

**BASIC DESIGN STUDY REPORT
ON
THE PROJECT FOR IMPROVEMENT OF THE HEALTH FACILITIES
IN
THE KWAZULU-NATAL PROVINCE
IN
THE REPUBLIC OF SOUTH AFRICA**

OCTOBER 2001

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

**JOINT VENTURE
BETWEEN
INTERNATIONAL TOTAL ENGINEERING CORPORATION
AND
YAMASHITA SEKKEI INC.**

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PREFACE

In response to a request from the Government of the Republic of South Africa, the Government of Japan decided to conduct a basic design study on the Project for Improvement of the Health Facilities in the KwaZulu-Natal Province in the Republic of South Africa and entrusted the study to the Japan International Cooperation Agency (JICA).

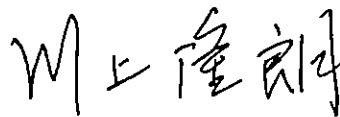
JICA sent to South Africa a study team from 1 April to 3 May 2001.

The team held discussions with the officials concerned of the Government of South Africa, 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 South Africa in order to discuss a draft basic design, and as this result, 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 Republic of South Africa for their close cooperation extended to the teams.

October, 2001



Takao Kawakami

President

Japan International Cooperation Agency

October, 2001

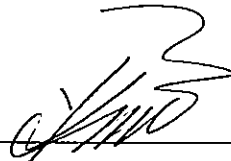
Letter of Transmittal

We are pleased to submit to you the basic design study report on the Project for Improvement of Health Facilities in the KwaZulu-Natal Province in the Republic of South Africa.

This study was conducted by the joint venture between International Total Engineering Corporation and Yamashita Sekkei inc., under a contract to JICA, during the period from March, 2001 to October, 2001. In conducting the study, we have examined the feasibility and rational of the project with due consideration to the present situation of South Africa 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,



Yoji ISHIKAWA

Project manager,

Basic design study team on

the Project for Improvement of Health

Facilities in the KwaZulu-Natal Province

in the Republic of South Africa

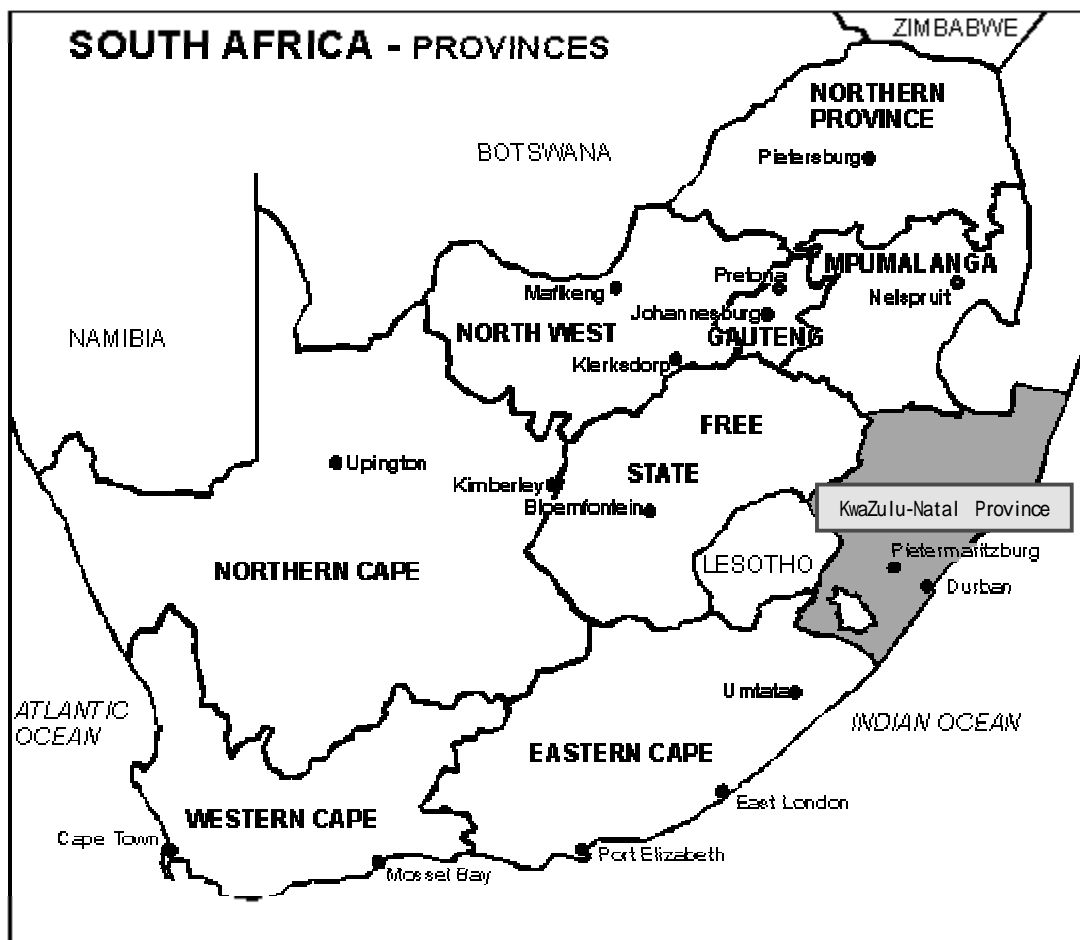
The Joint Venture between

International Total Engineering Corporation and

Yamashita Sekkei inc.

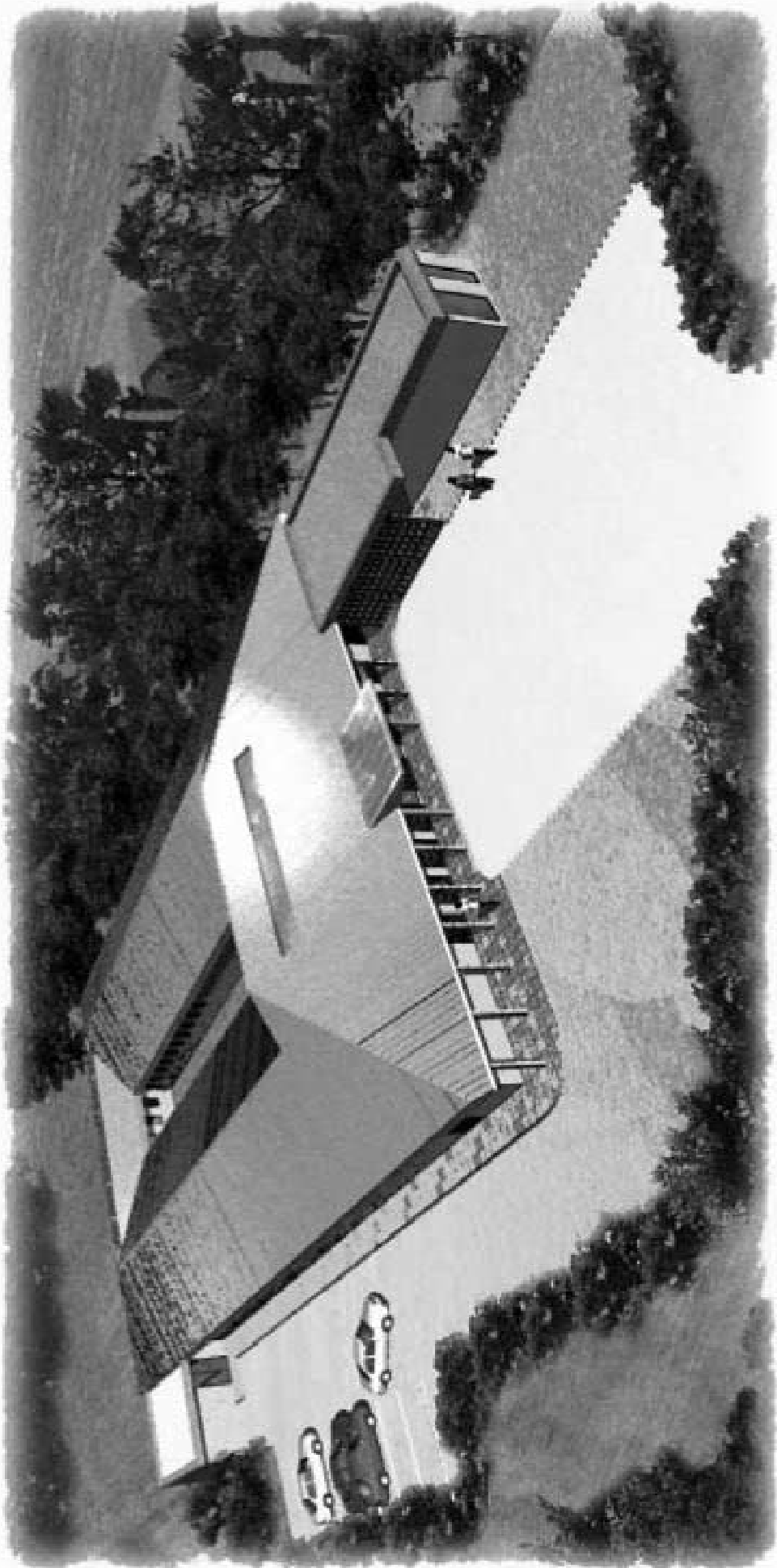
Location Map

Republic of South Africa



KwaZulu-Natal Province





Birds Eye View of New Community Health Centre



Perspective View of New Community Health Centre

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Abbreviations

ANC	African National Congress
CB	Catherine Booth Hospital
CHC	Community Health Center
CMTD	Central Medico Technical Division
CSIR	Council for Scientific and Industrial Research
DC	District Council
DHO	District Health Office
EK	Ekombe Hospital
EM	Empangeni Hospital
ES	Eshowe Hospital
EU	European Union
JICA	Japan International Cooperation Agency
KZN	KwaZulu-Natal (Province)
MB	Mbongolwane Hospital
MSH	Management Science for Health
NDOH	National Department of Health
NG	Ngwelezana Hospital
NK	Nkandla Hospital
RDP	Reconstruction and Development Programme
SABS	South Africa Bureau of Standards
SM	St. Mary's Kwamagwaza Hospital
USAID	The United States Agency for International Development
WB	World Bank

Summary

Indigenous people called “African” occupy 78% of the total population of the Republic of South Africa, mostly suffering poverty as a result of apartheid over a long period of time. The Mandela Administration organized in 1994 embarked on implementation of “Reconstruction Development Program” which focused on correction of racial inequity. The Mbeki Administration that succeeded the Mandela Administration also struggles for promotion of the RDP.

“2000-2004 Health Sector Strategic Framework” was published in 1999 as a 5-year national plan. In accordance with this national plan, the KwaZulu-Natal Department of Health is under execution of "The Five-Year Strategic Plan (2000- 2004)" on the basis of "providing optimal health status to all the residents of KwaZulu-Natal Province." Under the strategic plan they focus on the improvement of health services, establishing a local health system closely linked to primary health care, decrease in the morbidity / mortality rate and refining the hospital services. They also struggle against such organizational issues as human resource development and effective facility management to narrow the regional gap in the quality of health services.

The site of a hard fought battle of Anglo-Boer and Anglo-Zulu War, KwaZulu-Natal Province has a lot of former “Homelands” where the Zulus were assigned to live, which make KwaZulu-Natal one of the Provinces with the most widened racial gap in social / health status as shown below.

Infant mortality rate per 1000 live births	52.1 (national average 45.4),
HIV prevalence among antenatal attendees	32.5% (22.8%),
Population growth rate	2.8% (2.4%),
Unemployment rate	25.9% (23.3%).

It is also noted that whereas the level of health service for the white people reaches that of the advanced nations, the quality of health services for the people of former “Homelands” is still insufficient even after the practice of apartheid came to an end.

A lot of former “Homelands” are concentrated in DC28 of KwaZulu-Natal Province, the Project site, and the level of health services is far below the provincial average, especially in maternal care and public health care in each clinic. Their health services in the secondary level also do not function well due to delay of equipment renewal.

Under these circumstances, the National Department of Health of the South Africa has requested the Japan's Grant Aid for supply of medical equipment and construction of health facility in DC28 of KwaZulu-Natal Province, which principally aims to narrow the regional gap in the quality of health services in KwaZulu-Natal Province by raising the poor health status of DC28. In response to this request, the Government of Japan conducted a Basic Design Study and formulated a basic design of a requested Japanese Assistance for the purpose of improving the primary health services (maternity care and public health) in DC28 through equipment supply and facility construction and of upgrading the secondary health services in DC28 through equipment supply to regional and district hospitals.

The Requested Japanese Assistance shall cover low level health facilities as well as high level ones to aim at improvement in health services of whole area of DC28. The Project sites had originally contained 2 regional hospitals, 5 district hospitals and 44 clinics. And then St. Mary's Kwamagwaza district hospital was added to one of the Project sites which had just been transferred to the control of KwaZulu-Natal Department of Health in November 2000. The Requested Japanese Assistance shall also cover the District Health Office which has requested equipment for health promotion and maintenance activities and made an additional request for the Technical Assistance by Consultant. The Requested Japanese Assistance shall include construction of Nseleni community health center in the light of improvement of primary health services. The contents of the Project are as follows.

Project Facilities (54 sites)

Activities		Name of Facilities
Secondary Health Care	Regional hospitals (2 sites)	Ngwelezana Regional Hospital, Empangeni Regional Hospital
	District hospitals (6 sites)	Eshowe District Hospital, Nkandla District Hospital Catherine Booth District Hospital, Ekombe District Hospital, Mbongolwane District Hospital, St. Mary's Kwamagwaza District Hospital
Primary Health Care	Community health center (1 site)	New Nseleni Community Health Center
	Clinics (44 sites)	Mabhuqwini, Malunga, Manyane, Mfongosi, Mthungwini, Xulu, King-Dinuzulu, Nkwalini, Mathungela, Ngudwini, Ntumeni, Osungulweni, Samungu, Nxamalala, Chwezi, Esibhudeni, Ewangu, Halambu, Mandaba, Ndabaningi, Nongamlane, Thalenedi, Vumanhlamvu, Ensingweni, Mvutshini, Khandisa, Ngwelezane, Ntuze, Phaphamani, Thokozani, Luwamba, Nomponjwana, Ntambanana, Ndlangubo, Kwayangue, Ndundulu, Ekuphumuleni, Dondotha, Sokhlu, Kwambonambi(Mbonambi), Kwambonambi(Sappi), Nhlabane, Cinci, Ocilwane
Control of activity of health service· Maintenance service (1 site)		District Health Office

• Equipment Plan

Principle in equipment plan shall be to renew the existing equipment and it shall be based on the disease structure in DC28 and on the actual functions and activities of each health facilities.

Major Medical Equipment by Facilities

Facilities		Major Medical Equipment
Ngwelezana Regional Hospital	Operation	Anaesthetic apparatus with ventilator, Anaesthetic apparatus with ventilator, spirometry function, Blood gas analyzer-cassette type, C-arm image intensifier, Multiparameter monitor, Defibrillator with monitor and recorder, Laparoscopic TV system
	ICU	ECG multichannel, Blood gas analyzer, Multiparameter monitor, Multiparameter monitor-neonatal, Transport portable incubator
	Emergency	Multiparameter monitor, Portable X-ray machine, Defibrillator with cardiac pacing, Ultrasound (B/W)
	Ophthalmology	Phako emulsification unit, Applanation tonometer, Fundus camera
	Radiology	Colour doppler ultrasound, Automatic film processor-portable
Empangeni Regional Hospital	Operation	Operation table, Anaesthetic apparatus with ventilator, spirometry function, Multiparameter monitor, Blood gas analyzer-cassette type, Hysteroscope
	ICU	ECG multichannel, Multiparameter monitor
	Obstetric	Ultrasound (B/W), Infant warmer
	Radiology	X-ray unit-general, Colour doppler ultrasound
Eshowe District Hospital	Operation	Anaesthetic apparatus with ventilator, Blood gas analyzer-cassette type, Defibrillator with monitor and recorder, Laparoscopic TV system
	Neonatal	Multiparameter monitor-neonatal, Infant warmer
	Obstetric	Ultrasound (B/W)
	ICU	Multiparameter monitor
	Radiology	X-ray unit-general
Nkandla District Hospital	Operation	Operation table, Anaesthetic apparatus with ventilator, Blood gas analyzer-cassette type, Defibrillator with monitor and recorder, Multiparameter monitor
	Emergency	Multiparameter monitor
	Neonatal	Multiparameter monitor-neonatal
	Obstetric	Ultrasound (B/W), Infant warmer
	ICU	Multiparameter monitor
	Radiology	Portable X-ray machine, X-ray unit-general
Catherine Booth District Hospital	Operation	Defibrillator with monitor and recorder, Blood gas analyzer-cassette type, Multiparameter monitor
	Emergency	Multiparameter monitor
	ICU	Multiparameter monitor
	Obstetric	Ultrasound (B/W), Infant warmer
Ekombe District Hospital	Operation	Operation Table, Blood gas analyzer-cassette type, Multiparameter monitor, Defibrillator with monitor and recorder
	Neonatal	Multiparameter monitor-neonatal, Infant warmer
	Obstetric	Ultrasound (B/W)
	ICU	Multiparameter monitor
	Radiology	Portable X-ray machine
Mbongolwane District Hospital	Operation	Operation table, Blood gas analyzer-cassette type, Multiparameter monitor, Defibrillator with monitor and recorder
	Emergency	Multiparameter monitor
	Neonatal	Multiparameter monitor-neonatal, Infant warmer
	Obstetric	Ultrasound (B/W)
	ICU	Multiparameter monitor
	Radiology	Portable X-ray machine
St.Mary's Kwamagwaza District Hospital	Obstetric	Infant warmer
	Neonatal	Multiparameter monitor-neonatal
	ICU	Multiparameter monitor
	Operation	Multiparameter monitor, Defibrillator with monitor and recorder, Blood gas analyzer-cassette type
	Radiology	Ultrasound (B/W), X-ray unit-general
Clinic	Obstetric	Infant warmer
District Health Office	Health Education	Equipment for health education and promotion activities, Mobile car for health promotion activities
Community Health Center (CHC)		ECG Multichannel, Infant warmer, Multiparameter monitor, Transport portable incubator, Ultrasound (B/W), X-ray unit-general, Dental unit, Automatic film processor-portable

• Facility Construction

Appropriate construction plan shall be made and it shall focus on the low costs of construction and maintenance.

Outline of Structure

Name of Facility	Community Health Center
Land area	4,150 m ²
Total floor area	1,441 m ²
Structure	Reinforced concrete, Single floor
Main department	Medical health care service department: Admission/waiting, Emergency, Dental, Laboratory, Radiography, Mother and child health/obstetric, General out patient, Rehabilitation, General ward (short stay within 48 hours), Dispensary Support service department: Administration, Mobile service, Maintenance service, Machinery /equipment

• Technical Assistance by Consultant

Contents of assistance	Period
Health Education and Promotion	1 person / 3 months
Management Method of Equipment	1 person / 3months

The Requested Japanese Assistance shall require 17 months including Detail Design.

Implementation of the Project will lead to improvement of the quality of the secondary health services (examination, diagnosis and treatment) in the regional and district hospitals, for example increase in the number of radiology and ultrasound examination, operation and inpatients.

Construction of new CHC and equipment supply to clinics will lead to improvement of the quality of primary health services (maternity and public health basis), for example increase in the number of delivery and outpatients.

Guidance on Health Education and Promotion as a part of Technical Assistance by Consultant will motivate local health services and lead to increase in the number of school health services program and local health improvement program.

Introduction of Management Method of Equipment as a part of Technical Assistance by Consultant will help establish an organised system for using the supplied equipment.

Since the Requested Japanese Assistance is designed to improve the quality of health services received by the most demanded people living in the former “Homelands”, it will help the “Health Sector Strategic Framework” and the “Five-Year Strategic Plan” to achieve their goals.

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