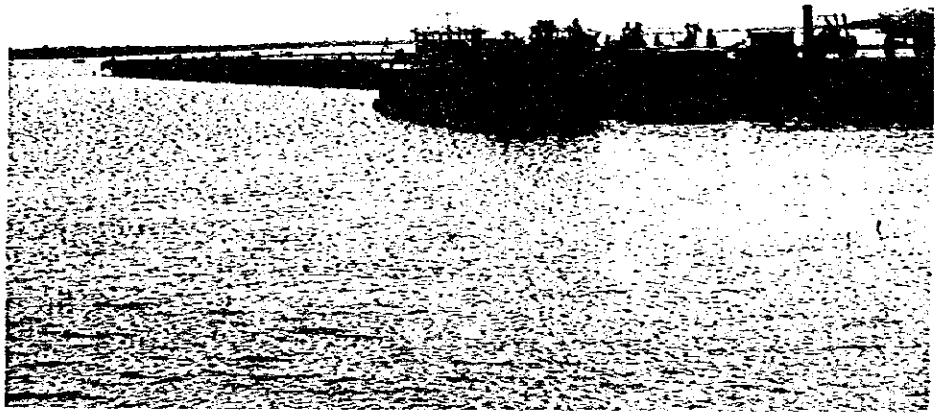
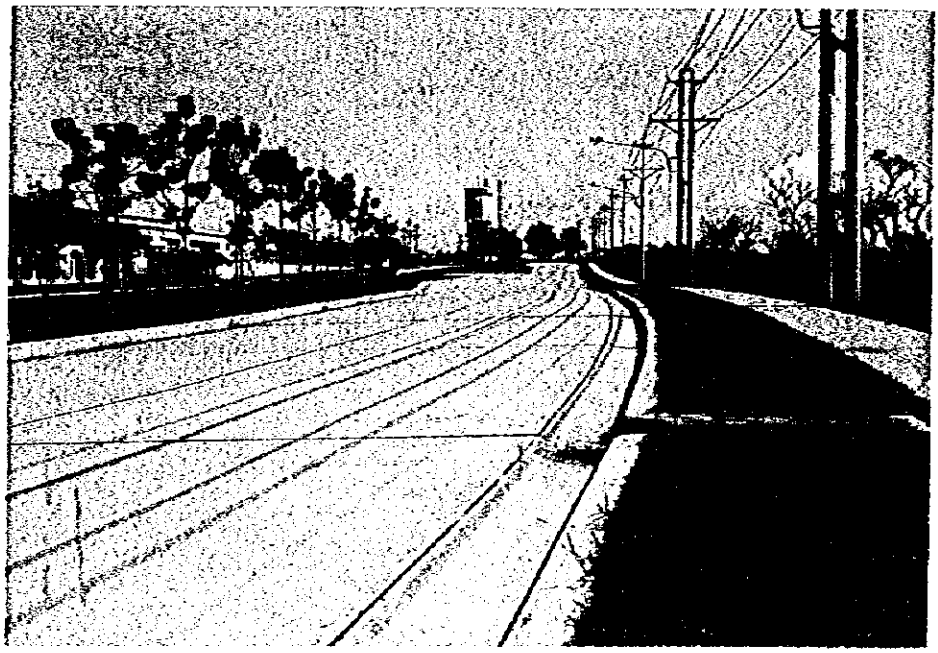
ヴィエトナム社会主義共和国
鉄鋼圧延工場建設計画予備調査
報　告　書

1999年12月

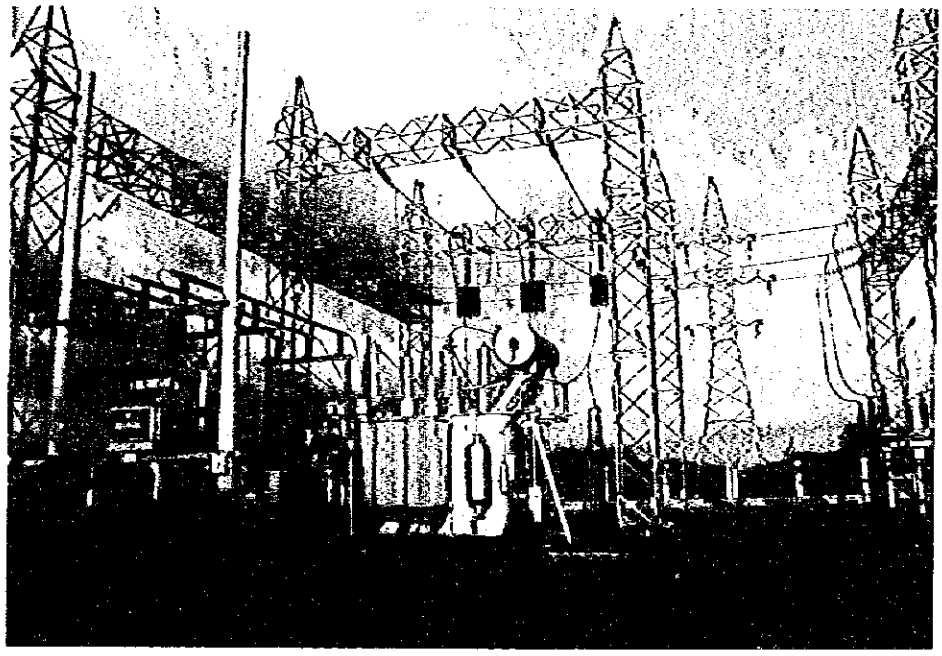
国際協力事業団
鉱工業開発調査部



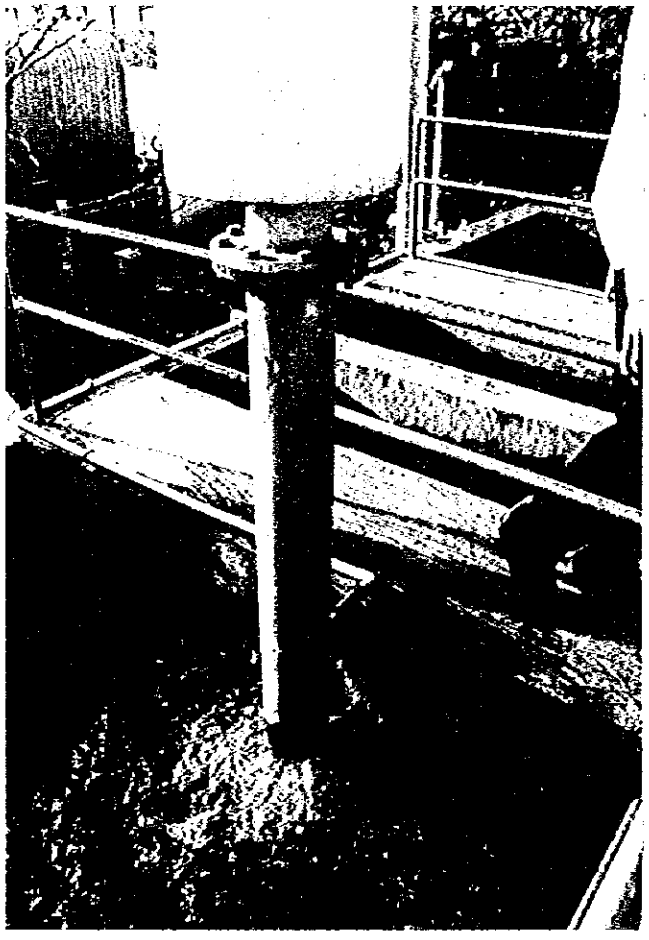
Phu My 港



AMATA 工業団地内の道路



Nhon Trach 変電所



Nhon Trach 地下水のくみ上げポンプ

ヴィエトナム社会主義共和国鉄鋼圧延工場建設計画予備調査

目　次

1．協議結果

１．協議結果

１－１　予備調査の概要

（１）予備調査に至る経緯

ヴィエトナムでは１９７６年の南北統一以降、社会主義計画経済のもと重工業を中心とした工業化が行われてきており、１９８６年にドイモイ政策を打ち出してからは市場経済の導入を図りさらに工業化を促進してきた。

かかる状況の下、ヴィエトナム政府の要請により JICA は９６年６月から９８年３月まで鉄鋼産業振興マスタープラン調査を実施した。このマスタープランでは２０１０年までに年間製鉄量４６０万トンの一貫製鉄所を建設するプランを提示したが、その後のアジア経済危機等の影響もあり、鉄鋼需要の伸びは大幅に減速し、２０１０年までに一貫製鉄所を建設する計画の実現可能性は低下した。

他方、ヴィエトナムは現在、鋼板生産設備を有しておらず、その全てを輸入に頼っている。鋼板の国内需要は近年急速に増加しており、９８年の輸入量は７０万トンに達し、貿易収支の点でも大きな負担となっている。このため、ヴィエトナム政府は、鉄鋼マスタープランの当面の代替案として、圧延工場の建設にかかる構想をまとめ、９８年１０月我が国に対し、鉄鋼マスタープラン事業化調査実施の正式要請を提出した。

これを受け、事業団はプロジェクトサイト、調査後の資金手当の考え方をヴィエトナム政府に照会していたところ、この度、冷間圧延工場の候補サイトの選定（ホーチミン近郊）がなされると共に、工業省より資金調達に関する考え方が示された。

以上の経緯を踏まえ、本件ヴィエトナム国鉄鋼圧延工場建設計画調査は、ヴィエトナムにおける圧延工場建設のフィージビリティを検討し、同国における最適な工場の粗デザイン、建設費、建設工程の策定を行う。

（２）予備調査団派遣の目的

圧延工場建設にかかるフィージビリティスタディの実施の枠組みについて先方と協議を行い、合意内容を実施細則（S／W）と関連議事録により確認する。なお、実施細則には以下の項目を含む。

ア．調査の目的

イ．調査の範囲
ウ．タイムスケジュール
エ．双方の負担事項

（3）調査団構成

①総括	：植嶋　卓巳	国際協力事業団　工業開発調査課
②技術協力行政	：阪西　卓	通商産業省通商産業省基礎産業局 鉄鋼課技術振興室
③企画調査	：小林　知樹	国際協力事業団　工業開発調査課
④通訳	：樋口　ホア	日本国際協力センター

また、上記4人の他にヴィエトナム国鉄鋼公社に個別派遣中の田中伸昌専門家が同行した。

（4）調査期間／日程

調査期間は1999年11月21日から12月1日であり、具体的な日程は以下のとおりであった。

日程表

日付			行程
11月	21日	日	移動（東京—バンコク）
	22日	月	移動（バンコクーハノイ） 大使館、現地事務所
	23日	火	Ministry of Industry, Ministry of Planning and Investment Viet Nam Steel Corporation
	24日	水	大使館 移動（ハノイーホーチミン）
	25日	木	Bien Hoa Industrial Zone2 AMATA Industrial Park Nhon Trach Industrial Park
	26日	金	Phu My Industrial Zone
	27日	土	移動（ホーチミンーハノイ）

	２８日	日	資料整理
	２９日	月	Viet Nam Steel Corporation 大使館
	３０日	火	Viet Nam Steel Corporation 現地事務所
１２月	１日	水	移動（ハノイ－東京）

１－２　協議結果

（１）Scope of Work(S/W)、Minutes of Meeting(M/M)への署名

１２月１０日、計画投資省 HOC 次長の立ち会いのもと、工業省 HUAN 局長、鉄鋼公社 SON 社長、及びヴィエトナム事務所地曳所長の間で S/W（別添参照）の署名を行った。また、調査内容の詳細に関わる事項を M/M（別添参照）にとりまとめ、同様に署名を行った。

調査団の派遣中に S/W の署名が行えなかった理由は計画投資省（MPI）の異議によるものである。

予備調査団が派遣される一週間ほど前に MPI は首相府に対して、文書を発出している。その内容は、冷間圧延工場建設に係るフィージビリティスタディはヴィエトナム鉄鋼公社（VSC）独自に行うべきであるというものであった。MPI にとっては鉄鋼プロジェクトの優先順位は低く、本案件に割り当てられた日本の ODA 予算を他の案件（例えば、インフラストラクチャーの整備計画など）に振り替えたい意思があったのである。

かかる状況のもと、調査団は MPI に対して、MPI の考えるように本開発調査に係る経費を他の案件に差し替えることは日本の ODA 予算が案件ベースで運用されているため不可能であること、予算上及び手続き上、合意が早々に得られない場合は本調査を本年度案件として開始することが不可能になること、結果として本調査の実施自体が危うくなる可能性があることを説明し、理解を求めた。同様に、工業省（MOI）、VSC も MPI の理解を求めるべく交渉したが、調査団滞在中には MPI 内部の意見調整が取れなかった。

これに対して調査団は、手続き上１２月１０日までに合意が得られなければ本開発調査の実施が不可能になる旨をヴィエトナム側に伝えて帰国した。

調査団の帰国後、MOI、VSC、現地事務所の説明により MPI 内部での同意が得られ、MPI の Phuc 次官が首相府に対して本開発調査の実施に同意する旨の文書を発出したところ、首相府から肯定的な回答があり、期日である１２月１０日に S/W の署名式が執り行われた。

（２）本格調査について

署名自体に手間取ったものの、実質のカウンターパート期間である工業省及び鉄鋼公社と当方との間に調査内容にかかる意見の相違はほとんどなく、基本的に日本側対処方針の範囲において合意がなされた。以下に S/W で合意されている本格調査の主要な点を記載する。

①調査目的

国内需要向けの鉄鋼鋼板生産設備（圧延工場）の建設にかかるフィージビリティを策定する。

②調査のスケジュール

2000 年 2 月上旬	コンサルタント選定完了
2000 年 2 月中旬 -2 月下旬	国内準備作業
2000 年 3 月上旬 -3 月下旬	第 1 次現地調査
2000 年 5 月中旬 - 6 月中旬	第 1 次国内作業
2000 年 6 月下旬 - 7 月中旬	第 2 次現地調査
2000 年 8 月上旬 -8 月下旬	第 2 次国内作業
2000 年 9 月中旬 -9 月下旬	第 3 次現地調査
2000 年 10 月上旬- 10 月中旬	第 3 次国内作業
2000 年 10 月下旬	ファイナルレポート送付

③調査の範囲

熱間圧延ミルの建設サイトが選ばれていないことから、本案件を２フェーズに分けて実施する。すなわち、フェーズＩにおいては、現在サイト選定がなされた冷間圧延ミルのフィージビリティスタディを行うとともに、冷間圧延・熱間圧延ミルが同一あるいは異なるサイトに立地する場合の利

害得失に触れつつ熱間圧延ミルの建設サイトに関し提言する。

フェーズⅠ終了時までに熱間圧延ミルの建設候補サイトが選定された場合、フェーズⅡに移行し引き続き熱間圧延ミルのフィージビリティスタディを行う。

フェーズⅠ

A．ミル建設のためのプレコンディションにかかる調査

1）ヴィエトナム産業経済の概観を得る。

2）国内外の市場における、圧延工場にかかる原料及び製品の需要及び供給の過去の動向及び現状を調査するとともに原料及び製品の需要供給の予測を行う。以上の調査により、最適な生産品目を策定する。

3）策定された生産品目及び入手可能な原料を検討し、各工程における適用技術の比較研究を行う。

4）ユーティリティやインフラストラクチャーなどの現状及び整備プランを調査する。

B．冷間圧延ミルにかかるフィージビリティ調査として次の項目について調査する。

冷間圧延ミルにかかる前条件、サイト調査、粗デザイン、各工程における機材の具体的提案、初期投資評価、収益性の分析、建設にかかる工期、環境影響評価

C．熱間圧延ミルにかかる事前調査

D．熱間圧延ミル建設サイトにかかる提言

フェーズⅡ

A．フェーズⅠのレビュー

B．熱間圧延ミルのフィージビリティスタディ

また、その他の合意内容は M/M（別添３参照）として記録し、その内容は以下の通り。

①詳細な調査内容

ア．プラント建設サイトに係る調査

(ｱ)建設サイト選定に決定的な評価基準を決める。

(イ)いくつかの代替サイトを調査し、評価し、評価基準にもっとも合致するものを選定する。
(ウ)選定されたサイトに関して、土質調査、ユーティリティ等を含む詳細調査を行う。
(エ)サイトの整地にかかる支出の概算
イ．適用できる技術と設備にかかる調査
(ア)製品構成、生産能力、投入等生産にかかる前提条件の調査
(イ)適用できる冷延技術を評価し、比較することによって最適技術を選ぶ。
(ウ)技術導入と移転
(エ)プラントの詳細なレイアウトと基礎設計の策定。基礎設計は建設機材・資材、建設工程等建設にかかる計画も含むとする。
(オ)機械及び設備の選定を行う。
(カ)機械及び設備にかかる一般的な要求
(キ)主な導入設備として次を想定する。
酸洗設備、冷間厚延設備、焼鈍設備、製品の巻き取り機械、製品の梱包、保管、運搬等の管理に係る設備
(ク)その他次の設備に関しても調査する。
酸の中和及び再生設備、水素・窒素合成設備、廃棄物処理設備、配電設備、製品検査設備、通信設備、生産ライン管理設備、ロールショップ、ユーティリティ（水、圧縮空気）に係る配管等設備、燃料の貯蔵、配分等にかかる設備

②候補サイトの選定に関して
予備調査団が視察した４つの工業団地（２．調査結果参照）他ホーチミン近郊のいくつかのサイトを、本開発調査においてより詳細に調査し、その中から最適な一つを選ぶ。土質調査を目的とするボーリング調査などの深い調査は選定されたサイトに行う。

③ステアリングコミッティーに関して
VSC の Son 社長を代表とするステアリングコミッティーを設置し、MOI、MPI の他、科学技術省(MOSTE)が参加する。

④カウンターパート機関に関して

S/W で明記されているように MOI がカウンターパート機関として、他の政府・非政府機関との調整を行うが、調査業務には VSC が編成するカウンターパートグループがあたる。このグループには常時５人の人員が配置されるが、日本側調査団が必要と判断した場合には増員を VSC に要求することができる。

付属資料

（1）Scope of Work

（2）Minutes of Meeting

SCOPE OF WORK

FOR

The Feasibility Study on Installation of Steel Flat Product Mills

(Phase I : F/S on Cold Rolling Mill)

IN

The Socialist Republic of Viet Nam

AGREED UPON BETWEEN

THE MINISTRY OF INDUSTRY

OF

THE SOCIALIST REPUBLIC OF VIET NAM

AND

THE JAPAN INTERNATIONAL COOPERATION AGENCY

HANOI, December 10 , 1999

TAKANORI JIBIKI
RESIDENT REPRESENTATIVE
VIET NAM OFFICE
JAPAN INTERNATIONAL
COOPERATION AGENCY (JICA)

TRAN MINH HUAN
GENERAL DIRECTOR
DEPARTMENT OF
INTERNATIONAL COOPERATION
MINISTRY OF INDUSTRY

NGUYEN KIM SON
PRESIDENT
VIET NAM STEEL CORPORATION

In Witness:
LE VAN HOC
VICE DIRECTOR
INDUSTRIAL DEPARTMENT
MINISTRY OF PLANNING AND INVESTMENT

I. INTRODUCTION

In response to the request of the Government of the Socialist Republic of Viet Nam (hereinafter referred to as "GOV"), the Government of Japan decided to conduct the Feasibility Study on Installation of Steel Flat Product Mills (hereinafter referred to as "the Study") in accordance with the Agreement on Technical Cooperation between the Government of Japan and the Government of Viet Nam (hereinafter referred to as "the Agreement").

Accordingly, the Japan International Cooperation Agency (hereinafter referred to as "JICA"), the official agency responsible for the implementation of the technical cooperation programs of the Government of Japan, will undertake the Study in close cooperation with the relevant authorities concerned of the Socialist Republic of Viet Nam(hereinafter referred to as " Viet Nam").

The present document sets forth the scope of work for the Study.

II. OBJECTIVE OF THE STUDY

The objective of the Study is to examine the feasibility of the construction of new steel flat product mills for domestic demand in Viet Nam.

III. SCOPE OF THE STUDY

The Study will be conducted in two phases.

In Phase I, studies on general market conditions for steel products with special focus on flat products and the feasibility of construction of a cold strip mill at the selected site from the conceptual and technical view, will be conducted, as well as a preliminary study on a hot strip mill.

If a proper site for the hot strip mill is selected by the GOV by the end of phase I, the study will proceed to phase II, where a conceptual as well as technical study on the construction of the hot strip mill will be conducted.

Phase I

I-A Study on Preconditions for Installation of the mills

I-A-1 Review of the national economy and industry of Viet Nam

I-A-2 Market analysis of steel products

I-A-2-a Present Situation and past record of, demand for, and supply of hot and cold rolled products.

I-A-2-b Present Situation in the international market for semi-products, and hot and cold rolled products

I-A-2-c Demand and supply forecast

I-A-2-c-(1) Demand and supply forecast of cold rolled products

I-A-2-c-(2) Demand and supply forecast of hot rolled products

I-A-2-c-(3) Supply forecast of semi-products for both the hot strip mill and for the cold strip mill

T. J

I-A-2-d Expected products mix and required production capacity
I-A-2-e Internationally competitive quality requirements of the flat products
I-A-3 Study on applicable technology for the hot and the cold strip mills
I-A-3-a Availability of semi-products for both the hot and the cold strip mill
I-A-3-b Comparative study on applicable hot and cold strip processes and a rough comparison of the cost of each process
I-A-3-c Recommended hot and cold strip mill processes
I-A-4 Development plan
I-A-4-a Development strategies for the cold and hot strip mills
I-A-4-b Utilization of energy and water resources
I-A-4-c Transportation(road,port and port facilities)
I-A-4-d Technological upgrading and expansion
I-B Feasibility Study on the cold strip mill
I-B-1 Preconditions for installation of the cold strip mill
I-B-2 Site investigation
I-B-3 Outline of the cold strip mill
I-B-4 Description of each process facility
I-B-5 Structure of building for equipment installation
I-B-6 Manning plan
I-B-7 Capital cost estimation
I-B-8 Production cost and financial analysis
I-B-9 Construction schedule
I-B-10 Environmental Assessment
I-B-11 Recommendation
I-C Preliminary Study on the hot strip mill
I-C-1 Preconditions
I-C-2 Outline of the hot strip mill
I-C-3 Production processes for hot rolled products and for plate products
I-C-4 Rough estimation of capital cost
I-C-5 Construction schedule
I-D Recommendation
I-D-1 Site and facility recommendation for the hot strip mill
I-D-2 Miscellaneous Recommendation.

Phase II
II-A Review of the feasibility study on the cold strip mill
II-B Feasibility study on the hot strip mill
II-B-1 Preconditions
II-B-2 Site investigation
II-B-3 Outline of the hot strip mill
II-B-4 Description of each process facility
II-B-5 Structure of building for equipment installation
II-B-6 Manning plan
II-B-7 Capital cost estimation

II-B-8 Production cost and financial analysis
II-B-9 Construction schedule
II-B-10 Environmental Assessment
II-B-11 Recommendation

IV. WORK SCHEDULE

The Study will be carried out in accordance with the attached tentative work schedule.

V. REPORTS

JICA shall prepare and submit the following reports in English to the GOV in accordance with the attached tentative work schedule.

Fifteen (15) copies of the Inception Report
Twenty (20) copies of the Interim Report
Thirty (30) copies of the Draft Final Report
Thirty (30) copies of the Final Report

VI. UNDERTAKING BY THE GOVERNMENT OF VIET NAM

1. The GOV shall accord privileges, exemptions, and other benefits to the Japanese study team (hereinafter referred to as "the Team") in accordance with the Agreement.

2. To facilitate smooth conduct of the Study, the GOV shall take the following necessary measures:

2-1 To secure the safety of the Team,

2-2 To permit the members of the Team to enter, leave, and stay in Viet Nam for the duration of their assignment therein, and exempt them from alien registration requirements and consular fees,

2-3 To exempt the members of the Team from taxes, duties, and any other charges on equipment, machinery, and other materials brought into, and out of, Viet Nam for the conduct of the Study,

2-4 To exempt the members of the Team from income tax and charges of any kind imposed on, or in connection with, any emoluments or allowances paid to them for their services for the implementation of the Study,

2-5 To provide necessary facilities to the Team for remittance as well as utilization of the funds introduced into Viet Nam from Japan for the implementation of the Study,

2-6 To secure permission for entry into all areas concerned for the implementation of the Study,

2-7 To secure permission for the Team to take all data and documents including photographs and maps related to the Study out of Viet Nam to Japan, and

2-8 To provide medical service as needed, expenses for which can be chargeable to the members of the Team.

3. The GOV shall bear claims, if any arise, against the members of the Team resulting from, occurring in the course of, or otherwise connected with the discharge of their duties in the implementation of the Study, except when such claims arise from gross negligence or willful misconduct on the part of the Team members.

4. The Ministry of Industry (hereinafter referred to as "MOI") shall act as the counterpart agency to the Team and also as the coordinating body in relation with other governmental and non-governmental organizations concerned for the smooth implementation of the Study.

5. The MOI shall, at its own expense, provide the Team with the following in cooperation with other organizations concerned:

5-1 Available data and information related to the Study,
5-2 Counterpart personnel,
5-3 Suitable office space with necessary equipment at the project site, and
5-4 Credentials or identification cards.

VII. UNDERTAKING BY JICA

For the implementation of the Study, JICA shall take the following measures:

1. To dispatch, at its expense, a series of study teams to Viet Nam
2. To pursue technology transfer to the Vietnamese counterpart personnel during the course of the Study.

VIII. CONSULTATIONS

JICA and MOI shall consult with each other in respect of any matter that may arise from, or in connection with, the Study.

5

Tentative Schedule for
The Feasibility Study on Installation
of
Steel Flat Product Mills
in the Socialist Republic of Viet Nam

Month	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
Year	2000									
Month	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.
Work in Viet Nam		■			■		■			
Work in Japan	▯			▨			▨		▯	
Reports	△ IC/R			△ IT/R			△ DF/R		△ F/R	

MINUTES OF MEETING
FOR
the Feasibility Study on
Installation of Steel Flat Product Mills
(Phase I : F/S on Cold Rolling Mill)
in
the Socialist Republic of Viet Nam

HANOI, December 10 , 1999

TAKANORI JIBIKI
RESIDENT REPRESENTATIVE
VIET NAM OFFICE
JAPAN INTERNATIONAL
COOPERATION AGENCY (JICA)

TRAN MINH HUAN
GENERAL DIRECTOR
DEPARTMENT OF
INTERNATIONAL COOPERATION
MINISTRY OF INDUSTRY

NGUYEN KIM SON
PRESIDENT
VIET NAM STEEL CORPORATION

In Witness:
LE VAN HOC
VICE DIRECTOR
INDUSTRIAL DEPARTMENT
MINISTRY OF PLANNING AND INVESTMENT

The Japanese Preparatory Study Team (hereinafter referred to as "the Team") organized by the Japan International Cooperation Agency(hereinafter referred to as "JICA") headed by Mr. Takumi UESHIMA, visited the Socialist Republic of Viet Nam (hereinafter referred to as " Viet Nam") from November 22 to December 1, 1999 for the purpose of discussing the Scope of Work for "the Feasibility Study on Installation of Steel Flat Product Mills"(hereinafter referred to as "the Study")

During its stay in Viet Nam, a series of meetings were held between the Team and the representatives of the authorities concerned of Viet Nam and the Vietnam Steel Corporation (hereinafter referred to as "the Vietnamese side") and related ministries. The participants in the meetings are listed in Appendix.

This Minutes of Meeting summarizes the discussions and agreements reached among the parties concerned with regard to the Study and should be read in conjunction with the Scope of Work dated December 10,1999 (hereinafter referred to as "the S/W").

1. With regard to III. Phase I-B-3 up to I-B-5 of the S/W, the Team and the Vietnamese sides (hereinafter collectively referred to as "both sides") agreed that these items include the following study works,

(1) Plant location and plant site

a.Decisive criteria for selection of plant location and site

b.To study alternative location and sites, to assess and to select the site, which meets most of preconditions(criteria proposed for the site selection)

c.Detail investigation of selected site including soil condition(boring and soil analysis),power and utility supply etc

d.Major expenditure for site clearance, site preparation

(2) Production applicable technology and equipment arrangement

a.Preconditions of plant production requirements such as product mix, capacity, plant input etc

b.To assess applicable technologies for production of cold rolling coils, comparative study on the applicable processes for cold rolling production and to select appropriate technology to be applied for proposed cold strip mill.

c.Technology acquisition and transfer

d. Detail plant lay-out and basic engineering. Basic engineering essentially comprises the detail configuration of construction facilities, equipment and production processes, material flow and linkage between different stages of production.

e. Selection of machinery and equipment

f. General requirement for machinery and equipment(quality, supply sources etc.)

g. Major equipment such as pickling line, cold strip mill, annealing equipment, recoiling, and product handling and packaging

h. Optional equipment such as H_2/N_2 generation and acid regeneration neutralization, utility(water, stream, compressed air), fuel(NPG, oil), waste treatment, power supply and distribution, roll shop, laboratory, product testing, automation and production control, and communication.

2. The Team already visited 4 sites(i.e. Amata Industrial Park, Bien Hoa Industrial Zone 2, Nhon Trach, Phu My) among proposed by VSC to have general viewpoints. Both sides agreed that Japanese consultant team would further investigate the 4 sites mentioned above and other potential sites in the vicinity of Ho Chi Minh City to select the most appropriate one, on which detailed study including soil investigation by boring would be made.

3. Both sides agreed to establish the steering committee for the smooth implementation of the Study. The committee might consist of the representatives of Ministry of Industry, Ministry of Planning and Investment, Ministry of Science and Technology, and Vietnam Steel Corporation (hereinafter referred to as "VSC"). The committee will be chaired by Mr. Nguyen Kim Son, the president of VSC.

4. With regard to VI 3. of the S/W, both sides agreed that Ministry of Industry should act as coordination body in relation with other governmental and non-governmental organizations and that the team headed by Mr. Nguyen Huu Tho, Director of Planning and Investment Department of VSC would engage in the Study with Japanese consultant team. The VSC team will have 5 standing members and the Japanese consultant team can require VSC to provide additional personnel, if necessary.

Appendix

List of Participants in the meetings

JICA Preparatory Team
Mr. Takumi UESHIMA
Director, Industrial Development Study Division, JICA
Mr. Taku BANZAI
Official, Technology Promotion Office, Iron and Steel Division,
Basic Industries Bureau, Ministry of International Trade and Industry
Mr. Tomoki KOBAYASHI
Staff, Industrial Development Study Division, JICA
Ms. Nguyen Vu Viet Hoa
Interpreter

JICA Viet Nam Office
Mr. Takashi HATAKEYAMA
Deputy Resident Representative

Ministry of Industry
Dr. Tran Minh Huan
General Director, Department of International Cooperation
Mr. Nguyen Van Thang
Senior Expert, Department of Planning and Development
Mr. Bui Van Hung
Senior Expert, Department of International Cooperation

Vietnam Steel Corporation
Mr. Nguyen Kim Son
President
Mr. Pham Chi Cuong
Vice President
Mr. Dao Duc Dinh
Director, Planning and Investment Department
Mr. Nguyen Huu Tho
Deputy Director, Planning and Investment Department
Mr. Trinh Khoi Nguyen
Expert, Planning and Investment Department
Eng. Nguyen Phuc
Project Manager, Planning and Investment Department
Mr. Nobuyoshi TANAKA
JICA Expert for VSC
Ms. Nguyen Phong Lan
Assistant to JICA Expert

3 / 3

2．調査結果

予備調査団はVSCに提示された4カ所の工業団地の視察を行い、インフラストラクチャー、ユーティリティ、借地条件などの基本的情報を収集した（別表参照）。

まず、立地に関してであるが、いずれの工業団地も消費市場であるホーチミンから車で100分程度以内の距離にあり、原料港として適しているPhu My港(50000t級の船舶が接岸可能)とホーチミンを結ぶ幹線沿いに位置している。鉄鋼産業に関しては原料港に近い方が、有利であると考えられるのでPhu My Industrial Zoneが優れているように思われる。

次に電力供給であるが、公共の電力供給の利用は外部の影響を受けやすいため、自家発電である方が有利である。その観点からすると、AMATA工業団地が現時点での供給電力は少ないものの、拡張計画を有しており有望である。

電力と同様に重要なユーティリティとして上水があげられるかと思うが、これに関してはいずれの工業団地も十分な水供給が得られることを確認した。

圧延工場建設に特異的な点として、地耐力が特に要求される点にある。というのも、圧延機の重量はとても大きく、それぞれの支持に重量がかかるので、平均的に地耐力があっても、支持直下の特異的な点において一定の地耐力がないと、圧延機が設置できないことになる。いずれの工業団地も1.5Kg/㎠以上あり、平均的には十分な地耐力を持っていると考えられるが、Phu Myのように海に近く土質が一定しないケースもあるため、今一度確認のための土質調査が必要と思われる。また、基本設計の後、各支持部直下においてボーリングを行い、実際に地耐力が必要とされる特異的な点における土質調査を行うべきである。

以上、各工業団地間で多少の差異はあるもの、本格調査の対象としてより詳細な調査を行うに適当であることが確認された。

候補サイト概要一覧

	Requirement	Bien Hoa 2	AMATA	Nhon Trach	Phu My
運営主体		Sonadezi	Sonadezi + AMATA	Min. of Construction	UDEC
設立年		1963	1994	1993	1998
全体の広さ	minimum 100m X 200m		100 ha(Stage1) {700ha(plan)}	448 ha	954ha
土質耐重率		1.5-2.0 kg/cm2	2.0 kg/cm2	1.5-2.5 kg/cm2	K95<
既存施設の数		95	9	11	4
既存施設の業種		電気機器、製靴、縫製、金属、薬品	金属加工、縫製、薬品、放送、化学、電力	ゴム、縫製、機械工業、精密金型、金属加工	港湾、線材（鉄鋼加工）、肥料
業種に関する規制		特になし	染色以外	特になし	特になし
既存日本企業		古川（銅）、富士通、サンヨー、マブチモーター	ＹＫＫ、ワコール、花王	Yokohama Rubber、ヒロタ	キョーエイ
電力		一般	自家発電	一般	自家発電(建設中)
供給電力量	7Mw	４０Ｍｗの変電能力	6.5Mw(将来的に1.2Gwまで増設可)	１６Ｍｗの変電能力（８０ＭＷを予定）	１２６Ｍｗの変電能力
供給電圧		22KV	22KV	22KV	22KV
水源			地下水	地下水	公共
供給可能水量	1200m3/day	15000m3/day	6000m3/day 30000m3(plan)	12000m3/day	???
主要都市からの距離		30Km(HCMC) 0Km(Bien Hoa)		60km(HCMC) 60km(VungTau)	70km(HCMC) 50km(VungTau)
主要港湾からの距離		30Km(Saigon) 40Km(Phu My)		20Km(Phu My)	0km(Phu My)
港湾の規模	30000t/month	15000t(Saigon) 50000t(Phu My)			
廃水共同処理場の能力	Acid,Oil	4000m3/day	1000m3/day 4000m(plan)	1000m3/day	
備考		市場に近く、整備されているが、原料港から遠く、また空きスペースも少ない。	丘陵を切り開いた為、軽く傾斜している。市場に近いが、電力供給の増加がポイント。	原料港から近いが道路の整備状況が悪いのが難点。潅水を整備することも必要。	自前の岸壁をもてる可能性もあるが、未整備で土質も一定でない。

付属資料

工業団地紹介パンフレット（抜粋）

（1）Bien Hoa Industrial Zone 2

（2）AMATA Industrial Park

（3）Nhon Trach Industrial Zone

（4）Phu My Industrial Park

VÀI NÉT VỀ SONADEZI Biên Hòa

Brief introduction of SONADEZI BIEN HOA

Sonadezi Biên Hòa là một doanh nghiệp Nhà nước được thành lập theo QĐ số 1713/QĐ-UBT ngày 15 -12 -1990 của UBND tỉnh Đồng Nai. Sonadezi Biên Hòa là doanh nghiệp loại một và là Công ty đầu tiên ở Việt Nam được thành lập để xây dựng và phát triển các Khu Công Nghiệp tại Đồng Nai. Sonadezi Biên Hòa có các chức năng và nhiệm vụ như sau :

● Khôi phục, nâng cấp, phát triển & kinh doanh các công trình kỹ thuật hạ tầng, công trình tiện ích công cộng nhằm nâng cao hiệu quả hoạt động của các nhà máy, xí nghiệp tại Khu Công Nghiệp Biên Hòa I.

● Xây dựng, quản lý và kinh doanh hạ tầng kỹ thuật KCN Biên Hòa II, KCN Gò Dầu và liên doanh với Công ty Bangpakong Industrial Park II Co.,Ltd. Thái Lan để xây dựng Khu Công Nghiệp Long Bình hiện đại (AMATA).

● Thực hiện dịch vụ tư vấn một cửa cho các nhà đầu tư trong KCN Biên Hòa I, KCN Biên Hòa II, KCN Gò Dầu, KCN AMATA và các nơi khác phù hợp với quy hoạch phát triển công nghiệp của Việt nam. Giúp các nhà đầu tư triển khai thực hiện dự án sau khi nhận được Giấy phép Đầu tư.

● Khảo sát, lập bản đồ hiện trạng, thiết kế và thi công các công trình xây dựng công nghiệp và dân dụng.

● Liên doanh với Cty Namfatt (VN) SND BHD - Malaysia để chế tạo & lắp dựng các cấu kiện thép dùng trong xây dựng

Sonadezi Bien Hoa is a State - Owned Company established under the Decision No. 1713/QD-UBT dated 15 December, 1990 from the Dong Nai People's Committee. The Company has been classified as premier enterprise, and was the first Vietnamese Company involved in the development and exploitation of industrial zones in Dong Nai province. Its functions and tasks are as follows :

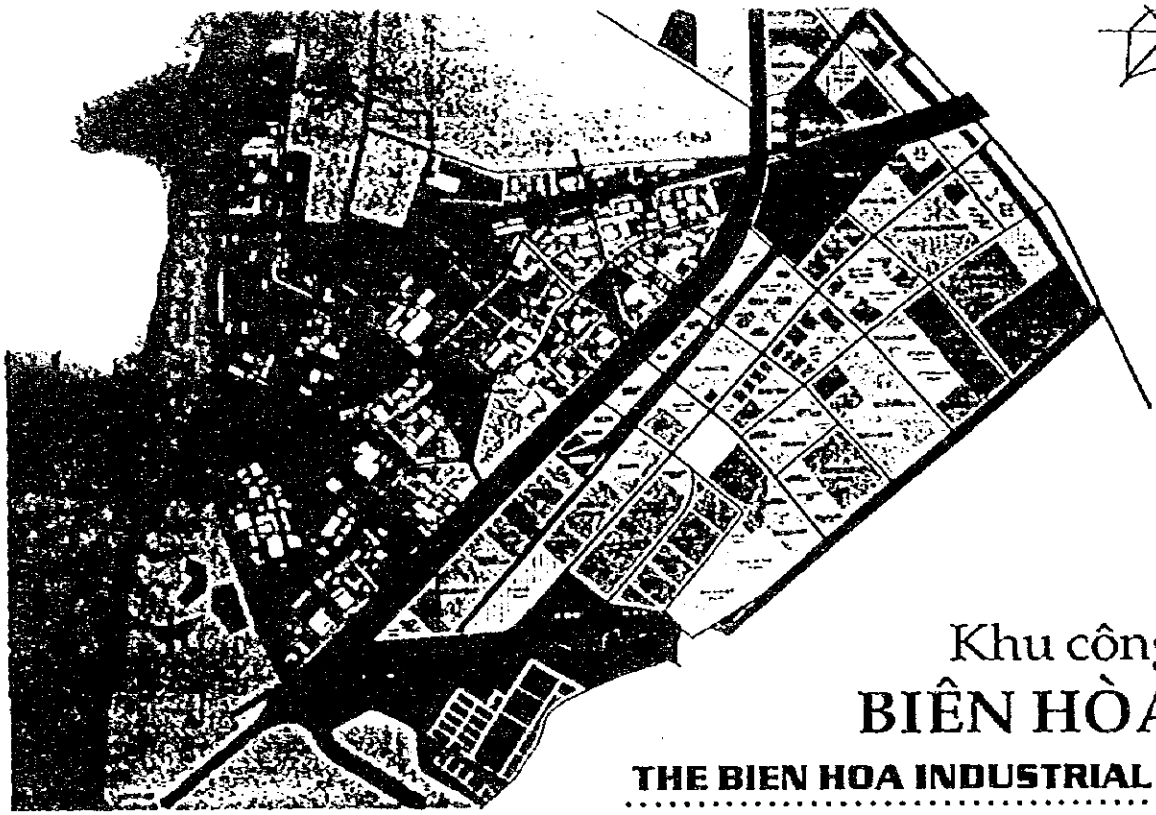
● *Carrying out the maintenance, up-grading and business development of infrastructure, public utilities for uninterrupted production of factories and enterprises belonging to Bien Hoa Industrial Zone I.*

● *Carrying out the construction, management and business development of Bien Hoa Industrial Zone II, Go Dau Industrial Zone, and forming the joint venture with Bangpakong Industrial Park II Co., Ltd - Thailand to build up Long Binh Modern Industrial Park (AMATA).*

● *Providing one-stop investment consultant services for investors investing in Bien Hoa Industrial Zone II, Go Dau Industrial Zone and AMATA Industrial Park & others, conforming to Vietnamese industrial development planning. Helping investors to carry out the project implementation after the granting of Investment Licences.*

● *Carrying out topographical surveys, the designing and building of civil and industrial projects.*

● *Entering into a joint-venture with Namfatt (Vietnam) Snd. Bhd. of Malaysia to set up a factory for the fabrication and installation of steel building structures.*



Khu công nghiệp
BIÊN HÒA I & II
THE BIEN HOA INDUSTRIAL ZONE I & II

● *Vị trí địa lý thuận lợi:*

Khoảng cách theo đường bộ từ Khu Công Nghiệp Biên Hòa II tới các nhà ga, bến cảng và sân bay quốc tế như sau:

Cảng Đồng Nai	2 km
Tân Cảng	25 km
Cảng Sài Gòn	30 km
Cảng Phú Mỹ	44 km
Sân bay Quốc tế Tân Sơn Nhất	30 km
Ga Biên Hòa	5 km
Ga Kho Vận Sóng Thần	12 km
Ga trung tâm Sài Gòn	30 km

● *Cơ sở hạ tầng hoàn chỉnh:*

- Hệ thống đường giao thông thảm bê tông nhựa, tải trọng H30.
- Trạm điện 40 MVA với lưới điện 22 KV đã xây dựng xong.
- Hệ thống cấp nước 15.000m³/ngày đêm.
- Nhà máy xử lý nước thải 8.000m³/ngày đêm.
- Điện thoại, Fax với mạng IDD lắp đặt nhanh chóng theo yêu cầu của khách hàng.

● ***Tiền thuê đất được giữ ổn định trong một thời gian dài từ 30 đến 35 năm.***

● ***Phương thức trả tiền thuê đất linh hoạt, có thể trả hai lần trong một năm hoặc trả một lần cho nhiều năm.***

● ***Được giảm tiền thuê đất từ 5% đến 15% nếu trả tiền thuê đất một lần cho thời hạn từ 5 đến 15 năm trở lên.***

● *Good Geographical Location:*

Distances by road from Bien Hoa Industrial Zone II to major transportation facilities:

Dong Nai River Port	*2 km*
New River Port	*25 km*
Saigon River Port	*30 km*
Phu My Deepwater Port	*44 km*
Tan Son Nhat International Airport	*30 km*
Bien Hoa Railway Station	*5 km*
Song Than General Warehouse Railway Station	*12 km*
Saigon Central Railway Station	*30 km*

● *Complete Infrastructures Facilities:*

- *Internal asphalt roads with H30 load bearing.*
- *40 MVA transformer station and 22 KV power cable grid.*
- *Water supply system with capacity of 15,000m³ / day.*
- *Waste water treatment plant with capacity of 8,000 m³ / day.*
- *IDD modern telecommunication network available at the request of customers.*

● ***Land rental is constant over long periods from 30 to 35 years.***

● ***Flexible land rent payment method which is alternatively 02 time payments every year or one time payment for many years.***

● ***A reduction from 5% to 15% of land rental is applied for one time payment for a period from 5 years to 15 years or more.***

アマタ工業団地
(ベトナム)

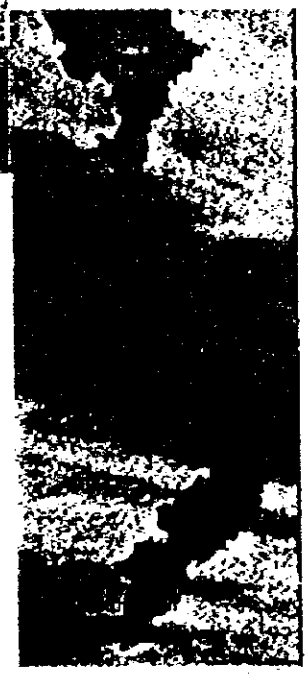
１９９９年11月現在

1. 事業主体：アマタ・ベトナム工業団地株式会社
   [Amata (Vietnam) Company Limited]
2. 沿革：工業団地の開発において共に成功を収めている、タイ王国最大手のバンパコン工業団地２株式会社(伊藤忠商事主要株主)とベトナム最大手のソナデジ社との合弁(1994年末)により、ホーチミン市北に位置するドンナイ省ビエンホアにて工業団地の開発運営を行う
3. 立地上のメリット：
   a) ホーチミン市から通勤可能（30km）
   b) 輸出入港(サイゴン港)に至近
   c) 労働者の確保が容易(人口50万人のビエンホア市中心まで5km)
   d) 強固な地盤(工場によっては杭打ち不必要)
   e) 洪水の心配無し(海抜40m)
   f) 電力の安定供給(団地内自家発電所+電力公社)
4. 開発規模：700ha(210万坪)を５期に分けて開発。第１期(100ha)のインフラ工事は完了。日系企業は４社(花王、カドリール、YKK、ワコール様)
5. インフラストラクチャー：
   工業用水：地下水を浄水処理し供給。将来的には、ドンナイ省水道局からの浄水を供給。
   工業排水：各企業にて工業団地下水排水規準値まで一次処理後、団地内下水処理施設にて二次処理。
   電力　：団地内にあるアマタパワー社の自家発電所プラント(許可120MW、稼動6.5MW)より、22KVの送電線にて供給。更に、ベトナム電力公社(EVN)からの電力もバックアップとして供給可能。
6. 付帯設備(構想)：商業地域、住居地域の多彩な諸施設。病院、教育施設(大学、技術系専門学校)、スポーツ施設、ショッピングセンター等、ミニ工業都市の開発を目指す。
7. ワン・ストップ・サービス：ドンナイ省工業団地管理公社(DIZA)より一括して許可証(投資許可、輸出入許可)が発行される。

企業戦略上の最適立地

アマタシティ（ビエンホア）は南ベトナムドンナイ省ビエンホア市内に立地しております。

また、北ベトナムと南ベトナムを結ぶベトナム唯一の第一級道路国道一号線(米軍が施工、アジア開発銀行の借款により１９９６年より拡張開始)に面し、ベトナム南部経済三角地域に位置しております。商業地域としてのホーチミン市、生産拠点としてのビエンホア市、港湾施設、エネルギー供給基地としてのブンタオ省によりこのベトナム南部経済三角地域は構成されております。

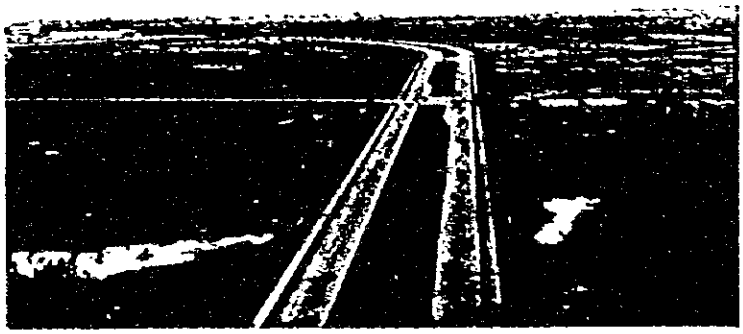


アマタシティ（ビエンホア）から

ホーチミン市まで	３０ｋｍ
サイゴン新港まで	２５ｋｍ
サイゴン港まで	３２ｋｍ
フーミー港まで（建設中）	４０ｋｍ
ブンタオ港まで（計画中）	９０ｋｍ
タンソンニャット国際空港まで	３５ｋｍ
ビエンホア空港（旧米軍空港）まで	３ｋｍ
第二空港予定地（ロンビン）まで	３０ｋｍ

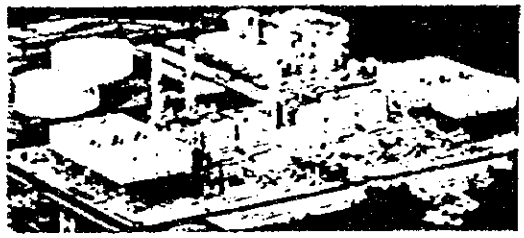
安心のインフラストラクチャー

アマタシティー(ビエンホア)工業団地は、国道一号線に面し、ホーチミン市より北東約30㎞の地点に位置しています。総開発面積は、700ha で、現 在第一期分(100ha)を開発分譲中です。



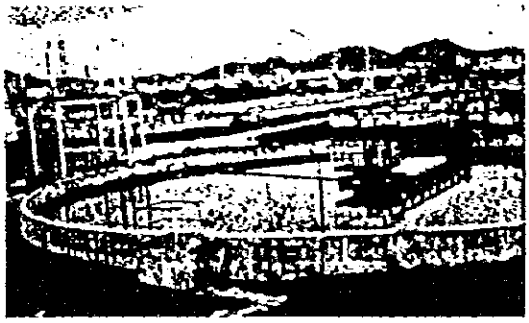
電力設備

ベトナム政府エネルギー省管轄であるパワーカンパニーNO2 より、アマタシティー(ビエンホア)工業団地内変電所設備(第一期 40MW)を通じて、22KV の送電線により電力を供給します。



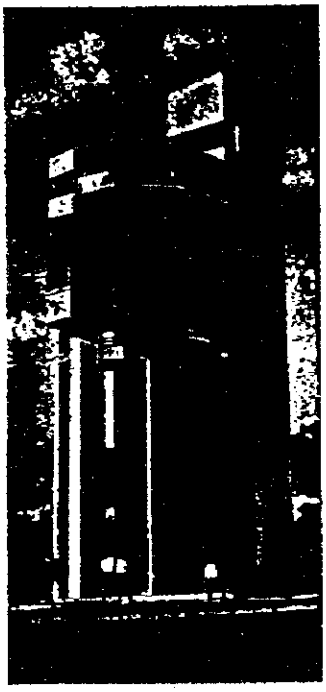
道路

団地内構内道路は、全て強固なコンクリート舗装道路で、幹線道路は、幅 52m の 8 車線道路、支線道路は幅 42m の 2 車線道路です。



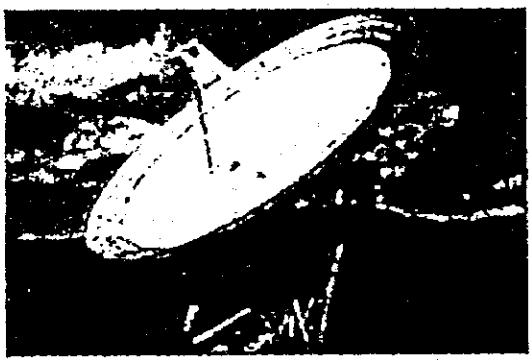
排水処理システム

アマタシティー(ビエンホア)工業団地では、ドンナイ省環境保護条例の排水規準に適合した工業下水処理を行なう為、各工場にて一次処理した下水を集中して処理する下水処理施設を設置しています。



工業用水

第一期用工業用水は、ドンナイ省水道局より供給 される上質の水道水です。又団地内に井戸を設け て、緊急時には地下水を浄水処理して供給します。第一期用供給水量は、1 日当たり水道水 3,000～5,000 立方メートルです。また将来的には、工業団地近郊を流れるドンナイ川より直接取水し、浄水処理した工業用水を供給する予定です。ドンナイ川は、ホーチミン市民の生活用水としての供給水源でもあり、上質な水であるといえます。



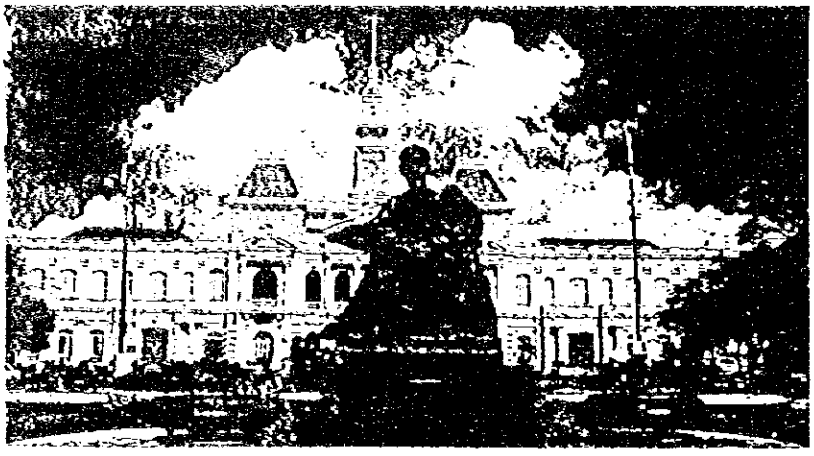
通信システム

960 回線分の容量の電話交換システムを設置し、第一期分として 300 回線を供給します。

焼却炉

各工場から排出される一般のゴミを処理する為に、焼却炉を設置する予定です。

その他のメリット



豊富な労働力

アマタシティ（ビエンホア）は豊富な労働力をもつビエンホア市内に位置しているため、労働力供給の面では恵まれた条件にあります。ビエンホア市はドンナイ省（人口１７０万人）の省都であり、４０万人の人口を擁しております。

地盤と洪水対策

アマタシティ（ビエンホア）の敷地はその地盤の固さからベトナム戦争時代に米軍基地として利用されていました。各敷地は赤土を含む良質の土壌です。平均地耐力は、１０t／㎡であるため標準工場であれば工場建設のための杭を埋設する必要がないと言われており、工場操業のため重機を工場内に設置する場合でも工場建設杭の長さは最高で地表面から１２m前後で済みます。また、各敷地は平均海抜４０mに位置しており、雨水は近隣を流れる運河を伝って、ドンナイ川に流れますので洪水の心配もありません。これらの理由により、工場建設のためのコストや時間が大幅に節約できるうえに、工場操業後も洪水による操業中断や敷地内排水のための余分な施設も必要ありません。

周辺人口

ビエンホア市　：約　４０万人
ドンナイ省　　：約１７０万人
ホーチミン市　：約４５０万人

投資恩典

法人所得税の減免

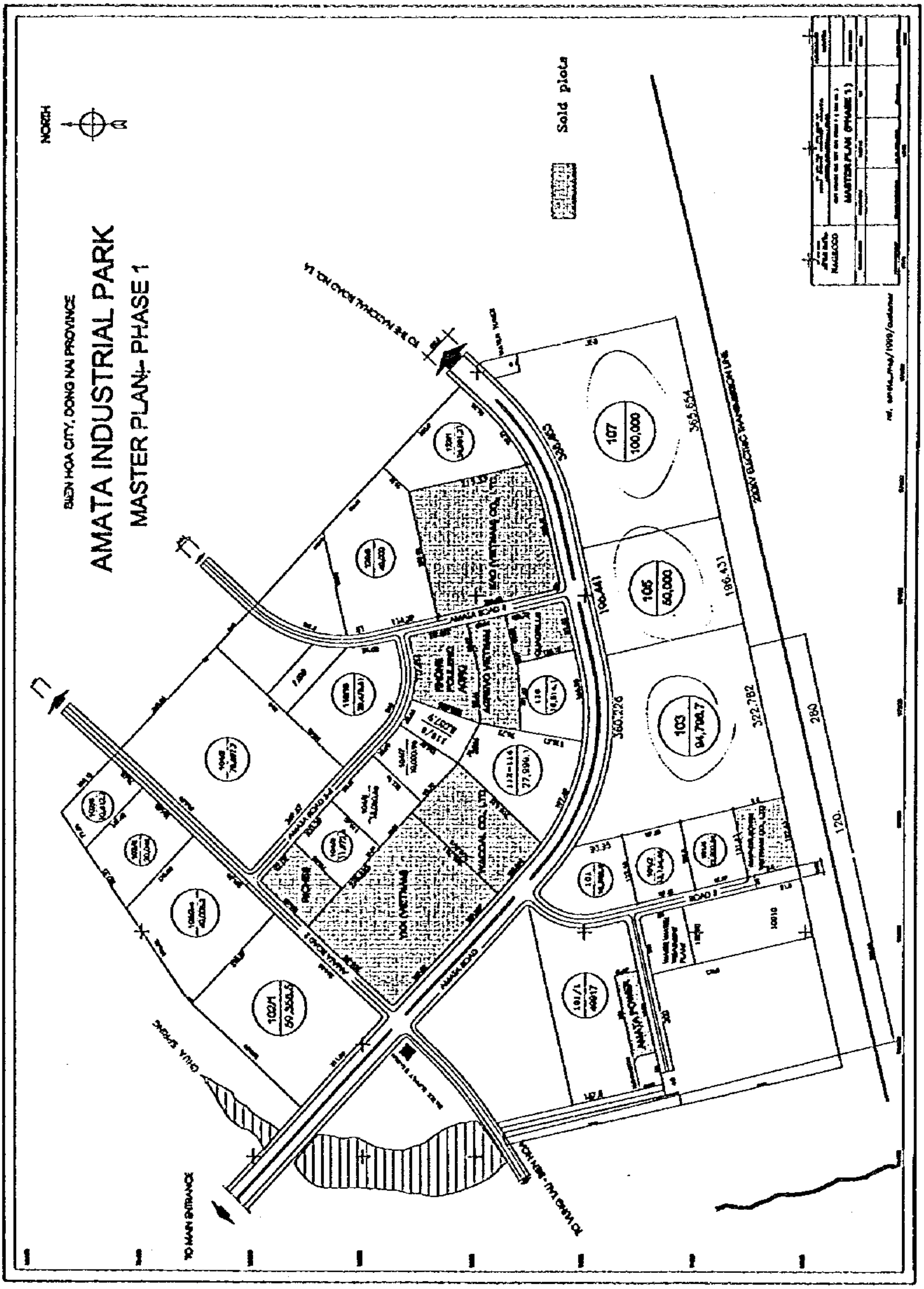
通常、ベトナムにおける法人所得税率は２５％ですが、工業団地に入居する企業は、以下の税恩典を得ることができます。

法人所得税率

A.国内向け製造業　１８％
B. 輸出向け製造業
（８０％以上の輸出）１２％
A，Bいずれの場合も、利益計上年より２年間の法人所得税免税
C.サービス業　２２％
Cの場合、利益計上年より１年間の法人所得税免税
注）上記税恩典は工業団地法（NO192-CP,1994年12月28日発行）による。

ワンストップサービス

ベトナムで工場操業するためには投資許可証を始め様々な認可を関係省庁より取得する必要があります。これらの手続きは煩雑で且つ、時間もかかるのが現状です。工業団地に入居される企業の皆様は、それらの認可をドンナイ省工業団地局を通して申請することができるため、各省庁をまわる煩雑な手続きが簡略化できます。アマタシティ（ビエンホア）では皆様の申請を全面的にバックアップいたします。


BIEN HOA CITY, DONG NAI PROVINCE
AMATA INDUSTRIAL PARK
MASTER PLAN - PHASE 1
NORTH
Sold plots
TO MAIN ENTRANCE
CHUA SPRING
TO VUNG TAU - BIEN HOA
TO THE NATIONAL ROAD NO. 1A
AMATA POWER
102/1
59,358.5
101/1
40017
103
94,798.7
105
50,000
107
100,000
112-114
27,999.1
360.226
196.441
336.463
365.654
196.431
322.782
280
120.
220KV ELECTRIC TRANSMISSION LINE
MASTER PLAN (PHASE 1)

AMATA CITY (BIEN HOA) LAND LEASE FEE & TERMS OF PAYMENT

Land Lease Fee

US$60/m² for 10,000m² leased land
(Lease period upto December 31, 2044)

Term of Payment

1st payment	10%	as deposit on signing the Reservation Agreement for applying Investment License
2nd payment	30%	30 days after signing the Property Lease Agreement (The Property Lease Agreement will be signed within 30 days from the date of issuing the Investment License)
3rd payment	20%	30 days after second payment, or upon receiving the Certificate of Leased Property Registration from Land Management Department of Dong Nai Province, whichever late occurs
4th payment	40%	12 months after the third payment

THIS OFFER IS MADE TO PARTICULAR CUSTOMER ONLY

Option : The tenant has the option to make the 4th payment by dividing into 4 installments :

- 1st installment : 12 months after the 3rd payment — 10% of the total land lease fee
- 2nd installment : 12 months after the 1st installment — 10% of the total land lease fee
- 3rd installment : 12 months after the 2nd installment — 10% of the total land lease fee
- 4th installment : 12 months after the 3rd installment — 10% of the total land lease fee

The tenant must pay interest at the rate of 12% per annum on the unpaid amount of the 4th payment together with the payment of each installment

CALCULATION OF INTEREST

(For example : If the 4th payment of 40% due on January 01, 1997)

Installment No.	Due date	Amount		Interest rate per annum	% of the total payment	
		Paid %	Unpaid %		Interest	Payment %
1st installment	Jan 01, 1997	10	30			10.0
2nd installment	Jan 01, 1998	10	20	12% of the unpaid 30%	3.6	13.6
3rd installment	Jan 01, 1999	10	10	12% of the unpaid 20%	2.4	12.4
4th installment	Jan 01, 2000	10	-	12% of the unpaid 10%	1.2	11.2
Total		40			7.2	47.2

SOME INFORMATION CONCERNING
NHON TRACH I INDUSTRIAL ZONE

I. Location:

Nhon Trach I Industrial Zone, the expansion of Tuy Ha A industrial Zone (established 1995) having the area of 448.5 ha constructed by URBIZ, is under the New Nhon Trach City.

At present, Nhon trach I Industrial Zone have attracted 19 projects including Investors from America, France, Korea, Japan, Switzerland, Taiwan, Singapore, Malaysia, Hongkong, Panama... etc with the leased area of 89.86ha.

*** Traffic road:**

It is 60 km far from Ho Chi Minh City, 60 km far from Vung Tau and 40 km far from Bien Hoa City. At present, the Government have approved the Ho Chi Minh - Bien Hoa - Vung Tau Highway invested by Daewoo Corporation, which will be proposedly constructed by late 1999. By such time, it is only 22km far from Ho Chi Minh city.

*** Waterway:**

It is 48 km far from Saigon port, 60 km from Vung Tau port, 22 km from Phu My port, 15 km from Go Dau port (20.000 ton). Presently the Phu My port is available for 54.000 ton- ship loading containers, oversize equipment and machinery.

2. Land character:

Nhon Trach I Industrial Zone locates at the highest position in Nhon Trach District with following characters.

- High above sea level : 28 m.
- Average humidity : 62% - 84%.
- Average temperature : 27^{0} C,
- Average annual rainfall : 1.832mm
- Load-bearing intensity : from 1.5 to 2.5 kg/cm^2. (Advantage for the construction of project and without strengthening the foundation)

3. Nature of the industrial zone:

Nhon trach I Industrial Zone is available for investment of the following industries: producing construction materials, mechanic, precision mechanic,

producing and repairing vehicles and equipment, textile, electricity, electronic, chemical for industry, agriculture, and food processing, as well as other industries without heavy pollution.

4. Facilities and infrastructure status in industrial zone:

***Power Supply :**

Power 22 KV is available to the fence of every factory with the source from the 110/22 KV Power Station capacity of 80 MVA connected from the National Electric Network. This station is managed and operated by URBIZ.

***Water Supply :**

Cleaned water is available to the fence of every factory from the underground water treatment plant with volume of 15,000 m^3/day and night. This plant is managed and operated by URBIZ

***Telecommunication system :**

There will be a telecommunication network with the capacity of 500 digits available for national and international telecommunication.

*** Internal Roads in Industrial Zone:**

The internal roads are asphalt ones available for vehicles of H30.
The width ranges from 8m, 12 m , 16 m wide, coupled with the sidewalks, lighting and planting, which make a good view for the Industrial Zone.

*** Water drainage system:**

Presently, there are two separate sewage pipe systems available for receiving water from factories in the Industrial Zone.

*** Waste water treatment :**

There will be a waste water treatment plant for the whole Nhon Trach I Industrial Zone with volume of 12.000 m3/day and night. URBIZ assure to receive the waste water from the fence of factories.

5. Price of subleasing land and power and clean water:

5.1. Price of subleasing land

*** For first 5 years: US$ 1.54/m2/year.** In which:
- The Land rental in accordance with stipulation: US$ 0.09/m2/year.
- Infrastructure cost: US$ 1.45/m2/year.

*** From the sixth year: US$ 1.10/m2/year.** In which:
- The Land rental in accordance with stipulation: US$ 0.09 /m2/year.
- Infrastructure cost: US$ 1.01 /m2/year.

*** Term of payment:** The payment can be made annually.

5.2. Price of power and clean water:

- Power: VND 979/Kwh
- Water: VND 4,200/m^3

6. The duration of land subleasing: Term of land subleasing applicable in accordance with Investment Licence.

7. The procedure of land subleasing and Investment Licence:

** The procedure of land leasing:*

At Nhon Trach I Industrial Zone is simple and advantageous. Investors, who directly lease land from URBIZ will participate the following steps :

- Signing the land subleasing memorandum between URBIZ and Investor and making the deposit payment at the rate of US$ 5.000/ha. URBIZ will reserve of land intended to lease within 6 months from the date of signing the Land Subleasing Memorandum.
- When the Investor has been issued the Investment Licence, the Land Subleasing Contract will be signed by the 2 parties. URBIZ will hand over related documents, land, marks in conformity with the signed Land Subleasing Contract. The deposit payment shall be deducted from the payment of land rental after signing Land Subleasing Contract.

** Applying for Investment Licence*

In order to facilitate Investors to put their projects into operation URBIZ also assist Investors to complete all procedures for applying Investment Licence, Import Licence, Personnel registration, Making stamp, Registration of tax code in the shortest time with the lowest cost.

Furthermore, URBIZ is capable of doing the following works: Survey, design, and construction of the plant with high quality and satisfaction of schedule by Investor.

8. Customs service:

At present, the Customs Office is available in Nhon trach I Industrial Zone, directly implement import and export procedures, which is very advantage for inspection, import and export of enterprises in the industrial zone

9. Incentives on Tax:

Referring to Decree No. 36/CP dated April 24, 1997 in regard to enacting the stipulation on the industrial zone, Decree No. 10/CP Jan. 23, 1998 and Decree No. 53/1999/TTg dated March 26, 1999 by Prime Minister of Vietnam, enterprises invested in the industrial zone enjoy the incentives as follows:

a. Profit tax:
In respect of enterprises export less than 50% of its product: The rate is 15% of earned profit and this tax will be exempted for 2 years since the enterprise makes profit from its business.
In respect of enterprises export from 50% - 80% of its product: The rate is 15% of earned profit and this tax will be exempted for 2 years since the enterprise makes profit from its business and reduced by 50% for 2 subsequent years.
In respect of enterprises export over 80% of its product: The rate is 10% of earned profit and this tax will be exempted for 4 years since the enterprise makes profit from its business and reduced by 50% for 4 subsequent years.

b. Profit remittance tax: The rate is 5%

c. Import duty and V.A.T:
* The followings will be subjected to free of import duty and V.A.T for enterprises:
- Equipment, machinery imported to form the fixed assets of an enterprise or to form fixed assets for implementing business cooperation contract.
- Specialized transportation means in technological process imported to form the fixed assets of an enterprise and specialized transportation means for transporting workers (car over 12 seats, water transportation means)
- Components, parts, knockdown unit, appliance, mould and spare accessories of the above equipment and machinery.
- Construction materials imported for the purpose of forming the fixed assets which have not been produced locally.
* Investment projects included in the List of project where investment is specially encouraged shall be exempted from import duties in respect of raw material used for production for a period of five (5) year from commencement of production.
- Projects producing parts, mechanical and electronic parts will enjoy free of import duty for raw materials for 3 years.
* With respect of raw materials, parts, accessories and imported materials for manufacture, the payment of import duty of these commodities will be, after export, deducted in correspondence with export ratio of finished product.

10. Import and export of goods:
Nhon trach I Industrial Zone is advantageous location for import and export of goods. It is 22 km far from Phu My port(available for 54,000 ton-ship), 15 km from Go dau Port (available for 20,000 ton-ship).

In addition, Vung Tau International Port (with the participation of Evergreen Group - Taiwan) will build up an Inland Delivered Container (IDC) on Nhon trach I Industrial Zone for transportation of import and export goods for enterprises in the industrial zone.

11. Domestic consumption of goods:

Nhon trach I Industrial Zone is under Nhon trach Industrial City located on the center of Key Economic Region of Vietnam. This is the advantageous location with the lowest expenditure to deliver goods for 3 large markets of Vietnam; Vung tau City with the population of 2.000.000 people (60 Km far from the industrial zone); Bien hoa City, population of 900.000 people (40Km); Hochiminh City, population of 5.000.000 people (60Km). Also this is a good location to deliver goods to other places in Vietnam.

12. For labour:

As the industrial zone is located in the newly formed city, the force of labour is plentiful with the average salary as bellows:

- Laborer (common worker): US$ 35 - 40/month/person. The resident area near Nhon trach I Industrial Zone is entirely capable of supplying enough workers for factories in the industrial zone
- Technician: the average salary is variable US$ 60-80/month/person

Welcome to Nhon trach I Industrial Zone

Introduction

Phu My I
Industrial Park

- Total investment cost VNĐ : 879.440.000.000 VNĐ
- Total surface area : 954,5 hectares

- The Phu My I Industrial park was approved by the Prime Minister under Decision No 213 /QĐ -TTg dated 2, April, 1998.

- The decision No 2431 /QĐ - UBT dated 09, September, 1997 "To designate Urban development and Construction Company of Baria - Vungtau Province to be developer and operation investment technical infrastructures of Phu My I industrial park ".

I/ The nature of the industrial Park

Phu My I is an industrial Park, designed for promoting economic development of the Province for the year 1996 to 2010. Following industries are aimed at :

- Heavy industry associated with the ports.
- Steel & power industries.
- Chemical & fertilizer industries.
- Construction materials.
- Phu My I is also an industrial park of typical high technology.

2/ Location, boundary and size :

The Phu my Industrial Park is located on the west of Phu My new urban area of Tan Thanh District.

- Its is bordered with the Thi Vai river pond system on the west.
- The Phu My II Industrial Park on the South.
- The technical corridor, Vung Tau gas pipeline and the Phu My power Plant on the East.
- The My Xuan A Industrial Park on the North .

3/ The development and the functional sections :

3.1 The Phu My I Industrial Park will be deviled into :

- Section A : Electricity , fertilizer, steel Plants.
- Section B : Chemical , fertilizer, Construction material Plants.
- Section D1 : Storage & warehouse facilities.
- Section E1 : Management & public service center.
- Section F1 : Green area
- Section H1 : Technical infrastructure operating area

3.2 The Techno - Economic goals :

Item line	Category	Code	Surface area (hectares)	Maximum Construction density	Average Height	Co-efficient of land use
1	2	3	4	5	6	7
1.1	**Section A:**		**361.5**	55	1.1	0.605
	Land for Fertilizer,	A1	29			
	Power, Steel plants	A2	18			
		A3	86			
		A4	74			
		A5	78.5			
		A6	24			
		A7	20			
		A8	32			
1.2	**Section B:**		**216**	45	1.2	0.54
	Land for Chemical,	B1	30			
	Fertilizer plants	B2	21.5			
		B3	11			
		B4	31			
		B5	43			
		B6	26.5			
		B7	26.5			
		B8	26.5			
		B9	13			
		B10	16			
1.3	**Section D1:**	D1	**73.5**	35	1	0.35
	Land forStorage &	D1a	23			
	Warehouse Facilities	D1b	21.5			
		B9+B10	29			

2	**Section E1:** Land for Inductrial services & center management	 E1a E1b E1c E1d E1e E1f	**37.5** 6.8 7.6 6 6.2 5.5 5.4	40	3	1.2
3	**Land for vegetation** Broken down into: - Park. - Environmental green	F1 F1a F1b	154 44 110	5	1	0.05
4	**Land for Industrial infrastructure areas**	TTT	17	50	1	0.5
5	**Land for Communication**		95			

3.3 -Estimated and Requirement:

Item line	Designation	PHASE1		PHASE 2		PHASE 3	
		Surface Area	Proporation	Surface Area	Proporation	Surface Area	Proporation
	Total surface area	**501**	**100**	**453.5**	**100**	**954.5**	**100**
1	Land for construction of plants, Enterprises Warehouses and Storage	317	63.3	334	73.7	651	68.2
2	Land for communication	70	14	25	5.5	95	10
3	Land for vegetation	80	15.9	74	16.3	154	16
4	Land for industrial Services and management center	23	4.6	14.5	3.2	37.5	4
5	Land for industrial infrastructrure areas	11	2.2	6	1.3	17	1.8

4. Technical infrastructures :

4.1 Communication :

- Central road : 1,500 m long running in the operational section with the red line boarder of 46m wide.
- The main road of the industrial park.

+ 2-2 Section road is the road running along the port with 4191m long its red line boundary is 50m wide.

+ 4-4 Section road has the red line boundary of 31m wide and 13,934m long

- Internal road : 5,180m a long , 23 m wide (5-5 cross/section)
- Side walks and the land for vegetation.

4.2. Land reclaiming :

- Elevation > 2..7m.
- Total volume of dirt to be needed 7,837,475 cubic meter.

4.3 Drainage :

The rain-water drainage network will be designed in accordance with the topography in such a way that water can drain most rapidly. There will be 3 drainage areas :

+ The port drainage area to the Thi Vai river.

+ The Northern drainage area : A part of water will Flow to "Rao" Spring, the other part will flow into the canals of Phu my thermo-electric plant.

+ Water in the Southern drainage area will flow into flood control reservoir.

4.4 Water supply :

Shall be in accordance with the master plan of Phu my new urban development and the water supply planing of National Route 51 (It is understood that the My xuan underground water resource, the surface water resources of Toc tien village and Phu my town will, provide a capacity of 340,000 cubic meters/24 hours.

The diameter of the water pipeline is from 100mm to 150mm, and the total length of pipeline is 21,500m.

The technical pipeline will be laid in ditches. In case impossible to lay in the ditches, they will be but under the pavement (side walk). The 100 mm pipeline will be from 0,5 - 1m deep (from top to the designed bed).

4.5 Power Supply :

The power supplied to the Phu my 1 industrial Park will be conducted from the national power grid (directly supplied by the Phu my power plan with the acity of 3,600 W).

* Power network.

A 110 KV line from the 110 KV transmission station of the Phu my power Plant to the 110/22 KV power station of the industrial Park will be installed (AC 240 wire).

-Two 110/22 KV transformer station will be erected in the industrial park, which are :

-Phu my 1A Power Station (in operation).

The 110/22 KV power station of Phu my 1-A with a acity of 2x40 MVA is now in operation to support the construction of Phu my Power Plant. In the future, this station will be turned into the industrial Park. It will supply power to the Vietnam steel manufacturing.

-Phu my 1-B Power Station :

The 110/22KV power Station of Phu my IP. 1-B has the auity of 2x63 MVA. By the year 2005, one more 63 MVA power Station will be erected. This station will supply power to Section industrial complex. For the time being, the Phu my power station will supply power to the port area (60 hectares). In the future, the power for this area will be supplied from the same source of Thi vai port, after Thi vai port has been provided power as planned.

(Plants) Factories in the IZ will be supplied power from 22KV network. There will be a 22 KV underground cable system connected to 22KV bus of the 110/22KV power station linking with the 22 KV distribution station. The 22 KV network is a by pass circuit but will be operated as a incomplete one.

At the plants, there will be 22/0,4 KV transformer station.

* Lighting network.

250 W natrium bulbs will be installed along the road of the industrial Park.The lighting rates are subject to the road category.

+The lighting rates for the main road is 0,8 cd/sa-m.

+The lighting rates for secondary roads is 0,4 cd/sq-m.

+The lighting network wire will be laid in the same ditch with the other technical wire.

+Lights will be installed along both sides of the roads large than 11m wide, while roads with 18,5m wide, will be installed with lights on one side only.

4.6 Sewage drainage & environment protection :

- The volume of the waste water discharged from the plants & factories will be 30 cu-m/hectare - 24 hours.

- The volume of the waste water discharged from the storage and warehouses, 25 cu-m/ha.

- The volume of the waste water discharged from the service center : 20 cu-m/ha - 245 hours.

The sewage system will comprise of :

- A 300 - 400 - 500 mm diameter cast iron pipeline for water to run by gravity, total length : 19.440m.

- A 300 - 350 - 400 mm diameter cast iron pipeline for water to run by gravity, total length: 1840m.

- Two waste water pumping station built underground.

- Two waste water treatment stations with the average capacity of 18000 cu-m/ daily.

* Environmental sanitation :

a - The plants in the industrial Park are requested to adopt anti-pollution technology, integral assembly line and use the anti-toxic materials in order to restrict the waste of materials/ raw materials and to protect the environment.

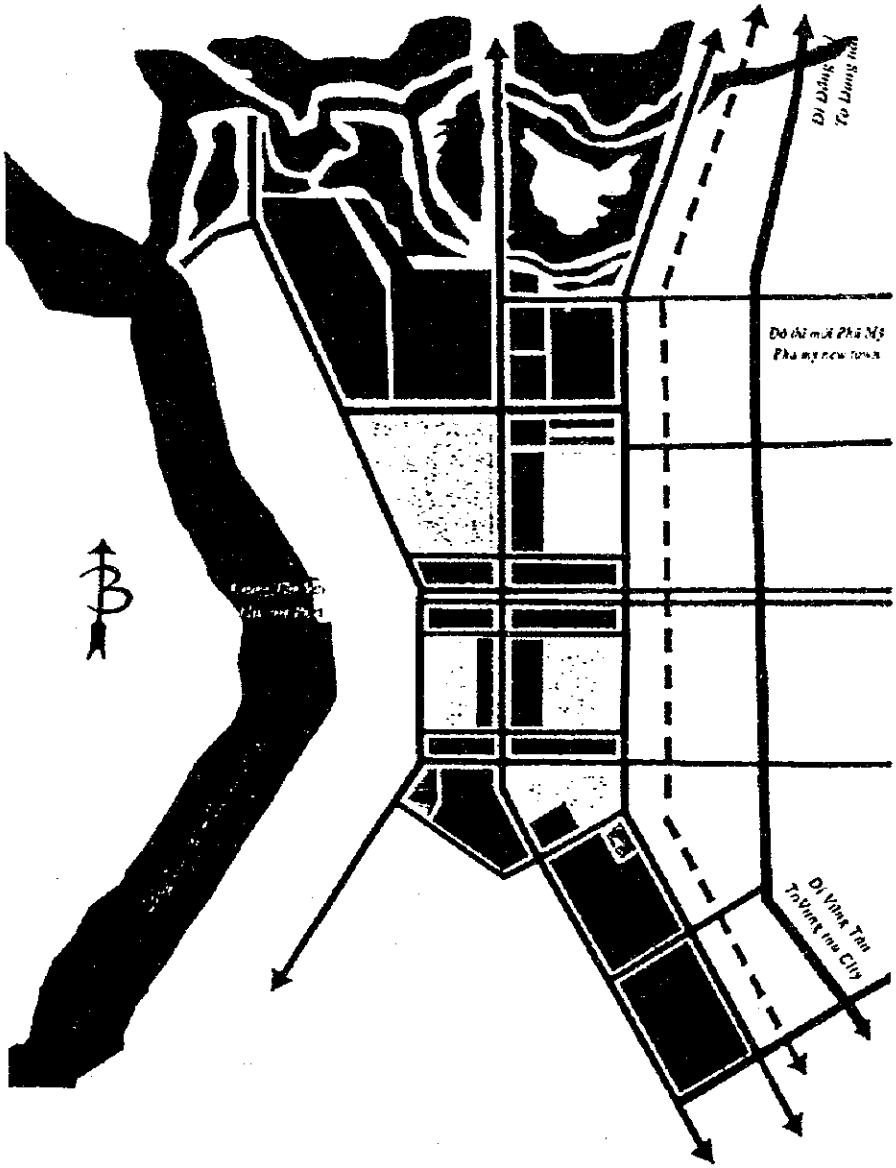
b - Environment protection for water : waste water will be treated first at the factory and 2nd time at a common facility, as stipulated by the TCVN 59 Standard. Then it will run into the reservoir for natural conditioning.

c - Environment protection for air : air pollutants discharged from the plants in the Phu My 1 industrial Park will be treated by modern dust & toxic treatment equipment in accordance with the TCVN 5939 - 1995 standard and the 5940 - 1995 standard issued by the State of Viet nam.

d- Trees will be planted around the plants, factories, residential quarters, waste water treatment station and waste dumping areas.

TỈNH BÀ RỊA VŨNG TÀU
QUY HOẠCH KHU CÔNG NGHIỆP PHÚ MỸ I

BARIA - VUNGTAU PROVINCE
THE INDUSTRIAL INFRASTRUCTURE PHU MY I



GHI CHÚ		NOTE
Đất chưa được thuê sử dụng		Free land
Đất trung tâm điều hành và dịch vụ công cộng		Land managing center and public service
Đất đã có giấy phép đầu tư		Licensed Area
Đất đã có thỏa thuận địa điểm		Agreed place land
Đất đầu mối hạ tầng kỹ thuật		Technical Infrastructure Item
Đất công viên và cây xanh cách ly		Park and seperated Vegetation Land
Sông, hồ		River, Pool
Đường giao thông		Transportation network

CÁC LỢI THẾ ĐẦU TƯ VÀO KHU CÔNG NGHIỆP ĐỒNG XUYÊN & PHÚ MỸ I

CÁC CHỈ TIÊU	CÁC LỢI THẾ CƠ BẢN
Quản lý và quy hoạch	Quy hoạch hoàn chỉnh, quản lý hoàn thiện. BQL các KCN thực hiện uỷquyền của các Bộ quản lý nhà nước "một cửa", cấp giấy phép đầu tư,quản lý xuất nhập khẩu, xuất xứ hàng hoá, quản lý lao động... cho các dự án đầu tư.
Thuế ưu đãi	Miễn thuế lợi tức 2 năm kể từ năm bắt đầu sản xuất kinh doanh có lãi, sau đó nộp thuế lợi tức từ 10 - 15%.
Thuế chuyển lợi nhuận	Nhà đầu tư nước ngoài có thể tự do chuyển lợi nhuận thu được ra nước ngoài. Thuế chuyển lợi nhuận là 5%.
Cơ sở hạ tầng	Các yếu tố hạ tầng đã hoàn thiện: cấp thoát nước, điện, đường xá, cây xanh.

BENEFIT FROM INVESTMENT IN INDUSTRIAL PARK DONG XUYEN & PHU MY I

CRITERIA	BASIC BENEFITS
Management And Planing	Planing work have been satisfactorily completed and management, properly organized. "ONE DOOR" Policy is applicable -the various ministries have authorized the BIZA to award investment projects (in IZs)
Tax Incentives	Tax - exemtion for 2 year, commencing from the 1st benefit - earning year. Tax will be collected in the following year:10-15%.
Tax on Transfer of Benefits *(repatriation of benefits)*	5% - Expatriate investors are entitled to transfer their benefits to foreign coutries.
Infrastructure facilities	Satisfactorily completed: -Water, power supply - Drainage - Roads/Access - Vegetation.