

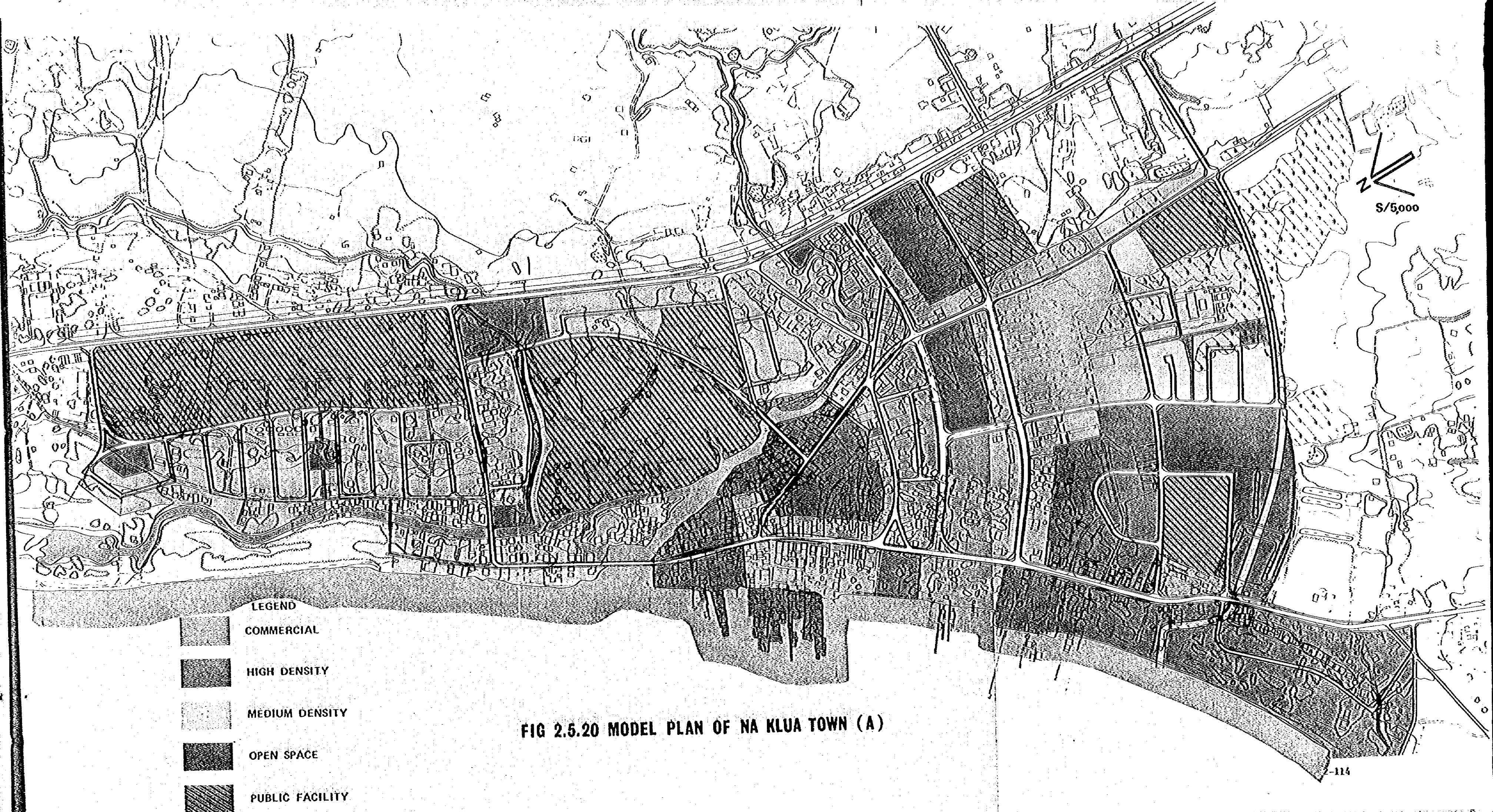
2.5.5 Land Use Plans in the Residential Area

On the basis of the comparative studies mentioned above, the land-use plans in Na Klua Towns A and B, and the Northern New Town are drawn up as shown in Fig. 2.5.20 to Fig. 2.5.22. Land-use classifications, areas and populations are summed up in Table 2.5.4.

Table 2.5.4 Land-Use and Population Plans (1986)

	Land-use	Area	Population Density (Net)	Population
Na Klua Town A	Residential areas	53.5(52.2) ha	persons/ ha.	10,400 persons
	High density	29.4	230(222)	6,700
	Medium density	24.1	155(148)	3,700
	Low density	-	-	-
	Commercial areas	19.1(15.0)	150(150)	2,900
	Public facility areas	23.4(25.1)		
	Open spaces	12.3(10.6)		
	Roads	10.2(20.2)		
	Total		118.6(123.1)	
Na Klua Town B	Residential areas	30.7(32.8)		4,800
	High density	11.6	220(222)	2,500
	Medium density	7.8	135(148)	1,100
	Low density	11.3	110(118)	1,200
	Commercial areas	1.6(1.6)	150(150)	200
	Public facility areas	3.2(3.2)		
	Open spaces	5.4(4.0)		
	Roads	8.4(8.4)		
Total		49.3(50.0)		5,000(5,000)
Northern New Town	Residential areas	48.5(49.0)		7,000
	High density	14.2	200(222)	2,800
	Medium density	11.4	135(148)	1,500
	Low density	22.9	110(118)	2,500
	Commercial areas	4.2(2.5)	150(150)	600
	Public facility areas	5.7(5.7)		
	Open spaces	6.0(5.9)		
	Roads	10.6(12.5)		
Total		75.1(75.6)		7,400(7,400)

Note: Inside () are the figures in the master plan.



LEGEND






-  COMMERCIAL
-  HIGH DENSITY
-  MEDIUM DENSITY
-  OPEN SPACE
-  PUBLIC FACILITY

FIG 2.5.20 MODEL PLAN OF NA KLUA TOWN (A)

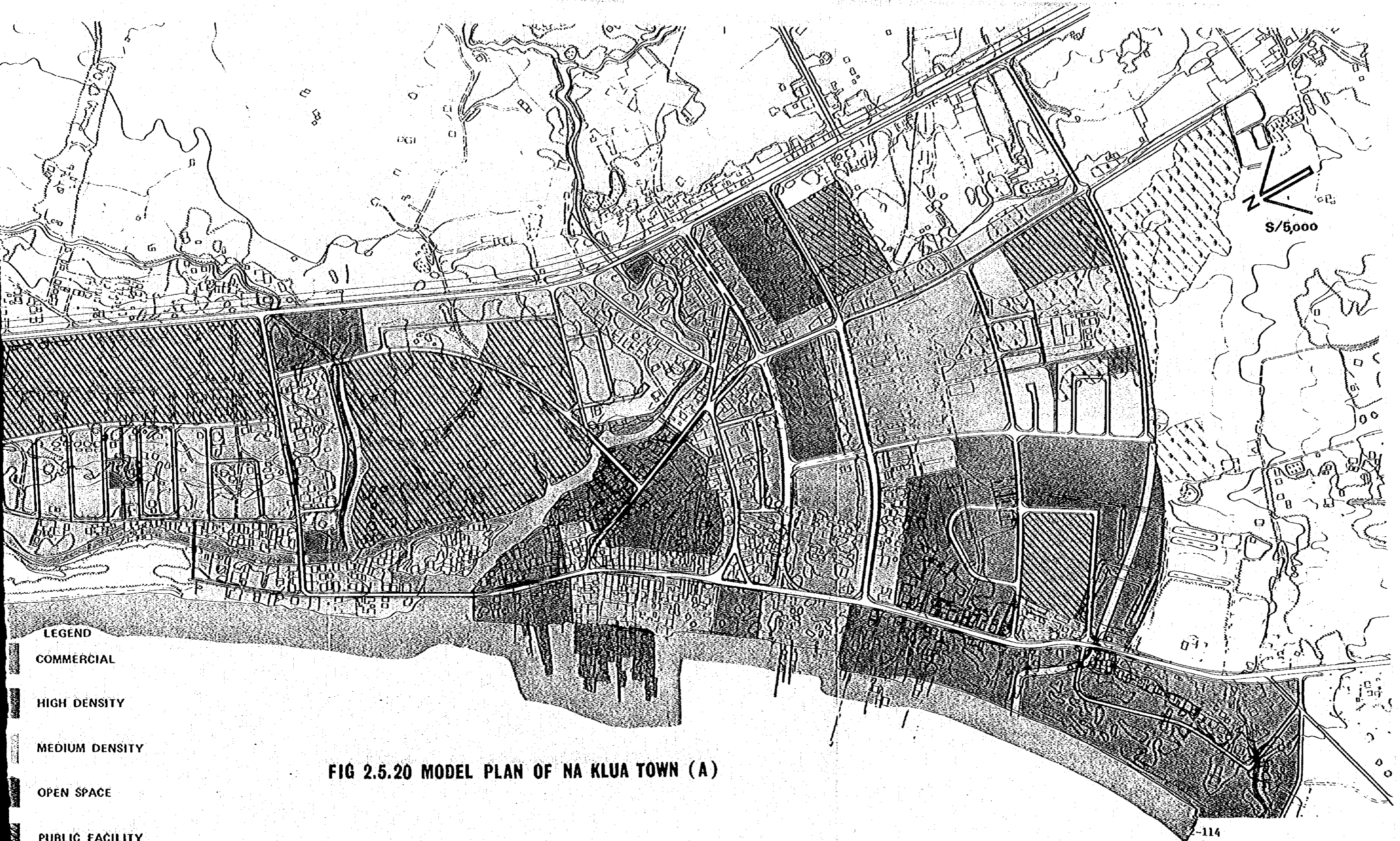


FIG 2.5.20 MODEL PLAN OF NA KLUA TOWN (A)

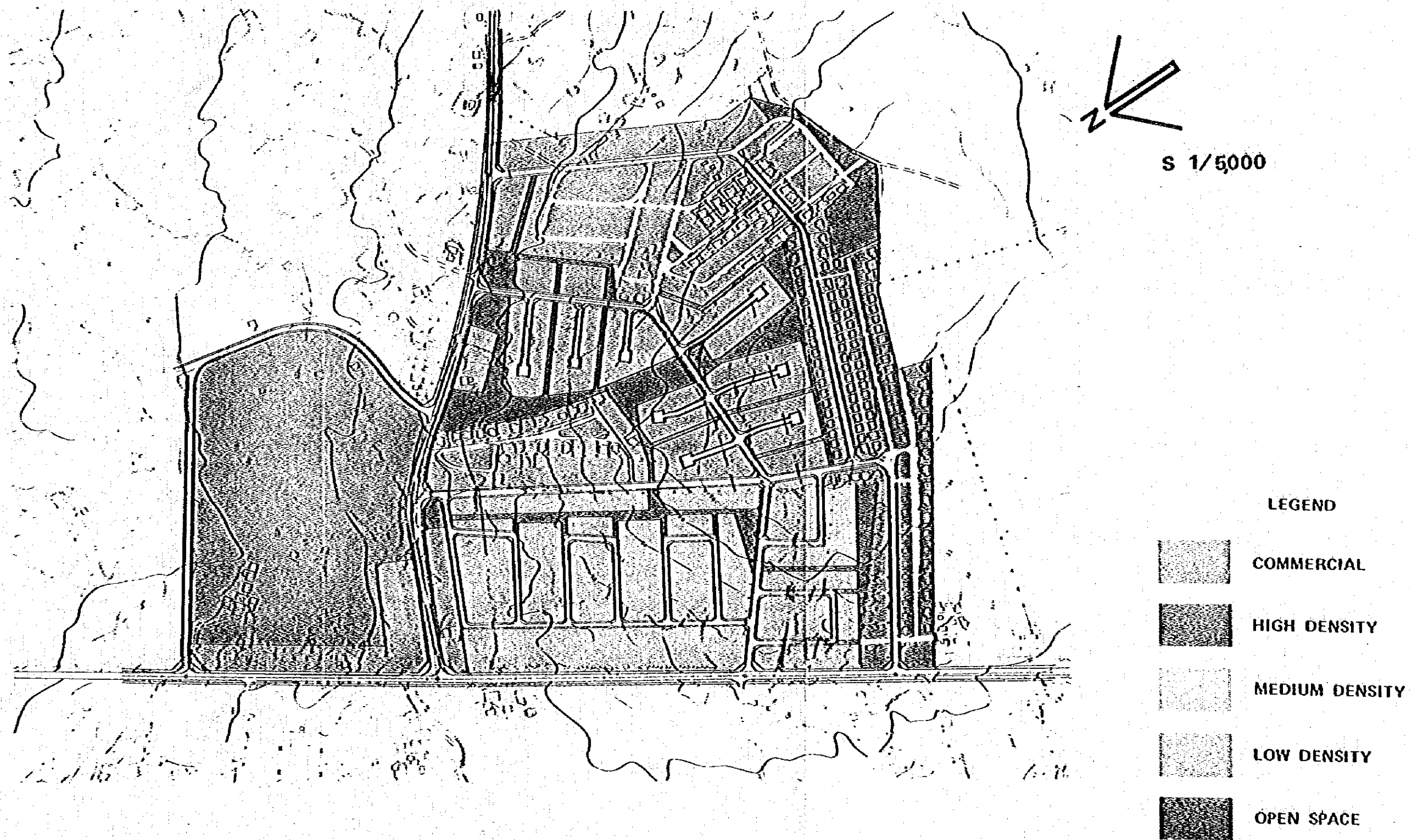
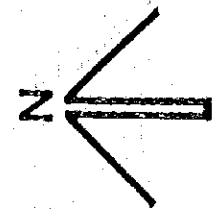
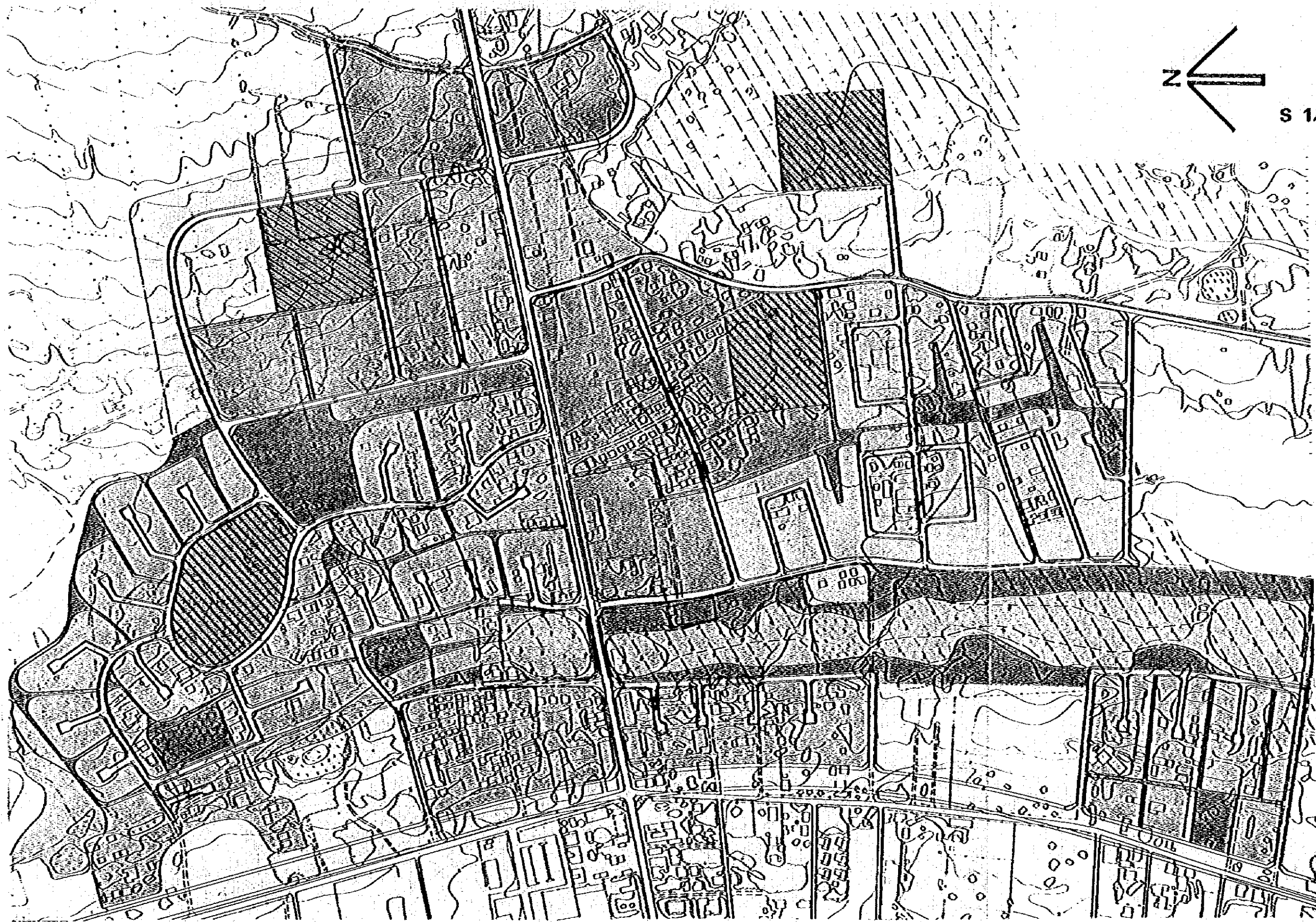


FIG 2.5.21 MODEL PLAN OF NA KLUA TOWN (B)



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LEGEND







-  **COMMERCIAL**
-  **HIGH DENSITY**
-  **MEDIUM DENSITY**
-  **LOW DENSITY**
-  **OPEN SPACE**
-  **PUBLIC FACILITY**

FIG 2.5.22 MODEL PLAN OF NORTHERN NEW TOWN

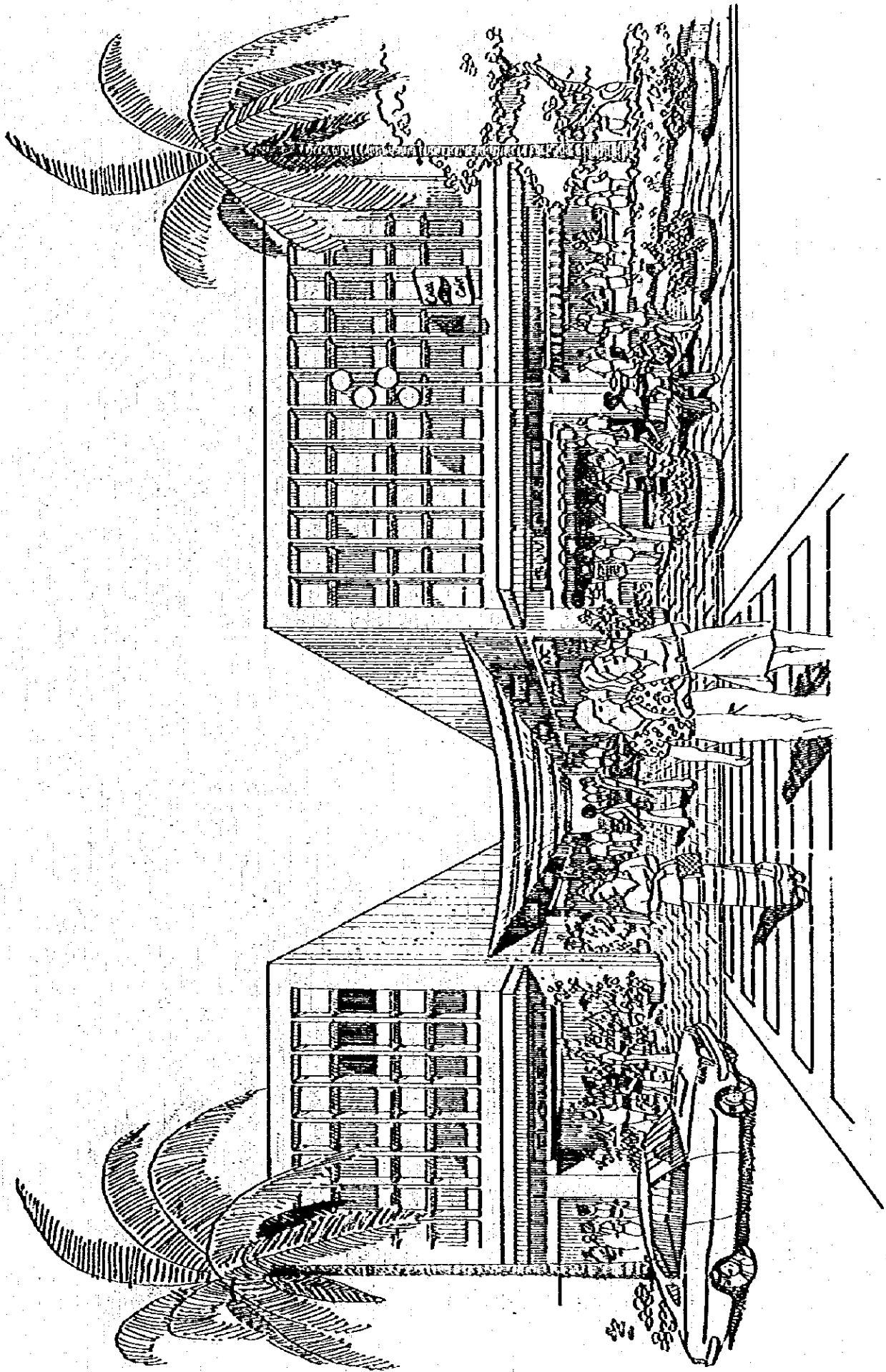


Fig. 2.5.23 Na Klua Town Center

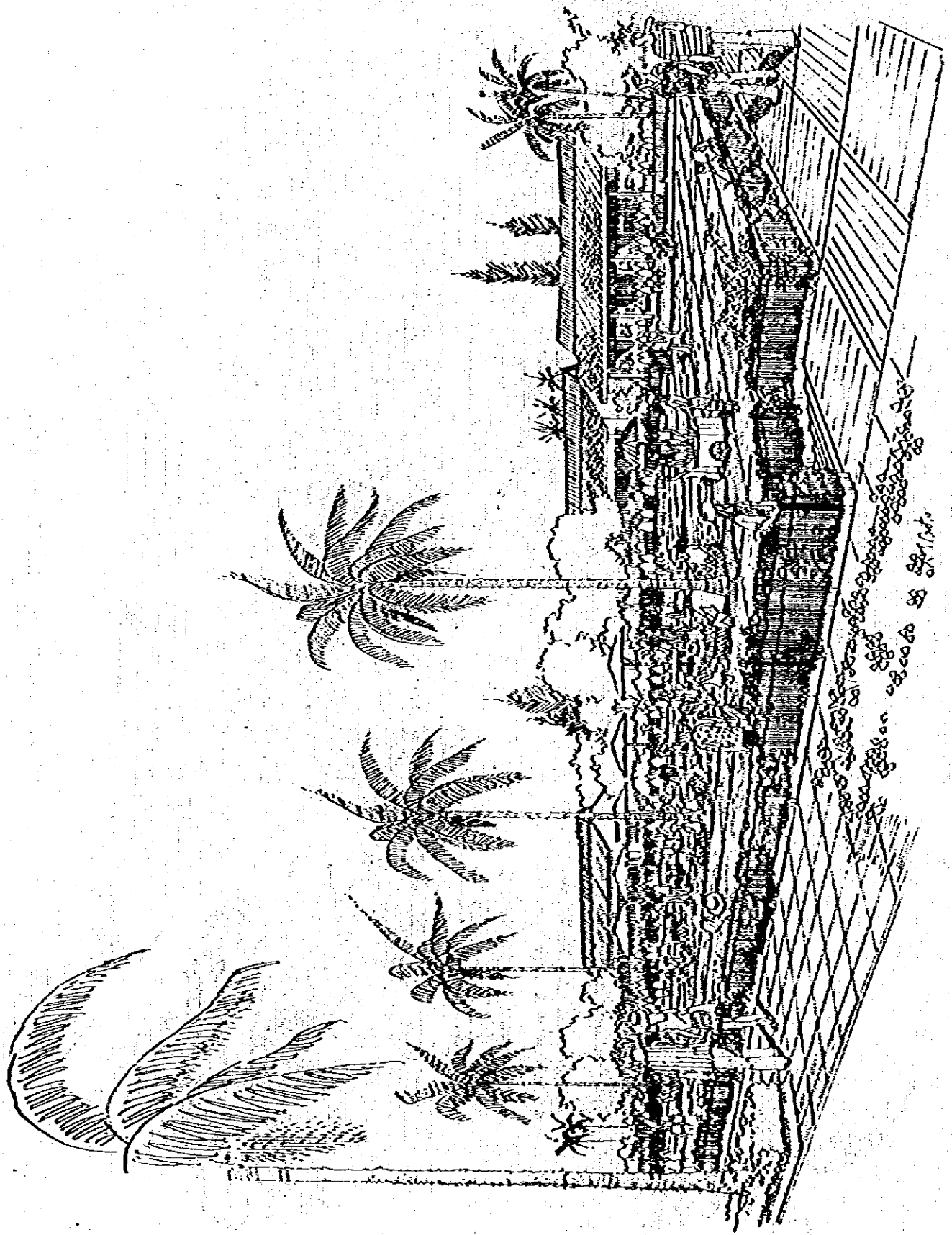


Fig. 2.5.24 Northern New Town Center

2.5.6 Points at Issue and Implementation Measures

(a) Residential occupancy plan

A facility implementation plan will be established based on the residential occupancy plan. Although in the population plans, the population gradually increases every year from 1976, the implementation of various facilities will be determined in accordance with individual residential area units, and occupancy plans will be coordinated with the implementation. Thus, implementation is not scheduled for each year, but is planned at the beginning of the year of the construction of each specific residential area. Taking into consideration the construction period of the facilities, occupancy plans are supposed to be considered after 1981. However, as shown in the population plans, population distribution may have taken place before 1981 as well.

The occupancy plans in each residential area in Na Klua Towns A and B and the Northern New Town are as shown in Fig. 2.5.25 and Fig. 2.5.26.

(b) Basic policy for the implementation of construction

The construction of residential areas will be carried out in accordance with the occupancy plans established in the previous section. Even within each residential area, construction will be subdivided further on the basis of phased plans in response to local conditions in an efficient and economic manner. Basic construction policy is summed up as follows:

- Step 1. Provision of infrastructure.
- Step 2. Construction of public facilities.
- Step 3. Housing construction in undeveloped areas.
- Step 4. Housing construction in areas where buildings already exist or are in need of renovation.

(c) Points at issue in the implementation measures

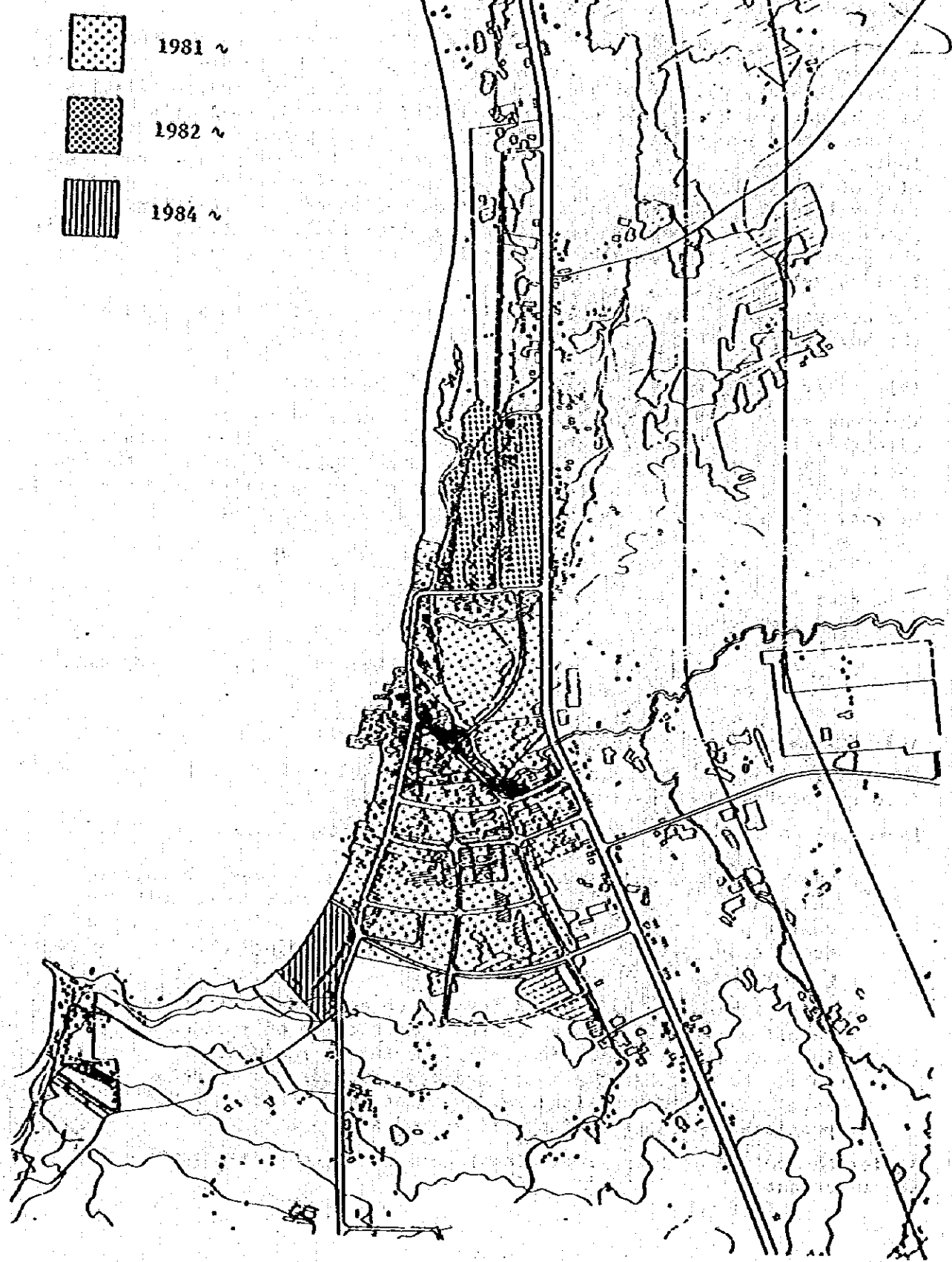
The points at issue in regard to the implementation of projects can be divided into two sections: Construction and regulation.

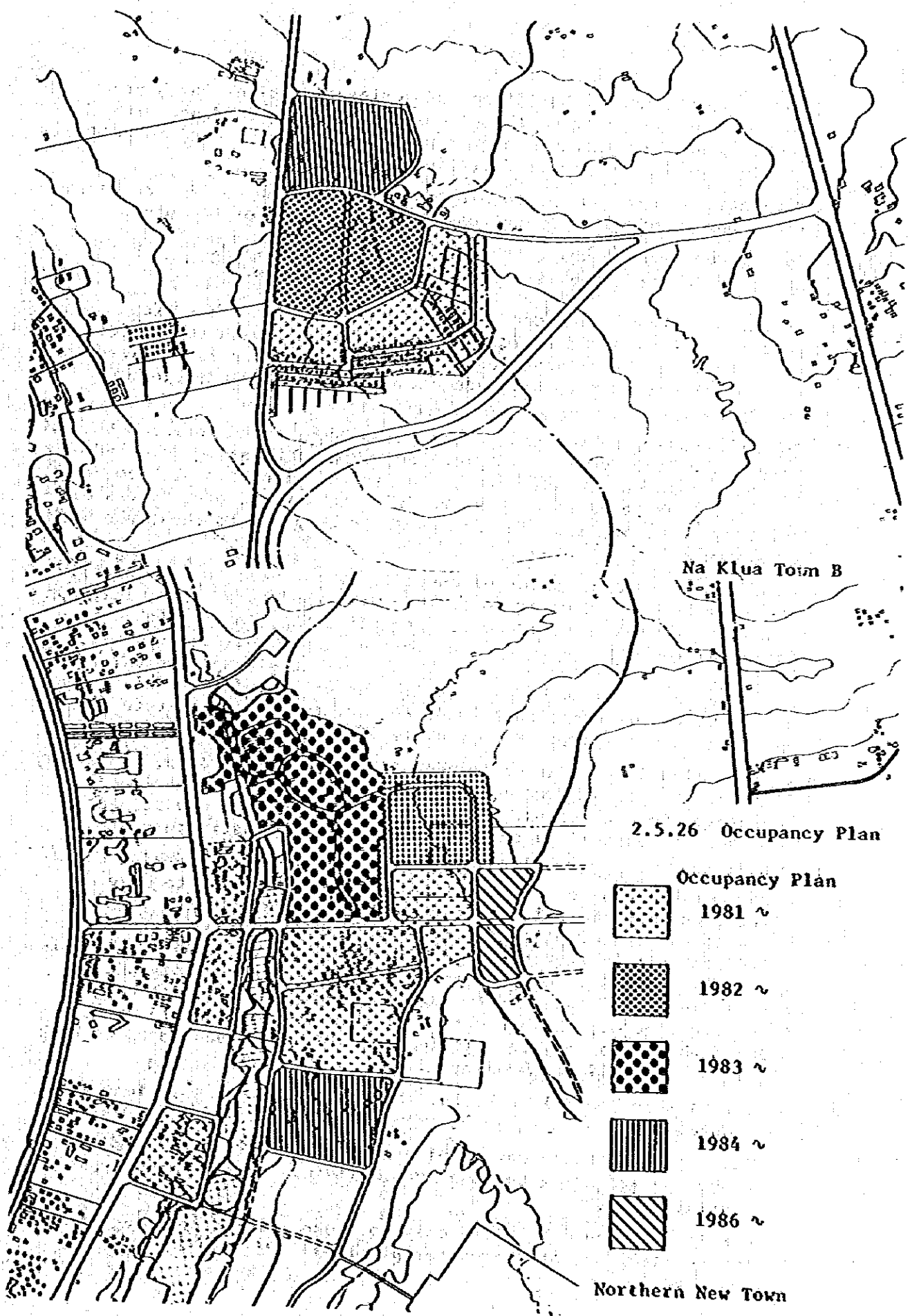
In regard to construction, the following are the two important problems:

- The problem of buildings, such as dwellings, stores, shops, etc., which have already been built and cannot be changed to suit the master plan; namely, which require removal or elimination and subsequent compensation, and uses of existing buildings which do not meet the requirements of the plan.
- This problem can be divided into three sections. First, who will be primarily responsible for the construction of residential sites, infrastructure and public facilities in the residential areas, the public sector or the private sector? Second, the question of legal issues such as land readjustment, and others. Third, the possible combination of the first and second issues.

As for the points at issue regarding regulations, the following two factors are important:

Fig. 2.5.25 Occupancy Plan
Na Klua Town A










Na Klua Toim B

2.5.26 Occupancy Plan

Occupancy Plan

-  1981 ~
-  1982 ~
-  1983 ~
-  1984 ~
-  1986 ~

Northern New Town

- To ensure the use of buildings and residential sites which are under construction or on the planning board in accordance with the master plan, regulatory measures will have to be adopted to guide development in the proper direction.
- Regulations are required to preserve existing unused land as vacant sites for future development based on the phases of the plan.

The following measures to solve these problems are proposed. The main organization of construction will be described elsewhere.

- In the low density and medium density residential areas, few problems are expected in respect to conformance with the master plan, because the present land-use and road network is utilized to a great extent as far as is adequate to the overall development concepts.
- In high density residential areas, since continuous terraced houses with one or two stories are proposed, some of existing detached houses should be reconstructed. In dealing with this problem, compensation may be paid to those who wish to move to other areas or priority in moving into new houses could be given to those who wish to stay in the same areas.
- In all areas, in the event of engendering the need to move or eliminating buildings in order to conform with the master plan, fair compensation should be guaranteed. Regarding the compensation, the following items for expenditure are included: building removal, purchasing new land or buildings, business loss compensation, and other compensation to be payable, the securing and the making of arrangements for substitute land, the securing of substitute buildings and guarantee the priority of occupation.
- In such high density areas as seen in the Na Klua A area, it is very difficult to get a crowded environment cleared and redeveloped. Therefore, in such cases, enhancement of the living environment should be encouraged by the provision of an infrastructure.
- The greater portion of commercial facilities and residential sites under construction or on the planning board give rise to many conflicts, not only in relation to non-conformance with the requirements of the master plan, but also because they are unlawful buildings. It is regrettably difficult to control this problem effectively. In addition, the general case is that tenants and the owners are not necessarily the same. Therefore, in order to give effective control, the protection of these tenants should be considered while too many restrictions should be avoided so as to keep the investment climate healthy.
- As practicable control measures, the following four solutions are considered.

The contents of the master plan should be fully understood by those who are going to construct buildings or to prepare residential sites.

Permission should be given only to those plans conforming with the requirements of the master plan.

City authorities should be given the authority to officially announce ordinances freezing existing conditions in order to preserve unused land or sites not built on.

Concerning what cannot be particularly significant impediments for the implementation of the master plan, even if existing buildings not in conformance with the master plan are not removed or eliminated, no force should be adopted to guide the development in the proper direction. In reality, a longer period of time might be required since renovation or reconstruction is not allowed, but such buildings will be able to remain as they are.

(d) Main organization of construction

The construction of residential sites, infrastructure under the road (R-3), public facilities, dwellings, etc., involves three issues. The first is the question of whether construction should be carried out by the public sector or the private sector. The second issue is that land readjustment and other problems may have to be settled by legal means, and the third issue is that these two cases may be combined. Here, we shall study what is the most preferable way to organize construction, comparing the merits and demerits of each case.

The main possibilities are as follows:

- All construction be implemented by the public sector.
- All construction be executed by the private sector.
 - 1. Development made by a superblock unit.
 - 2. Development made parcel by parcel.
- Development made by a combination of public and private sectors.
- Objectives are achieved by means of legal means, such as land readjustment.

1) The case of all construction being implemented by the public sector

- Merits

Conformance with the master plan is secured, and overall orderly development is facilitated.

Subdivision prices of residential sites are lower than if developed by the private sector.

- Demerits

Investment of public funds will have to be very large.

2)-1 Development made by the private sector (by the superblock system)

- Merits

Conformance to the master plan is relatively easy.

Investment of public funds is dispensable.

A diversified living environment is possible.

- Demerits

It is hard to coordinate construction with the master plan and is liable to cause disorderly development

Subdivision prices become higher than if developed by the public sector.

2)-2 Development made parcel by parcel

- Merits

Investment of public funds is dispensable.

A diversified living environment is possible.

- Demerits

It is hard to coordinate with the master plan and liable to bring about disorderly development.

Subdivision prices become higher than if developed by the public sector.

3) Development made by a combination of public and private sector

- Merits

Investment of public funds is relatively reduced.

A diversified living environment is possible.

- Demerits

It is hard to coordinate construction by the public sector and the private sector, so there is the possibility of being unable to efficiently construct infrastructure and public facilities.

Gaps in the subdivision prices established by the public sector and the private sector may become apparent.

4) Objectives being achieved by legal means, such as land readjustment

- Merits

Public fund investments will be minimized because part of construction costs will be recovered by means of disposal of reserved land.

Acquisition of the sites will become unnecessary.

As a rule, since existing buildings remain untouched, trouble with inhabitants will be rare.

- Demerits

Since there is no legal substantiation, new legislation will be required.

Because of the necessity to keep down investment of public funds, based on the above scrutiny, it is preferable to use the private sector as the main development organization for construction. In this case, in order to make coordination easier with the master plan, it is desirable to package construction by the superblock system. Besides, it is essential to ensure efficient construction with well-coordinated plans for the construction of the infrastructure (above road level R-2) and public facilities related to the other facilities developed by the private sector.

2.6 Improvement plan for the beach road

2.6.1 Outline

(a) Existing conditions and problems

The beaches of Pattaya resort can be roughly classified by character into the following three categories.

- Main beach : A major part of the beach activities of Pattaya are swimming, sun bathing, horse riding, strolling boating, etc. and are performed on a sandy beach with a length of about 4 km from Orchid Lodge to downtown Pattaya.
- Private beach : The beach from Na Klua village to Orchid Lodge, and the western beach of Pattaya hill are rocky and both beaches are used as private beaches for hotels, bungalows, villas, etc.
- Southern beach : The beach to the south of Pattaya hill is sandy long and wide, with coral reefs. This continuous beach to Bang Sarey has a great potentiality as tourism resource, but it is almost unused at present.

The beach road mentioned in this section is a road with a length of about 4 km parallel to the main beach, and used as a multi-purpose space such as a major road connecting the hotels and downtown, on-street parking lots, a promenade for tourists, an access road to the beach, location for street vendors, etc., having an important effect on the beach activities on the main beach. Therefore, it is proposed in the master plan that as a center for the development of tourism in Pattaya, the beach road should be integrated in the improvement plan for the main beach.

Accordingly, the present problems regarding the beach road can be considered as problems of the main beach. The problems of the main beach are concerned with differences in scale; these differences in scale have arisen because Pattaya was formed as a tourist resort in spontaneous but not an orderly manner. In Pattaya, the beach promenade or parking lots are located adjacent to the beach so that visitors can approach the beach with ease. Street vendors, and tours for motor-boats, scooter-boats, horse riding, etc. are waiting for hire just on the beach. Apparently, it seems that the tourists' convenience is given top priority. Such a pattern is an important merit for a small-scale tourist resort, but this pattern is not adequate for receiving and servicing such a large number of visitors as Pattaya.

Under the circumstances, the main problems of the beach should be examined from the three aspects of safety, comfort and convenience, which are the fundamental factors of a tourist resort. The results of the examination are summarized below.

1) Safety

- Beach road : The beach road is now used as a main road by residents as well as tourists, and also as the access road connecting the hotels to the beach

- : and promenade, a space for street vendors and others. Therefore, the beach road is fully congested with high speed-taxicabs, motor cycles and pedestrians, so that they are exposed to extremely dangerous conditions.
- Swimming and boating** : A great number of pleasure boats, motor-boats, scooter-boats, etc. are moored at the beach without any order. In this situation, participants in beach activities cannot enjoy swimming freely or appreciate the beautiful view of Pattaya hill. From another aspect, due to the lack of a sea surface control plan, the safety of swimmers is not secured as motor-boats run in the same area of high speed.
- Beach control** : There are broken bottles, empty cans and other harmful rubbish left on the beach and seashore, so that people who enjoy sun bathing or swimming in their bare feet are exposed to danger. At present, measures against accidents by providing life guards, rescue or first aid stations are not satisfactory. Moreover, the horse riding which is performed on the beach might be a disturbance for tourists as well as a source of tetanus infection (from horse dung).
- 2) **Comfort**
- Automobile noise** : The main road and street parks are located adjacent to the beach without a satisfactory green belt. Thus, the comfortable environment of the beach is disrupted by the noises caused by automobiles, motor cycles, etc.
- Confusion in use of the beach** : At present, the main beach is used for various purposes such as sun bathing, swimming, strolling, horse riding, etc., which result in considerable confusion in the use of the beach; thus, people enjoying one pleasure become a factor impeding the pleasurable activities of others.
- Use of the sea area** : The mooring of pleasure and other boats without any order on the beach is not desirable in view of the landscape, and also boating near the beach interrupts the sun bathing, swimming and like activities on the beach due to the noise caused by it.

3) Convenience:
Information

: In an international resort like Pattaya, it is very important to provide tourists with information on where, how, when and how much information the tourists desire to obtain. There are many recreational activities available, such as pleasure boats, other types of boats, bicycles, horse riding, etc. at present, but since there is no organized information distributed, the tourists find it hard to enjoy these recreational facilities or activities.

Beach facilities : The number of one-day visitors to Pattaya has been increasing year by year; especially on Saturday and Sunday, a considerable number of visitors are found on the main beach. However, there are very few service facilities such as public toilets, lockers, shower baths, etc., for these visitors at present. It may be said that almost no preparation for maintaining and servicing one-day visitors is provided at present.

(b) Improvement plan for the beach

Grasping all aspects of problem under the present circumstances, the master plan recommends the necessity for improving them, and establishes the following concepts in proposing an improvement plan for the beach as a development target.

1) Rest and relaxation

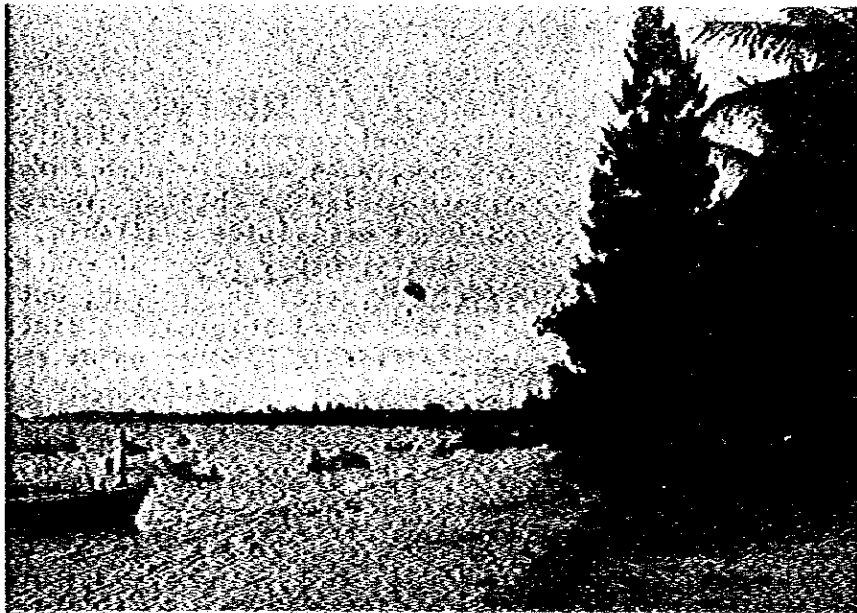
- A comfortable beach for sun bathing and swimming.
- Strolling on the beach promenade

2) Promoting beach and ocean activity

- Unskilled beach and ocean sport participants should be able to enjoy themselves with ease and safety.

3) Education

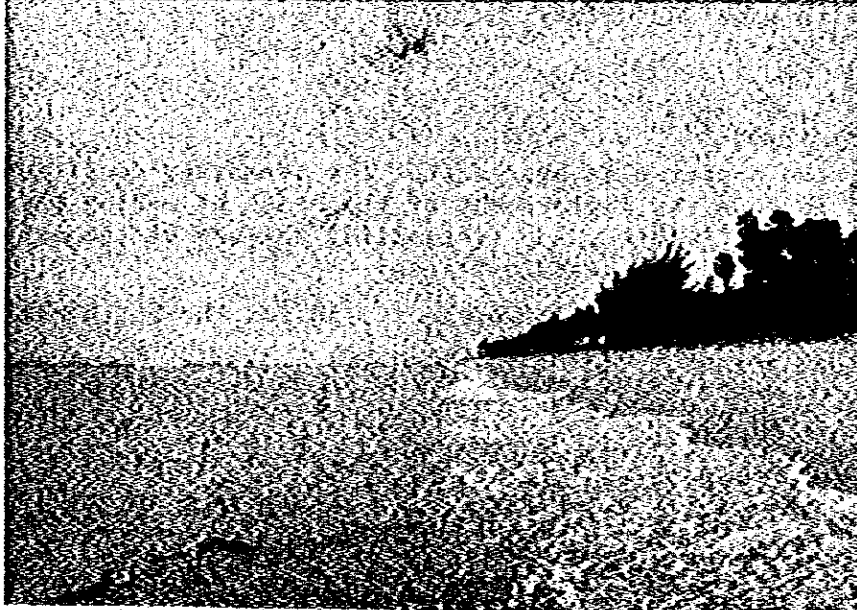
- Acquiring knowledge about the sea
- In addition, the master plan states that the necessary conditions for the plan include the improvement of the beach by making physical changes in beach activities, and controlling the use of the sea surface so as to achieve the said target.
- The planning concepts of the improvement plan for the beach are given below.



Main Beach



Private Beach



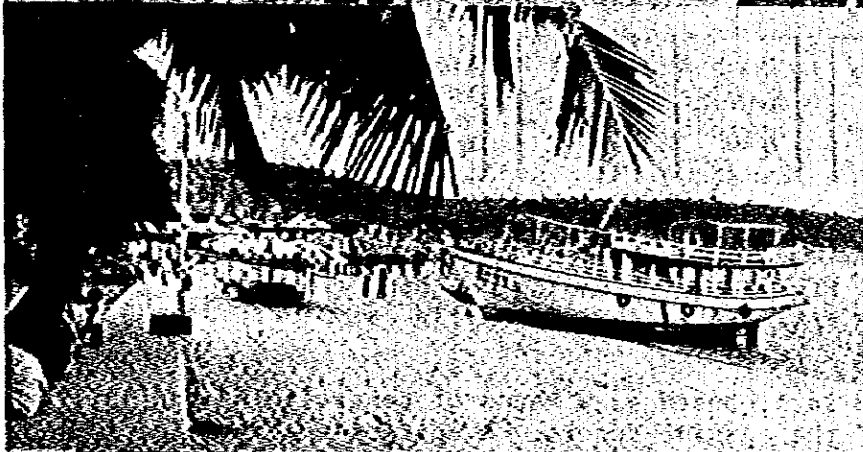
Southern Beach



Parking



Pony Station



Mooring



Planting

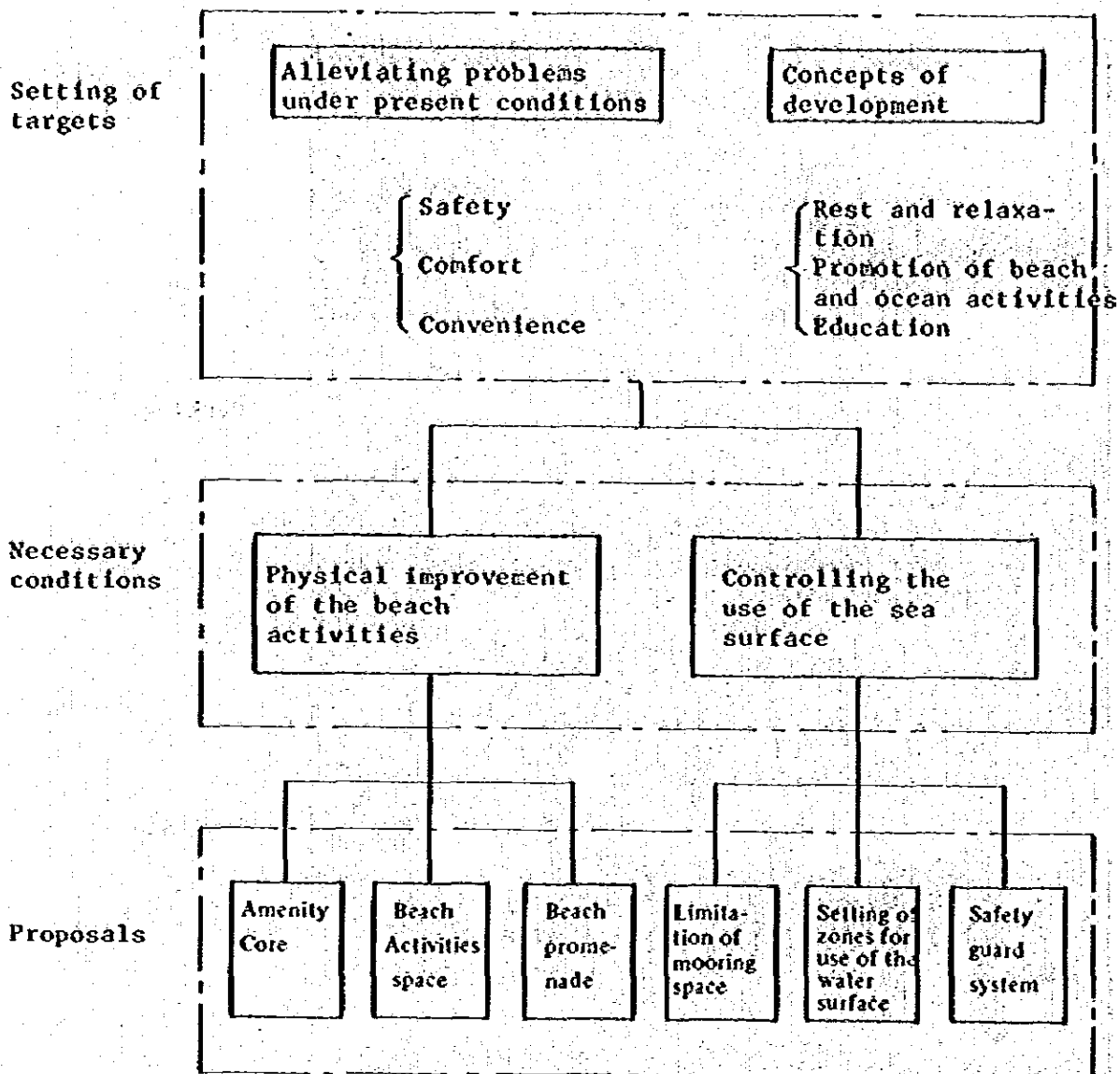


Fig. 2.6.1 Planning Concepts

(1) Amenity core

The amenity core is proposed as a means of centralizing and unifying the character of the seaside resort. A unified resort image for Pattaya can be created by forming a core where all tourist activities can be easily controlled. The functions of the amenity core are summarized as follows.

- Functional center (connecting point of traffic)
- Spiritual center (symbol zone)
- Center of information (information center)

1) Facilities

The proposed facilities in the amenity core are required to provide enough attractiveness to function as the main core in Pattaya.

- A shopping arcade where tourists can buy things without any anxiety.

- A place for cultural activities (folk dances and folk museum)
- Facilities for recreation intended for tourists with their families
- Traffic terminal
- Service center (tourist information center, police box and relief station)

11) Location of core

In the master plan, during the first stage, two cores are located at the north and the south of the main beach with the above facilities.

Main amenity core : The main amenity core consists of an area including the downtown district. The present problems* in the downtown area are to be solved by redevelopment of the downtown district, and the core is ranked as a central focus for Pattaya as a tourist resort.

Northern core : The area north of Orchid Lodge is planned to be a northern core, creating a two-pole structure for the main beach in combination with the main amenity core.

* The problems in downtown Pattaya are discussed as follows.

Restaurants and gift shops line the beach, and there are only a few roads meeting at right angles with the beach road, so that it is difficult to develop in an inland direction; if the present linear pattern is left unchecked as it is, further linear development is foreseen and ultimately, the beautiful beach front may be occupied by continuous structures.

Regarding types of business, the number of bars and night clubs is so many that there is a strong image of a so-called "night street", and the street is not suitable for tourists with their families, couples, and the like.

Some restaurants, gift shops, etc. illegally occupy the beach.

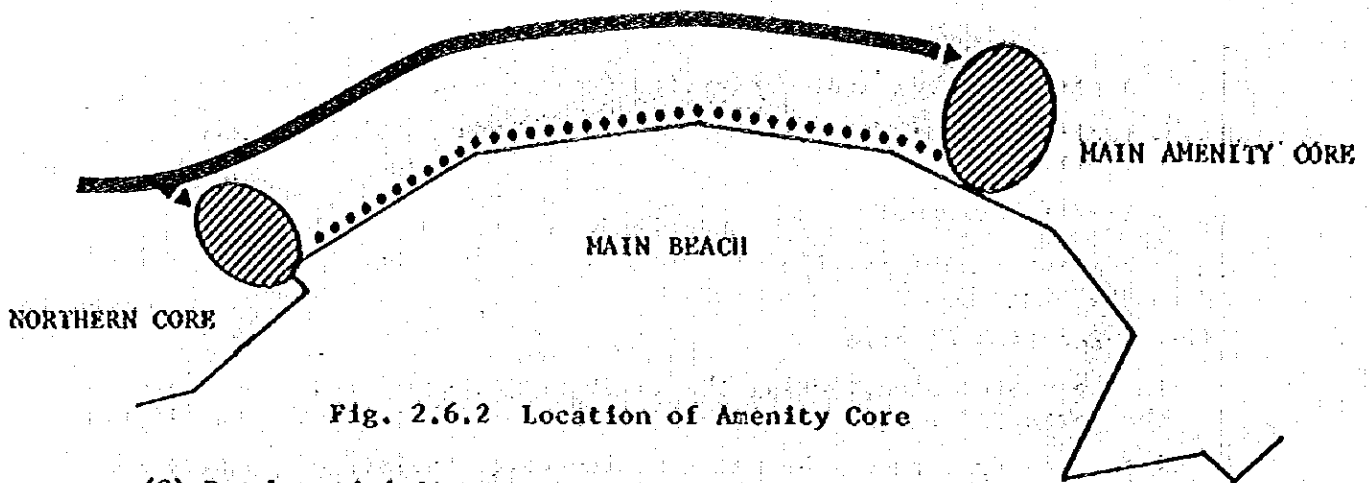


Fig. 2.6.2 Location of Amenity Core

(2) Beach activities space

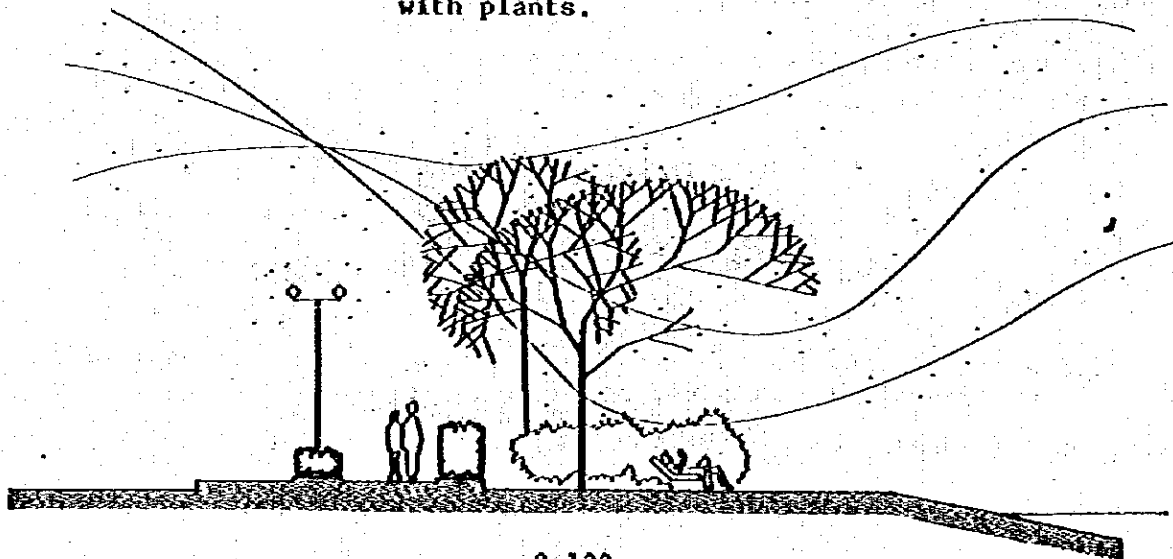
In order to achieve the planned target regarding space for the beach activities, the improvement plan should combine functional and landscaping aspects.

1) Securing privacy

It is necessary to secure privacy on the beach for the tourists so that they experience rest and relaxation and that comfort on the beach is increased. For this, a beach activities area should be separated from other parts of the beach, for instance, the circulation area (the area for automobiles, bicycles and pedestrians) and the sea activities area (boating and water skiing areas). The people visiting the beach consist of overnight visitors and one-day visitors who are either foreign tourists or Thai visitors whose activity purposes on the beach vary. This difference in activity requirements causes confusion on the beach, so that it is necessary to meet the activity requirements of visitors with the same purposes on the same part of the beach according their respective purposes. The activities of many street vendors on the beach create an undesirable environment for the rest and relaxation of tourists there. Therefore, it can be said that restriction of their activities on the beach is necessary to secure privacy for the visitors.

Securing privacy : As measures to secure private space, the following are proposed.

1. Buffer zone : The space for rest and relaxation is surrounded with plants.



2. Sand beach

: In order to secure a larger space and make space less dense, existing plants on the beach such as coconut palms, acacias, etc. should be transplanted as the occasion demands.

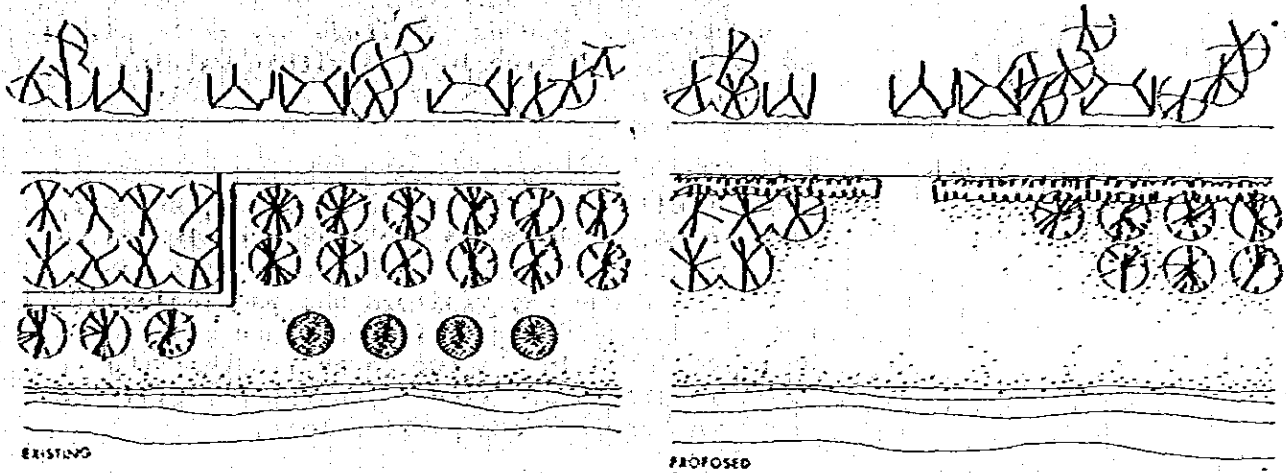


Fig. 2.6.3 Transplanted

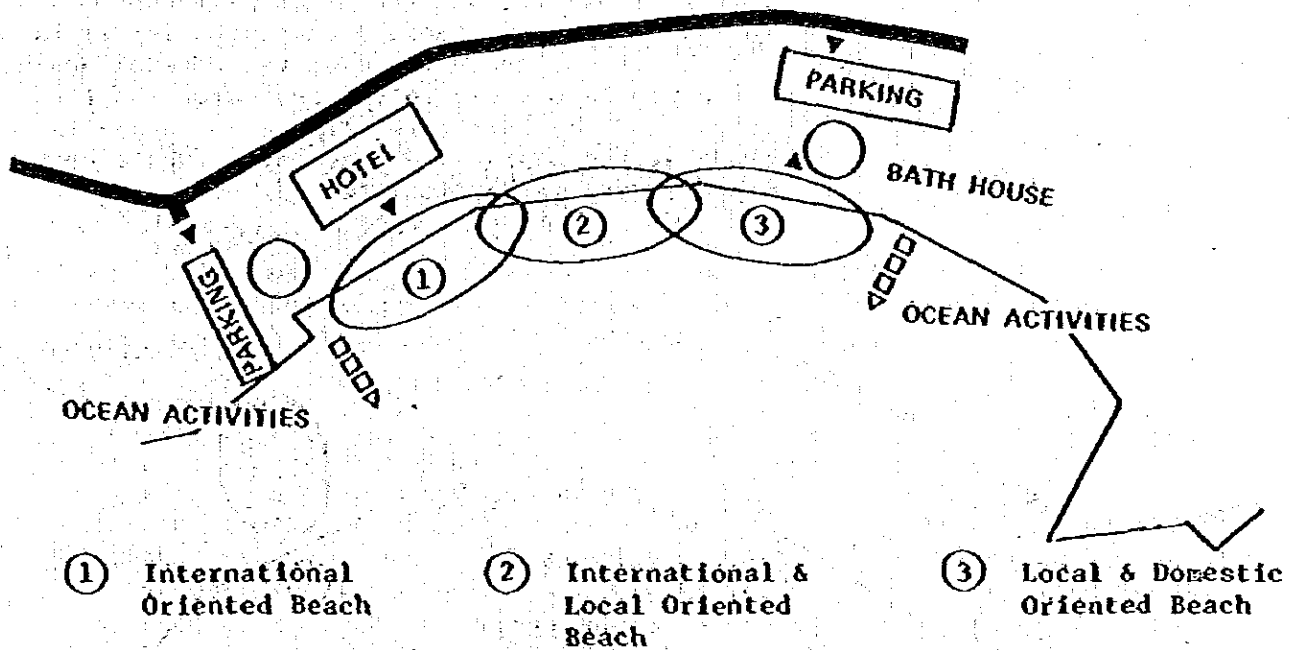


Fig. 2.6.4 Directing of Visitors

Directing of visitors

: In the case of direction of visitors, it is a priority that visitors having different purposes can freely select their beach area; therefore, it is not desirable to put foreigners on one exclusive beach, one-day visitors on another exclusive beach, and so-on. For this, a plan should be established so that the users can be naturally controlled by arrangement of parking lots, beach facilities, etc.

1. Parking lots for one-day visitors

: Parking lots for one day visitors are established at places adjacent to the cores located at the northern and southern ends of the main beach, respectively. One-day visitors are to be directed to the beach area located within walking distance from the parking lots and mainly used by them.

2. Beach facilities

: Beach facilities such as locker rooms, showers, bath rooms, toilets and the like are planned to be appropriately arranged throughout the whole beach. For one-day visitors who particularly use these facilities, large ones are planned to be established in the two cores, so that the visitors are to be directed to these facilities as in the case of the parking lots.

Restriction of street vendors

: The vendors in Pattaya are classified into two groups, one of which engages in trade with foreign tourists, and the other, with one-day Thai visitors. Of those groups, the former is allowed to engage in trade at the several designated places planned in the two cores and the beach, and the latter is allowed to engage in trade at the designated beach areas where one-day visitors gather in large numbers.

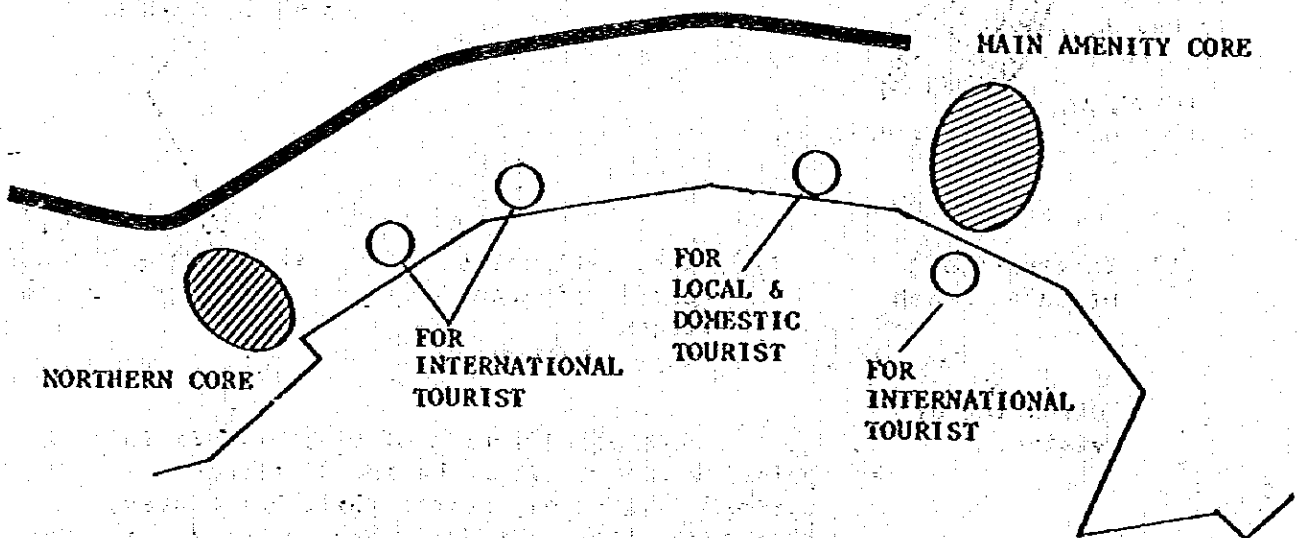


Fig. 2.6.5 Location of Vending Area

ii) Enhancement of availability

The availability of beach activity space is decided by arranging the locations of various service facilities. These are realized by properly arranging the facilities to assist the activities of overnight guests and one-day visitors on the beach, such as showers, lockers, flush toilets, snacks, stalls, bicycle pools, first aid medical relief stations, etc. The following facilities are proposed.

- Service Park** : This is a central station with beach service facilities located in the center of the main beach.
- Facilities** : Snacks, stalls, police boxes, first aid medical relief stations, locker rooms, shower rooms, inquiry offices, public toilets, bicycle pools, bicycles for rent, taxi pools.
- Satellite Park** : This is planned to be a sub-service park for beach activities, which are collected together not only as a service function but to provide scenic points to break the monotony of the beach.
- Facilities** : Stalls, public flush toilets, bicycle pools.

(3) Beach promenade

The main beach is also used for strolling areas as a beach promenade. However, in present Pattaya, the congestion caused by pedestrians, taxis, motor cycles and others causes confusion and at the same time provides obstacles to the maintenance of privacy for beach activities. Therefore, the following basic ideas for improvement are proposed.

i) Elimination of motor vehicle traffic

The beach promenade should be defined as a space for pedestrians and bicycles, eliminating motor vehicle traffic, such as taxis, buses, motor cycles, etc., from the beach road.

ii) Bicycle parking, bicycle roads

Actually in Pattaya, conveyances available for medium distance travel are rarely used, and this reduces the pleasure of using transport means for enjoying an ambient beach atmosphere and scenery in the tourist resort. In consequence, the utilization of bicycles should be promoted as the main medium distance conveyances for reaching the amenity cores, port facilities, inland activity areas and other tourism spots. For this purpose, beach roads should be provided with exclusive roads for bicycles at the same time with bicycle parking lots at proper locations.

iii) Introduction of low speed conveyances

Pattaya main beach constitutes a coasting extending about 4 km and its central facilities for sightseeing are situated at both extremities of this beach. For this reason, the scale of the main beach is relatively large for pedestrians, so that substitute conveyances will be necessary to eliminate motor vehicles from the beach roads. As stated above, the principal will still be pedestrian movement over short distances and bicycle riding for movement over medium distances. We propose, however, the introduction of low speed traffic conveyances as safe transport means available to all tourists.

2.6.2 Existing Situation on the Beach

(a) Existing facilities

Pattaya main beach extends about 4 km south to north, with the southern part (for about 1 km) forming an amusement quarter called downtown Pattaya. The sandy beach, as the central area for the beach resort, is as long as about 3 km, providing sheds, footpaths, etc., though the width is as narrow as 20 m, and in a condition which can hardly be called fully functional. The land use at the back of the main beach is classified into 3 parts; namely, enumerating from the north; a hotel area; a composite area of hotels, bungalows and vacant land; and then downtown Pattaya. In the area north of the access road in the middle of the main beach, there stands five international class hotels, so the beach is used by overnight guests at these hotels. In the area between the central access road and downtown Pattaya, restaurants, gift shops and others protrude from the downtown area and stand in a row along the beach. However behind them are more unused lots, private villas, and so on, together with intensive use of the beach in front by domestic tourists.

In downtown Pattaya, there are many daily commodity stores which cater to the inhabitants. Standing side by side these stores are now gradually changing to restaurants and gift shops catering to the tourists. At the same time, night time entertainment, such as bars, night clubs, etc., have been increasing, while their use by tourists tends to be concentrated in the night and tourists can rarely be seen there in the daytime.

The main amusements on the main beach are horse riding, motor cycle riding, cycling, etc., for inland activities, and boat riding, parasailing, water skiing, surfing, etc. for ocean sports, which are available all around the beach. There are also several pony stations and one place for a rent-a-cycle service.

(b) Trend of one-day visitors

1) Current conditions regarding one-day visitors

The arrival of one-day visitors in terms of the number of cars and chartered buses parked on Pattaya main beach is shown in Table 2.6.1. If it is assumed on average there are 4 persons to a private car and 50 persons on a bus, this will give us approximately 2,000 people a day. Besides, the number of stalls being heavily used by the day visitors exceed 200.

Table 2.6.1 One-day Visitor Situation

Conditions	May 14 (Sunday) 2:00 PM	June 4 (Sunday) 11:00 AM
	Number of Units	Number of Units
Private Cars	180	229
Chartered Buses	10	22
Stalls	Not available	220

- Parking facilities for one-day visitors are presently designated roadside parking areas which hold about 500 vehicles. Furthermore, the greater part of the beach is available for parking cars. The actual status of existing parking lots reveals that about 90% of cars park along the beach, whereas there are fewer cars parked in the roadside parking areas. For this reason, it is considered that parking along the beach be given arboreal shade to protect the cars from direct sunlight, and the activity range of one-day visitors be limited around their cars.
- Approximately half of the chartered buses are parked on the beach near the downtown area, and very few are found on the road parking lots. Besides, vacant land beside the Ocean View Hotel has been serving as a parking lot, and several vehicles are found parked there.
- Parking on lanes and back roads is not found for the time being.
- The number of baht-buses parked on the beach is very big. According to the field survey, about 50 buses were found. This represents approximately 17% of the baht-buses in the Pattaya area.
- Stalls are distributed all around the main beach. These facilities are movable and do business with domestic tourists. Above 90% of the stalls are dealing in foods, and many of them are cooking and serving food on the spot. Souvenir shops are counted only in small numbers.

Most of the stalls are doing business on the roads, except in some areas. Viewed from the traffic aspect, since the width of the roads is adequate at present, there is no noticeable hindrance to the road traffic, although improvements are desirable because of the danger in crossing the road and the occupation of roadside parking lots. Besides, from a sanitary point of view, there are not merely problems of sanitary control, such as tableware washing, cooking and so on, with the difficulty of supplying service water to these facilities, but also problems of sanitation and beach contamination from the filthy water from these facilities being scattered around the roads.

2) Thoughts on the one-day visitors

As basic policy regarding the one-day visitors, they should be received in sufficient numbers to contribute to the natural environment of the Pattaya area. Basic measures are as follows:

1) Controlling the number of one-day visitors

Unless limitations are set, the number of visitors may exceed beach capacity, which make it difficulty to maintain Pattaya as an international tourist resort.

11) Arrangements of beach facilities for one-day visitors

One-day visitors do not have any living base in the Pattaya area, so that it will be necessary to arrange service facilities for their activities, meals and sightseeing on the beach.

iii) The stall facilities are important for domestic one-day visitors, though, as mentioned before, there are a lot of problems. They should be essentially improved with a view to being an international tourist resort. However, this will probably be difficult to carry out all at once. We propose the following improvements by steps.

STEP 1 Designation of their location

STEP 2 Hygienic control

STEP 3 Conversion to other facilities

(c) Trend of baht-buses

The number of baht-buses in the Pattaya area is presently 375, of which 295 are registered as vehicles for the Pattaya baht-Bus Cooperative in Chonburi Province. The number of 375 is the number regulated by the Ministry of Transport.

If we divide baht-bus income into in-season and off-season, the income for each bus each day will be as follows:

Table 2.6.2 Income by Baht-bus

Income and Cost	In-season	Off-season
	Baht/day	Baht/day
Total income	200	150
Fuel	60	50
Net profit	140	100

Baht-buses are in service for both international tourists and domestic tourists, and the availability situation is as follows:

Table 2.6.3 Number of Customers

Season		Customers/day/car			
		Total	International	Domestic	Local
In-season	in persons	180	40	100	40
	in %	100	20	50	30
Off-season	in persons	140	25	100	15
	in %	100	15	70	15

Note: International ; International tourists
 Domestic ; Thai tourists
 Local ; Hotel employees plus residents in Pattaya & Na Klua

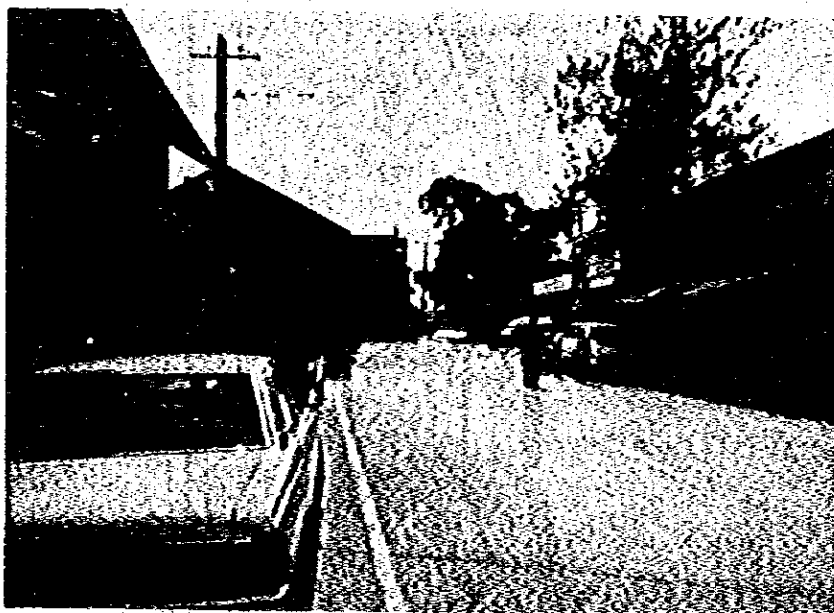
The total number of customers of baht-buses a day is as follows:

Customers

Season	Total	International	Domestic	Local
In-season	54,000	12,000	12,000	30,000
Off-season	42,000	4,500	7,500	30,000

The routes for baht-buses are presently established by the Baht-Bus Co-operative (See Fig. 2.6.7). Among these, route (1) is already in service, while route (2) is still under consideration. The operation of baht-buses is based upon the above-mentioned routes, though, actually they are often used in similar ways to taxis, they are not restricted within these settled routes.

The operating distance per day will be about 130 km, which is equal to approximately 5 times the operating distance of the said bus routes.



Bus Station proposed by Baht-Bus Union
 (① Station on Fig. 2.6.7 at Na Klua)

Fig. 2.6.7 Proposed Routes by Baht-Bus Union

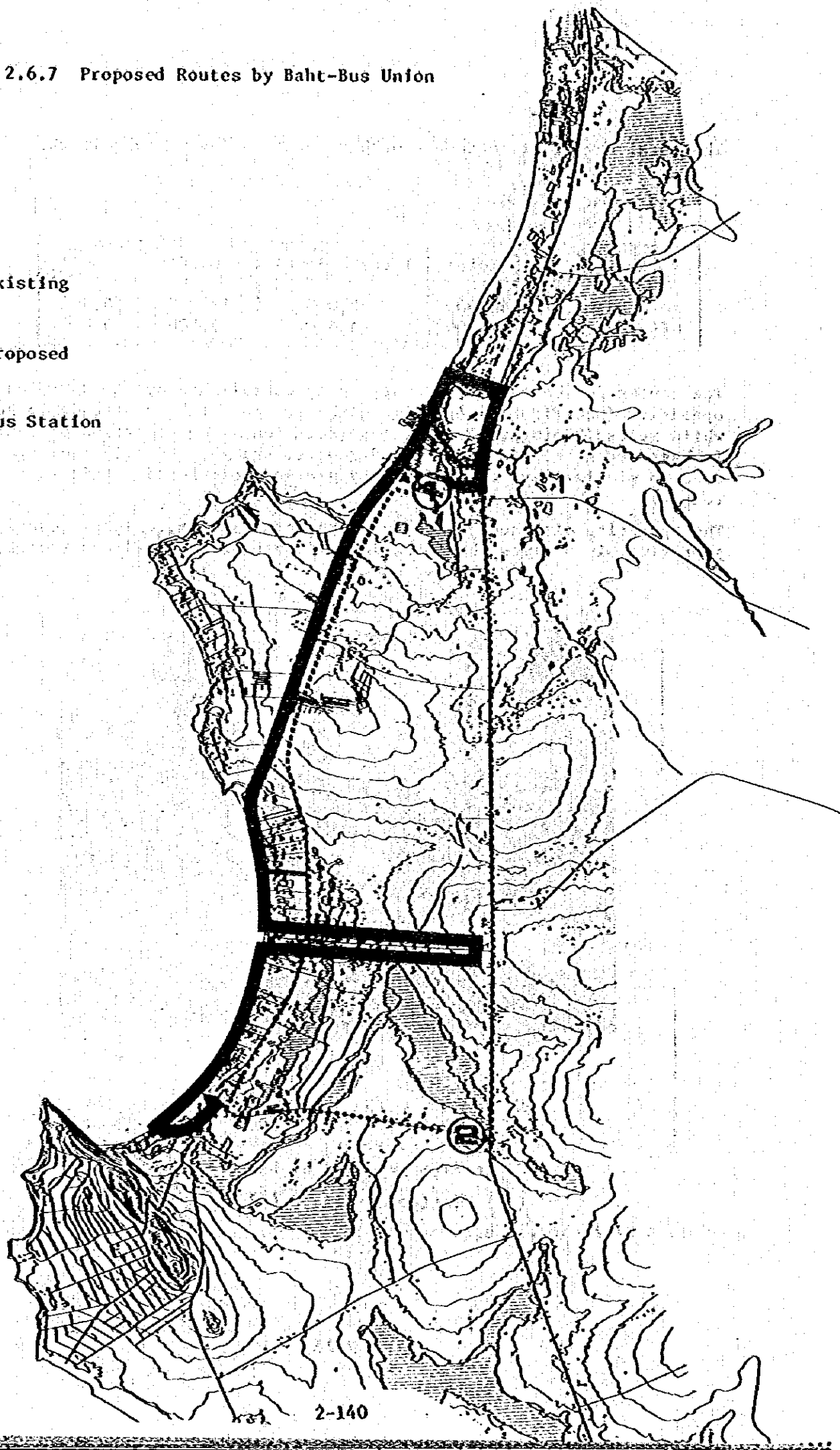


Existing



Proposed

①, ② Bus Station



2.6.3 Beach Road Circulation System

(a) Comparative study for beach road improvement plans

As for the beach road improvement plans, we recommended the necessity of eliminating motor vehicle traffic from the beach road. In the following paragraphs, the circulation system of the beach road and the back roads, after eliminating the motor vehicle traffic on the beach road is comparatively evaluated as follows.

Scheme A Loop system

Though the scheme is involved in the provision of a taxi riding area on both sides of the beach road and back road, a loop system will be adopted for circulation between the beach and back road.

Merits -

- (1) The beach road becomes an exclusive pedestrian way which maintains pedestrian safety from motor vehicle traffic.
- (2) Only a short walking distance is needed for users to go to the taxi riding area.

Demerits -

- (1) Noise nuisance will be brought to residents of narrow streets.
- (2) It is necessary to improve some of the narrow streets.
- (3) It is necessary to make traffic regulations for narrow streets.

Scheme B U-turn system

Though the scheme is involved in the provision of taxi riding area on both sides of the beach road and back road, a cul-de-sac treatment will be adopted for circulation between the beach and back road.

Merits -

- (1) In comparison with Scheme A, the noise nuisance area will not be so extensive.
- (2) A scheme for ideal pedestrian passages will become possible.

Demerits -

- (1) It is necessary to widen the cul-de-sac roads.
- (2) The size of the taxi riding area is physically limited.
- (3) The feasibility of implementation may be doubtful based on situations in the area contemplated for taxi riding lots.
- (4) A long walking distance will be needed to be covered by users going to the taxi boarding area.

Scheme C Linear system

This scheme involves providing a taxi riding area along back road only and banning taxis from coming up the narrow streets to connect the beach with back road.

Merits -

- (1) The interruption of motor vehicle traffic into the pedestrian passages can be entirely eliminated.
- (2) Problems on narrow streets are eliminated.
- (3) The maximum width of the beach is possible.

Demerits -

- (1) It is a drawback for the policy of planning a taxi riding area.
- (2) It denies a work place to existing taxi drivers, so that it will be necessary to introduce substitute public conveyances on the beach road.
- (3) Access roads will be necessary for pedestrians from each hotel to taxi riding lots. Besides, design attention will be required for installing taxi riding lots on arterial roads.
- (4) Traffic regulations will be required for circulation in the narrow streets.

Scheme D Combination loop system

Basically this scheme depends on the loop system, the characteristics of which are improved by adopting the cul-de-sac system and other methods for providing taxi riding lots on the beach roads.

Merits -

- (1) Following in the footsteps of the existing road system diminishes the effect on taxi drivers and implementation is easier. Besides, this system is easily understood by tourists.
- (2) It is the most ideal as a taxi service system for tourists.
- (3) There is no necessity to provide special taxi riding lots on back road.
- (4) There is no special necessity to introduce public conveyances.

Demerits -

- (1) Though motor vehicle traffic is separated from pedestrians and bicycles, problems still remain between hotels and beach activity spaces.
- (2) It is not the most ideal scheme in response to noise, pedestrian safety and forms of pedestrian passage.
- (3) Widening the beach up to the maximum is difficult if the pedestrian passages along the motor vehicle road are to be maintained in parallel.

As a result of the above-mentioned considerations, we propose to adopt scheme D as the most feasible scheme in the first stage, and then to shift to scheme C.

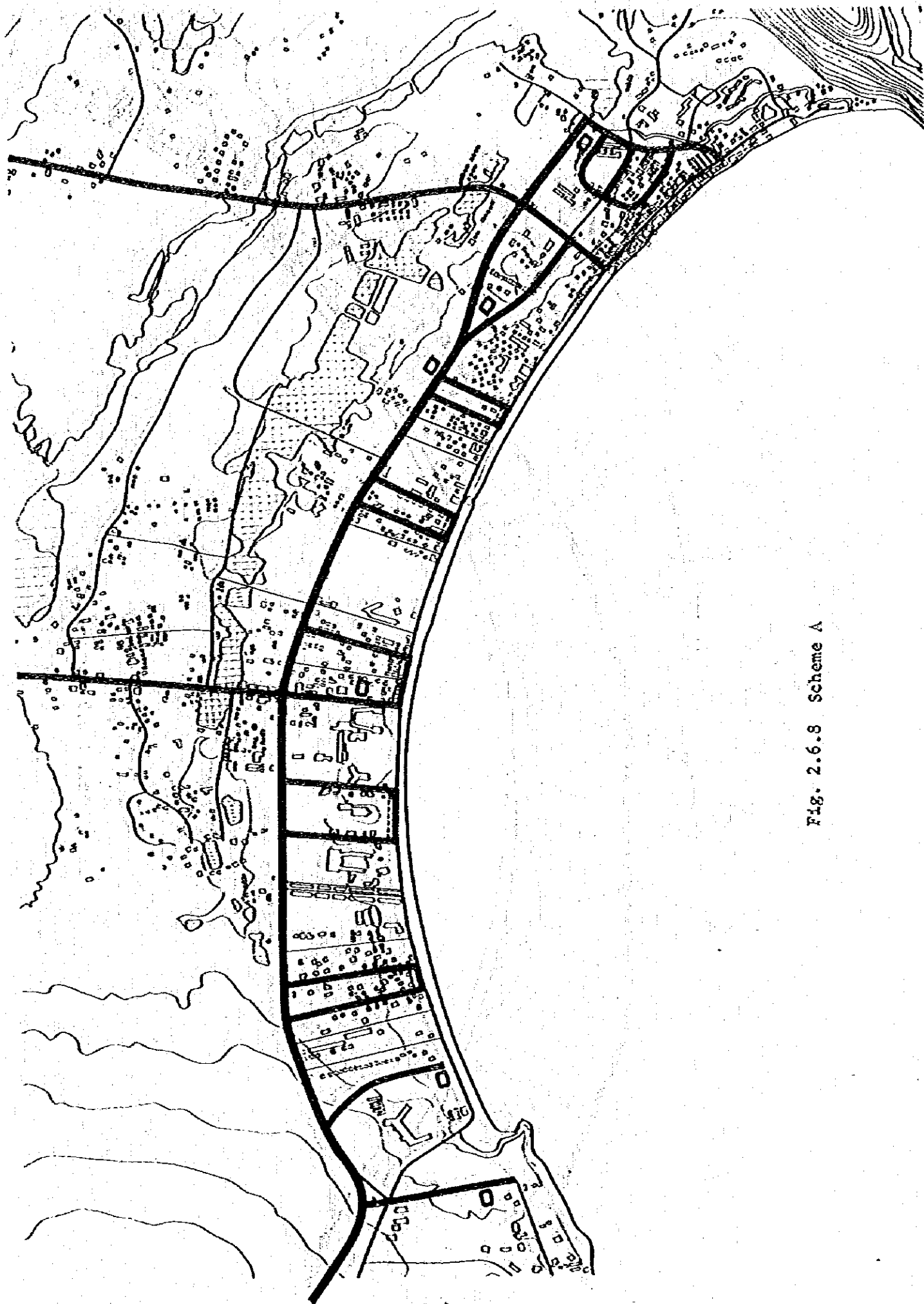


Fig. 2.6.8 Scheme A

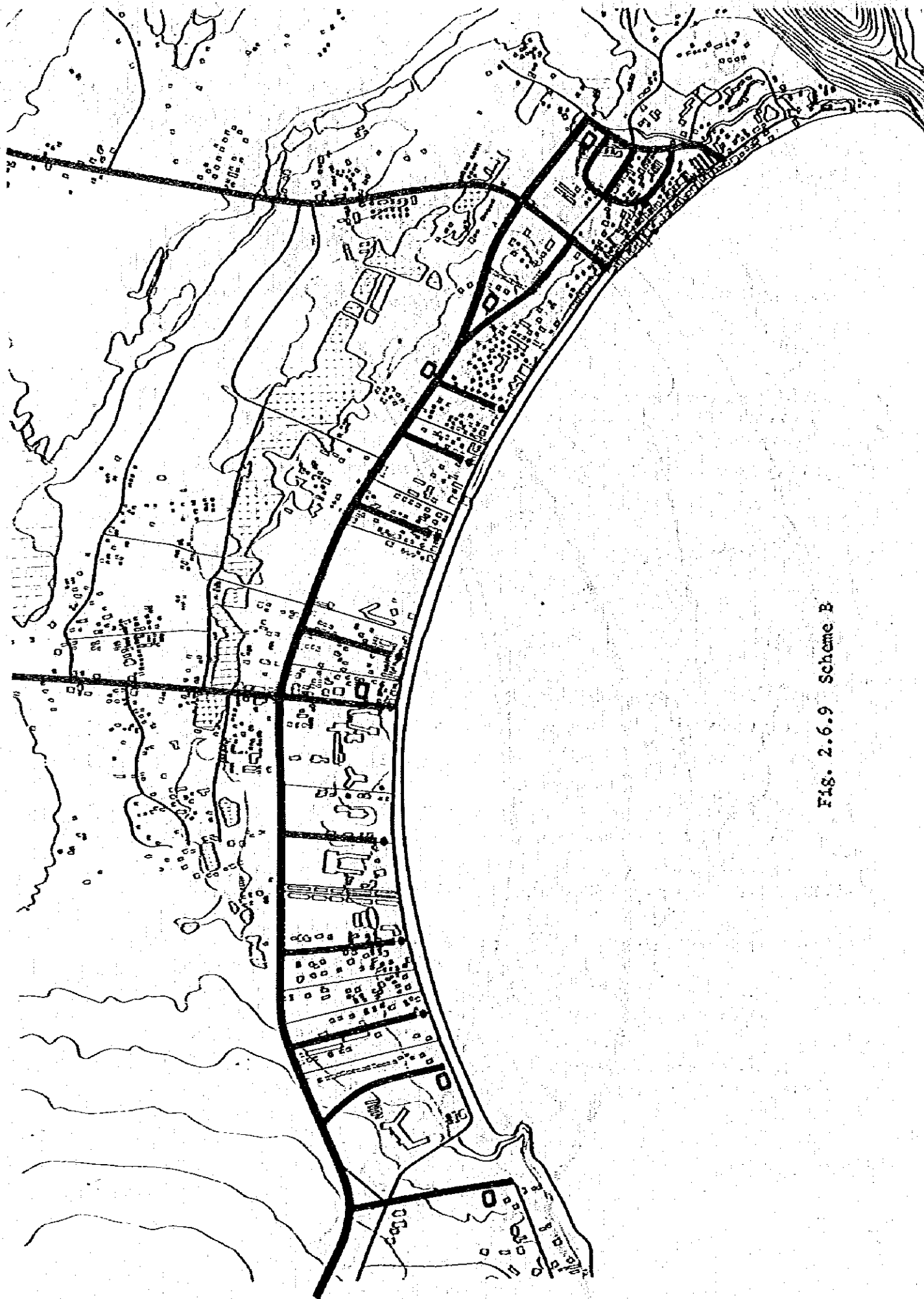


FIG. 2.6.9 Scheme B

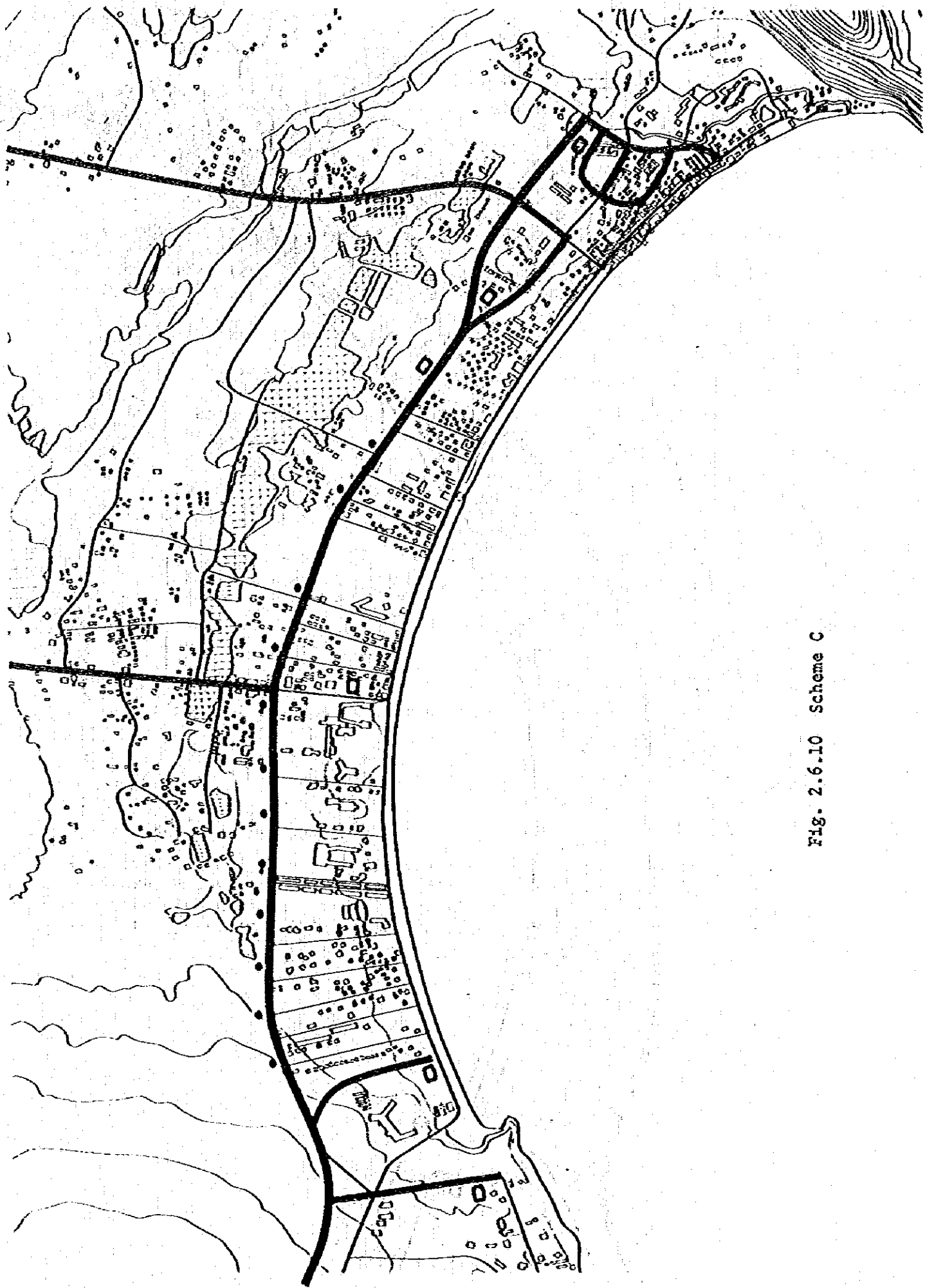


Fig. 2.6.10 Scheme C

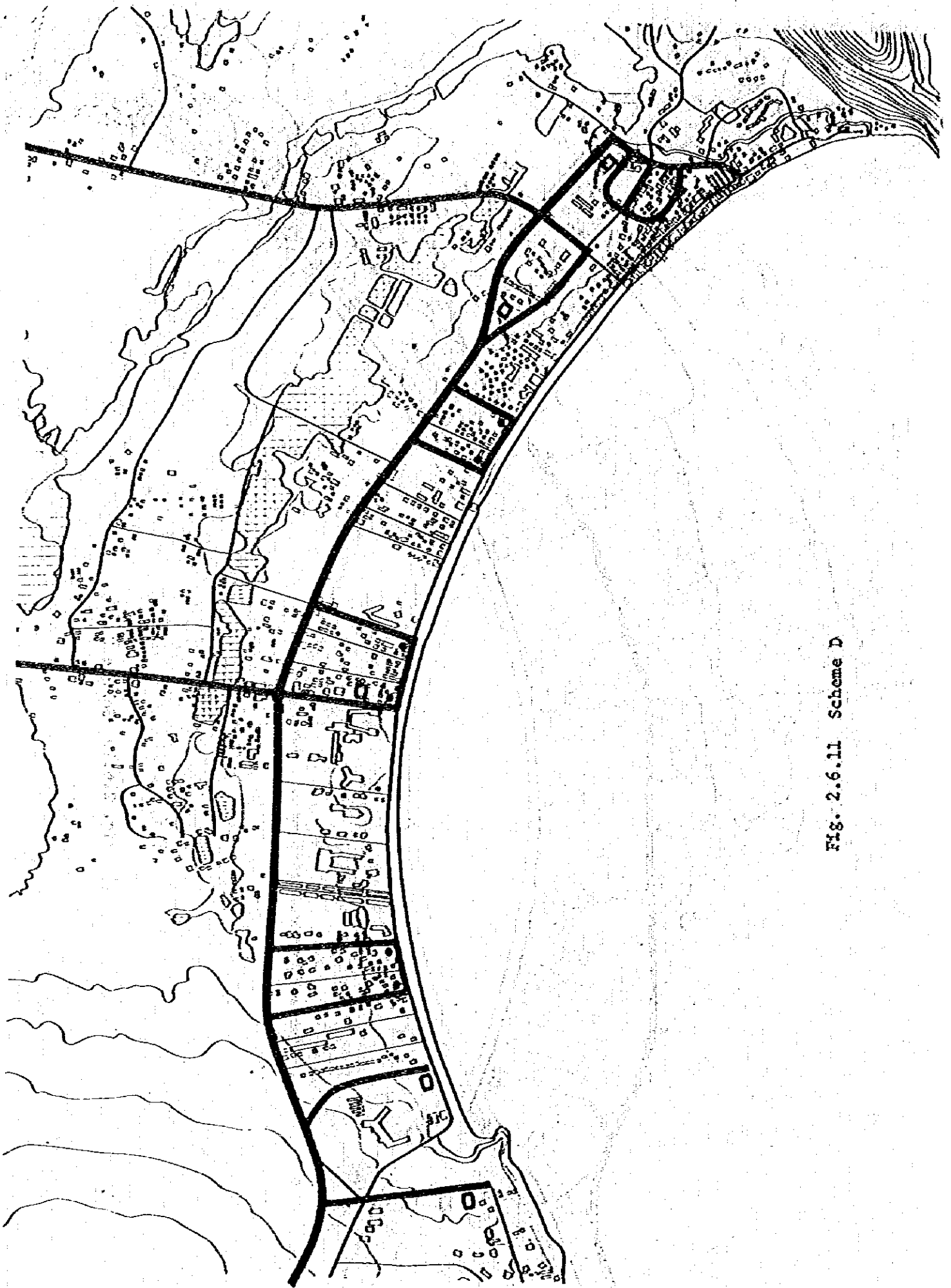


Fig. 2.6.11 Scheme D

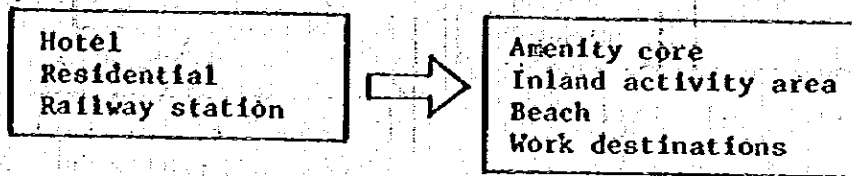
(b) Evaluation of tourist activity circulation flow

Evaluation is made of the flow pattern of different types of traffic in the Pattaya area, which will help in the formulation of plans.

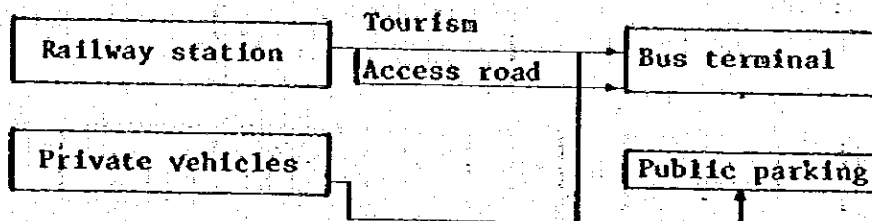
1) Motor vehicle traffic

Motor vehicle traffic consists of taxis and private cars, though taxis mainly dominate the traffic within the area, while private cars dominate access traffic from outside of the area to the tourist destination area of Pattaya.

1. Taxi circulation



2. One-day visitor



3. Nights of staying visitor by private vehicles



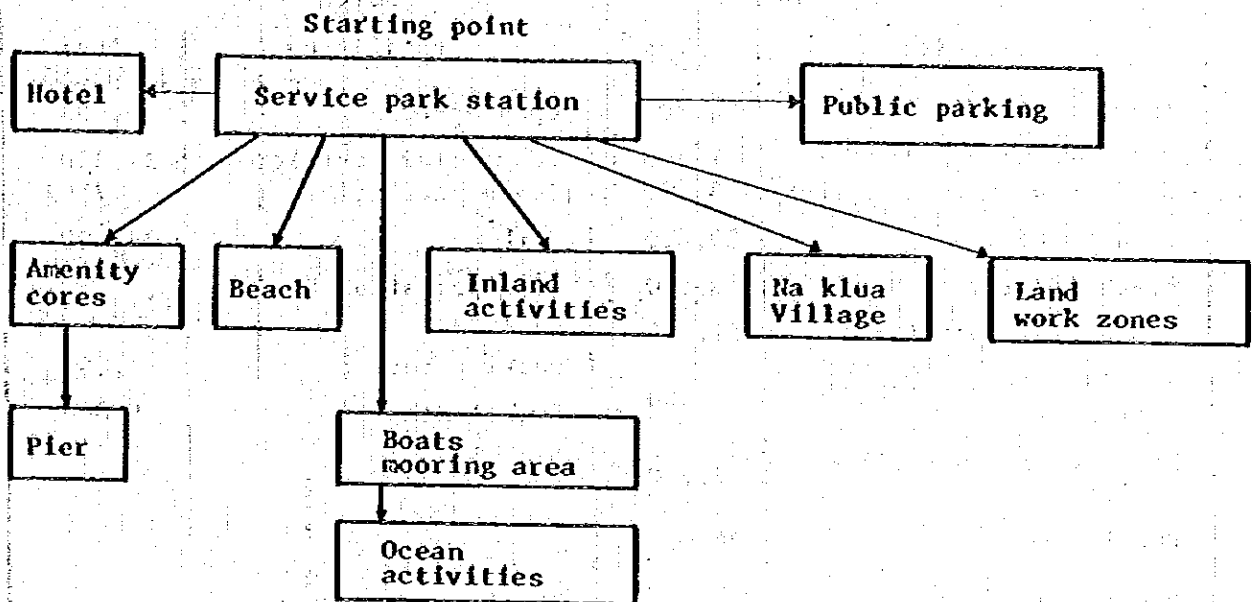
2) Pedestrian circulation

Pedestrian circulation includes the flow of staying tourists, one-day visitors, and residents. All the flows are limited within the area of a circle with a radius of approximately 500 meters, which is considered to be the possible walking distance from a starting point.

3) Bicycle traffic

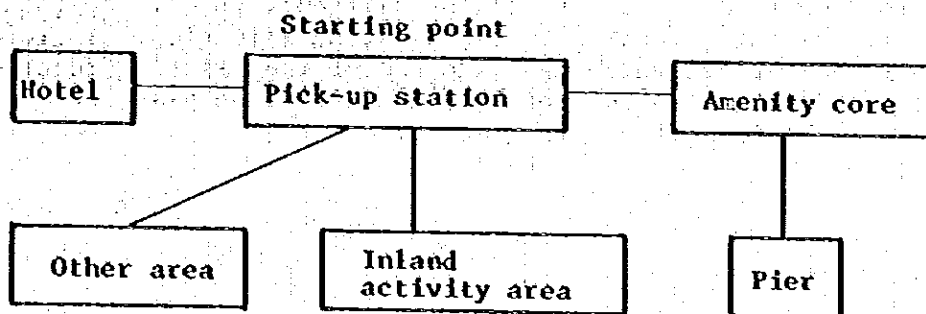
Bicycle riding could play an important role in Pattaya as a middle-distance transportation service and it should be promoted to be the main form of traffic, especially for tourist transport within the region.

The main characteristic of this type of circulation is that all of the bicycle traffic starts at bicycle renting stations.



4) Slow moving public transportation

It is utilized mainly on the beach road as a middle-distance transportation means.



2.6.4 Facilities Planning

(a) Amenity core

The main amenity core and the northern core are planned, to have the following facilities.

Table 2.6.4 Area of Amenity Core

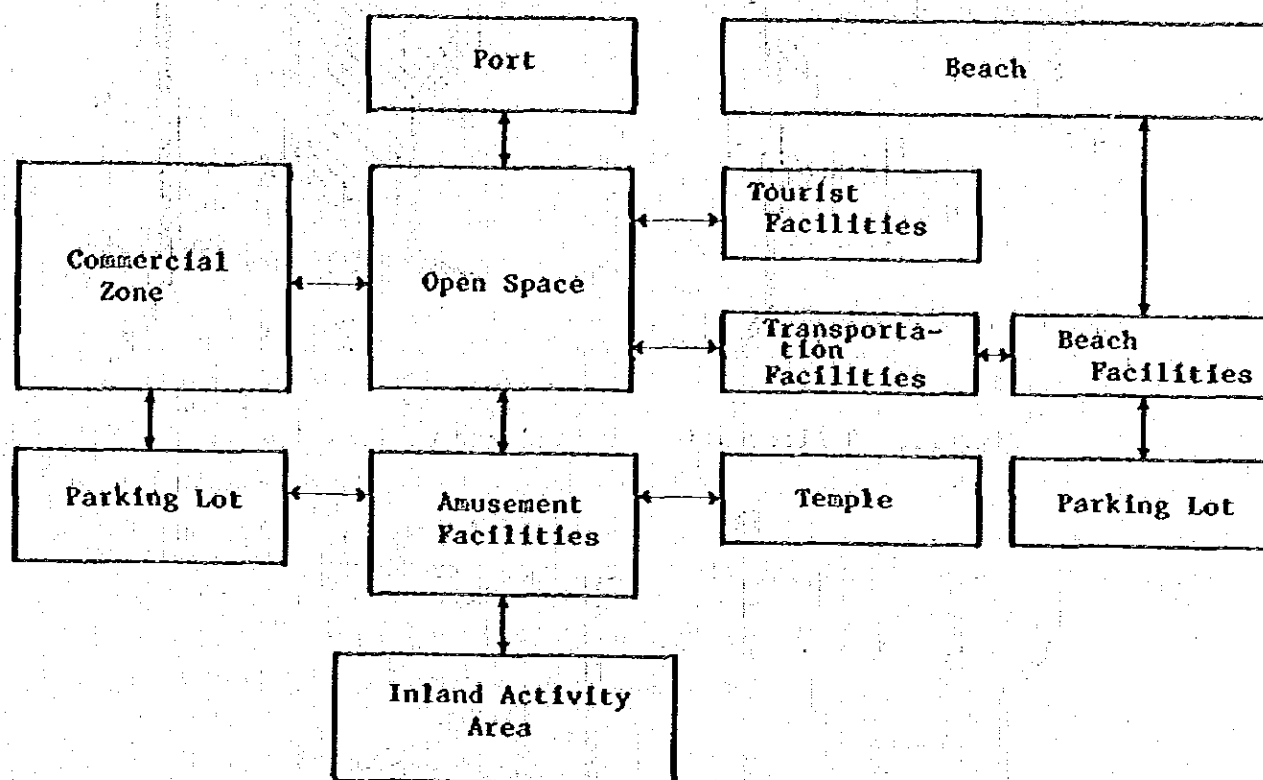
Main Amenity Core		North Core	
Facilities	Area	Facilities	Area
Amusement Region	34,200 ^{m²}	Open Space	18,400 ^{m²}
(Multi-Purpose Hall Craft Center	1,800 3,000)	Commercial Facilities (Beach Facilities	12,300 750)
Open Space	20,600	Park	39,900
Beach Facilities Space	3,500	Transportation Facili- ties	12,200
Commercial Facilities	52,500	Parking Lot	5,000
(Tourist Service Facili- ties	500)	Symbol Zone	6,800
Transportation Facili- ties	12,200		
Parking Lot	26,000		
Total Area of Main Amenity Core	149,500	Total Area of North Core	94,600

1) Main amenity core

1) Functional arrangement

The area in which this main amenity core is planned to be constructed includes the zone which has already become prosperous to some extent as the downtown area. It will be difficult to develop this area without paying attention to the existing situation. Therefore, to achieve a pattern which can make use of the existing functions as well as co-ordinate with the total land-utilization plan, we are planning to make the following arrangements.

Fig. 2.6.12 Functional Arrangement of Main Amenity Core



11) Zoning

The downtown area where the proposed main amenity core is located consists of the beach road with commercial facilities such as restaurants, gift shops, etc., on both sides and is in a linear pattern. This linear pattern will be a hindrance to development considering the planned improvements of the commercial area by securing the beach and open spaces, its future expansion, etc. So, it is desirable to change the pattern into inland expansion. And it is also necessary to secure the safety and amenity of users by separating pedestrians from cars as much as possible in this zone.

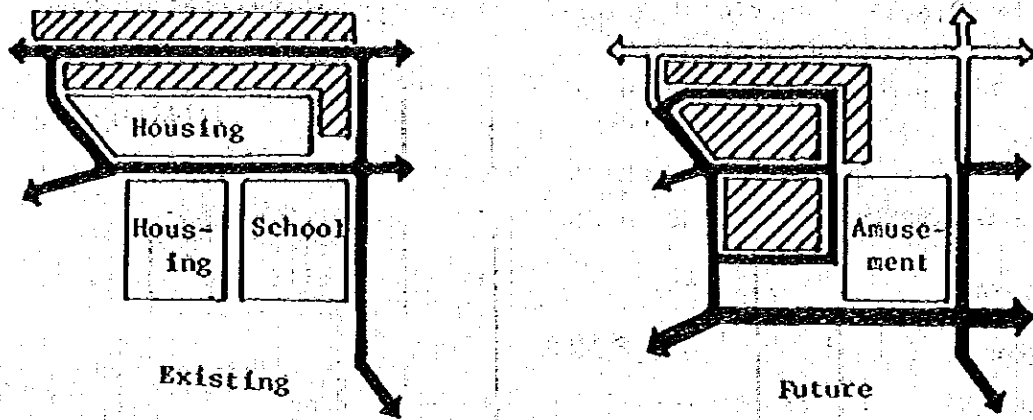


Fig. 2.6.13 Alternation in Land-use Utilization

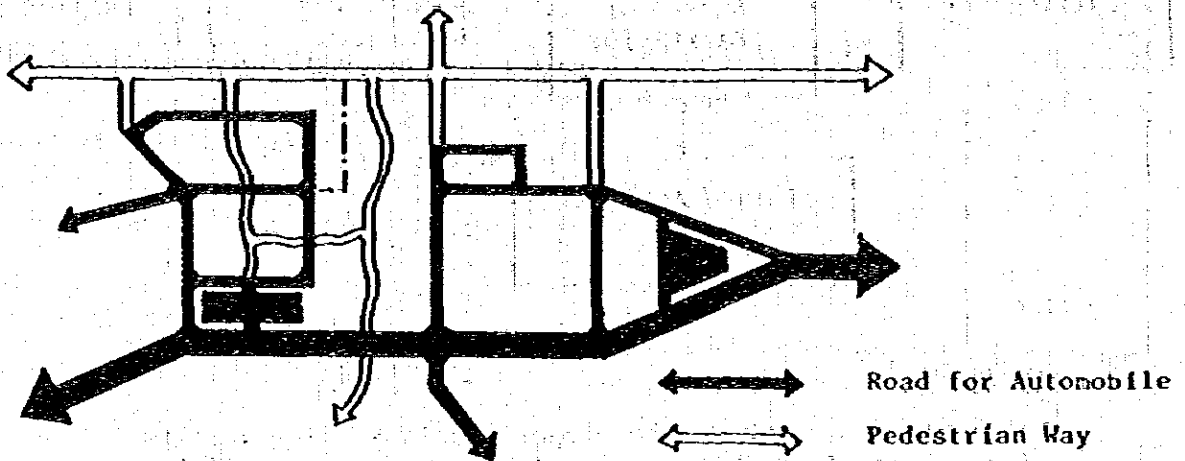


Fig. 2.6.14 Automobile and Pedestrian Circulation System

11) Amusement facilities

The amusement facilities mentioned here mean the facilities which are used supplementarily for tourism and important facilities which are indispensable for creating a tropical and Thai-like atmosphere for tourists.

Multi-Purpose Hall

This will be used mainly for the performance of Thai dancing, Thai boxing, etc., as well as for the holding of various shows, contests, etc. as multi-purpose center.

Craft Center

Here the manufacturing procedures for such crafts as Thai silk, woodwork, etc. can be shown and the goods may be sold on the spot. This craft center will not only be utilized as exhibition space, but will also be designed to contribute to regional industries as well as the local residents.

Museum

Here, materials relating to Thai manners and customs, history and the preparation of related materials about Pattaya shall be preserved and exhibited. This museum shall be not only for tourists but also for local people, and so-on.

Temple

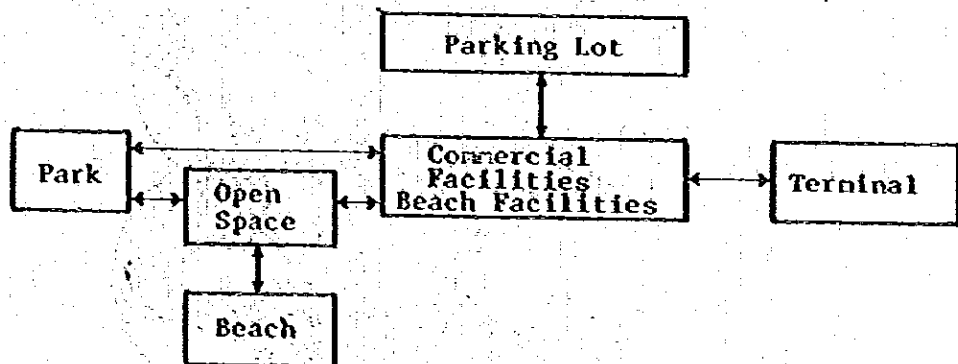
This temple is located almost in the center of the main amenity core and should be positively utilized as one of the tourist resources.

2) The Northern core

1) Functional arrangement

The northern core shall supplement the function of the main amenity core and shall be arranged in the north end of the main beach so that the two cores will function as supplements to each other.

Fig. 2.6.15 Functional Arrangement of the North Core



11) Zoning

Area A : As this area is lower than the surrounding ground, it is not suitable for various facilities from the point of view of services, road conditions, etc. Therefore, it should be opened to pedestrians as an open space where people may gather, making it related to various surrounding facilities.

Area B : This area is situated on the elevated ground in the north core and should be prepared as a beach park with a view over the sea.

Area C : There are no facilities now in this area. It will be prepared as a commercial area with a Thai and tropical atmosphere, which shall be integrated into nature (landscape) by controlling the construction of facilities. And the beach-related facilities will also be arranged appropriately in this area.

Area D : As the main road runs by the east-end of the north core, a transportation terminal will be provided at this point. This terminal will also be used as the main entrance to the main beach so this terminal will be prepared as a symbolic place. Service road will be approached by the north of the core, furthermore, a parking lot will be located to the north of the service road.

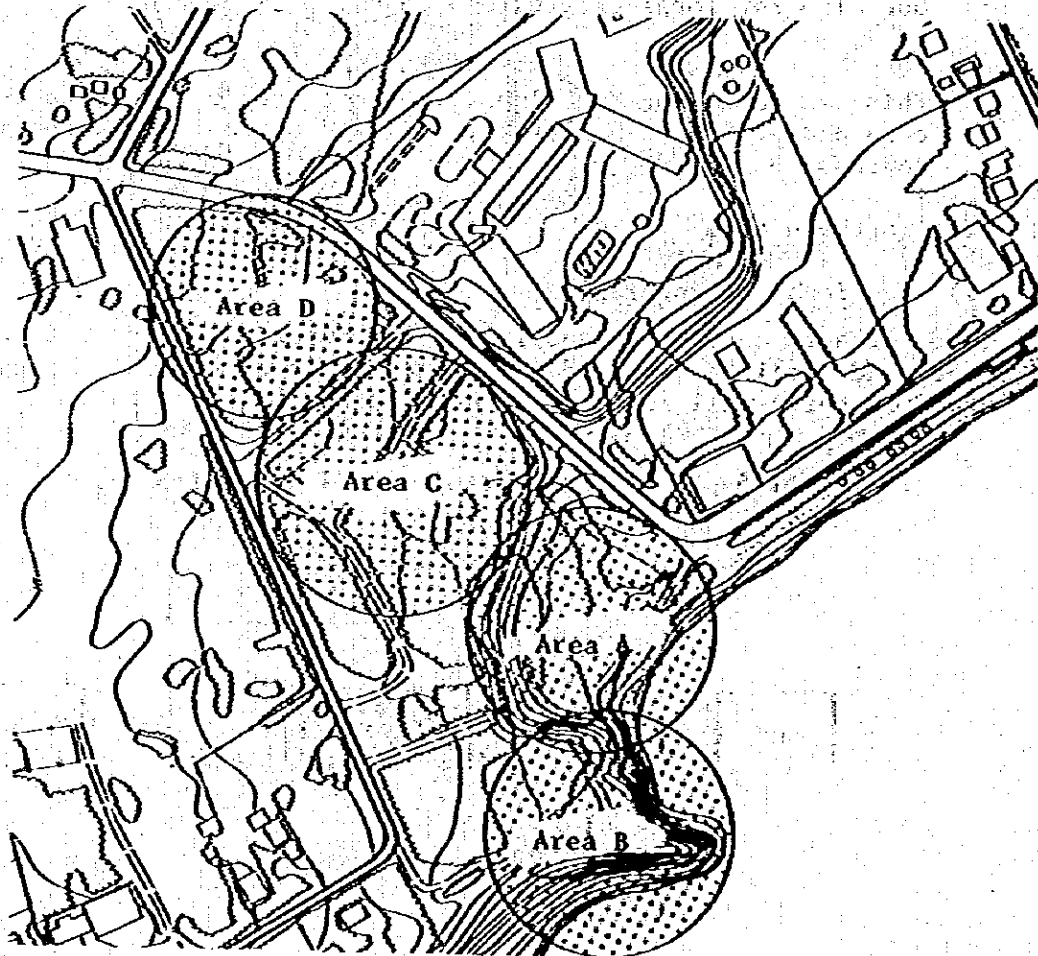


Fig. 2.6.16 Zoning of the Northern Core

(b) Beach park

In the beach park, a service park will function as a station where beach service facilities are concentrated and there will be a satellite park which will supplement the service park.

1) Planning

The main beach is roughly divided into three zones from the points of view of user, function, location, etc. One service park will be allocated in each zone for the various services for beach activities. However, in the case of the southern part of the main beach, the facilities shall be incorporated in the main amenity core.

Satellite parks shall be arranged at intervals of 300 meters out of consideration for the convenience of pedestrians.

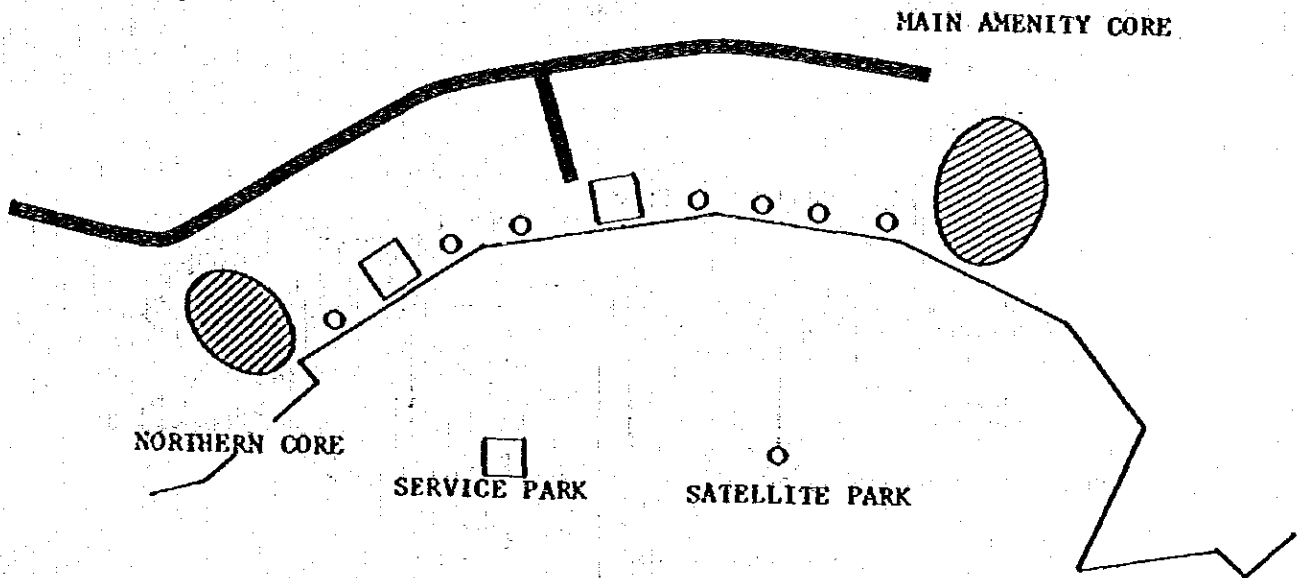
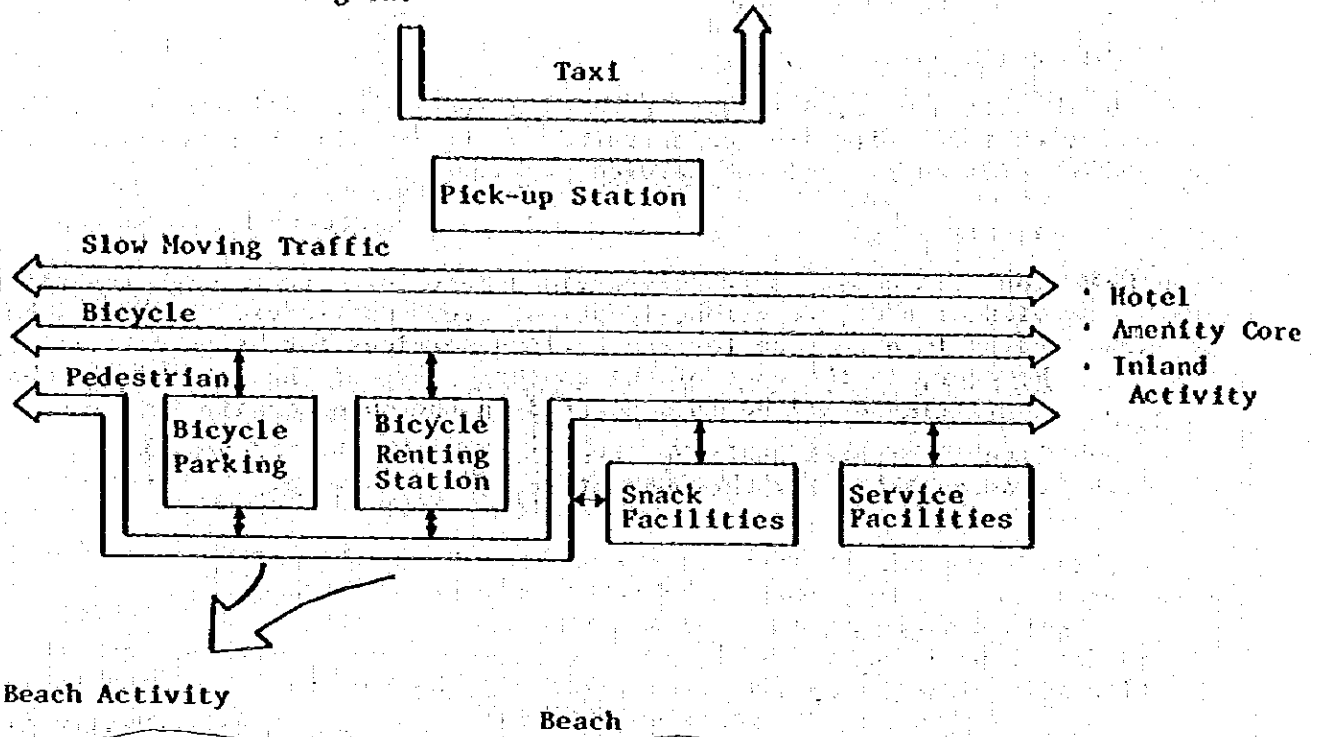


Fig. 2.6.17 Location of the Beach Parks

2) Service Park

Functional Arrangement



3) Satellite Park

Functional Arrangement

