## BASIC DESIGN STUDY REPORT ON THE PROJECT FOR IMPROVEMENT OF THE NATIONAL TUBERCULOSIS CENTER IN THE KINGDOM OF CAMBODIA

JANUARY 2000

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)
PACIFIC CONSULTANTS INTERNATIONAL (PCI)
K. ITO ARCHITECTS & ENGINEERS INC.

PREFACE

In response to a request from the Government of the Kingdom of Cambodia, the Government of

Japan decided to conduct a basic design study on the Project for Improvement of The National

Tuberculosis Center, and entrusted the study to the Japan International Cooperation Agency

(JICA).

JICA sent to Cambodia a study team from 1 April to 5 May, 1999. The team held discussions

with the officials concerned of the Government of Cambodia, and conducted a field study at the

study area. After the team returned to Japan, further studies were made. Then, two missions

were sent to Cambodia in order to discuss a draft report from 13 July to 5 August and a draft

final report from 24 October to 12 November, 1999. And as these results, the present report was

finalized.

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 Cambodia for their close cooperation extended to the teams.

January 2000

Kimio Fujita

President

Japan International Cooperation Agency

## LETTER OF TRANSMITTAL

We are pleased to submit to you the basic design study report on the Project for Improvement of The National Tuberculosis Center in the Kingdom of Cambodia.

This study was conducted by Pacific Consultants International in association with K.ITO Architects & Engineers, Inc. under a contract to JICA, during the period from 25 March, 1999 to 14 February, 2000. In conducting the study, we have examined the feasibility and rationale of the project with due consideration to the present situation of Cambodia and formulated the most appropriate basic design for the project under Japan's grant aid scheme.

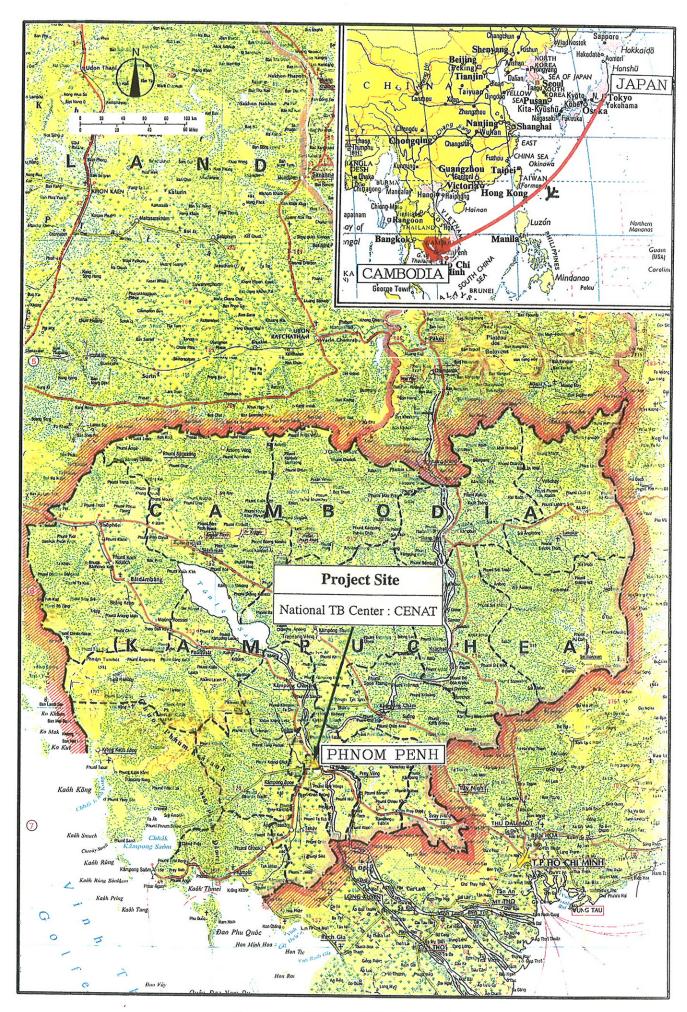
Finally, we hope that this report will contribute to further promotion of the project.

Very truly yours,

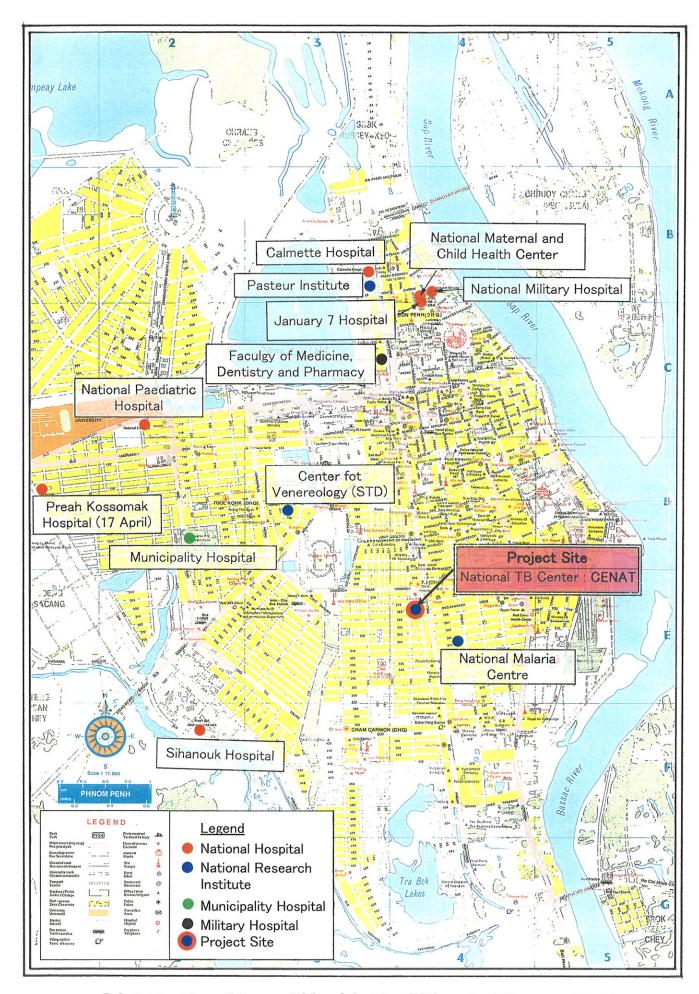
Tetsuji Hatano Project Manager,

Basic Design Study Team on the Project for Improvement of the National Tuberculosis Center in the Kingdom of Cambodia Pacific Consultants International

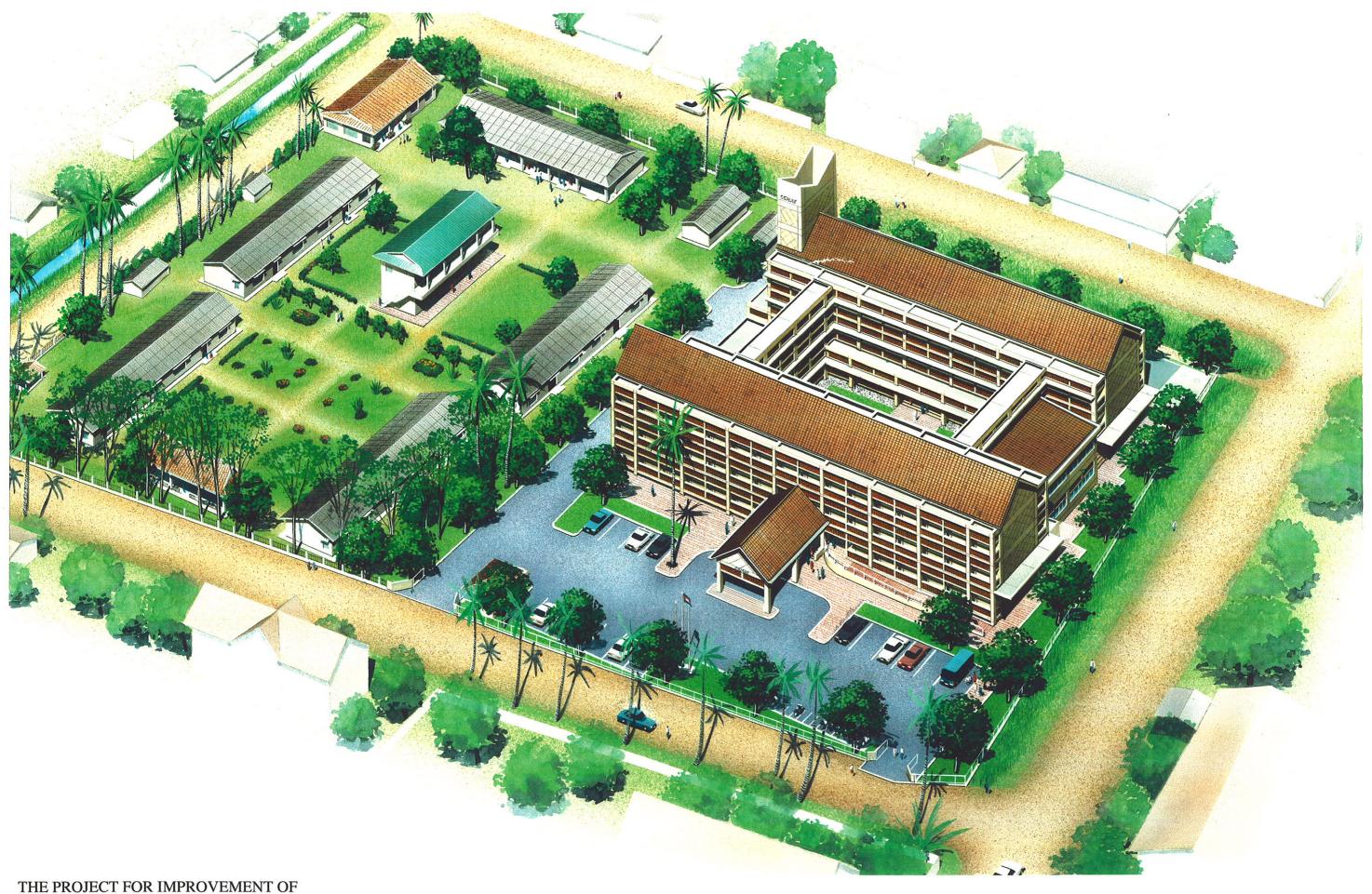
in association with K.ITO Architects & Engineers, Inc.



**Location Map of Project Site** 

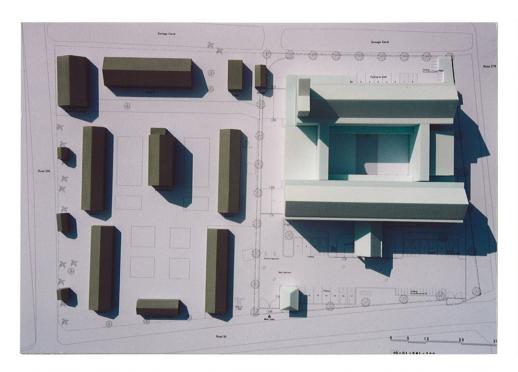


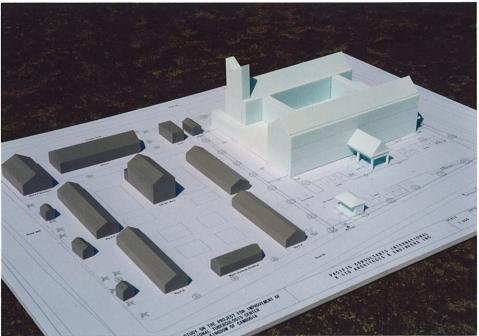
Distribution Map of Health Facilities in Phnom Penh



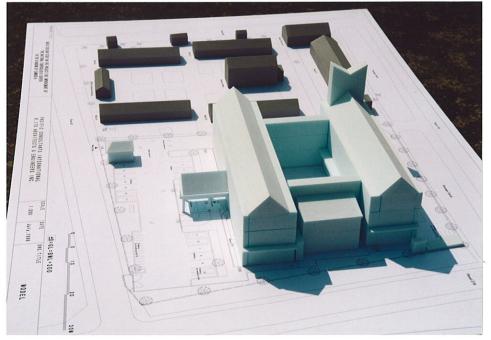
THE PROJECT FOR IMPROVEMENT OF THE NATIONAL TUBERCULOSIS CENTER IN THE KINGDOM OF CAMBODIA

PACIFIC CONSULTANTS INTERNATIONAL K.ITO ARCHITECTS & ENGINEERS INC.









THE PROJECT FOR IMPROVEMENT OF THE NATIONAL TUBERCULOSIS CENTER IN THE KINGDOM OF CAMBODIA

PACIFIC CONSULTANTS INTERNATIONAL K.ITO ARCHITECTS & ENGINEERS INC.

Model Photos

## **ABBREVIATION**

A/V	Audio Visual
BOD	Biochemical Oxygen Demand
CENAT	National Tuberculosis Center
CMS	Central Medical Supply
COD	Chemical Oxygen Demand
DOTS	Directly Observed Treatment Short Course
EDC	Electricite Du Cambodge
E/N	Exchange of Notes
JICA	Japan International Cooperation Agency
LCD	Liquid Crystal Device
MDF	Main Distribution Frame
MEC	Medical Engineering Center
МОН	Ministry of Health
MSF	Medecins Sans Frontieres
NGO	Non-Governmental Organization
NTP	National Tuberculosis Program
PABX	Private Automatic Branch Exchange
PIP	Public Investment Program
PTTC	Project Type Technical Cooperation
R&D	Research & Development
ТВ	Tuberculosis
TOR	Terms of Reference
WB	World Bank
WFP	World Food Program
WHO	World Health Organization

## Final Report Contents

Preface

Letter of Transmittal

Location Map of Project Site / Distribution Map of Health Facilities in Phnom Penh Perspective / Model Photo

Abbreviation

			Page
CHAPTER 1	BACK	GROUND OF THE PROJECT	1 - 1
1-1	Backgr	round of the Request	1 - 1
1-2	Compo	onents of the Request	1 - 3
CHAPTER 2	CONT	ENTS OF THE PROJECT	2 - 1
2-1	Objecti	ive of the Project	2 - 1
2-2	Basic (	Concept of the Project	2 - 1
2-2-	-1 Po	olicy of the Cooperation	2 - 1
2-2-	2 St	udy Result and Examination of the Contents of the Request	2 - 4
2-3	Basic I	Design	2 - 8
2-3-	1 De	esign Concept	2 - 8
2-3-	2 St	udy of the Design Criteria	2 - 9
	(1)	Basic Concept for the Determination of Contents and scale of Facilities	2 - 9
	(2)	Study for the Number of Rooms	2 -10
	(3)	Computation of Scale of Each Room	2 -13
	(4)	Facilities Required and Area of Each Facility	2 -22
	(5)	Design of Equipment	2 -23
2-3-	3 Ba	asic Plan	2 -25
	(1)	Site Layout Plan	2 -25
	(2)	Architectural Plan	2 -26
	(3)	Structural Plan	2 -33
	(4)	Utility Plan	2 -35
	(5)	Equipment Plan	2 -45
	(6)	Building Material Plan	2 -56
	(7)	Basic Design Drawings and Equipment List	2 -59

CHAPTER 3 IM	IPLEMENTATION PLAN
3-1 Im	aplementation Plan
3-1-1	Implementation Concept
3-1-2	Implementation Conditions
3-1-3	Scope of Works
3-1-4	Consultant Supervision
3-1-5	Procurement Plan
3-1-6	Implementation Schedule
3-1-7	Obligation of Recipient Country
3-2 O <sub>I</sub>	peration and Maintenance Plan
3-2-1	Operational Body
3-2-2	Operation and Maintenance Plan 3 - 19
CHAPTER 4 PR	OJECT EVALUATION AND RECOMMENDATIONS 4 - 1
4-1 Pr	oject Effect
4-2 Re	ecommendation 4 - 2
APPENDICES	
APPENDIX-1	MEMBERS OF THE STUDY TEAM
APPENDIX-2	SURVEY SCHEDULE
APPENDIX-3	LIST OF PERSONS CONCERNED IN THE RECIPIENT COUNTRY
APPENDIX-4	MINUTES OF DISCUSSIONS (April 9, July 28 and November 4, 1999)
APPENDIX-5	EXTENT OF WORKS
APPENDIX-6	BUDGET FOR MINISTRY OF HEALTH
APPENDIX-7	TRAINING CURRICULUM IN CENAT
APPENDIX-8	NUMBER OF OUTPATIENTS AND EXAMINATIONS
APPENDIX-9	DRAWINGS OF SITE SURVEY
APPENDIX-1	0 STAFF ALLOCATION IN CENAT
APPENDIX-1	1 PLAN FOR TEMPORARY OFFICE BUILDINGS
APPENDIX-1	2 LIST OF REFERENCE MATERIALS