JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
NATIONAL HOUSING AUTHORITY (NHA)

THE STUDY
FOR
URBAN REDEVELOPMENT PLAN AND CASE STUDY
IN
THE BANGKOK METROPOLITAN AREA
IN THE KINGDOM OF THAILAND

FINAL REPORT

VOLUME II
MAIN REPORT

MARCH 2002

NIPPON KOEI CO., LTD.
URBAN DYNAMICS INSTITUTE, TAKAHA

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PREFACE

In response to a request from the Government of the Kingdom of Thailand, the Government of Japan decided to conduct a "Study for Urban Redevelopment Plan and Case Study in the Bangkok Metropolitan Area in the Kingdom of Thailand" and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA selected and dispatched a study team headed by Mr. Shinya Osumi of Nippon Koei Co., Ltd. and consist of Urban Dynamics Institute, Takaha, to Thailand from November 2000 to March 2002.

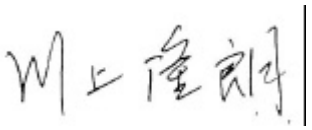
In addition, JICA set up an Advisory Committee headed by Mr. Katsunori Otomaru of the Urban Development Corporation, which examined the Study from specialists and technical points of view.

The team held discussions with the officials concerned of the Government of Thailand and conducted field surveys at the study area. Upon returning to Japan, the team conducted further studies and prepared this final report.

I hope that this report will contribute to the promotion of this project and to the enhancement of friendly relationship between our two countries.

Finally, I wish to express my sincere appreciation to the officials concerned of the Government of Thailand for their close cooperation extended to the study.

March 2002



Takao Kawakami
President
Japan International Cooperation Agency

Mr. Takao Kawakami
President
Japan International Cooperation Agency
Tokyo, Japan

Subject: Letter of Transmittal

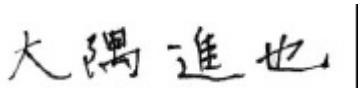
Dear Sir,

We are pleased to submit herewith the Final Report of the "Study for Urban Redevelopment Plan and Case Study in the Bangkok Metropolitan Area in the Kingdom of Thailand". This study was conducted by Nippon Koei Co., Ltd., in association with Urban Dynamics Institute, TAKAHA, under a contract to JICA, during the period from November 2000 to March 2002. The report consists of Summary, Main Text and Appendix..

The report presents recommendations for the policy to improve living environment in the Bangkok Metropolitan Area, which reflect the results of preparation of the redevelopment master plan for public housings and implementation of a case study.

We would like to take this opportunity to express our sincere gratitude to your Agency, the Ministry of Foreign Affairs. We are also most grateful for the cooperation and assistance from the officials concerned in Thailand, the JICA Bangkok office, and the Embassy of Japan in Thailand. The Final Report is a fruit of excellent collaboration of all participants in this study.

Yours Faithfully,



Shinya OSUMI
Team Leader, JICA Study Team
The Study for Urban Redevelopment Plan and
Case Study in
the Bangkok Metropolitan Area in
the Kingdom of Thailand

THE STUDY
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THE KINGDOM OF THAILAND

FINAL REPORT

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INTRODUCTION

Authority

This is the Final Report on the Study for Urban Redevelopment Plan and Case Study in the Bangkok Metropolitan Area in the Kingdom of Thailand prepared in accordance with the Scope of Work (S/W) concluded in August, 2000, between the National Housing Authority of Ministry of Interior, the Kingdom of Thailand and the Japan International Cooperation Agency (JICA).

Background of the Study

(1) Recent Urban Development in Bangkok

Thai economy has rapidly grown since the latter half of the 1980s abreast of the industrial countries thanks in large part to the direct investment from Japan and other growing Newly Industrialized Economies (NIES) in Asia. As a result of large influx of foreign capital into real estate market, intensive urbanization has taken place in Bangkok area, the capital of Thailand, as witnessed in real estate development by the hands of private real estate developers in high rise office buildings, condominiums, hotels, shopping centers etc. The government has also made large investment in urban infrastructures such as elevated highways, mass transit systems, airport, and water works. Currently, more than 6 million people live in the administrative area of Bangkok Metropolitan Administration (BMA) with an area of 1,565 km2.

The financial crisis that started first in Thailand in 1997 and spread to entire Southeast Asian countries prompted decline of Baht currency, put a sudden brake to the economic boom and resulted in minus growth in real economic growth index. The central government turned to retrenchment finance policy and real estate market has gravely been deteriorated.

Bangkok now appears to be gradually returning to the stable state in spite of the turmoil caused to the urban development efforts by the financial crisis. Influx of rural population into the city, environmental pollution associated with construction of urban development projects, traffic congestion, rise of land prices are gradually leveling off or calming down. It seems to be the time to re-evaluate the past practices and seek for a new direction for future urban development of Bangkok.

(2) Necessity of Urban Redevelopment

Owing to the government's financial crunch, many important urban infrastructure development projects were shelved or suspended. On the other hand, rapid rise in land price has led to shortage of housing supply for medium/low income population and decrease of open space for new housing or urban development. As a result, urban problems such as traffic congestion, water and air pollution, garbage disposal, flood and slums have become ever more serious.

To cope with the situation, improvement of deteriorated urban areas through redevelopment has come to be recognized as one of the most important strategies in urban development policy.

(3) Request of Cooperation

Under such circumstances, the Government of the Kingdom of Thailand (GOT) requested the Government of Japan (GOJ) for technical cooperation to carry out a study on urban redevelopment in so called Din Daeng, Makkasan, Huai Khwang area in Bangkok. The GOJ agreed to undertake the study. The implementation of the study entitled "The Study for Urban Redevelopment and Case Study in the Bangkok Metropolitan Area in the Kingdom of Thailand" (the Study) was entrusted to the Japan International Cooperation Agency (JICA), the official agency responsible for implementation of the technical cooperation program of the Japanese Government.

The Study was commenced by a JICA Study Team organized by JICA in December 2000. The area covered by the Study (Study Area) is located inside Bangkok city having around 500 ha.

The Study Area

The Study Area is located on the north east side of central part of Bangkok and has population of about 188,000 in about 500 ha land area which is surrounded by Vibhavadi Rangsit and Asok Rachadaphisek roads.

Din Daeng Community Area in about 100 ha is a part of the Study Area consisting of owned and used by government bodies. This area is a target area for an urban redevelopment master, including NHA Din Daeng Housing Complex (approx. 33 ha) for low income population.

Lastly, there is a small area, about 3 ha, where first renewal of the NHA's housing in the Study Area will be undertaken which is identified as " the Case Study

Area".

Objectives of the Study

The objectives of the Study delineated by the foregoing S/W Mission are:

1) To strengthen the institutional capacity of relevant organizations including local communities for planning and execution of urban redevelopment projects through technology transfer in the course of the Study,
2) To formulate policy direction of redevelopment for the Study Area situated in an inner city with approximately 500 ha with population of about 188 thousand,
3) To formulate an urban redevelopment master plan on high priority area situated in a group of lands owned and used by government sector (Din Daeng Community Area),
4) To conduct a case study on a selected land(s) within the Din Daeng Community Area, covering detailed design and environmental impact assessment (EIA), and
5) To generate recommendations for urban renewal in BMA, based on lessons learnt in the course of the planning on the Study Area, Din Daeng Community Area, and Case Study Area.

CONCLUSIONS AND RECOMMRENDATIONS

Conclusions

1. Future Urban Development Direction of Bangkok

For a sustainable growth of Bangkok, it would be necessary to transform the current urban structure into polycentric urban structure envisaged in the foregoing development projects under the situation of low population growth. Specifically, the key is to curb the trend of ribbon type urban development along the two major axes absorbing the high order urban functions.

It would be of paramount importance to rejuvenate the inner city where hollowing-out is progressing by creating basis to draw the high order urban functions, for the sake of spatially balanced urban feature. This is especially true of the area enclosed by the Inner Ring Road. Higher land use intensity must be achieved here as sub-main road networks are almost ready, and mass transit system such as BTS and a subway, Blue Line, are in operation or expected to be opened soon.

2. Appraisal of Din Deang Community (DC) Development Plan

(1) Planning Issues

The Study Area could be held as strategically located and as having a high development potential as the fourth urban core of Bangkok. It could therefore play a central role in forming an ideal urban structure of future Bangkok. The urban functions to be introduced in this area will be the international gateway, business-base function, civic center, and inner city housing.

Given those, the functions to be introduced in the DC Area are set up as a civic center by the new BMA City Hall, business and commerce function, and housings including units for low-income households, as presented in the following table.

Table Development Framework (2011)

Item		Unit	Quantity
Population	Residents	person	56,200
	Employee	person	29,800
Total Floor Area		m^2	1,741,000
Housing		Units	8,761

(2) Financial Evaluation

The commercial development will be entrusted to a private investor(s) on land trust contract, who will build and run the commercial facilities. The project execution agency will construct the rest of the facilities.

Financial Internal Rate of Return (FIRR) in a 30-year project life has been estimated at 6.6% for the entire project which is strongly supported by the commercial development sections with 18% in FIRR. Participation of private sector in commercial development is therefore crucial to ascertain financial viability of the Plan, by compensating the low profitability of the residential development section.

(3) Economic Evaluation

Economical Internal Rate of Return (EIRR) in a 50-year project life has been estimated at 12.9%, which is at the rather lower level, compared to other ordinary project.

(4) Initial Environmental Examination

Among the thirteen items of the initial environmental examination in the construction phase, relocation of existing residents has been identified to need special caution for the implementation of the Plan. The relocation in the first phase will be the crucial part of the Plan, of which results will affect attitude of existing residents for the Plan.

3. Appraisal of the Case Study Plan

(1) Planning Issues

The Case Study Plan is the first phase of the DC Development Plan which is executed as a pilot project for the succeeding phases of the Plan to demonstrate appropriateness of the entire enterprise. Contents of the Case Study Plan are comprised of renewal of a part of the NHA Din Daeng Housing Complex, as presented in the following table. Principle directions of the facility planning include improvement of living environment, reduction of operation/maintenance costs, and deference to existing life style.

Outline of Case Study Plan

Items	Site-A (Block A 1.1)	Site-B' (Block K 1.3)	Site-C (Block C 1.5)	Total
Land area	14,584	8,418	23,524	46,526
Number of residential unit	1,210	200	1,380	2,790
Total floor area (m^2)	21,900	3,650	25,400	50,950

(2) Financial Evaluation

Accumulated cost and revenue would not balance within 30 years project life, longer period will have to be considered. It is though not reasonable to evaluate the Case Study Plan independently. It should be appraised within the context of the whole Din Daeng Community Development Plan.

4. Effectiveness to Improvement of Urban Environment through Urban Redevelopment in Bangkok

Project appraisal indicators such as FIRR (Financial Internal Rate of Return), EIRR (Economic Internal Rate of Return) etc. are relatively low compared with other development projects. This is inevitable owing to the fact that the Plan is an urban redevelopment project attempting to improve the existing urban environment, unlike the ordinary projects creating a new thing. Moreover, the Plan involves non-profit oriented component of the housing for low-medium income population and peculiar costs inherent to housing renewal undertaking such as compensation to current residents and demolition of existing buildings. Consequently, the Plan should not be appraised on the same basis as the other ordinary development projects. The same is true of the urban development projects in Japan as well as other countries. Compared with the similar cases in Japan, it can be claimed that as far as the above indicators are concerned the Plan compares favorably.

In sum, DC Development Plan could be justified from the financial as well as socio-economic point of views. It could further be argued that delay of implementing a pilot project like the Plan will negatively affect the entire city planning of BMA.

RECOMMENDATIONS

1. Recommendation on Implementation of DC Development Plan

(1) Consistency in Development Policy

Participation of private sector is increasingly important for the Plan to be financially sound. Unwavering government policy is indispensable for the private sector to participate in a huge and time consuming project like this one with a sense of security, as repeatedly pointed out by private investors interviewed by the Study.

(2) Execution Methods of DC Development Plan

(Project Execution Organization)

In project planning stage, a project planning council will be set up among the concerned public organizations and stake holders, NHA, BMA, MOF, TD (Treasury Department) etc., along with a Liaison and Coordinating Committee and a Work Party organized to work out land use plan, determine scale of facility, and to set down rules for sharing project costs.

On the other hand, a Project Team will be organized among NHA and BMA to support the activities of the above organizations. The Project Team will be composed of the consultants and private businesses:

In project executing stage, construction of the new BMA city hall and the profit oriented components (commercial facility and profitable housing for middle or upper income residents) will be undertaken by BMA and private sector respectively. There could be three execution methods such as a stake holders' cooperative, a new organization (new company), and joint enterprise under city planning.

(Operation and Maintenance Organization)

NHA should be the operation and maintenance body for housings for low income population, though the commercial facilities constructed, operated and maintained by private sector.

Public and welfare facilities should be operated and maintained by the administration office of each facility, while operating organizations for the social service facilities should be determined in consideration of public-service-oriented or

profit-oriented natures of the facilities.

It should not be overlooked to search ways to get resident community to participate in these activities as employment opportunities.

(3) Financing Scheme

Since long term low interest financing is required for the Plan, it is recommended that a single reliable public organization (MOF etc.) will borrow money for the entire project execution bodies from domestic and/or international financing agencies and sub-loan or grant the money to each party.

In order to enable an international financing, it is advisable to consider Din Daeng Community Development Plan as a part of the comprehensive urban living environment improvement undertaking in Bangkok, to which a sector loan could be considered.

(4) Adjustment between the Land Owner (Treasury Department) and Stakeholders

In order to determine a new land use, it is mandatory to obtain approval on it by the Treasury Department according to the law B.E.2518. To reach a consensus, setting up of an executive agency is urgently called for to determine the contents of the Plan.

(5) Market Research for Commercial Development

Extensive market research for the commercial development component is required as the revenue from this component is a predominant part of the project revenue.

(6) Flexibility in Project Planning

There is a large factor of change in an urban renewal project unlike other development projects because of the involvement of many stakeholders and participation of private investors. As a consequence, the project plans are required to be flexible such that revisions can be easily made complying with the ever-changing situation.

2. Recommendation on Implementation of Case Study Plan

(1) Efforts to Collect Fair Rent for NHA Housing

In Din Daeng Housing Community, people are living at an extremely low house rent compared with that of the market rate in the surrounding area despite the fact that some

of them are capable of higher rent. In order to have them continue to live in the same place and in improved living environment, efforts must be exerted by NHA to collect reasonable house rent from the social-fairness point of view since the housing is of public property.

(2) Importance of Securing Vacancy in Initial Stage

Securing vacant residences is very important to smoothen temporary settlement for the returning residents by expeditious moving of the moving-out residents or evacuation of dubious occupation (sub-renting etc.). It is particularly true of the initial stage, in Site B' as much vacancy in existing residences as possible should be attained during the 2 years construction period here.

(3) Ascertaining Financial Burden of NHA Housing Development

Feasibility of the NHA housing is largely dependent on the number of returning residents. The number is also influenced by evacuation of sub-renters. Detail survey of the current residents is called for to ascertain realistic financial burden for NHA housing project.

(4) Restriction of Right in Redevelopment

It will be necessary to restrict the transfer of right among the current residents to curb the speculative activities when implementation of redevelopment project is officially launched.

3. Recommendations on Future Urban Redevelopment Undertaking in Bangkok

(1) Recommendations on Institutional Set-up (Strengthening Execution Body)

1) Effective Use of Specific Plan

The city planning system in Thailand is constituted of 1) General Plan and 2) Specific Plan. Although the General Plan was revised in 1997, no updating of the Specific plan has been done yet, because is taken as a means to execute a specific project in stead of an area-wide transformation purpose.

It is imperative to back up a project by the city planning with a purpose to transform a road system with a regulative-and-incentive mechanism. To this end, it is advisable to make better use of the existing system, Specific Plan, rather than devising another

system.

2) Introduction of Building Code Suitable for Large Land Lot Development

The present building code and regulations are more or less oriented to individual buildings, therefore, there seem to be some regulations which are not suitable for applying to group of buildings in a large land lot.

BMA in fact is applying the regulations flexibly on case by case basis on demand from the project owners. However, the project owner could not be certain if preferential treatment would be exercised in advance. Introduction of a notion of large land lot development into the building code/regulations would no doubt dispel undue concern for the private developers on the large land lot.

3) Introduction of Methods for Large Area-wide Development

There seems to be some difficulty in planning a large-scale development project over a consolidated land under the present land law. This is acutely felt in such a case where a patch of public land such as road is lying across the land, for altering use of the said public land, no matter how minuscule it may be, must be subjected to approval of the Cabinet. This kind of situation seems to discourage the enterprise of improving urban environment in a densely built-up area by consolidating numerous small parcels of lands for an efficient large scale facilities.

To counter the situation, a system to relieve specific areas for large scale development of some of the ordinary regulations to open a red-tape-free way for private sector to undertake the projects. To this end, an authorizing procedure in the city planning system will have to be put into effect. In these cases, such preferential measures as relaxation of land transfer tax, subsidy or tax exemption for the lands which are ceded from the land owners to install public facilities like roads are recommended to be put into practice, along with application of building codes in suitable manner for large scale development undertakings.

(2) Recommendation on Legal Provisions

1) Strengthening City Planning Body

It now has become apparent that a national level back-up is indispensable for their efforts, such as the effective use of Specific Plan mechanism. Collaboration with such national office as Department of Town and Country Planning (DTCP) is also crucial among working groups through regular discussions.

In the meantime, to promote district level city planning, it would be necessary to fine tune the efforts to such sensitive business as conversion/adjustment of stakeholders' right and involving participation of local community, which would no doubt call for reinforcement of the present human resources and organizational structure. As it is likely that the importance of district level city planning increases in future, nurturing human resources who can coordinate the idea of city planning with the rights or demand of the residents is understood to be very important.

2) Utilization of Accumulated Know-how

Decentralization policy and substantial restructuring of government offices are being promoted in Thailand now. NHA, currently under the jurisdiction of Ministry of Interior but might be transferred to another social-development-related ministry, has in stock invaluable know how on urban development gained through numerous housing development projects. Chances are that its role or weight as an execution body in urban development efforts in the country is apt to get obscured under such circumstances. In view of the fact that the Urban Development Corporation, Japan played a very significant role in realizing important city planning enterprises in Tokyo as well as in other major cities in Japan rendering its know how on urban development, NHA's role could not be underestimated in the landscape of city planning of Bangkok.

As a consequence, it is recommended that, as far as the section of NHA devoted to urban development is concerned, a way be sorted out to enable full use of its know how regardless of what organizational structure NHA may have or to which ministry it may belong in future.

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ABBREVIATIONS

AC	Asbestos Cement
BCR	Building Coverage Ratio
BMA	Bangkok Metropolitan Administration
BMR	Bangkok Metropolitan Region
BOD	Biochemical Oxygen Demand
BTS	Bangkok Transit System
CAT	Communication Authority of Thailand
CBD	Central Business District
CI	Cast Iron
DCP	Department of Public Cleansing
DDS	Department of Drainage and Sewerage
DI	Ductile Iron
DMH Areas	Din Daeng, Makkasan, and Huai Khwang Areas
DO	Dissolved Oxygen
DOH	Department of Highway
DPC	Department of Public Cleansing
DS	Dry Solids
DSCV	Dry Solid Calorific Value
DTCP	Department of Town and Country Planning
DWF	Dry Water Flow
EGAT	Electricity Generation Authority of Thailand
EIA	Environmental Impact Assessment
ETA	Expressway and Rapid Transit Authority of Thailand
FAR	Floor Area Ratio
FY	Fiscal Year
GDP	Gross Domestic Product
GI	Galvanized Iron
GIS	Geographic Information System
GPP	Gross Provincial Product
IEE	Initial Environmental Examination
IMF	International Monetary Fund
JBIC	Japan Bank of International Cooperation
JICA	Japan International Cooperation Agency
LLC	Lowest Lower Class
LMC	Lowest Middle Class
M/M	Minutes of Meeting

MEA	Metropolitan Electricity Authority
MLC	Medium Lower Class
MMC	Medium Middle Class
MOI	Ministry of Interior
MOSTE	Ministry of Science, Technology, and Energy
MOTC	Ministry of Transport and Communications
MRTA	Metropolitan Rapid Transit Authority
MSL	Mean Sea Level
MSW	Municipal Solid Waste
MSWM	Municipal Solid Waste Management
MWA	Metropolitan Water Supply Authority
NESDB	National Economic and Social Development Board (NESDB)
NHA	National Housing Authority
NIES	Newly Industrializing Economies
NSCD	Night Soil Control Division
NSTP	Night Soil Treatment Plant
OCMLT	Office of the Commission for the Management of Land Traffic
Pb	Plumbum
PB	Polybutylene
PC	Prestressed Concrete
PE	Polyethelene
PEA	Provincial Electricity Authority
PVC	Polyvinyl Chloride Pipe
RID	Royal Irrigation Department
S/W	Scope of Work
SO_2	Sulfur Dioxide
SP	Steel Pipe
SRT	State Railway of Thailand
SS	Suspended Solids
STS	Sewerage Treatment System
TOT	Telecommunication Organization of Thailand
TSP	Total Suspended Particles
UFW	Unaccounted-for water
ULC	Upper Lower Class
ULC	Upper Lower Class
UMC	Upper Middle Class
UTDM	Urban Transportation Distribution Model
VAT	Value Added Tax
WQMC	Water Quality Management Center

WQMD	Water Quality Management Division
WTP	Water Treatment Plant
WWTP	Wastewater Treatment Plant

MEASUREMENT UNITS

Extent

cm^2 = Square-centimeters
m^2 = Square-meters
km^2 = Square-kilometers
ha. = Hectares (10,000 m^2)
rai = 0.16 Hectares

Volume

cm^3 = Cubic-centimeters
m^3 = cu.m = Cubic-meters
l = Liter

Length

mm = Millimeters
cm = Centimeters (cm = 10 mm)
m = Meters (m = 100 cm)
km = Kilometers (km = 1,000 m)
wah = 2 Meter

Weight

g = Grams
kg = Kilograms
ton, t = Metric tonne
μ g = Microgramma (= Millionths of a gram)

Energy

kcal = Kilocalories
kW = Kilowatt
MW = Megawatt
kWh = Kilowatt-hour
MWh = Megawatt-hour
GWh = Gigawatt-hour
MVA = Mega Volt Ampere
V = Volt
kV = Kilovolt

Time

sec, s = Seconds
min = Minutes
h, hr = Hour
d = Day

Others

% = Percent
^0C = Degree Celsius
MPN = Most Probable Number
dB = Decibel
pcu = Passenger Car Unit
l/c/d = Litter per Consumer per Day

INTRODUCTION TO THE STUDY

A. STUDY BACKGROUND

(1) Recent Urban Development in Bangkok

The economy of Thailand has rapidly grown since the latter half of the 1980s abreast of the industrial countries thanks in large part to the direct investment from Japan and other growing newly industrialized economies in Asia. As a result of the large influx of foreign capital into the real estate market, intensive urbanization has taken place in the Bangkok area. Development by private developers has been active for most forms of real estate: high rise office buildings, condominiums, hotels, and shopping centers amongst others. The government has also made large investment in urban infrastructure such as elevated highways, mass transit systems, airport, and water works. Currently, more than six million people live in the administrative area of the Bangkok Metropolitan Administration (BMA), having an area of 1,568 km^2.

The financial crisis, which first started in Thailand in 1997 before spreading to all Southeast Asian countries, prompted a decline of the baht, put a sudden brake on the economic boom, and resulted in negative real economic growth. The central government turned to a retrenchment finance policy and the real estate market has gravely deteriorated.

Bangkok now appears to be gradually returning to a stable state in spite of the disruption to urban development caused by the financial crisis. Influx of rural population into the city, environmental pollution associated with construction of urban development projects, traffic congestion, and rising land prices are gradually leveling off or reducing in their rates of growth. It seems to be the time to re-evaluate the past practices and seek a new direction for the future urban development of Bangkok.

(2) Necessity of Urban Redevelopment

Owing to the Thai government's financial crisis, many important urban infrastructure development projects have been shelved or suspended. On the other

hand, the rapid rise in land prices has led to a shortage of housing supply for medium/low income population and a decrease in open spaces for new housing or urban development. As a result, urban problems such as traffic congestion, water and air pollution, garbage disposal, flood, and slums have become ever more serious.

To cope with this situation, improvement of the deteriorated urban areas through redevelopment has come to be recognized as one of the most important strategies in urban development policy.

B. OBJECTIVE OF THE STUDY

The Government of Thailand requested the Government of Japan to conduct an urban development study early in the last economic and construction boom. In response to the request, the Government of Japan has been dispatching experts to the relevant government agencies since 1993, and they have conducted a series of studies on various urban development related matters; e.g., transportation, environment, and flood control.

In the city planning of BMA, one of the key directions identified is to tackle the district level urban development, since previous efforts have concentrated on the city's primary infrastructure. (These efforts are bearing fruit today.) To fully utilize these urban infrastructure developments, along with re-vitalizing the remaining inner city communities, it is vital to improve the district urban infrastructure to eventually raise the urban potential of Bangkok as a whole.

The Government of Thailand made another request for technical assistance for an urban re-development study in September 1999, and the Government of Japan responded with a Scope of Work (S/W) Mission to Thailand in August 2000. The Scope of Work for the study was delineated and minutes of meeting (M/M) signed between the National Housing Authority (NHA), a state enterprise under the Ministry of Interior (MOI) and the S/W Mission. The objectives of the Study defined by the S/W Mission are:

(a) To strengthen the institutional capacity of relevant organizations including local communities for planning and execution of urban redevelopment projects through technology transfer in the course of the Study;
(b) To formulate policy direction of redevelopment for the Study Area. (An inner city area of approximately 500 ha (3,125 *rai*) with a population of about

188,000.);

(c) To formulate an urban redevelopment master plan for a high priority area consisting of a group of lands owned and used by the government sector (Din Daeng Community Area);

(d) To conduct a case study on selected land(s) within the Din Daeng Community Area, including detailed design and environmental impact assessment; and

(e) To generate recommendations for urban renewal in the area of BMA, based on lessons learnt in the course of the planning on the Study Area, Din Daeng Community Area, and the Case Study Area.

The urban redevelopment planning and execution methods established by the Study is expected to assist in the concerted efforts for urban redevelopment in BMA, while the case study will help NHA to implement the housing renewal project promptly and realistically.

C. STUDY AREAS

The Study Area is located on the north side of the central part of Bangkok and has a population of about 188,000 spread over about 500 ha of land. Major roads such as Vibhavadi-Rangsit and Asok-Rachadaphisek run around the Study Area. Important public facilities such as Thai-Japan Youth Center, Skill Development Institute, a university, and colleges are located in the Area.

Din Daeng Community Area is a part of the Study Area consisting of lands owned and used by government bodies. Among them Din Daeng Housing Complex (approx. 24 ha) is where public housing for low-income people was constructed in 1951 by the Department of Public Welfare, MOI. The operation was later transferred to NHA and the remaining part of the development completed as the first public housing complex in Thailand. Huai Khwang Housing Complex (approx. 30ha) is another public housing complex developed by NHA, situated in the north part of the Study Area. On the south side, there is a large parcel of open land occupied by the Makkasan marshalling yard of the State Railway of Thailand (SRT) that provides an opportunity for large-scale commercial development.

In this report, some specific terms are used, and in order to avoid confusion, these are defined as follows:

The Study Area: An area of approximately 500 ha which contains Din Daeng Community Area, Huai Kwang Housing Complex of NHA and SRT's Makkasan

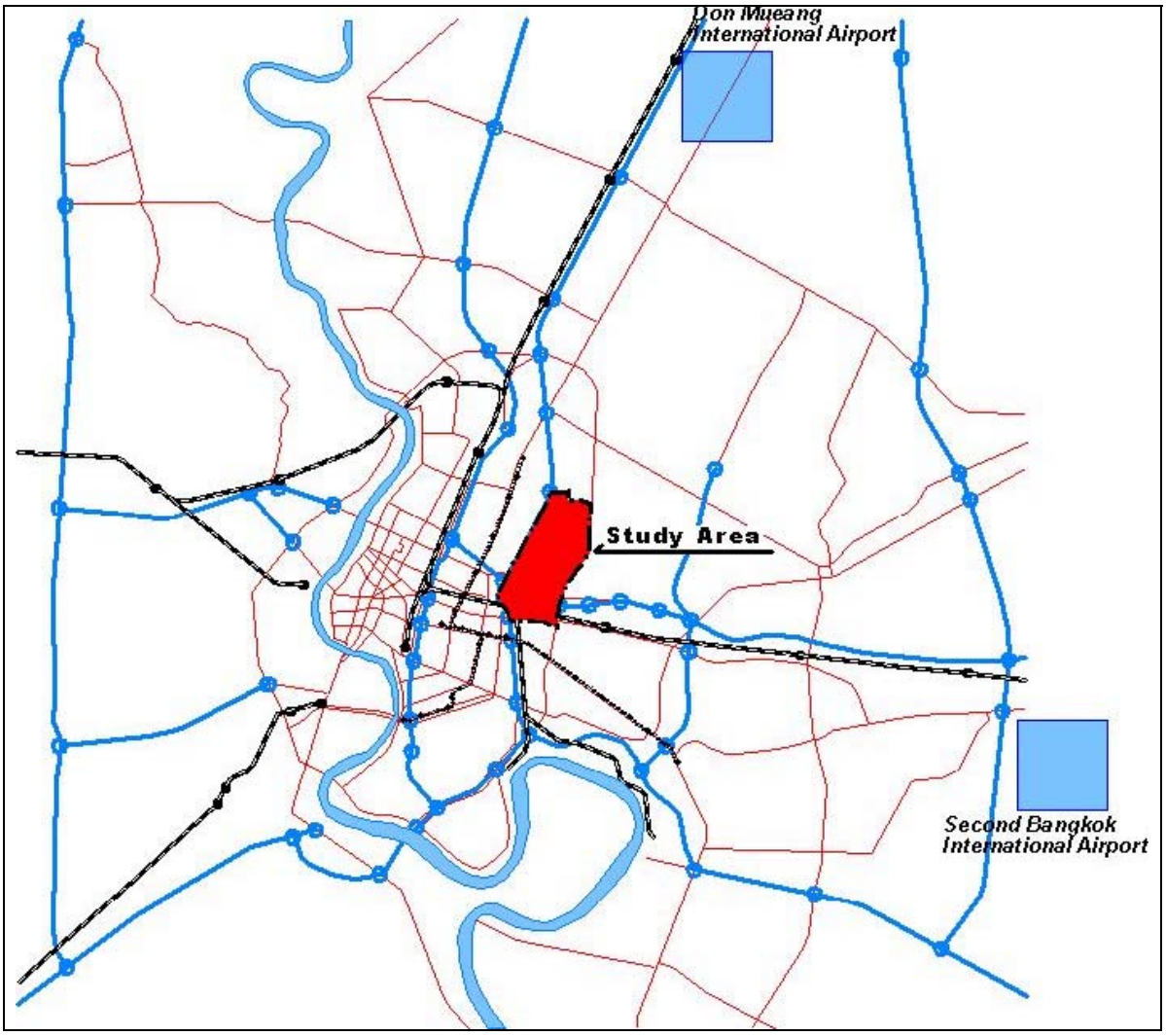
Yard. This is the object area for setting general policy for urban redevelopment. The area covers most of Din Daeng District and part of Ratchathewi District. This term will sometimes be substituted by DMH Area as appropriate.

Din Daeng Community Area: A group of lands of approximately 100 ha in total, owned by the central government and used by NHA, BMA and other government agencies. This was the subject area of Din Daeng Community Development Master Plan prepared by NHA, and further studied by the Study. The term DC Area will sometimes be used as an abbreviation for this term as appropriate.

Case Study Area: Block(s) of lands that have been selected within the Din Daeng Community Area, and are the subjects of case studies.

The location of the Study Area and large blocks of lands in the Study Area are presented in the following figures.

Location of the Study Area



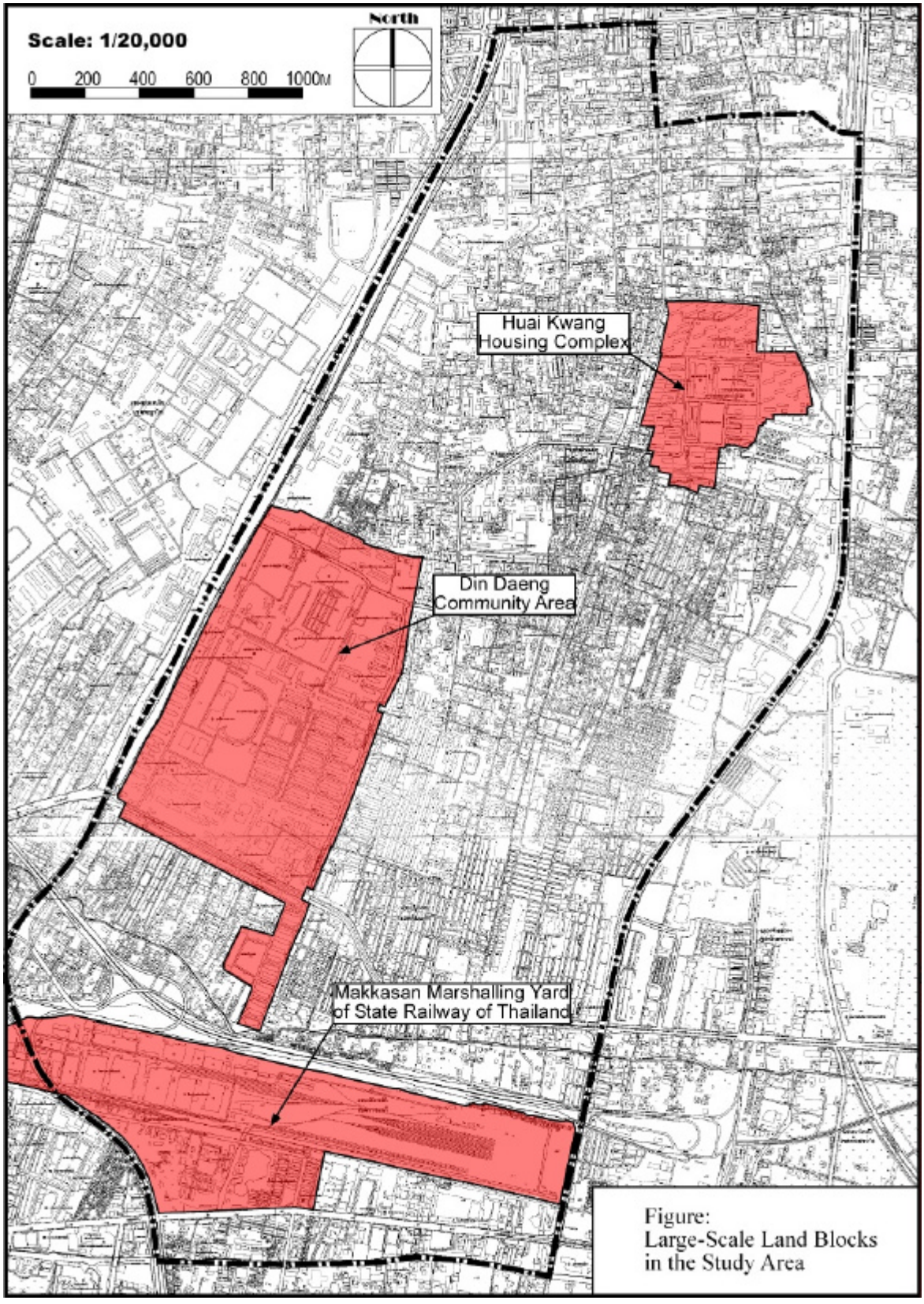


Figure:
Large-Scale Land Blocks
in the Study Area