Chapter 3 Implementation Plan

Chapter 3 Implementation plan

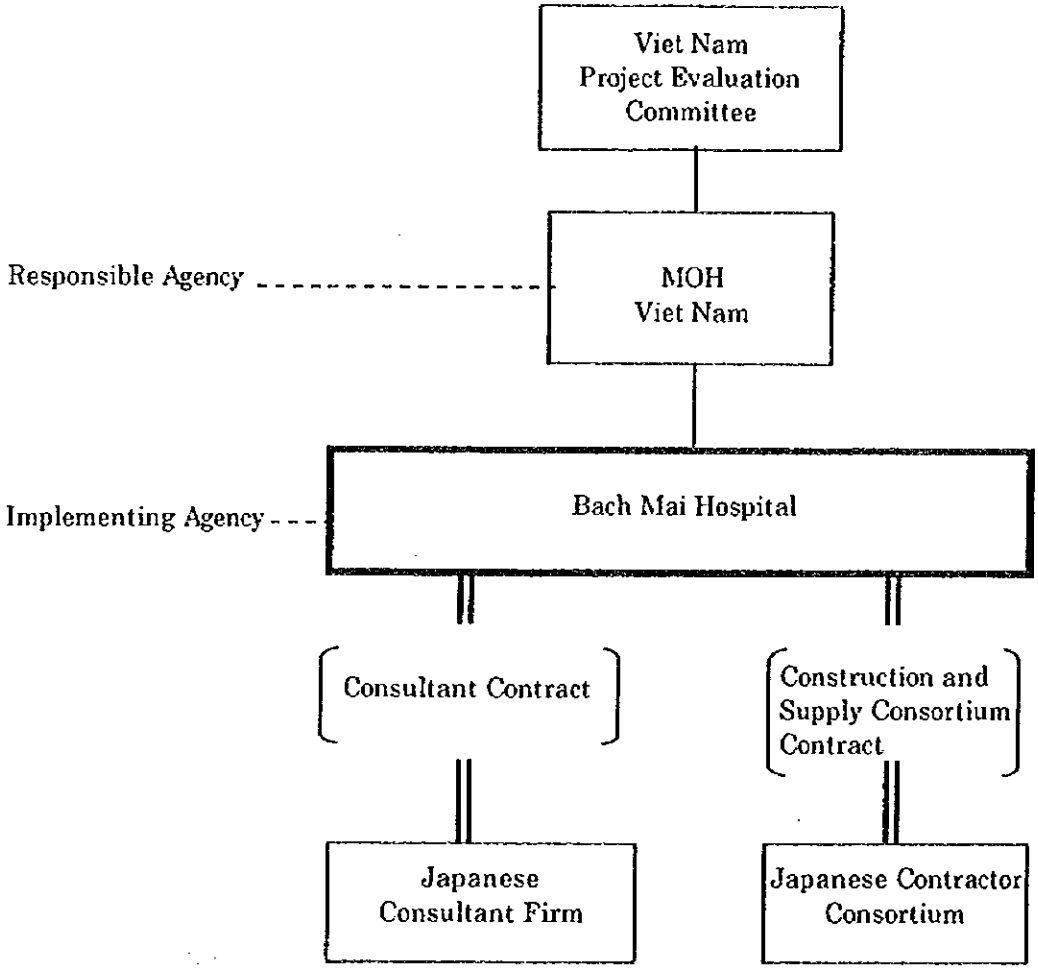
3-1 Implementation plan

3-1-1 Implementation concept

(1) Implementation system

The Project will be implemented under Japan's grant aid cooperation scheme, after the decision by the Cabinet of the Government of Japan and the Exchange of Notes (E/N) on the Project with the Government of Viet Nam. The Project's implementation system in Viet Nam is as follows.

fig.3-1 Implementing Organization

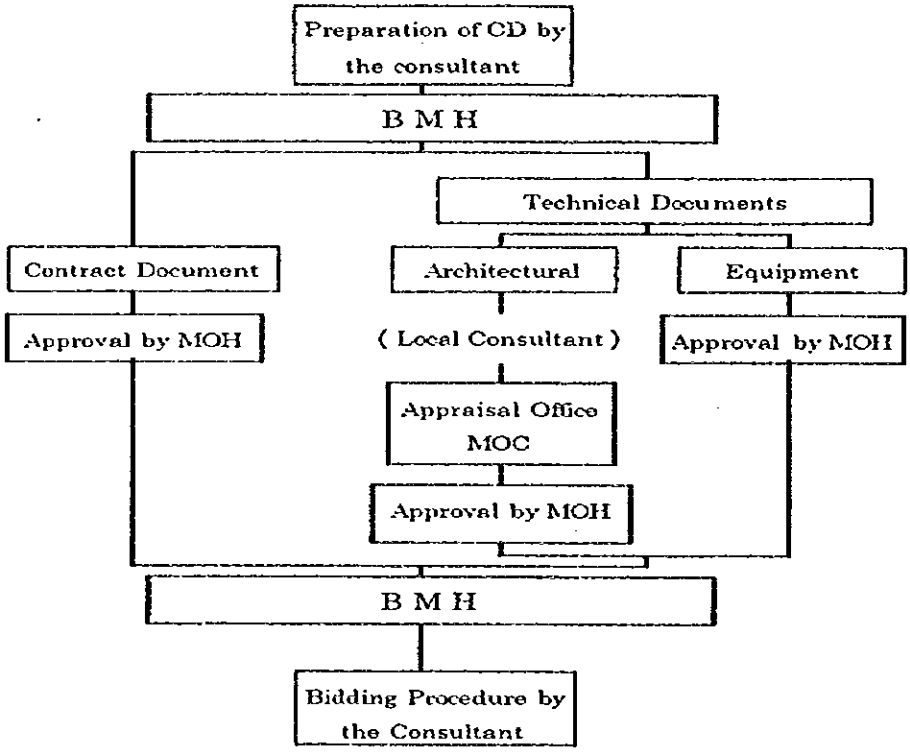


The Ministry of Health is the responsible agency of Viet Nam for the Project's implementation, while Bach Mai Hospital is the implementing agency. Bach Mai Hospital, being the Vietnamese executing body, concludes a consultant contract and a consortium contract on construction and procurement, and implements undertakings committed by Vietnamese side.

The contents of the Tender Documents (e.g., detailed design drawings and specifications) for the Project's implementation will be confirmed by Bach Mai Hospital. The Documents on the procurement of medical equipment will be approved by the Ministry of Health, upon reporting from BMH. Regarding buildings and facilities, Bach Mai Hospital prepare an application for approval to the Appraisal office of the Ministry of Construction. The Document will be accepted by the Ministry of Health, after due Appraisal.

The following chart shows the flow of these procedures.

3-2 Approval Procedures



(2) Consultant

After the E/N is concluded, Bach Mai Hospital concludes a consultant agreement with a Japanese consultant firm, regarding detailed design and construction supervision, and receives the Japanese government's verification of the contract. For the smooth implementation of the Project, it is important to conclude a consultant contract as early as possible after the conclusion of the E/N. After concluding the contract, the consultant firm prepares detailed design drawings on the basis of the present basic design study report and with the consent of Bach Mai Hospital. Then BMH confirms the contents and receives approval of construction, in accordance with the procedures mentioned in (1) above. The firm conducts bidding and construction

supervision services based on the detailed design drawings.

(3) General contractor

The work for the Project includes the construction of buildings and facilities and procurement and installation of equipment. A general contractor, a consortium, with necessary qualification, is selected from Japanese contractors, by an open public tender.

Bach Mai Hospital concludes a construction contract with the contractor selected by the tender, and receives the Japanese Government's verification of the contract.

Then the contractor initiates the work and performs it in accordance with the construction contract.

Since the work is a complicated construction work including various medical equipments and the move and reinstallation of the existing equipment, it is recommended to form a consortium consisting of a construction contractor and an equipment supplier.

The reasons are shown in the followings;

1) To avoid the delay of execution period
Smooth planning and coordination of the work schedule, avoiding unnecessary reworks and delay in schedule because of the discrepancy between building utility works and the equipment in their specs or because of the simple miscommunication.

2) Responsibility of the defect
In case of the separate contract, the responsibility sometimes becomes unclear but in case of a consortium, at least the owner is protected and the cooperation to recover the defect will be carried out in smoother manner.

3) Cost saving in utility
Some of the equipments require different connection systems, therefore in case of the separate contract, the general contractor need to prepare for the various type of the equipments. But if it is the consortium, general contractor needs to prepare on for the chosen type of the equipments.

4) Moving and installation of the existing equipment
a. Move and installation of the running equipments require a lot of care for the timing, for this the close management of the consortium is very efficient.
b. There are many heavy equipment such as CT scanner and other X-ray equipments need to be moved. For these equipments reinforcing, pits, increasing power capacity, moving route, and repair after the move. For the smooth implementation, well thought out probed survey and coordination will
benefit both countries.

5) Storage management
Consortium can control the storage of equipment under one system and can save unnecessary redundancy and trouble.

(4) Employment of local consultant/constructor and dispatch of expert from Japan

It is assumed that Vietnamese engineering companies possess technologies of certain levels, and local consultant firms have highly qualified personnel who have received training abroad. The limited number of these personnel, however, makes it difficult to employ them for the Project's implementation. In Viet Nam, no working

drawings are prepared, adjustment and management of progress in engineering and installation work are not smoothly done, and, among others, engineering work and installation work or installation of different apparatuses is not regarded as an integral part of a project's implementation. This is likely to produce the necessity of construction or installation being done anew, or result in delayed progress. Intensive management and guidance are therefore necessary, where a local constructor is employed. In constructing facilities and installing equipment, a contractor company, which is a Japanese legal person, employs a local subcontractor. Regarding construction by local methods, no problems would be produced if due management and guidance are provide. As the Project is aimed at the construction of a large-scale hospital including a technical block, it is necessary to dispatch experts from Japan for the construction work necessary to maintain dignity as a hospital and engineering work requiring high accuracy such as in electric installations. Specifically it is necessary to dispatch engineers from Japan or a third country, for the operation room, X-ray shield work, electrical engineering, medical gas piping, and the regulation of facilities and equipment.

3-1-2 Implementation conditions

(1) Construction conditions

It is thought that Vietnamese constructors possessed technology of a certain level, with the mechanization of construction work being advanced to a certain extent, thanks to assistance from the former Soviet Union. Their technical levels have been further raised after the country's market-opening, giving overseas corporations access also to the construction industry. Construction companies from Hong Kong, Singapore, Korea, Japan, Germany and other countries have established joint ventures with local constructors, being in charge of the implementation of projects mainly by foreign investments.

Consequent technology transfer and advanced mechanization have raised local constructors' capability. In fact, you can see a number of construction machines such as cranes, lifts, concrete mixers and drilling machines for field piling, in construction sites within Hanoi for high-rise buildings with 14 to 20 stories.

Orders are, however, often placed separately in the construction industry in Viet Nam. The fact that orders are placed for individual pieces of work impedes the smooth coordination and management of the progress of construction work. This is caused by Vietnamese constructors' general practice of not preparing accurate, detailed working drawings and not regarding electrical & mechanical installations as part of construction work.

Main construction materials such as concrete, reinforcements, form materials and bricks can be procured in Hanoi. Finishing materials such as stones, some kinds of tiles, lumber, sheet glass and paints are produced domestically, but technology for lumber pressing and the quality of sheet glass appear to be inadequate. Aluminum windows often found in Hanoi are inferior in water tightness and airtightness, unlike prefabricated ones, allowing rain and winds to come into rooms, because they are installed on the spot by cutting aluminum materials imported from abroad. Regarding materials for electrical & mechanical installations, only certain types of pipes and wires are mostly imports from Singapore, Thailand, Hong Kong, Japan and other counts.

Regarding materials for doors and windows as well as electrical & mechanical installations which must be imported from third country, preliminary formalities, including tax exemption formalities, need to be performed smoothly, for avoiding delay in construction work.

Generally local construction workers are employed in construction work, under the supervision of the contractor, a Japanese legal person. In the case of the Project, however, it is necessary to dispatch experts from Japan, as appropriate, to engage them in technical guidance and progress management, because there are only a small number of skilled local workers for special installations which require special skill.

(2) Implementation conditions

The construction site for the Project, being located to the center of the premises of Bach Mai Hospital, is surrounded by buildings and facilities where patients come and go. It is necessary, therefore, to elaborate a temporary work plan for the purpose of avoiding the intersection of the paths of flow of the construction personnel and the patients and hospital personnel as much as possible. It is also necessary to control noise, Vibration and dust as much as possible, because the site is near the existing awards.

3-1-3 Scope of works

For the smooth implementation of the Project, it is important to define Japanese and Vietnamese undertakings. The scope of works is mentioned in the following table.

4-3 Allocation of the Works

Japanese Grant	Viet Nam
1. Architectural Work -including fixed furniture, fit up and curtain in the Ward	1. Secure and Prepare Land- Demolish Existing Structure and Substructure. Clear the Site including Unexploded Bombifany, Relocation of Existing Main Pipe Lines.
2. Electrical Work -Power Supply, Motor Control, Lighting, Socket Outlet, Telephone, Public Address, Lightning, Fire Alarm	2. Move ICRTM
3. Plumbing・Air Conditioning -Water Supply, Sewage, Hot Water Supply, Sanitary Fixture, Gas Facility, Fire Fighting System, Air Condition, Ventilation System	3. Landscaping -Landscaping and Planting (except court yard) Gate, Fence, Road, Parking
4. Other Utilities -Generator System, Medical Gas System, Water Treatment System, Sewage Treatment (Preliminary) Boiler System, Elevator System	4. Connecting Infrastructure -Power Line, Telephone Line, City Water, Sewage Line
5. Exterior Work -Planting in Court Yard, Grading, Roads, Lighting	5. Miscellaneous Curtain (Rail by J.G.) Blind, General Furniture
6. Medical Equipment -Supply and Installation	6. Move and Installation of Existing Equipment

3-1-4 Consultant supervision

The Japanese consultant company concludes a consultant contract with Bach Mai Hospital, and conducts detailed designing and consultant supervision for the Project.

The purpose of consultant supervision is to ascertain that construction work is in conformity with the design drawings, to give guidance and advice and coordinate work throughout the construction period, from a fair standpoint for the proper implementation of the contents of the contract, and thereby to raise the quality of construction work. Consultant supervision comprises the following.

(1) Cooperation in bidding and concluding a contract

The consultant company prepares the tender documents necessary for deciding contractors for construction work and electrical & mechanical installations, gives a public notice of bidding, accepts applications for tendering, examines the applicants' qualifications, holds an explanatory meeting for tendering, distributes tender documents, and accepts and evaluates tenders. The consultant company gives advice to Bach Mai Hospital and the successful bidder on the conclusion of a construction contract.

(2) Guidance, advice and coordination for contractor

The consultant company gives guidance and advice to the contractor and coordinates construction work, by examining the construction process, the progress schedule, the construction material procurement plan, the medical equipment procurement and installation plan, etc.

(3) Inspection and approval of working drawings, manufacture drawings, etc.

The consultant company examines the working drawings, the manufacture drawings and other documents presented by the contractor, and gives approval, with the necessary instructions.

(4) Confirmation and approval of construction materials and medical equipment

The consultant company confirms conformity between the construction contract and the construction materials and medical equipment the contractor pains to procure, and approves the adoption of them.

(5) Inspection of construction work

The consultant company attends, as necessary, inspections and test carried out in plants where construction materials and medical equipment are manufactured, in order to ascertain that they possess the required quality and performance.

(6) Report on the progress of construction work

The consultant company reports the progress of construction work and the conditions in the construction site to the agencies concerned of both countries.

(7) Completion inspection and trial run

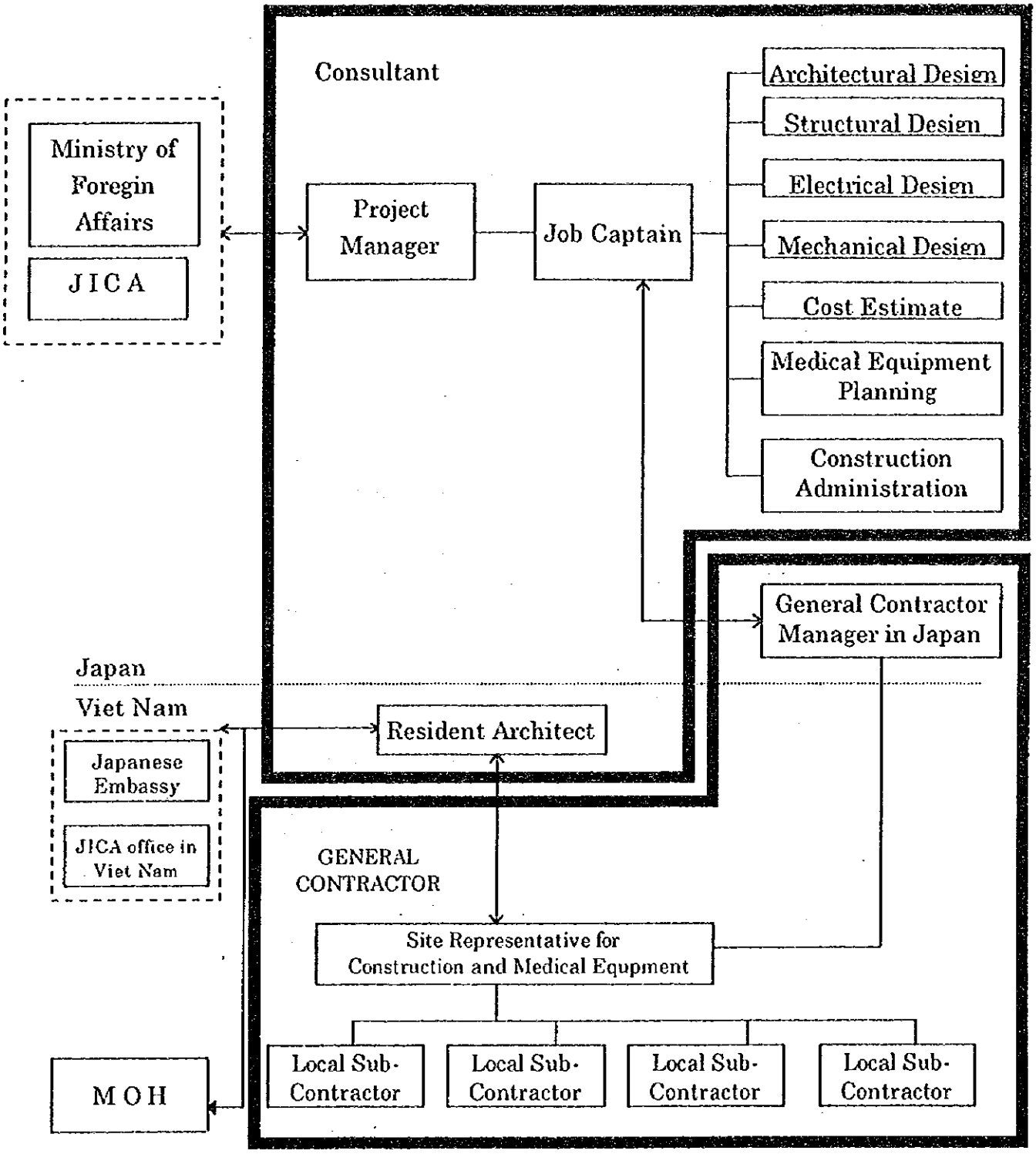
The consultant company conducts completion inspections on the buildings and ancillary facilities as well as medical installations, conducts trial runs to ascertain that the performances are secured as described in the contract, and hands in a certificate of the completion of inspection to Bach Mai Hospital.

(8) Consultant supervision system

In view of the scale of the Project, the consultant company assigns two regular supervisors, who perform the above-mentioned activities. The company sends experts in relevant fields to the site, as necessary in the progress of construction work, for discussions, inspections, guidance and coordination necessary in the Project's implementation. In the period of foundation work and skeleton work, one expert in structure and one in architecture are dispatched basically, while one expert in architecture, one in mechanical installations, one in electrical installations, and one in medical equipment are dispatched in the period of finishing work. The company is prepared to dispatch additional experts where necessary, and establishes a back-up system, by assigning experts also in Japan to keep contact with dispatched experts. The company reports to the agencies concerned of the Japanese government on progress in the Project's implementation and other necessary matters such as the procedure of payments and handing over upon completion.

The following chart shows the consultant supervision system.

3-4 Construction Administration



3-1-5 Procurement plan

(1) Construction material procurement plan

1) Procurement conditions

a. Local procurement

Construction materials and equipment of domestic make are used as much as possible, for making it easy to repair, maintain and manage them after the completion of the facilities. Consideration is given to qualities and amounts procured, with a view to not affecting the progress of construction work. Imports which are freely available in Vietnamese markets (i.e., those available any time without placing an order and going through import formalities) are regarded as domestic products.

b. Procurement by import

Those materials and equipment which are not available locally, which do not satisfy the required qualities, and whose supply is short are imported from Japan and a third country. In this case, it is necessary for the contractor to make arrangements for the smooth performance of procedures and formalities for import and customs clearance, by keeping contact with the Ministry of Health of Viet Nam.

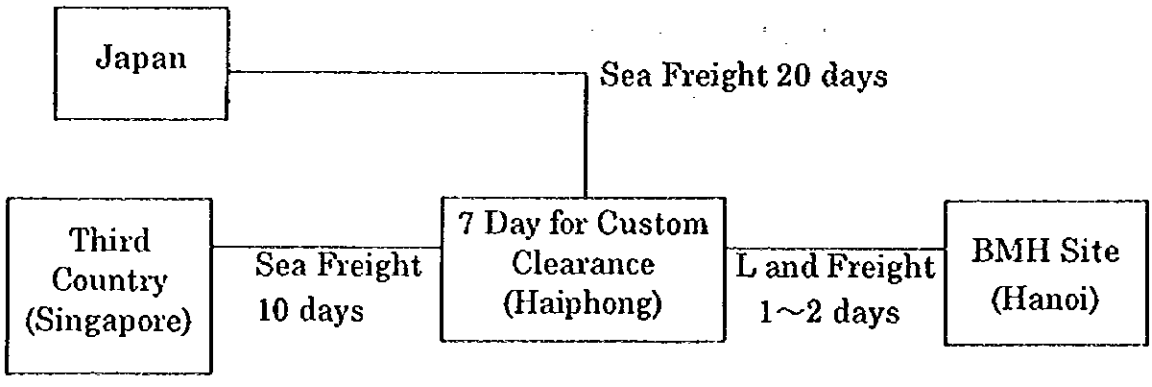
Where the sum of the price and the packaging/transport expenses for an import from Japan or a third country is smaller than the purchase price of a local product of a similar type, procurement by import shall be chose, as a general rule.

c. Transport plan

Those materials and equipment imported from Japan and other countries are transported by sea up to Haiphong Port, Viet Nam, and then overland by truck to the construction site. As large vehicles are permitted to enter the city of Hanoi only between 2200 hours and 0600 hours of the following day, the transportation of materials and equipment in trucks exceeding 3.5 tons must be carried out during the nighttime.

As some of the materials and equipment to be transported in this way are apt to be deteriorated by impacts, humidity and high temperatures, packaging which sufficiently stands transportation in these conditions must be applied.

3-5 Freight Flow and Time



2) Construction material procurement plan

Under the above-mentioned procurement concept, construction materials to be procured are classified into three categories, namely, those locally procured, those imported from a third country, and those imported from Japan. The following table shows these classifications.

3－6 Major Construction Material Supply

Works	Material	Viet Nam	Third Country	Japan	Comments
Concrete Work	Cement	○			
	Sand	○			
	Gravel	○			
	Deformed Bar	○			
	Form	○			
Steel Work	Steel		○		Not Manufactured in Viet Nam
Masonry	Concrete Block	○			
	Brick	○			
Water Proofing	Asphalt water Proof		○		
	Coating		○		
	Sealing		○		
Plastering	Terrazzo	○			
Tile	Ceramic Tile	○	○		Smaller tile under 100×100 needs to be imported
	Porcelain Tile	○	○		
Carpentry	Timber	○	○		Local lumbers are hard wood and tend to be turisted
	Laminated Wood	○	○		
	Plywood				

Works	Material	Viet Nam	Third Country	Japan	Comments
Metal Work	Light Gage Steel Stud		○		No Local product
	Finish Hardware		○		
	Costume Make Hardware	○	○		Some custom made hardware are available
	Curtain Rail for Ward			○	No Local product
Plastering	Cement Mortar	○			
	Plaster	○			
Wood Door&Window	Swing Door		○		Because of the quality of Local door/frame, recommend 3rd Country Products
	Wood Door Frame		○		
	Hardware		○		
Metal Door&Window	Aluminum Window		○		Because of the quality of Local door/frame, recommend 3rd Country Products
	Steel Door&Window		○		
	Stainless Door		○		
	Xray Proof Door				
Glazing	Plate Glass		○		
	Heat Reflective Glass		○		
	Glass Block		○		
Painting	Interior Paint	○	○		
	Exterior Paint	○	○		
Interior Works	Plaster Board		○		] No Local product
	Rockweed Sound		○		
	Absorption Board		○		
	Glass Wool				
	Glazed Board			○	
	Lead Lined Board			○	

Works	Material	Viet Nam	Third Country	Japan	Comments
Furniture	Chair, Table,	○	○		Quality Furniture need to be acquired the 3rd country
	Locker	○			
Miscellaneous	Laboratory Sink Laboratory Table	○	○		Quality required parts need to be bought from Japan
Exterior Work	Painting Material	○	○		
Electrical Work	Wiring Material	○	○		Supporting Material-local
	Lighting Fixture		○	○	Special Fixtures from Japan
	Switch Board		○		Complicated panels - 3rd country
	Generator		○		
	Wire and Cable	○			
	PBX		○		No local products
	Nurse Call System			○	Quality products - not available
	Public Address		○		〃
	Fire Alarm			○	〃
Mechanical Works	Boiler		○		No local Product
	Pump			○	Quality product-not available
	Air Conditioner		○	○	Depend on the Spec.
	Exhaust Fan		○	○	〃
	Ceiling Fan		○	○	〃
	Defuser, Grill		○	○	〃
	Sanitary Fixture		○	○	〃
	Water Treatment	○		○	No local Product
	Ducting Material	○	○		Depend on the Spec.
	Pipes	○		○	〃
	insulation Material			○	〃
	Automatic Control			○	Quality Parts are required
	Kitchen Equipment		○	○	Depend on the Spec.

Works	Material	Viet Nam	Third Country	Japan	Comments
Mechanical Works	Medical Gas			○	No Local product
	Sewage Treatment			○	〃
Elevator Work	Elevator		○	○	Depend on the Maintenance System
	Cargo Lift		○	○	

(2) Medical Equipment Procurement Plan

When procuring medical equipment, it is important to observe how similar equipment is used locally, the level of medical technicians and the availability of local agents. Once these factors are weighed, it can be determined if medical equipment should be procured locally, in Japan or in a third country.

1) Procurement in Japan

Radiology equipment, M/E equipment and surgical operation equipment are mostly Japanese made materials and are well received in Viet Nam and surrounding countries and there are many agents. Also, some of the BMH maintenance technicians were trained by Japanese manufacturers. This training will continue in the future as well. Therefore, this type of equipment is best procured in Japan.

2) Local Procurement

Clinical laboratory equipment normally requires many agents, is consumable and also require more frequent maintenance inspections. It is usually made in third countries and because there are no importation taxes, these items are best procured locally.

3) Third Country Procurement

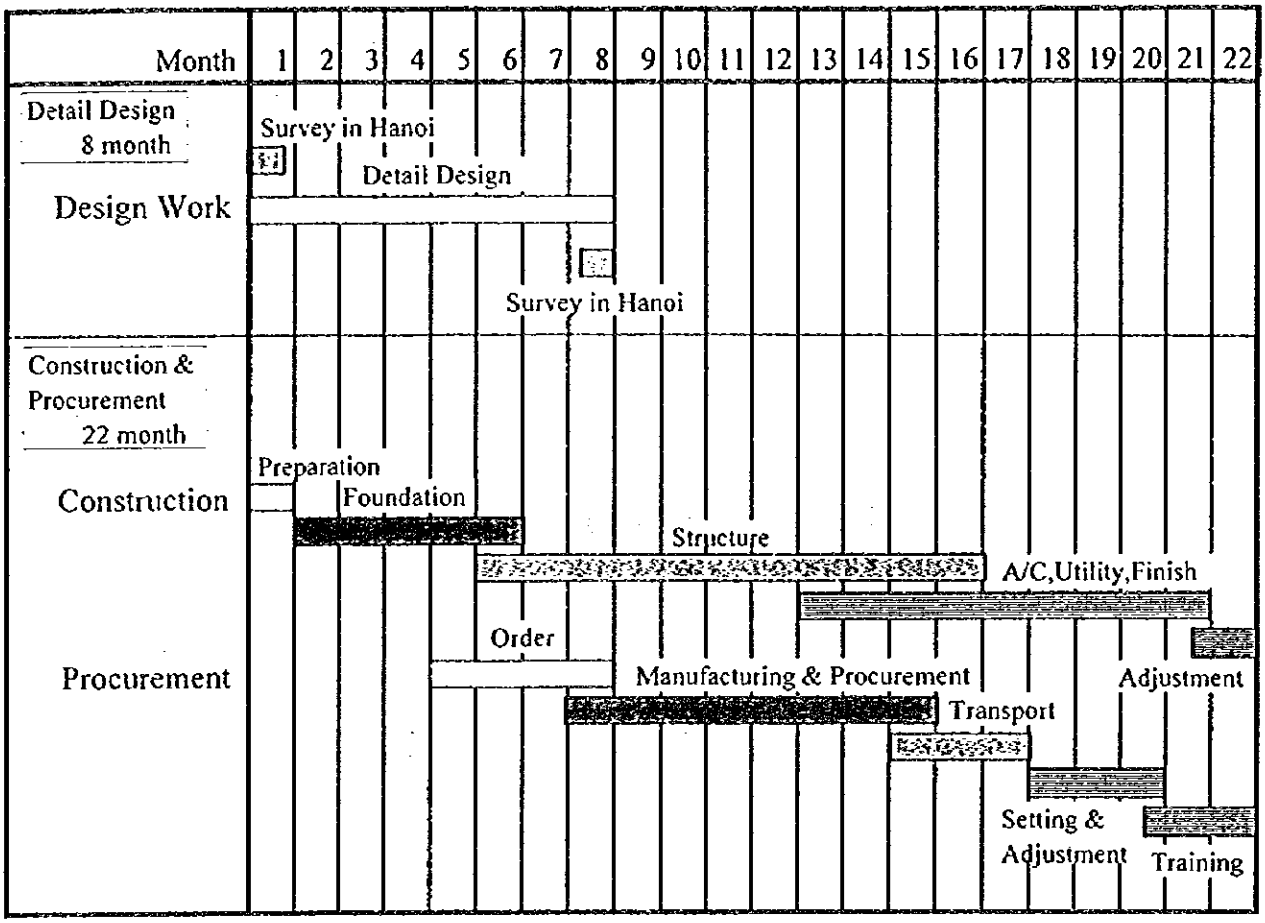
For radiological equipment and sterilizers, third country products, as well as Japanese, are popular and have many agents. Therefore, this equipment can be procured from third countries as well as Japan. Other ordinary furniture and equipment can be procured from neighboring countries if they are not produced in Viet Nam.

3-1-6 Implementation schedule

In the Project, implementation designing is initiated after the conclusion of the E/N on implementation design and the verification of the design contract.

In addition to this, an E/N is concluded on contraction work and procurement of materials and equipment. Based on the E/N, bidding formalities are performed, a contractor and manufacturers are selected, contracts on construction work and procurement are concluded, and construction work is commenced, upon verification of the contracts.

3-7 Application Schedule



Implementation design requires at least six months after concluding the contract, while it takes two months to go through procurement formalities. The construction period is estimated at 22 months. It takes, therefore, 2 years and 7 months after concluding the E/N on implementation design to complete the Project.

3-1-7 Obligations of recipient country

The following are undertakings on the Vietnamese side.

1) Exemption of the taxes relevant to the Project.

2) Application for and acquisition of the government approval of the construction of buildings and facilities under the Project.

3) Issuance of Banking Arrangement (B/A) and Authorization to Pay (A/P), and the bearing of the fees for them.

4) Guarantee of the prompt landing of materials and equipment at the port of destination, tax exemption and customs clearance, and overland transportation.

5) Provision of conveniences necessary for the Japanese nationals who are in charge of the provision of materials and equipment, based on the verified contract, to enter Viet Nam and stay there in order to promote the Project's implementation.

6) Complete exemption of the Japanese nationals who are in charge of the provision of materials and equipment, based on the verified contract, from customs duties and taxes.

7) Budgetary measures for the effective operation, maintenance and management of the facilities built and the equipment procured under Japan's grant aid cooperation scheme.

8) Bearing of expenses necessary for items other than those provided under the grant aid cooperation scheme.

9) Relocation of the Institute for Clinical Research in Tropical Medicine from the construction site.

10) Removal of the existing facilities and obstacles from the construction site, and leveling of ground,

11) Construction of walls, gates and other structures.

12) Laying of main cable for electric power, a water main, and a main telephone line and construction of a swerer up to the project site.

13) Removal and installation of those equipment which are to be transferred from the existing facilities to the new facilities.

14) Purchase and installation of furniture.

3-2 Project expenses

3-2-1 Project cost estimate

(1) The Project shall be implemented under Japan's grant aid cooperation scheme.

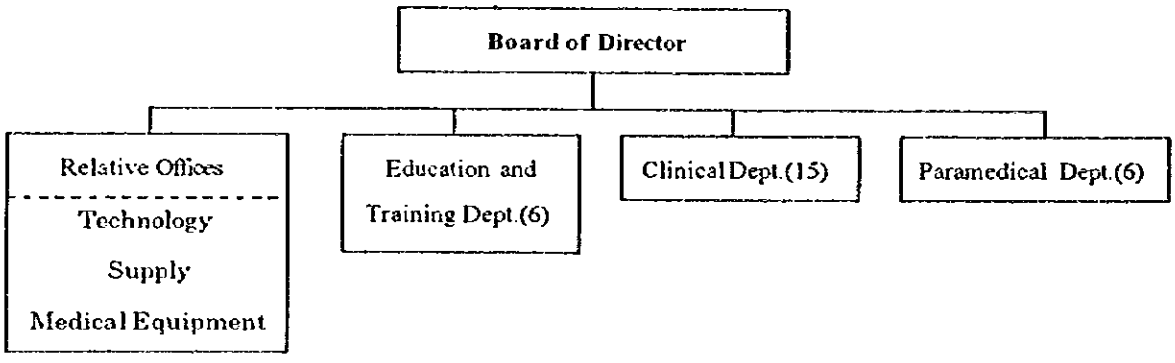
(2) Expenses borne by the Vietnamese government. The following are details of estimated expenses to be borne by Vietnamese Government.
The expense is estimated at approximately US$ 3,853,200.
Details are mentioned below.

1)	Expenses for the demolition of the existing facilities, the removal of the buried items, and ground leveling	US$ 226,300
2)	Expenses for the extension and connection of infrastructures	US$ 19,600
3)	Relocation of the Institute for Clinical Research in Tropical Medicine (2,898 m²)	US$ 1,000,000
4)	Expenses for the construction of roads, internal walls, parking lots, and plating	US$ 46,500
5)	Expenses for furniture and fixtures	US$ 664,000
6)	Expenses for application and permit fee, and Banking Arrangement Charge	US$ 1,781,100
7)	Expenses for the move and reinstallation of the old equipments	US$ 115,700
	Total	US$ 3,853,200.

3-2-2 Maintenance and management plan

(1) Maintenance and management system
The maintenance of the facilities and equipment in Bach Mai Hospital is conducted mainly in the Supply Section and the Medical Equipment Section of the Administration Department.

4 – 9 Management



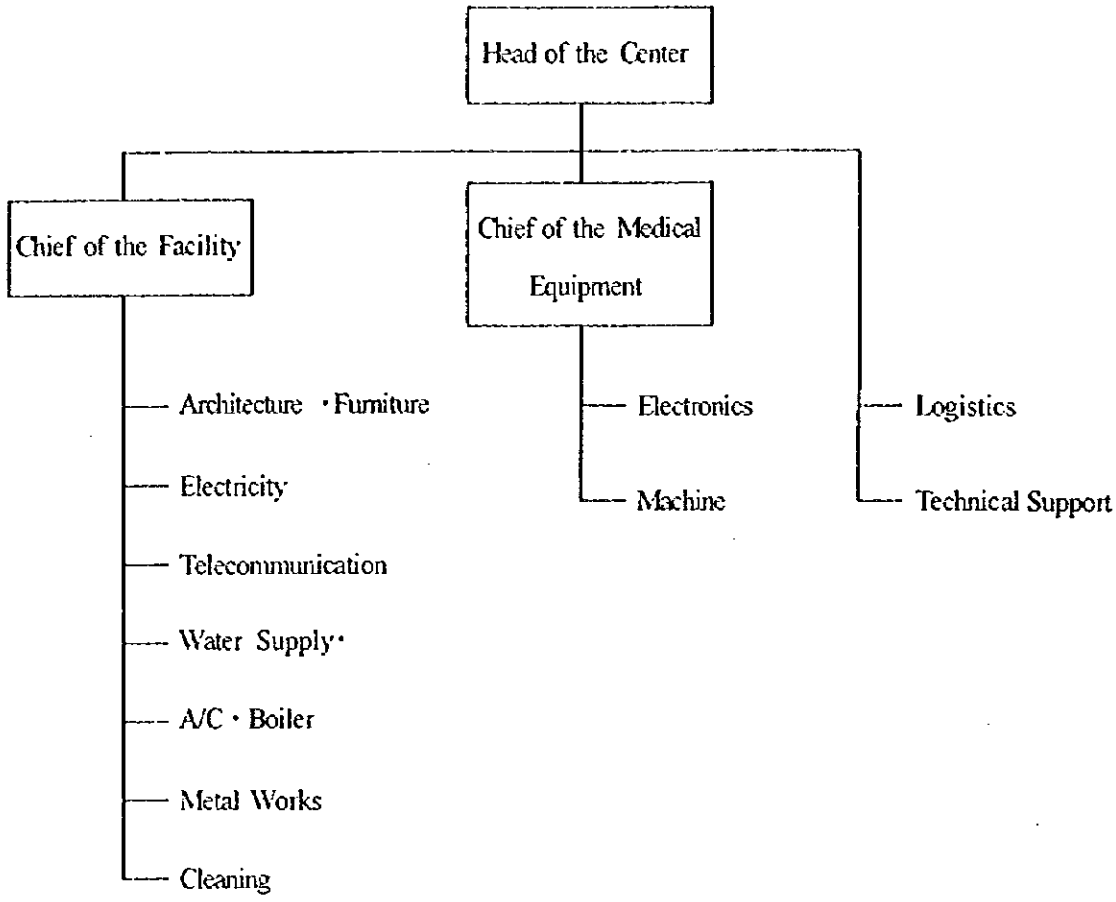
Regarding facilities such as architectural, electrical and mechanical facilities, 40 members of the Supply Section are in charge of daily operation, regular maintenance, troubleshooting and repairs, in order to maintain their functions maximum with superannuated, old-fashioned tools and machines (40 members consist of seven electrical personnel, 10 mechanical personnel, six carpentry personnel and 11 general personnel). Regarding medical equipment, 19 members of the Medical Section are in charge of maintenance (19 members consist of three managers, 10 electronics engineers, two electronics assistants, three warehouse management personnel and one accountant). The 10 electronics engineers, all being graduates of the Hanoi Institute of Technology, read spare parts specifications from manuals and drawings, procure spare parts and conduct repairs themselves. The individual engineers of both sections appear to possess technologies of the top level in Viet Nam, but a budgetary deficit prevents them from purchasing sufficient numbers of spare parts and maintenance tools and machines.

There are five small-scale workshops scattering in the premises of Bach Mai Hospital. This makes it difficult to keep contact among them, producing inefficiency. The five workshops include

① Carpentry Workshop,
② Plumbing Workshop,
③ Metal Processing Workshop,
④ Electrical Workshop and
⑤ Medical Equipment Workshop

The director, the Vice Director and the management are well aware of the present conditions in the hospital and the importance of maintenance, and they intend to establish a new maintenance system as mentioned below, in order to form and execute a budget smoothly. Specifically the three sections of the Administration Department are integrated to the Maintenance Center, which is directed by the Vice Director Dr. Dinh. The center has four sections under the direct control of the Vice Director, for the purpose of centralizing and intensifying maintenance activities. The sections include the Facilities Section, the Medical Equipment Section, the Procurement Section (the section in charge of purchasing materials and spare parts for the sections), and the Technical Support Section (the section in charge of coordination between the first two sections, instruction in operation, training, and total management and keeping of materials and spare parts).

3－10 Proposed Organization of Maintenance Center



(2) Maintenance and management system for medical equipment

The maintenance and management of medical equipment are conducted by medical personnel of Bach Mai Hospital, as a general rule. These personnel separately take charge of the maintenance of radiological equipment, equipment of the operation Theatre and the Central Supply and Sterilizing Room, land equipment of the Clinical Examination Room. As several among these personnel have received training abroad, their technical elves are throughout to be high than those in neighboring countries, but regarding disorder and trouble which cannot be dealt with in the hospital, repairs are entrusted to external agents.

The Medical Equipment Section has medical equipment registers for the maintenance and management of the hospital's medical equipment. If trouble or disorder takes place in medical equipment of any department, the responsible person makes a written request for troubleshooting by the section. In response to the request, technical personnel the section troubleshoot and make and keep a record on the condition and details of troubleshooting. This system, which has been established only recetlyand has produced only a few results thus far, shows that maintenance is placed importance in Bach Mai Hospital.

(3) Maintenance and management cost

The following is a tentative calculation of maintenance and management expenses required annually after completion of the Project.

3--11 Operation and Maintenance Cost

[Unit: US$]

	2000	2001	2002~
① Electricity	133,056	133,056	133,056
② Telephone	14,877	14,877	14,877
③ Water	0	0	0
④ Propane Gas	2,867	2,867	2,867
⑤ Medical Gas	13,427	13,427	13,427
⑥ General Feel	45,792	45,792	45,792
⑦ Building Maintenance	0	56,000	56,000
⑧ Equipment O/M	200,000	250,000	250,000
Total	410,019	516,019	516,019

①Power rate .....US$133,056/year

According to the regulations of the Power Company of Hanoi, the power rate system applied to Bach Mai Hospital is as follows.

Basic rate : Not application

Meter rate: US$0.077/kwh

The contracted capacity for Bach Mai Hospital is assumed to be around 1,200 kw, a tentative calculation based on the scale and contents of its facilities. Average power consumption is estimated at around 720 kw, as it is assumed to be about 60% of the contracted capacity. The following is the formula for finding the annual power cost.

Meter rate: US0.077/kwh x 720kw x 8h x 25 days x 12 months = US$133,056/year

Thus, the annual power cost is US$133,056/year.

②Telephone cost .....US$14,877/year

The frequency of the use of the telephone line is assumed as follows.

Within the city of Hanoi: 3 min./call, 120 calls/day
Domestic long distance : 5 min./call, 5 calls/day
Overseas : 10 min./call, 1 call /day

Telephone cost are calculated as follows.

Within the city of Hanoi:

US$0.0065/min x 3 min x 120 calls/day x 25 days x 12 months = US$702/year

Domestic long distance:
US$0.53/min x 5 min x 5 calls/day x 25 days x 12 months = US$3,975/year

Overseas Calls:
US$6.80/min x 5 min x 1 call/day x 25 days x 12 months = US$10,200/year

Annual telephone rates total to US$14,877/year.

③Water cost.....Not application
Well water is used in the hospital, while city water is planned as a back-up means. No water cost is therefore included in maintenance and management expenses.

④Gas cost.....US$2,867/year
Gas is used in the Pantry and clinical examination.

Pantry	:	2,920 kg/year
Laboratory	:	576 kg/year
		3,496 kg/year

The annual gas cost is US$0.82/kg x 3,496/year = US$2,867/year

⑤Medical gas rates.....US$13,427/year
Medical gases used in Bach Mai Hospital include oxygen and nitrous oxide (laughing gas), which are consumed in the Operation Theatre, the Delivery Room and the wards. The quantities of medical gases consumed are calculated, as follows;
Daily quantities consumed are:
Oxygen : 40 m³=/day
Nitrous oxide : 4 m³=/day
Annual consumption
Oxygen : 40 m³=/day x 365 days/ = 14,600 m³/year(18,396 kg/year)
Nitrous oxide : 4 m³=/day x 365 days/ =1,460 m³/year(2,861 kg/year)
Medical gas rates
Oxygen : US$0.03/kg = x 18,396 kg/year = US$552/year
Nitrous oxide : US$4.5/kg = x 2,861 kg/year = US$12,875/year
Total: US$13,427/year

Annual medical gas cost amount to US$13,427/year.

⑥Fuel for generator and boiler.....US$45,792/year
Diesel oil is used as fuel for the emergency power generator and boiler. It is assumed that power failures occur once a month, with each failure lasting for four hours. The unit price of diesel oil is US$0.36/liter.
The fuel expense is calculated as follows.

Monthly fuel consumption: 500 ℓ/day x 25days x 0.8+150 ℓ/ x 4h = 10,600 ℓ/month.
Fuel expense : US$0.36/1 x 10,600 1/month = US$3,816/month
The annual fuel expense is US$3,816/month x 12 months/year = US$45,792/year.

⑦ Building maintenance expense ..... US$56,000/year

In Bach Mai Hospital, maintenance-free materials are used in exterior and interior finishing, to facilitate the maintenance and management of the buildings. In exterior finish work, bricks and tiles are used and resin spraying is applied so that maintenance will require simple cleaning only. In interior finish work, stone or locally produced terrazzo is used for flooring, while tiles are used or a paint is applied to the walls so that they can be maintained by simple cleaning. In these conditions, expenses for building maintenance (including those for repairs on interior and exterior finish, plumbing installations and air conditioners, and for the purchase of spare parts) are estimated at US$2.00/m2/year.

The annual expenses for building maintenance amount to US$2.0/m2/year x 28,000m2 = US$56,000/year.

These expenses, however, are not necessary for the first one year because the facilities are newly constructed.

⑧ Equipment maintenance expense (+) .....US$250,000/year

Fist year : $200 thousand

Second year : $250 thousand

Third year : $250 thousand

According to the objectives of the Project, equipment which are maintenance-free or maintainable with smaller running costs are provided. It is planned therefore that they will be of those grades which satisfy the functions absolutely necessary in Bach Mai Hospital. X-ray apparatuses, operating equipment and clinical examination equipment to be provided shall be highly durable, with their spare parts being locally available at low lyrics.

Especially regarding reagent and expendable supplies for clinical examinations, third-country products popular in Viet Nam are adopted as much as possible, with a view to holding down expenses for these.

Chapter 4 Project Evaluation and Proposals

Chapter 4 Project Evaluation and Proposals

4-1 Feasibility Study and Benefits

(1) Extent of benefits

The Vietnamese government has designated BMH as a major facility for medical treatment in northern Viet Nam, where it will serve as the main tertiary medical treatment center for 34 million people living in the northern coastal regions, the northern mountains, and the Hong River delta which includes the 3 million citizens of Hanoi.

Designated as the teaching hospital for Hanoi Medical College and for the Nursing College, and also as a national research institute, BMH also contributes to the health care and medical treatment needs of the entire nation of Viet Nam

(2) Beneficiary

As a tertiary medical treatment center, BMH directly provides health care for 200,000 out-patients and 300,000 in-patients yearly.

As a teaching hospital, BMH provides educational opportunities for 1250 students from Hanoi Medical College, and doctors, nurses and other medical personnel from rural areas, as well as 390 student nurses studying at the Nursing College. In addition, seminars are held 40 times year for 200 to 300 persons.

BMH not only contains six national research institutes, but also conducts clinical research on a national level into communicable and endemic diseases that directly affect the health of Vietnamese citizens. It also serves as a major medical treatment organization, providing guidance for public organizations in rural areas and providing educational programs and information regarding effective methods of treatment and prevention of disease to the medical personnel who work directly on the front lines of medical care in rural areas.

(3) Maintenance, administration, and operation

BMH operates with income from a yearly budget provided by the Ministry of Health plus fees collected for medical treatment and from health insurance. Over the past 5 years, the Ministry of Health budget has risen from 7.34 billion Vietnamese Dong (84.4 million Japanese yen) to 25.22 billion Vietnamese Dong (286 million Japanese yen), and this high growth rate continues to date will be at a more leisurely rate than before. Income from fees received for medical treatment increased recently when the government established a new policy calling for payment by the direct beneficiary of the treatment, and totaled 670 million Vietnamese dong (75.7 million Japanese yen) after 1995. The start of health insurance also resulted in 1.13 billion Vietnamese dong (128 million Japanese yen) in income in 1996.

Even with increase in expenditures, the past 5 years have been increasingly profitable. The government adopted a master plan for BMH, of which the current proposal is one part, demonstrating that the Vietnamese government has committed itself to providing BMH with sufficient economic support even after

the current proposal is completed.

In terms of human resources, as well, BMH is well endowed with 5 professors and 2 assistant professors from Hanoi Medical University among the 382 physicians affiliated with the hospital. This number of doctors is roughly twice that found in Japan and can be attributed to BMH function as a teaching hospital. The number of nurses employed at the hospital is still only 1/2 to 2/3 the number found at Japanese hospitals, and needs to be increased, but the planned centralization is certain to have a beneficial effect not only in this area, but in the number of medical technicians employed as well.

At the technical level, the doctors found here are the finest available in Viet Nam, although differences in perception regarding the roles of nurses results in the apparent need for improvement in the quality of nursing. Although a lack of instruments and replacement parts presently hampers the medical technicians in their work, they may do with what they have, and are among the best in Viet Nam.

With regard to environmental concerns, the on-site sewage treatment facilities exceed Vietnamese national standards, and the collection of disposable waste by the Hanoi public health corporation is sufficient for the time being. An incinerator is currently being installed on-site in order to process medical waste materials properly. The implementation of batch processing of fluids containing heavy metals and treatment of sewage containing contagions are problems that must be addressed in the future.

The current proposal is a project that will create a facility capable of supporting Viet Nam long term medical care goals, and the support of the Vietnamese government most certainly guarantees the feasibility of maintaining and operating a project of this scale.

4-2 Technical Cooperation

During the basic design survey, various private meeting were held, and during a meeting in which draft proposals were presented, the assistant chief of International Cooperation for the Vietnamese Ministry of Health expressed a desire for technology Cooperation from Japan, the official application for which is currently under preparation.

On a practical basis, it would be difficult to effect a sudden and immediate departure from the existing systems still in use, regardless of the goals of this project in improving testing, diagnosis, intensive care treatment, the nursing system, etc. It is therefore necessary to give careful consideration to the changes in operating methods with the introduction of technology from Japan, which will assist the modernization and renovation of the hospital as a whole.

4-3 Recommendations

As described in this report, the implementation of this project will enable BMH to operate as a major medical center in northern Viet Nam, and to contribute to the improvement of health care for the entire nation. Therefore it is entirely appropriate that this project be assisted by the Japanese Grant.

The support of the Ministry of Health shows that BMH is guaranteed sufficient human and financial resources to fulfill the goals of this project.

It is recommended to proceed with following points for more smooth and effective implemention.

1) Establish Maintenance Center

As discribed before, the centralization and accumulation of maintenance function is crucial . Centralization all the information and control on the Maintenance to the Maintenance Center all the equipment procurrent, utilization and maintenance will be managed clearly and easily. This will result in a good coordination between the workshops and can accomodate better service. Following issues will be handled more easily.

a) Preparation of log book, maintenance record for better maintenance and management.
b) Preparation of maintenance mannual, operation mannual, wiring plan, etc.
c) Increase junitors and train them for better cleaning method and keep the sanitary environment.
d) To find damaged area in earlier stage and repair before they get worse.
e) Clean the water filter and add chroline regularly.
f) Clean the sewage filter treatment facility and add the dis infectant regularly.
g) Clean the filter for A/C regularly.

2) Train and increase the members of Nurse

As mentioned before, in Viet Nam, the numer of nurses are much smaller in comparison in the number of doctors. The role of nurse in BMT seems to be just a helper for the doctors. In order to activate the medical care, in suggested to improve the quality and number of nurses. At least 120 more nurses are needed for the project departments alone. For whole hospital, probably 200 to 250 nursed would be necessary to be increased.

More over, the local medical facilities are necessary those nurses, BMH nurse school is pressed to train more nurses.

Aside from the nurse training, medical education for doctors should also stress the importance of nurses in quality medical services.

3) Monitoring System for the Medical Services

As emphasized at the seminar held by the Survey Team and lead by Dr. Yoshitake, the provisions of Japanese Grant for this project can be only a start in the direction of achieving the aims of the project, the successful completion of which depends entirely upon the efforts of the staff at BMH, whose goal must always be the comfort and

recovery of their patients.

To help ascertain the effects of this project, the Team recommended a monitoring system. The system is to establish an index of current levels of medical care at BMH by sampling survey, and upon completion of this project, and for several years thereafter continue to monitor and to compare the progress made by BMH.

The following items are to be used in establishing an index of levels of medical care.

Indicators of evaluation for quality of medical service

1 Disease distribution of in-patients (department-wise)
2 Area from where patients come
3 Average bed occupancy rate (ward-wise)
4 Average admission
(ward-wise, department-wise, and top-ten disease-wise)
5 Mortality rate in the whole hospital
6 Mortality rate in each department
7 Mortality rate of each disease
8 Surgical operation mortality
9 Neonatal mortality in the hospital
10 Autopsy rate
11 Referral rate to other hospitals
12 Referral rate from other hospitals
13 Infection rate in the hospital
14 Complication rate after the operation
15 Patient satisfaction test

Indicators of evaluation for quality of medical service

(Please answer narratively)

1 Does the activities of the hospital meet the community needs ?
2 Does the hospital give collaboration and cooperation to the community health activities and medical care ?
3 Is the role of the hospital in the community health clear ?
4 Is the hospital cooperating with other surrounding with other hospitals ?
5 Is the hospital sharing the medical equipment with other hospitals ?
6 Is the hospital providing medical information ?

ANNEX

Annex

1. Basic Design Study Team
   (1) Team Members
   (2) Schedule
   (3) Discussant
   (4) Minutes of Meeting

2. Explanation Team for the Draft Basic Design
   (1) Team Members
   (2) Schedule
   (3) Discussant
   (4) Minutes of Meeting

3. Other Data
   (1) Evaluation for Requested Medical Equipment
   (2) Technical Note

1. Basic Design Study Team

1. Basic Design Study (February 17 to March 18, 1997)

(1) Team Member

Name	Duty	Occupation
TAKIMOTO, Masaru	Leader	Development Specialist, JICA
OHARA, Hiroshi	Technical Adviser	Bureau of International Cooperation International Medical Center of Japan, MOHW
AKIYAMA, Minoru	Technical Adviser	Bureau of International Cooperation International Medical Center of Japan, MOHW
NARITA, Eita	Coordinator	First Project Study Division, Grant Aid Project Study Department, JICA
KANAGAWA, Ichiro	Project Manger	Nihon Sekkei Inc.
HAMADA, Tomonao	Architecture Planner	Nihon Sekkei Inc.
ISHIKAWA, Syuzo	Facility Planner	Nihon Sekkei Inc.
YOZA, Takashi	Equipment Planner I Operation & Maintenance Planner	Nihon Sekkei Inc.
DATE, Takuji	Equipment Planner II	Nihon Sekkei Inc.
NAKAYAMA, Shimematsu	Procurement PLanner Cost Estimator	Nihon Sekkei Inc.
HIRASHIMA, Akihisa	Interpreter	Nihon Sekkei Inc.

(2) Basic Design Study Schedule (February 17 to March 18, 1997)

	Date	Activites
1	Feb. 17(M)	Lv Narita (via Hong Kong) Av Hanoi
2	Feb. 18(Tu)	Embassy of Japan JICA Vietnam Office MOH, MPI
3	Feb. 19(W)	1st Meeting w/BMH
4	Feb. 20(Th)	2nd Meeting w/BMH
5	Feb. 21(F)	3rd Meeting w/BMH
6	Feb. 22(Sa)	4th Meeting w/BMH Visit to Dong Da Hospital Visit to Dong Anh Hospital
7	Feb. 23(Su)	Team Meeting
8	Feb. 24(M)	5th Meeting w/BMH
9	Feb. 25(Tu)	6th Meeting w/BMH Discussion on M/D
10	Feb. 26(W)	Discussion on M/D at MOH
11	Feb. 27(Th)	Signing M/D Report to JICA Report to Embassy
12	Feb. 28(F)	JICA Officials leave Hanoi 7th Meeting w/BMH
13	March 1(Sa)	8th Meeting w/BMH Site & Facility Survey
14	March 2(Su)	Data Analysis
15	March 3(M)	9th Meeting w/BMH BMH Survey Infrastructure Survey Equipment & Material Survey

16	March 4(Tu)	10th Meeting w/BMH Meeting w/Ministry of Telecom. Meeting w/Ministry of Construction Procurement Survey
17	March 5(W)	11th Meeting w/BMH BMH Survey Water, Sewage & Waste Survey
18	March 6(Th)	12th Meeting w/BMH Meeting w/MOH on Waste Master Plan Hearing of MOC Visit Friendship Hospital
19	March 7(F)	13th Meeting w/BMH Survey on Operation & Maintenance
20	March 8(Sa)	14th Meeting w/BMH Procurement Survey
21	March 9(Su)	Data Analysis
22	March 10(M)	15th Meeting w/BMH Discussion on Technical Note Survey of the Terminal Waste Disposal
23	March 11(Tu)	Visit 108 Hospital Survey on Fire Regulation Signing of Technical Note Report to JICA Office
24	March 12(W)	Lv Hanoi, Av Ho Chi Minh Visit Cho Ray Hospital
25	March 13(Th)	Visit Tu Du Obs & Gy Hospital Procurement Survey Hearing on Construction Business
26	March 14(F)	Lv Ho Chi Minh, Av Bangkok Research on the Procurement
27	March 15(Sa)	Research on the Procurement
28	March 16(Su)	Data Analysis
29	March 17(M)	Research on the Procurement Lv Bangkok
30	March 18(Tu)	Av Narita

(3) Discussant

1) Viet Nam Officials

- Ministry of planning and Investment

  Dr. Doung Duc Ung, Director General, Foreign Economic Relations Dept.
  Dr. Ho Quang Minh, Deputy Director General, Foreign Economic Relations Dept.
  Mr. Tran Tuan Anh, Senior Expert, Foreign Economic Relations Dept.

- Ministry of Health

  Prof. Le Van Truyen, Vice Minister
  Dr. Ngo Van Hop, Director General, International Cooperation Dept.
  Dr. Trinh Bang Hop, Deputy Director, International Cooperation Dept.
  Dr. Duong Van Tinh, Deputy Director, ME and Health Construction Dept.
  Ms. Nguyen Thi Ninh Chau, Program Officer, International Cooperation Dept.
  Dr. Le Duc Chinh, Treatment Dept.
  Eng. Ha Dac Bien, Expert, ME and Health Construction Dept.
  Ms. Bui Tuye Nhung, Expert, Financial Dept.

- Bach Mai Hospital

  Prof. Tran Quy, Director
  Dr. Tran Thi Thinh, Vice Director
  Dr. Ngo Toan Dinh, Vice Director
  Dr. Tran Quoc Do, Vice Director
  Prof. Tran Vanb Chat, Chief of General Planning Div.
  Dr. Nguyen Thi Nga, Vice Chief of General Planning Div.
  Dr. Phan Quang Huy, General Planning Div.
  Eng. Nguyen Nhu Thuc, Chief of Financial Div.
  Eng. Bui Xuan Vinh, Equpment Div.
  Eng. Do Trong Tai, Equipment Div.
  Eng. Pham Manh Hung, Maintenance Div,
  Ms. Nguyen Hai Yen, Interpreter, General Planning Div.
  Ms. Nguyen Linh Ha, Interpreter, General Planning Div.

- Dong Da Hospital

  Dr. Ho Thi Minh, Director

- Dong Anh Hospital

Dr. Tong Binh Son, Director

- Friendship Hospital
  Dr. Nguyen Xuan Luong, Director

- Cho Ray Hospital
  Dr. Truong Van Viet, Acting Director

- Tu Du Obsterical and Gyaecological Hospital
  Dr. Nguyen Thi Ngoc Phuong, Director
  Dr. Pham Viet Thanh, Vice Director

- Viet Nam Environment Water Supply Consultation Company
  Eng. Pham Van Khuong, Sewage Water Treatment Dept.
  Eng. Nguyen Thi Khue, Sewage Water Treatment Dept.

- Fire Prevention and Fighting Department, Hanoi
  Eng. Vu Dinh Hien, Chief, Fire Prevention and Fighting Dept.

- Power Company of Hanoi
  Eng. Nguyen Xuan Thanh, Vice Director, Technical Dept.

- Ministry of Post and Telecommunication
  Mr. Luong Trong Hai, Manager of Frequency Assignmnet and License Division, Radio Frequency Dept.
  Mr. Do Van Tien, Expert, Police Dept.

- Hanoi City Post Office
  Ms. Bui Thi Thanh To, Head of Pay-Rent Development, Trading Center

2) Japanese Officials

- Embassy of Japan
  Mr. Masao Miyazaki Second Secretary JICA Viet Nam Office

- JICA Viet Nam Office
  Mr. Masaru Todoroki, Resident Representative
  Mr. Hisatoshi Okubo, Assistant Resident Representative

(4) 協議議事録

MINUTES OF DISCUSSIONS

BASIC DESIGN STUDY
ON
THE PROJECT FOR THE IMPROVEMENT OF THE BACH MAI HOSPITAL
IN
SOCIALIST REPUBLIC OF VIETNAM

Based on the results of the Preliminary Study, the Japan International Cooperation Agency (JICA) decided to conduct a Basic Design Study on the Project for the Improvement of the BACH MAI Hospital in Socialist Republic of Vietnam (hereinafter referred to as "the Project").

JICA sent to Socialist Republic of Vietnam the Study Team, which is headed by Masaru TAKIMOTO, Development Specialist, JICA, and is scheduled to stay in the country from 18th February to 13th March, 1997.

The Team held discussions with the officials concerned of the Government of Socialist Republic of Vietnam (hereinafter referred to as "the GOV") and conducted a field survey at the study area.

In the course of discussions and field survey, both parties have confirmed the items described on the attached sheets. The Team will proceed to further works and prepare the Basic Design Study Report.

Hanoi, 27th February, 1997

Mr. Masaru TAKIMOTO
Leader,
Basic Design Study Team
JICA

M.D. NGO VAN HOP
Director General
Department of International Cooperation
Ministry of Health,
Socialist Republic of Vietnam

Prof. TRAN QUY
Director of BACH MAI Hospital

ATTACHMENT

1. OBJECTIVE

The objective of the Project is to improve medical functions and services of the BACH MAI Hospital and its educational function as a teaching hospital through construction of its facility and procurement of medical equipment.

2. PROJECT SITE

The BACH MAI Hospital

3. RESPONSIBLE AND EXECUTING AGENCY

(1) Responsible Agency : The Ministry of Health
(2) Executing Agency : The BACH MAI Hospital

4. ITEMS REQUESTED BY THE GOV

After discussions with the Team, the following items were finally requested by the GOV.

(1) Construction of Facility : Details of items are listed in ANNEX 1
(2) Procurement of Medical Equipment : Details of items are listed in ANNEX 2

However, the final items of the Project will be decided after further studies.

5. CATEGORY & CRITERIA TO SELECT THE EQUIPMENT

The GOV has understood that the category for classification as shown in ANNEX 2 and criteria as shown in ANNEX 3 are adopted in principle to select the equipment procured by the Project.

6. JAPAN'S GRANT AID SYSTEM

(1) The GOV has understood the system of Japan's Grant Aid clarified by the Team as described in ANNEX 4.
(2) The GOV shall take the necessary measures described in ANNEX 5 for smooth implementation of the Project on condition that the Grant Aid Assistance by the Government of Japan is extended to the Project.

7. SCHEDULE OF THE STUDY

(1) The consultants in the Team will proceed to further studies in Vietnam until 13th March.
(2) JICA will prepare the Draft Report in English and dispatch a mission in order to explain its contents around June, 1997.
(3) In case that contents of the Draft Report is accepted in principle by the GOV, JICA will complete the Final Report (Basic Design Study Report) and send it to the GOV by August, 1997.

8. SITE CLEARANCE

(1) The GOV has agreed to remove the existing Institute of Clinical Research in Tropical Medicine to the other place and implement site clearance including the demolition and relocation of the existing cables, pipes, and other obstructions, especially the drainage pipes within the site specified by the Team by the end of March, 1998.
(2) The GOV has agreed to submit the plan with schedule for the removal and site clearance by 10th March, 1997 to the Team.
(3) The GOV has agreed to submit monitoring reports on the removal and site clearance to JICA office in Vietnam monthly.
(4) The GOV stated that the responsible department for the site clearance is the Supply Division, the BACH MAI Hospital.

9. INTERNAL PROCEDURES BY THE GOV

(1) The GOV has agreed to promote the internal procedures for its completion, especially the final approval by "the Office of the Government", required for the implementation of the Project by the end of July, 1997.
(2) The Team stated it would be difficult to implement the Project if the Project would not be approved by "the Office of the Government" by the end of July, 1997.
(3) The GOV has agreed to submit the plan with schedule for completing the above mentioned procedures by 10th March, 1997 to the Team.
(4) The GOV stated that the responsible department for these procedures is the Planning Department, the Ministry of Health.

10. OTHERS

(1) The GOV has agreed to move and install the existing equipment which is scheduled to be used in the Project to the relevant newly built facilities.

(2) The GOV has agreed to secure and allocate the adequate budget for the execution of the Project.

(3) The GOV has agreed to secure and allocate the enough budget to operate and maintain properly and effectively the facility and the equipment of the Project.

(4) The GOV requested that the consultants in the Team would give advice to the GOV to develop their scheme of the horizontal extension of the Technical Block.

(5) The GOV stated that technical cooperation was necessary to improve medical functions and services in the BACH MAI Hospital. The Team stated that the technical cooperation was a scheme other than the grant aid program and that the GOV is able to submit newly the request for technical cooperation to the Embassy of Japan in Vietnam with necessary internal procedures.

ANNEX 1

MAIN CONTENTS OF FACILITY

Technical Block (1st Priority)

Central Laboratories		Nos. of Rooms
Hematological Exam.	Examination room	
Bio-Chemical Exam.	Examination room	
Microbiological Exam.	Examination room	
	Cultivation	
	Sterilization	
Pathology Exam.	Examination room	
	Specimen	
	Dissection	
	Dark Room	
Common Facility	Blood & Urine Collecting	
	Washing & Sterilizing	
	Storage & Cold storage	
Radiology Examination		
	General X-Ray	X4.
	Mammography	
	Fluoroscopy	X3
	C.T.	X1
	Control Room	
	Dark Room	
Physical Examination		
	ECG	X1
	EEG	X1
	EMG	X1
	Ultrasound	X1
	Respiratory	X1
Endoscopy Examination		
	Endoscopy	X4
	Recovery	
	Preparation	
	Washing	
	Instrument	
I.C.U.		
	Bed Room	30 beds
	Nurse Station	
	Instrument	
	Night Duty	

Operation Theater		
	Operation Room	X6
	Operation Hall	
	Nurse Station	
	Instrument	
	Transfer(Stretcher)	
	Anesthetist	
Pharmacy		
	Dispensary	
	Storage	
C.S.S.		
	Washing	
	Packing	
	Sterilizing	
	Sterilized Instrument	
Administration & General Items		
	Director's OFC	X1
	Deputy Director's OFC	X3
	Medical OFC	
	Lecture Hall	X1
	Lecture Room	X3

Inpatient and Service Ward (2nd Priority)	Total of 450 Beds
Internal Medicine	
Pneumology	50 Beds
Endocriology	50 Beds
Nephro-Urology	50 Beds
Gastro-Enterology	50 Beds
Surgery	100 Beds
Pediatrics	50 Beds
Gynecology & Maternity	50 Beds
Mix Ward	50 Beds

Operation Theater		
	Operation Room	X6
	Operation Hall	
	Nurse Station	
	Instrument	
	Transfer(Stretcher)	
	Anesthetist	
Pharmacy		
	Dispensary	
	Storage	
C.S.S.		
	Washing	
	Packing	
	Sterilizing	
	Sterilized Instrument	
Administration & General Items		
	Director's OFC	X1
	Deputy Director's OFC	X3
	Medical OFC	
	Lecture Hall	X1
	Lecture Room	X3

Inpatient and Service Ward (2nd Priority)	Total of 450 Beds
Internal Medicine	
Pneumology	50 Beds
Endocriology	50 Beds
Nephro-Urology	50 Beds
Gastro-Enterology	50 Beds
Surgery	100 Beds
Pediatrics	50 Beds
Gynecology & Maternity	50 Beds
Mix Ward	50 Beds

Equipment list of Bach Mai Hospital ANNEX 2

TECHNICAL BLOCK

Item No.	Department	Equipment Name	Q'ty	Category
HE - 1	Hematology Examination	Blood coagulator	1	I
HE - 2		Binocular microscope	3	I
HE - 3		Hematocrit centrifuge	1	I
HE - 4		Tabletop centrifuge	2	I
HE - 5		Automatic blood cell counter	1	I
HE - 6		Differential leucocyte counter	1	I
HE - 7		Deep freezer	1	III
HE - 8		Medical refrigerator	1	I
HE - 9		Automatic micropipette set	1	I
HE - 10		Incubator	1	I
HE - 11		Drying oven	1	I
HE - 12		Automatic slide stainer	1	III
HE - 13		Blood pipette washer	1	I
HE - 14		Colorimeter	1	I
HE - 15		Rotary shaker	1	I
HE - 16		Electric balance	1	I
HE - 17		Pipette shaker	1	I
HE - 18		Laboratory small items	1	I
HE - 19		Blood bank refrigerator	2	I
BE - 1	Biochemistry Examination	Biochemical auto analyzer	1	III
BE - 2		Tabletop centrifuge	2	I
BE - 3		Medicine refrigerator	2	I
BE - 4		Auto pipette	1	I
BE - 5		Auto dilutor set	2	I
BE - 6		(Flame)Photometer	1	I
BE - 7		Water softener apparatus	1	I
BE - 8		Trolley (Laboratory cart)	2	I
BE - 9		Instrument cabinet	5	I
BE - 10		Pipette washer	3	I
BE - 11		Laboratory small items	1	I
ME - 1	Microbiological Examination	Colony counter	1	I
ME - 2		Binocular microscope	7	I
ME - 3		Incubator	5	I
ME - 4		Drying oven	2	I
ME - 5		Deep freezer	1	I
ME - 6		Anaerobic culture apparatus	1	I
ME - 7		Table top centrifuge	3	I
ME - 8		Vortex shaker	3	I
ME - 9		Electronic balance	1	I
ME - 10		Water bath	3	I
ME - 11		Vertical sterilizer	1	I
ME - 12		Micropipette set	1	I
ME - 13		Laboratory small items	1	I
PE - 1	Pathological Examination	Fluorescent microscope	1	I
PE - 2		Medicine refrigerator	2	I
PE - 3		Auto micropipette	1	I
PE - 4		Deep freezer	1	I
PE - 5		Cryostat	1	I

Equipment list of Bach Mai Hospital

Item No.	Department	Equipment Name	Q'ty	Category
PE - 6	Pathological Examination	Binocular microscope	4	I
PE - 7		Tabletop centrifuge	1	I
PE - 8		Tissue fixing shaker	1	I
PE - 9		Rotary microtome	2	I
PE - 10		Tissue staining set	1	I
PE - 11		Paraffin oven	1	I
PE - 12		Drying oven	2	I
PE - 13		Slide warmer	3	I
PE - 14		Paraffin bath	2	I
PE - 15		Electronic balance	2	I
PE - 16		Automatic tissue processor	1	I
PE - 17		Microtome knife sharpener	1	I
PE - 18		Incubator	1	I
PE - 19		Vortex shaker	1	I
PE - 20		Magnetic stirrer	1	I
PE - 21		pH meter	1	I
PE - 22		Slide container	3	I
PE - 23		Interval timer	3	I
PE - 24		Laboratory small items	1	I
RE - 1	Radiology Examination	General X-ray apparatus	2	I
RE - 2		Fluoroscopic X-ray TV unit with remote cor	1	III
RE - 3		Automatic film processor	1	I
RE - 4		Mobile X-ray unit	1	I
RE - 5		Film dryer	1	I
RE - 6		X-ray examination small item	1	I
RE - 7		Darkroom small items	1	I
PY - 1	Physical Examination	Holter system (for ECG:2 ,for blood pressure	2	I
PY - 2		Ultrasound scanner (whole body)	1	I
PY - 3		Pulse doppler apparatus	1	I
PY - 4		EEG (16-18 channels)	1	I
PY - 5		ECG stress test system	1	I
PY - 6		Autospirometer	1	I
PY - 7		Electrocardiograph(6ch:2,3ch:3,1ch:6)	2	I
PY - 8		Sphygmomanometer	6	I
EE - 1	Endoscopy Examination	Panendoscope system	1	II
EE - 2		Colonoscope system	1	I
EE - 3		Duodenoscope system	1	I
EE - 4		Cystoscope system	1	I
EE - 5		Arthrofiberscope system	1	III
EE - 6		Fiberscope TV system	4	I
EE - 7		Endoscope cabinet	2	I
EE - 8		Endoscopy table	4	I
EE - 9		Endoscopy electrosurgical unit	1	I
EE - 10		Suction pump	4	I
EE - 11		Manual disinfector	3	I
IC - 1	Intensive Care Unit	ICU bed	5	II
IC - 2		Ventilator	3	II
IC - 3		Patient monitor + Central monitor	4	I

Equipment list of Bach Mai Hospital

Item No.	Department	Equipment Name	Q'ty	Category
IC - 4	Intensive Care Unit	Suction unit	8	I
IC - 5		Nebulizer	1	I
IC - 6		Infusion pump	7	I
IC - 7		Syringe infusion pump	10	II
IC - 8		Pulse oximeter	2	II
IC - 9		IV hanger	20	I
IC - 10		Medical refrigerator	3	I
IC - 11		Medicine cabinet	4	I
IC - 12		Weighing scale for bed	2	II
IC - 13		Patient record cabinet	5	I
IC - 14		Stethoscope	10	I
IC - 15		Sphygmomanometer	15	I
IC - 16		Emergency cart	6	I
IC - 17		Ambu bag	10	I
IC - 18		Feeding pump	10	I
IC - 19		Autoclave (Table top type)	2	I
IC - 20		Water treatment system (for 2 bed)	1	III
IC - 21		Individual dialysis pump system	2	III
IC - 22		Dialyzing solution mixing tank	2	III
IC - 23		Hemodialysis machine	2	III
IC - 24		X-ray film viewer	1	I
OT - 1	Operation Theatre	Scrub station	2	I
OT - 2		Universal operation table	6	I
OT - 3		Operating light	6	I
OT - 4		Electrosurgical unit	6	I
OT - 5		Anesthesia apparatus (with ventilator)	6	I
OT - 6		Camera TV system for operating system	1	III
OT - 7		Laparoscopy operating system	1	III
OT - 8		Suction pump	6	I
OT - 9		Patient monitor	6	I
OT - 10		Defibrillator	2	I
OT - 11		Medical refrigerator	1	I
OT - 12		Blood refrigerator	1	I
OT - 13		Blood warmer	2	I
OT - 14		Instrument table	6	I
OT - 15		Operating instrument set	1	I
OT - 16		Instrument container	1	I
OT - 17		Sphygmomanometer	6	I
OT - 18		Kick bucket	6	I
OT - 19		IV stand	12	I
OT - 20		Film viewer	6	I
OT - 21		Dressing drum	6	I
OT - 22		Stretcher	2	I
OT - 23		Recovery bed	2	I
OT - 24		Ambu bag	6	I
OT - 25		Endotracheal set	1	I
OT - 26		Chair for anesthesia	6	I
OT - 27		Operation chair	6	I

Equipment list of Bach Mai Hospital

Item No.	Department	Equipment Name	Q'ty	Category
OT - 28	Operation Theatre	Foot stool	12	I
OT - 29		Instrument carriage	6	I
OT - 30		Instrument cabinet	6	I
OT - 31		Electa shelf	4	I
OT - 32		Pulse oxymeter	3	I
PH - 1	Pharmacy	Bottle rack	5	I
PH - 2		Medicine rack	5	I
PH - 3		Medicine cabinet	5	I
PH - 4		Medicine safety box	1	I
PH - 5		Water purifier	1	I
PH - 6		Balance	2	I
PH - 7		Mortal and pastle	2	I
PH - 8		Trolley	2	I
PH - 9		Cash register	1	I
PH - 10		Medical refrigerator	3	I
CS - 1	Central Supply and Sterilizing	High pressure steam sterilizer	4	I
CS - 2		Boiler system	1	I
CS - 3		Tube washer	2	I
CS - 4		Tube dryer	2	I
CS - 5		Washing spray gun system	2	I
CS - 6		Glove washer	1	I
CS - 7		Drying oven	2	I
CS - 8		Electa shelf	6	I
CS - 9		Transport trolley	4	I
CS - 10		Distribution trolley	2	I
CS - 11		Basket trolley	2	I
CS - 12		Dressing drum	10	I
CS - 13		Dressing container	10	I
CS - 14		Small items for sterilization	1	I
GE - 1	General item	Slide projector	2	I
GE - 2		Overhead projector	2	I
GE - 3		Screen	2	I
LR - 1	Labour Room	Labour bed	6	I
LR - 2		Irrigator stand	6	I
LR - 3		Examination light	1	I
DE - 1	Delivery Room	Delivery bed	3	I
DE - 2		Anesthesia apparatus	1	I
DE - 3		Operation light	3	I
DE - 4		Delivery instrument set	3	I
DE - 5		Infusion pump	3	I
DE - 6		Scrub station	1	I
DE - 7		Instrument table	3	I
DE - 8		Instrument tray	3	I
DE 9		Suction unit	3	I
DE - 10		Fetal monitor	2	I
DE 11		Vacuum extractor	2	I
DE 12		Irrigator stand	3	I
DE - 13		Infant warmer	2	I
DE - 14		Foot stool	3	I

Equipment list of Bach Mai Hospital

Item No.	Department	Equipment Name	Qty	Category
NP - 1	New Born/Premature Nursery	Infant incubator	4	I
NP - 2		Infant ventilator	2	III
NP - 3		Phototherapy unit	1	I
NP - 4		Neonatal monitor	2	III
NP - 5		Infant treatment table	2	I
NP - 6		Infant care center	1	I
NP - 7		PO2/PCO2 monitor	1	III
NP - 8		Infusion pump	1	I
NP - 9		Syringe pump	1	I
NP - 10		Examination light	2	I
NP - 11		Laryngoscope	2	I
NP - 12		Weight and height scale	2	I
NP - 13		Nebulizer	2	I
NP - 14		Medical refrigerator	1	I
NP - 15		Nursing bottle warmer	1	I
NP - 16		Nursing bottle sterilizer	1	I
NP - 17		Instrument cabinet	3	I
NP - 18		Emergency cart	1	I

Equipment list of Bach Mai Hospital

INPATIENT AND SERVICE WARD

Item No.	Department	Equipment Name	Q'ty	Category
IS - 1	Other Department	Bedside monitor	20	I
IS - 2		Ventilator	5	I
IS - 3		Defibrillator	5	I
IS - 4		Infusion pump	10	I
IS - 5		Syringe pump	10	I
IS - 6		Weight and height scale	10	I
IS - 7		Instrument cabinet	10	I
IS - 8		Diagnostic instruments	10	I
IS - 9		Hand driven resuscibag	10	I
IS - 10		Suction pump	20	I
IS - 11		Nebulizer	10	I
IS - 12		Examination light	10	I
IS - 13		Pulse oxymeter	3	I
IS - 14		ECG	10	I
IS - 15		Medical refrigerator	10	I
IS - 16		Film illuminator	10	I
IS - 17		Revolving stool	20	I
IS - 18		Emergency cart	10	I
IS - 19		Medicine cabinet	10	I
IS - 20		Automatic infant scale	5	I
IS - 21		Autoclave (Table top)	10	I

Note)

Category

Equipment for the Project is classified to three categories as follows.

I) The equipment which is essential for sustaining the present hospital function.

II) The equipment of which function could be fulfilled in the utilization of the existing one.

III) The equipment which is for the improvement of the hospital function with relevacy of the Project.

ANNEX 3

CRITERIA TO SELECT THE EQUIPMENT

Equipment for the Project shall be selected in accordance with nine criteria summarized as follows;

a) Basic necessity (1-(1)&1-(5))
b) Technical level (1-(2))
c) Operation and maintenance cost (1-(3),2-(3) & 2-(4))
d) Replacement (1-(4))
e) Operation and maintenance (1-(6) & 2-(3))
f) Extended benefits (1-(7) & 2-(2))
g) Environment (2-(1))
h) Centralization (2-(5))
I) Specification*

*The equipment which is in unnecessarily sophisticated specifications ar not suitable for the Project, therefore the criteria " Specifcation " should be added.

The contents of each criteria are classified by referring to the relevant items agreed in P/S of which record is attached as shown below;

1. Equipment which is included in the project

(1) Basic equipment which is utilized for diagnosis and treatment. (Basic necessity)
(2) Equipment which is utilized with ordinarily and already established technique. (Technical level)
(3) Equipment whose operation and maintenance cost can be prepared by the Viet-Nam side. (Operation and maintenance cost)
(4) Equipment which is replaced with the existing outdated equipment. (Replacement)
(5) Equipment which is required by the hospital function and the level of medical services of the hospital. (Basic necessity)
(6) Equipment which is utilized within the present manpower resources. (Operation and maintenance)
(7) Equipment which is effectively utilized for more patients. (Extended benefits)

2. Equipment which is excluded from the project

(1) Equipment whose operation requires radioactive isotope. (Environment)
(2) Equipment whose object is for advanced research activities. (Extended benefits)
(3) Equipment whose maintenance is difficult technically or financially. (Operation and maintenance, & Operation and maintenance cost)
(4) Equipment which is possible to purchase locally by the hospital finance. (Operation and maintenance cost)
(5) Equipment which is required in different department / institute in duplicate in spite of possibility to be utilized or managed as centralized system. (Centralization)

ANNEX 4

Japan's Grant Aid Scheme

(1) Grant Aid Procedures

1) Japan's Grant Aid Program is executed through the following procedures.

Application	(Request made by a recipient country)
Study	(Basic Design Study conducted by JICA)
Appraisal & Approval	(Appraisal by the Government of Japan and Approval by Cabinet)
Determination of Implementation	(The Notes exchanged between the Governments of Japan and the recipient country)

2) Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA (Japan International Cooperation Agency) to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study), using (a) Japanese consulting firm(s).

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Program, based on the Basic Design Study report prepared by JICA, and the results are then submitted to the Cabinet for approval.

Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes signed by the Governments of Japan and the recipient country.

Finally, for the implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

(2) Basic Design Study

1) Contents of the Study

The aim of the Basic Design Study (hereafter referred to as "the Study"), conducted by JICA on a requested project (hereafter referred to as "the Project") is to provide a

basic document necessary for the appraisal of the Project by the Japanese Government. The contents of the Study are as follows:

a) Confirmation of the background, objectives, and benefits of the requested Project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation.

b) Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view.

c) Confirmation of items agreed on by both parties concerning the basic concept of the Project.

d) Preparation of a basic design of the Project.

e) Estimation of costs of the Project.

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid Project. The Basic Design of the Project is confirmed considering the guidelines of Japan's Grant Aid Scheme.

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

2) Selection of Consultants

For smooth implementation of the Study, JICA uses (a) registered consultant firm(s). JICA select (a) firm(s) based on proposals submitted by interested firms. The firm(s) selected carry(ies) out a Basic Design Study and write(s) a report, based upon terms of reference set by JICA. The consulting firm(s) used for the Study is (are) recommended by JICA to the recipient country also to work on the Project's implementation after the Exchange of Notes, in order to maintain technical consistency and also to avoid any undue delay in implementation should the selection process be repeated.

(3) Japan's Grant Aid Scheme

1) What is Grant Aid?

The Grnat Aid Program provides a recipient country with non-reimbursable funds to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. Grant Aid is not supplied through the donation of materials as such.

2) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.

3) "The period of the Grand Aid" means the one fiscal year which the Cabinet approved the Project for. Within the fiscal year, all procedures such as exchanging of the Notes, concluding contracts with (a) consultant firm(s) and (a) contractor(s) and final payment to them must be completed.
However in case of delays in delivery, installation or construction due to unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

4) Under the Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.
When the two Governments deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country.

However the prime contractors, namely, consulting constructing and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

5) Necessity of "Verification"

The Government of recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability ot Japanese taxpayers.

6) Undertakings required of the Government of the Recipient Country

In the implementation of the Grant Aid project, the recipient country is required to undertake such necessary measures as the following:

(1) To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the construction.

(2) To provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites.

(3) To secure buildings prior to the procurement in case the installation of the equipment.

(4) To ensure all the expense and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid.

(5) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts.

(6) To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the Verified contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the perfonnance of their work.

(7) "Propose Use"

The recipient country is required to maintain and use the facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.

(8) "Re-export"

The products purchased under the Grant Aid should not be re-exported from the recipient country.

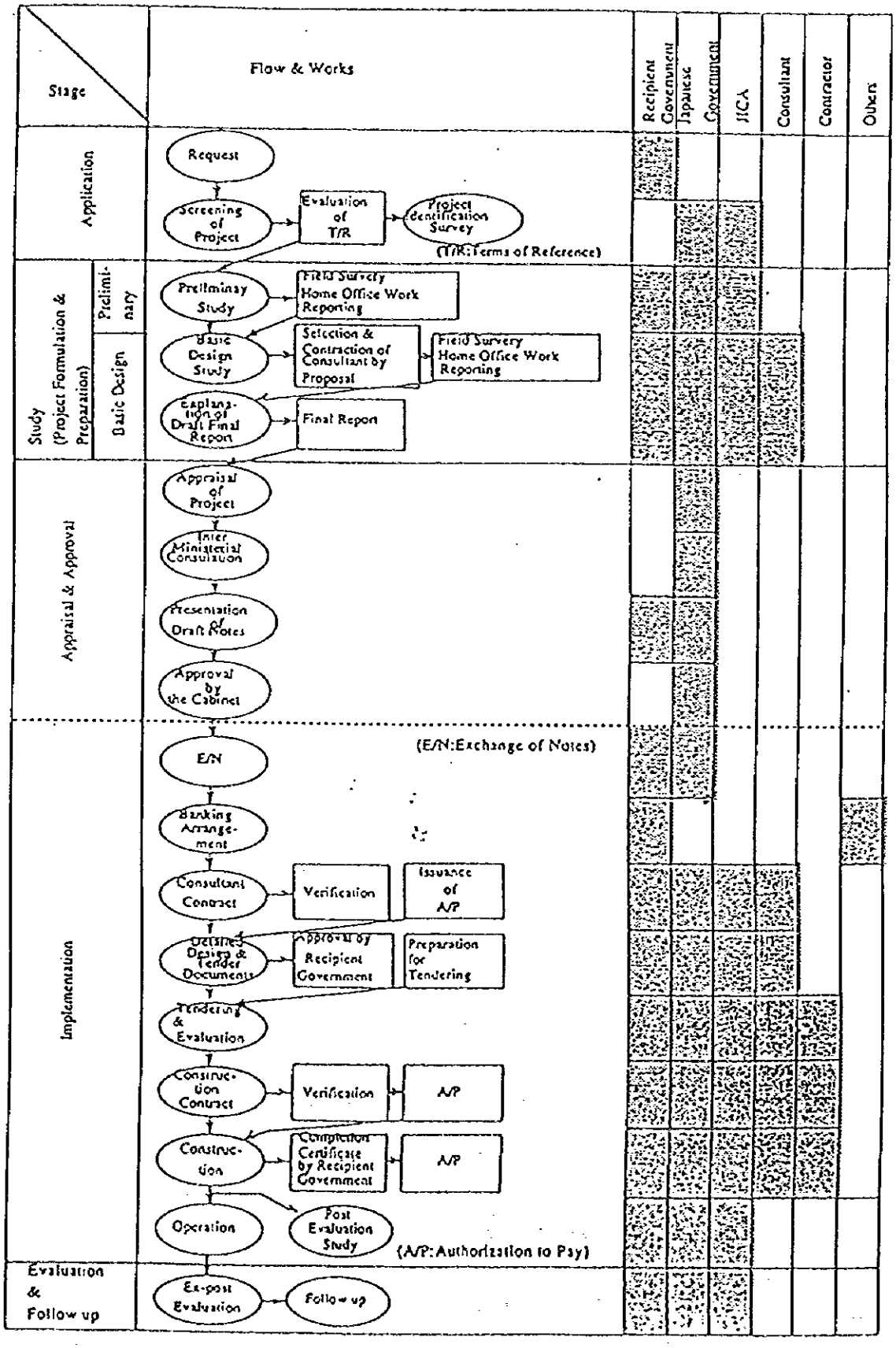
(9) Banking Arrangements (B/A)

a) The Government of the receipient country or its designated authority should open an account in the name of the Government of the recipient country in an authorized foreign exchange bank in Japan (hereinafter referred to as "the

Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the Verified Contracts.

b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an authorization to pay issued by the Government of the recipient country or its designated authority.

Flow Chart of Japan's Grant Aid Procedures



Major Undertakings to be taken by Each Government

No.	Items	To be covered by Grant Aid	To be covered by Recipient Side
1	To secure land		●
2	To clear, level and reclaim the site when needed		●
3	To construct gates and fences in and around the site		●
4	To construct the parking lt	●	
5	To construct roads		
	1) Within the site	●	
	2) Outside the site		●
6	To construct the buildings	●	
7	To provide facilities for the distribution of electricity, water supply, drainage and other incidental facilities		
	1) Electricity		
	a. The distributing line to the site		●
	b. The drop wiring and internal wiring within the site	●	
	c. The main circuit breaker and transformer	●	
	2) Water Supply		
	a. The city water distribution main to the site		●
	b. The supply system within the site (receiving and elevated tanks)	●	
	3) Drainage		
	a. The city drainage main (for storm, sewer and others) to the site		●
	b. The drainage system (for toilet sewer, ordinary waste, storm drainage and others) within the site	●	
	4) Gas Supply		
	a. The city gas main to the site		●
	b. The gas supply system within the site	●	
	5) Telephone System		
	a. The telephone trunk line to the main distribution frame/panel (MDF) of the building		●
	b. The MDF and the extension after the frame/panel	●	
	6) Furniture and Equipment		
	a. General furniture		●
	b. Project equipment	●	
8	To bear the following commissions to the Japanese foreign exchange bank for the banking services based upon the B/A		
	1) Advising commission of A/P		●
	2) Payment commission		●
9	To ensure unloading and customs clearance at port of disembarkation in recipient country		
	1) Marine (Air) transportation of the products from Japan to the recipient country	●	
	2) Tax exemption and custom clearance of the products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site	●	
10	To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contact such facilities as may be neccessary for their entry into the recipient country and stay therein for the performance of their work.		●
11	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contracts.		●
12	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant.		●
13	To bear all the expenses, other than those to be borne by the Grant, necessary for construction of the facilities as well as for the transportation and installation of the equipment		●

ANNEX 5

Necessary Measures to be taken by the Government of Viet Nam

1. to provide data and information necessary for the Project ;
2. to secure the site for the Project ;
3. to clear, level and reclaim the site prior to commencement of the Project ;
4. to undertake incidental outdoor works such as gardening, fencing, gates and exterior lightning in and around the site ;
5. to provide facilities for distribution of electricity, water supply, telephone, drainage, sewerage and other incidental facilities to the site ;
   (1) electricity distributing line to the site.
   (2) city water distribution main to the site.
   (3) drainage city main to the site.
   (4) telephone trunk line and the main distribution panel of building.
   (5) general furniture such as carpets, curtains, tables, chairs and others.
6. to bear commissions to the Japanese foreign exchange bank for its banking service based upon the Banking Arrangement (B / A), namely the advertising commission of the Authorization to Pay (A / P) and payment commission ;
7. to ensure prompt unloading, tax exemption, customs clearance at the port of disembakation in Viet-Nam and prompt internal transportation therein of the materials and equipment for the Project purchased under the Grant Aid ;
8. to exempt Japanese juridical and physical nationals engaged in the Project from customs duties, internal taxes and other fiscal levies which may be imposed in Viet-Nam with respect to the supply of the products and services under the verified contracts ;
9. to accord Japanese nationals whose services may be required in connection with the supply of the products and services under the verified contracts such facilities as may be necessary for their entry into Viet-Nam and stay therein for the performance of their work ;
10. to provide necessary permissions, licenses and other authorizations for implementing the Project, if necessary ;
11. to assign appropriate budget and teaching and administrative staff members for proper and effective operation and maintenance of equipment procured under the Grant Aid ;
12. to maintain and use properly and effectively the facilities constructed and the equipment procured under the Project ; and
13. to bear all the expenses, other than those to be borne by the Japan's Grant Aid within the scope of the Project.

2. Explanation Team for the Draft Basic Design

2. The Explanation Team for the Draft Basic Design

(February 17 to March 18, 1997)

(1) Team Member

Name	Duty	Occupation
TAKIMOTO, Masaru	Leader	Development Specialist, JICA
YOSHITAKE, Katsuhiro	Technical Adviser	Bureau of International Cooperation International Medical Center of Japan, MOHW
AKIYAMA, Minoru	Technical Adviser	Bureau of International Cooperation International Medical Center of Japan, MOHW
NARITA, Eita	Coordinator	First Project Study Division, Grant Aid Project Study Department, JICA
KANAGAWA, Ichiro	Project Manger	Nihon Sekkei Inc.
HAMADA, Tomonao	Architecture Planner	Nihon Sekkei Inc.
ISHIKAWA, Syuzo	Facility Planner	Nihon Sekkei Inc.
YOZA, Takashi	Equipment Planner I Operation & Maintenance Planner	Nihon Sekkei Inc.
HIRASHIMA, Akihisa	Interpreter	Nihon Sekkei Inc.

(2) The Explanation Team for the Basic Design

(June 9 to June 20, 1997)

	Date	Activites
1	June 9(M)	Lv Narita (via Hong Kong) Av Hanoi
2	June 10(Tu)	JICA Vietnam Office Embassy of Japan MOH, MPI
3	June 11(W)	1st Meeting w/ BMH, Site Survey
4	June 12(Th)	MOH Dept. of ME&C, Dept. of Therapy Hanoi Fire Preventionand Fighting Dept. 2nd Meeting w/ BMH
5	June 13(F)	3rd Meeting w/ BMH Minister of Health
6	June 14(Sa)	Visit to Viet Doc Hospital Meeting w/ Local Consultant Team Meeting
7	June 15(Su)	Team Meeting Dr. Akiyama Av Hanoi
8	June 16(M)	4th Meeting w/ BMH Hanoi Water Business Company Power Company of Hanoi Seminer
9	June 17(Tu)	1st Discussion on M/ M 5th Meeting w/ BMH
10	June 18(W)	2nd Discussion on M/ M 6th Meeting w/ BMH
11	June 19(Th)	Signing M/ M Report to JICA Report to Embassy
12	June 20(F)	Lv Hanoi Av Narita

(3) Discussant

1) Viet Nam Officials

・Ministry of Planning and Investment

Dr. Do Xuan Mao, Director, Labour Culture & Social Affairs Dept.
Mr. Tran Tuan Anh, Senior Expert, Foreign Economic Relations Dept.
Mr. Nguyen Trung Dung, Senior Expert, Foreign Economic Relations Dept.

・Ministry of Health

Prof. Do Nguyen Phuong, Minister
Dr. Trinh Bang Hop, Deputy Director, International Cooperation Dept.
Dr. Tran Thi Gang Huong, International Cooperation Dept.
Eng. Nguyen Xuan Binh, Director, ME and Construction Dept.
Eng. Dong Van Tinh, Deputy Director ME and Construction Dept.
Eng. Ha Dac Bien, Expert, ME and Construction 'Dept.
Eng. Nguyen Thu Anh, Expert, ME and Construction Dept.
Dr. Tran Thu Thuy, Director Therapy Dept.
Dr. Nguyen Nhu Hy, Deputy Director, Planning Dept.
Ms. Tran Khanh Ha, Planning Dept.
Eng. Le Ngoc Thach, Deputy Director, Financial Dept.
Eng. Nguyen Thi Thuan, Expert, Financial Dept.
Ms. Bui Tuyet Nhung, Expert, Financial Dept.

・Bach Mai Hospital

Prof. Tran Quy, Director
Dr. Tran Thi Thinh, Vice Director
Dr. Ngo Toan Dinh, Vice Director
Prof. Tran Van Chat, Head of General Planning Div.
Dr. Nguyen Thi Nga, Vice Head of General Planning Div.
Dr. Phan Sy An, Head of Nuclear Medicine Div.
Eng. Nguyen Nhu Thuc, Head of Financial Div.
Eng. Bui Xuan Vinh, Head of Medical Equipment Div.
Eng. Dang Ngoc Dinh, Medical Equipment Div.
Eng. Do Trong Tai, Medical Equipment Div.
Eng. Pham Manh Hung, Construction Div.
Eng. Pham Quoc Hung, Construction Div.
Eng. Duong Thi Thuy, Construction Div.
Ms. Nguyen Linh Ha, Interpreter, General Planning Div.

・ Viet Doc Hospital

Dr. Nguyen Ngoc Lam, Vice Director

Dr. Nguyen Manh Nham, Head, Technical Bureau and International Cooperation

・ THIKECO

Eng. Nguyen Doc Dat, General Director

Eng. Phan Trong Giang, Deputy General Director

Eng. Tran Van Dzung, Assistant General Director

Eng. Trinh Quang Dzung, General Manager

Ms. Nguyen Thi Hoa, Project Analysis Dept.

・ Fire Prevention and Fighting Department, Hanoi

Eng. Vu Dinh Hien, Chief, Fire Prevention and Fighting Dept.

・ Hanoi Water Business Company

Ms. Nguyen Xuan Tho, Chief, Technical Dept.

・ Power Company of Hanoi

Eng. Eguyen Xuan Thanh, Vice Director, Technical Dept.

2) Japanese Officials

・ Embassy of Japan

Mr. Mitsunori Ida Second Secretary

Mr. Yasuyuki Ito Second Secretary

・ JICA Viet Nam Office

Mr. Masaru Todoroki, Resident Representative

Mr. Hiroshi Tsujino

(4) 協議議事録

MINUTES OF DISCUSSIONS

BASIC DESIGN STUDY
ON
THE PROJECT FOR THE IMPROVEMENT OF BACH MAI HOSPITAL
IN
SOCIALIST REPUBLIC OF VIETNAM
(CONSULTATION ON DRAFT REPORT)

In February 1997, the Japan International Cooperation Agency (JICA) dispatched the Basic Design Study Team on the Project for the Improvement of BACH MAI Hospital in Socialist Republic of Vietnam (hereinafter referred to as "the Project") to Socialist Republic of Vietnam and has prepared the draft report of the study through discussion, field survey, and technical examination of the results in Japan.

In order to explain and to consult the official concerned the Government of Socialist Republic of Vietnam (hereinafter referred to as "the GOV") on the components of the draft report, JICA sent to Vietnam a study team (hereinafter referred to as "the Team"), which is headed by Masaru TAKIMOTO, Development Specialist, JICA, and is scheduled to stay in the country from June 10 to 19, 1997.

As a result of discussions, both parties have confirmed the main items described on the attached sheets.

Hanoi, June 19, 1997

Mr. Masaru TAKIMOTO
Leader,
Draft Report Explanation Team
JICA

M.D. TRINH BANG HOP
for Director General,
Department of International Cooperation
Ministry of Health,
Socialist Republic of Vietnam

Prof. TRAN QUY
Director of BACH MAI Hospital

ATTACHMENT

1. COMPONENTS OF DRAFT REPORT

The GOV has agreed and accepted in principle the components of the draft report proposed by the Team.

2. OBJECTIVE

The objective of the Project is to improve medical functions and services of BACH MAI Hospital and its educational function as a teaching hospital. The Team stated that the Government of Japan would contribute to attain the objective of the Project by constructing facility of BACH MAI Hospital and procurement of medical equipment as shown in the draft report on condition that the Grant Aid by the Government of Japan is extended to the Project.

3. ITEMS REQUESTED BY THE GOV

The items requested by the GOV listed in ANNEX-1 shall be re-examined in Japan and referred to on finalizing the Basic Design Study Report.

4. JAPAN'S GRANT AID SYSTEM

(1) The GOV has understood the system of Japan's Grant Aid clarified by the Team as described in ANNEX-2.

(2) The GOV shall take the necessary measures described in ANNEX-3 for smooth implementation of the Project on condition that the Grant Aid Assistance by the Government of Japan is extended to the Project.

5. SITE CLEARANCE

(1) The GOV has agreed to move the existing facilities locating in the site to the other place and implement site clearance including the demolition and relocation of the existing cables, pipes, and other obstructions, especially the drainage pipes within the site by the end of March, 1998. The site area is specified in ANNEX-4.

(2) The GOV has agreed to submit monitoring reports on the site clearance to JICA office in Vietnam monthly from August, 1997 by the form as ANNEX-5.

6. INTERNAL PROCEDURES BY THE GOV

(1) The GOV has agreed to complete the internal procedures, especially the final approval by "the Office of the Government" and inform JICA office in Vietnam of its approval by August 15, 1997.
(2) The Team stated it would be difficult to implement the Project if the Project would not be approved by "the Office of the Government" by August 15, 1997.
(3) The GOV stated that the responsible department for these procedures is the Department of Medical Equipment and Construction in cooperation with other relevant departments in Ministry of Health.

7. INPUT BY THE GOV

The GOV has understood that, in addition to input by Japan under Grant Aid, other activities are necessary to attain the objective of the Project.(shown in ANNEX-6)

(1) Improvement in Medical Services
(2) Improvement in Hospital Management
(3) Improvement in Central Function
(4) Improvement in Collaboration / Cooperation with Other Medical Institutes

8. ORGANIZATION OF "THE PROJECT OFFICE"

(1) The GOV has agreed to organize "the Project Office", which takes the responsibility for implementing internal reform of BACH MAI Hospital, etc., in accordance with the basic concept "Centralization of Function" of the Project.
(2) "The Project Office" will be defined and function as not only a working group for the above mentioned reform but also a counter-part team of Japanese-Side in implementing the Project.
(3) The members of "the Project Office" shall consist of person from BACH MAI Hospital and the following departments.

1) the Department of Medical Equipment and Construction, Ministry of Health
2) the Department of Planning, Ministry of Health
3) the Department of International Cooperation, Ministry of Health
4) the Department of Finance, Ministry of Health
5) the Department of Therapy, Ministry of Health

9. MONITORING AND EVALUATION OF THE PROJECT

The GOV has agreed to implement a baseline survey on indicators as described in ANNEX-7 by the end of July, 1997 for monitoring and evaluating of the Project.

10. OTHERS

(1) The GOV has agreed to secure and allocate the adequate budget for the execution of the Project.

(2) The GOV has agreed to secure and allocate the enough budget to operate and maintain properly and effectively the facility and the equipment of the Project.

(3) The GOV stated that technical cooperation was necessary to improve medical functions and services in BACH MAI Hospital. The Team stated that the technical cooperation was a scheme other than the Grant Aid and that the GOV was able to submit newly the request for technical cooperation to the Embassy of Japan in Vietnam with necessary internal procedures.

(4) The Team stated that the construction works of the Project would start in September, 1998 on condition that the procedures relevant to the Project by the both governments are implemented smoothly.

ANNEX-1

ITEMS REQUESTED BY THE GOV.

A. Facility

(1) Deep Well

(2) Oxygen Generator Room(approximately 80m2) in stead of Oxygen Cylinder Storage.

(3) Duty Room for Machine Operator (2 desks)

B. Medical Equipment

(1) Fluoroscopic X-Ray with remote control

(2) Additional 20 ICU Beds

ANNEX-2

Japan's Grant Aid Scheme

(1) Grant Aid Procedures

1) Japan's Grant Aid Program is executed through the following procedures.

Application	(Request made by a recipient country)
Study	(Basic Design Study conducted by JICA)
Appraisal & Approval	(Appraisal by the Government of Japan and Approval by Cabinet)
Determination of Implementation	(The Notes exchanged between the Governments of Japan and the recipient country)

2) Firstly, the application or request for a Grant Aid project submitted by a recipient country is examined by the Government of Japan (the Ministry of Foreign Affairs) to determine whether or not it is eligible for Grant Aid. If the request is deemed appropriate, the Government of Japan assigns JICA (Japan International Cooperation Agency) to conduct a study on the request.

Secondly, JICA conducts the study (Basic Design Study), using (a) Japanese consulting firm(s).

Thirdly, the Government of Japan appraises the project to see whether or not it is suitable for Japan's Grant Aid Program, based on the Basic Design Study report prepared by JICA, and the results are then submitted to the Cabinet for approval.

Fourthly, the project, once approved by the Cabinet, becomes official with the Exchange of Notes signed by the Governments of Japan and the recipient country.

Finally, for the implementation of the project, JICA assists the recipient country in such matters as preparing tenders, contracts and so on.

(2) Basic Design Study

1) Contents of the Study

The aim of the Basic Design Study (hereafter referred to as "the Study"), conducted by JICA on a requested project (hereafter referred to as "the Project") is to provide a

basic document necessary for the appraisal of the Project by the Japanese Government. The contents of the Study are as follows:

a) Confirmation of the background, objectives, and benefits of the requested Project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation.

b) Evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from a technical, social and economic point of view.

c) Confirmation of items agreed on by both parties concerning the basic concept of the Project.

d) Preparation of a basic design of the Project.

e) Estimation of costs of the Project.

The contents of the original request are not necessarily approved in their initial form as the contents of the Grant Aid Project. The Basic Design of the Project is confirmed considering the guidelines of Japan's Grant Aid Scheme.

The Government of Japan requests the Government of the recipient country to take whatever measures are necessary to ensure its self-reliance in the implementation of the Project. Such measures must be guaranteed even though they may fall outside of the jurisdiction of the organization in the recipient country actually implementing the Project. Therefore, the implementation of the Project is confirmed by all relevant organizations of the recipient country through the Minutes of Discussions.

2) Selection of Consultants

For smooth implementation of the Study, JICA uses (a) registered consultant firm(s). JICA select (a) firm(s) based on proposals submitted by interested firms. The firm(s) selected carry(ies) out a Basic Design Study and write(s) a report, based upon terms of reference set by JICA. The consulting firm(s) used for the Study is (are) recommended by JICA to the recipient country also to work on the Project's implementation after the Exchange of Notes, in order to maintain technical consistency and also to avoid any undue delay in implementation should the selection process be repeated.

(3) Japan's Grant Aid Scheme

1) What is Grant Aid?

The Grnat Aid Program provides a recipient country with non-reimbursable funds to procure the facilities, equipment and services (engineering services and transportation of the products, etc.) for economic and social development of the country under principles in accordance with the relevant laws and regulations of Japan. Grant Aid is not supplied through the donation of materials as such.

2) Exchange of Notes (E/N)

Japan's Grant Aid is extended in accordance with the Notes exchanged by the two Governments concerned, in which the objectives of the Project, period of execution, conditions and amount of the Grant Aid, etc., are confirmed.

3) "The period of the Grand Aid" means the one fiscal year which the Cabinet approved the Project for. Within the fiscal year, all procedures such as exchanging of the Notes, concluding contracts with (a) consultant firm(s) and (a) contractor(s) and final payment to them must be completed.
However in case of delays in delivery, installation or construction due to unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

4) Under the Grant Aid, in principle, Japanese products and services including transport or those of the recipient country are to be purchased.
When the two Governments deem it necessary, the Grant Aid may be used for the purchase of the products or services of a third country.

However the prime contractors, namely, consulting constructing and procurement firms, are limited to "Japanese nationals". (The term "Japanese nationals" means persons of Japanese nationality or Japanese corporations controlled by persons of Japanese nationality.)

5) Necessity of "Verification"

The Government of recipient country or its designated authority will conclude contracts denominated in Japanese yen with Japanese nationals. Those contracts shall be verified by the Government of Japan. This "Verification" is deemed necessary to secure accountability of Japanese taxpayers.

6) Undertakings required of the Government of the Recipient Country

In the implementation of the Grant Aid project, the recipient country is required to undertake such necessary measures as the following:

(1) To secure land necessary for the sites of the Project and to clear, level and reclaim the land prior to commencement of the construction.

(2) To provide facilities for the distribution of electricity, water supply and drainage and other incidental facilities in and around the sites.

(3) To secure buildings prior to the procurement in case the installation of the equipment.

(4) To ensure all the expense and prompt execution for unloading, customs clearance at the port of disembarkation and internal transportation of the products purchased under the Grant Aid.

(5) To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which will be imposed in the recipient country with respect to the supply of the products and services under the Verified Contracts.

(6) To accord Japanese nationals whose services may be required in connection with the supply of the products and services under the Verified contracts, such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.

(7) "Propose Use"

The recipient country is required to maintain and use the facilities constructed and equipment purchased under the Grant Aid properly and effectively and to assign staff necessary for this operation and maintenance as well as to bear all the expenses other than those covered by the Grant Aid.

(8) "Re-export"

The products purchased under the Grant Aid should not be re-exported from the recipient country.

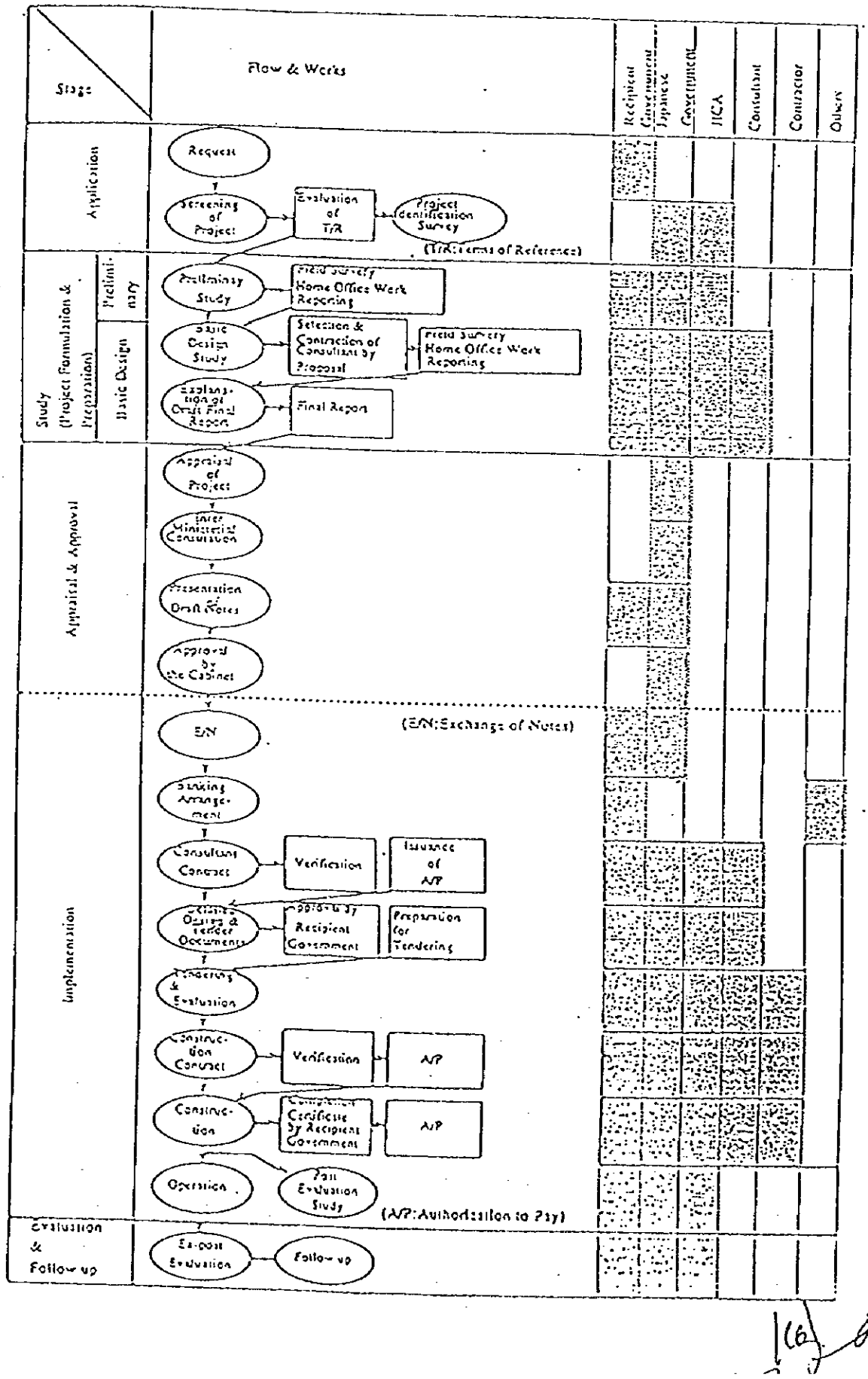
(9) Banking Arrangements (B/A)

a) The Government of the receipient country or its designated authority should open an account in the name of the Government of the recipient country in an authorized foreign exchange bank in Japan (hereinafter referred to as "the

Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the Verified Contracts.

b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an authorization to pay issued by the Government of the recipient country or its designated authority.

Flow Chart of Japan's Grant Aid Procedures



Major Undertakings to be taken by Each Government

No.	Items	To be covered by Grant Aid	To be covered by Recipient Side
1	To secure land		●
2	To clear, level and reclaim the site when needed		●
3	To construct gates and fences in and around the site		●
4	To construct the parking lt	●	
5	To construct roads		
	1) Within the site	●	
	2) Outside the site		●
6	To construct the buildings	●	
7	To provide facilities for the distribution of electricity, water supply, drainage and other incidental facilities		
	1) Electricity		
	a. The distributing line to the site		●
	b. The drop wiring and internal wiring within the site	●	
	c. The main circuit breaker and transformer	●	
	2) Water Supply		
	a. The city water distribution main to the site		●
	b. The supply system within the site (receiving and elevated tanks)	●	
	3) Drainage		
	a. The city drainage main (for storm, sewer and others) to the site		●
	b. The drainage system (for toilet sewer, ordinary waste, storm drainage and others) within the site	●	
	4) Gas Supply		
	a. The city gas main to the site		●
	b. The gas supply system within the site	●	
	5) Telephone System		
	a. The telephone trunk line to the main distribution frame/panel (MDF) of the building		●
	b. The MDF and the extension after the frame/panel	●	
	6) Furniture and Equipment		
	a. General furniture		●
	b. Project equipment	●	
8	To bear the following commissions to the Japanese foreign exchange bank for the banking services based upon the B/A		
	1) Advising commission of A/P		●
	2) Payment commission		●
9	To ensure unloading and customs clearance at port of disembarkation in recipient country		
	1) Marine (Air) transportation of the products from Japan to the recipient country	●	
	2) Tax exemption and custom clearance of the products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site	●	
10	To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work.		●
11	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contracts.		●
12	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant.		●
13	To bear all the expenses, other than those to be borne by the Grant, necessary for construction of the facilities as well as for the transportation and installation of the equipment		●

ANNEX-3

Necessary Measures to be taken by the Government of Viet Nam

1. to provide data and information necessary for the Project ;
2. to secure the site for the Project ;
3. to clear, level and reclaim the site prior to commencement of the Project ;
4. to undertake incidental outdoor works such as gardening, fencing, gates and exterior lightning in and around the site ;
5. to provide facilities for distribution of electricity, water supply, telephone, drainage, sewerage and other incidental facilities to the site ;
   (1) electricity distributing line to the site.
   (2) city water distribution main to the site.
   (3) drainage city main to the site.
   (4) telephone trunk line and the main distribution panel of building.
   (5) general furniture such as carpets, curtains, tables, chairs and others.
6. to bear commissions to the Japanese foreign exchange bank for its banking service based upon the Banking Arrangement (B / A), namely the advertising commission of the Authorization to Pay (A / P) and payment commission ;
7. to ensure prompt unloading, tax exemption, customs clearance at the port of disembakation in Viet-Nam and prompt internal transportation therein of the materials and equipment for the Project purchased under the Grant Aid ;
8. to exempt Japanese juridical and physical nationals engaged in the Project from customs duties, internal taxes and other fiscal levies which may be imposed in Viet-Nam with respect to the supply of the products and services under the verified contracts ;
9. to accord Japanese nationals whose services may be required in connection with the supply of the products and services under the verified contracts such facilities as may be necessary for their entry into Viet-Nam and stay therein for the performance of their work ;
10. to provide necessary permissions, licenses and other authorizations for implementing the Project, if necessary ;
11. to assign appropriate budget and teaching and administrative staff members for proper and effective operation and maintenance of equipment procured under the Grant Aid ;
12. to maintain and use properly and effectively the facilities constructed and the equipment procured under the Project ; and
13. to bear all the expenses, other than those to be borne by the Japan's Grant Aid within the scope of the Project.

ANNEX-4

THE AREA OF SITE CLEARANCE
Sub Entrance
Main Entrance
Project Site
Institute of Dermatology
Gerontology Institute
International
Gastroenterology Dept.
Family Houses
Mental Health Dept.
Neurology Dept.
Institute of Psychology Neurology Dept.
Carpentary Workshop
Laundry & Sanitation Center
Mortuary
Rheumatology Dept.
Institute of Dermatology
Nuclear Medicine Dept.
Institute of Clinical Research in Tropical Medicine
Dept. of Out-Patient (Polyclinic)
Biomedicology Dept.
Otorhino-laryngology
Waste Water Treatment
Animal House
Laundry
Doctor
Pathology Anatomy Dept.
Traditional Medicine Dept.
Pharmacology Dept.
Electronic Workshop
Lecture Hall of Cardiology
Artif. Kidney
Anti-poison Center
I.C.U.
Surgery Dept.
Allergology & Immunology Dept.
Cardiology Institute Respiratology Dept.
Operation Theater
Lecture Hall
Institute of Medical Enzymology
Dept. of Physiotherapy & Rehabilitation
Endoscopy Center
Lecture Hall
Bio-Chem Dept.
Radiology Dept.
Cardiology Institute Endocrinology Dept.
Temporary Hemodialysis Dept.
Obstetric Dept.
Pediatric Dept.
Haematology Institute Nephro.Urology Dept.
Administration Block (Gerontology Institute & Administration)
Institute of Haematology & Blood Trans.
Rheumatology Dept.
Casualty Emergency Dept.
N

MONITORING REPORT ON THE REMOVAL AND SITE CLEARANCE

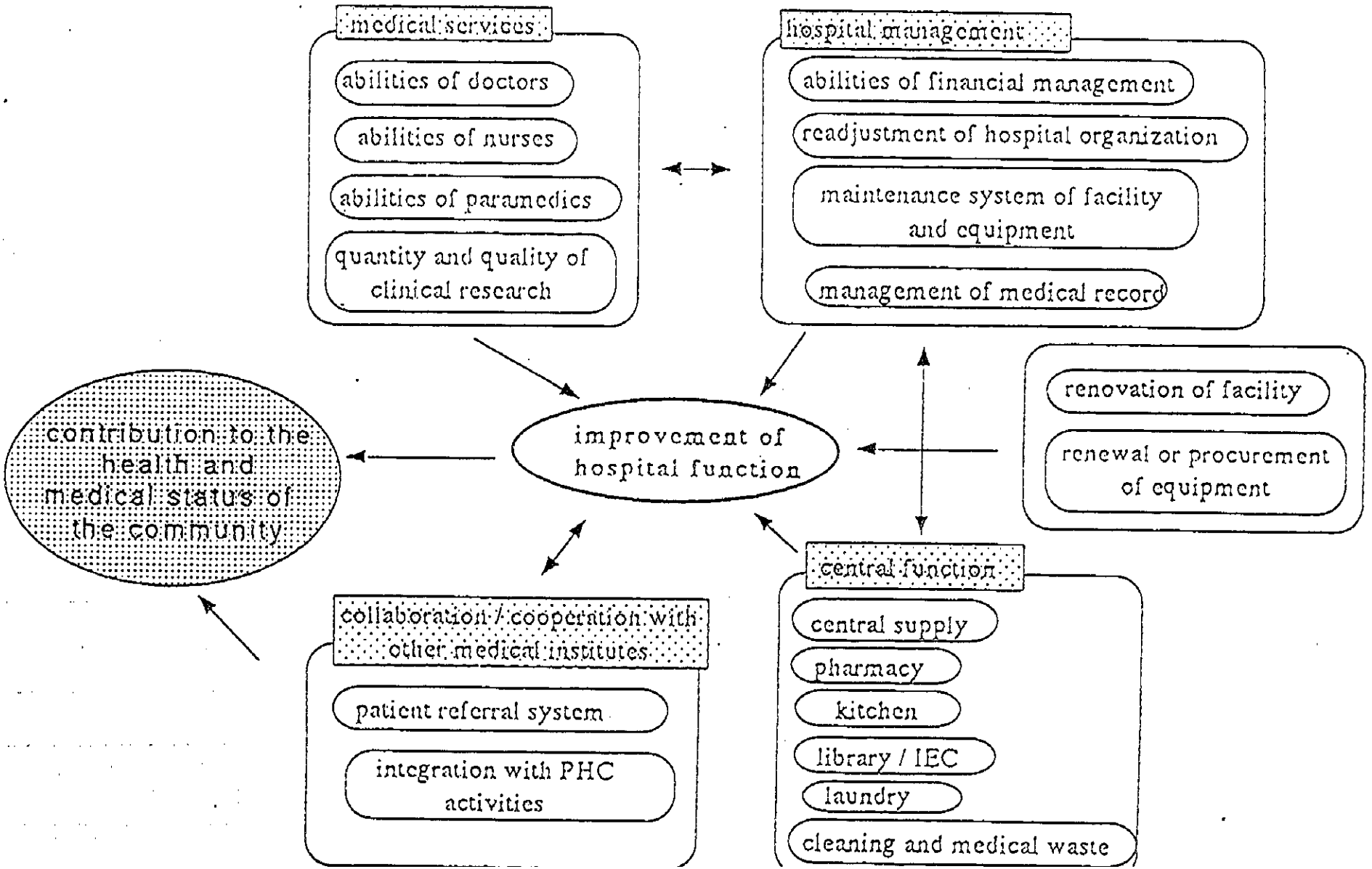
ANNEX - 5

Project: The Improvement of Bach Mai Hospital
Title: Site Preparation Progress of Works
For The Month Of: _____

No.	Description	% Completed In Total	1997 Aug	Sept	Oct	Nov	Dec	1998 Jan	Feb	March	April
A	Master Work Schedule: Relocation Of The Institute For Clinical Research In Tropical Medicine	%	START %	%	%	%					
B	Master Work Schedule: Extension & Connection Of Infrastructure:-										
B.1	Power cables	%					%				
B.2	Telephone cables	%					%				
B.3	Water supply pipes, drainage system	%					%				
B.4	Others(Rainwater piping)	%					%				
C	Master Work Schedule: Removal Of Existing Piping & Wiring:-										
C.1	Power cables	%						%			
C.2	Telephone cables	%						%			
C.3	Water supply pipes, drainage system	%								%	
C.4	Others(Curbs, gutters, rainwater piping)	%								%	
D	Master Work Schedule: Demolition Works For The Existing Facilities										
D.1	Existing Facilities (buildings 1-26, brickwall 1-4, asphalt road, concrete road, cutting of trees)	%						%	%	%	
D.2	Demolition & Removal Of Buried Items	%								%	
D.3	Mines & Bomb Deactivation	%								%	
D.4	Ground Levelling	%								%	END

Annex-6

Component factors for improvement of hospital function



ANNEX-7

Indicators of evaluation for quality and quantity of medical services

1 disease distribution of in-patients (department-wise)
2 average bed occupancy rate (ward-wise)
3 average admission days (ward-wise, department - wise ,and top-ten-disease - wise)
4 preoperative admission day s
5 mortality in the hospital (whole hospital, department-wise, disease-wise)
6 rate of discharge for death at home (department-wise, ward-wise)
7 operative mortality (department-wise)
8 neonatal mortality in the hospital
9 rate of voluntary discharge (department-wise, ward-wise)
10 rate of discharge with improvement of the disease (department-wise)
11 referral rate(to other hospitals ,from other hospitals)
12 patients satisfaction surveillance
13 ratio of responded claims
14 ratio of the dieted in-patient
15 other indicatios if neceassary

Qualitative evaluation for the activities to the community health
(If yes, please answer ellaborately)

1 Does the activities of the hospital meet the community needs?
2 Number of visits of the consultation team to the lower referral hospitals.
3 Number of seminors for the lower referral medical personell.
4 Does the hospital give collaboration and cooperation to the community health activities and medical care?
5 Is the role of the hospital in the community health clear?
6 Is the hospital regular meetings with surrounding health facilities ?
7 Is the hospital sharing the medical equipment with other hospitals?
8 Is the hospital providing medical information to other facilities?
9 other indicatios if neceassary