JAPAN INTERNATIONAL
COOPERATION AGENCY (JICA)
CENTRAL JUVENILE AND FAMILY COURT
MINISTRY OF JUSTICE
KINGDOM OF THAILAND

BASIC DESIGN STUDY REPORT
ON
THE PROJECT FOR CONSTRUCTION
OF
THE VOCATIONAL TRAINING SCHOOL
IN
THE KINGDOM OF THAILAND

JUNE, 1993

NIKKEN SEKKEI LTD
JAPANESE CORRECTIONAL ASSOCIATION

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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 basic design study on the Project for Construction of the Vocational Training Center in Thailand and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Thailand a Basic Design Study Team headed by Mr. Kouichi Abe, Deputy Director, Akagi Juvenile Training Center, Ministry of Justice, and constituted by members of Japanese Correctional Association from September 14 to October 13, 1992, and a Phase-2 Study Team headed by Mr. Shigeki Kobayashi, Grant Aid Div., Economic Cooperation Bureau, Ministry of Foreign Affairs, and constituted by members of Nikken Sekkei Ltd. and Japanese Correctional Association from January 21 to February 17, 1993.

The team held discussions with the officials concerned of the Government of Thailand and conducted a field study at the study area. After the team returned to Japan, further studies were made. Then, a mission was sent to Thailand in order to discuss a draft report and the present report was prepared.

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

I wish to express my sincere appreciation to the officials concerned of the Government of the Kingdom of Thailand for their close cooperation extended to the teams.

June, 1993

Kensuke Yanagiya

Kensuke Yanagiya
President
Japan International Cooperation Agency

June, 1993

Mr. Kensuke Yanagiya,
President
Japan International Cooperation Agency
Tokyo, Japan

Letter of Transmittal

We are pleased to submit to you the basic design study report on the project for construction of the vocational training school in the Kingdom of Thailand.

This study was conducted by Nikken Sekkei Ltd. in consortium with Japanese Correctional Association under a contract to JICA, during the period of Jan. 18, 1993 to June 30, 1993.
In conducting the study, we have examined the feasibility and rationality of the project with due consideration to the present situation of Thailand, and formulated the most appropriate basic design for the project under Japan's grant aid scheme.

We wish to take this opportunity to express our sincere gratitude to the officials concerned of JICA, the Ministry of Foreign Affairs and the Ministry of Justice. We would also like to express our gratitude to the officials concerned of the Central Juvenile and Family Court, Ministry of Justice, the JICA Thailand Office, the Embassy of Japan in Thailand for their cooperation and assistance throughout our field survey.

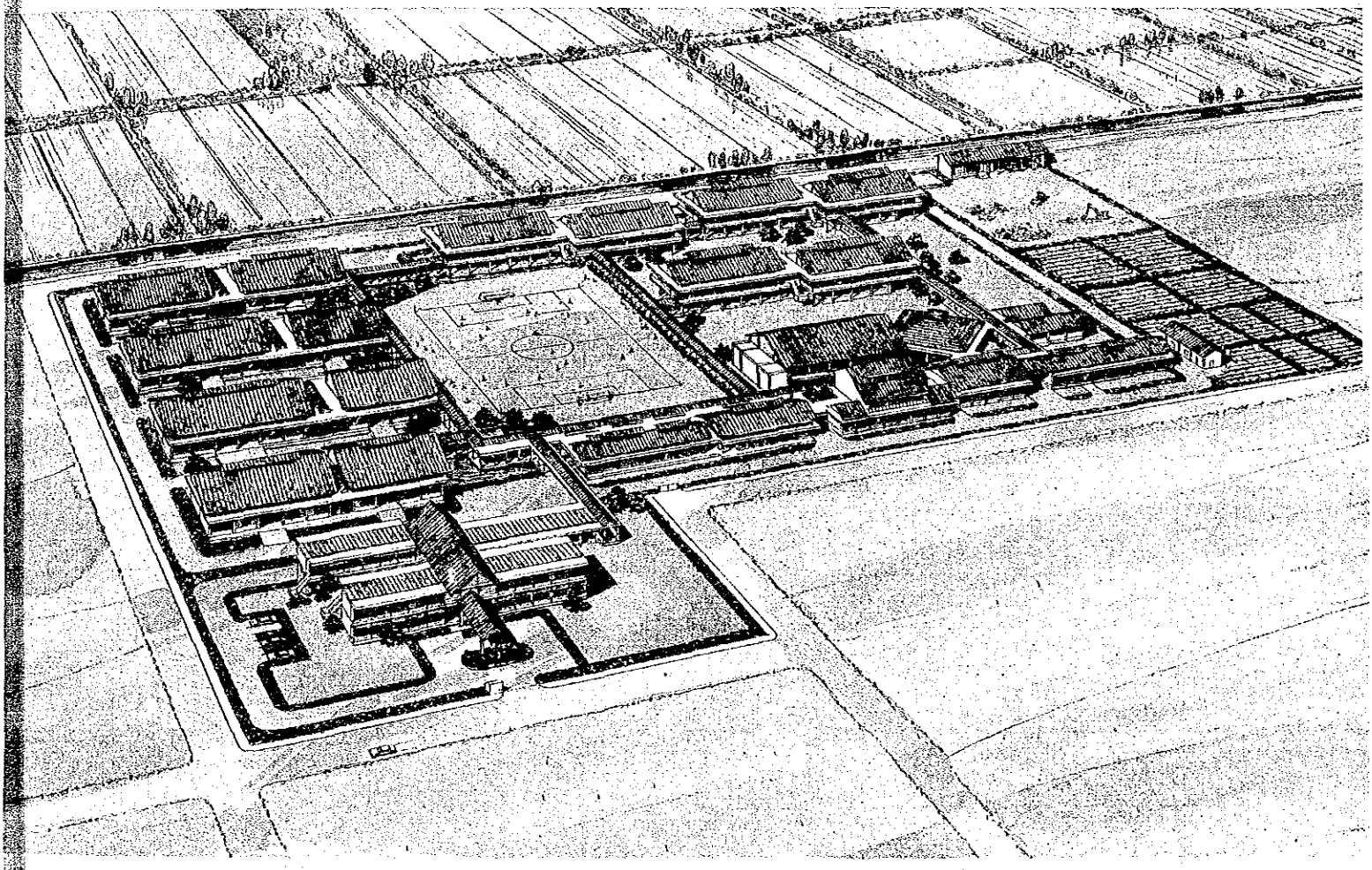
Finally, we hope that this report will contribute to further promotion of the project.

Very truly yours,

Masami Tanaka
Project Manager

Basic design study team on the Project for Construction of the Vocational Training School

Nikken Sekkei Ltd. in consortium with
Japanese Correctional Association



SUMMARY

Summary

The Government of the Kingdom of Thailand has adopted a series of Five Year Economic and Social Development Plans beginning in the fiscal year 1961 with the aim of changing Thailand from an agriculture based country to a manufacturing industry based one, and the Government is now engaged in the implementation phase of the Seventh Five Year Economic and Social Development Plan. The Kingdom of Thailand has made remarkable economic growth during the period and is still making efforts to continuously maintain its stable economic growth and improve the quality of life of its people by implementing the above mentioned Seventh Five Year Economic and Social Development Plan.

However, industrialization and urbanization accompanying the rapid economic growth triggered unexperienced social disturbances such as a rising rate of unemployment, widening economic gap between the have and the have not, aggravating living environments resulting from poverty which in turn brought forth new social problems such as increasing rate of juvenile delinquency and crime. Hence, providing the juveniles with sufficient education and vocational training to meet the recent labor demand has become an urgent issue for the Thai Government.

Present system of protection and care for juveniles in the Kingdom of Thailand is divided into the following three different administrative frameworks.

1) Protection and care for juveniles under the age of 24, being administered by the National Juvenile Bureau of the Prime Minister's Office; a policy administrative framework of protective measure to bring up wholesome juveniles.

2) Protection and care for children under the age of 18, being administered by the Children and Juvenile Division of the Public Welfare Department of the Ministry of Interior; a welfare and self-supportive framework of protective measure to protect children on an institutionalization basis.

3) Protection and care for delinquent children and juveniles, whose age are between 7 and 18, being administered by the Juvenile Protection and Observation Center under the control of the Juvenile and Family Court, the Ministry of Justice; a correctional and rehabilitative framework of protective measure to correct juvenile delinquents by employing the following two methods; probationary work in society on the one hand and correctional activities such as academic education, vocational training and living guidance in the institution on the other hand.

The Project relates to the final administrative framework of the third of the above mentioned frameworks, that is, the function of juvenile correctional within the institution, which can be said to be a protective measure within the administration of the juvenile justice system.

The organization of the juvenile and family court in Thailand consists of one Central Juvenile and Family Court in Bangkok and ten provincial juvenile and family courts in local areas. One protection and observation center is provided to correspond to each juvenile and family court. Juvenile training schools are provided under the jurisdiction of the protection and observation center. The Central Juvenile and Family Court, the executing agency of the Project, is

in charge of juvenile delinquent cases in the Bangkok area, supervising the Central Protection and Observation Center.

At present, four juvenile training schools and one remand home are provided in Bangkok area under the jurisdiction of the Central Protection and Observation Center. These juvenile correctional facilities which are not only aged, deteriorated and overpopulated but also confined, understaffed and short of educational equipment are far from appropriate educational operation.

Considering the aggravated juvenile delinquency problems as well as deteriorated juvenile correctional institutions, the Ministry of Justice of the Kingdom of Thailand requested a grant aid from the Government of Japan to establish a model vocational training school for wayward youths in the area of Nakhon Pathom Province in the vicinity of Bangkok, thus aiming at improving and enhancing the juvenile correctional system of the country as a part of implementation of the Seventh Economic and Social Development Plan.

In response to the request, the Government of Japan decided to conduct a Preliminary Study and Japan International Cooperation Agency (JICA) sent a team to Thailand from December 5 to December 22, 1991, to confirm the request, as well as to study the adequacy and necessity of the Project. The Preliminary Study Team came to a conclusion as follows:

The problems of the existing juvenile correctional facilities are:

1) Insufficiency of buildings and equipment: buildings are aged, crowded and short of educational equipment.

2) Inappropriateness of education and training: insufficient educational plan; short of educational equipment; undertrained staff; insufficient vocational training; understaffing.

3) Inappropriateness of educational planning: education on the classification system basis is not provided or insufficient.

Based upon discussions and analysis of the problems mentioned above, the Preliminary Study Team concluded that it is most appropriate to establish a model facility where 200 male juveniles, of the age 14 through 18 years (until 24 years if specifically admitted by case) are housed and provided with education emphasizing vocational training. Thus the facility is expected to play a role as a driving force to improve and upgrade educational operation of other existing juvenile institutions as well, as newly built ones in the future all over the country. At the same time, it was concluded regarding the establishment of the vocational training school that it would be adequate to conduct a basic design study for a grant aid.

Following the conclusion, JICA sent the Phase-1 Basic Design Study Team to Thailand from September 14 to October 13, 1992, to study the adequacy of the Project, the implementation/management setup, the educational plan, the vocational training plan, and the basic conception of the arrangement of facilities. The team, after the survey, compiled the result of the study in a Basic Design Study Interim Report.

Following the Phase-1 Basic Design Study, JICA sent the Phase-2 Basic Design Study Team to Thailand from January 21 to February 17, 1993, to confirm the contents of the interim report

compiled by the Phase-1 Basic Design Study Team. The team also investigated existing and similar facilities as well as the project site and its environment to review the adequacy, the layout of facilities, the grade, and the size of the project.

Based on the results of the above studies, JICA made an analysis in Japan to prepare a basic design, and sent a basic Design Draft Final Report Explanation Team to Thailand to present a draft final report on the basic design study from April 18 to April 27, 1993.

The fundamental contents of the basic design of the Project based on the above studies and analysis are outlined as follows.

1) The Executing Agency of the Project

The executing agency of this Project is the Central Juvenile and Family Court under the control of the Ministry of Justice, the Kingdom of Thailand.
The Project is administered and managed by the Administrative Division of the Central Protection and Observation Center under the supervision of the Central Juvenile and Family Court. The number of staff working with the Project is 76. Administration and management of the facility is conducted by a superintendent under the supervision of the Administrative Division of the Central Protection and Observation Division. Four sections, that is, Administrative Section, Academic and Vocational Section, Rehabilitation Section and Medical Section are provided under the superintendent.

2) Outline of the education and training plan of the Project

Number of trainees	:	200 male juveniles of ages 14 through 18 Juveniles with high aptitude for vocational training and high expectancy of being rehabilitated are selected out from the existing training schools.
Length of training	:	Approximately one year except for the Construction Vehicle Operation Course which is 6 months.
Enrollment and release method	:	Twice a year for each vocational training course to enhance the efficiency of the education and training. Trainees for each course are released for return to society simultaneously, as a rule.
Fundamental education plan	:	Based on the education plan which systematically arranges goals, contents, process and methods, well planned education and training for the areas of vocational training, living guidance, academic education, health and physical education, extracurricular activities, social work and psychological activities are conducted.
Courses of vocational training	:	Welding and sheet metal work, Automobile maintenance, Electric wiring, Wood work, Machining, Printing, Airconditioner repairing, Construction vehicle operation. (Total 8 courses)

Considering that the Project is run as a model correctional facility for juvenile delinquents, on-the-job staff training for staffs of juvenile training schools all over Thailand is introduced and conducted in the facility.

3) Outline of facilities

Administration Building
Academic Education Building
Central Building
Service Building
Gymnasium
Cafeteria
Shower Building
Toilet Building
Dormitories (6 Buildings)
Workshops (4 Buildings)
Construction Vehicle Operation Training Building
Garage for Farm Machineries
Connecting Corridors

4) Outline of equipment

General equipment:

Pickup Truck
Microbuses (large and small)
Computer
Prophylactic Unit
Power Filler
Video Projector
Basketball Backstops

Vocational training equipment:

Welding and sheet metal work course

Hand Bending Three Rollers
Shearing Machine
TIG Welding Machine
Bar Bender

Automobile maintenance course

Air Compressor
Wheel Balancer
Emission Tester
Two-pole Lift

Electric wiring course

Drying Oven
Insulation Puncture Tester
Coil Winding Machine, Manual Type
Low Tension Switch Board for Training Use

Wood work course

Hand Feed Planer
Automatic Single Surface Planer
Circular Saw with Sliding Table

Straight-Line Rip Saw
Wood Working Lathe

Machining course
Precision Lathe
Universal Milling Machine
Shaper
Upright Drilling Machine

Printing course
Offset Printing Presses
Power Paper Cutter
Bookbinding Machines

Airconditioner repairing course
Refrigeration Cycle Training Units
Airconditioner for Training Use

Construction vehicle operation course
Swamp Bulldozer
Wheel Loader
Motor Grader
Hydraulic Excavator

The expected period required for Detail Design for the Project is 5 months, and the period required for construction work and procurement of equipment for the Project is expected to be 12 months.

By putting this Project into practice with grant aid from the Government of Japan, youths with less opportunity of higher education from poor family background who dropped out society and committed crimes, are provided with appropriate and upgraded vocational training to meet the needs of today's labor market in Thailand . Along with the training they receive enhanced, fulfilled education to foster their social adjustment capacity so that they can return to the society as sound working members of the society, thus relieving the social unrest and disorder but also contributing to the improvement in manpower to sustain national industrial prosperity, as well as the welfare and happiness of the national.

Furthermore, since the Project is being constructed as a model correctional school, it will have an influential power to improve other existing or newly built facilities as well, thus upgrading and strengthening the system and function of juvenile correctional facilities inThailand.
In conclusion, the Project meets the expressed purpose of Japanese grant aid, and is highly valid as well. Accordingly it is hoped that the Project be implemented through grand aid from the Government of Japan as soon as possible.

Positive and continuous efforts on the part of the Government of Thailand will be an absolute necessity to make the Project proceed in a successful way.

This will include the realization of technical cooperation of the Government of Japan, recruitment and securing of capable staff in both qualitative and quantitative aspects, establishment of a cooperation system among the staff, provision of necessary budget, observance of trainee capacity, establishment of educational curriculums and provision and development of the staff training system for running the Project as a model school.

CONTENTS

Appendices

CHAPTER 1 INTRODUCTION

Chapter 1: Introduction

The Government of the Kingdom of Thailand has adopted a series of Five Year Economic and Social Development Plans with the aim of maintaining its stable economic growth and improving the quality of life of its people. However, industrialization and urbanization accompanied by its economic growth brought forth social upheavals which triggered the gravitation of population toward cities, the rise of the unemployment rate, the aggravation of urban environments, as well as the disorganization of the family structure which in turn has intensified delinquency of its youth.

To reduce the delinquency of its youth who are valuable assets of Thailand, the Government of Thailand requested a grant aid from the Japanese Government to establish a model vocational training center for wayward youths in the area of Nakhon Pathom Province in the vicinity of Bangkok.

In response to the request, the Government of Japan decided in December, 1991 to send a preliminary study team of Japan International Cooperation Agency (JICA) to Thailand to confirm the request, as well as to study the adequacy and necessity of the project. As a result, the preliminary study team came to a conclusion regarding the establishment of the vocational training center that it would be adequate to conduct a basic design study for a grant aid. Following the conclusion, JICA sent the Phase-1 Basic Design Study Team headed by Koichi Abe, Deputy Superintendent of Akagi Juvenile Training School, Ministry of Justice, to Thailand from September 14 to October 13, 1992, to study the adequacy of the project, the implementation/management setup, the education plan, the vocational training plan, and the basic conception of the arrangement of facilities. The team compiled the results of the study in a basic design study interim report.

Following to the Phase-1 Basic Design Study, JICA sent the Phase-2 Basic Design Study Team, headed by Shigeki Kobayashi, Grant Aid Div., Economic Cooperation Bureau, Ministry of Foreign affairs, to Thailand from January 21 to February 17, to conduct a field investigation to confirm the contents of the interim report compiled by the Phase-1 Basic Design Study Team, as well as to review the request from the Government of Thailand including the implementation/management setup, the number of juveniles to be covered by the project, the period of education, the education plan, the vocational training plan, and the facilities/equipment plan. They also investigated the existing and similar facilities to review the adequacy, the grade, as well as the size of the project.

Based on the results of the above studies, JICA made an analysis in Japan to prepare a basic design, and sent a Basic Design Draft Final Report Explanation Team, headed by Mr. Takashi Hatakeyama, Dupty Director, First Project Management Division, Grant Aid Project Management Department, to present a draft final report on the basic design study from April 18 to April 27, 1993.

Based on the above, this report covers the establishment of facility size, the selection of equipment, the design principles, the implementation plan, the maintenance plan, the

project evaluations, and proposals which are considered the most suitable for the execution of this project.

The members of the Basic Design Study Team, the list of Main People interviewed, the itinerary for studies in Thailand, the minutes of discussions, and others are included in the Appendices.

CHAPTER 2 BACKGROUND OF THE PROJECT

Chapter 2: Background of the Project

2-1 Background of the Project

The population of Thailand is approximately 55 million and the area of its land is 514,000 square kilometers. Economic development which has been the national policy target is spectacular owing to the change of its economic structure from an agriculture based to a manufacturing industry based one.

However, Thailand has suffered from its widening economy gap between urban and rural areas and the have and the have not, caused by domestic migration to Metropolitan Bangkok from agricultural villages in rural areas. The educational gap also has widened. In rural areas, because of poverty, youngsters have to go to work instead of school, and in some cases migrate to slum areas in Bangkok where they can earn better income.

The labor force is mainly composed of agricultural and fishery workers (approximately 60%), but the number of manufacturing and construction workers has shown gradual increase while the increase of the number of commercial workers has been more obvious in recent years. The unemployment rate has been decreasing and has hovered around 5% since 1990. Also, Thailand faces a serious deficit in its manpower of engineers due to the growth and technological advancement of its industry.

Thailand has been making its efforts to fully realize a compulsory education, raising the rate of enrollment into secondary education, as well as to promote vocational education. However, the increase of the number of juveniles who need protection and care has been a hindrance to that goal. Therefore, the need to provide efficient training for those juveniles so as to meet labor demand has become a urgent responsibility for ministries concerned.

At present, the Kingdom of Thailand is in the implementation phase of the Seventh Five Year Economic and Social Development Plan which started in the fiscal year 1992. The first economic and social development plan began in 1961 upon the recommendation of the World Bank.

Since the implementation of the first plan, the Kingdom of Thailand has basically enjoyed stable economic growth, but has failed to achieve balanced distribution of its wealth, and such problems as unemployment, poverty, income disparity, weak infrastructure, underskilled labor force, and regional underdevelopment have ensued.

To overcome these problems, the Seventh Five Year Economic and Social Development Plan was proposed, which emphasized a) maintenance of stable economic growth, b) redistribution of income and prosperity to all localities, and c) development of human resources, the quality of life, natural resources, and social environment.

Juvenile and Family Courts of the Ministry of Justice of the Kingdom of Thailand has six projects which are related to the Seventh Five Year Economic and Social Development Plan. One of the projects is a project to construct youth training schools of the Central Observation and Protection Center in Nakhon Pathom Province, which prompted the Ministry of Justice to submit the present request for Japanese grant aid.

Thailand has three different administrative frameworks in which the protection and care for juveniles are provided.

- Prime Minister's Office
- Public Welfare Department of the Ministry of Interior
- Protection and Observation Centres of Juvenile and Family Courts of the Ministry of Justice

The latter two agencies provide institutional care such as academic and vocational training for those juveniles under their protection. The present project aims to provide Japanese grant aid to this part of the Government of Thailand.

In 1951, the Thai legislature created the Act Instituting Juvenile Courts and the Children and Juvenile Court Procedure Act. In 1952, the Central Juvenile Court and its subsidiary, the Central Observation and Protection Centre, which is responsible for the handling of cases dealt by the Court, was set up in Bangkok under these legislations. So far, a total of 11 juvenile courts have been set up in the Kingdom of Thailand. In 1992, Juvenile Courts were turned into Juvenile and Family Courts due to recent legal change.

The judge of a Juvenile and Family Court may take one of the following dispositions which are grouped into two types of treatment: community-based treatment and treatment within the institutions.

- Community-based treatment
  1) Admonishing a child or a juvenile then release him/her.
  2) Giving a caution to parent(s) or a guardian of a child or juvenile and then release him/her.
  3) Placing a child or a juvenile under the care of person or organization capable of giving training or instruction.
  4) Releasing a child or a juvenile after placing him/her on probation.
  5) Substituting corporal punishment for fine.
  6) Fining.
- Treatment within institutions
  7) Sending an child or a juvenile to a training school.
  8) Sending a child or a juvenile to an annex of a training school, which is a place for detention, not a prison.

9) Imprisonment.

The dispositions 6) and 9) are punishment, while others are not.

The Central Juvenile and Family Court has the following institutions for the treatment of juvenile delinquents.

In 1952, the Central Observation and Protection Centre was established in Bangkok and other 11 centres accompanying with the Juvenile Courts have been set up in the whole country.
A police officer transfers a juvenile suspect of committing a crime within 24 hours after apprehending him/her. The centre transfers him/her to a remand home or to a training school. The Probation and Medical Divisions of the centre and the chief of the remand home studies the social, mental, physical and behavioral situations of the juvenile to make up respective reports.
A judge utilizes these reports and a report filed by an inquiry officer to reach a judgment on the disposition of the juvenile. The centre is trusted by the court to execute the disposition.

Training Schools under the Administrative Division of Observation and Protection Centre are obliged to correct and detain delinquents according to the Juvenile Court order. In addition to taking good care of their health, it provides academic, vocational, and moral education for them in order to rehabilitate them to be a good citizen capable of earning a living.
The Administrative Division of the Central Observation and Protection Centre has four training schools, namely, Ban Mutita, Ban Karuna, Ban Ubekka, and Ban Pranee. The former three schools house boys and the last one houses girls.
The length of stay of approximately forty percent of the juveniles in the four training schools ranges from 1.5 to 2 years and that of approximately seventy percent of them ranges from 1 to 2.5 years.

2-2 Outline of the Request

Due to the widening income gap and the increasing unemployment, many Thai youths are under the risk of becoming delinquent due to the lack of opportunity to secure stable employment and income.

The Central Observation and Protection Center of the Central Juvenile and Family Court of the Ministry of Justice operates five juvenile institutions in Bangkok serving 1,100 wayward youths. However, due to the recent social change, the institutions have become too obsolete to serve the urgent needs of the youths.

Under the circumstances stated above, the Government of Thailand made a request to the Government of Japan for the grant aid to integrate the institutions into a upgraded complex. Upon this request, the Japanese Government sent its preliminary study team

to Thailand in December, 1991. The team reached its agreement with the Government of Thailand to construct a model juvenile training school which emphasizes vocational training.

In addition, concerning institutions, an agreement was also reached on including a management building, residential unit, medical institutions, etc. in the plan in addition to the vocational training building. Based on the results of the consideration mentioned above, the phase-1 basic design study was carried out in September - October, 1992. The purpose of the institution and the contents of education and training were examined in this study. As a result, an agreement was reached as follows on constructing a vocational training school for rehabilitation that focuses mainly on vocational training, so as to become a model institution for the expansion of the youth rehabilitation system domestically by the Government of Thailand.

(1) Trainees to be trained in this institution, which is to be provided by grant aid.

1) Number of juveniles: 200

2) Juveniles with high aptitude for vocational training and high expectancy of being rehabilitated are selected out from the existing juvenile training schools.

(2) Contents of request from the Thai side

1)	Buildings:	Administration building and office building, workshops, classroom building, gymnasium, canteen, and dormitories
2)	Vocational training courses:	Welding and sheet metal work, automobile maintenance, electric wiring, woodwork, machining, printing, and airconditioner repairing

Based on these agreements, the contents of each training course was examined. A basic plan was drawn up according to that result and the phase-2 basic design study was carried out in February - March, 1993. Since there is significant demand for construction in Thailand, especially around Bangkok, by taking the high labor demand for this type of work into account, it was decided that operation of construction vehicle would be added to the training courses of this plan.

CHAPTER 3 OUTLINE OF THE PROJECT

Chapter 3: Outline of the Project

3-1 Objectives

Thailand, due to remarkable changes of social structure accompanied by recent rapid progress of industrialization and urbanization, suffers from more serious social problems such as the rising rate of crime and unemployment that Thailand has never experienced before. Bangkok, the capital, suffering most from those social disorders caused by unexpected inflow of population from rural areas has been distressed by the increase of juvenile delinquents, unwanted offsprings of industrial prosperity.

On the other hand, the existing facilities in Bangkok area where juveniles with socially deviant behaviors are kept cannot provide those youngsters with adequate and effective education and training because of the limited and confined site, aged buildings, and shortage of equipment necessary for rehabilitation.

Under the above mentioned aggravated circumstances, the Government of Thailand, endeavoring to attain more efficient rehabilitation of problem youths, made a plan to newly construct "A Vocational Training School" to help unlawful youth return to the society in Nakhon Pathom Province near Bangkok area, to be realized by the Central Juvenile and Family Court, as an integral part of the policies of the 7th Five Year Economic and Social Development Plan of Thailand.

The objectives of the Project are to construct a model vocational training school for juveniles with socially deviated behaviors and to provide equipment necessary for advanced training, in accordance with the policies of the 7th Five Year Economic and Social Development Plan of Thailand.

3-2 Study and Examination of the Request

The Government of Thailand, deeming it an urgent task to establish systems of implementing efficient rehabilitation of socially deviated youths dropped out of the society, based upon the 7th Five Year Economic and Social Development Plan, holds a scheme to newly construct a training school as an integral part of the national policies.

However, the existing institutions for delinquent youths cannot afford effective training systems due to inadequacy of buildings and scarcity of equipment, and to the lack of the capacity to administer and operate the programs, to the effect that contents of training become degraded and insufficient.

The construction of the vocational training school of the Project, functioning as an innovated model school, along with its implementation of progressive innovated

training, is expected to enhance and strengthen the functions and systems of juvenile corrections of Thailand.

Consequently, the implementation of the Project is most necessary and highly expected for Thailand where improvement of the systems to rehabilitate and swiftly help problem youths return to the society is urgent and most emphasized.

Also, successful returning of delinquent youths to the society as diligent law-abiding working members of the community after being trained in the new facility will be most advantageous to Thailand because it can relieve the social unrest or disorder, upgrade manpower to sustain national industrial prosperity, and maintain and stabilize happiness of the whole nation.

3-3 Project Description

3-3-1 Executing Agency and Operational Structure

(1) Executing Agency

The Executing Agency of this Project is the Central Juvenile and Family Court under the control of the Ministry of Justice of the Kingdom of Thailand.

The administration and management of the Vocational Training School, the Project, is to be conducted by the Administrative Division of the Central Protection and Observation Center under the supervision of the Central Juvenile and Family Court.

(2) Management Organization

1) The organization chart of the Vocational Training School is shown in the Chart 3-1. Administration and management of the school is conducted by an superintendent under the supervision of the Central Protection and Observation Center. Total number of the staff is 76. Four sections that is, Administrative section, Academic and vocational section, Rehabilitation section and Medical section are provided under the Superintendent.

2) Staffing

Management of the Project is conducted by the staff members shown in the Table 3-1.

3-3-2 Plan of Education and Training

(1) Plan for Correctional Education

The Project is to conduct a variety of education and training including vocational training in order to effectively implement rehabilitation of youths who dropped out from the society.

This facility, consequently, needs to be provided with adequate number of trainees, proper size and grade of facilities and equipments, and above all, establish a system of education to implement effective rehabilitative activities.

The facility, furthermore, being constructed to be a model juvenile correctional facility in Thailand, needs to be planned as a higher graded institution than other existing training schools in terms of education and training.

(2) The outline of the educational plan is as follows:

1) Admittance

Capacity: 200
Sex: Male
Age: 14 through 18 (until 24 years if specifically admitted by case)

Juveniles to be enrolled: Juveniles with high aptitude for vocational training and high expectancy of being rehabilitated are selected out from the existing training schools.

2) Length of training

Approximately one year except for the Construction Vehicle Operation Course which is 6 months.

3) Enrollment method

Twice a year for each vocational training course.
Trainees for each course are enrolled simultaneously.

4) Release method

Trainees are released from the facility simultaneously after completion of training.
Unqualified or incompetent trainees shall be transferred or sent back to other training schools.

5) Fundamental educational plan

Education and training, in certain period of time, can be most efficiently implemented through conducting well-planned, elaborated educational

programs utilizing audio-vidual machines or psychotherapeutic techniques. Fundamental educational plan for that purpose, depicting goals, process, contents, methods and others of education needs to be provided.

6) Educational goal

Educational goal of the Project is to change problem youths into wholesome and healthy workers with sound view of work as well as vocational skills and knowledge.

7) Contents of education

Educational contents mainly consist of the following two kinds of education: education to provide trainees with willingness to work and instruction to provide trainees with ability to deepen self-understanding and thus adjust themselves to normal social life. To make education effective, it is necessary to break down it into five different fields of educations; vocational training, life guidance, academic education, health and physical education and extracurricular activity. When each area of education is fulfilled and co-related to one another, successful education is made possible.

8) Educational method

Educational contents can be best implemented with elaborated educational methods to fit the contents; audio-visual machines should be used for academic education, individual or group counseling should be adopted for effective life guidance, for instance.

9) Educational process

To attain educational goals, educational period should be divided into certain steps, such as introductory, intermediate and pre-release period. Specified educational goal, contents, and methods are provided corresponding to each divided period of education.

Details of education as to five areas of educations living guidance, academic education, health and physical education, and extracurricular activity-are as follows.

Living Guidance

1) Goals

Introductory stage: Adaptation to the school

Intermediate stage: Deepening self-understanding

Pre-release stage: Preparation for life after release

2) Contents

Introductory stage: Orientation, adaption to the facility

Intermediate stage: Rearing of wholesome ways of thinking and behavior as sound member of the community

Pre-release stage: Establishing life plan after release

3) Methods

Lecture, counseling, discussion, essay writing, etc.

Academic Education

1) Goals

Introductory stage: Developing basic academic ability

Intermediate stage: Upgrading academic ability

Pre-release stage: Fixation and application of acquired academic ability

2) Contents

English, mathematics, science, and Thai language necessary for practicing vocational training throughout the training period

3) Methods

Daytime: Group lessons at classrooms

Nighttime: Self study in dormitories

Health and Physical Education

1) Goals

Introductory stage: Enhancing basic physical strength, Understanding health and hygiene

Intermediate stage: Upgrading physical strength, Deepening understanding of health and hygiene

Pre-release stage: - ditto -

2) Contents

Introductory stage: Running, sex education, AIDS education, drug education, etc.

Intermediate stage: Soccer, basketball, volleyball, pingpong, sepatakro, sex education, etc.

Pre-release stage: - ditto -

3) Methods

Physical education: Exercise

Sex education, etc.: Lecture, using audio-visual machines

Extracurricular Activities

1) Goals

Rearing culture and independence through practicing a variety of cultural, physical, religious activities, individual or group therapy, outdoor trainings, etc.

2) Contents

Cultural activities: Drawing contest, essay contest, etc.

Physical activities: Soccer tournaments, volleyball tournaments, etc.

Special activities: Parents, guardians meeting, etc.

Religious activities: Buddhism service, lectures by guest speakers, etc.

Individual programs: Counseling, music therapy, etc.

Group programs: Group counseling, psychodrama, etc.

Outdoor activities: Camping, tour to factories, etc.

3) Methods

A variety of methods corresponding to educational contents such as Exercise, Lecture, Use of audio-visual machines.

(2) Vocational Training Plan

The following eight vocational training courses will be given in this school, through agreement with the Government of the Thailand: Welding and sheet metal work, automobile maintenance (including installation of accessories), electric wiring (including repair of household electric appliances), woodwork, machining, printing, airconditioner repairing, and construction vehicle operation. The objectives of the courses are as follows.

1) Welding and Sheet Metal Work

In welding work, training will be mainly carried out in arc welding and gas welding, which are the basics of welding work. Training will also include gas shielded arc welding and gas cutting. In sheet metal work, training will be carried out in cutting, bending, embossing, and straightening.

2) Automobile Maintenance

In this course, the following knowledge and skills will be acquired: knowledge and skills regarding disassembly, assembly, inspection, and adjustment of engines; knowledge and skills regarding steering mechanisms; skills in simple welding, sheet metal, and painting work; knowledge and skills regarding various types of measuring work, and skills in the installation of electrical equipment, etc. The purpose of this course is to train technicians so that they can widely respond to employment opportunities.

3) Electric Wiring

In this course, the following knowledge and skills will be acquired: knowledge and skills regarding indoor wiring, knowledge and skills regarding repair of household electric appliances, such as VCRs and TVs, and knowledge about electricity, etc.

4) Woodwork

In this course, knowledge and skills regarding general woodworking will be acquired through the acquisition of knowledge and skills regarding woodworking, knowledge and skills regarding manufacturing of box furniture, and carving skills.

5) Machining

Knowledge and skills regarding lathe work (the major type of metal machining work) will be acquired, making it easy for trainees to find employment. Furthermore, knowledge and skills regarding various metal machining machines will also be acquired.

6) Printing

Overall printing skills will be acquired, such as knowledge and basic skills regarding plate-making, knowledge and skills regarding printing machines, and knowledge and skills regarding bookbinding.

7) Airconditioner Repairing

Knowledge and skills regarding repair, adjustment work, and maintenance relating to air conditioners for home use, etc. will be acquired.

8) Operation of Construction Vehicle

Knowledge and skills regarding the basic operation of construction machinery and field construction skills are acquired.

It will be desirable for trainees to receive further vocational training at a vocational training school after they have worked in society for a certain period of time.

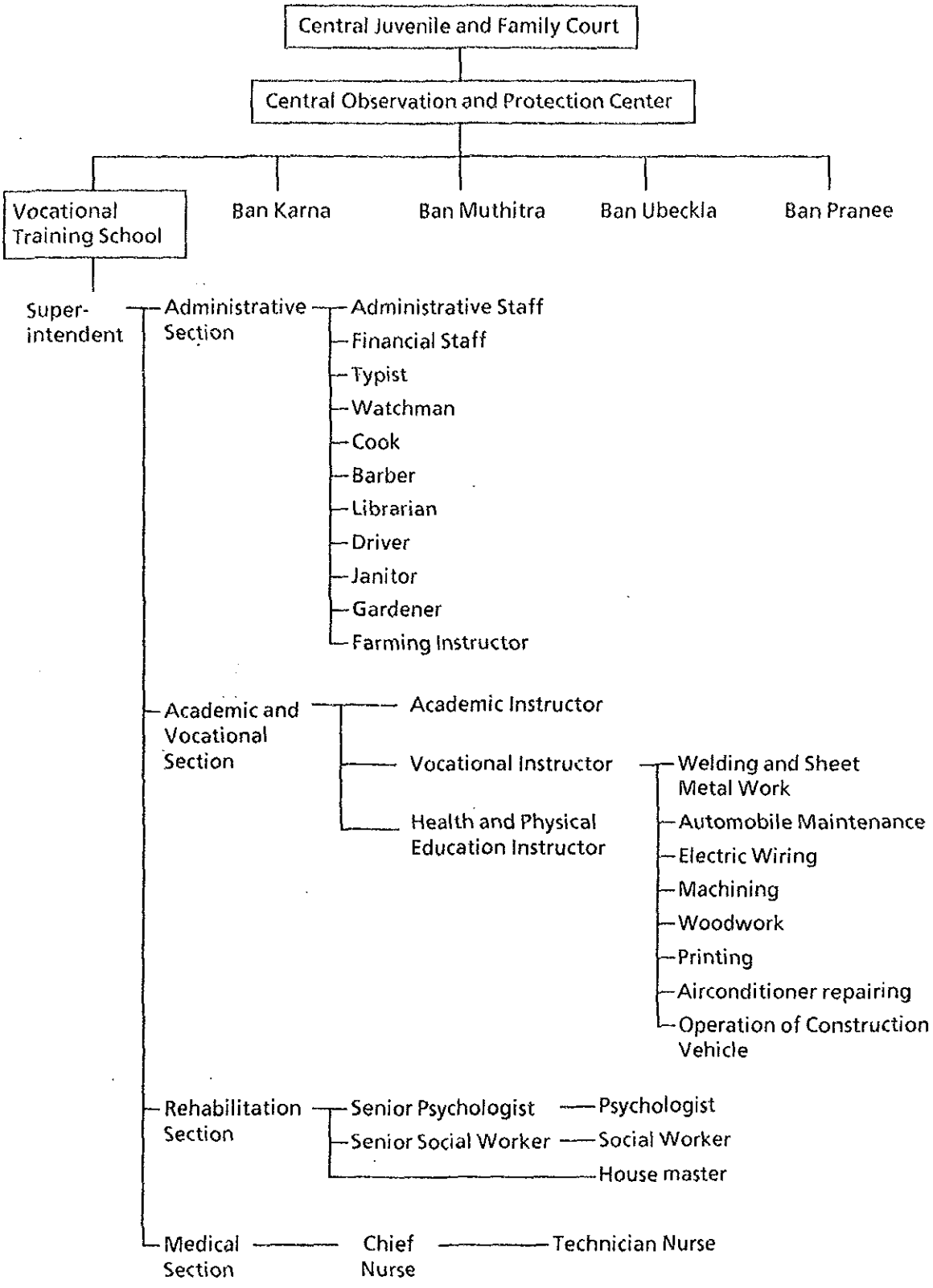


Chart 3-1 Organization Chart

Table 3-1 Configuration of Staff

Job type	Number of people	Main services	Remarks
Superintendent	1	Management and administration of the school on the whole	
(Administrative Section) Section chief	1	Supervising of general affairs service, registration service, facility management, and facility management at night and on weekends	
Administrative staff	1	Management of documents, management of supplied and lent articles, communications and adjustments between sections	
Financial staff	1	Accounting service	
Typist	1	Typing service	
Watchman	24	Security service, vocational training support, treatment support, and guidance on physical education support	Includes night duty
Cook	2	Cooking service, supervision of juveniles assigned on cooking	
Barber	1	Hair cutting service	
Librarian	1	Management of library and guidance on reading	
Driver	1	Driving service	
Janitor	1	Security service for administration building	
Gardener	1	Maintenance of the planting and support on farming	
Farming instructor	1	Guidance on farming	
Administrative Section (subtotal)	36		

Job type	Number of people	Main services	Remarks
(Academic and Vocational Section) Chief Vocational Instructor	(1)	Supervising of vocational training (One of the Instructors will be appointed as a Chief Instructor)	
Vocational Instructor	16	(common to the following courses)	Includes night duty
Welding and Sheet Metal Work	(2)	Technical guidance on each course Preparation of curriculum Housemaster support, Saturday courses support, Guidance of juveniles in the dining room, Case meeting, Treatment support	
Automobile Maintenance	(2)		
Electric Wiring	(2)		
Woodwork	(2)		
Machining	(2)		
Printing	(2)		
Airconditioner Repairing	(2)		
Operation of Construction Vehicle	(2)		
Chief Academic Instructor	(1)	Supervising of academic guidance (One of the Instructor will be appointed as a Chief Instructor)	Includes night duty
Academic Instructor	4	Mathematics, English, Science, Thai, case meeting, treatment support, physical education support, housemaster support, Saturday course support, guidance of juveniles in the canteen	Includes night duty
Health and Physical Education Instructor	1	Guidance on health, guidance on physical education and recreation, treatment support, and housemaster support	Includes night duty
Academic and Vocational Section (subtotal)	21		
(Rehabilitation Section) Senior Psychologist	1	Supervising psychologists and Saturday course support	
Psychologist	1	Orientation, group therapy, music therapy, projection therapy, seminar group, psychodrama, family therapy, pre-release education, and Saturday course support	

Job type	Number of people	Main services	Remarks
Senior Social Worker	1	Supervising social workers, supervision of public welfare activities, aftercare activities, family therapy, aftercare service activities, and Saturday course support	
Social Worker	1	Orientation, interview, case counseling, group counseling, group activities, character and behavior development therapy, creativity training, family therapy, recreation, day leave training, follow-up observation, and Saturday course support	
Housemaster	12	Management of juveniles' living, living guidance, management of the dormitory, security of the dormitory, administrative work with respect to hospitalization, orientation, group treatment, guidance on self-supporting labor, Saturday course support, management of annual events	Includes night duty
Rehabilitation Section (subtotal)	16		
(Medical Section) Chief Nurse	1	Supervising health care	
Technician Nurse	1	Health care	
Medical Section (subtotal)	2		
Staff total	76		

3-3-3 Location of the Project Site

The project site is located approximately 30 kilometers to the west of Bangkok and owned by the Ministry of Justice. It is in a rice paddy region approximately 8 kilometers to the north from the Bhudthamonton Park Intersection of the Route 338 and approximately 3.3 kilometers to the west from the Bhudthamonton-Banglane Road (paved). It is located at Saraya District, Nakhon Pathom Province.

Although the site is surrounded by rice paddies, there are signs of urbanization such as the Mahidol University campus and Royal Gem Country Club.

The site is approximately 940 meters east to west and 470 south to north. The northern boundary shifts slightly to the east making it a parallelogram. The whole area is 443,152 square meters (276 rai). There is a plan to move training schools in Bangkok to this site. An area of 54,000 square meters in the southeast section of the site is considered a most suitable lot within the compound for this project.

The lot is a reverse "L" shape composed of a training school section 300 meters east to west and 160 meters south to north and an administration office section 100 meters east to west and 60 meters south to north. Staff housing will be built by the Thai side on the east. The Thai side will also build a 12-meter-wide access road on the east side of the administration office section. The lot includes a 2,500-square-meter training field for learning how to operate construction vehicles and a 4,500-square-meter self-management farm.

The Government of Thailand plans to integrate a part of the Central Observation and Protection Center, four training schools, and a remand home existing in Bangkok to establish a training school complex including medical facilities. A definite schedule has not been made yet.

Based on the master plan prepared by the Thai side, a lot adjacent to a lot for the staff housing was chosen as a most suitable place for the project which pursues a model vocational training school.

Chart 3-2 Location of the Project Site

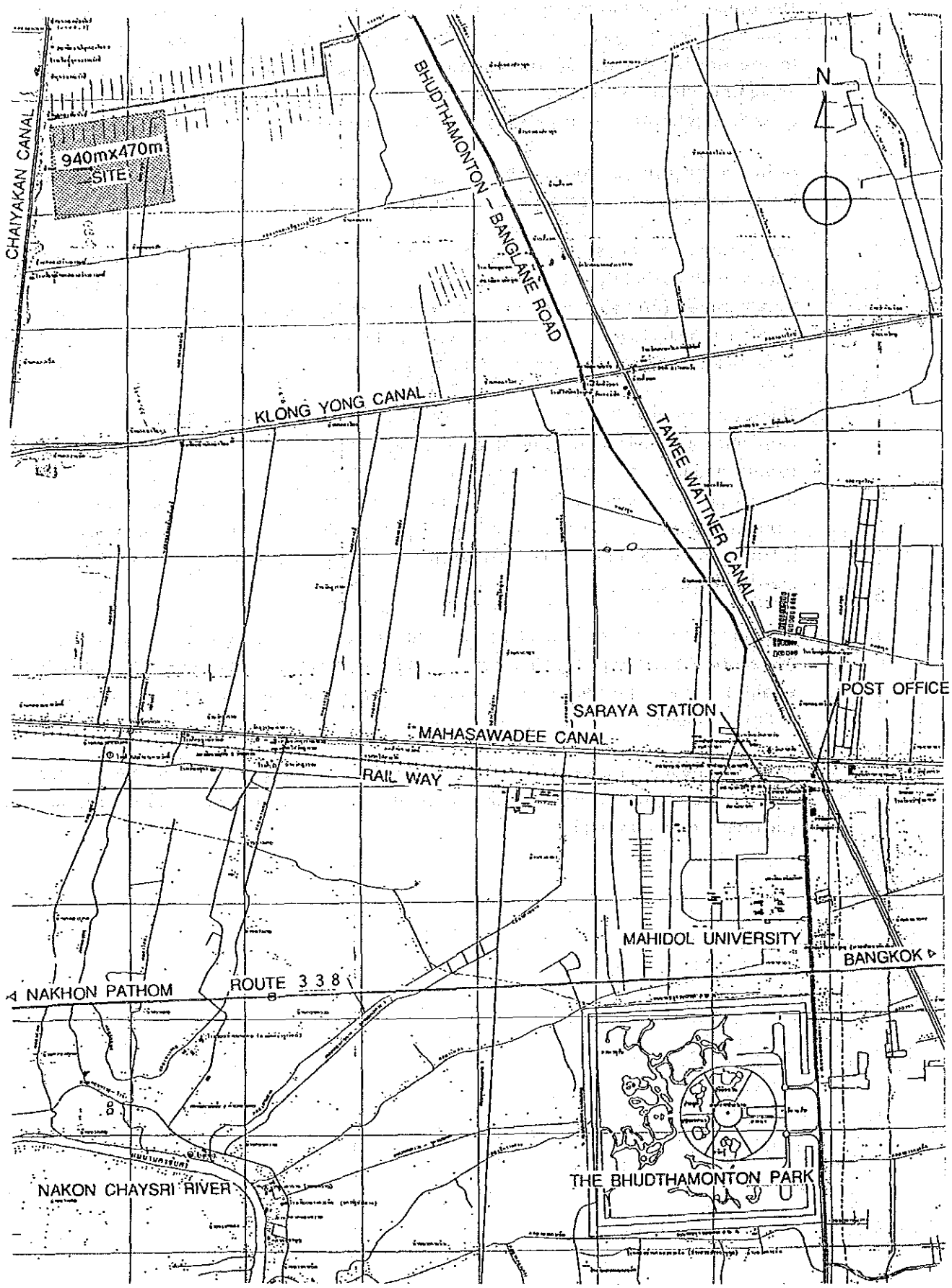
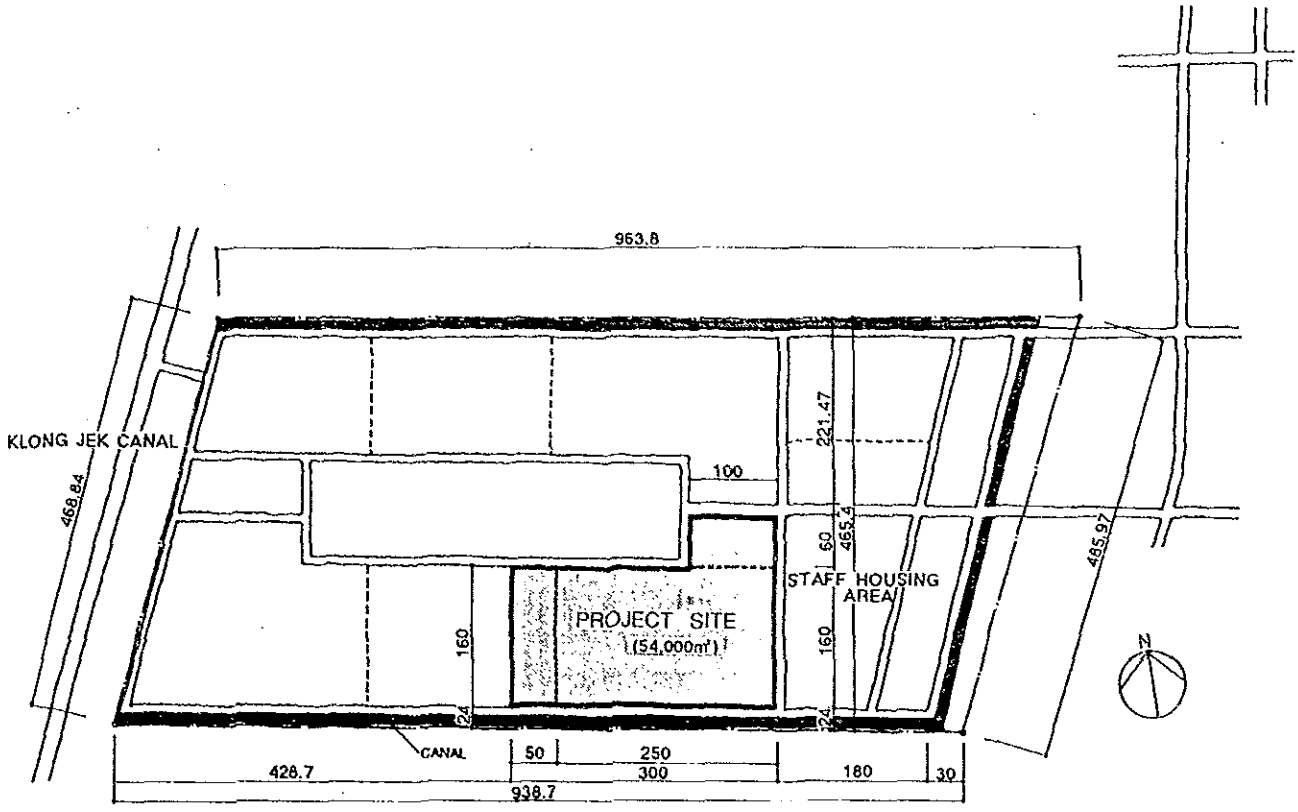


Chart 3-3 Project Site



3-3-4 Natural Conditions and Social Environments

(1) Geographical Features

The project site is in a flat rice paddy region 1 to 1.2 meters above sea level and it is surrounded by rice paddies on the north, the east and the south sides. The Klong Jek Canal, a tributary of the Tachin River runs on the west side. The canal is 22 meters wide and about 3 meters deep. The difference of elevation between the project site and the water surface is about 80 centimeters. The water level is slightly elevated to 1.1 meters above sea level after rice reaping during the period from August to October. The 1986 rainy season recorded the largest amount of precipitation and the water level of the overflown canal reached 70 to 80 centimeters above the ground level.

According to the results of water examinations of the canal, the water is suitable for irrigation, but it cannot be used for domestic use.

The canal is linear, which tells that it was built artificially for the development of farmland. On both sides of the canal are slightly higher areas which are thought to be made of earth produced when the canal was built. There are houses on these areas.

(2) Climate

Thailand is subject to tropical monsoon climate in the south and the rest is tropical savanna climate. The project site belongs to the tropical savanna zone as Bangkok does and the temperature is high throughout the year. A year is divided into two clearly distinct seasons. The rainy season is from May to October and the dry season is from November to April. About 85% of the annual amount of precipitation comes from the rainy season. March and April in the dry season are the hottest months, and the temperature sometimes exceeds 40 degrees centigrade. The period from November to February is relatively cool. The following shows temperatures and precipitation of each month.

	Jan.	Feb.	Mar.	Apr.	May	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
Highest Temperature (°C)	32	33	34	35	34	33	32	32	32	31	31	31
Lowest Temperature (°C)	21	23	25	26	25	25	25	25	24	24	23	21
Average Temperature (°C)	26.1	27.6	29.2	30.3	29.8	28.9	28.4	28.2	27.9	27.6	26.7	25.5
Precipitation (mm)	9	29	34	89	166	171	178	191	306	255	57	7
Rain Days	2	3	4	6	16	17	19	21	22	17	6	2

Constant winds blow from southwest from March to October and from northeast from November to February. The wind velocity is quite light at 1.8 to 3.0 m/second throughout the years.

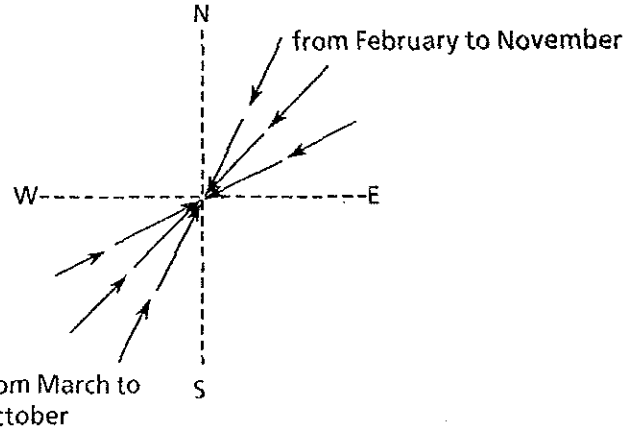


Chart 3-4 Directions of Winds Around the Project Site

(3) Geological Features

The ground conditions of the Bangkok area are as follows. There is a layer of soft clay from the surface to 15 meters underground, and then a layer of soft sand 10 to

12 meters thick. Underneath the soft sand layer lies a layer of relatively firm sand 5 to 10 meters thick, and then a layer of firm sand. When constructing high-rise buildings, concrete piles 40 to 50 meters long are used with the firm sand layer as a supporting foundation. For relatively low buildings, friction piles are used on the layer of relatively firm sand.

According to the eleven boring tests conducted in the project site, the top layer is a mixture of fine sand and soft clay from the surface to 18 meters underground, and the N value is less than 5. Underneath the top layer lies a layer of firm silty sand, and the N value is 20 to 40.

(4) Social Environments

1) Infrastructure

The Bhudthamonton-Banglane Road that goes from the Route 338 to the project site was completely paved in 1992. The building lot is about 3.3 kilometers west of the Bhudthamonton-Banglane Road, and the access road to the project site has already by laterite-paved by the Thai side. They plan to asphalt it in accordance with the construction schedule.

For electricity, it is possible to lay an electric cable for about 5.1 kilometers to the project site from the 22KV distribution line (PEA) laid along the Bhudthamonton-Banglane Road. The Thai side will lay an electric cable along the access road at their expense in accordance with the construction schedule.

There is no city water available around the project site for water supply. Required water volume for this project will be supplied by the Thai side from well system consist of a deep well, a pumping plant and a elevated water tank. The Thai side will bear the construction expenses for the well system.

Following the waste water standard of Thailand, waste water treatment plant will be constructed, and processed water will be discharged into the canal outside the project site.

For telephone, it is possible to lay a telephone cable for about 6.25 kilometers to the project site from the telephone circuit (TOT) laid along the Bhudthamonton-Banglane Road. The Thai side will lay a telephone cable along the access road at their expense in accordance with the construction schedule.

There is no gas available around the project site. LPG cylinders will be used for this project.

2) Living Environments

The area including the project site is in an alluvial delta land of the Chaopuraya, the Tachin and the Kwai Rivers. It is a low and flat land with a small difference of altitude between the sea level of the Siam Bay and the land.

There are many canals around the project site in a gridiron pattern at intervals of 2 to 5 kilometers. These canals are used for irrigation and water transportation in the Tachin River region. There are many villages along each canal, and village has temples and schools.

The completion of a Route 338 that connects Bangkok and Nakhon Pathom has been promoting the development of this area as a suburb of Bangkok. There is a highway junction halfway between Bangkok and this area, allowing people to go to the airport and Bang Na (near Ban Karna) without having to go through Bangkok. Currently, commercial zones and apartment zones are forming along the Route 338. Especially, the area that stretches from Bangkok through the Bhudthamonton Intersection to Nakorn Pathom is rapidly developing as a bedroom town of Bangkok, and a number of apartment buildings of 5 to 10 stories and stores are under construction. Wide-stretching paddy fields are also being turned into housing lots, and houses are under construction in various places. The whole area promises further expansion in the future.

Houses stand on the west side of the project site along a canal which functions as a main transportation means. There are Sawan Arom Village about 1 kilometer to the south and Chaiyakan Village adjacent on the north side. Sawan Arom has an elementary school, and Chaiyakan has a temple, a public health center, and an elementary school. There also are villages along the Yong Canal 2 kilometers to the south and the Tawee Wattner Canal along the access road on the east. There are 7 elementary schools within 5 kilometers from the project site. It seems that there is no problem with living environments.

The intersecting point of the Yong Canal and the Tawee Wattner Canal seems to be the center of this area, where a loading port for farm products is located in addition to houses, a temple and an elementary school.

The south-bound line of Thai National Railways runs from east to west 3.5 kilometers to the south from the project site, and the Mahasawadee Canal runs parallel to the railway. There is a concentration of public facilities here including a railway station, a post office, and a hospital in addition to condominiums and restaurants, forming an administrative base of the wide-stretching area. The Mahidol University campus is on the south of this area.

The whole neighborhood is called the Saraya District where a large amount of capital is now being invested as a suburb of Bangkok. Mahidol University has recently moved to this district, and campus buildings and roads around the university are still under construction. A new golf course, Royal Gem Country Club, was laid out about 3 kilometers to the south of the project site in 1992. There is a spectacular construction rush of high-rise condominiums. However, vestiges of villages formed along canals still remain in the neighborhood of the project site, providing a recommendable environment for constructing a juvenile education institution.

3-3-5 Outline of Facilities and Equipment

(1) Facilities

1)	Administration Building			
	RC	2F		1,680 m²
2)	Academic Education Building			
	RC + S	1F		580 m²
3)	Central Building			
	RC	2F		1,000 m²
4)	Service Building			
	RC	1F		350 m²
5)	Gymnasium			
	RC + S	1F		700 m²
6)	Cafeteria			
	RC + S	1F		325 m²
7)	Shower Building			
	RC + S	1F		110 m²
8)	Toilet Building			
	RC + S	1F		65 m²
9)	Dormitory - 1, 2, 3, 4, 5, 6			
	RC	2F		5,820 m²
10)	Workshop - 1, 2, 3, 4			
	RC + S	1F		4,440 m²
11)	Construction Vehicle Operation Training Building			
	RC + S	1F		260 m²
12)	Garage for Farm Machineries			
	RC + S	1F		75 m²
13)	Connecting Corridor			
	RC + S	1F		1,695 m²
			Total	17,100 m²

(2) Outline of equipment

1) Outline of general equipment

Daily life and training are carried out according to the administration plan. The main equipment and materials needed for the training and their purposes are as follows.

- Pickup truck
- Microbus (small)
- Microbus (large)
- Computer
- Prophylactic Unit
- Tractor used for farming
- Video projector
- Basketball backstops

2) Outline of equipment used for vocational training

The equipment and materials used for vocational training that will be needed for the various vocational training courses under this plan have been studied in order to follow the training objectives and curriculum. An outline of the equipment is as follows.

- Welding and Sheet Metal Work Course
  - Hand bending three rollers
  - Shearing machine
  - TIG welding machine
  - Bar bender
  - Other

- Automobile Maintenance Course
  - Air compressor
  - Wheel balancer
  - Emission tester
  - Two-pole lift
  - Other

- Electric Wiring Course
  - Drying oven
  - Insulation puncture tester
  - Coil winding machine, manual type
  - Low tension switch board for training use
  - Other

- Woodwork Course
  - Hand feed planer
  - Automatic single surface planer
  - Circular saw with sliding table
  - Straight-line rip saw
  - Universal tool grinder
  - Universal circular saw
  - 4 Spindle tenoner
  - Wood working lathe
  - Wood working press
  - Dust collecting system
  - Other

- Machining Course
  - Precision lathe
  - Universal milling machine
  - Shaper
  - Upright drilling machine
  - Band sawing machine
  - Other

- Printing Course
  - Offset printing press
  - Power paper cutter
  - Bookbinding machine
  - Other

- Airconditioner Repairing Course
  - Refrigeration cycle training unit
  - Airconditioner for training use
  - Other

- Construction Vehicle Operation Course
  - Swamp bulldozer
  - Wheel loader
  - Motor grader
  - Hydraulic excavator

3-3-6 Operation and Maintenance Plan

(1) Maintenance Plan for Facilities

1) Buildings

Maintenance of buildings mainly consist of daily routine maintenance such as cleaning, reconditioning of wear and tear due to utilization and deterioration arising from breakage and aging, and guarding against crimes. For routine maintenance, scrupulous and frequent cleaning, prompting the careful usage and early discovery of breakage and defects of the buildings, will ultimately result in the prolonged life of facilities, utility service equipment and vocational training equipment.

As to repairs, provided that the expected life span of the buildings of the Project is 30 years, the repair works involving the structural components will not be necessary, it will be mainly executed regarding interior and exterior finishing. Remodeling and modification will be required by the mode of operation of the users of buildings such as the alteration of the objectives of the buildings, increase in the staff number, and alteration of vocational training activities. It will be necessary to appoint person in charge of facility from the Administration Section and to secure for systematic inspection and reconditioning.

In the inspection and repair of buildings, periodical execution of the following items is recommended.

(Exterior)

- Repair and repainting of exterior finish and inspection of cracks caused by neutralized concrete ..... (once / 5 years)
- Inspection and repair, repainting of roof slab
  ..... (inspection: once / year)
- Inspection and partial repair of roof waterproofing
  ..... (inspection: once / year)
  (others: as occasion calls)
- Periodical cleaning of downspouts, drains, etc.
  ..... (once / month)
- Inspection, repair of sealing of exterior doors and windows
  ..... (once / year)
- Repainting of exterior doors and windows
  ..... (once / 5 years)

- Periodical inspection and cleaning of drainage gutters, manholes, etc.
  ..... (once / 6 months)

- Periodical checkup of landscaping and gardening
  ..... (as occasion calls)

As to guarding, it will be necessary to form a guarding system mainly aiming at the prevention of theft of vocational training equipment, utility service equipment, by the execution of checking of incoming and outgoing facility users and of carrying-in and out of articles, and around-the-clock patrols.

2) Utility Service Systems

With respect to the various utility service systems such as electrical, air-conditioning and ventilation, plumbing, etc., in addition to daily operation control and periodical inspection to utility service equipment, maintenance such as repair in case of failure is necessary. It is important to form a maintenance system preventing failure and accidents and securing the smooth operation of facilities by operating the equipment properly and executing daily inspection, lubrication, adjustment, painting and repair. Utility service systems of the facility is, with respect to their purposes, to be basic. At least a technician, as maintenance personnel for electricity, air-conditioning, ventilation and plumbing is considered necessary. Utility service equipment are to be periodically overhauled, degenerated parts are to be replaced, and each equipment is to be inspected and maintained with the predetermined periods from several months to several years. For this purpose it is also necessary to dispatch appropriate engineers to the facility from a certain organization as Design & Construction Div., Ministry of Justice. The general equipment themselves are to be replaced at the end of their life span indicated below.

Durable Years of Equipment

(Electrical Equipment)

Panel Board	20 to 30 years
Fluorescent Lamps	5,000 to 10,000 hours
Incandescent Lamps	1,000 to 1,500 hours
Telephone Exchange	40 years
Public Address System Equipment	10 to 20 years

(Plumbing Equipment)

Pumps	10 to 15 years
Tanks	15 to 20 years
Pipes and Valves	10 to 15 years
Plumbing Fixtures	25 years
Fire Fighting Systems	20 years

Fire Extinguisher (Chemical exchange)	5 years
Gas Equipment	6 years
Sewage Treatment Equipment	7 years

(Air-conditioning and Ventilation Equipment)

Pipes	10 to 15 years
Fans	10 to 15 years
Room-Airconditioners	5 to 10 years
Package-type Airconditioners	5 to 10 years

(2) Plan for Maintenance of Equipment

For the equipment for vocational training to be provided at the Vocational Training School, it is necessary to set up systems not only for day-to-day maintenance and management to ensure that their functions will be preserved, but also for speedy repair in case of breakdown and the uninterrupted supply of spare parts.

1) System for Maintenance of Equipment

- A majority of the equipment for vocational training to be introduced through implementation of this Project are not manufactured in Thailand and therefore need to be imported from Japan. However, there are quite a large number of manufacturers and agents for general equipment and vocational training equipment in Thailand, so a certain degree of after-sales service in the form of repair, etc. can be expected from those manufacturers and agents.

- In cases where the teachers or instructors are not accustomed to operating the equipment for vocational training, initial troubles, defined as troubles occurring due to incorrect operations within one year after the start of use, tend to happen much more frequently than in Japan. Trouble can also be triggered by invisible damages due to long-distance transportation, as well as the natural conditions of Thailand. Since most of these failures can be corrected by such simple measures as exchanging of spare parts at an early stage, it is important for the Vocational Training Dept. to receive appropriate technical transfer on how to operate the equipment and carry out day-to-day maintenance from the early stages of installation and adjustment of the equipment during the construction period.

- Sufficient knowledge on operation of the equipment and thorough execution of day-to-day maintenance and management

  Day-to-day maintenance and management of the equipment must be conducted by the teachers and instructors at the Vocational Training School. In order to prevent misuses which are the most common cause of the breakdown of equipment, and also to ensure adequate maintenance

and management closely following the usage manuals, it is crucial that appropriate technical guidance be provided by the Japanese side to those people in charge.
In conclusion, the guidance described below should be provided by the Japanese side at the time of installation of the equipment so that the maintenance and management of the equipment for vocational training will be undertaken correctly:

- 1. The methods for storing and managing the supplied spare parts and expendables will be introduced to the Thai side.

- 2. Clear-cut and accurate manuals for repairing the equipment are to be prepared and guidance on how to utilize and preserve them will be provided to the Thai side.

- 3. Methods for operating and repairing the equipment will be explained by Japanese engineers who have both the expertise and linguistic ability to do so.

2) Procurement of Consumables

Components that constitute equipment are divided into consumables that must be exchanged regularly with the progress of use of the equipment and repair components that are required at the time of failures. The repair parts to be used for the initial year that accompany the equipment when it is procured do not necessarily contain everything that is required at the time of breakdown. Hence, consumables and missing components must be purchased by the budget of the Thai side. However, strongly the personnel system for maintenance and management may be reinforced, maintenance and management will be impossible without repair parts. As a result, the Thai side must reserve a budget for the purchase of the repair parts.

Costs related to procurement of consumables and spare parts essential for the operation of general and vocational training equipment tend to vary depending on the frequency of usage of the equipment. Consequently, trials and experience of some sort are required for determining the adequate amount required for procuring them. Many of the equipment to be used at the Vocational Training School will require consumables and repair parts.

(3) Estimated Costs for Operation and Maintenance

Estimation was made on the annual costs required for operation and maintenance of the facilities and vocational training equipment, to be covered by Thai side after the completion of the project.

The following calculations are based on the prices as of March 1993.

1) Running Cost for Facilities

a) Personnel Costs

Estimation will be made on Personnel Costs, which will take up a major part of the operation and maintenance costs of the project, according to the personnel plan and operation and maintenance plan by Thai side at the time of this foundation.

Salary for 46 persons	TB	3,053,000/year
Payment for 30 persons	TB	1,096,800/year
Official Welfare Services cost/over time pay	TB	108,300/year
Total	TB	4,258,100/year

b) Energy Costs

The annual running cost for the facilities is estimated as follows based on respective consumption of water, electricity, LPG and fuel oil.

- Water

156 m^3/day × 365 × 0.75 × TB2.5 m^3 = TB 106,800/year

Sub-total TB 106,800/year

- Electricity

[For facilities]

Lighting/ Receptacles	200KW × 0.12 × 8 hr/day × 365 × TB1.23/KW	= TB86,200/year
General Airconditioners	40KW × 0.3 × 8 hr/day × 240 × 5/7 day × TB1.23/KW	= TB15,200/year
Ventilators	10KW × 0.7 × 8 hr/day × 365 × 5/7 day × TB1.23/KW	= TB18,000/year
Waste Water treatment	10KW × 0.3 × 8 hr/day × 365 day × TB1.23/KW	= TB32,300/year
	Sub total	= TB151,700/year

[For vocational training]

Vocational training equipment	500KW × 0.15 × 6 hr/day × 365 × 5/7 day × TB1.23/KW	= TB144,300/year
	Sub total	= TB144,300/year
	Sub total:	= TB296,000/year

- LPG (Liquefied Petroleum Gas)

Kitchen	600 Food/day × 700 Kcal/Food/ 11,000 Kcal/kg × 365 × TB11/kg	= TB153,300/year
	Sub total	= TB153,300/year

- Fuel Oil

According to the estimation by Thai side.	TB300,000/year
Sub total	TB300,000/year

Grand Total	TB856,100/year

c) Maintenance Cost for Facilities

- *Buildings*
  Maintenance, inspection and repair cost for buildings can be regarded as Repairing Expenses, which vary substantially depending on the age of buildings. For example, while repairing expenses for buildings are presumed to be about TB3/m^2 annually until about 5 years after completion, they increase abruptly thereafter. The following is the estimation at the rate of TB40/m^2 for annual average expenses of a assumed life span of 30 years.

  TB40/m^2/year × 17,100 m^2 = TB684,000/year

- Utility Service Systems
  As to the costs for inspection and maintenance of the utility service systems, there will be very few exchange of parts up to 5 years after the completion of facilities, but the next 5 years will necessitate some number of exchanges of parts and the systems themselves. The average annual expenditure required for maintenance of systems, in a 10-year span, is approximately 3% of the total construction costs for utility service systems as the utility service system for the project is simple.

  TB60,000,000 × 3%/year = TB1,800,000/year

Sub-total	TB2,484,000/year

2) *Running Cost for Vocational Training Equipment*

a) Maintenance Costs for Vocational Training Equipment, etc.
Maintenance, inspection and repair costs for the equipment TB 602,000/year

b) Materials for Vocational Training TB 614,000/year

Sub total	TB 1,216,000/year

(4) Summary of Running Costs

1) Running Costs for Facilities

a)	Personnel Cost	TB 4,258,100/year
b)	Energy Cost for Facilities	TB 856,100/year
c)	Maintenance Costs for facilities	TB 2,484,000/year
	Sub total	TB 7,598,200/year

2) Running Costs for Vocational Training Equipment:

a)	Maintenance costs for vocational training equipment	TB 602,000/year
b)	Materials for Vocational Training	TB 614,000/year
	Sub total	TB 1,216,000/year
	Total	TB 8,814,200/year

(5) Considerations on Running Costs

1) Running Cost for Facilities

As to a) Personnel Cost and b) Energy cost, amount estimated above exceed those studied and expected by Thai side a little.
As to c) Maintenance cost for facilities, this cost will be very small up to 5 years after completion of the facilities, but the next 5 years, this cost may increase significantly. It is advisable after 5 years from the completion of the facilities to procure budget for possible maintenance cost for facilities as above estimated.

2) Running Costs for Vocational Training Equipment

Estimated budget for running the vocational training equipment is mostly equivalent to that by Thai side.

It is expected that the budget which Thai side will procure will mostly cover the necessary expense for operating the Vocational Training School for 5 years after the completion of the facilities.

3-4 Technical Cooperation

The Project, aiming at strengthening and enhancement of function and system of the juvenile corrections in Thailand, endeavors to establish an innovated system to effectively rehabilitate problem youths dropped out from the society through setting up

a new model vocational training school. It is planned that, consequently, a variety of more upgraded education including vocational training compared with those of the existing training schools are introduced and implemented in the new school.

It is afraid, however, that less experienced concerned instructors of the new facility, immediately after the facility being completed may find it difficult to efficiently run and administer the new facility as well as practice high level of education and training of all areas including vocational training satisfactorily with the following reasons.

Concerned staff of the new school lack in experience to implement organized and well-planned educational treatment based upon an established fundamental treatment plan without which any sufficient educational activities to rehabilitate problem youths with respect for law as well as human right of individual youth are not made possible.

Concerned staff of the new facility lack in knowledge of method to evaluate progress of individual juveniles, without which any effective education cannot be practiced.

Concerned staff of the new facility are less experienced to conduct upgraded guidance or psychotherapy techniques including interview or group counselling to be initiated into the facility.

When the Project being implemented staff organization and security system different from those of the existing training schools are introduced; more innovated educational methods such as life guidance including psychotherapeutic techniques, interview and other methods employing a variety of audio-visual equipment should be initiated; upgraded machines and equipment of the vocational training should be installed and fully utilized.

Along with the matters written above, the existing facilities of Thailand fail to conduct appropriate educational activities because of their inadequate construction plan or building structures. Also, Thai staff have scarce ideas how they construct juvenile correctional facility where upgraded education can be fully implemented. It is necessary, consequently, that Japanese idea as to construction of juvenile correctional facility which emphasizes education and training most should be conveyed to Thailand through implementation of this Project.

It is judged, consequently, that when intending to grade up the capacity of administration and technical instruction of concerned staff working with the new facility, it is inevitable to send technical experts to Thailand as well as train Thai staff in Japan to practice technical cooperation covering such areas as correctional education plan, vocational training plan, education in dormitories, individual education method, adjustment of family problems or job placement at the time of returning to the society, technical instruction of each vocational training course, classification method, facility planning and so on, thus making effectiveness of this Grand Aid Project greatest.

CHAPTER 4 BASIC DESIGN

Chapter 4: Basic Design

4-1 Design Policy

The following are the fundamental policies adopted for drawing up the basic design of the facilities and equipment:

(1) To design facilities that add diversity and substance to the daily life of juveniles who spend their time there; facilities that encourage juveniles to rehabilitate themselves in preparation for their return to social life.

(2) To design facilities that are not only appreciated by the staff who work there but also allow efficient staffing and prevent accidents.

(3) To design facilities safety-oriented and allow efficient training to be carried out.

(4) To design facilities that are easy to use, easy to maintain, and conform to the cultural and natural environment of Thailand.

(5) To draw up a design that takes fully into account the local construction techniques, methods and standards and also uses locally procured materials and equipment wherever possible.

(6) To select systems and equipment that are easy to maintain and manage when drawing up the utility plan.

(7) To also select systems and equipment that are easy to maintain and manage when drawing up the equipment plan.

Some of the design principles listed are explained in more detail below:

4-1-1 Policies for Coping with the Natural Conditions

The meteorological conditions of the construction site are an important factor for determining details of the architectural design including establishment of living space and shape of buildings.

The site for the Project, at approximately 14°N, 100°E, is located roughly 30 km to the west from the center of Bangkok, Thailand. The climate of the region is tropical/savanna type, with average annual temperature of 27.6°C, average annual humidity of 79.0%, and average annual rainfall of 1,543.9 mm.

It is therefore necessary to establish appropriate standards for indoor temperature and humidity, and also provide protection and insulation against sunlight and humidity.

These natural conditions are vital factors for drawing up an architectural design that ensures the comfort, economy, safety and functionality of the indoor space.

(1) Countermeasures against heat and humidity

The temperature of this region is more or less stable throughout the year at 25° - 30°C and the humidity is also within the range of 73% - 84%. The maximum temperature can exceed 40°C during the hot months of March to May. The high-temperature, high-humidity climate throughout the year necessitates an effective heat insulation system for maintaining a comfortable living space. Ventilation through the roof space also helps alleviate external loads.

(2) Countermeasures against the wind

The wind of the region is characterized by gentle breeze with annual average wind force of only 4.5 Knots (2.3 m/sec.) The maximum instantaneous wind force is about 29 m/sec. which is not strong enough to affect buildings. Natural ventilation that consumes no energy should be adopted where possible in the architectural design.

(3) Countermeasures against rainfall

The total annual rainfall is 1,543.9 mm, out of which 85% is concentrated in the rainy months of May through October. The remaining 15% falls during the dry months of November through April. The floor height of the 1st Floors is raised to guard against floods during the rainy season, and an adequate slope is added to the site to prevent pools of water from forming locally. As to the buildings, a sloped roof system or waterproof roof system is adopted as a rule so that as much rain water as possible is dispersed from the roof and drained into the ground.

(4) Countermeasures against exposure to rainfall

The site is close to the 14°N line and is exposed to strong sunlight. Adjustment of intake of sunlight through appropriate positioning of canopies, eaves and louvers and selection of insulation materials for external walls and roofs and therefore a critical part of the building design. The amount of sunlight on the western and eastern walls tends to be constant from the morning to afternoon, but the sun rays from the west in the afternoon coincide with the peak increase of temperature, so the amount of heat absorbed by the western walls, in particular, should be kept down to a minimum. The facilities are also laid out along the east-west axis as a rule.

4-1-2 Policies for Coping with the Social Conditions

Many of the juveniles who come to this School are from poor families. Affected by the drastic changes in the social structure of Thailand characterized by the changing urban social structure and the widening gap between the rich and poor accelerated by the

social growth of Thailand, they had committed crimes or had fallen into delinquency. The Vocational Training School houses such juveniles from poor families who had fallen into delinquency and provides them with sufficient vocational training to equip them with vocational skills that meet current requirements, thereby enabling them to return to social life as rehabilitated laborers. The Project aims at providing a safe and amenable environment where juveniles can live with peace of mind and undergo efficient vocational training.

And the Vocational Training School is positioned as a model facility for juvenile training schools in Thailand, and the focus of the facility design is placed on providing a modest but healthy environment adequate for educational purposes rather than creating a design that conforms to those of existing facilities. The Center is roughly divided into two parts: a general area where outside visitors are free to come and go, and a training area for educating and training juveniles. A clear division must be made between these two areas. As to the environment accommodating the facilities, an affective use should be made of green zones and water features so that a psychologically restful environment can be achieved.

4-1-3 Policies on the Local Construction Circumstances

Since the facilities will be constructed under grant aid from the government of Japan, they will be exempted from the procedure of applying for a building permit which is commonly required of general facilities of private companies. Consequently, the facilities are also free from the procedures for obtaining authorized signatures for detail design documents prepared by local consultants which is obligatory in some nations at the time of applying for confirmation of a grant aid project. However, the design of facilities and selection of equipment should conform to regulations on urban design, the building standard act, safety codes and other local laws and provisions.

4-1-4 Policies on Utilization of Local Subcontractors and Local Materials

Although the main contractor for the construction work for the facilities is officially a Japanese corporation, the Project will relay a great deal on Thai firms for subcontractor work.

The level of skills maintained by local construction companies in Thailand is high among Southeast Asian countries and those firms are regarded as having sufficient expertise.

Thailand is generally rich in labor force, but there is a shortage of skilled workers. Almost all types of construction materials and equipment, excluding some utility-related devices, are locally available.

Consequently, from the aspect of efficient management and maintenance after completion of the facilities, local products should be utilized wherever possible. It is also important to adopt a construction method which can be sufficiently covered by the technical standard of local subcontractors, so that a design that contributes to the