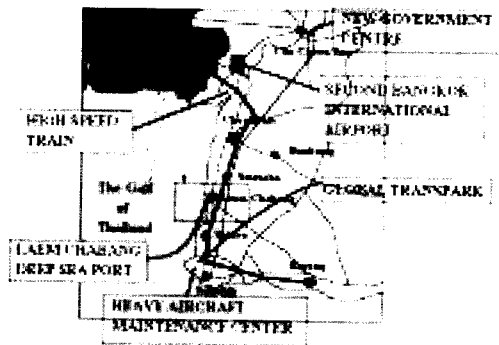


particular, the essential focus is on a pre-plan of a new town designed to support a port function. This new town may be seen as a particular kind of company town, which is named here, as a “new port towns”. Until recently, this kind of town has assumed some importance.

Laem Chabang new port town

In recent years, marine transportation activities involving the kingdom of Thailand have been developing rather rapidly as a direct result of the improving socio-economic situation of the country. According to statistics provided by the Ministry of Transportation and Communication in 1991, (Thailand 2000), international shipping to the Port of Bangkok accounted for 76.4% of the value of, and 92.5% of the quantity of the total foreign trade for the year, highlighting the essential role of marine transportation. The Port of Bangkok is essentially a river port with narrow bar channels, making it almost impossible to accommodate or service large global freight carriers.



Eastern Sea Board Mega Projects

The Thai government had, since 1989, laid down an ambitious plan to develop this new seaport, the construction of which was made possible with the assistance of the Japan International Corporation Agency (JICA). Laem Chabang Port, located on Thailand's eastern

seaboard is one of the many projects planned with decentralization in mind. Many other national projects have also been developed to explore the eastern seaboard area in order to complement the new port. In 1996, when Thailand was badly hit by an economic crisis, many projects were put in hold or even shelved. However, Laem Chabang's construction at that particular time had already proceeded to its second phase of construction, and the volume of cargo passing through had been steadily increasing. While Laem Chabang appeared to look prosperous and inviting as a global port, the hinterland port was viewed unfavorably as declining in importance. The new town at Laem Chabang, planned by the Department 6 of town Planning, was originally targeted to accommodate 120,000 people. At the present time, however, there are only an estimated 5,000 people living and working there.

Research question

“What principles from an urban design perspective, should underline the design of transportation infrastructure in new Port Towns today” and Sub research questions are What urban design principles should underline the design of road network in new port towns? And What urban design principles should underline the design of the physical relationship between the port and the town today?

Research Methodology

Stage 1 : Literature review

Outline some aspects in the literature review which are linked to the quality of public realm and the urbanisation process such as some of the political and functional economy, and some other

linked to port planning processes of globalisation and bulk-carrying industries. This review stage represents the guidelines in general issues of interesting areas. The latter then leads to the urban form implications of land-use function and transportation combination route/mode requirements. The broad matrix will be formed to guide the idea of transferring from the literature review of theories and conceptual thinking to specify or identify issues and to adjust the investigations via the case studies related.

Stage 2 : Investigate specific new towns and port cities in contemporary situations

Some aspects of port circumstance are associated with the social science and port development in an era of globalisation and its impact on cargo transportation industries. This stage will represent a guide to general issues focusing areas of new port town. However, it will lead to urban structure implications of land-use functions and road design and layout component requirement. The broad research methodology will be formed to guide the idea of transferring from the literature review of theories and conceptual thinking to specifically identified issues, and adjusts the investigations via the case studies related.

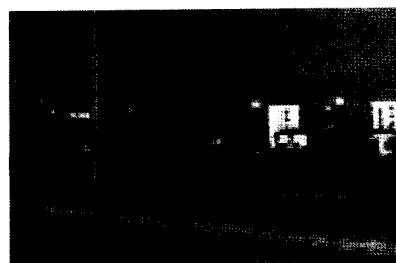
Stage 3 : Defining Issues and Elaborating via multi case study

Cases relating to Port cities and towns in selected areas of the U.K. and Asia are reviewed. (Southampton, Milton Keynes, Runcorn in UK and Kobe, Hong Kong, Singapore in Asia) Based upon an outline check-list derived from the review of the literature, a range of port cities and new towns, the macro scale issues of urban structure relevant to

port/town and linking of port re-design to town centre are examined. Case studies focus on one instance of road design and road layouts of a particular phenomenon and processes occurring in that particular instance. Conducting urban design studies, accessibility assessment and urban quality review as professional clarification to refine the range of issues and to identify and characteristic any appearance of topological patterns.

Stage 4 : Primary information collected in the main case study

Using the output from the primary stage, indicators will be used for evaluating multi-case studies. These processes formed to investigate the advantage and disadvantage of problem solving in case studies, more than measure of evaluate which town is better developed than the others. An interview workshop is held and questionnaires will be drawn up in two categories-the open-ended and the close-ended pattern. Questionnaires gathered are analysed using the SPSS software. Participants are from the consumers, controller and producer groups.



Stage 5 : Proposing the principles of transportation infrastructure design.

The preliminary principles are formed by summarising the assessment of their relative success of those strategies of urbanisation process and road patterns from recent stages. The limitations of the research and areas for further investigation will be discussed. The primary

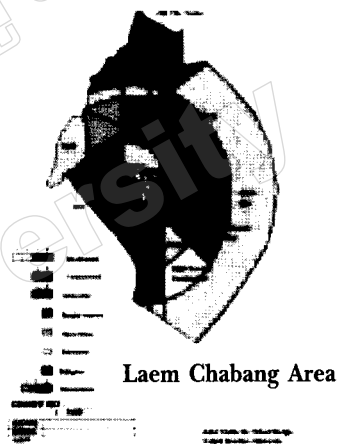
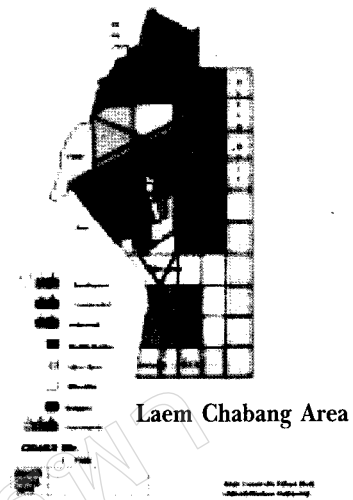
principle of the transportation infrastructure design in the new port town will also be established. Two proposed solutions will be constructed in conceptual assembling that will be transformed into physical proposals in the next stage. Pragmatic versions of the former stage will be transformed into abstract versions of plans and guidelines in urban design strategy of new port town.

Stage 6 : Arranging the classification of Alternative proposals

Developed primary principles in the former stages are used as a guide to format the physical proposals of road design and road layout models. Many hypothetical classifications of new port town patterns and many issues have been selected to include two proposals. The transportation infrastructure design of new port will be investigated based on the road design and road layout debates. Regional patterns of port towns follow the “Ribbon Corridor Development” by its geographical implications that urban growth actually occurs along the coastline. Moreover, for the urban structure level, road design and road layouts in this thesis are formulated in Concentric Hierarchy and Grid Pattern. The steps of the new port town design will be analysed to examine the characteristics and patterns of the two alternative proposals.

Stage 7 : Evaluating finding and drawing conclusions

Follow in the research question in the infrastructure design of new port towns, the research will focus on the guidelines of the principles of the new port town formed by the transport infrastructure, alter-native plan or concept will be reconstructed, following the trend of the urbanisation process.

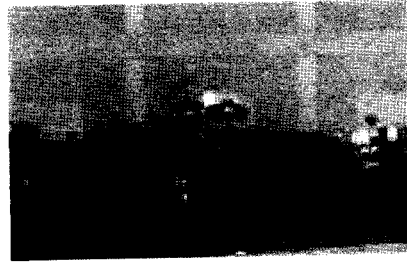


The Two Alternative Models
(Grid and Concentric Hierarchy)

As mentioned from previous stage, Space Syntax software Cost and Benefit Methodology and the urban design workshop will test the validity of the findings via enquiry. Space Syntax Software's accepted assessment of the quality of open space ; will be applied to access Permeability and Legibility of the urban realm. Cost and Benefit Methodology will be the tool employed to evaluate the potential of transportation patterns regarding benefit for investment. Though the details for practical costs and value of return cannot be calculated in the research, the methodology and the result of primary comparison can be demonstrated.

Cost and Benefit Analysis

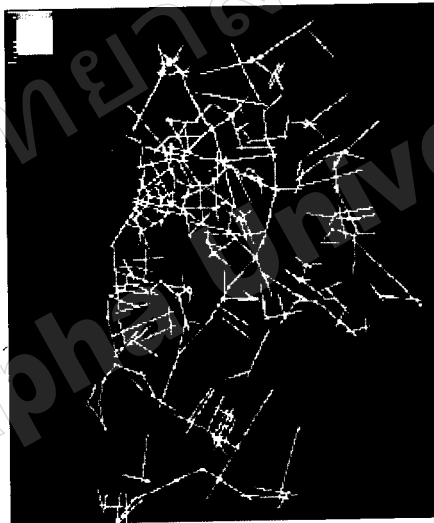
The comparative mechanism used to evaluate the remnant urban space is the questionnaire and the urban design workshop. (Urban Design Quarterly No.67, Special Report Methodology, July 1998) by professionals to fulfil the achieved inquiry in part of the mathematics Computerized Software and expert perception.



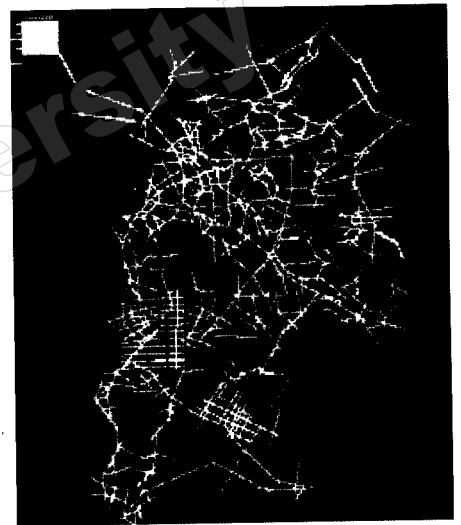
The Two Alternative Model



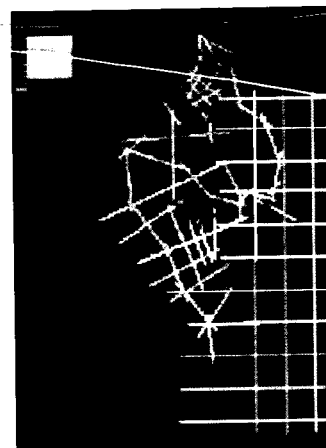
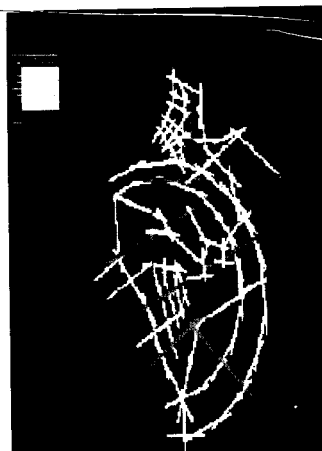
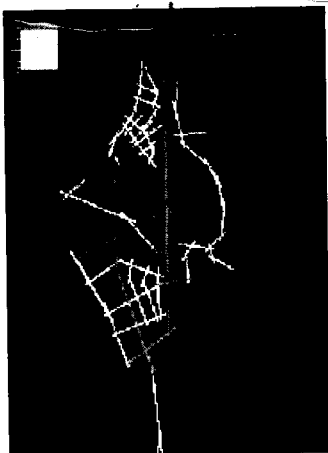
Existing Model



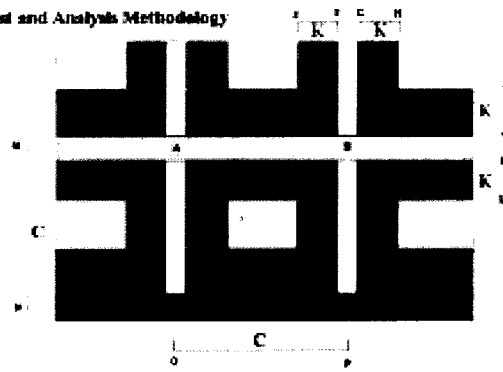
Concentric Hierarchy Model



Grid Model



Cost and Analysis Methodology



Example
 Cost A-B = (D-F) meter X C (for land items)
 Boarder A-D = (G-I) meter X K (Original Land Value)

Board - Boarder A-B
 Cost A-B

Board A-B - Level Road
 K = radius of road influence to the land the
 Threshold = 500 meter from the road then
 level refer to Highway C
 C = cost of construction, that
 depend on type of road

THE STRUCTURE OF THE PRINCIPLES

● New Port Town Principles

General Information

1. Aim and Objective

2. The Appearance of Urban Design Trend

- Urban Design Strategy
- Theoretical Comprehensive Plan

3. Schedule of the principle

4. Guideline in level of Administration Control

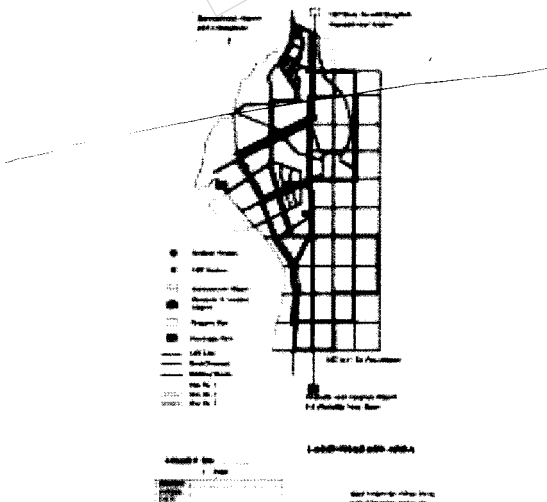
NPT1. The National Policy (Government Role)

NPT2. City Council Plan (City Strategy)

NPT3. District structures (Master Plan Guideline)

5. Characteristic of the principle

- Transportation Management Strategy



NPT 1 : National Policy

1. Guideline for Transportation Management Strategy

- Balance the benefit of Strong Economic and Better living in town.
- Co-ordination of Various Organisations.
- Public participation.

2. Guideline for Transportation Infrastructure strategy

- Road Management Guideline
- Railway Planning Guideline
- Public Transport Purposed
- Light Railway Mass Transit (LRT)
- Bus Network
- Deep Sea port Strategy
- Future Airport Network

NPT 2 : City Council Policy

1. Guideline for Conceptual Aspect

- Aim/Objective of the plan
- Characteristic of the town
- The aim of the town in the future
- Port and City relationship in new port town
- The role of the Port Town in the future

2. Guideline for Management Aspect

- Aggregately Area of the city
- City centre
- Characteristics of New Port Town
- The experiments in town planning
- Administration
- Element of New Port Town Planning guideline
- Categories of urbanisation process
- Physical linking : Port & City

3. Guideline for Physical Aspect

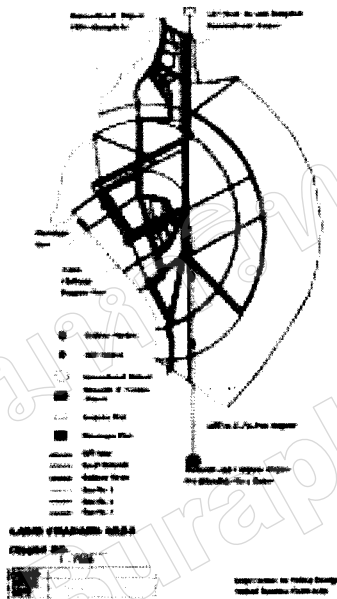
- Road Pattern
- Railway Routes
- Light Railway Mass Transit Routes
- Bus network
- Commercial Deep Sea Port

- o International Airport
- o Design for Bicycle & Pedestrian

NPT 3 : District Structure (Master Plan Guideline)

1. General Information

- o Definition
- o Period of the city plan :
- o Characteristics of Master Plan



2. The Conceptual Aspects

- o Master Plan Conceptual
- o Land Location conceptual
- o Transportation Conceptual

3. Land Use Planning

- o Reservation Zone
- o Residential Zone
- o Commercial Zone
- o Industrial & Warehouses Zone
- o Green belt Zone
- o Open space Zone
- o Health Service Zone
- o Education Service Zone
- o Religion Zone
- o Government Zone
- o Town Centre Zone

4. Transportation Planning

- o Road Network
- o Railway Route
- o Mass Transit
- o Bus network
- o Port
- o Airport

5. Standard Matrix Purposed