


No. 1

MINISTRY OF HEALTH
PALESTINE

BASIC DESIGN STUDY REPORT
ON
THE PROJECT FOR
CONSTRUCTION OF NEW HOSPITAL IN JERICHO
IN
PALESTINE

DECEMBER 1995

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PREFACE

In response to a request from Palestine the Government of Japan decided to conduct a basic design study The Project for Construction of New Hospital in Jericho and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Palestine a study team from March 21 to April 14, 1995.

The team held discussions with the officials concerned of the Self Government of Palestine, 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 Palestine 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 Self Government of Palestine for their close cooperation extended to the teams.

December, 1995



Kimio Fujita
President

Japan International Cooperation Agency

December, 1995

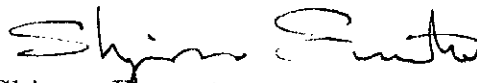
Letter of Transmittal

We are pleased to submit to you the basic design study report on The Project for Construction of New Hospital in Jericho in Palestine.

This study was conducted by Kume Sekkei Co., Ltd., under a contract to JICA, during the period from March 17, 1995 to December 31, 1995. In conducting the study, we have examined the feasibility and rationale of the project with due consideration to the present situation of Palestine 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.

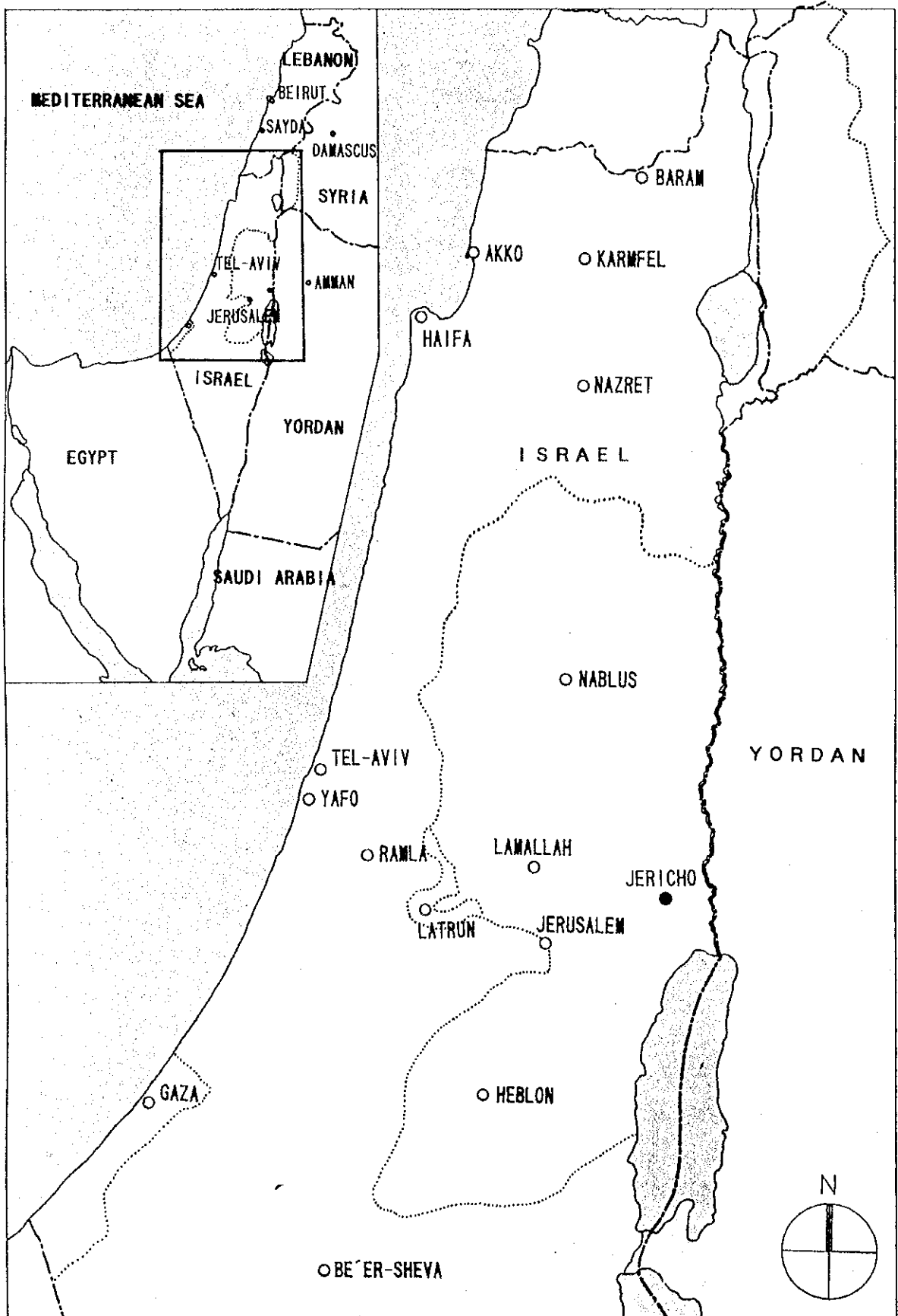
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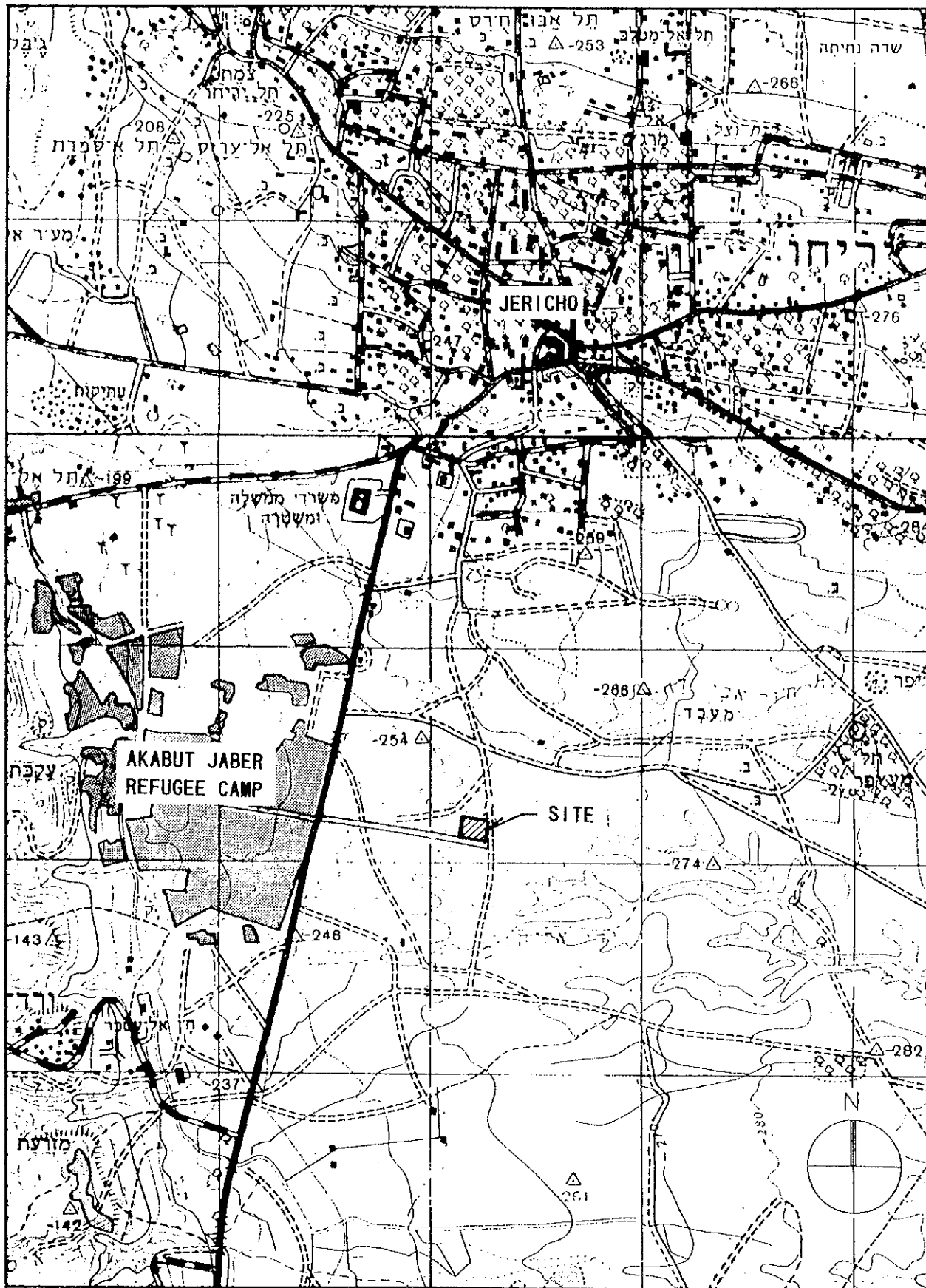


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Project Manager

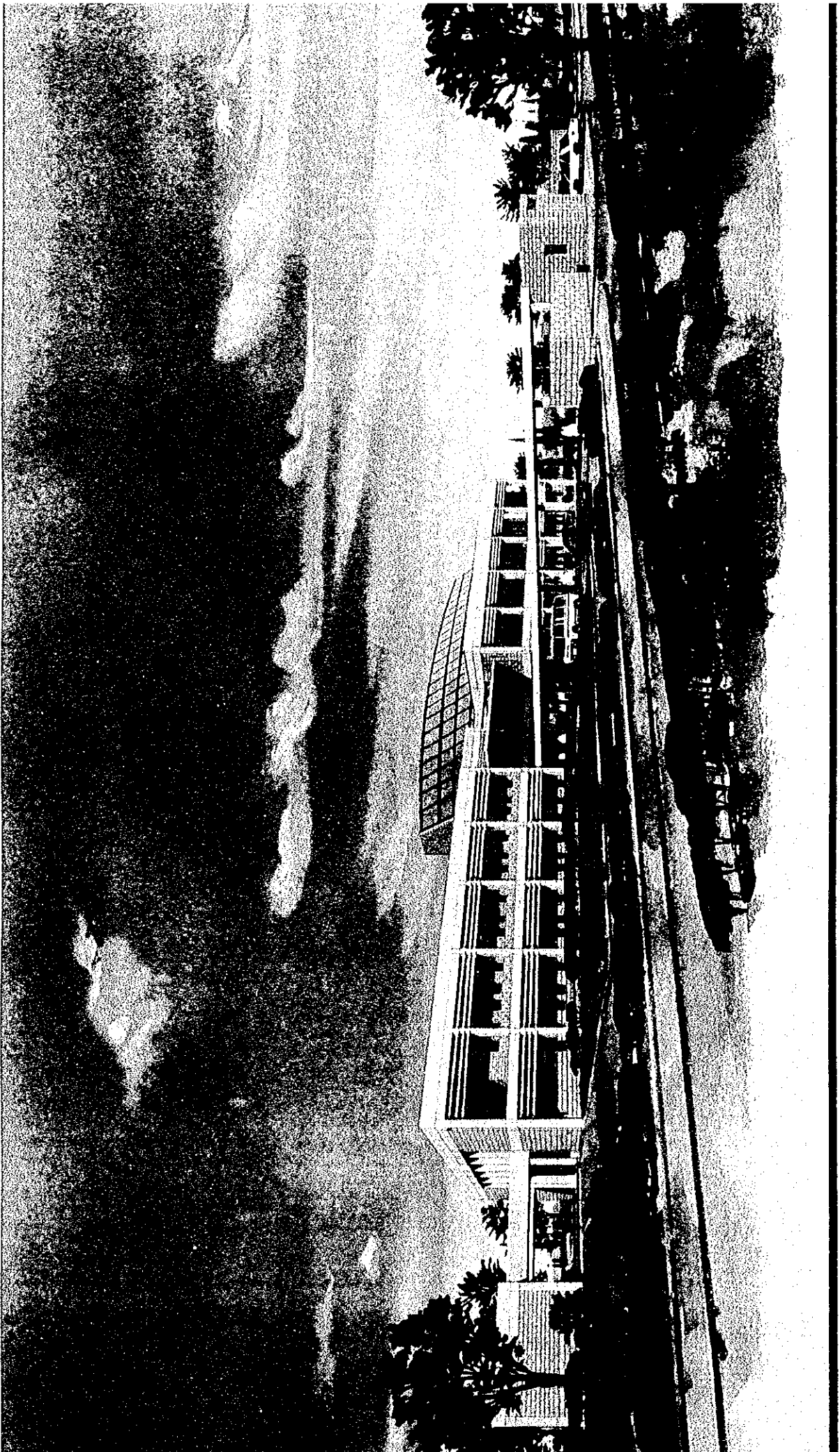
Basic Design Study Team on the Project for
Construction of New Hospital in Jericho
Kume Sekkei Co., Ltd.





TO JERUSALEM

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LIST OF ABBREVIATIONS

CA	Civil Administration
DOP	Declaration of Principles on Interim Self-Government Arrangement
IAP	Interim Action Plan
MCH	Mother and Child Health Care Center
MOH	Ministry of Health
MOLA	Ministry of Local Government Authority
MOPIC	Ministry of Planning and International Cooperation
NHP	National Health Plan
PCH	Palestine Council of Health
PECDAR	Palestinian Economic Council for Development and Reconstruction
PHC	Primary Health Care Center
PLO	Palestine Liberation Organization
PA	Palestine Authority
PNC	Palestine National Council
PRCS	Palestinian Red Crescent Society
UNRWA	United Nations Relief and Works Agency for Palestinian People
WHO	World Health Organization
	The Gaza-Jericho Agreement

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Chapter 1

Background of the Project

Chapter 1 Background of the Project

1-1 Interim Self-Government

In accordance with the Declaration of Principles on Interim Self-Government Arrangement (DOP), which was inked by the Palestine Liberation Organization (PLO) and Israel on September 13, 1993, both sides signed the implementation agreement (The Gaza-Jericho Agreement) to withdraw Israeli forces from the occupied territories of the Gaza Strip and the West Bank town of Jericho on May 4, 1994. The official transfer of authority was completed on August 17 the same year, and interim self-government in the districts of Gaza and Jericho began. The PLO and Israel have agreed in the DOP that the interim self-government is a transition period of five years and to discuss the eventual status of the occupied territories within two years from the start of autonomy (i.e. by May 1996).

The process of interim self-government involves transferring all administrative and security maintenance authority to the Palestinian side upon first withdrawing Israeli forces from Gaza and Jericho and then redeploying them with the aim of giving protection to the Jewish settlers who have remained in the Gaza Strip.

The main actions scheduled to be carried out in the five-year transition period beginning in May 1994 can be summarized as follows:

- ① The holding of Palestinian National Authority (PNA) elections by the Palestinian people within nine months after the agreement has become effective.
- ② The withdrawal of Israeli forces from the West Bank areas of concentrated Palestinian population before the start of the aforementioned elections.
- ③ The reaching of decisions on the composition of the PNA, the number of members and the transfer of authority to the PNA.

Despite these scheduled activities, the discussions reached an impasse concerning the withdrawal of the Israeli forces and the PNA elections were delayed, however, negotiations to expand the autonomy from the Gaza Strip and Jericho to all areas of the West Bank were advanced, and the PLO and Israel provisionally signed an agreement concerning the expansion of autonomy on August 11, 1995. According to this agreement, the Israeli forces shall completely withdraw from all but one (Hebron) of the seven main West Bank towns and all authority, including the maintenance of security, shall be transferred to the Palestinian side.

At the time of the commencement of interim self-government, the authority transferred to the Palestinian side covered the areas of education and culture, tax system and tax collection, social welfare and public health and medical care. However, in line with the agreement of August 27, 1995, Palestinian authority shall be expanded to cover eight areas with the inclusion of posts, commerce, labor and agriculture, and Palestinian autonomy in these areas is scheduled to go into effect during the middle of September 1995. Affairs in these fields shall be executed by Palestinian Authorities that have been appointed by the PLO.

Following the transfer of authority in the area of public health and medical care, the control of the public health bodies, composed of 12 hospitals, two psychiatric hospitals and 206 clinics, was handed over to the Palestinian side.

1-2 Current State of Medical Care in Palestine and Problem Points

Palestine faces many problems in terms of its social environment such as the slow development of its economy and the deterioration of sanitation, which was allowed to occur during the years of occupation. However, with a high literacy rate and a certain level of public health and medical care already reached, the conditions required for promoting awareness of public sanitation are in place. The public health and medical care service system on the West Bank is composed of three different levels: the primary medical care service provided by the four levels of PHC, the secondary medical care services provided by secondary hospitals such as Jericho and Rafidia, and the tertiary medical care services provided by hospitals such as Al Makassed. Additional relief work provided by the United Nations Relief and Works Agency (UNRWA) and non-governmental organizations (NGO) mean that the standard of primary and tertiary medical care services is good, however, strengthening of the secondary medical care field is required in order to establish a comprehensive public health and medical care service system.

(1) Disease Trends and the Medical Care Standard

Concerning the state of diseases on the West Bank, numerous cases of infant respiratory infections and digestive organ diseases can be seen, however, there are no Third World-type diseases caused by poor nutrition. The PHC service is implemented and vaccination rates are high. Public health and sanitation indices in West Bank are better than in the Gaza Strip, but compare unfavorably with those in neighboring Jordan, and the infant mortality rate, in particular, is almost twice as high at 40 - 50/1000 compared to that in Jordan. Strengthening of the setup for the prevention and treatment of infections, which are the main causes of infant mortality, is needed. Among adults, typical adult diseases such as diabetes and high blood pressure are common and causes of death are mainly

heart and circulatory organ diseases and tumors (cancer), indicating a disease pattern similar to that seen in the advanced nations. The average life expectancy is 62 years, indicating that many things need to be done in order to improve the medical care environment.

Regarding the level of the medical care service, many doctors and medical staff have received training and education in overseas countries and there are many staff quite capable of contributing to improving the medical care level in Palestine. However, as these staff members have received education under differing systems in numerous countries, their medical theoretical knowledge and medical terminology are not standard and differentials can thus be seen in their technical levels. Having said that, the medical personnel are well aware of international medical care standards and are functioning well in technical terms in advanced level of medical care. In order to establish and improve a comprehensive public health and medical care setup in future, it will be necessary to standardize technical levels in all areas of care from primary to tertiary and correct the differentials in ability among medical staff.

Regarding medical expenses, the MOH has determined a system of charges, however, treatment for epidemics, mother and child examination and treatment by the MOH and the care and treatment of infants of three years and under are all provided free of charge. There is a health insurance program, however, it still has few contributors. It is necessary to increase the number of contributors and secure sufficient operating funds in order to establish this as a sound system.

(2) Problem Points

The state of medical care in Palestine is one of confusion, created by the special circumstances of the area having been an occupied territory for so long, and many problems exist such as regional differentials, unbalanced technical levels, limited service ranges and a lack of medical care staff, and so on. Generally speaking, the state of the systems themselves ranging from PHC through to the secondary and tertiary referral systems is good, however, the existing systems are largely dependent on assistance from UNRWA, NGO and donor countries. It is forecast that UNRWA will reduce the scale of its operations if the number of recognized refugees falls following the stabilization of autonomy, and the lack of equality between services provided by NGO due to their poor coordination is also a problem. In view of these conditions, the following measures are seen to be necessary in order to strengthen the comprehensive public health and medical care service ahead of the future expansion of autonomy:

- ① Strengthening of the secondary medical care service, which plays the key role in local medical care and in the referral system.
- ② Promotion of medical care standardization to eliminate regional disparities in care and to correct differences in the technical levels of medical staff.
- ③ Strengthening of the financial base to ensure the continued and sound operation of the medical care service.

(3) Current Conditions of Jericho Hospital

In the Jericho district, there are a total of 13 PHC facilities, consisting of four public institutions, three UNRWA centers and six NGO centers, providing primary medical care services and contributing to the diffusion of local public health and sanitation. The top referral hospital of these PHC facilities is Jericho Hospital, which is the sole public, secondary medical care facility in the area.

Jericho Hospital was opened in 1954 by Jordan, which at that time had annexed the West Bank, in a building which was originally designed as a hotel, to act as the core medical care facility for Jericho, which at that time possessed a population of almost 100,000. Following that, the population of Jericho fell so rapidly, due to the Six-day War and the occupation by Israel, that the hospital was at one point closed down, however, it was reopened as a clinic in 1970, became a pediatrics hospital in 1972 and eventually developed into a general hospital with the addition of emergency and gynecology departments, and so on. During the period of occupation by Israel, the occupation government was negative in its running of the hospital and the hospital functions deteriorated badly. However, following the transfer of control of the hospital to Palestine in line with the start of autonomy, the hospital operating rate was able to recover from between around 10% and 20% during the occupation to around 60% as a result of the efforts of those concerned on the Palestinian side. Despite this, the small scale of the facilities and the fact that the buildings were never originally designed to act as hospital facilities means that poor functioning efficiency due to the numerous building plan problems and appalling deterioration is something that cannot be denied.

The improvement of hospital functions through the emergency provision of equipment and facilities repair work by the Japanese Red Cross Society has led to hopes that the operating efficiency of the hospital will further improve. However, it is considered that the urgent construction of a new hospital is the only way to fundamentally overcome the problems of insufficient facilities space, inefficient layout and deteriorated building frame.

1-3 Historical Background and Contents of the Request

Following the signing of the DOP in September 1993, the Government of Japan, in an effort to find effective support measures to aid the stabilization of autonomy, dispatched the Project Formation Study Team in November 1993 and also took part in the Consultative Group (CG), which was staged by the World Bank in December the same year. Planning survey members were dispatched to the Japanese Embassy in Israel in March 1994 and as a result of the surveys carried out, it was confirmed that there is a high need for aid in the social infrastructure areas of public health and medical care and economic infrastructure areas such as roads, and so on.

Following the signing of the Implementation Agreement in May 1994, the interim self-government was set up and administrative authority was transferred, and this raised the possibility of carrying out bilateral cooperation in the Gaza Strip and the West Bank town of Jericho. In response to this situation, the Government of Japan, in July 1994, dispatched the Project Formation Study Team with the aims of discovering and forming a specific project, and this study team confirmed the contents of the local side's request concerning the project for provision of medical care equipment for the Gaza District 4 Hospital and the project for the improvement of Jericho Hospital. In September 1994, the Palestinian Economic Council for Development and Reconstruction (PECDAR) made a renewed request to the Government of Japan for grant aid for the said projects and, in response to this, the Preliminary Study Team was dispatched in November 1994.

In the Preliminary Study, it was judged that the primary medical care service in Jericho is operating smoothly and that there are enough facilities to rival the tertiary medical care level in neighboring Jerusalem and Ramallah, however, it was accepted that the secondary medical care service in the district has yet to be sufficiently developed. Jericho Hospital is the only secondary medical care facility in Jericho and it was confirmed that implementation of the Project designed to improve the said hospital was both necessary and urgently required. In discussions held with the Minister of Health and the Director of the PCH, agreement was reached on the points listed below.

- (1) A new hospital shall be built as a secondary medical care facility and its functions shall be limited to the provision of basic medical care services and the handling of diseases and symptoms which cannot be treated with PHC. The hospital shall not provide tertiary medical care services that require high level medical technology, and thus cerebral neurosurgery, open heart surgery, new born infant concentrated monitoring equipment and artificial dialysis shall not be included within the Project bounds.

- (2) Departments which will be studied for the Project at the Basic Design Study are as follows:
- a) General surgery, b) General internal medicine, c) Pediatrics, d) Obstetrics/ Gynecology, e) Orthopedics, f) Otorhinolaryngology, g) Ophthalmology, h) Laboratory, i) Radiology, j) Operation theater, k) Physiotherapy.
- (3) Medical Facilities for the Project is designed on the assumption that all the function for secondary medical care in existing Jericho Hospital which has fifty beds in transferred to the Jericho Hospital to be constructed under the Project.
- (4) Medical equipment for the Project is designed on the assumption that necessary equipment in existing Jericho Hospital (including any equipment to be procured) is moved to the Jericho Hospital which will be constructed under the Project.
- (5) The scheduled construction site of the new hospital shall be the candidate site on the southern side of Jericho (facing the Akabut Jaber refugee camp).

Furthermore, the following item was discussed and agreed upon in the course of the study.

- (1) The existing Jericho Hospital does not possess bacterial investigation equipment in its clinical investigation department, however, the Palestinian side has requested that such equipment be added to the functions of the new hospital. As this equipment is judged to be within the bounds of the Project, bacterial investigation equipment shall be added to the Basic Design Study target areas.

Chapter 2

Contents of the Project

Chapter 2 Contents of the Project

2-1 Objectives of the Project

Following the transfer of the right of self-government relating to medical care with the effectuation of the Palestinian Authority, the MOH (Ministry of Health) has been earnestly consolidating medical services through the restoration of the proper functions of deteriorated hospitals and clinics in the jurisdiction and the setting up of new functions with new facilities, equipment and manpower in order to establish a comprehensive health and medical care system in Palestine. The Jericho Hospital is the only public, secondary hospital in the Jericho District and, therefore, it should play a key role in the health care of the district. In reality, however, less than active management and maintenance during the occupation period degraded the hospital functions. The strong efforts of the MOH/PCH to improve the medical care environment has now doubled the number of staff working at the Jericho Hospital compared to before the transfer of the management right. Together with the removal of buildings and the provision of new equipment by the Japanese Red Cross Society, the Jericho Hospital has begun to regain its good reputation and the confidence of the public. As a result, the number of both out-patients and in-patients, has now begun to gradually increase. Nevertheless, the present buildings are so old and congested that the hospital cannot fulfil the role of a key secondary medical care hospital envisaged by the National Health Programme. The construction of more efficient new hospital with sufficient space is, therefore, judged essential to provide the required medical service.

The main objectives indicated by the Palestinian side for each stage of hospital development are briefly described below.

- Short-term Objective:

restoration of the hospital functions - construction of new hospital buildings to replace the deteriorated existing buildings together with the provision of new medical equipment and establishment of an appropriate management and maintenance system to improve and expand the medical care service functions of the Jericho Hospital.

- Medium-term Objective:

improvement of the secondary medical care service in the Jericho District - improvement of the state of health of Palestinians and the secondary medical care level in the Jericho District by means of the provision of an adequate local medical care service by the improved and expanded Jericho Hospital and improvement of the technical level, in turn resulting from the re-training of staff using the new facilities, and also the establishment of the hospital's status as the district's key hospital.

- Long-term Objective:

strengthening of a comprehensive health and medical care service system in Palestine - contribution to the establishment of a comprehensive health and medical care system in Palestine as a key secondary hospital equipped with an extensive referral system ranging from the acceptance of referred patients by primary medical care facilities in the region to the transfer of patients to higher medical care facilities; in anticipation of the expected expansion of the self-governing area in the future, the Jericho Hospital will contribute to the improvement and establishment of Palestine's health and medical care service system as a model key secondary hospital.

2-2 Basic Concept of the Project

The Project aims at the construction of a new Jericho Hospital as the first referral hospital for primary medical care facilities and also as the key secondary hospital in the Jericho District. Under the Project, secondary medical care is defined as the basic medical care service which exceeds the scope of primary care but which does not require advanced medical technologies. The Jericho Hospital is responsible for secondary medical care in the three tier referral system and plays an important role in the establishment of a comprehensive health and medical care service system in the Jericho District and ensuring the smooth running of the referral system.

The hospital functions deemed necessary to achieve the objectives of the Project are examined below to establish a basic concept for the facilities and equipment to be provided by Japanese grant aid.

2-2-1 Confirmation of Requested Facilities and Equipment

(1) Contents of the Requested Components

1) Main Functions

- | | |
|--------------------|------------------------------|
| a) General Surgery | b) General Internal Medicine |
| c) Pediatrics | d) Obstetrics/Gynecology |
| e) Orthopedics | f) Otorhinolaryngology |
| g) Ophthalmology | h) Laboratory |
| i) Radiology | j) Operating Theatres |
| k) Physiotherapy | l) Emergency Unit |

2) Medical Facilities

Medical facilities for the Project is designed on the assumption that all the function for secondary medical care in existing Jericho Hospital which has fifty beds is transferred to the Jericho Hospital to be constructed under the Project.

3) Medical Equipment

Medical equipment for the project is designed on the assumption that suitable equipment in existing Jericho Hospital (including any equipment to be procured) will be moved to the Jericho Hospital which will be constructed under the Project.

(2) Appropriateness of the Requested Components

The Project facilities will act to restore and expand the functions of the existing Jericho Hospital and inherit its functions as the central secondary medical care institution in the area. It is basically necessary to examine the facility volume and contents in accordance with those of the existing hospital.

1) Examination of Main Functions

The main functions of the existing hospital are contained in the five departments of general surgery, general internal medicine, pediatrics, obstetrics and gynecology and orthopedics. The request components aim to expand on these hospital functions by the additional departments of otorhinolaryngology and ophthalmology. It is judged that these request components are appropriate in that they are within the bounds of fundamental examination-based secondary medical care and are in line with the Project objective of bolstering the public health and medical care services which are required by the local community.

Furthermore, the requested central consultation department, radiology unit, operating theaters and delivery rooms each inherit the functions of the existing hospital, and again these request components are judged to be of an appropriate nature.

2) Examination of Medical Care Facilities

a) Wards

The requested scale of the hospital wards has assumed a slight increase over the ward capacity of the existing hospital, which is 50 beds. The present number of hospital beds per 1,000 of the population in Palestine is 1.07 beds in the Gaza Strip and 1.13 beds in Jericho. The WHO has recommended that this be raised to 2 beds, however, it seems that 1.5 beds will be the acceptable number on process. If the population of Jericho is assumed to be 36,000, the number of beds on process will be 54 and the recommended number would be 72. The forecast population by 2002 will be approximately 50,000, and in this case, the number of beds over time will be 75 and the recommended number would be 100. Because the Project scale setting of the existing number of beds is almost the same as the acceptable number on process set by WHO, and because this setting appears to be just right in terms of the current situation in Jericho, it is again judged that the requested ward scale is appropriate.

b) Out-patients

The ratio of the daily average number of out-patients going to secondary medical care facilities in Palestine compared to the number of beds is between 0.6 - 0.8 people per bed.

The average daily number of out-patients going to the existing Jericho Hospital is 48.4 (as of 1994), and if this changes in line with the present population growth rate, it is estimated that the daily number of out-patients will be around 60 when the population reaches the set value of 36,000. Similarly, with respect to the number of emergency patients, it is expected that this will increase from 91.7 (1994) to around 110. Because it is normal for the other secondary medical care facilities in Palestine to provide out-patient consultation rooms in each specialist department, in this Project, scale shall be designed to ensure no insufficiency or excess by providing consultation rooms for the basic care departments and shared consultation rooms for additional departments. Regarding the separation of male and female patients, it is thought that this can be achieved by mutually separating waiting spaces, without having to completely separate the consultation rooms.

3) Examination of Medical Equipment

The requested medical equipment is limited to that for use in the field of secondary medical care and consists of items to replace existing deteriorated equipment and that needed to restore and bolster the functions of the hospital as the core secondary medical care facility. The contents of the request are judged to be appropriate in that they are in accordance with the general objective of the Project, which is continuation of the functions of the existing hospital.

When selecting the specific items of equipment, it is necessary to make sure that their quantities match with the required hospital functions and that their maintenance is easy.

2-2-2 Examination of Organizational Elements of the Hospital

The organization of the new Jericho Hospital will consist of 5 sections, i.e. ward section, out-patient section, central laboratory and diagnosis section, supply section and administration and welfare section. The main functions of each section are listed below.

(1) Facilities

- **Ward**

Men's, Women's and Children's Ward, Nurses' Station/Attached Room, Day Corner (Patients' Lounge)

- **Out-Patients Department**

Out-patients : reception, consultation/examination room

Emergency Unit : emergency treatment, minor operations, observation beds

- **Central Consultation Department**

Laboratory (Pathological and physiological Lab.), X-Ray Unit, Operation Theater Unit, Deliver Unit, Physiotherapy

- **Supply**

Central Sterilisation Supply Unit, Pharmacy, Workshop, Storage, Kitchen, Laundry, Incineration, Machine room

- **Administration and Welfare**

Administration, Medical Office, Meeting Room, Morgue

(2) Medical Equipment

Main medical equipment for each function is as follows:

a) General Surgery

The General Surgery will be equipped with an initial diagnosis set, suction unit, ECG unit and infusion pump, etc. Of the existing equipment, that which will be used at the new hospital includes a diagnostic endoscope set (fibre-scopes for bronchial tubes, stomach, duodenum and rectum) and diagnostic laparoscope. The equipment to be newly provided under the Project includes an examination bed for endoscope

use, endoscope to prevent secondary infections, laparoscope sterilising unit and endoscope storage cabinet, etc.

b) General Internal Medicine

In addition to a wide range of equipment to be used for general diagnosis and treatment relating to internal medicine, the equipment to be newly provided under the Project includes an ultra-sonic scanning unit, various monitors, endoscopes, retinal camera and slit lamp for microscopes for functional tests.

c) Pediatrics

In addition to the existing equipment, the new equipment to be provided under the Project includes a pediatric ECG unit, ambu bag and infusion pump.

d) Obstetrics/Gynaecology

The most popular delivery method in the Jericho District is to give birth at home with the assistance of a midwife. With the construction of the new hospital, it is planned to use the existing facility as the 4th PHC to deal with normal deliveries. The delivery facility at the new hospital is planned to deal with various kinds of abnormal deliveries, necessitating the provision of a fetal heart detector, anaesthesia apparatus, maternity ultrasonic scanner, infant incubator, infusion pump and miscarriage treatment set.

e) Orthopedics

There are many patients suffering from external injuries due to accidents, etc. The essential equipment to be provided under the Project to deal with these patients includes a C-arm X-ray unit, plaster table and orthopedic electric traction set.

f) Otorhinolaryngology

This is a new department to be established and a specialist will be sent from the Augusta Victoria Hospital on a part-time basis. The basic equipment to be provided under the Project includes an ENT treatment unit, ENT diagnosis/treatment set and tonsillectomy set.

g) Ophthalmology

This is also a new department. As in the case of the Otorhinolaryngology Department, a specialist will be sent from the Augusta Victoria Hospital on a part-

time basis. The basic equipment to be provided under the Project includes an ophthalmic diagnosis/treatment unit, slit lamp microscope and retinal camera.

h) Laboratory

At present, the laboratory conducts pathological analyses, including blood tests, biochemical tests and urine tests, at the request of the clinical departments and PHC/MCH. The laboratory section is currently in the process of expansion and improvement of its equipment should take the transfer of the existing equipment into consideration. The new equipment to be provided under the Project includes a urine analyser, blood cell counter, flame photometer, glucose analyser and medical refrigerator to store blood. Because of the planned implementation of bacteriological tests, the provision of such relevant equipment as incubators, dry oven, clean bench and microscopes will be necessary. The laboratory will also require an ECG unit and ultrasonic scanner for functional tests. An autopsy table is also required to establish the cause of death.

i) Radiology (X-ray Unit)

All the existing, old X-ray units and dark room equipment have exceeded their standard lives and are inadequate to deal with the relevant demands in the Jericho District, necessitating urgent improvement. The radiology unit in the new hospital is believed to require X-ray apparatus with fluoroscopy and two fixed-type general diagnosis X-ray apparatus.

j) Operating Theatres Unit

Both the main and sub-operating theatres will be equipped with such basic operating equipment as operating lamps (shadowless ceiling and stand types), operating tables, electric surgery unit, ventilator and cardiac monitor, etc. The existing equipment requiring replacement due to much deterioration includes operating lamps, ventilators, major and minor operating sets and infusion pumps.

k) Physiotherapy

Although various physiotherapy equipment, including short-wave as well as ultrasonic therapy units, electric muscle stimulator, infrared lamp, whirlpool bath and bicycle exerciser, has been donated by Japan and Germany, etc., this equipment has simply been stored in the warehouse of the Jericho Hospital due to the lack of appropriate floor space. There are many patients requiring rehabilitation and the introduction of a physiotherapy room to restore body functions is urgently required.

l) Emergency Unit

This unit has a round the clock diagnosis and treatment function to provide initial treatment for injuries due to accident or acute illness. Those patients requiring more advanced medical care in the field of neurosurgery or cardiosurgery are, in principle, referred to such senior hospitals as the Makassed Hospital or Ramallah Hospital. The unit is required to have a minor operating room equipped with an anaesthesia machine, respirator and shadowless lamp (ceiling type), etc. and to provide symptomatic treatment for emergency patients and also an observation room equipped with various monitoring machines to constantly observe the condition of patients. In addition, two ambulances (currently one) is the minimum requirement for the transportation of emergency patients.

m) Ancillary Facilities

- Delivery Unit

The unit will be equipped with two gynaecological examination units for the labour preparation room, a delivery and operating table for the delivery room, ultrasonic scanner for examinations, fetal heart detector and fetal monitor. In addition, the need to deal with abnormal deliveries necessitates the provision of operating equipment, infant incubator and infant ventilator as the minimum requirement.

- Central Sterilising Supply Unit

This unit conducts the sterilising of tools and equipment used in the operating theatres, emergency unit and delivery room. The essential equipment to be provided includes two high pressure steam sterilisers, an ultrasonic cleaning set, EO gas steriliser and endoscope cleaning machine.

- Pharmacy

Although the preparation and dispensing of medicines is not planned at the Jericho Hospital, the provision of certain equipment will be necessary such as medical cabinets, a medical refrigerator and safety box to ensure the safe storage and smooth distribution of medicines within the hospital.

- Maintenance Department

The provision of mechanical and electrical inspection and repair tools is necessary to enable the maintenance staff of the hospital to conduct the basic repair of mechanical and electrical breakdowns of the equipment to be provided under the Project.

2-2-3 Project Concept

Within the comprehensive health and medical care system consisting of primary through tertiary medical care, the Jericho Hospital is considered a secondary facility providing the local community with close medical care. Given this premise, the overall project concept adopts the following principles.

(1) Facilities

- The Jericho Hospital will play a central role in the health and medical care service as a higher medical institution than those PHCs located in the district through the provision of medical diagnosis and treatment services as well as the provision of guidance for and the sending of doctors to the PHCs.
- The subject departments for improvement under the Project are such basic areas as general surgery, general internal medicine, pediatrics and obstetrics/gynaecology as well as the new additions of orthopedic, otorhinolaryngology and ophthalmology departments. The Jericho Hospital will act as a local general hospital equipped with an emergency unit.
- The Jericho Hospital will not provide tertiary medical care and medical services for patients requiring highly specialised treatment and its activities will centre on the diagnosis and treatment of more general diseases in the district.
- The grade of medical equipment will be sufficient to provide secondary medical care. In consideration of the specifications of the equipment currently in use at the existing Jericho Hospital, the specifications of the new equipment should not be beyond the technical capability of the medical staff at the new hospital.
- Similarly, the scope and specifications of the new facilities should not be beyond the technical capability of the current maintenance staff at the Jericho Hospital.

(2) Medical Equipment

- The range of equipment to be provided under the Project should be sufficient to provide the medical service required of the key secondary hospital in the area through the acceptance of patients referred from the PHC/MCH institution.
- The planned provision of medical equipment for the new Jericho Hospital should be well balanced to meet the needs of all sections, including the ward, out-patient department central laboratory, supply section and administrative section.
- In principle, the existing equipment used at the present Jericho Hospital will be transferred to the new hospital provided that it can be effectively used. As the existing hospital building is planned to be used as a Level 4 PHC following the construction of the new hospital, the equipment to be transferred to the new hospital should be disrupted the continuous functioning of the present hospital as a PHC.
- The principal criteria for the selection of new equipment is to replace the antiquated/deteriorated equipment currently in use and to supplement that equipment of which there is currently a shortage at the present hospital. The new equipment should meet the essential requirements of a secondary medical service.
- All the equipment must be easy to maintain on site or must be able to be repaired in Palestine in view of its most efficient use.

Table 2-1 Functions and Roles of New Jericho Hospital

Department	Main Functions and Roles
1. Clinical Departments	Provides a general medical service, ranging from diagnosis and treatment to emergency treatment, etc. for general patients, including those referred by PHCs.
(1) Emergency Unit	As the only emergency unit in the Jericho District, provides emergency symptomatic treatment except in the case of cardiosurgery and neurosurgery which will be dealt with by the tertiary medical service.
(2) General Surgery	Provides general surgical treatment and surgical operations within the framework of the secondary medical service.
(3) General Internal Medicine	Provides general internal diagnosis and treatment in cooperation with the central laboratory.
(4) Pediatrics	The child population in the Jericho District is very large, i.e. 47% of the local population is under 15 years of age (1991 survey). Consolidation of the Pediatrics Department is essential to stop of the rising trend of the IMR (infant mortality rate) in the area.
(5) Obstetrics/Gynaecology	Plays a central role in the obstetrics/gynaecology service in the Jericho District as a referral hospital for the PHC/MCH. Its manpower and facilities are required to be able to deal with abnormal deliveries and miscarriages, etc.
(6) Orthopedics	Many of the patients of the existing Jericho Hospital suffer from external injuries caused by accidents, etc. and more than 50% of the in-patients are related to orthopedics, making it highly desirable that the new hospital have expanded facilities for orthopedic treatment and physiotherapy (rehabilitation).
(7) Otorhinolarygology (8) Ophthalmology	These two departments were opened in May, 1995 as new additions to the Jericho Hospital. Consultants are sent from the Augusta Victoria Hospital on a part-time basis. This expansion of the medical service range provided by the Jericho Hospital should prove highly beneficial for the local population.
2. Operating Theatres	Common operations carried out at the existing Jericho Hospital are appendectomies, herniotomies, hemorrhoidectomies, thyroidectomies, kidney removal and gynaecological operations. Some 500 operations were conducted in 1994. The highest level operation is a celiotomy (stomach removal) under general anaesthetic.
3. Physiotherapy	Provides physiotherapy treatment for the rehabilitation of patients suffering from injuries to assist the early recovery of proper physical functions and an early return to normal social life.
4. Radiology Laboratory	Establishes the exact location and state of problems using X-rays or ultrasound to assist diagnosis and treatment.
(1) Radiology	Establishes the exact location of problems by means of general X-rays and fluoroscopy and provides a mobile X-ray machine to assist bedside diagnosis.
(2) Dark Room	Develops X-ray films using an automatic film developing machine.

Department	Main Functions and Roles
5. Central Laboratory	Conducts various tests to assist quick and accurate diagnosis by doctors.
(1) Sample Test Room	Conducts such general medical tests as blood tests, biochemical tests, serum tests and urine tests, etc. on samples sent by clinical departments to assist diagnosis and provides the same testing service for PHCs.
(2) Bacteriological Test Unit	The introduction of a bacteriological test unit is planned to combat the spread of ___ disease and amoebic dysentery.
(3) Function Test Unit	Tests the physical functions of patients using an ultrasonic scanner, various types of endoscopes, various types of monitoring equipment, a retinal camera and slit lamp, etc. to assist clinical diagnosis.
6. Ward	Provides approximately 50 beds for patients of the General Surgery, General Internal Medicine, Pediatrics, Obstetrics/Gynecology and Orthopedics Departments. The average stay in hospital is expected to be approximately 4 days per patient.
7. Central Sterilising Service	Provides a sterilisation service for the tools and equipment used by the operating theatres, emergency unit and ward, etc.
8. Pharmacy	The present Jericho Hospital conducts both medical diagnosis/treatment and prescription and provides an integrated medical service by directly prescribing drugs for out-patients to be collected through the Pharmacy.
9. Administration	Conducts all the necessary administrative work of the hospital and tries to expand and consolidate the local medical service.
(1) Hospital Management	Conducts the general management of the hospital.
(2) Maintenance	Conducts the maintenance of the hospital's facilities and medical equipment to ensure the continuous provision of a high quality medical service.

2-3 Basic Design

2-3-1 Design Concept

The design conditions required for the new facilities are considered as follows:

- **Adaptation to Local Climate**

Temperature rising to nearly 45°C in summer. Particular attention must be paid to the direction of the building opening, adjustment of exposure to direct sunlight, natural ventilation, dust prevention, heat insulation and air-conditioning.

- **Adaptation to Local Social Customs**

Particular attention must be paid to accommodating the social customs in Palestine, including the separation of male and female patients in the ward as well as the out-patient area and a large number of carers and visitors. Circulation planning should preferably reflect such customs.

- **Clear Circulation**

By making the overall configuration of the hospital functions extremely clear with easy circulation for visitors and the service providers.

- **Safety**

Particular attention must be paid to the safety aspects of the hospital, including fire resistance, the provision of escape routes, the prevention of secondary infections and environmental aspects as waste water drainage and medical waste disposal.

- **Growth and Change**

The architectural design of the hospital building should allow for the future expansion of each department in response to both qualitative and quantitative changes of the demands for medical care resulting from the progress of medicine and an increase of the service population.

- **Easy Maintenance**

The running cost of the hospital must be kept to a minimum by means of the basically maintenance-free design of facilities and equipment. This will result in a low maintenance labour requirement.

Based on the design conditions described above, the following design principles are adopted.

(1) Design Principles for Facilities

a. Optimum Secondary Medical Service Facilities

The grade of the facilities should be appropriate for a key secondary medical institution which will provide the health and medical care services expected by the local community in the Jericho District. The layout of the facilities should be both efficient and functional. The respective circulation for patients, staff and visitors should be clearly defined to ensure the most efficient flow. Safety and ease of use should prominently feature in the planning while each department should be allowed to perform its functions and meet the requirements as a medical facility.

b. Facilities Fully Adapted to Local Climate

Jericho is located at Lat. 31°50' N in an arid area of 250 m below sea level. There is a large temperature difference between the hot summer when the temperature may well exceed 45°C and the chilly winter. The building design should incorporate features to shut out strong sunlight and sandy dust while promoting natural lighting and natural ventilation with little dependence on mechanical systems. In short, the building design should aim at achieving a pleasant indoor environment by means of architectural measures.

c. Environmental Care

No major development has taken place in the area surrounding the site at the moment. Nevertheless, special care should be taken in regard to the discharge of waste water and solid waste and also in regard to noise from the new hospital in anticipation of future development in the area.

d. Ease of Maintenance

Special construction methods which make facility maintenance difficult will be avoided and construction methods which are popularly used in the area and which are appropriate to the local environment will be employed instead. In the case of construction materials, priority will be given to those materials which are easy to obtain locally and which have proven good durability. Simplicity, ease of maintenance and durability should also be the main features of any mechanical building service system. The underlying idea is that the likely maintenance cost to be borne by the Palestinian side after the handing over of the facilities should be kept to a minimum due to easy maintenance even if this results in a relatively high initial investment cost.

(2) Design Principles for Medical Equipment

- a. The basic design contents for the equipment should be well balanced and coordinated in regard to the requirements of the Project as seen by patients, hospital staff and medical administrators.
- b. The basic design contents for the equipment should allow technical self-reliance and development of the Palestinians side on the basis of thorough surveys and examination of the concrete administrative targets established by the MOH/PCH, the current technical level of medical care and the preferences/opinions of the medical staff and those working at similar medical facilities in Palestine.
- c. In selecting the equipment, it must be determined that the project implementation body is technically and financially capable of conducting the necessary maintenance work.
- d. Although any adverse effect of voltage fluctuation on precision equipment should be prevented by the stable supply of power on the part of the supplier, an AVR (automatic voltage regulator) will be installed to the equipment to ensure its long service.
- e. In regard to the equipment procurement sources, local procurement will be given priority in order to facilitate equipment maintenance and repair by the hospital provided that the equipment does not hamper the efficiency and effectiveness of the hospital's medical service.

(3) Calculation of Facility Volume

Based on the assumed service population, the likely number of patients and number of staff members for a local key hospital with 50 beds, the sizes of the required facilities are calculated using relevant data in Palestine and Japan and the calculation results are given in Table 2-2. All the facilities listed in the table are deemed necessary as part of the new Jericho Hospital and their volume are deemed reasonable in comparison with similar facilities in Palestine.

Table 2-2 Planned Floor Area

[Total Floor Area]

Facility	Floor Area (m ²)	Remarks
Reception and Service Area	1,117.0	
Out-Patient Dept.	414.0	
Administration	324.0	
Central Consultation Area (GF)	450.0	
Central Consultation Area (1F)	540.0	
Ward	1,080.0	
Sloped Area	152.0	
Machine Room	186.4	
Total	4,263.4	
Service Building	196.0	
Grand Total	4,459.4	

[Reception and Service Areas]

Facility/Room	Floor Area (m ²)	Remarks
Reception/Office (Medical Chart Storage)	52.0	10 persons × 5 m ² /person + reception counter
Accounting	10.0	
Pharmacy	52.0	Inclusive of medical storage
Waiting Lobby (Reception/Accounting/Pharmacy)	66.0	
Emergency Clinic	27.0	
Emergency Resuscitation (Minor Operation)	39.0	
Observation (Day Beds)	39.0	4 beds with NC
Night Duty	19.5 × 2 = 39.0	With T/S
Guard/Room (Central Monitoring)	19.5	Regular police call
Changing Rooms (Locker Rooms)	19.5 × 2 = 39.0	40 each for men and women with T/S (40 persons × 0.4 m ² /person)
Dining/Rest Room	58.5	80 persons × 1.2 m ² + 2 turnovers + 10 m ² (for tea corner)
Kitchen	78.0	With office and distribution corner
Housekeeper's Room	29.3	
Laundry (Washing Room)	48.8	Also used for washing by families of patients
Main Machine Room	168.0	Only on one floor
Sub-Total	765.1	
Corridors, Staircases, Toilets, Storage, Lifts and Others	351.9	
Total	1,117.0	

[Out-Patient Area]

Facility/Room	Floor Area (m ²)	Remarks
Clinic (Nos. 1 through 4 and No. 6)	24.0 × 5 = 120.0	One each for the General Internal Medicine, General Surgery, Pediatrics, Obstetrics/ Gynaecology and Orthopedics Departments
Plaster Room	12.0	For the Orthopedics Department
Minor Operation Room	12.0	For the General Surgery Department
Internal Examination Room	6.0	
Clinic (No. 5)	24.0	For joint use by ENT doctors
Dark Room	6.0	
Isolation Room	8.0	
Waiting Hall	120.0	To accommodate many carers and the family members of patients
Sub-Total	308.0	
Corridors, Staircases and Toilets, etc.	106.0	
Total	414.0	

[Central Consultation Area on Second Floor]

Facility/Room	Floor Area (m ²)	Remarks
Operating Theatres No.1 and No. 2	36.0+33.0=69.0	
Reception/Administration	18.0	
Ante Room	24.0	With bed
Changing and Meeting Rooms	36.0	18.0 m ² for men and 18.0 m for women with T/S
Operation Hall/Scrub Up Area	58.5	With a patient recovery corner
Dirty Corridor	30.0	With preliminary washing space
Equipment Storage	12.0	
Sub-Total	247.5	
Central Sterile Supply Unit	112.5	Preliminary washing corner, autoclave corner and storage corner, etc.
Sub-Total	112.5	
Delivery Room	30.0	
Labour Room	20.0	
Nurses' Station/Ante Room, etc.	40.0	Inclusive of a waste disposal corner of 5.0 m ²
Sub-Total	90.0	
Second Floor Central Consultation Area Sub-Total	450.0	
Corridors, etc.	90.0	
Total (Second Floor)	540.0	

[Roof Top Machine Room]

Facility/Room	Floor Area (m ²)	Remarks
Roof Top Machine Room	186.4	
Total	186.4	

[Administration (Medical Office, etc.)]

Facility/Room	Floor Area (m ²)	Remarks
Director's Room	42.0	Inclusive of reception area
Doctor's Office	63.0	10 persons × 6.3 m ² /person (also serving as the department head's room)
Library/Conference	63.0	50 persons (doctors, nurses and technicians) × 1.2 m ² /person
Matron's Room/Admin. Director's Room	42.0	
Pantry	6.0	
Sub-Total	216.0	
Corridors, Staircases and Toilets, etc.	106.0	
Total	324.0	

[Central Consultation Area on First Floor]

Facility/Room	Floor Area (m ²)	Remarks
X-Ray Room No. 1	24.0	
X-Ray Room No. 2	24.0	
Reception/Operation Corner	24.0	
Film Stacks/Viewing Corner/ Dark Room/Staff Room	72.0	
Sub-Total	144.0	
Endoscopy Room	24.0	
Physical Lab. (ECG Rooms)	12.0	3.0 m × 2.0 m × 2
Physical Lab. (Ultrasonic Scanning)	6.0	
Reception/Internal Passage	30.0	
Sub-Total	72.0	
Laboratory (Testing Area) Speciman Room/Reception/Blood Bank/Storage	57.0	
Director's Room	7.5	
Biological Laboratory	7.5	
Sub-Total	72.0	
Reception for Rehabilitation	6.0	
Hydrotherapy	24.0	
Treatment (Light Treatment Area/Retraction Cubicle)	18.0	
Gym (Walking Exercise Area)	24.0	
Sub-Total	72.0	
First Floor Central Consultation Area Sub-Total	360.0	
Corridors, etc.	90.0	
Total (First Floor)	450.0	

[Ward]

Facility/Room	Floor Area (m ²)	Remarks
4-Bed Rooms	Room Space: 28.5 Toilet and Shower: 3.5 32.0 × 11 = 352.0	With T/S for slightly serious patients; 5 rooms each for men and women and one room for the pediatrics wing (11 rooms in total)
Single-Bed Room	19.5 × 6 = 117.0	With T/S for patients with serious conditions or infectious diseases; 2 rooms each for men and women and 2 rooms for the pediatrics wing (6 rooms in total)
Day Room	39.0	
Nurses' Stations	45.0 × 2 = 90.0	
Nurses' Corner	18.0	In the pediatrics wing
Rest and Meeting Rooms	10.5 × 2 = 21.0	
Neonatal Room	9.0	For newborn babies
Treatment Rooms	18.0 × 2 = 36.0	
Waste Disposal Rooms	7.5 + 9.0 = 16.5	One each for men and women's waste
Linen Storage	3.5 × 2 = 7.0	One each for men and women
Equipment Rooms	8.0 × 2 + 6.0 = 22.0	One each for men, women and nurse corner
Kitchenettes	3.5 × 2 = 7.0	One each for men and women
Sub-Total	734.5	
Corridors, Staircases and Toilets, etc.	345.5	
Total	1,080.0	
Sloped Area	38.0 × 4 = 152.0	For single floor only

2-3-2 Basic Design

(1) Building Plan

The proposed site for the Project is located some 750 m east of the trunk road running south from Jericho towards Jerusalem and the Dead Sea. While there are no man-made structures in the area at present, due to the planned development of the area as a residential quarter in the future, the distribution of the new facilities should be carefully designed, taking the possibility of eventual development into consideration. Access to the new hospital from down town Jericho will be by bus and ride-together taxi. The site is almost rectangular and stretches almost 100 m in the north-south direction and 150 m in the east-west direction with a total land area of approximately 15,000 m². All the required facilities will be constructed on this site while leaving space for future expansion.

1) Architectural Plan

a) Layout

The main building has two storeys and consists of 3 blocks. The west block will house the reception office, welfare, services and the ward, the south east block will house the out-patient and medical office, while the north west block will house central consultation sections. The main principles for the layout planning are listed below.

- The front entrance will mainly be used by out-patients and the visitors of in-patients and the circulation will be separated from those using the emergency unit entrance located on the opposite side of the guard's room.
- A service building will be separately constructed to the western side of the site. The space between the main building and service building will be used as a service yard and the service entrances will be located there.
- A compound road will be introduced all along the site perimeter to secure access to the entire site.
- In preparation for future expansion, the expansion sites for the central consultation department and ward will be identified in advance.
- Gardens will be created to the north and south sides of the ward windows.

b) Building Design Details

The following principles are adopted for the planning of the design details of the buildings.

- Out-patients referred by a PHC will firstly be checked by the guard and will then move on to the out-patients department for examination and/or treatment after completing the registration procedure at the reception. Various tests will be conducted in the central consultation department located to the north of the courtyard. Following examination, treating and/or tests, the referred out-patients will settle the bill and receive medicine before leaving.
- Out-patients arriving at the hospital without a referral or out of normal consultation hours will be examined and treated at the emergency unit. Those whose response to treatment requires observation will be transferred to the observation room. An emergency treatment room will be introduced to provide emergency treatment for those involved in traffic accidents and so on.
- The ramp will be located right opposite the main entrance to provide a convenient vertical path of flow for those in wheelchairs or on stretchers.
- The quadrangle plan of the ward will be divided into the north section and south section to separately accommodate men and women. The pediatrics wing will be located in the centre of the west section. The nurses' station will be located in the courtyard part of the quadrangle in view of convenient access to all areas of the ward.
- The central sterilising supply unit will be located adjoining the operating theatre area and the obstetrics delivery room in view of the smooth circulation of sterilised and contaminated equipment and tools.
- A balcony will be introduced on both the north and south sides of the building to control sunlight while a courtyard and light court will be introduced at the central part of the building to facilitate natural ventilation and natural lighting.

c) Construction Materials

The selection of construction materials for the new Jericho Hospital will emphasise the use of those materials and construction method which are popularly used in the Jericho District. Other selection criteria for the construction materials are economy, durability and ease of maintenance.

• Exterior Finishing Materials

The main finishing material to be selected is local stone in order to make use of its proven weatherability and heat insulation performance.

Roof : Accessible asphalt membrane waterproofing with concrete plate finish

Coping : PC coping, water repellent agent coat

External Walls : Local stone (hard limestone) facing with base concrete block masonry (t200)

Louvres : Exposed concrete coated with a water repellent agent

Window Frames : Aluminium frames with heat repellent glass used in some windows

Scarcement : Concrete, mortar trowel and pea gravel finish

Courtyard Ground : Concrete plate finish

Surroundings : Planted to reduce the reflection of the sun and dust

• Interior Finishing Materials

The most appropriate materials will be selected based on the functions and characteristics of each room in addition to high durability and ease of maintenance. Table 2-3 gives the finishing materials for the main rooms.

Table 2-3 Finishing Materials for Main Rooms

[Interior Finish No. 1]

Room	Floor	Walls	Ceiling	Fixtures, etc.	Air-Conditioning
< First Floor >					
Out-Patients Clinic Room	TZ block	- half tiling (H: 1,100 mm) - mortar VP	rock wool acoustic tile	wash basin, WT, curtain rail	△
Out-Patients Waiting Hall	local stone	local stone	rock wool acoustic tiles (in part)	water fountain, bench	-
Out-Patients Toilet	ceramic tile	semi-ceramic tile	calcium silicate board AEP	shower pan, etc.	Ex.
Guards' Room	TZ block	mortar VP	rock wool acoustic tile	central monitoring unit	△
Reception/Accounting/Pharmacy	"	"	"	counter, WT, SUS sink	△
Reception Lobby	local stone	local stone	rock wool acoustic tiles (in part)	handrail	-
Emergency Unit - Observation Room - Clinic Room	TZ blocks	- half tiling (H: 1,100 mm) - mortar VP	rock wool acoustic tiles	wash basin SUS sink, WT, curtain rail	△
Emergency Resuscitation Room	ceramic tile	semi-ceramic tile	"	"	△
Rooms related to X-Ray Unit	TZ block	mortar VP	"	WT for film viewer film rack	△
X-Ray Dark Room	"	- half tiling (H: 1,100 mm) - mortar VP	"	SUS sink, WT	△
Physiological Laboratory	"	"	"	curtain rail, etc.	△
Pathological Laboratory	"	semi-ceramic tile	calcium silicate board AEP	laboratory table	○
Physiological Treatment Rehabilitation Room	"	mortar VP	rock wool acoustic tile	curtain rail, equipment installation wall	△
Hydrotherapy Room	ceramic tile (mosaic)	semi-ceramic tile	calcium silicate board AEP	-	△
Duty Night Room	TZ block	mortar VP	rock wool acoustic tile	T/S	△
Changing Room	"	"	"	T/S, cabinet	△
Dining/Rest Room	"	"	wooden strip board	-	△
Kitchen	ceramic tile	semi-ceramic tile	calcium silicate board VP	counter	△
Catering Office	TZ block	mortar VP	rock wool acoustic tile	-	△
Laundry/Linen Storage	ceramic tile	semi-ceramic tile	calcium silicate board VP	WT for storage	△
Housekeeper's Room	TZ block	mortar VP	rock wool acoustic tile	storage cabinet	△
Corridor	"	"	exposed ceiling AEP	stretcher guard and handrail, etc.	-
Main Machine Room	mortar (hardener)	half mortar (H: 1,100 mm) with GW board finish	GW board	-	Ex.

[Interior Finish No. 2]

Room	Floor	Walls	Ceiling	Fixtures, etc.	Air-Conditioning
< Second Floor >					
Ward	TZ block	- half tiling (H: 1,100 mm) - mortar VP	rock wool acoustic tile	curtain rail, wash basin, hook for drip	△
Ward T/S	ceramic tile (mosaic)	semi-ceramic tile	calcium silicate board AEP	shower pan, curtain	Ex.
NS	TZ block	mortar VP	rock wool acoustic tile	counter, SUS sink, WT	△
Treatment Room	"	"	"	SUS sink, WT	△
Rest Room	"	"	"	sink	△
Toilet/Shower Room	ceramic tile	semi-ceramic tile	calcium silicate board AEP	shower pan, curtain	Ex.
Corridor	TZ block	mortar VP	exposed ceiling AEP (rock wool acoustic tiles in part)	stretcher guard and handrail, etc.	-
Day Corner	"	"	rock wool acoustic tile	stretcher guard	△
Coctors' Room, etc.	"	half wooden panel (H: 1,100 mm), mortar VP	"	black curtain/blind	△
Delivery Room, etc.	PVC sheet	semi-ceramic tile	"	SUS sink, WT	○
Central Sterile Unit, etc.	"	"	calcium silicate board VP	Pass box, stainless steel sink, WT	○
Operating Theatres	"	"	steel panel	-	○
Operating Hall	"	"	"	wash basin	○
Changing Room, Admin.	TZ block	mortar VP	rock wool acoustic tile	T/S	○
Corridor	"	"	exposed ceiling AEP (rock wool acoustic tile in part)	stretcher guard	-
Staircase	"	"	sprayed resin	metal non-slip	-
< Roof Top >					
Machine Room	mortar (hardener)	half mortar (H: 1,100 mm) with GW board finish	GW board	-	Ex.

Note: ○ - full air-conditioning, △ - cooling and ventilation, Ex - extractor fan, TZ - terrazo tiles, WT - work table, GW - glass wool, T/S - toilet and shower

2) Structural Plan

The structural plan shall satisfy the design criteria relating to site, building uses, future plans, building volume, construction cost and term, and structures that possess high degrees of safety, economic feasibility, ease of work execution and durability shall be strived for.

a) Structural Outline and Frame Plan

- Levels, Eave Heights and Structure Types

	Main Block	Attached Blocks
Story	2	1
Height (m)	9.2	4.2
Structure	RC (Reinforced Concrete) frame	RC (Reinforced Concrete) frame

- Members

Foundations, foundation beams, columns, main beams, sub-beams, slabs: RC structure set on site

Outer walls: CB (concrete block) wall substrate, local stone tiled

Interior partition walls: CB wall substrate, morar coated or tiled

b) Ground Bed Outline and Foundation Plan

① Ground Bed Outline

- The site is situated in a low basin area surrounded by mountains, some 10 km to the north-west of the Dead Sea and some 10 km west of the Jordan River. The altitude is approximately between -252 and -256 m.
- The results of boring surveys at 5 locations within the site are as follows.

Soil Type	Depth (GL-) (m)	N-Value	Color
Loess	0 - 8	4 - 30	white
Marl	8 - 25	27 - 32	yellow - green
Chalk	25 -	(hard)	

- Physical and dynamic characteristics of soil types

LOESS: Windblown fine sand and clay. Soft.

Plastic Limit	PL=19-23%	Liquid Limit	LL=35-39%
Plasticity Index	PI=16-17%	Moisture Content	W=4.2-11.3%
Void Ratio	e =12-32%	Adhesion	c =2.0 t/m ²

MARL: Clay with carbonate constituent. Very tightly compacted.

Dry density $\rho_d=1,593-1,765 \text{ kg/m}^3$ Moisture content $W=10.4-15.3\%$

Void Ratio $e= 27-7.58\%$

Unconfined Compressive strength $q_u = 5.81-15.88 \text{ kg/cm}^2$

Specific Gravity 2.71-2.81 Adhesion $c = 4.4 \text{ t/m}^2$

CHALK: Consistent limestone. Very hardly compacted.

- There is no underground water.

② Foundation Plan

- Guidelines

The foundations shall take the ground bed conditions and ease of execution into consideration, and shall support the superstructures without giving way to subsidence and by being balanced with the superstructures.

- Foundation Type and Form

As the loess layer which extends to approximately GL-8m is clay which changes its physical characteristics when water is added, its support strength below the foundation is deemed to be too weak to be the supporting layer. Therefore, a pile foundation with the marl and the chalk layer as the supporting layer will be used. Cast-in-Place Concrete Pile will be used as the equipment can be procured locally for this type of pile.

The foundation form will be an independent foundation.

③ Excavation and Shoring Plan

As the excavation depth will be approximately GL - 2.2 m, open cut excavation shall be adopted.

c) Design Legislation and Standards

As structure design legislation and standards in Palestine are currently in the legislation process, the design for the project shall be carried out in accordance with the legislation and standards of Japan.

d) Design Load

- Seismic Force

Small earthquakes have been felt in Jericho and surrounding areas, however, there are no records of seismic force or damage. 50% of the seismic force as prescribed in the Building Code in Japan shall be adopted.

The following standard shearing force coefficient shall be assumed and the seismic force for each building level shall be obtained in accordance with the Building Code in Japan.

Standard shearing force coefficient: $C_0 = 0.1$ (for initial design purposes)

Initial natural period: $T = 0.02 h$ (sec) (h=building height in m)

Ground bed category: Category 2 ground bed ($T_c = 0.6$)

- Wind Force

50% of the wind force prescribed in the Building Code in Japan shall be adopted.

- Live Loads

Table 2-4 indicates the design live loads of representative building sections.

Table 2-4 Design Live Loads

Secion	Floor	Frame	Seismic Force	Remarks
Roofs	100	60	40	
Wards	180	130	60	
Diagnosis and Treatment	400	270	160	
Corridors and lobby	360	330	210	
Laboratory and X-ray room	500	330	210	Calculated according to actual conditions
Office	300	180	80	
Machine room and electricity room	700	400	250	Calculated according to actual conditions

e) Materials

The materials shall be procured locally as far as possible.

Cement : Normal Portland cement

Coarse aggregate : Locally produced crushed sand

Fine aggregate : Locally produced river sand, mountain sand or crushed sand

Reinforcing steel : JIS standard item (JIS G3112) or equivalent or better foreign standard item

D16 or less = SD295, D19 or more = SD345

3) Air-Conditioning and Plumbing Services

The day temperature of mid-summer becomes 45°C, and at night it is comparatively low. Relative sunshine duration is also very high, but humidity is low. The system is designed to provide comfortable indoor environment with easy maintenance.

a) Air-Conditioning and Ventilation Facilities

① Basic Design Conditions for Air-Conditioning

• Rooms with Air-Conditioning

While it is unnecessary for the building to be heated because of the climate of the area, air-conditioning is essential to maintain a pleasant indoor environment. Air-conditioning will be restricted to the following rooms, however, to keep the related operation and maintenance cost to a minimum.

Air-Conditioned rooms are indicated on Table 2-2.

• Air-conditioning Specifications

- Design Outdoor Conditions : DB40°C and RH30%
- Design Indoor Conditions : DB 24°C and RH 50% for the
operating theatres and delivery room
DB 26°C and RH 50% for all other
rooms

② Heat Sources

It will be necessary to supply steam to the sterilisation unit and laundry. The following heat sources will be provided with high pressure steam boilers playing a central role.

• Boilers and Oil Supply System

- High pressure steam boilers (water tube type)× 2 (fuel:type A heavy oil)
- Main oil tank (capacity: 5,000 litres × 1)

• Refrigeration System

- Electric water cooling reciprocating type refrigerating machine × 1
- Double steam use absorption type refrigerating machine × 1

③ Air-conditioning Service

• Air-conditioning System

In order to establish an easy operation and low running cost, the system will allow independent time and zone setting for each subject room. In those places requiring a high level of cleanliness, such as the operating theatres, a single duct and reheating system designed to provide a high level of cleanliness and ease of controlling odour and noise will be introduced. In contrast, a fan coil unit and primary air system will be introduced for the ward and nurses' stations. where the independent use of the air-conditioning system is required. No air-conditioning will be provided for corridors as cool air from the air-conditioned rooms will pass through.

First Floor

- Emergency Zone : fan coil unit + primary air
- Service Zone : fan coil unit + primary air
- Pharmacy/Reception Zone: fan coil unit + primary air
- X-Ray Zone : single duct + reheating
- Laboratory Zone : multi-zone unit
- Hydro Therapy Zone : single duct

Second Floor

- Ward Zone : fan coil unit + primary air
- Nurses' Station Zone : fan coil unit + primary air
- Operating Theatre Zone : single duct + reheating
(combined with fan coil unit in parts)
- Delivery Room Zone : single duct + reheating
(combined with fan coil unit in parts)
- Central Sterilisation : single duct + reheating
(combined with fan coil unit in parts)
- Medical Office Zone : fan coil unit + primary air
- Service Zone : a separate type air-conditioning unit will
be installed in the guard's room and
maintenance staff room

- Clean Air Supply

The intake of fresh air to the building will be integrated and a simplified filtering unit will be installed to remove sand from the air. Air cleanliness will be particularly maintained in the following zones.

- Operating Theatre Zone : air-conditioning unit to be equipped with a pre-filter and medium performance filter (colourmetry: 90% or more)
- Delivery Room Zone : same as operating theatre zone
- Central Sterilisation Service Zone : an air outlet unit equipped with a Zone HEPA filter will be installed in the main operating theatres, delivery room and sterilisation room of the central sterilisation service department; the ventilation frequency in these rooms will be 30 times/day to achieve a cleanliness class 1,000 to 10,000.

Except above mentioned three zone, all the filters will be facile filter.

- ④ Ventilation System

- Rooms with ventilation system : kitchen, laundry, main machine room and morgue
- Rooms with extractor fan : toilets, storages and kitchenette

- ⑤ Automatic Control

A basic automatic control system will be introduced for energy saving and easy maintenance of the air-conditioning system and heat sources. The fan coil unit in each room will be independently switched on and off and the fan speed will be controlled. A central monitoring panel will be installed in the maintenance staff room for the switching on and off of the air-conditioning machinery.

b) Water Supply and Drainage Facilities

① Water Supply

- Water Source : municipal water
- Supply Method : gravity method with an elevated water tank
- Water Tank : double slab under the main machine room
(capacity: approx. 120 m³) to prevent temperature
rise of water mineral water mineral water is used
for drink
- Elevated Water Tank : stainless steel panel type (capacity: approx. 10 m³)
- Water Pipes : zinc plated steel pipes for pumping up route vinyl
chloride pipes for distribution routes

A water softening-cum-filtering unit will be installed to secure good water quality.

② Hot Water Supply

- Heating Source : solar panels
- Supply Areas : operating theatres, laboratory, central sterilisation
department, delivery room, kitchen, laundry
emergency treatment room, etc.
- Supply Method : central supply system with two 1,000 litre
stainless steel storage tanks
- Supply Pipes : pipes

③ Water Drainage and ventilation pipe

- Water Drainage System : separate system for indoor and integrated system
for outdoor water discharge; separate channels
for rainwater and laboratory waste water
- Ventilation System : steak ventilation system and circuit ventilation
system
- Waste Water Treatment : combined treatment of sewage and
miscellaneous waste water at long time aeration
type septic tank prior to discharge for ground
infiltration

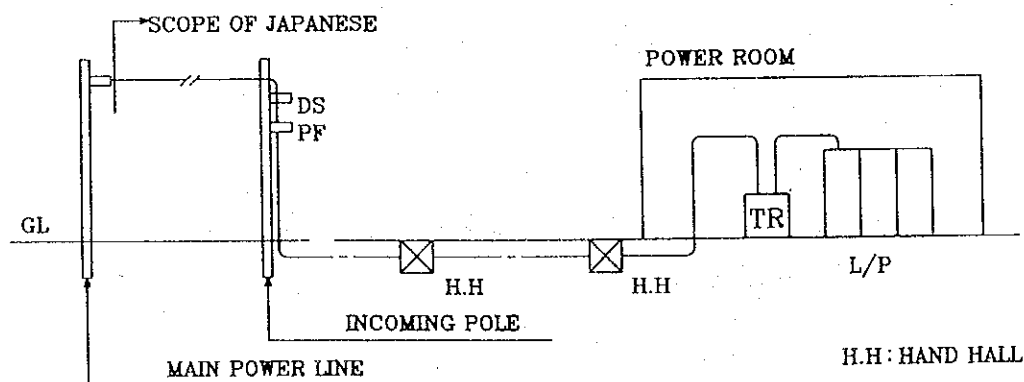
- Laboratory Waste Water : acid and alkali-treated at neutralisation tank prior to discharge for ground infiltration
- Rainwater : heavy metal-collect separately discharged for ground infiltration
- ④ Fire-Fighting : fire extinguishers in required places
- ⑤ Gas Supply : LPG to the kitchen
- ⑥ Medical Gas Supply
- 4-Bed Rooms : 2 set of oxygen supply and suction outlet
- Single-Bed Room, Emergency Treatment, Room and Observation Room : 1 set of oxygen supply and suction outlet
- Operating Theatres : outlets for oxygen gas, suction, laughing gas (nitrous oxide), compressed air and excessive gas
- Delivery Room and Labour Room : outlets for oxygen gas, suction and compressed air
- ⑦ Sterilised Water for Medical Use
- Independent supply will be made to the scrub up basins in the operating theatre zone.
- ⑧ Kitchen
- Prefabricated Refrigerator : one each and freezer
- Gas Range : one 4-ring gas range
- Sink : one for washing up and one for preliminary washing
- Dishing Tables : 2
- Service Carts : 2
- Racks and Shelves, etc.
- ⑨ Laundry
- Washing Machines : 3 (large and medium sizes)
- Dryers : 2
- Steam Iron : 1
- Electric Irons : 2

4) Electrical Installations

a) Power Supply and Substation

Power supply to the buildings will be made by the existing aerial cable and will be 3-phase, 3-wire, 6.6 KV/50 Hz. From the service pole, underground cable will stretch as far as the electricity room. At the substation, the voltage will be dropped from 380 V to 220 V which will then be supplied to each load point. A transformer capacity of approximately 600 KVA is assumed.

Scope of Work : The Japanese side will be responsible for electrical installation beyond branching from main power line, including the substation in the building.



b) Generator

An independent power generating unit will be installed as a back-up power source for such important medical equipment as life-support machines and security lighting, etc. during a power cut. A constant power supply will be ensured for the operating theatres and delivery room, etc. using a UPS unit. The planned generator specifications are as follows.

Generating Capacity : 3-phase, 3-wire, 380 V/220 KVA

Fuel : light oil or heavy oil

Operating Duration : 24 hours/day

c) Trunk Power Line

Power of 3-phase, 4-wire, 380V/220V will be supplied from the power room to each panelboard.

d) Lighting

Lighting will be basically provided by fluorescent lamps in view of economy. Incandescent lamps will be used where required due to the specific purpose or function of a room. The planned luminous intensity of the main rooms is given below.

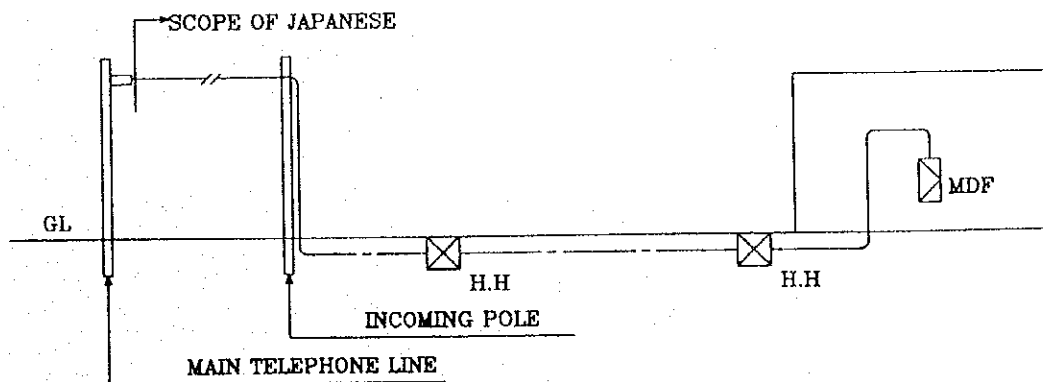
Consultation Room/Operating Theatre	:	500 lux
Administration Office/Nurses' Station	:	400 lux
Ward	:	150 lux
Corridor/Lobby	:	100 lux

Shadowless lamps will be installed in the operating theatres.

e) Telephone

Telephone provision to the site will be made from the existing line to the service pole on the premises using aerial cable. From the service pole, underground cable will be used to reach the MDF panel inside the building. A push button telephone system will be installed with some 50 extensions.

Scope of Work : The Japanese side will be responsible for the telephone connection beyond branching from main telephone line.



H.H : HAND HALL

f) Public Address System

An amplifier will be installed in the administration office for paging and emergency calls, etc.

g) TV Reception

A VHF television aerial will be installed on the roof and wiring will be conducted to each outlet.

h) Interphone

An interphone system will be installed in each operating theatre and the X-ray laboratory.

i) Electric Clock

An electric clock will be installed in each operating theatre to assist operations.

j) Nurse Call System

A nurse call system will be installed to assist communication between patients and nurses and to make urgent calls for a nurse.

k) Automatic Fire Alarm System

An automatic fire alarm system triggered manually or by a heat sensor will be installed to warn those inside the building of a fire.

l) Outdoor Lighting

Outdoor lighting will be installed for the security of the premises and will be manually switched on and off.

(2) Equipment Plan

The selection of equipment for the Project will be limited to that equipment which is vital for the hospital to provide a secondary medical service. The first step in the establishment of the equipment plan is confirmation of the functions and roles expected of each department of the hospital, followed by examination of the equipment specifications and grades which are sufficient to provide the said medical service. Furthermore, if any of the equipment used by the existing Jericho Hospital appears to meet the specification and grade requirements, the feasibility of the transfer of this equipment to the new hospital should be analysed.

1) Specifications and Grades

Table 2-5 gives the specifications and grades of the main equipment to enable the hospital to perform the required functions and roles of a secondary medical institution described in Table 2-1.

Table 2-5 Specifications and Grades of Planned Main Equipment

Equipment	Main Specifications	Suitability of Use and Grade
1. Ultrasonic Scanner with Printer	<ul style="list-style-type: none"> - Scanning method: convex/linear - Display mode: B/M 	The desirable model is that with a wide diagnostic capability to deal with the general ultrasonic testing of organs and the early diagnosis of pregnancy as well as diagnosis of the fetus position, etc. in the Obstetrics Department.
2. Delivery Table (Operating Table)	<ul style="list-style-type: none"> - Hydraulic height adjustment mechanism - With a supplementary table 	The table should be able to swiftly obtain the best position for a Caesarean section or any other operation. Table height adjustment is made by a foot pedal while the pelvis height is adjusted by a handle.
3. ENT Treatment Unit	<ul style="list-style-type: none"> - Switch: remote controlled micro-switch - Vertical motion: max. height: 810 mm min. height: 510 mm stroke: 300 mm - Swivel angle: 360° 	Used mainly for the diagnosis and treatment of ENT patients with a mechanism which can easily change the patient position.
4. ENT Diagnosis/Treatment Unit	<ul style="list-style-type: none"> - Suction/atomising device: automatic - Spray device: automatic with direct connection to rubber tube - Insufflation device: air control with tap - Lamp arm: stretchable arm with built-in spring - External dimensions: frontage: 1,070 mm depth: 515 mm height: 880 mm (upto top surface of main body) 	Used together with the above patient chair for the diagnosis and treatment of ENT patients. The basic equipment and tools for these purposes are stored in the console box.
5. Ophthalmic Unit	<ul style="list-style-type: none"> - Chair: 1,200 - 1,450 mm (H) with console box, lamp and hydraulic height adjustment 	Reclining chair for ophthalmic examinations.
6. Slit Lamp Microscope	<ul style="list-style-type: none"> - Type : Gressnough type/Galilei type - Total magnification : X10 - 30 - Slit lamp : slit width : 0 - 10 mm slit length : 0 - 10 mm 	Used for the diagnosis of clouding or inflammation of the diaphragm and/or crystalline lens
7. Retinal Camera	<ul style="list-style-type: none"> - Type: Mydriatic - Filming angle of view: 50°, 35° and 20° - Filming magnification (35 mm film): ×1.8 (50°), ×2.5 (35°), ×3.7 (20°) - Observation magnification: ×10 (50°), ×13.4 (35°), ×19.9 (20°) 	Used for the recording of retinal changes due to disease and for fluorescent retinal filming to check retinal irregularities or lesions of the retina. Essential equipment for the ophthalmology department of any general hospital.
8. Glucose Analyser	<ul style="list-style-type: none"> - Main Specification - Measuring method: H₂O₂ Electrode using GOD membrane - Capacity: 60 samples - Measuring range: 0 to 999 mg/dl - Linearity range: 0 to 700 mg/dl - Sample volume: 10 µl - Accuracy: CV 2% (at 100 mg/dl) 	Suitability of Use and Grade Use in a clinical laboratory as routine inspection. Measuring the rate of glucose in blood and urine.
9. Flame Photometer	<ul style="list-style-type: none"> - Fuel: butane or natural gas - Sample size: 20 - 40 µL - Testing items: Na, K, Li - Accuracy: ±2% 	Very often used in a clinical laboratory for the direct measurement of Na, K and Li in blood, plasma and lymph fluid and for the indirect measurement of K, etc. in urine.

Equipment	Main Specifications	Suitability of Use and Grade
10. CO ₂ Incubator	<ul style="list-style-type: none"> - Temperature range: +5°C -50°C ± 1.0°C - CO₂: automatic control of CO₂ density, temperature and CO₂ alarm function 	An essential tool for cell culture in a non-airtight environment. Must be capable of maintaining a constant temperature with free control of the CO ₂ density.
11. Inverted Microscope	<ul style="list-style-type: none"> - Optical system: UIS - Total magnification: 40x-1000x - Eyepiece: 10x 	Observing the cytopathic effect arises from virus to be increased.
12. Mobile X-ray Machine	<ul style="list-style-type: none"> - Type: capacitor-type generator - Phase: 10 A (220 V), 20 A (110 V) - Tube voltage: max.: 105 KV min.: 40 KV - Tube current: max.: 400 mA - Accessory: electrical repair tools and cabinet 	A compact X-ray machine with a high voltage generating unit, X-ray tube unit and X-ray tube support unit installed on a self-propelled platform car equipped with a built-in battery and motor. Essential to conduct X-ray examinations of patients who cannot be moved from the ward.
13. X-ray Apparatus with Fluoroscopy and TV	<ul style="list-style-type: none"> - Examination table with sliding table top for remote control - High voltage generating unit (Rating) short time : 80 KV - 500 mA 150 KV - 250 mA continuous : 125 KV - 4 mA - X-ray tube unit (tube voltage): max. 150 KV - Image Intensifier (size): 9 inches 	Subject organs include the throat, esophagus, stomach, duodenum, small and large intestines and anus. The fluoroscopy is to be used for the early discovery or diagnosis of bronchial and lung infections caused by digestive problems.
14. Dark Room Equipment Set	<ul style="list-style-type: none"> - Automatic film processor for hand-winding films - Dark room lamp and timer - Film name printer - Cassette bath box, etc. 	Equipment set for the processing (developing) of X-ray films.
15. Operating Table	<ul style="list-style-type: none"> - With hydraulic height adjustment - Table top gear type - Versatile type to allow both vertical and horizontal tilting and raised abdominal position 	Operating table for general surgical use. Preferably that which can maintain the patient's position without causing body stress.
16. Shadowless Operating Lamp	<ul style="list-style-type: none"> - Ceiling suspension type - Dual light sources: (8 - 10 bulbs/4 - 5 bulbs) - Luminous intensity: 100,000 lux plus 30,000 lux or more - Integral counter balance - With elevation arm 	Dual lamp type is preferred to provide heatless lighting with the optimum luminous intensity and colour temperature while properly lighting the operating area to ensure smooth operations.
17. Ventilator	<ul style="list-style-type: none"> - Electric powered lug ventilator with built-in compressor. - Function: CMV, CMV/Assist, IMV, SIGH, etc. - Tidal volume: 50 - 1300 ml - Frequency: 6 - 40 times/min. 	Use to assist the patient's respiration during and after operation.
18. Defibrillator	<ul style="list-style-type: none"> - Usable with standard 12 induction ECG - Output energy : 3 - 360 joules - Monitor size : 5 - 5.5" - Rapid charger : built-in type - Power source : both AC and DC 	Sends a direct current via the skin to combat ventricular fibrillation, the most common form of heart stoppage, to restore the original rhythm of the heart. Essential equipment for a general hospital.
19. Electric Surgery Unit	<ul style="list-style-type: none"> - Usage: incisions, coagulation, mixed, bipolar - Digital output display - Cutting output: 0 - 250 W - Coagulation output: 0 - 120 W - Mixed output: 0 - 200 W - 3 bipolar output: 18 W 	Used to cut open body tissue or to conduct a hemostatic section or coagulation. Essential for any operating theatre.
20. High Pressure Steam Steriliser	<ul style="list-style-type: none"> - Effective chamber dimensions: 660 mm x 900 mm - Electric steam generator - Operation temperature: 100 - 132°C - Pressure: 0 - 4 kg/cm² (continuous: 2.4 kg/cm²) - Safety devices: low water level warning, safety valve (spring type) 	Conducts quick and assured sterilisation and used to sterilise medical tools and equipment except those which are vulnerable to heat or water.
21. EO Gas Steriliser	<ul style="list-style-type: none"> - Sterilising gas pressure: 1.3 kg/cm² - Sterilising temperature: 35 - 70°C - Digital chamber temperature display with timer - Safety devices: chamber pressure warning, gas leakage warning 	Conducts the sterilisation of items vulnerable to heat such as rubber gloves, catheters, tubes, infusion and blood transfusion sets, endoscopes and oral anaesthesia units, etc. Preferably with an aerator.
22. Cleaning Machine for Endoscope	<ul style="list-style-type: none"> - Automatic jet cleaning system - Disinfectant tank: 15 lit. - Water consumption: 11 - 13 lit./min. 	Cleaning device in exclusive use for various endoscopes.
23. Autopsy Table	<ul style="list-style-type: none"> - Material: Stainless steel - Dimension: 750 (W) x 2,600 (L) x 800 (H) App. - Electric Consumption: 1.5 kW 	For pathology use.
24. Mortuary Refrigerator	<ul style="list-style-type: none"> - Capacity: 2 bodies - Storage temperature: standard: 5°C, programmable range: 0 - 10°C - Stainless steel holding tray - Cooling system: closed air cooling type refrigerating machine 	For the temporary storage of dead bodies. Two body spaces should be sufficient.

3) Existing Equipment and Its Transfer to New Hospital

The Japanese government provided medical equipment through the Japanese Red Cross Society between September, 1994 and August, 1995 to restore the functions of the Jericho Hospital. Having examined this new equipment as well as the old equipment owned by the hospital, it is judged that 123 pieces of equipment (89 types) out of 151 pieces of main equipment (94 types) currently in use by the existing hospital can be transferred to the new hospital for continued use. List of the existing main equipment of the Jericho Hospital is shown in Appendix-9.

4) Planned Equipment

The new Jericho Hospital has identified 974 pieces of equipment (377 types) to maintain the secondary medical service level. As 123 pieces of equipment (89 types) can be transferred from the existing Jericho Hospital, the number of required equipment to be procured under the Project is 851 pieces (301 types). The destinations and quantities of the equipment to be newly procured are shown in Table 2-6. A list of the planned equipment is given in 2-4 Drawings.

Table 2-6 Destinations and Quantities of Equipment to be Newly Procured Under the Project

Destination	Planned Equipment					
	Required Qty. of Equipment for New Jericho Hospital		Qty. of Equipment to be Transferred from Existing Jericho Hospital		Qty. of Equipment to be Procured	
	Types	Pieces	Types	Pieces	Types	Pieces
(A) General Surgery	25	38	10	12	15	26
(B) General Internal Medicine	6	13	3	7	3	6
(C) Pediatrics	11	23	8	16	5	7
(D) Obstetrics/Gynaecology	49	87	17	21	34	66
(E) Orthopedics	13	19	1	1	12	18
(F) Otorhinolaryngology	13	15	-	-	13	15
(G) Ophthalmology	13	13	-	-	13	13
(H) Central Laboratory	45	56	21	22	26	34
(I) Radiology room	13	17	3	4	10	13
(J) Operating Theatres	30	80	11	22	24	58
(K) Physiotherapy	23	48	7	7	16	41
(L) Emergency Unit	30	61	7	10	24	51
(M) Outpatients common	21	145	-	-	21	145
(N) Ward	39	272	-	-	39	272
(O) Central Sterilisation Service	12	27	-	-	12	27
(P) Morgue	6	6	-	-	6	6
(Q) Pharmacy	5	8	1	1	5	7
(R) Maintenance	17	30	-	-	17	30
(S) Reception	1	2	-	-	1	2
(T) Laundry	2	7	-	-	2	7
(U) Medical Office, Meeting Room	3	7	-	-	3	7
Total	377	974	89	123	301	851