

6-3 INSTALLATION PLAN FOR MEDICAL EQUIPMENT

(1) Electrical Works

- 1) The electricity source from the existing outlets is adequate for the small pieces of medical equipment. However, at the moment, the number of outlets in some of the rooms is insufficient. The old outlets need to be replaced and new ones need to be installed. These works are to be done by the Sudanese.
- 2) The electricity source for the large pieces of medical equipment, and for the X-ray apparatus in particular, does present a problem. The power capacity required for the expected X-ray apparatus is greater than that of the existing X-ray apparatus. Consequently new cables will have to be run to the X-ray room and accordingly the distribution boards inside the Electrical room will need renovation. Furthermore a piping pit and a cable tray for the control cables in the X-ray room will be needed. These electrical works must be completed by the Sudanese prior to the installation of apparatus.

(2) Air Conditioning Works

No particular air conditioning alterations will be required for the medical equipment which is planned to be installed.

(3) Plumbing Works

- 1) As water is supplied to the rooms requiring water, it will not be difficult to connect pipes to the medical equipment. However the piping in the Dark rooms where chemicals are being used rusty and all the piping inside the rooms will have to be renewed. These works are to be done by the Sudanese.
- 2) Drainage does not present any particular problems.

The work concerning both the electrical and the plumbing facilities is much the same, neither demand high level

skills. If the Sudanese are presented with the conditions concerning the electricity and the plumbing required for the planned equipment, it is possible for the Sudanese staff to execute and supervise these works.

(4) Architectural Works

As already mentioned in Chapter 4 the X-ray apparatus was not set onto reinforced concrete slabs. Foundation work is required in order to prevent the apparatus from tilting owing to the floor subsidence. Pit and cable tray work to connect the control room and lead glass work for the view windows are also required. The alteration of the concrete floor blocks, the fixing of PVC tiles, the painting of the walls and the ceilings are also highly desirable. All of these works are to be done by the Sudanese. These things are technically possible for the Sudanese staff. Tomography apparatus in this project is recommended to be installed in the RM-1. Since the equipment in the Laboratory department include some precise equipment, it is recommended that the Sudanese improve the windows of the specific rooms in order to prevent the dust from damaging the equipment.

(5) Guideline for the installation of medical equipment

Below are the equipment numbers of those requiring power, water or gas supplies, drainage or foundations. These works shall be the responsibility of the Sudanese. However, prior to works, detailed discussions regarding capacity, construction methods and locations should be held between the Sudanese and the Japanese. It must be confirmed that these works have been completed by the Sudanese prior to the installation of the medical equipment.

5)-1 Electricity

- A) Operating Department : 1,2,4,5,6,7,19,36,37
- B) X-Ray Department : 1,2,3,4,5
- C) Clinical Investigation Unit: 1,2,3,4
- D) Anesthesia and Resuscitation Department : 1,2,4,7,8,9,10
- E) Pharmacy Department : 1,2,3,4

- F) Medicine Department : 6,7,8,13,14
- G) Outpatient Department : 4,8,9
- H) Obstetric and Gynaecological Department : 3,5,6,11,17,18,20
- I) Mortuary Department : 3
- J) Pathology Museum : 1,3
- K) Endoscopy Department : 5,6,8
- L) Histopathology, Haematology: 1,2,3,4,5,6,7,10,11,12,13,
& Chemical Department 14,15,16,17,18,19,20,21,22,
23,24,26,27,28,32
- M) Microbiology Department : 1,3,4,5,6,7,8,9,10,11,12,
14,15,16,17,18,19,20,21,22
- N) Immunology Department : 1,2,3,4,5,6,7,8,9,10,11
- O) Blood Bank Department : 1,2,3,4,5,6

Power receiving system for the above listed equipment are as follows.

- i) Max. power capacity below 2.5Kw:
Prepare 13A socket outlet.
- ii) Max. power capacity 2.5Kw and above.
To be indicated according to the type of equipment.

5)-2 Water Supply and Drainage

- B) X-Ray Department : 4
- E) Pharmacy Department : 3
- L) Histopathology, Haematology: 7
& Chemical Department
- M) Microbiology Department : 14

5)-3 Butane Gas Cylinder

- L) Histopathology, Haematology : 23
& Chemical Department
- M) Microbiology Department : 8

5)-4 Ventilation

- M) Microbiology Department : 8

5)-5 Foundation

- B) X-Ray Department : 1,2

Details of installation of Tomography and Diagnosis X-ray Mammography unit in X-ray department are as follows.

(a) Electrical works

The works for cable tray, conduit pipe and distribution board are to be carried out by the Sudanese.

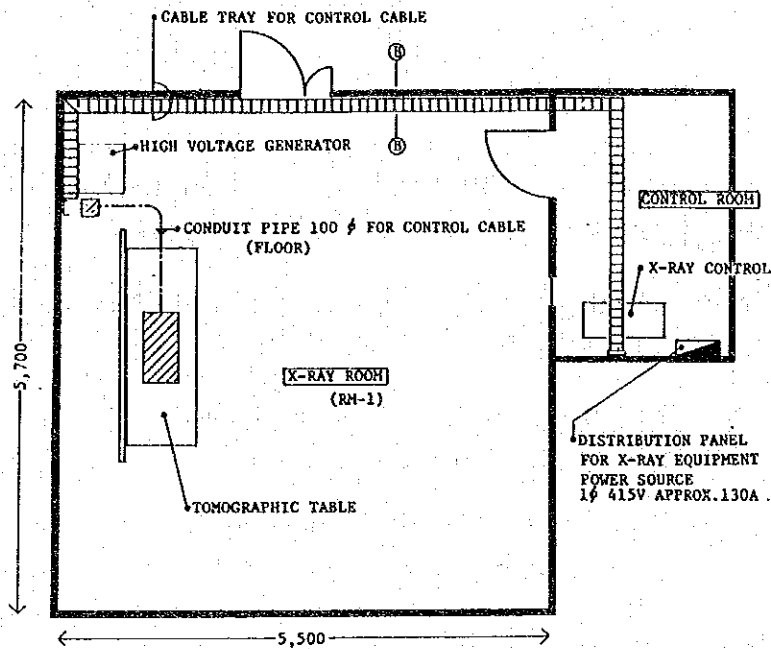


Fig. 6. Layout of X-ray Room

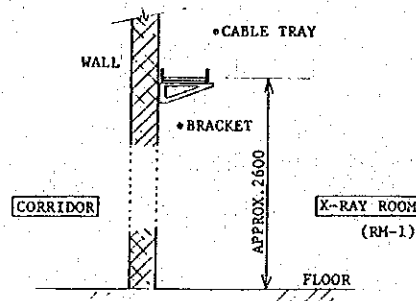


Fig. 7. Detail of Cable Tray

(b) Foundation works

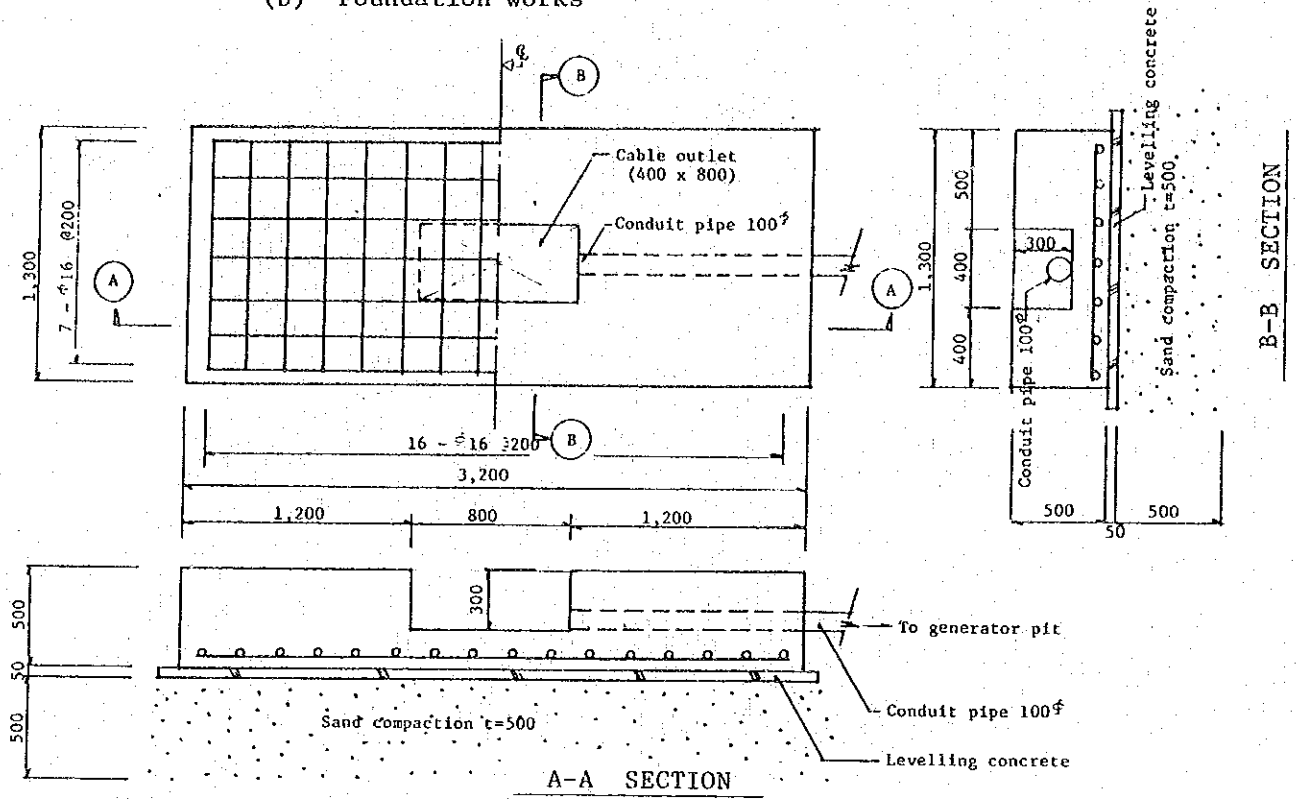


Fig. 8. Foundation of Tomographic Table

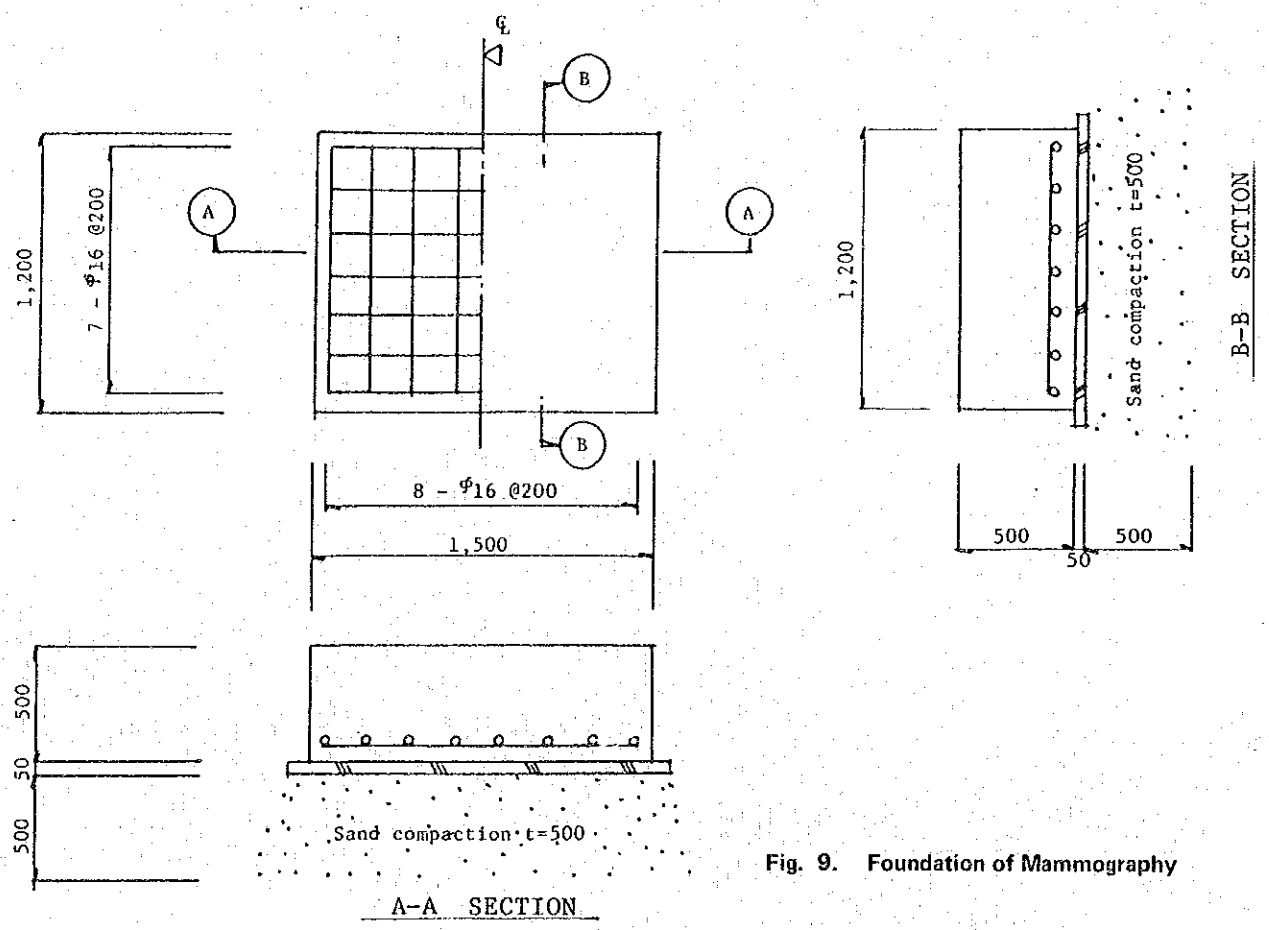


Fig. 9. Foundation of Mammography

CHAPTER 7
CONCLUSION

7. CONCLUSION

As has already been said, the plans for the improvement of the medical equipment for the Emergency and Accident Centre and the Laboratory Complex and for the extension of the existing facilities, which have not yet reached completion, are to be excluded from this project. The project is to cover the medical equipment which can be installed with slight modification in the existing facilities. The Medical Equipment plan was made in order to improve the function of the existing facilities as the University Hospital.

As far as the details of the equipment for this project are concerned, it is thought to be possible for the Sudanese to carry out the maintenance and the operation, to finance the budget and to execute the appurtenant works.

The Faculty of Medicine, University of Khartoum is the heart of Medical Research in the Sudan. The students, who are trained at this hospital become doctors, are allocated across the country and contribute to the improvement of the medical service. This grant-aid project is estimated to be significant not only in improving Soba University Hospital but also in upgrading to medical service throughout the country. An extension of grant-aid for Soba University Hospital, Medical Equipment Improvement Project by the Japanese Government is significantly relevant and the contributions of this project shall be highly esteemed,

APPENDIX

1. MEMBERS OF THE STUDY TEAM

Dr. Seichi Inatomi	Team Leader Professor, Medical School, Okayama University
Mr. Norio Shimomura	Project Coordinator Basic Design Div., Grant Aid Dept. JICA
Mr. Mineo Nagaoka	Architect Yamashita Arch. & Eng. Inc.
Mr. Seishi Asakura	Electrical & Mechanical Engineer Yamashita Arch. & Eng. Inc.
Mr. Taiji Nakatani	Medical Equipment Specialist

2. SURVEY SCHEDULE

2-1 Survey Schedule

	Date	Detail of Survey
1st day	Jan. 9 (Sun.)	Left Narita (Messrs. Inatomi, Shimomura)
2nd day	Jan. 10 (Mon.)	Arrived at Paris
3rd day	Jan. 11 (Tue.)	Arrived at Khartoum Meeting with the members of Japanese Embassy Courtesy Call on Ministry of Planning
4th day	Jan. 12 (Wed.)	Discussion with the doctors at Soba University Hospital
5th day	Jan. 13 (Thu.)	Ditto, Survey on existing facilities
6th day	Jan. 14 (Fri.)	Analysis of collected Data
7th day	Jan. 15 (Sat.)	Meeting with the members of Japanese Embassy Discussion with the doctors at Soba Univ. Hospital (Messrs. Nagaoka, Asakura and Nakatani arrived at Khartoum)
8th day	Jan. 16 (Sun.)	Discussion with the doctors at Faculty of Medicine
9th day	Jan. 17 (Mon.)	Exchanged signatures on Minutes of Discussions Reported the results to Japanese Embassy
10th day	Jan. 18 (Tue.)	Survey on existing facilities at Soba Univ. Hospital
11th day	Jan. 19 (Wed.)	Ditto (Messrs. Inatomi, Shimomura left Khartoum)

12th day	Jan. 20 (Thu.)	Data collection at Univ. of Khartoum Discussion with doctors at Soba Univ. Hospital
13th day	Jan. 21 (Fri.)	Analysis of collected data
14th day	Jan. 22 (Sat.)	Discussion with doctors at Soba Univ. Hospital Survey on existing facilities Reported the survey results to Japanese Embassy
15th day	Jan. 23 (Sun.)	Messrs. Nagaoka, Asakura and Nakatani left Khartoum
16th day	Jan. 24 (Mon.)	Arrived at Zurich
17th day	Jan. 25 (Tue.)	Arrived at Narita

2-2 Sudanese Members

- Dr. Saad Ahmed Ibrahim (Prof. and Dean of Faculty of Medicine,
University of Khartoum)
- Dr. Haddad Omer Karoum (Director, Soba University Hospital
Prof. of Obstetrics and Gynaecology)
- Dr. Ibrahim Abdel Aziz (Deputy Director, Soba University
Hospital
Associate Prof. of Surgery)
- Mr. Abdalla Yagoub Abbasher (Secretary General, Soba University
Hospital)

3. MINUTES OF DISCUSSIONS

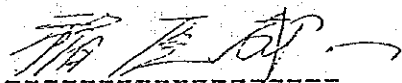
MINUTES OF DISCUSSIONS

In response to the request by the Government of the Democratic Republic of the Sudan, the Government of Japan has sent, through the Japan International Cooperation Agency (JICA) which is an official agency implementing the technical cooperation of the Government of Japan, a team headed by Dr. Seiiti Inatomi, Professor, Department of Parasitology, Okayama University Medical School, to carry out a basic design study on the Improvement of Medical Equipment for Soba University Hospital (the Project) for 13 days from January 9th, 1983.

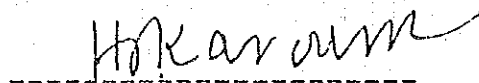
The team had a series of discussions and exchanged views with the staff members of the University of Khartoum.

Both parties have agreed to recommend to their respective Governments and the authorities concerned to examine the result of the study attached herewith toward the realization of the Project.

January 17th 1983, Khartoum



Dr. Seiiti Inatomi
Leader, Japanese Study Team,
JICA



Prof. Haddad Omer Karoum
Director, Soba University Hospital,
Khartoum, Sudan.

ATTACHMENT

- 1- The Project Proposal submitted by the Government of the Sudan has been composed of two Phases, Phase I has been of the improvement of the equipment necessary for the establishment of Emergency and Accident Centre (Centre) and Phase II of the improvement of the equipment for existing Hospital.

The team has been sent on condition that the buildings needed for Phase I have been completed by Sudanese side. However, the buildings have not been completed yet and the timing of its completion is not convinced because of shortage of fund.

- 2- Under such condition, both parties have agreed that the team carry out the necessary study and select the equipment for Phase II.

- 3- Sudanese side has stated that the establishment of the Centre has still the higher priority and new proposal, will be submitted in which the completion of the buildings as well as the provision of the equipment are included under the Grant Aid Assistance from the Government of Japan, after the further study by Sudanese side.

- 4- As the result of the study and discussions between both parties, following equipment has been selected within the scheme of Phase II.

(Equipment required by the Sudanese side whose cost will be borne by the Government of Japan)

- a) Equipment for Theatre.
- b) Equipment for Anaesthesia & Resuscitation
- c) Equipment for Hospital Pharmacy.
- d) Equipment for X-Ray Department.
- e) Equipment for Clinical Investigation Unit.
- f) Equipment for Laboratory.
- g) Equipment for Blood Bank.
- h) Others

5- The team will convey to the Government of Japan the desire of the Sudanese side that the former takes necessary measure to provide and install the equipment mentioned above within the scope of Grant Aid Assistance of the Government of Japan.

6- Both parties have agreed that the training of Sudanese personnel for operation and maintenance of the equipment will play essential role of the Project.

7- The Government of the Sudan will take necessary measures on condition that the Grant Aid Assistance by the Government of Japan is extended to the Project (Phase 11).

- 1/ to provide data and information necessary for installation of the equipment.
- 2/ to ensure prompt unloading, customs clearance in Sudan of imported materials and equipment and to facilitate the internal transportation for them.
- 3/ to exempt Japanese nationals concerned from customs duties, internal taxes and other fiscal levies which may be imposed in Sudan on the occasion of the supply of materials and services for installation
- 4/ to provide and accord necessary permissions, licences and other authorization required for carrying out the Project (Phase 11).

- 5/ to maintain and use properly and effectively the equipment purchased under the Grant Aid Assistance
- 6/ to bear all the expenses other than those to be borne by the Grant Aid Assistance necessary for the installation of the equipment.

JICA