

THE MINISTRY OF SCIENCE, TECHNOLOGY & ENVIRONMENT

資料3. HTPのコンセプト

THE CONCEPT  
OF HANOI HIGH-TECH PARK

Hanoi 6/1996

## I. INTRODUCTION

### A. Economic situation of Vietnam

1. The open politic of Vietnam started from 1986
2. Economical indicators in 90's
  - a) *Average growth rate of GDP in period 1991-1995 was 7.5% per year.*
  - b) *Industrial share in GDP in 1995 was 30.3%.*
  - c) *Total foreign investment in period 1988-1995 was valued over 18 billions USS.*
3. Indicators for science and technology
  - a) *R&D expenditure counts 0.5% of GDP*
  - b) *R&D manpower is estimated 800,000 persons*
  - c) *Public sector plays the dominant role in R&D activities.*

### B. National development policy

1. Vietnam's course "Industrialization and Modernization"

The indicators targeted to 2000

- a) *GDP per capita: 500 USS*
- b) *GDP growth rate: 9-10% per year*

The GDP per capita targeted to 2020 will be 2,000-2,500 USS.

2. The National Science and Technological Program to 2020

The Government of SR Vietnam intends to promote and accelerate high-tech industries and high technologies as the core for the course "Industrialization and Modernization country" (1994).

For this purpose, the Government is considering to prepare various mechanics of policy level, institutional level and facility level. The establishment of high-tech park is one of the mechanics to enhance the high-tech industry.

3. The High-Tech Park Program

Vietnam decided to establish two high-tech parks in Hanoi and in Hochiminh city in the resolution of Vietnam Communistic Party Congress VII. These high-tech parks should function as a pilot to implement the high-tech development program of Vietnam in 21st century.

High-tech park should not be regarded as one type of conventional industrial park or nominal "high-tech" park. As the base of high-tech park project, the integrated high-tech policy which consist of some policy as follows should be adopted:

- a) *Policy to promote high-tech industry*
- b) *Policy to bring up R&D-type venture business*
- c) *Policy to invite overseas Vietnamese starting high-tech business*
- d) *Policy to induce high-tech foreign investment.*

In this sense, the high-tech park project of Bangalore in India may be one of the models which Vietnam high-tech park could follow.

The basic functions of these high-tech park in Vietnam economical development are following:

- e) *Transfer high technological industries into Vietnam*
- f) *Create new technological industries for Vietnam*
- g) *Prepare high-tech human resource for Vietnam*

## II. OUTLINE OF HANOI HIGH-TECH PARK

### A. *The vision of Hanoi High-tech Park*

The Hanoi High-tech Park should be an example for other high-tech parks being created later in Vietnam and leading to the creation of new type integrated cities for Vietnam in the 21st century.

### B. *Study area*

The Government of SR Vietnam decided to develop subcities around Hanoi including XuanMai - Hoalac regional (1996).

The Government of SR Vietnam decided to locate the Hanoi High-tech Park in Hoalac (1996) in the area about 1,300 ha.

The Hoalac region at the moment:

1. Near Hanoi (30 minutes by highspeed road)
2. Attractive natural landscape.
3. Small population.

### C. *Development strategy*

Based on the regional Hoalac considerations, the proposed development strategy for the Hanoi High-tech Park should be as follows:

1. To concentrate the development of the infrastructure including road network, water supply system, drainage and sewerage system, electrical supply system, communication network.
2. To establish the attractiveness environment for high-tech corporations and employees.
3. To induce high-tech production factories by transferring the high-tech industries multinational corporations from abroad, in the short term.
4. To induce new high technological industries and prepare the high-tech human resource, in the long term.

### D. *The demands of Hanoi High-tech Park*

Key factors leading to success of Hanoi High-tech Park are:

1. To attract international investors to invest and locate the targeted high-tech industries in the proposed park.
2. To attract the existing R&D organizations in Hanoi and to relocate to the proposed park.

### E. *The type of Hanoi High-tech Park*

Based on the integrated high-tech promoting policy, a self-contained type of High-tech Park is to be created strategically in Hoalac as a multi-functional organic center involving the fundamental functions following:

1. High-tech industry
2. Trade and business support
3. Technology research and development

4. Technology training

5. Residence/Amenity

**F. Components of Hanoi High-tech Park**

The following six conceptual zoning is proposed to meet the requirements of the above mentioned function.

1. High-tech industrial zone:

High-tech and supporting industries for.

a) *Targeted industries upto 2010:*

- (1) Electronic, computer and software
- (2) Communication
- (3) New material
- (4) Biology

b) *The main components*

- (1) Industrial modules
- (2) Incubation facilities
- (3) Public service
- (4) Greenbelts

2. Central business zone:

Commercial, administrative and support functions.

a) *The main components:*

- (1) City center
- (2) Subcities
- (3) Public institutes

3. R&D zone:

Research and development High Technologies.

a) *The main components*

- (1) National software center
- (2) Technological centers
- (3) Incubator center for R&D-type venture business
- (4) R&D institutes
- (5) Industrial inspection and standardization center.
- (6) Public service

4. Training zone:

Technological training functions

a) *The main components*

- (1) The national technological training center
- (2) Vocational training centers
- (3) Public service

5. Amenity zone:

5

Recreation function.

a) *The main components*

- (1) Lake zone
- (2) Parks
- (3) Sport facilities
- (4) Greenbelts
- (5) Public service

6. Housing zone:

Residential with urban amenity, educational, administrative and recreational functions.

a) *The main components*

- (1) Housing modules
- (2) Schools
- (3) Parks and greenbelts
- (4) Public service

These zones should be connected organically. In every zone need to plan for built and development the greenbelt and open space. It is desirable that housing, education facilities and urban amenities of international standards and the related office and business functions to support production activities be provided on the Park to ensure the high quality of life of the employees in Hanoi High-tech Park. The park should be planned in conformity with the master plan of the Hoalac region development.

### III. ORGANIZATION FOR IMPLEMENTATION AND OPERATION

#### A. Vietnam Government

- i. To establish high-tech promoting policy and guidance.
  - a) *Creating a suitable legal environment for high-tech development in the high-tech park*
  - b) *Special financial assistance for development*
  - c) *Subsidies, tax breaks, and others regional location incentives.*
2. To approve of land utilization plans for development regions
3. To make basic development survey
4. To make proposal of plan and master plan.
5. To make feasibility study.
6. To invite high-tech park development organizations from abroad.
7. To invite high-tech industry

#### B. The Corporation for Financing and Promoting Technology (FPT) as a high-tech park developer

1. To acquire land
2. To make working and engineering plans.
3. To manage the development progress.
4. To attractive industry
5. To provide enterprise placement services and gathering users

#### IV. DEVELOPMENT SCHEDULE

##### A. Preparation period: 1996-1997

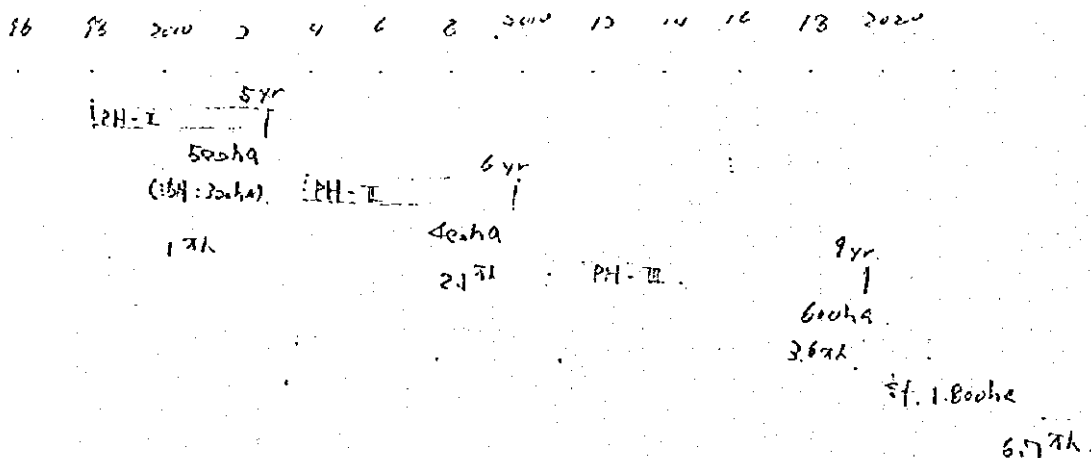
Under cooperation of JICA development study and JICA expert (Part V)

##### B. Implementation phases

The development of Hanoi High-tech Park has been divided into phases as following:

1. First phase (1998-2003): 800 ha, including 300 ha of the lake, with 10,000 of population and 10,000 employees.
2. Second phase (2004-2010): 400 ha with 21,000 of population and 21,000 employees.
3. Third phase (2011-2020): 600 ha with 36,000 of population and 36,000 employees.

The decision on the development component's of these phases would be based on priorities, necessities and possibilities. But the main line is the harmonically development all components.





## V. PROPOSED CONTENTS OF JICA DEVELOPMENT STUDY

### A. *Concept of JICA study*

The JICA study should be focused mainly on the proposal of the integrated high-tech promoting policy. Arrangement and components of Hanoi high-tech park shall be deducible from these kind of integrated high-tech promoting policy. In this context, the urban planning and the engineering of the hard infrastructure for this high-tech park should not be the key issue of, although necessary for, the JICA study.

### B. *Phases and contents*

The JICA study should be proceeded under two phases as follows:

1. First phase (6 months, by the 1st half 1997):
  - a) *Proposal of the integrated high-tech promoting policy.*
  - b) *Master plan of the Hanoi High-tech Park.*
2. Second phase (6 month, by the end of 1997)
  - a) *Feasibility study and engineering of the Hanoi High-tech Park*

### C. *Steering committee*

To make the study feasible and effective, Vietnamese side will establish the steering committee which consists of ministries, institute, people's committee and organization concerned, and is chaired by the minister of MOSTE.

### D. *JICA expert*

In addition to these, to promote the ability and to support the performance of Vietnamese side concerning high-tech policy and high-tech park, JICA expert is expected to dispatch to MOSTE.

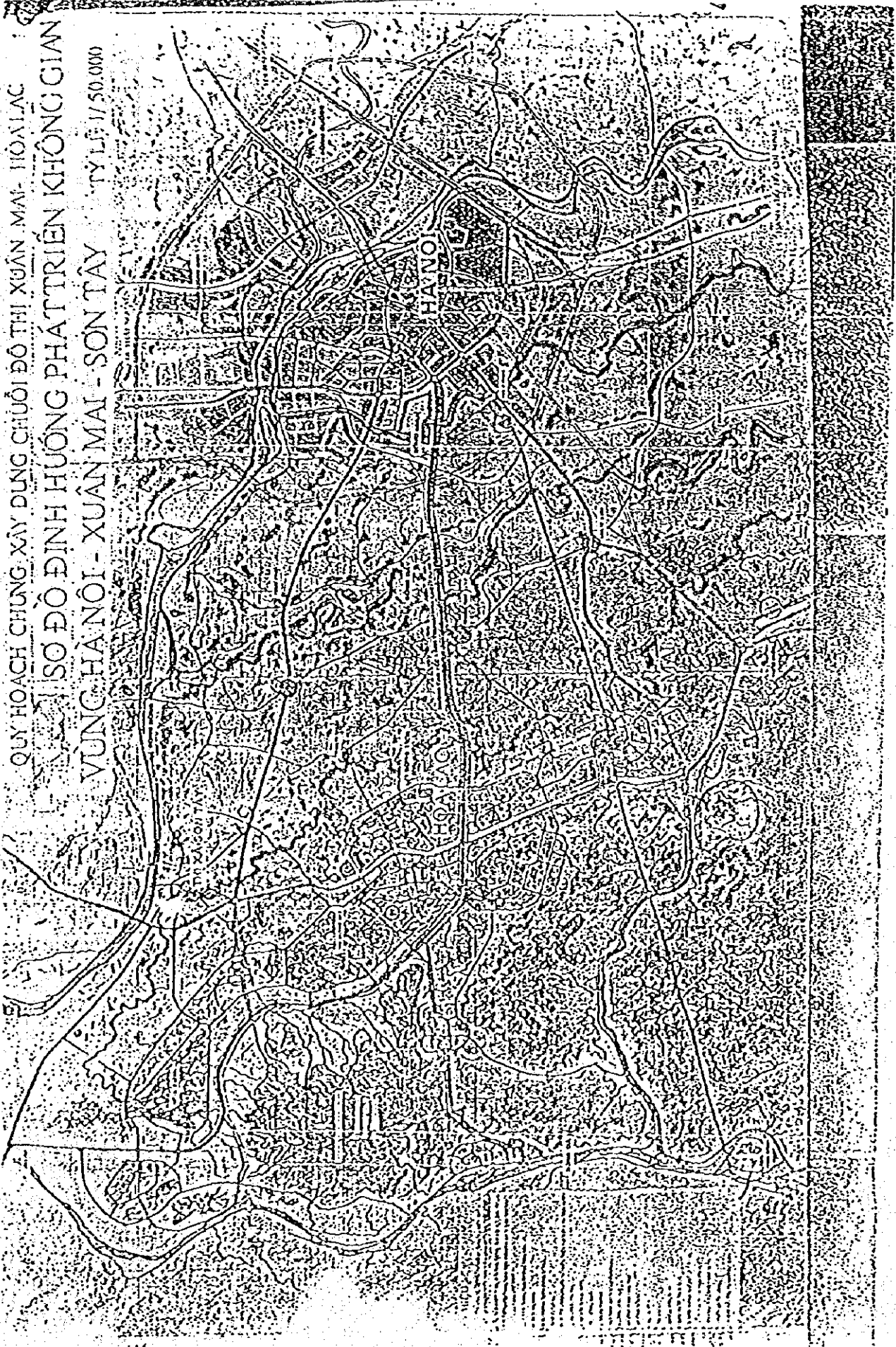
## VI. ATTACHMENT

- A. *Location map*
- B. *Preliminary plan of zoning*

QUY HOẠCH CHUNG XÂY DỰNG CHUỐI ĐÓ THỊ XUÂN MẠI - HÒA LẠC

SƠ ĐỒ ĐỊNH HƯỚNG PHÁT TRIỂN KHÔNG GIAN  
VÙNG HÀ NỘI - XUÂN MẠI - SƠN TÂY

TỶ LỆ 1/50.000





資料4. HTP計画のTOR

THE MINISTRY OF SCIENCE, TECHNOLOGY AND ENVIRONMENT

For discussion

TERMS OF REFERENCE

FOR

MASTER PLAN AND FEASIBILITY STUDY

ON

HANOI HIGH-TECH PARK PROJECT

IN

VIETNAM

JULY 1996

## I. Background of the Study

Vietnam's policy of "Industrialization and Modernization" targets 9-10% of GDP growth rate to Year 2000 and US\$500 of GDP per capita in Year 2000 and US\$2,000-2,500 in Year 2020.

The Government of Vietnam intends to promote and enhance high-tech industries and technologies as the core of the "Industrialization and Modernization" policy. For this purpose, the Government is considering to prepare various schemes of policy level, institutional level and facility level. The establishment of high-tech parks is one of the schemes to promote the high-tech industry. High-tech parks are expected to function as a pilot to implement the high-tech industry development program toward the 21st century and as an example of new type integrated cities for Vietnam in 21st century.

Vietnam has decided to establish two high-tech parks in Vietnam, one in Hanoi area and another in Hochiminh city area, in the resolution of the Vietnam Communist Party Congress VII in 1991. It is also decided by the Prime Minister in 1996 that Hanoi High-Tech Park is located at Hoa Lac area in Ha Tay Province integrated in the Son Tay - Hoa Lac - Xuan Mai New Urban Development.

High-tech park project should not be regarded merely as one type of conventional industrial park projects. As the basis of high-tech park project, an integrated high-tech promotion policy should be formulated. The policy includes mainly: policy to promote high-tech industry, policy to foster R & D type venture business, policy to invite overseas Vietnamese pioneering high-tech business, and policy to induce foreign investment in high-tech industries.

The basic functions of the high-tech park are mainly: to transfer technology of high-tech industries to Vietnam, to research and develop high-tech industries fit to Vietnam, to incubate high-tech business, and to develop high-tech human resources. The high-tech park may include the following facilities: Multi-functional science and technology center (including R & D facilities, incubation facilities, testing facilities, training facilities, etc.), site and services for advanced high-tech factories and laboratories, administrative/commercial facilities, residential facilities, recreational/amenity facilities, supporting infrastructures, etc.

## II. Objectives of the Study

The objectives of the Study are:

- a) to formulate a master plan for high-tech industrial promotion,
- b) to formulate a master plan for the Hanoi High-Tech Park Project with the target year of 2020,
- c) to prepare recommendations on the policy, legal, institutional and administrative frame works and for high-tech (advanced-technology based) industrial promotion,
- d) to conduct a pre-feasibility study on the Hanoi High-Tech Park.

- e) to conduct a feasibility study on first stage development of the Hanoi High-Tech Park, and
- f) to formulate the implementation plans for the Multi-functional Science and Technology Center.

### III. Study Area

Study should be conducted in the Hanoi High-Tech Park site with a tract of about 1,500ha located in the Ha Tay province about 30km to the west of the Hanoi City. Further, relevant areas shall be inclusive in the study area for the study of inter-relationship, linkage and cooperation in accordance with the requirement. (See attached map)

### IV. Scope of the Study

The Study shall be conducted in two phases as given below.

#### A. <Phase I> Formulation of a Master Plan for High-tech Industrial Promotion in the Greater Hanoi area

1. Present Conditions of Vietnam and Study Area
  - a) Review of Vietnamese economy
  - b) Review of the policy environment and development plans of the GOV
  - c) Study on present conditions and future prospects of the Hanoi / Ha Tay area
  - d) Study on related projects
    - (1) Review of the plan for "Hanoi National University City Project" in Ha Tay area
    - (2) Review of the "Son Tay - Hoa Lac - Xuan Mai New Urban Development Master Plan"
    - (3) Review of a plan of "New Highway Lang Ha - Nui Muc"
    - (4) Review of other related projects in the Greater Hanoi area
  - e) Review of the present industrial development situation in the Hanoi / Ha Tay area
  - f) Survey and analysis of the investment demand and needs for science and technology promotion
    - (1) Potential investors to the Hanoi High-Tech Park
    - (2) Needs for science and technology promotion including R&D and standardization, incubation, technological transfer, human resources development, information

*dissemination and registration and protection of intellectual property rights*

- (3) *Requirements/conditions of the investors for the investment in high-tech industries in the Greater Hanoi area*

2. **Policy recommendation for High-tech Industrial Promotion**

- a) Definition and role of high-tech industries
- b) High-tech industrial promotion policy and strategies
- c) Study of the existing high-tech parks in other countries such as Bangalore in India and Hsinchu in Taiwan
- d) Identification of prospective sectors for the high-tech parks
- e) Master plan for high-tech industrial promotion
  - (1) *R&D support plan*
  - (2) *Incubation support plan*
  - (3) *Technological transfer (training) plan*
  - (4) *Human resources development plan*
  - (5) *Information dissemination plan*
  - (6) *Supporting plan for the registration and protection of the intellectual property rights*
- f) Necessity of the Hanoi High-Tech Park
- g) Investment promotion policy by deregulation, encouragement of investment from overseas including overseas Vietnamese, etc. In particular, following points will be studied:
  - (1) *Improvement of related procedures of investment*
  - (2) *Sophistication of the system relating to land*
  - (3) *Deregulation on the employment of locally employed staff*
  - (4) *Improvement of others various legal regulations*

3. **Formulation of a master plan and pre-feasibility study of the Hanoi High-Tech Park**

- a) Roles and functions of the Hanoi High-Tech Park for the industrial promotion in the Greater Hanoi area



- b) Cooperation with the other development zones within Hanoi National University City project and cooperation with relevant Government ministries and entities
- c) A conceptual plan of the Hanoi High-Tech Park
- d) Cooperation and linkage with existing and planned IPs/EPZs in whole Vietnam
- e) Layout plan of the facilities and landscape planning of the Hanoi High-Tech Park
- f) Selection of appropriate high-tech industrial categories to be located
- g) Roles and functions of the Multi-functional Science and Technology Center for the industrial promotion in the Greater Hanoi area
- h) A conceptual plan of the Multi-functional Science and Technology Center
- i) Institutional and legal recommendation for operation/management system
- j) Environment plan
- k) Development phasing

**B. <Phase II> Feasibility Study on First Stage Development of the Hanoi High-Tech Park**

- 1. Field study on the Hanoi High-Tech Park site
  - a) Infrastructure
  - b) Accessibility
  - c) Topography and geology
  - d) Labor force
  - e) Social and environmental situations
- 2. Feasibility Study on the Hanoi High-Tech Park for first phase
  - a) Selection of a development site for the Hanoi High-Tech Park
  - b) Determination of the appropriate development area
  - c) Preparation of land use and land preparation plans

- d) Preliminary design of the facilities
- e) Preliminary design of the required infrastructure and utilities
- f) Planning for operation and management
- g) Construction scheduling of the Hanoi High-Tech Park
- h) Cost estimation
- i) Project evaluation
- j) Consideration of social and environmental impacts

3. Implementation plans for Multi-functional Science and Technology Center

- a) Scaled model
- b) Design of the required infrastructure and utilities
- c) Detail plan for the required machinery/equipment
- d) Detail layout plan and design of the facilities
- e) Land preparation and detail construction plans.
- f) Operation and management plan
- g) Financial plan

Recommendations

- a) Financial arrangement
- b) Further technical assistance
- c) Overall recommendations

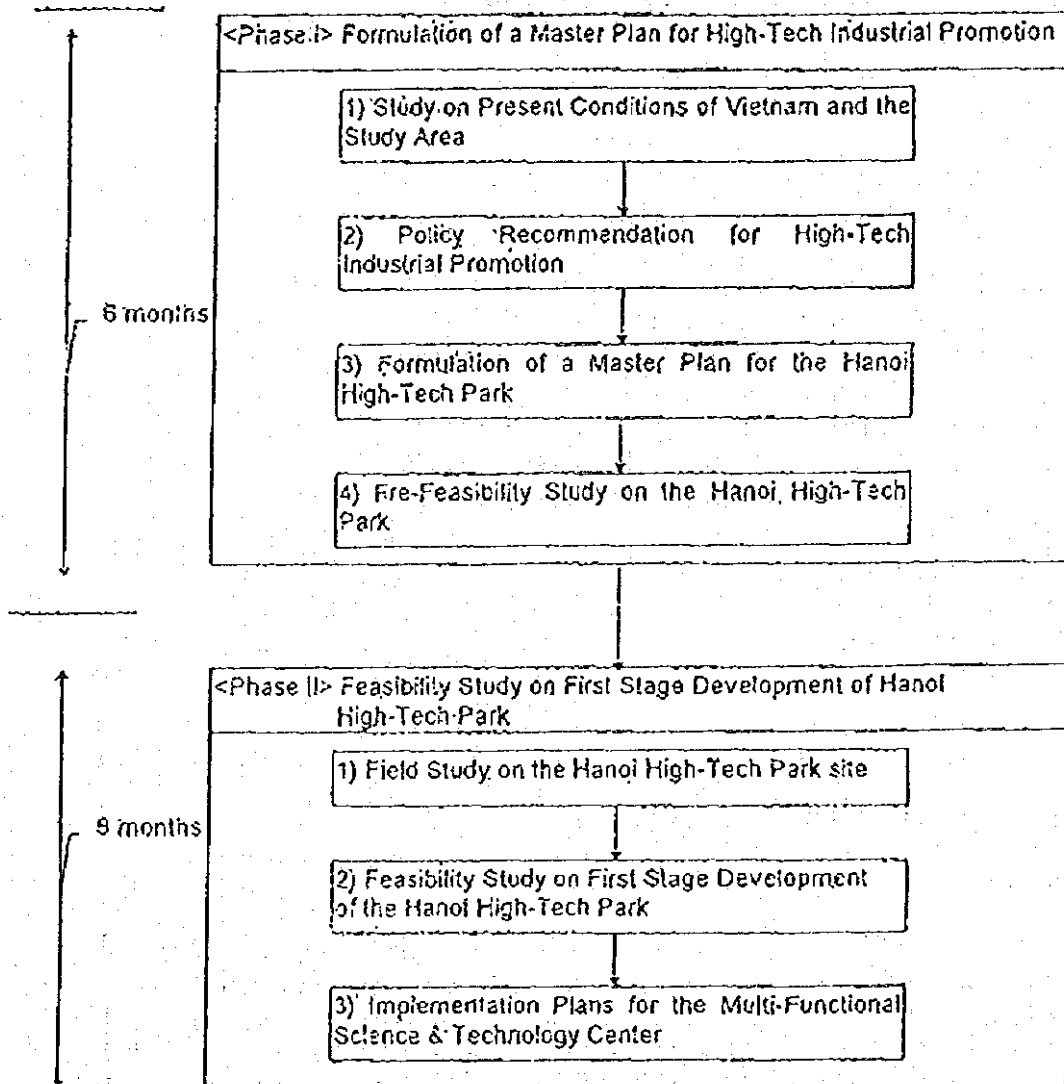
## V. Work Schedule of the Study

### I. Work schedule

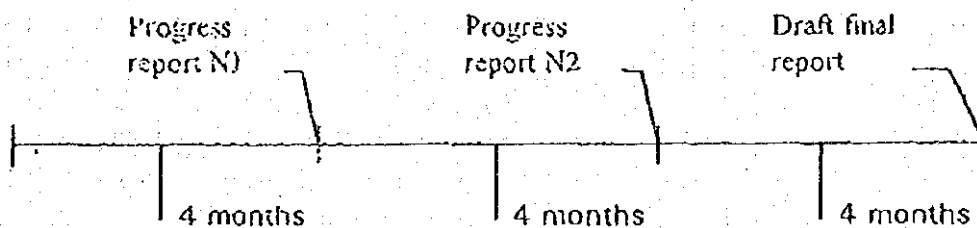
Work schedule of the Study shall be as follows:

<PHASE I>	Formulation of a Master Plan for High-Tech Industrial Promotion in the Greater Hanoi area	6 months
<PHASE II>	Feasibility Study on First Stage Development of Hanoi High-Tech Park	6 months
Total		12 months

## 2. Work Flow



## 3. Output targets



## VI. Experts Requirement

The necessary experts to conduct the Study are shown below

- 1/ Team Leader
- 2/ Urban/Regional Development Planner
- 3/ Legal/Institutional Expert
- 4/ Incubation and Corporate Management Expert
- 5/ Macro Economy/Financial and Tax Policy Expert
- 6/ Human Resources Development Expert
- 7/ R&D Expert
- 8/ Investment Promotion Expert
- 9/ Demand Survey Expert (Investment Demand)
- 10/ High-Tech Park Construction Planner and Cost Estimator
- 11/ High-Tech Park Management Planner
- 12/ Infrastructure Planner A (Land Preparation, Transportation)
- 13/ Infrastructure Planner B (Water Supply, Sewerage, Drainage)
- 14/ Infrastructure Planner C (Electricity, Telecommunication)
- 15/ Architectural/Landscape Planner
- 16/ Equipment Planner
- 17/ Economic/Financial Analyst
- 18/ Environmental Expert

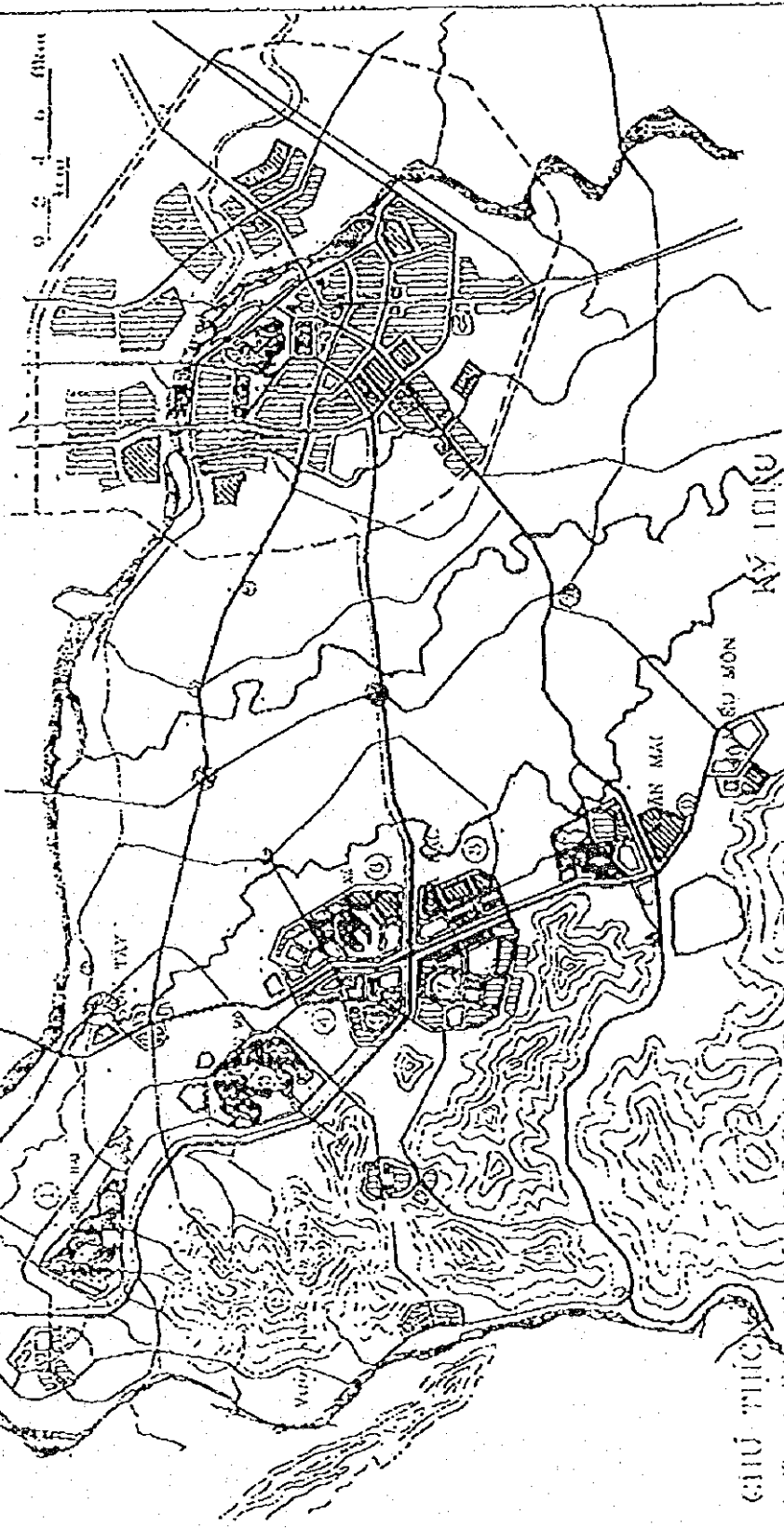
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TERMS OF REFERENCE FOR MASTER PLAN AND FEASIBILITY STUDY-8



Quy hoạch chung xây dựng chức đô thị Xương mới Hòa Lạc  
 SƠ ĐỒ ĐỊNH HƯỚNG PHÁT TRIỂN VÙNG HÀ NỘI - QUẬN MẠI SƠN TÂY



CHỈ DẪN

- 1 Khu dân cư tập thể và gia đình
- 2 Khu dân cư tập thể và gia đình
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- Tuyến cấp nước chính
- Đường sá
- Đường cao tốc
- Đường đô thị
- Cảng đường sông

（1）数据库系统应用案例的概述

数据库系统应用案例是指将数据库技术应用于实际问题的解决方案。数据库系统应用案例的概述包括以下几个方面：

- 1. 案例背景：介绍案例的背景、目的和意义。
- 2. 案例需求：分析案例的需求，包括功能需求、性能需求、安全需求等。
- 3. 案例设计：设计数据库系统，包括数据库结构、表结构、索引、视图等。
- 4. 案例实现：实现数据库系统，包括数据库的安装、配置、数据迁移等。
- 5. 案例测试：测试数据库系统，包括单元测试、集成测试、性能测试等。
- 6. 案例维护：维护数据库系统，包括数据库的备份、恢复、优化等。

（2）数据库系统应用案例的数据库设计

数据库设计是数据库系统应用案例的核心环节。数据库设计包括以下几个方面：

- 1. 数据库结构：设计数据库的整体结构，包括数据库名、表名、视图名等。
- 2. 表结构：设计数据库中的表结构，包括表名、表字段、表数据类型、表约束等。
- 3. 索引：设计数据库中的索引，包括索引名、索引字段、索引类型等。
- 4. 视图：设计数据库中的视图，包括视图名、视图字段、视图查询语句等。
- 5. 数据库安全：设计数据库的安全策略，包括用户权限、数据加密、数据备份等。

（3）数据库系统应用案例的数据库实现

数据库实现是将数据库设计转化为实际的数据库系统。数据库实现包括以下几个方面：

- 1. 数据库安装：安装数据库系统，包括数据库软件的安装、配置等。
- 2. 数据库配置：配置数据库系统，包括数据库参数、数据库用户、数据库权限等。
- 3. 数据迁移：将数据从旧系统迁移到新系统，包括数据导出、数据导入等。
- 4. 数据库优化：优化数据库系统，包括数据库性能优化、数据库安全优化等。

（4）数据库系统应用案例的数据库测试

数据库测试是验证数据库系统是否符合需求的过程。数据库测试包括以下几个方面：

- 1. 单元测试：测试数据库中的单个组件，如表、视图、索引等。
- 2. 集成测试：测试数据库中的多个组件的集成，如表、视图、索引等。
- 3. 性能测试：测试数据库系统的性能，如响应时间、吞吐量等。
- 4. 安全测试：测试数据库系统的安全性，如数据加密、数据备份等。

（5）数据库系统应用案例的数据库维护

数据库维护是确保数据库系统长期稳定运行的过程。数据库维护包括以下几个方面：

- 1. 数据库备份：定期备份数据库，防止数据丢失。
- 2. 数据库恢复：在数据丢失时恢复数据库。
- 3. 数据库优化：定期优化数据库，提高数据库性能。
- 4. 数据库安全：定期更新数据库安全策略，防止数据泄露。









JICA