to be applied. The semi-flexible zoning regulation is considered to be most adequate to cope with the various new elements of the development. Fixed target for the zoning should be for a 10 years period and a revision should be done in future according to the original principle. In other words, minor changes might be implemented to absorb the new needs and requirements.

In the process of the realistic application of zoning regulations, some cases like demolition of the existing structures which violated the usage restriction in the landuse plan may be waived but no expansion or addition will be allowed.

3.11.3 Contents of zoning

Proposed zoning regulations are composed of five sections.

a. Development area and preservation area

b. Type of use or occupancy area

c. Regulation of the structure

d. Planned public facility area

e. Special zone area

(a) Development area and preservation area

The purposes of this regulation are as follows:

(i) Prevention of uncontrolled expansion of the development area and to promote the environmental conservation.

(ii) Effective public investment in the infrastructure.

1) Development area

Development according to the various requirements will be permitted in this area. Infrastructures and other public facilities are constructed by the public sector in advance and then the controlled private investments will be invited.

2) Preservation area

As a basic policy, all developments are prohibited in this area including public investments. However, agricultural use will be permitted with the approval of the relevant public authorities. The following two special areas should be given separate consideration.

(i) No expansion or addition of existing tapioca factories will be allowed in future. Since the pollution control of waste water fom the factories is urgently needed to keep sea water along the Pattaya beach clean, adequate treatment facilities according to established standards should be provided as a urgent measure until the removal of factories can be completed.

(ii) Infrastructure services for the clustered existing housing areas along the major roads will be considered if the main pipelines are located.

(b) Type of use of occupancy area

Landuse regulation is recommended to prevent the uncontrolled and disorderly expansion in the development area, so that the image of the international resort would not be disturbed by the conditions of the new towns and the other main objective of improvement of the local community's living standard would be met. Type of use or occupancy area are as follows:

1) Hotel area

Only hotel facilities are allowed in this area. Definition of hotel is any building containing 100 or more guests rooms intended or designed to be used, or which are used, rented or leased out to be occupied, or which are occupied for accomodation purposes by guests.

2) Bungalow area

Low density accomodation facilities - bungalows, villa and cottages are permitted to be constructed in this area.

3) Commercial area

The types of facilities allowed are commercial facilities, public facilities and housing-with-commercial facilities.

4) Tourism related facilities area

Facilities to promote tourism development are permitted in this area. The facilities include amenity core facilities, sports facilities, inland activity facilities and other tourism promotion facilities.

5) Residential area

The area where the living environment should be improved include housing, public facilities and a small scale commercial facilities (snack stands, drugstores). However these commercial facilities should be restricted to absolutely minimum to a scale and number at the strategetic location to protect the character of the pure residential area.

6) Special residential area for villas and cottages as second houses

These resorting accommodations are not for business purpose, but are to be used only as vacationing facilities. The areas are located at the distinguishly prominent spots in the study area, so that special cares have to be taken to maintain the aesthetic nature of the area.

(c) Regulation of the structure

Building regulations compose of the aspects of the physical forms and the aesthetic nature. The regulation of the physical aspects include building coverage ratio, floor area ratio, the height of buildings and setback requirement. The aesthetic regulation include color application to the exterior of the structure, building materials and others. The regulations of the physical form will be focussed in this section. The aesthetic aspect will be explained in the architecture section.

General definition of the terms used in this section are as follows:

1) Building area:

The maximum horizontal projected area of the building at or above grade, including all enclosed extensions. The term building area shall include all side yards and open courts less than 1.5 m in width and all closed courts less than 2 meters in width, except for outside balconies.

2) Building height:

The vertical distance from the grade to the top of the heighest roof beams of a flat roof, or to the mean level of the highest gable or slope of a hip roof. When a building faces more than one street the height shall be measured from the average of the grades at the center of each street front.

3) Coastline:

The border-line between the sea and the shore, determined by the authority.

4) Floor area ratio:

A figure which express the total gross floor area as a multiple of the area of the lot. This figure is determined by dividing the gross floor area of all buildings on a lot by the area of that lot.

5) Lot:

The land bounded by definite lines which is occupied or to be occupied by a building or structure and accessory buildings including the open spaces required under these regulations.

6) Percentage of lot occupancy:

A figure which expresses that portion of a lot lying within lot lines and building lines which is occupied or which may be occupied under these regulations as building area.

7) Storey:

That part of a building comprised between a floor and the roof or the next floor above.

8) Gross floor area:

The sum of the gross horizontal areas of the several floors

of all buildings on the lot, measured from the exterior faces of exterior walls and from the center line of walls separating two buildings. The term gross floor area shall include basements, elevator shafts and stairways at each storey, floor space used for mechanical equipments, interior balconies and mezzanines. The term gross floor area shall not include cellars, and outside balconies which do not exceed a projection of 2 meters beyond the exterior walls.

(d) Proposed criteria for regulation

In the following, a list is present for reference purpose showing the maximum, medium and minimum standard which may be adopted as the criteria for regulation and the medium figures are considered most appropriate for application in Pattaya. However to provide more flexibility for the private investors, max. and min. figures may also be allowable. Floor area ratio, building height and building coverage ratio indicate the maximum figure to be permitted.

1) Zoned hotel area

	Med.	Max.	Min.
Lot size	200 m^2/R	240	160
Building area	80 m^2/R	90	70
- Floor area ratio		60%	
- Building height limitation		15 m	
- Building coverage ratio		20%	
- Set back requirement at all sides		20 m	

2) Zoned bungalow area

Lot size	1,500 m^2	1,800	1,200/bungalow
Gross floor area	100 m^2	120	80/bungalow
- Floor area ratio		10%	
- Building height limitation		8 m	
- Building coverage ratio		10%	
- Set back requirement		20 m	

3) Zoned special residential area for villas and cottages as second houses

	Med.	Max.	Min.
Lot size	1,000 m^2	1,200	800/villa
Gross floor area	130 m^2	160	100/villa

- Floor area ratio 20%
- Building height limitation 8 m
- Building coverage ratio 20%
- Min. set back requirement 5 m

4) Zoned Residential area

a. Lower density residential area

Population density Gross 80 persons/ha
Net 118 persons/ha
Number of residential units 21 units/ha

	Med.	Max.	Min.
Lot size (m^2)	480	580	380/unit
Gross floor area	120	140	100/unit

- Floor size (m^2) 40%
- Building height 8 m
- Building coverage ratio 30%

b. Medium density residential area

Population density Gross 100 persons/ha
Net 148 persons/ha
Number of residential units 26 units/ha

	Med.	Max.	Min.
Lot size (m^2)	380	460	300/unit

i) Semi-detached housing requirements

Floor area ratio 50%
Building height 8 m
Building coverage ratio 40%

ii) Detached housing

Same requirement as the low density residential area will be applied.

c. Higher density residential area

Population density	Gross	150 persons/ha	
	Net	222 persons/ha	
Number of residential units		40 units/ha	

	Med.	Max.	Min.
Lot size	250	300	200/unit

- Floor area ratio 70%
- Building height limitation 15 m
- Building coverage ratio 40 %

5) Zoned commercial area

Population density	Gross	150 persons/ha
Floor area ratio		100% *
Building coverage ratio		50%
Building height limitation		15 m

* Housing upstairs and commercial facilities downstairs will be permitted.

6) Tourism related facility area

It is not recommended to apply building regulation due to the irregular requirements of facilities. Therefore the more adequate system is the process of approval by the related public officials.

(e) Planned public facility area

To carried out smoothly the construction of the public facilities, building regulation to the pre-acquired sites for the roads, parks and schools has to be established. In this area, only public facilities will be allowed, except for the small scale remolding of existing structures. Declaration of the public sites is to be done with the appropriate timing to secure the site according to the phasing of developments.

(f) Zoned special area

The three amenity cores are included in the zoned special area. The recommended regulations are control of disorderly site developments and promotion of harmonious planning of cores in addition to the regulation of the type of use and the structures. The construction of amenity facilities has to be approved by the related public officials.

3.11.4 Implementation of zoning regulation

(a) Necessary process to implement the zoning regulations

1) Control of the accommodation facilities

Landuse and building regulations would not function as an effective means for the control of the total number of required hotel rooms. Therefore relevant public body will determine the appropriate required number of hotel rooms and give the approval for construction of hotels to the private investors.

2) Approval of the construction of structures

The public officials shall check the adequacy and conformity to the regulations on the floor area ratio, building height, building coverage ratio and setback requirements before giving approval for the construction.

3) Permission of the facilities in the zoned special area

Basing upon the principles established in the zoned special area, the various facilities proposed for construction in the amenity cores shall be evaluated for the adequacy by the public officials and alternative solutions shall be enforced in the case of unacceptable proposals.

4) Site supervision of the structures after the approval and permission.

Checking system for conformity to the conditions of approval and permission for the constructed structures shall be established and in the case of unsatisfactory condition, the termination of the construction in progress or the alteration to meet regulation shall be enforced to control the development.

(b) Enforcement organization

Well established organization holds the key on whether the development will be effected successfully. Further details will be described in the chapter, "Organization". Here, a proposal is made for two types of agencies which are considered necessary for the enforcement of the regulation.

1) Building regulatory agency for

- acceptance of the building application
- approval of the applications of the general structure except accommodation facilities and amenity core facilities
- checking the adequacy of the structures on sites
- other matters

2) Committee for the development of Pattaya composed of architects, planners, hoteliers, store owners representatives, community representatives and other tourism related representatives.

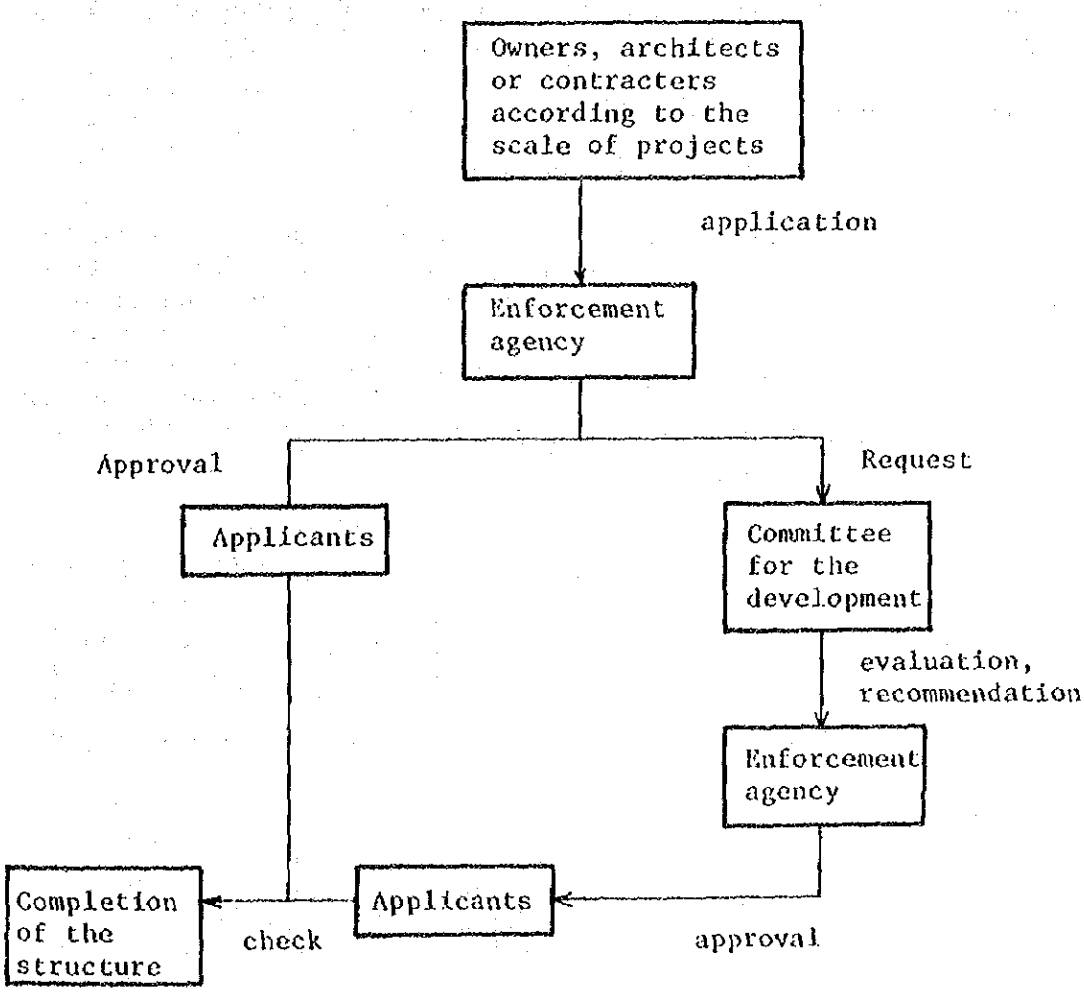
The following responsibility shall be included

- control of accommodation facilities
- Permission and revision of the facilities in the zoned special area
- Other items transferred from the building regulatory agency.

(c) Procedure

Building construction procedures may be implemented in the following manner.

Fig. 3.11.1 Procedure of Development Regulation



3.12 ARCHITECTURE AND LANDSCAPE

3.12.1 Architecture

There are two classifications in functional needs of architecture. First is shelter function which provides safety, convenience, comfort, space, privacy and other needs for daily living. The second is the aesthetical function.

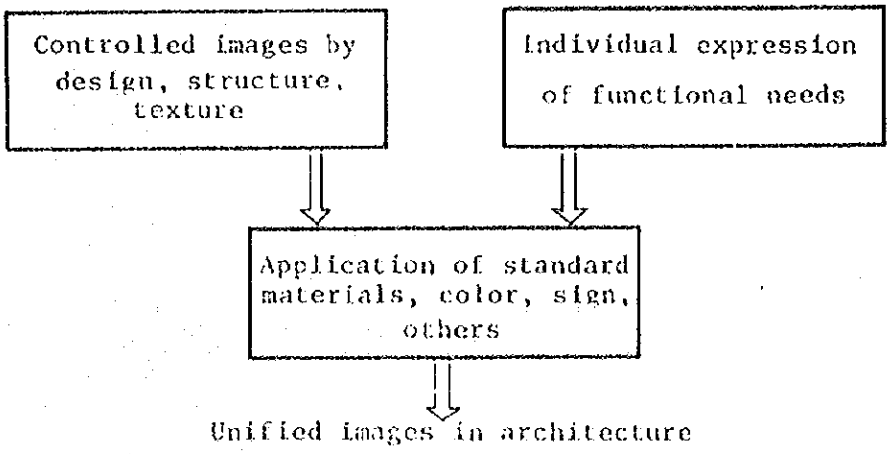
The main objectives for Pattaya tourism development encompass the improvement of social welfare of the local community as well as improvement of tourism facilities and environments. The shelter function of architecture has to be stressed and improved to a level of respected minimum standard of international resort. However, the other function should not be neglected because the total image created by the physical existence of structures could be a great tourism asset. Planners take this subject in detail. As the basic approach to deal with the aesthetic field of architecture, the totality in expression of locality and shelter needs is derived from understanding of treatment in visual sense of the grouped architecture (public and private) instead of appreciation of individual piece of art.

(a) Design policy

1) Architecture as a group

Individual structures possess own function and express visually their functions in individual ways. Taken as a group, there are some natural relationship among structures in function and in expression. Therefore unified theme of architecture does not necessarily bring all structures under one theme, but rather stresses harmonious expression of the collective method of individual character of buildings.

In order to apply the above mentioned aesthetic concepts, recommended approach are shown in a following diagram.



Generally, style application should be avoided to give diversified appearance of the whole study area except in the specific areas such as amenity cores, inland activity area and beach area.

2) Feature of locality

Aesthetic and shelter functions in architecture have greatly contributed to the establishment of Pattaya resort images. So far, architectural design elements have not been utilize and directed at the full extent to promote Thai atmosphere and tropical mood for Pattaya resorts. In other words, the design elements such as climatic control in natural means and historical, cultural and social expressions in architecture have not been investigated and explored to create the rural character of the resort for placing emphasis on Thai atmosphere and tropical environments. The following design elements shall be respected by the communities, planners, architects and other related professionals and people.

a. Example of climatic controls

- Sun control : long projected overhung natural sun screen
- Rain control : high pitched roof, long projected overhung, elevated floor system
- Natural Ventilation : Elevated floor system, open structure

b. Historical, cultural and social design elements

Thai temple architecture and other distinctively expressed styles which use construction material available in local area as seen in residential architecture.

3) Provision of functional needs

Two kind of functional needs have been considered in the view of two different users of structures. That is to say, one need of facility is for local community and the other need is for tourists. There is no difference in origin of basic needs of facilities for both local community and foreign tourists. However the weight of emphasis would be different. As a result, two type of architectural expression reflected on the different needs will be provided in the field of architecture. In the following section, some recommendations will be made basing on the above line of understanding.

(b) Background in Thai architecture

1) Thai design

Special character in residential, religious, commercial and public facilities are observed in their own expressions to handle the climatic and functional requirements. Especially each facility styles have been derived from the natural process of dealing with climatic condition of high temperature and humidity.

a. Residential architecture

Typical traditional residential architecture is wooden post and beam structure and the first floor is commonly elevated for various reasons. Interior space of an average house is open with the minimum application of furnitures. Residences for high income groups are best identified with high pitched roof, long projected overhung and teak wall.

b. Temple architecture

The influence of Burmese architecture can be seen in Thai temple architecture such as overlapped roof system, sharp pointed ridge of roof and rich accessories on the eaves. Such characteristics have been applied on some of public governmental buildings with high pitched tiled roof.

c. Commercial architecture

The most commonly seen commercial facility style may be called Chinese traders style. Normally they have two or three storeys and have a plan with a much longer depth compared with street faced dimension of width. Other characteristics in this style is the attachment of rather large scale sun shade device to control direct sun.

2) Structure and materials

Since earthquake is almost non-existence, the structural design is based on consideration only for vertical loads. Chinese trader style buildings representing typical Thai structure has been constructed at a low cost because of simple structural system with rigid frame system and concrete block or bricks. However, adequate sanitary facilities, control of lighting load and safety measures are required to be improved in the majority of buildings.

3) Needs of tourists and inhabitants

a. Needs of tourism related structures are summarized as follows:

Shelter elements	Provision of infrastructures
	Provision of devices to adapt to high temperature and humidity climate
Aesthetic elements	Thai atmosphere
	Tropical moods

b. Needs for local community may be summarized as follows:

- high weight on shelter element
- function and endurance
- low initial cost and maintenance

(c) Solutions and Recommendation

1) Establishment of building standard regulation

The following regulations are proposed to guarantee safe, comfortable and convenient space for users of structures.

- Building standard:

  Strength of structure, safety devices or measures in structure against fire, provision of emergency shelter

- Environmental control standard:

  To establish convenient and comfortable space standard, including the following:

  * Space standard (floor area ratio, building coverage ratio, gross population density) to control density
  * Basic sanitary facility standard
  * Lighting and ventilation standard
  * Maintenance and management standard
  * Air conditioning standard

- Aesthetic standard:

  Standard of exterior face of the structure

  * Facade standard
  * Color coordination standard
  * Exterior material standard
  * Height limitation
  * Billboard regulation
  * Other necessary regulations to control the aesthetics of exterior space

a. Sanitary control of environment

Adequate sanitary conditions of facilities such as international hotels, restaurants and other amenity facilities have to be maintained to meet the sanitary requirements of the international resort.

- Ventilation control of quality and quantity
- Provision of high quality water supply and sewerage system
- Sanitary service standards such as room cleaning, bed sheets cleaning and other standard practice

The following Japanese environmental standard in structure is given as an example. However considering the locality, modification of the standard will be necessary.

Environmental standard in interior space of structure

Items	Standard
Maximum content of dust Particles in the air	≤ 0.15 mg/m^3
CO content ratio	≤ 10 ppm
CO_2 content ratio	≤ 1000 ppm
Room temperature	$17°C \leq T \leq 28°C$
Relative humidity ratio	40% to 70%
Ventilation	≤ 0.5 m/sec
Separated chlorine content ratio in the air	≥ 0.1ppm

b. Recommendation of design approach as a unit development

To achieve harmonious aesthetic environment, conventional methods require the following steps.

1. Establishment of aesthetical standard in each area
2. Application of the standard requirement to a proposed structure
3. Approval of construction accordingly

As mentioned in the beginning of this section, such a conventional approach tends to make less attractive appearnces and also the problems of controlling aesthetic outcome as a total image over the development area may still remain. Therefore a unit development method ought to be considered in designing wherever applicable section area can be defined. In other word, setting up projected images of Thai atmosphere and tropical mood and the designers or architects are selected for designing groups of facilities in the designated area.

c. Consideration in renewal of existing structures

Established building standard application will be effective for the new buildings. The measure to be taken for the existing building is as follows. The minimum conditions of structures from the points of requirements of safety and sanitary standards should be recommended. In the field of interior space environmental standard, specific facilities such as hotels, public facilities and major restaurants are regulated by this environmental standard, which will cover both the existing facilities and the future proposed structures.

2) Physical design solutions

a. Chinese trader styles

Many chinese trader style structures have been constructed in Thailand due to the easy construction and the lower construction costs for commercial developments. This style of development tend to create monotonous space composition as represented in the existing international market in Pattaya which express excessive continuous mass of structure from the point of aesthetic consideration. Even from the standpoint of spatial experience, it is not adequate for visitors to enjoy and appreciate the mood of Thai and tropical feature. Therefore the general characteristics of space arrangements created by structures are more delicate and free space arrangements best represented as garden type of space composition. As a basic rule, the chinese trader styles shall be avoided in future development.

b. Design consideration for handicapped people

The recommended general policy is that Pattaya tourism facilities are opened to all foreign tourists and local visitors. According to the line of this policy, handicapped people should have opportunity to enjoy the various tourism facilities.

Especially public facilities, hotels, amenity facilities,

road and park facilities should be treated in an adequate way so that handicapped people will have the same opportunity as the normal people.

e. Promotion of bicycle transport and parking facilities

There is no appropriate transportaion means for intermediate travelling needs existing in Pattaya resort. In order to go from hotel areas to main amenity core area, visitors have to use inadequate high speed taxi which is too speedy for appreciating the surrounding beautiful view and various interesting activities. On the other hand, it is too far away for walking with comfort. Therefore more intimate private transportation means should be introduced. A recommendation for this purpose is the promotion of bicycle riding which is the most convenient way to visit inland activity areas, amenity cores, port facilities and other interesting tourism spots. As a result, the parking facilities for bicycles become an important element. Some regulations should be established to provide bicycle parking spaces at the beach road, parks, inland activity areas, public facilities, hotels and other places where people will gather.

3.12.2 Landscaping

The four main necessary characteristics for an attractive international resort are listed as follows:

- breaking away from daily routine
- hospitality
- openness and informality (exploratory, speculative and physical)
- commemorative

Such characteristics should not be taken independently but be promoted into the bases for developing the unified over all image of Pattaya beach. Natural development of Pattaya image provided with the above mentioned characteristics derived from the natural, physical conditions, historical and cultural assets, manners and customs of people would be promoted. The positioning of tourism promotion by landscaping is defined in this respect.

There are two approaches in the promotion of the tourism development.

1. Promotion of visual aspects in landscaping
2. Preservation aspects of the tourism related resources

The first approach is more positive involvement in promotion and the second one is relatively passive participation. Planners

take the position of the active and positive participation in creating the recommended resort images, taking also into consideration the preservation of natural environment.

(a) Design principle

1) Uniform design

"Sun, sea and sand" are the main attractions of Pattaya. However the 3 S appeal is proposed to be accompanied by two additional streams of images, tropical mood and exotic Thai atmosphere. Visitors will get chances to appreciate this mood and atmosphere on the Pattaya beach, under the coconut trees and at the street corner of the downtown These visitors' spatial enjoyable experiences will become an important factor to attract more visitors. For this reason, Pattaya landscaping design will be unified under tropical and exotic feature, and the special individualistic characters will be created.

2) Harmony of facilities with the nature.

The main actor in Pattaya tourism development is nature itself and the facilities play a supporting role to nature. Various careful measures have to be taken for protection of nature and active harmonious participation of facilities in the nature. As the examples of the measures, zoning application according to the potentiality of natural condition aimed for preservation of aesthetic aspects and environmental aspects of nature and aesthetic facility standard established for uniform design, application of established coordinated color, and building material standard will mutually be coordinated and help the development of a harmonious tourism atmosphere.

3) Natural beauty to be opened to public

It is the basic policy that the natural resources of Pattaya should be appreciated by all visitors. In other words, such a pattern, landmark or natural aesthetics owned by private sectors like hotels, bungalows and other private villa should be controlled. Examining the conditions of natural resources in Pattaya, beach area, park zone around the swamps, and other designated landmark area shall be named as the controlled development area.

(b) Solutions and recommendations

1) Promotion of visual space

a. Tropical trees and flowers

Analyses: Plantation of tropical trees and flowers will play a very important role in the promotion of tropical mood. The following types of tropical trees

and flowers are available to Pattaya area.

Trees	Palm trees Mangrove
Flowers	Bougainvillea Orchid Lotus

Palm trees will provide the basic elements of the tropical mood and bougainvillea will act as the active promotion of lively tropical mood. Mangrove and lotus are found respectively in the individual role as sea side plants and water plants as tourism resources in the local spots.

Considering the rich varieties in types of orchids and their high value as commercial commodity, tourism facility as plantation garden can be promoted.

Recommendation:

Palm trees - As a basic design elements to create a tropical mood

Bougainvillea - Effective clustering method to emphasize a certain area

Lotus and water lily - Creating floating flower garden in the central park zone

b. Promotion of landmark

Analysis: The general characteristics of geographical condition of Pattaya area are expressed as flat land except a 100 m high central Pattaya Hill. This is a point which can be seen from all directions of the study area and especially the view from the coast line and the sea will make the most spectacular accents to the Pattaya resort. Handling of the green space of the Pattaya Hill will be a key factor to produce an attractive landmark for Pattaya resort.

Recommendation: Preservation of Pattaya Hill. Presently a television tower, small scale temples and other unattractive structures have been built, with a road which leads to a top of the hill. This destructive progression has to be stopped and the hill restored to function as an impressive landmark. The following solutions to the aesthetic problems of the T.V. towers are suggested. Either removal or camouflage of the antenna structures should be undertaken. Since removal of the structure might involve technical and legal problems, camouflage solution by decorating it into a temple tower might be a more feasible solution.

c. Landscaping at beach area

Existing landscaping at the beach area has not been adequately planned to meet aesthetical and functional requirements. The following physical design solutions are to be undertaken.

1. Application of hedges to define the private beach space.

2. Creation of open space to set up open view.

3. Setting up of service centers for bicycle parkings, snacks and toilet facilities.

4. Relocation and new planting of palm trees at the appropriate locations to give more spacious beach spaces.

5. Implementation of adequate lighting system on the beach area.

d. Making good use of the existing swamp area

Analysis: Existing swamp areas have been either utilized as rice fields or left as non-productive swamp areas. These swamp areas contain the potentiality for conversion into supplementary tourism resources to beach, sea and islands.

Recommendation: Natural condition of these areas are situated under the delicate biological and geological balance. Therefore artificial development should be kept to the minimum and this tourism assets is promoted into an object for appreciation as against direct participation on the beach.

2) Landscaping promotion of kinetic space

a. Approach roads

Analysis: The real feeling of being in the resort is brought up not only by beach and sea, islands and tourism facilities, but also by the expection of getting closer to the resort. The first impression will be made during this early time span. The promotion of the approach road from Bangkok to Pattaya resort becomes important to raise the effectiveness of the tourism resources.

Recommendation:

- General improvements of landscaping and street signs along the Sukhumuit Highway

- Improvements of approach roads as the image making entrance to the Pattaya resort.

b. Road park

In such a broadly dispersed resorts, the improvement of individual tourism facilities would not be enough to harmonize the total image without provision of aesthetic improvements of tourism resources of the organic circulation space. That is to say, emphasis on the visual requirements on the roads should be introduced in addition to the function of the transportation of people.

Recommendation:

- Provision of park-like roads, tropical tree promenade and construction of pedestrian and bicycle ways in the atmosphere of a park.
- Criteria for determining the road routes based not only on the shortest routes but the routes which have more attractive views on the way.

c. Street furnitures

Analysis: Observing the existing street furnitures system, the elements of aesthetic application as well as the functional requirements have not been emphasized. Random locations of benches, waste baskets and lighting have to be corrected and appropriate system is to be implemented based on the new approach.

Recommendation: Establishment of uniformly designed street furnitures such as street lighting fixtures on beaches, street signs, waste baskets, telephone boxes will benefit in increasing the aesthetic quality of the tourism area, and at the same time, fixing the identity of the street furniture to the users will also be beneficiary in the functional aspect.

LEGEND

- PALM TREES AND OTHER ROADSIDE TREES
- PARK AND GENERAL LANDSCAPING AREA
- WATER PLANTS–LOTUS AND WATER LILLY
- SYMBOL ZONE–BOUGAINVILLEA AND ORCHID
- RIVER, POND AND STORM WATER CHANNEL
- SHOPPING PARK DEVELOPMENT
- BEACH DEVELOPMENT
- LANDMARK AREA
- BUFFER ZONE

N

0 200 500 1000 2000 M

FIG 3.12.1 LAND SCAPING PLAN

3.13 INVESTMENT COST FOR IMPLEMENTATION

(a) Classification of investment sectors

All investment cost excluding infrastructure are classified as follows:

1) Public - I

The following public facilities which cannot expect a revenue return are classified in this category. Public facilities (schools) and open space in the local communities, beach facilities, open space in the amenity cores, central park and a big scale park development in the southern park are in this category.

2) Public - II

Amusement center and aquarium facilities are classified in this group. These facilities can be invested by either public or private sectors and can expect to have a revenue return. However, public sector is considered to be more appropriate developer.

3) Private - I

Among private investments, the facility groups such as housing, villa and commercial facilities in the local community which can not expect a revenue return from the tourism income are classified in this category.

4) Private - II

The private facility groups which are able to be self-substaining financially from tourism incomes are classified in this category. Hotels, commercial facilities in the amenity cores and inland activity facilities are in this category.

(b) The approach to calculate the total investment cost adopted in calculation of the approximate total investment costs adopted is based on the assumption of the unit cost per area or per unit based on past experience on similar projects in or near Pattaya.

1) Construction cost

In the construction cost, the cost of site preparation and landscaping are included in addition to the building cost. Unit construction costs are generally based on the Thai local standard and in the items of where local unit cost is unavailable, the standard Japanese unit costs are used as a reference and an assumption is made.

Regarding the distribution of local currency and foreign currency, the ratio of foreign currency is between 0% to 50% and decided as the case may be.

2) Land cost

Land cost is based on the data provided during the field survey which varies between 25 Bahts/m^2 to 600 Bahts/m^2 according to the items.

3) Maintenance cost

Maintenance cost include only the required cost for Public I category since in other category, this item is recoverable from the revenue. Personnel expenses and utility expenses are included in the maintenance cost.

(c) Distribution of yearly investment costs

The distribution of investment costs at the end of each phasing period is based on the scope of work established according to the masterplan. In the distribution of yearly investment costs, the average, continuous yearly investments methods is adopted except special items. The results of investment distribution by phases are as follows:

		Approximate percentage of total investments
Phase 1	Stage 1	10%
	Stage 2	20%
Phase 2		70%

(d) Summary of Cost estimates

Table 3.13.1 summarized all investment cost estimated roughly at an accuracy of $\pm$ 40% for all the public and private sector investments, (excepting the infrastructive projects which are analysed in greater details in Chapter 5) require for the realization of the whole masterplan for the tourism development of Pattaya.

Table 3.13.1 Investment Cost (Excluding Infrastructure)

Millions Baht

	Total Cost	77	78	79	80	81	I-1 Sub Total	82	83	84	85	86	I-2 Sub Total	87	88	89	90	91	92	93	94	95	96	II Sub Total
Public - I (11.3%)																								
Construction																								
Local	279.8	12.6	14.2	13.3	14.4	15.8	70.3	16.5	17.3	14.7	16.6	16.7	81.8	18.8	17.1	15.1	15.2	12.6	10.2	9.6	9.6	9.8	9.7	127.7
Foreign	66.9	3.3	3.4	3.2	3.5	3.8	17.2	4.2	4.2	3.6	4.0	4.1	20.1	4.2	3.8	3.3	3.2	3.2	2.7	2.4	2.4	2.2	2.2	29.6
Total	346.7	15.9	17.6	16.5	17.9	19.6	87.5	20.7	21.5	18.3	20.6	20.8	101.9	23.0	20.9	18.4	18.4	15.8	12.9	12.0	12.0	12.0	11.9	157.3
Land	234.7	16.5	17.0	16.3	23.5	23.3	96.6	14.5	14.6	11.7	16.1	16.0	72.9	12.8	12.2	12.2	12.2	10.7	1.1	1.0	1.0	1.0	1.0	65.2
Total	581.4	32.4	34.6	32.8	41.4	42.9	184.1	35.2	36.1	30.0	36.7	36.8	174.8	35.8	33.1	30.6	30.6	26.5	14.0	13.0	13.0	13.0	12.9	222.5
Maintenance	554.7	1.0	2.2	3.3	4.6	5.9	17.0	7.9	9.6	11.0	12.6	14.1	55.2	15.9	17.4	18.7	20.0	21.2	22.2	23.4	24.4	25.6	26.7	215.5
Total	1,136.1	33.4	36.8	36.1	46.0	48.8	201.1	43.1	45.7	42.0	49.3	50.9	230.0	51.7	50.5	49.3	50.6	47.7	36.2	36.4	37.4	38.6	39.6	438.0
(Maintenance: 1997 - 2006 per year = 26.7 1997 - 2006 Total = 267.0)																								
Public - II (1.3%)																								
Construction																								
Local	26.6				2.9	2.9	5.8			2.9	2.9		5.8				7.5	7.5						15.0
Foreign	19.8				1.2	1.2	2.4			1.2	1.2		2.4				7.5	7.5						15.0
Total	46.4				4.1	4.1	8.2			4.1	4.1		8.2				15.0	15.0						30.0
Land	20.9				4.6	4.6	9.2			4.1	4.6		9.2				2.5	-						2.5
Total	67.3				8.7	8.7	17.4			8.7	8.7		17.4				17.5	15.0						32.5
Private - I (29.2%)																								
Construction																								
Local	1060.0	35.1	35.0	35.0	35.0	35.0	175.1	51.5	51.5	51.5	51.4	51.3	257.2	62.9	62.9	62.9	62.9	62.9	62.8	62.8	62.8	62.7	62.7	628.3
Foreign	265.1	8.8	8.8	8.8	8.8	8.6	43.8	12.9	12.9	12.9	12.9	12.8	64.4	15.8	15.8	15.8	15.8	15.6	15.7	15.6	15.6	15.6	15.6	156.9
Total	1325.7	43.9	43.8	43.8	43.8	43.6	218.9	64.4	64.4	64.4	64.3	64.1	321.6	78.7	78.7	78.7	78.7	78.5	78.5	78.4	78.4	78.3	78.3	785.2
Land	187.4	14.4	14.4	14.4	14.2	14.2	71.6	8.6	8.6	8.4	8.3	8.3	42.2	7.5	7.5	7.4	7.4	7.3	7.3	7.3	7.3	7.3	7.3	73.6
Total	1513.1	58.3	58.2	58.2	58.0	57.8	290.5	73.0	73.0	72.8	72.6	72.4	363.8	86.2	86.2	86.1	86.1	85.8	85.8	85.7	85.7	85.6	85.6	858.8
Private - II (58.2%)																								
Construction																								
Local	1383.2	5.8	6.0	6.0	6.0	6.0	29.8	50.2	50.3	50.3	50.1	50.2	251.1	111.2	111.1	110.0	110.1	110.1	110.1	109.9	109.9	110.0	109.9	1102.3
Foreign	1158.3	2.4	2.1	2.1	2.1	2.1	10.8	39.2	39.0	38.9	39.0	38.9	195.0	96.2	96.2	95.1	95.0	95.0	95.0	95.1	95.1	94.9	94.9	952.5
Total	2541.5	8.2	8.1	8.1	8.1	8.1	40.6	89.4	89.3	89.2	89.1	89.1	446.1	207.4	207.3	205.1	205.1	205.1	205.1	205.0	205.0	204.9	204.8	2054.8
Land	479.5	3.7	3.7	3.7	3.6	3.6	18.3	10.8	10.8	10.6	10.5	10.5	53.2	41.0	41.0	40.9	40.9	40.9	40.7	40.7	40.7	40.6	40.6	408.0
Total	3021.0	11.9	11.8	11.8	11.7	11.7	58.9	100.2	100.1	99.8	99.6	99.6	499.3	248.4	248.3	246.0	246.0	246.0	245.8	245.7	245.7	245.5	245.4	2462.8
Grand Total (Excluding Maintenance)																								
Construction																								
Local	2750.2	53.5	55.2	54.3	58.3	59.7	281.0	118.2	119.1	119.4	121.0	118.2	595.9	192.9	191.1	188.0	195.7	193.1	183.1	182.3	182.3	182.5	182.3	1873.3
Foreign	1510.1	14.5	14.3	14.1	15.6	15.7	74.2	56.3	56.1	56.6	57.1	55.8	281.9	116.2	115.8	114.2	121.5	121.3	113.4	113.1	113.1	112.7	112.7	1154.0
Total	4260.3	68.0	69.5	68.4	73.9	75.4	355.2	174.5	175.2	176.0	178.1	174.0	878.8	309.1	306.9	302.2	317.2	314.4	296.5	295.4	295.4	295.2	295.0	3027.3
Land	922.5	34.6	35.1	34.4	45.9	45.7	195.7	33.9	34.0	35.3	39.5	34.8	177.5	61.3	60.7	60.5	63.0	58.9	49.1	49.0	49.0	48.9	48.9	549.3
Total	5182.8	102.6	104.6	102.8	119.8	121.1	550.9	208.4	209.2	211.3	217.6	208.8	1055.3	370.4	367.6	362.7	380.2	373.3	345.6	344.4	344.4	344.1	343.9	3576.6