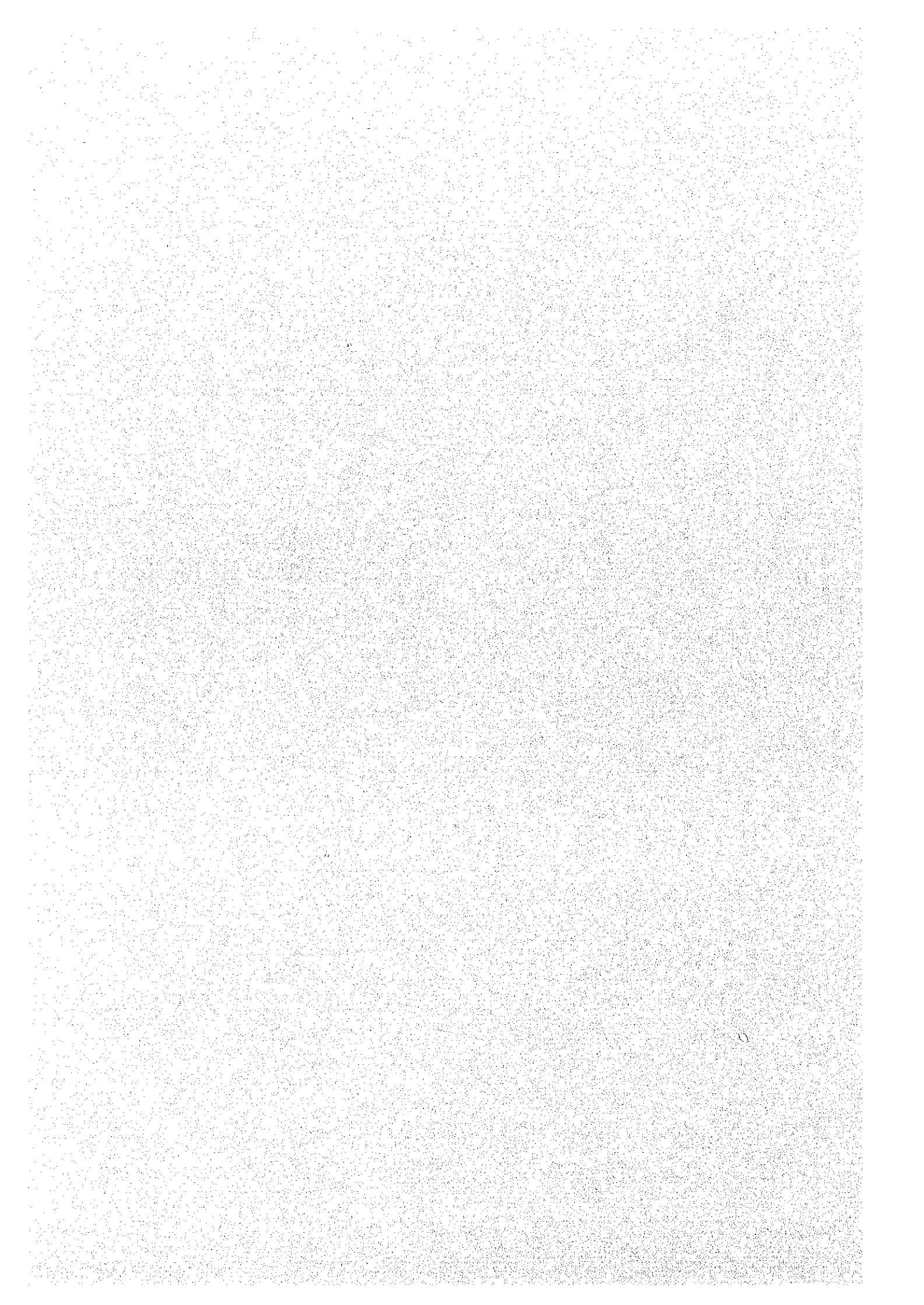


**CHAPTER 3  
IMPLEMENTATION  
PLAN**



## CHAPTER 3 IMPLEMENTATION PLAN

### 3-1 Implementation Plan

#### 3-1-1 Implementation Concept

##### (1) Basic Items

The Project is to be implemented in two stages.

- 1) The Exchange of Notes (E/N) for the Grant Aid Project shall be concluded for the first and second stages respectively between the Japanese Government and the Government of Indonesia after the cabinet meeting and decision by the Japanese Government.
- 2) With the E/N, Japan shall commit itself officially to assist and initiate specific action.
- 3) After the above-mentioned conclusion, a consultant contract shall be concluded between a consultant of Japanese nationality and the Government of Indonesia and detailed design and supervision services shall be started immediately.

##### (2) Detailed Design Stage

- 1) For the Detailed Design, full details of facilities and equipment in the Basic Design should be carefully confirmed and discussed with the implementation agency.
- 2) The consultant shall discuss the technical issues through meetings with the relevant authorities in Japan and Indonesia during the detailed design stage.
- 3) The detailed design will probably require approximately 4 months to complete after the agreement of the E/N.

##### (3) Tender

- 1) The tender for the construction of the facility and procurement and installation of equipment shall be conducted in accordance with JICA guidelines.
- 2) The tender is normally called for Japanese trading companies and construction companies for supply of equipment and construction of the facility respectively. If the Project is to be implemented in 2 stages, it is considered that the first stage will be for equipment supply to be undertaken by a trading company, and the second stage for facility construction and equipment supply by a construction company and a trading companies.

- 3) The Consultant will assist the implementation agency for the contracting of the construction contract in accordance with the guidelines of JICA.

#### **(4) Construction, Supply and Installation of Equipment**

- 1) According to past Grant Aid projects and other similar projects in Indonesia, most of the building materials are locally available and considered to be acceptable in quality and supply. Therefore, use of local building materials and equipment are preconditions for cost reduction and easy maintenance. As such, locally procured materials are planned to be used for this project as much as possible. However, ensuring and improving quality are the most important items to be noted.
- 2) Also, for the planning of labour supply, the capability of local contractor and level of skilled and semiskilled labourers are considered to be acceptable. Since a Japanese contractor will be the prime contractor who will supervise and manage local contractors and his labourers, the quality required for the project should be maintained.
- 3) Schedule between facility construction and supply and installation of equipment should be well and technically coordinated. In particular, since most equipment will be supplied from Japan or third countries, orders shall be made considering the overall schedule. Also transportation shall be well studied and planned in order that the equipment can be delivered to site on a timely basis. In this connection most of the equipment shall be supplied to the existing facilities and not be effected by the progress of construction except for IKIP-Bandung to which experiment table, etc. will be installed.

#### **(5) Executing Organization**

The organizations involved in this project are as shown below:

- 1) The decision-making organization of the Project is the Ministry of Education and Culture (MOEC).
- 2) The responsible organization for the Project is the Directorate General of Higher Education (DGHE) and the executing organization of the 3 IKIPs (IKIP-Bandung, IKIP-Yogyakarta and IIP-Malang).

In order to support the project technically, participation by local engineers is expected from public authorities such as Public Works (PW) in each state, planning committee (civil engineers and architect) in IKIP-Bandung or local consultants and contractors who have been involved in the construction of existing facilities in the IKIPs.

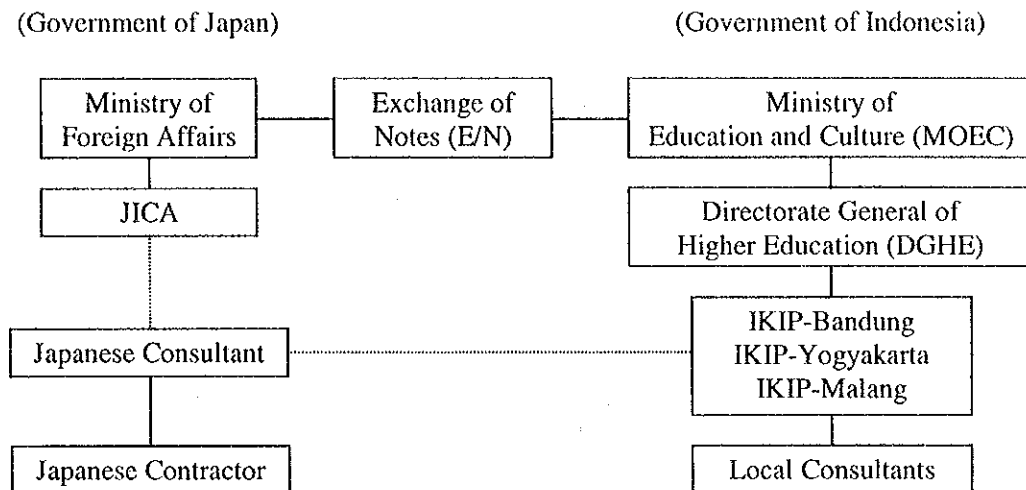


Fig. 3-1 Implementation Organization

### 3-1-2 Construction Situation and Items to be Noted for Construction

- (1) During the field survey in IKIP-Yogyakarta, IKIP-Malang, existing facilities and other similar facilities such as ITB and UGM, unsuitable quality of some facilities was observed. For example, wall cracks were observed anywhere in IKIP-Malang.

As for local contractors, their grade is ranked from A to C and construction of a contract amount more than Rp. 1,000,000,000 would be undertaken by an A-ranked contractor. There are a few A-ranked contractors in Bandung. In this project, a Japanese Contractor will be the prime contractor, and it is expected that the construction quality will be high and completed within the contract period by their efficient supervision and management of the local contractor.

#### (2) Study on Labour Supply

All major contractors, if their head office is located in Bandung or Jakarta, would be able to supply relatively highly-skilled labor for substructure, superstructure and finishing works. Moreover, in the case of a Grant Aid Project, the level of local labor can be improved by the Japanese contractor's appropriate supervision and management.

#### (3) Items to be noted for Construction (IKIP-Bandung)

In order to proceed with the project, consideration should be given to the environment around the site, as the Project site is located within the IKIP-Bandung campus, and a housing area is located at the south-western side of the site.

- 1) Construction method shall avoid any vibration to existing facilities, housing and new retaining walls built by the Indonesian side and measures shall be taken to prevent noise from pile driving and other works.

- 2) Measures for traffic safety while transporting the material on the campus road and necessary protection of road from damage, and repairing of roads if damaged.
- 3) Safety arrangement to avoid any risk for people passing near the Project site.
- 4) Japanese contractor will be the prime contractor in accordance with the Grant Aid program and they will undertake the construction by subletting the works to the local sub-contractor. Local workers would normally be employed by the sub-contractor and supervised. Therefore, it is necessary to employ efficient supervisors, provide suitable labor control and site supervision in order to achieve construction effectively and minimize losses. On the above condition, schedule control should be done most carefully considering the effective arrangement of workers.
- 5) For construction planning, in particular problems of the rainy season and effect on existing facilities must be considered. The earthworks, substructure and superstructure works should be scheduled and completed during the dry season, not in the rainy season.
- 6) Indonesian laws, codes and standards, should be followed. However, Japanese or American standards are also to be applied considering the local situation.
- 7) The southern graded area would be effective as a temporary yard for the site office, material stock yard and workshop. In this regard, it has been discussed and agreed that the area could be used for such temporary yard.
- 8) For IKIP-Bandung in particular, the equipment would temporarily be supplied to the existing facilities prior to the new facility construction being completed by the Japanese side and the equipment would be moved after training conducted in the existing facility. In this regard, it is necessary to coordinate the schedule in detail for sequence of facility construction and moving and installation of equipment.
- 9) Regarding the construction schedule, it is necessary for the Indonesian side to submit documents with an approved signature by local consultant's who have an Indonesian architectural license. Building permit application should be considered in the overall schedule.

The application procedures and necessary documents are as follows:

Staged Application Procedures	Necessary Documents	Term for Approval
(1) Administrative Instructions for Planning	1) Confirmation on usage of area concerned, 2) ratios of total floor area with site area and building area with site area, 3) building height limit, 4) designated wall lines, 5) amount of parking required, etc.	
(2) Approval of Site Layout	1) Site layout plan, 2) outlined sections, 3) floor area schedule, etc.	about 1 month
(3) Approval of Drawing for Construction	1) Plans, 2) elevations, 3) sections, 4) finishing schedule, 5) documents, models and pictures showing harmonization with the surroundings, 6) landscaping plans, 7) waste and drainage plans, etc.	about 2 months
(4) Various Approvals		
a. Substructure Approval	1) Piling and foundation plans, 2) calculation sheets, 3) soil investigation report, etc.	about 2 months
b. Superstructure Approval	1) Outlines of superstructure, 2) drawings, 3) structural calculation sheets, etc.	about 2 months
c. Electric, A/C, Plumbing and Utilities	1) Related drawings for electric, A/C, plumbing and utility, calculation for water consumption, detailed chemical waste and disposal plan, etc.	about 2 months
(5) Final Building Permit		
(6) Building Use Permission	Issued after final inspection of the building completion	

### 3-1-3 Scope of Works

The portions to be dealt with by the Japanese side and by the Government of Indonesia for the implementation of Japan's Grant Aid Program are shown in Table 3-1.

**Table 3-1 Extent of Works (IKIP-Bandung)**

Extent of Works - 1 (IKIP-Bandung)

Portions by the Japanese Side	Portions by the Indonesian Side/ IKIP-Bandung
<p>(1) Building Works Structure works, finishing works</p> <p>(2) Electrical Works Power/trunk facilities, lighting, power outlets, P/A systems</p> <p>(3) Utilities and Facilities</p> <p>a) Water Supply Construction works for the Water supply from the valve at the water supply meter to the building and all the related internal works for the water supply.</p> <p>b) Sewerage system including piping works up to the connection manhole</p> <p>c) Sanitation facilities (waste water treatment facility)</p> <p>d) Elevated tank and reserve tank</p> <p>e) Fire-extinguishing facilities</p> <p>f) Electrical supply and transformer system Cabling works from the high tension receiving panel in the PLN room to the facilities.</p> <p>g) Telecommunication system Cabling works from MDF to the facilities, including installation of conduit from the cross connection point at the site boundary to MDF</p> <p>h) Lightning Protection System</p> <p>i) Lighting system in the site</p> <p>(4) Exterior Work Road, path and parking lots within the site</p> <p>(5) Equipment Equipment for Education</p> <p>(6) Electric Room, Electric Generator Room, Pump Room</p>	<p>(1) <u>Site Preparation</u></p> <p>a) Pre Construction Works</p> <p>b) Ground preparation works:</p> <ul style="list-style-type: none"> <li>- Retaining walls to the northern, western and eastern sides of the Site</li> <li>- Grading of southern area (current trash disposal area)</li> </ul> <p>c) Temporary power and water supply for the construction</p> <p>d) Temporary access road for the construction</p> <p>(2) <u>External Works and Approach Roads</u></p> <ul style="list-style-type: none"> <li>- Landscaping, planting, fence, etc. within the Site</li> <li>- Permanent road works to eastern side and southern side</li> <li>- Rehabilitation of western and northern roads</li> <li>- Deckert plate/culvert plate</li> </ul> <p>(3) <u>Utilities and Facilities</u></p> <p>a) Water Supply Construction from the main feeder to the water valve at the water supply meter including the water supply meter.</p> <p>b) Sewerage Piping works from the connection manhole in the site to the existing sewerage line including the repair work of the existing ditch.</p> <p>c) Storm Drainage Drainage line from the site to the existing line including the expansion work of the existing drainage line.</p> <p>d) Electrical Work Cabling works (PLN side works/IKIP works) from the existing power supply point to the existing PLN room, and Cabling works from existing PLN room to the new Electrical room in new FPMIPA Building (including Renovation/Increases of H.T. Receiving Panel in the existing PLN Room)</p> <p>e) Telecommunication Work Cabling work (for Direct/Extension/Public telephone) from existing MDF/PABX to Point Distribution for new IDF/PABX.</p> <p>f) The provision of gas (LPG) cylinders for the kitchen and Lab.</p>



Portions by the Japanese Side	Portions by the Indonesian Side/ IKIP-Bandung
	<ul style="list-style-type: none"> <li data-bbox="772 309 1382 405">g) Moving of existing equipment and furniture from existing FPMIPA prior to the installation of the new equipment</li> <li data-bbox="772 405 903 434">(4) <u>Others</u></li> <li data-bbox="772 434 1382 530">a) Governmental works including the application and obtaining Governmental approvals and permissions</li> <li data-bbox="772 530 1382 627">b) Smooth custom clearance, tax exemptions and prompt internal transportation for the imported construction materials and equipment</li> <li data-bbox="772 627 1382 781">c) Commissions to the Japanese foreign exchange bank for its banking services based upon the Banking Arrangement namely the advising commission of the "Authorization to Pay" and payment commission</li> <li data-bbox="772 781 1382 846">(5) Management, operation and maintenance cost for the new building and facilities</li> <li data-bbox="772 846 1382 934">(6) Tax exemptions and necessary preferential treatment for the construction staff from Japan or a third country</li> <li data-bbox="772 934 1382 999">(7) Smooth entry, re-entry and departure from Indonesia for the Japanese technical staff</li> <li data-bbox="772 999 1382 1086">(8) All the expenses, other than those to be borne by Japan's Grant Aid within the scope of the Project</li> </ul>

Extent of Works - 2 (IKIP-Yogyakarta)

Portions by the Japanese Side	Portions by the Indonesian Side /IKIP-Yogyakarta
<p>(1) Equipment Equipment for education</p> <p>(2) Renovation: Minor renovation works incidentally required for the installation of equipment, installation of air-conditioners to the computer room and installation of blowers for each laboratory (to be included in the equipment list).</p>	<p>(1) All of works for providing utilities and facilities for distribution of electricity, water supply, telephone, drainage, sewerage and other incidental items.</p> <p>(2) Renovation of existing facilities required for the installation of equipment</p> <p>(3) Relocation of existing equipment, facilities and civil works required prior to the installation of the equipment</p> <p>(4) Construction and completion of the new chemistry building</p> <p>(5) Installation of security grilles to all laboratory buildings where equipment is to be installed.</p> <p>(6) Others</p> <p>a) Governmental works including the application and obtaining of Governmental approvals and permissions</p> <p>b) Smooth custom clearance, tax exemptions and prompt internal transportation for the imported equipment</p> <p>c) Commissions to the Japanese foreign exchange bank for its banking services based upon the Banking Arrangement namely the advising commission of the "Authorization to Pay" and payment commission</p> <p>(7) Management, operation and maintenance cost for the new facilities</p> <p>(8) Tax exemptions and necessary preferential treatment for the construction staff from Japan or a third country.</p> <p>(9) Smooth entry, re-entry and departure from Indonesia for the Japanese technical staff</p> <p>(10) All the expenses, other than those to be borne by Japan's Grant Aid within the scope of the Project</p>

Extent of Works - 3 (IKIP-Malang)

Portions by the Japanese Side	Portions by the Indonesian Side /IKIP-Malang
<p>(1) Equipment Equipment for education</p> <p>(2) Renovation: Minor renovation works incidentally required for the installation of equipment, installation of air-conditioners to the computer room and installation of blowers for each laboratory (to be included in the equipment list).</p>	<p>(1) All of works for providing utilities and facilities for distribution of electricity, water supply, telephone, drainage, sewerage and other incidental items.</p> <p>(2) Renovation of existing facilities required for the installation of equipment</p> <p>(3) Relocation of existing equipment, facilities and civil works required prior to the installation of the equipment</p> <p>(4) Others</p> <p>a) Governmental works including the application and obtaining of Governmental approvals and permissions</p> <p>b) Smooth custom clearance, tax exemptions and prompt internal transportation for the imported equipment</p> <p>c) Commissions to the Japanese foreign exchange bank for its banking services based upon the Banking Arrangement namely the advising commission of the "Authorization to Pay" and payment commission</p> <p>(5) Management, operation and maintenance cost for the new facilities</p> <p>(6) Tax exemptions and necessary preferential treatment for the construction staff from Japan or a third country.</p> <p>(7) Smooth entry, re-entry and departure from Indonesia for the Japanese technical staff</p> <p>(8) All the expenses, other than those to be borne by Japan's Grant Aid within the scope of the Project</p>

### **3-1-4 Consultant Supervision**

The scope of the supervision works during the construction stage is as follows:

**(1) Check and approval of the construction plans and drawings**

Checking and approving of the construction plans, construction schedules, working drawings, materials, samples, equipment lists, etc. submitted by the Contractor.

**(2) Management of the construction schedule**

Giving instructions to the contractor and reviewing the progress report submitted by the Contractor in order to complete the construction work as scheduled. In the event of that construction work being carried out by the Government of Indonesia is found to be delayed, the Consultant may request the Government of Indonesia to accelerate the construction work.

**(3) Quality control**

Checking and giving approval for the quality of materials and construction works in accordance with the specifications. However, the materials which are imported from Japan or other third countries will be checked by architects and engineers in the head office or branch offices of the Consultant.

**(4) Checking of the finished product**

Checking the finished products and confirming the quantity.

**(5) Assistance of payment and issuance of certificates**

Assisting with the procedures of checking bills, etc., relating to the payment of construction expenditure and issuance of certificates such as the certificate of practical completion, the completion certificate, etc., if necessary.

**(6) Check and submission of monthly progress reports**

Checking and approving monthly progress, completion documents and photos of works from the contractor and reporting the progress of the construction work to the Government of Indonesia and JICA.

The Consultant shall also prepare and submit the completion report in accordance with the Grant Aid Programme guidelines to the Japanese Government.

**(7) Others**

Manage and coordinate the schedule and works in order to achieve smooth operation with works executed by the Government of Indonesia, if necessary.

**3-1-5 Procurement Plan**

**(1) Procurement Plan for Building Construction (IKIP-Bandung)**

The procurement plan as shown below is prepared considering the fact that most building materials are available in Bandung. Since those materials should be acceptable in quality and quantity, materials should be basically locally procured and selected from those which are effective for minimum cost and easy maintenance. As for finishing materials, it is the availability of study chemical resistant material, however, this material is believed to be locally available. It is considered that materials should be procured locally, however this would have a large effect on the construction cost estimate as the cost of basic materials, even cement and re-bar are unstable due to the unstable economic situation in Indonesia. As such it is necessary to study whether the secondary industrial building materials should be procured from Japan or other countries.

Procurement of materials used in this project is defined as shown in Table 3-3.

**Table 3-3(1) Procurement Situation of Construction Materials**

Name of material	Locally Produced	From Japan	From Third Country	Remarks
Sand/Gravel	○			
Cement	○			
Bricks	○			
Timber	○			
Re-bar	○			
Concrete Blocks	○			
Tiles	○			
Wood Fittings	○			
Metal Fittings	○			
Glass	○			
Waterproof Agent	○			
Sheeting Plywood	○			
Roof Tile	○			
Roofing Material	○			
Plastic Tiles	○			
Ceiling Board	○			
Paint	○			
Miscellaneous Hardware	○			

Distribution Panel Board	○			
Lighting Appliances	○			
Electric Cable/Conduit	○	○		
Wiring Equipment	○			
Control Panel	○			
Transport	○			
Communication Appliance	○			
PVC pipes	○			
Sanitary Fixtures	○	○		
Elevated Reservoir Tank	○			
Pumps	○			

**Table 3-3(2) Procurement Situation of Construction Equipment**

Name of Equipment	Locally Produced	From Japan	From Third Country	Remarks
Back hoe (0.6m <sup>3</sup> )	○			with breaker
Shovel loader	○			
Dump truck (4t)	○			
Truck (4t)	○			with boom
Vibrating roller	○			
Rammer	○			
Compactor	○			
Concrete mixer (0.3m <sup>3</sup> )	○			tilting mixer
Re-bar cutter	○			
Re-bar bender	○			
Mortar mixer (0.3m <sup>3</sup> )	○			
Concrete Block making machine	○			
Water pump	○			
Generator (35kVA)	○			
Generator (2.2 kVA)	○			
Engine welding machine	○			
Crusher	○			
Tank lorry	○			
Temporary scaffolding	○			
Concrete Dumper	○			for transporting on site
Batcher plant	○			

## **(2) Procurement plan for Equipment**

### **1) Local Procurement**

Considering the maintenance and after service, office equipment like as copy machine or/and printing machine, computer and the relevant equipment are to be procured locally. Also, experiment tables are not locally procured in normal case of Grant Aid, however in this case, local procurement is to be considered in order to rationalize the cost.

As for experiment equipment, local products are very limited. According to teachers in FPMIPA, Japanese made glass products are of acceptable quality. Indonesian products are not so reliable. Microscopes for students, oven, and shaker are also produced in Indonesia, but are only produced upon order. Due to the serious economic situation and tight budget in Indonesia, such manufacturers are in a serious situation and will have a difficult future.

### **2) Procurement from Japan**

It is considered that most of the laboratory equipment should be procured from Japan, however European products such as physics practice equipment, biology and chemistry laboratory equipment are cheaper, therefore, equipment should be selected carefully through study of local procurement cost. German products have an advantage in maintenance and after service system in view of their sales quantity. However, there are many agents for Japanese products, and therefore the local maintenance system will not be adversely affected.

### **3) Procurement from a Third Country**

Most of the laboratory equipment used in the Universities in Indonesia are American and European products, in particular German products. This is due to historical reason. However, another reason is due to their competitive price. As for the products such as incubator, oven and shaker the cost shall be carefully reviewed and compared with Japanese products, and the most competitive product should be selected. As for reagent, European products, which can be purchased through local agents, are found to be more competitive than Japanese products.

## **(3) Method of Procurement**

As stated above, most equipment and consumables are available in Indonesia. As for procurement from Japan or third countries, one month for custom clearance (from document submission to finalizing) is anticipated and such durations should be considered in the overall schedule. As for custom clearance business, the agent is assigned by each ministry or authority and for this Project (MOE) PT. UJUNG LIMA would be assigned.

#### **(4) Method of Inland Transportation**

Custom clearance should be conducted in Jakarta, however for inland transportation from Jakarta to each site, the following four methods are considered:

- 1) Materials separately packed in Japan into three designations (3 IKIPs), transported individually to three Indonesian ports i.e. Jakarta (IKIP-Bandung), Semarang (IKIP-Yogyakarta) and Surabaya (IKIP-Malang) and from these ports, transported by trucks to each site.
- 2) Materials packed in separate containers in Japan for three designations, and shipped to Jakarta and from Jakarta, transported to each site by trucks.
- 3) Material packed all together in Japan, separated in Jakarta into three designations and transported to each site by trucks.
- 4) Materials separated for each site in Japan and shipped to Jakarta in the same containers and transported to each site from Jakarta by trucks.

In accordance with experience of past Grant Aid projects, transportation method 3) or 4) are considered to be practicable. However, considering the time and labor for taking material from each container and risk of loss and/or damage upon re-packing, method 4) is found to be most appropriate.

#### **3-1-6 Implementation Schedule**

The tentative implementation schedule to carry out facility construction and supply of equipment is shown in Table 3-5.

As for scheduling of the Project, it is necessary to understand the special circumstances of Indonesia. Effect of the rainy season should be considered for scheduling of piling, substructure and superstructure works. Commencement of such works should be in October, not in December. Looking at the wall cracks in IKIIP-Malang due to shortage of construction period, it is also necessary to allow sufficient construction period in the schedule.

As aforementioned, it would also be necessary to plan and coordinate in detail the timing of equipment installation. Furthermore, in accordance with past Grant Aid projects in Indonesia, there were cases that the contractor had to wait for the approval of the contract between the Japanese contractor and the Executing Agency for 4 to 5 months due to examination procedures by WASBANG. This always became a problem and it would be necessary for the Japan side to advise the Indonesian side to rectify such problems.



**Table 3-5 General Project Schedule**

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Detailed Design	E/N Conclusion, Local Work																	
	Detailed Design																	
	Approval																	
	Tender & Evaluation																	
Facility Construction & Equipment Supply IKIP Bandung	(Facility)																	
	Contract, Preparation Works, Transportation of Materials																	
	Temporary Work · Earth Works · Piling · Foundation Works																	
	Superstructure Works · Steel Structure Works																	
	Utilities and Facilities Works · Finishing Works																	
	External Works																	
	(Equipment)																	
	Manufacturing & Procurement																	
	Packing & Transportation																	
	Installation & Adjustment																	
Equipment Supply IKIP-Bandung (Existing) IKIP-Yogyakarta IKIP-Malang	Manufacturing & Procurement																	
	Packing & Transport																	
	Installation & Adjustment																	

## **3-2 Operation and Maintenance Plan**

### **3-2-1 Operation and Maintenance Plan**

Establishment of a well-arranged maintenance system, recruitment and training of capable technical staff, and sufficient budget are the necessary conditions for the successful implementation of the Grant Aid.

As to the maintenance of equipment in the 3 IKIP's, in general, technician(s) assigned to each laboratory assumes the first responsibility of doing maintenance and management. In addition, technicians belonging to the FPMIPA administration office assume the supplemental responsibility of doing maintenance. Each IKIP plans to recruit high-level technicians among graduates from surrounding polytechnics, which may not be so difficult because of the tough employment situation even among polytechnic graduates due to economic difficulties. After employment, most of the training will be provided in a form of OJT, which should not be a problem judging from the technical level of the current employees.

As to the maintenance of facilities, some of the maintaining works, mostly light works, have been done by FPMIPA itself, and other maintaining works have been carried out by the maintaining section of the IKIP headquarters. In order to improve the maintenance of facilities from now on, however, cooperation between the two sections in charge of maintenance should be strengthened further.

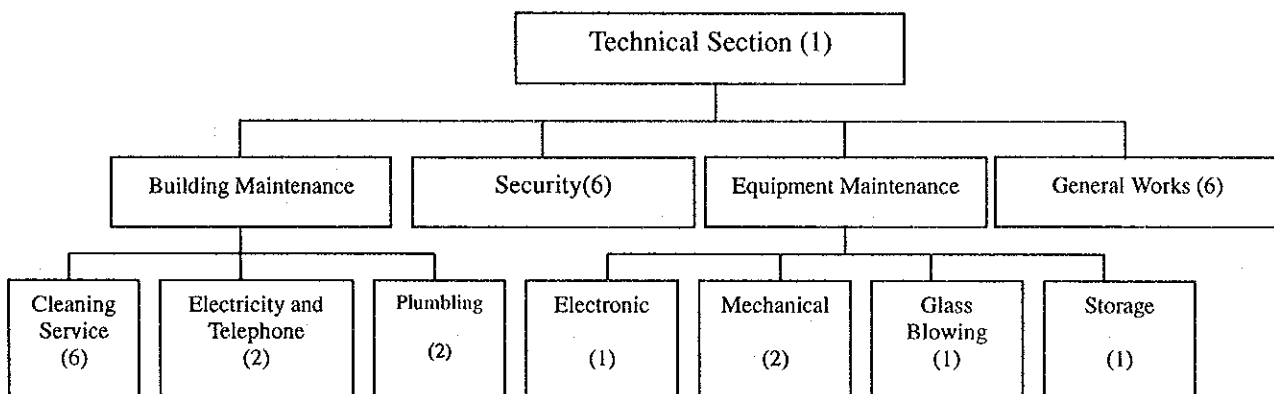
#### **(1) IKIP-Bandung**

The buildings and facilities of IKIP-FPMIPA Bandung are quite old. Besides, FPMIPA has little stock of not only advanced research equipment, but also basic equipment necessary for science experiments. Nonetheless, facility and equipment are relatively well cleaned and well maintained. It is confirmed that FPMIPA staff here has made every effort to do self-maintenance in each laboratory and to use what they have to their full extent. Also FPMIPA staff have been trying to develop supplemental teaching materials in spite of the shortage of necessary equipment.

After implementation of the Grant Aid, FPMIPA plans to arrange at least one technical staff who takes the direct responsibility of maintenance within the assigned laboratory in every department. In addition, FPMIPA will have 9 technical staff, specialized in the necessary fields such as electricity and machinery, in an administration office. They are going to deal with the

technical problems in each field (see Figure 3-2-1-1). These technical staff will be recruited from the graduates of the surrounding technical high schools and polytechnics and will be trained inside FPMIPA after employment. Apart from the maintenance of each laboratory, common computer rooms and workshop will be managed and maintained through the section of common facility maintenance and management (see Figure 2-4-1).

Figure 3-2-1-1 Organization chart of Maintenance & Repair department FPMIPA Bandung

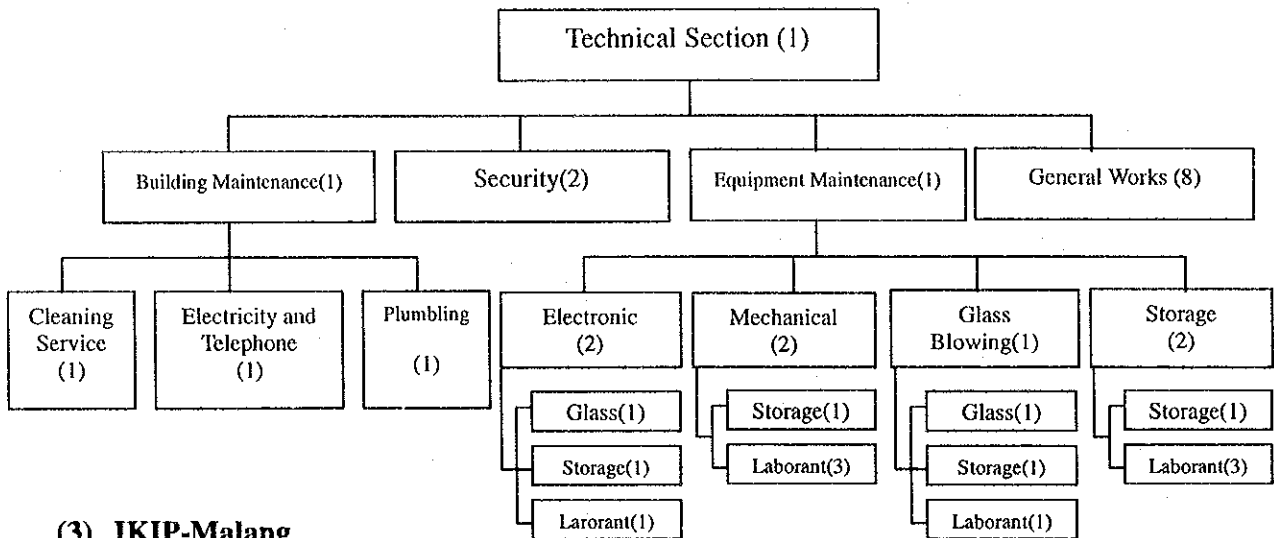


**(2) IKIP-Yogyakarta**

Through the field survey in IKIP Yogyakarta it is confirmed that the facility and equipment of some departments are well maintained and well managed, but those of other departments are not. For instance, in the physics department, similar to the case of IKIP-FPMIPA Bandung, technical staff placed in each laboratory have been doing maintenance and, as a result, each room is relatively clean and well prepared for doing experiments. In contrast, however, in the laboratories of the chemistry department, various chemicals are not well stored and small equipment is also left dirty after use in experiments.

Judging from the above facts, it is very doubtful that staff in FPMIPA here fully understand the necessity of the establishment of a maintenance system by themselves. Therefore, guidance and information exchange pertaining to the maintenance issue with FPMIPA staff, not only to the technical staff but also administration and teaching staff too, should be done continuously through JICA experts.

Figure 3-2-1-2 Organization chart of Maintenance & Repair department IKIP-FPMIPA Yogyakarta



**(3) IKIP-Malang**

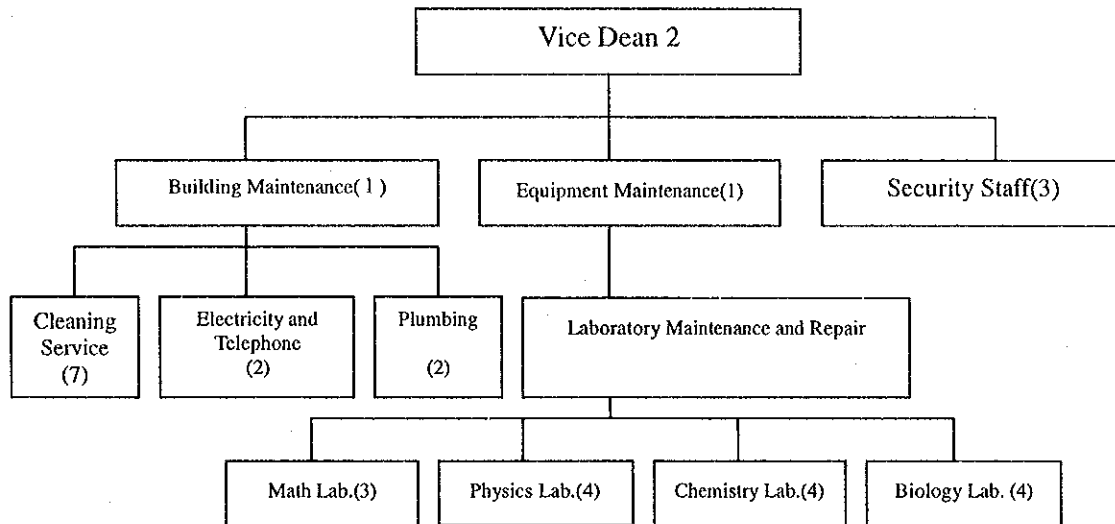
Although the buildings of IKIP-FPMIPA Malang have been just recently constructed in 1997 and have been used as a classroom and a laboratory since then, there is already some damage to the walls and floors. Also, damage to the roof may cause problems for equipment inside the room below. As to the present condition of equipment, it is very much insufficient in terms of both quantity and quality. Despite such shortages, maintenance of the equipment seems to be sufficiently done by the person in charge of each laboratory through the management of equipment list and chemical list.

Apart from the maintenance of laboratories of each department, however, condition of maintenance of common classroom and laboratory is not so good. This is partly because there are few staff in charge of maintaining the common facilities, and partly because cooperation between staff for common facilities and FPMIPA administration office has not been well organized. These problems should be rectified as soon as possible.

Maintenance and management system after implementation of the Grant Aid is shown in the Figure 3-2-1-3. According to the plan, maintenance of facility will be carried out by electricity technicians and plumbers, along with general workers. Maintenance of equipment will be done through a technician assigned to each laboratory. In addition to these maintenance staff, IKIP-FPMIPA Malang plans to employ three guardmen. This is because there is some damage in a roof, which seems to be used by outsiders to enter the building without

permission. As far as security is concerned, placement of capable watchmen should be done as soon as possible.

Figure 3-2-1-3 Organization chart of Maintenance & Repair department IKIP-FPMIPA Malang



### 3-2-2 Utility Running Cost (IKIP—Bandung)

The Utility Running Costs have been analyzed in order to review the Form 4-9 Breakdown of Expenditure proposed by FPMIPA-IKIP Bandung. The results are as follows:

The running costs for the utilities for the proposed facilities were estimated as follows by assuming demand factors based on the existing conditions:

#### (1) Electricity Costs

By applying the standard rates of the Electric Power Company (P.T. PLN) in Indonesia, electricity costs for the new facilities were estimated as follows:

No.: 3  
COL. TARIF: S-3  
Basic Service Rate: 15,500 Rp/kVA month  
Standard Rate : WBP (18:00 - 22:00) ··· K(1.2)xRp.98=117.6 Rp/kWh  
LWBP (22:00 - 18:00) ··· 98 Rp/kWh

The contract demand was assumed to be 650kVA based on the demand factor of 0.65 as follows:

$$1000\text{kVA} \times 0.65 = 650\text{kVA}$$

However, the contract demand should be applied 690kVA according to the standard of PLN,

The rate for the contract will be as follows:

Basic Service Rate:  $690\text{kVA} \times 15,500 \text{ Rp/kVA month} \times 12 \text{ month}$   
 $=128,340,000 \text{ Rp/yr.}$

Service Rate/kWh: WBP:  $690\text{kVA} \times 0.8 \text{ (power factor)} \times 276 \text{ days} \times$   
 $4\text{hr.} \times 0.1 \times 117.6 \text{ Rp/kWh} = 7,166,638.08\text{Rp/yr}$

LWBP:  $690\text{kVA} \times 0.8 \text{ (power factor)} \times 276 \text{ days} \times$   
 $20\text{hr} \times 0.3 \times 98 \text{ Rp/kWh} = 89,582,976\text{Rp/yr}$

Estimated total electricity costs for the new facilities= $225,089,614.08\text{Rp/yr}$ ···①

The estimated electricity costs for New FPMIPA after Project completion is 3.2 times of the present budget amount allocated for 2001/2002 (70,173,501Rp). Therefore, FPMIPA must apply and acquire the necessary funds from the Government of Indonesia.

$$\begin{aligned} \text{Connection Charge} &: (\text{Contract Demand} - \text{Existing Demand}) \times \text{Rp.125,000/KVA. month} \\ &= (690\text{kVA} - 400\text{kVA}) \times \text{Rp.125,000/KVA. month} \\ &= 36,250,000 \text{ Rp} \end{aligned}$$

$$\text{Consumer Deposit} : 690\text{kVA} \times \text{Rp.47,000/kVA} = 32,430,000 \text{ Rp.}$$

The above connection charge and consumer deposit should be paid to PLN upon contract with PLN. Such budgets should be applied and acquired to the Government of Indonesia accordingly.

## (2) Water Costs

The estimated daily water use at the new facilities is 85m<sup>3</sup>/day. The cost of water was calculated as follows:

Monthly water use:	85m <sup>3</sup> /day x 23 days/month	=	1,955m <sup>3</sup> /month
	15m <sup>3</sup> x 500Rp	=	7,500 Rp/month
	15m <sup>3</sup> x 800 Rp	=	12,000 Rp/month
	30m <sup>3</sup> x 1,300 Rp	=	39,000 Rp/month
	1,895m <sup>3</sup> x 1,500 Rp	=	2,842,500 Rp/month
	sub-total		2,902,955 Rp/month
Drainage Water Rate:	2,901,000 Rp/month x 30%	=	870,300 Rp/month

Basic Service Rate(Admin.,Tax,Service equipment charge(BEBAN))

			: 1,500 Rp/month
Total:			3,772,800 Rp/month
Estimated water costs per year:	3,772,800 Rp/month x 12 month/yr		
	= 45,273,600 Rp/yr	...	①

The estimated water use costs for the new facilities is 45,273,600 Rp/yr. The budget allocated for water in 2001/2002 is 66,270,376 Rp/yr. Therefore FPMIPA's estimated budget for water should be sufficient.

## (3) Fuel Costs

For the emergency electric generator, diesel fuel will be used. Fuel cost is 550 Rp/liter.

Rainy Season (Nov. - Feb.):	Assuming one 10hr power outage a week;		
	50 l/hr. x 16 times. x 10 h x 550 Rp/l		
	= 4,400,000 Rp/yr		
Dry Season (Mar. - Oct.):	Assuming one 3hr period power outage a week;		
	50 l/hr. x 32 times x 3 hr x 550 Rp/l		
	= 2,640,000 Rp/yr		
Total Fuel Costs:	7,040,000 Rp/yr	...	①

The estimated fuel costs for the new facilities is 7,040,000 Rp/yr. The budget allocated for fuel in 2001/2002 is 11,497,815 Rp/yr. Therefore FPMIPA's estimated budget for fuel will be sufficient.

#### (4) Telephone Costs

Costs of telephone lines for the new facilities were estimated as follows:

— Basic Service Rate per line : 20,000 Rp / month

— Service Rate per call:

Local calls : Local call rates are set for two different distances and three time periods.

• Local I (0—20km)

(0:00 - 9:00) ...150 Rp/3min

(9:00 - 15:00) ...150 Rp/2min

(15:00 - 24:00) ...150 Rp/3min

• Local II (20—30km)

(0:00 - 9:00) ...150 Rp/2min

(9:00 - 15:00) ...150 Rp/1.5min

(15:00 - 24:00) ...150 Rp/2min

City calls : Local call rates are set for three different distances and six time periods.

[mon. ~sat. ]

	ZONE— I	ZONE— II	ZONE— III
(06:00 - 07:00) ...	480 Rp/7min	675 Rp/5min	840 Rp/4min
(07:00 - 08:00) ...	960 Rp/7min	1345 Rp/5min	1680 Rp/4min
(08:00 - 18:00) ...	1200 Rp/7min	1680 Rp/5min	2100 Rp/4min
(18:00 - 20:00) ...	960 Rp/7min	1345 Rp/5min	1680 Rp/4min
(20:00 - 23:00) ...	480 Rp/7min	675 Rp/5min	840 Rp/4min
(23:00 - 06:00) ...	240 Rp/7min	340 Rp/5min	420 Rp/4min

#### International Calls

Zone I (3650Rp/min) , Zone II (4000Rp/min) , Zone III (4900Rp/min) ,  
 Zone IV (5400Rp/min) , Zone V (5650Rp/min) , Zone VI (6250Rp/min) ,  
 Zone VII (7150Rp/min)



Thus, Local calls were assumed as follows.

Local calls I : maximum time zone: 9:00–15:00 (150 Rp/2min)  
Local calls I will be estimated at 6 min. per call with 10 calls per day.

Local calls II : maximum time zone: 9:00–15:00 (150 Rp/1.5min)  
Local calls I will be estimated at 6 min. per call with 5 calls per day.

City calls : maximum time zone: 8:00–18:00 (ZONE– I , II, III)  
City calls I will be estimated at 7 min. per call with 3 calls per day

Local call I :  $150\text{Rp}/2\text{ min.} \times 6\text{ min.} \times 10\text{ calls/day} \times 23\text{ day/month} = 103,500\text{ Rp/month}$

Local call II :  $150\text{Rp}/1.5\text{ 分} \times 6\text{ min} \times 5\text{calls/day} \times 23\text{ day/month} = 69,000\text{Rp/month}$

City call : (ZONE-I)  $1200\text{Rp}/7\text{min.} \times 7\text{ min.} \times 3\text{calls/day} \times 23\text{day/month} = 82,800\text{Rp/month}$   
(ZONE-II)  $1680\text{Rp}/7\text{min.} \times 7\text{ min.} \times 3\text{calls/day} \times 23\text{day/month} = 115,920\text{Rp/month}$   
(ZONE-III)  $2100\text{Rp}/7\text{min.} \times 7\text{ min.} \times 3\text{calls/day} \times 23\text{day/month} = 144,900\text{Rp/month}$

International : (ZoneVII)  $7,150\text{Rp}/\text{min.} \times 6\text{ min.} \times 0.1\text{calls/day} \times 23\text{day/month} = 98,670\text{Rp/month}$

Basic Service Rate :  $20,000\text{Rp}/\text{LINE}/\text{month} \times 11\text{ LINE}(5\text{line}+6\text{line}) = 220,000\text{month}$

Total Cost per Month: 834,790 Rp/month

Total Telephone Cost at IKIP Bandung per year:  
 $834,790\text{ Rp/month} \times 12\text{ month/yr} = 10,017,480\text{ Rp/yr.} \dots \textcircled{1}$

①Total = 10,017,480 Rp/yr

②The estimated telephone costs for the new facilities are 10,017,480 Rp/yr

The 2001/2002 budget allocated for water is 15,718,075 Rp./yr. Therefore FPMIPA's estimated budget for telephone will be sufficient.

The Connection Charge/Permanent Consumer(Langgan Tetap) should be paid to TELKOM Such budgets should be applied and acquired from the Government of Indonesia accordingly.

#### (5) LPG Costs

For the laboratory and cafeteria , propane gas (LPG)will be used.  
LPG cost is 720 Rp/kg.

LPG Cost for Cafeteria kitchen will be estimated at 10 hours per day with capacity of 0.77 kg/hour.

$$0.77\text{kg/hour} \times 10 \text{ h/day} \times 720 \text{ Rp/kg} \times 23 \text{ day/month} \times 12 \text{ month/year} \\ \times 0.6(\text{operation rate}) = 918,086\text{Rp/year}$$

LPG Cost for laboratory will be estimated at 3 hours per day with capacity of 3 kg/hour.

$$3 \text{ kg/hour} \times 3 \text{ h/day} \times 720 \text{ Rp/kg} \times 23 \text{ day/month} \times 12 \text{ month/ year} \\ \times 0.6(\text{operation rate}) = 1,073, 088\text{Rp/year}$$

Total = 1,991,174 Rp/yr

The estimated LPG use costs for the new facilities are 1,991,174 Rp/yr

The 2001/2002 budget allocated for LPG is 2,660,923 Rp./yr. Therefore the budget will be sufficient.

#### (6) Summary of Utility Running Cost (IKIP—Bandung)

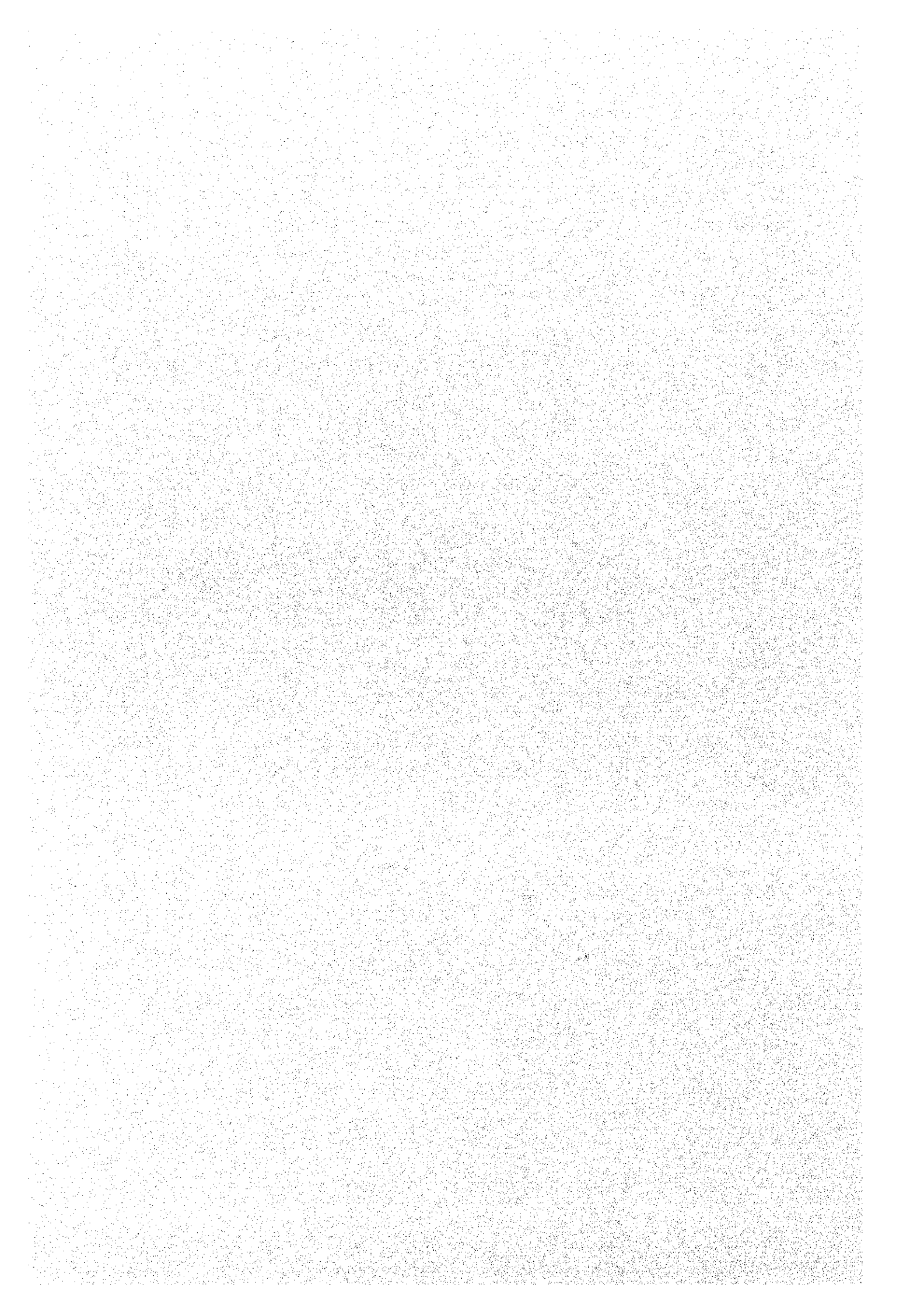
As stated above, estimated utility costs are summarized as follows:

①Electricity Expenses:	225,089,614 Rp/yr
②Water Expenses:	45,273,600 Rp/yr
③Fuel Expenses:	7,040,000 Rp/yr
④Telephone Expenses:	10,017,480 Rp/yr
⑤LPG Expenses:	1,991,174 Rp/yr
Total Estimated Utilities for①~⑤:	<u>289,411,868 Rp/yr.</u>

The above Total Utility Costs will be 1.7 times more than the budget of 166,320,690 Rp/yr allocated for 2001/2002.

According to this estimation of running cost, large increases of electricity expenses are anticipated. Therefore, FPMIPA must secure the necessary budget amount from the Government of Indonesia.

**CHAPTER 4**  
**PROJECT EVALUATION**  
**AND RECOMMENDATION**



#### **4. Evaluation and Suggestion for the Project**

##### **4-1 Justification and Future effect of the project**

The construction of facilities and the procurement of the education equipment will improve education programs of FPMIPA in 3IKIP. More qualified and refined teachers can be produced in improved education programs in FPMIPA. As a due course, students in primary and secondary schools come to be educated by the well-trained teachers. Students will be expected to get higher achievement.

By the time Indonesia has faced a severe economic crisis since 1998, the country had kept the high economic growth with other South-East Asian countries. In fact, at that time, the very high growth rate, 6 to 8%, was anticipated in Indonesia. However, in terms of human development, which is one of the main factors to support the economic growth, many Indonesians completed only primary education that was compulsory. Most of them did not go to secondary school. Because of lack of school facilities, equipment, books and teaching materials, and problems of teachers in quality and quantity, education in Indonesia has not fully developed human resources there. Accordingly, developed human resources are not adequately accumulated compared to the cases of the developed countries. It could be said that development of human resource is one of the main challenges to recover from current severe economic crisis in Indonesia.

The government of Indonesia has taken education as one of the most important nation issues, and decided secondary education as compulsory in 1994. However, there are still 6 millions of people who do not have opportunities to study at secondary schools because of their socio-economic problems and lack of school facilities. In spite of the economic crisis the country has faced, more financial and technical efforts are needed to realize compulsory secondary education not only for the sake of economic recovery but also for the sake of human development.

Since the government has recognized importance of education, it has put the top priority to promote wide-spread and improved secondary education rather than other projects. In order to achieve this goal, the development of facilities and equipment and the improvement of text books, teachers, and curriculum, should be necessary components of the development plan . However, it is supposed that the government in financial difficulties is need of support in order to manage and implement education developments on its own. Therefore, foreign donors need to

play an important role in the development. The objective of this grant project is to improve primary and secondary education in Indonesia by developing higher education institutes that provide trained teachers. The project takes important parts in the master plan for education development, which is the most prioritized one among other national master plans. This project should be considered significant, for it is concerned with Basic Human Needs, and it contributes economic growth in the future.

With the development of facilities and provision of equipment to IKIP Bandung, IKIP Yogyakarta, and IKIP Malang, several important outputs can be expected.

(1) Improvement of primary and secondary education

Educational circumstances at IKIP are greatly improved, then education programs at IKIP are improved, accordingly teachers who are better educated and trained are produced in pre-service and in-service program. Finally, primary and secondary education in local levels is improved in quality and quantity, and teachers trained at IKIP are expected to transfer their knowledge and skills to other local teachers.

(2) Organizational improvement of IKIP

With the implementation of the project, abilities of teaching staff of IKIP FPMIPA will be improved. Through the implementation and Project Type Technical Cooperation (PTTC), it is expected that better school administration is achieved, and information & statistical data about IKIP are well reported, accumulated and analyzed. It is obvious that betterment of administration system directly contributes to the improvement of the education programs.

(3) Financial Independence on IKIP

The project is also expected to promote financial independence of each IKIP. That is, in-service training program will more often take place at IKIP Bandung, IKIP Yogyakarta, and IKIP Malang owing to the development of facilities and procurement of equipment.

Since, In-service training program at IKIP is financed mainly by PGSM project, and PPPG and BPG also have a in-service training program for

teachers, there is a remaining issue that how in-service training program at IKIP financially and technically cooperate with PGSM project, PPPG, and BPG.

#### **4-2 Collaboration with other donors and Technical Cooperation**

##### **(1) Collaboration with other donors**

World banks, ADB and other donors have been involved in math & science education in Indonesia. It is necessary to consider cooperation with those donors. In particular, the project is closely related to PGSM project, which is being implemented by World Bank, in terms of equipment provision, curriculum development, and financial assistance to in-service training. It is required to understand details of activities in the PGSM project.

##### **(2) Technical Cooperation**

Project Type Technical Cooperation (PTTC) is already undertaken at IKIP FPMIPA targeted in this grant project. Therefore, when PTTC and this grant project work together and obtain Indonesia side's cooperation well, the objectives of this project will be achieved more effectively.

#### **4-3 Issues**

As mentioned, there are many positive effects expected to be realized due to this project. However, there are some actions the government of Indonesia is supposed to do in order to obtain greater outputs from the project.

##### **(1) Comprehensive plans to train teachers**

In addition to the pre-service training program for new undergraduates, there are several programs to retrain teachers in service in Indonesia. Some programs are done to make teachers more capable in a short term, and some are to qualify teachers according to the revision of the teacher's qualification. However, since there is no comprehensive national plan to train teachers, those programs do not work efficiently to produce more capable and qualified teachers.

Moreover, although teacher training institutions such as IKIP are directed by DGHE, secondary education is managed by DGPSE, and primary education is managed by the Ministry of Home Affairs. This complex structure of education system could be a problem in establishing a comprehensive plan to educate teachers. It is essential to establish the plan with stronger cooperation among the ministries and public organizations.

It is also very important to ensure the better working conditions for the trained teachers to continue their jobs for a long time. Because of the large numbers of teachers over the country, salary increase for all teachers could not be done immediately. However, it is reported that in some cases salaries for teachers are not appropriately delivered to teachers in local areas. It is the urgent issue that the government establishes the fair and direct payment deliver system for teachers over the country.

(2) Revision of Math and Science Education

The objectives of this project is to provide qualified teachers by the better education circumstances with good facilities and equipment. However, although it is necessary that the practices in math and science classes more often take place using newly provided equipment and facilities, it is not enough in terms of the achievement of better learning. Theoretical part of teaching should be considered as important as the part of practices in learning. It seems that FPMIPA thought practice class is more important. However, it is necessary to improve teaching contents in lectures for development of scientific approach and teaching materials for it with the development of facilities and equipment.

(3) Strong relationships between DGHE and IKIP, and cooperation among IKIPs

It is significant for all IKIP to exchange or share academic and technical knowledge for education efficiency. Technical assistance is done at targeted IKIPs in PTTC. Technical knowledge and information regarding subject matters and equipment need to be transferred and shared with all IKIPs. This could be made possible by strengthened relationships and cooperation among DGHE and all IKIPs.



(4) Financial independence and ensure of income

As shown in previous sections, finance of IKIP greatly depends on the government funds. However, since the government faces financial difficulties, it has become difficult for IKIP even to ensure the government funds. Therefore, each IKIP is increasingly required to find own ways to maintain its budget. Presently, some IKIP impose the expensive project fee on the students and impose some commissions on activities, such as consulting service, that teaching staff does out of school.

In addition to the above-mentioned ways to ensure some finance, IKIP could have seminars for general public and business-oriented people as well as could provide more educational programs to teachers in service. It could be also an possible strategy to publish books and texts regarding education.

(5) Establishment of operation and management system at each IKIP

The system of operation and management is confirmed with its organizational chart at each IKIP when field survey was done in August, 1998. In general operation and management jobs are actually taken done by the teaching staff who are not trained to do such kind of work. This is simply because of lack of administration staff in higher education institutes.

Accordingly, it is important to train teaching staff for school operation and management. Cost for management and operation would be also saved when teaching staff can share the administrative work. This kind of cost saving makes financial independence of IKIP more possible.

(6) Effective construction work done by Indonesian side

It is important that construction work of Indonesian side is smoothly implemented with special budget allocations. In addition, necessary furniture and other facilities that are out of scope of this project, need to be prepared by Indonesian side in accordance with the implementation of the project.

## **APPENDIX**

## MEMBERS OF THE SURVEY TEAM-BASIC DESIGN SURVEY

(August 3 ~ September 6, 1998)

- |     |  |   |
|-----|--|---|
| 1.  | Leader, Ms. MURAMATSU Yoshie   | Second Study Division, Grant Aid Study Department<br>Japan International Cooperation Agency (JICA)  |
| 2.  | Technical Advisor,<br>Prof. Dr. TERATANI Shosuke   | Professor, Department of Education,<br>Tokyo Gakugei University   |
| 3.  | Project Coordinator<br>Mr. UMEMIYA Naoki   | First Social Development Cooperation Division<br>Social Development Cooperation Department<br>Japan International Cooperation Agency (JICA) |
| 4.  | Chief Consultant / Architectural Planner,<br>Mr. HATANO Tetsuji                            | Pacific Consultants International   |
| 5.  | Education Planner / Operation and<br>Maintenance Planner, Dr. KAMEI Keiji                  | INTEM Consulting Co.  |
| 6.  | Facility Planner,<br>Mr. AKAZAWA Yutaka  | Pacific Consultants International   |
| 7.  | Mechanical & Electrical Engineering<br>Planner, Mr. SHIMADA Takatsugu                      | Pacific Consultants International   |
| 8.  | Equipment Planner / Procurement Planner,<br>Mr. MIYOSHI Kenzo                              | INTEM Consulting Co.  |
| 9.  | Construction Planner / Quantity Surveyor,<br>Mr. MIYATAKE Kazuhiro                         | Pacific Consultants International   |
| 10. | Total Coordinator, Mr. WONG Kouk Hung  | Pacific Consultants International   |
| 11. | Assistant Education Planner / Operation and<br>Maintenance Planner, Mr. MIYAZAWA<br>Ichiro | INTEM Consulting Co.  |

## MEMBERS OF DRAFT REPORT EXPLANATION

(December 9~ December 20, 1998)

- |    |  |  |
|----|--|--|
| 1. | Leader, Mr. YONEDA Kazuhiro  | Deputy Resident Representative,<br>JICA Indonesia Office,<br>Japan International Cooperation Agency (JICA) |
| 2. | Chief Consultant / Architectural Planner,<br>Mr. HATANO Tetsuji    | Pacific Consultants International  |
| 3. | Facility Planner,<br>Mr. AKAZAWA Yutaka                            | Pacific Consultants International  |
| 4. | Equipment Planner / Procurement Planner,<br>Mr. MIYOSHI Kenzo      | INTEM Consulting Co.   |
| 5. | Construction Planner / Quantity Surveyor,<br>Mr. MIYATAKE Kazuhiro | Pacific Consultants International  |

**SURVEY SCHEDULE (BASIC DESIGN SURVEY)**  
(August 3, 1998 ~ September 6, 1998)

No	Date	Place	Activity
1.	Aug. 3 (Mon)	NRT (10:50) → CGK (16:05) JL725	
2.	Aug. 4 (Tue)	<b>Jakarta</b> All members	Courtesy calls to and meeting with the officials from: <ul style="list-style-type: none"> <li>• JICA Indonesia office (9:00-10:00)</li> <li>• Embassy of Japan (10:20-10:50)</li> <li>• DGHE (14:00-16:00)</li> <li>• BAPPENAS (16:00-18:30)</li> </ul>
3.	Aug. 5 (Wed)	CGK(8:00) → SUB(9:20) GA304 SUB → Malang (by Car) Ms. Muramatsu/ Dr. Teratani/Mr. Umemiya/Mr. Hatano/Dr. Kamei/Mr. Wong	<b>IKIP Malang:</b> Explanation of Inception Report, survey of existing facilities (Chem. & Bio) and discussion regarding Answer to the Questionnaire and request of equipment and renovation. (12:50~17:00)
		CGK(10:00) → BDN(10:45) MZ3700 Mr. Akazawa/Mr. Shimada/ Mr. Miyoshi/Mr. Miyatake/ Mr. Miyazawa	<b>IKIP Bandung:</b> Explanation of Inception Report, discussion on the schedule of meeting, and survey of existing facilities and equipment. (13:30-17:30)
4.	Aug. 6 (Thu)	<b>Malang</b> Ms. Muramatsu/ Dr. Teratani/Mr. Umemiya/Mr. Hatano/Dr. Kamei/Mr. Wong Malang → SUB (By car) SUB(17:30) → YOG(18:35) MZ519	Survey of existing facilities ( Physics., Math, Common CR. Etc.) and discussion on the existing facilities and equipment, and Answer to the Questionnaires. (9:00 ~ 12:00)
		<b>Bandung</b> Mr. Akazawa/Mr. Shimada/ Mr. Miyoshi/Mr. Miyatake/Mr. Miyazawa	<ul style="list-style-type: none"> <li>• Discussion and explanation on the contents of IKIP's Proposal (9:00-10:00)</li> <li>• Discussion on the contents of Questionnaire (Educational Plan) (13:30-16:30)</li> <li>• Discussion on the infrastructures, utilities and facility planning(13:30-17:00)</li> <li>• Discussion and explanation on the contents of equipment for IKIP to review (13:30-17:30)</li> </ul>
5.	Aug. 7 (Fri)	<b>Yogyakarta</b> Ms. Muramatsu/ Dr. Teratani/Mr. Umemiya/Mr. Hatano/Dr. Kamei/Mr. Wong	<ul style="list-style-type: none"> <li>• Explanation of schedule and purpose of the survey and discussion on Chem. Bldg. With Vice Rector (9:00-10:30)</li> <li>• Discussion on the contents of M/D, survey of existing facilities and Answer to the Questionnaire (10:00-16:30)</li> </ul>
		<b>Bandung</b> Mr. Akazawa/Mr. Shimada/ Mr. Miyoshi/Mr. Miyatake/Mr. Miyazawa	<ul style="list-style-type: none"> <li>• Discussion and explanation on the contents of Questionnaire re. Construction (9:20-10:20)</li> <li>• Discussion on the meeting schedule with local Authorities (PLN, PDAM etc) (10:20-)</li> <li>• Discussion with PLN re. connection points and elec. rates.(13:30-16:30)</li> <li>• Survey of glass factories for market research of educational equip. (9:00-11:30)</li> <li>• Discussion on the contents of equipment list and layout of existing equip. (13:30-17:30)</li> </ul>

No	Date	Place	Activity
6.	Aug. 8 (Sat)	Yogyakarta Ms. Muramatsu/ Dr. Teratani/ Mr. Umemiya/Mr. Hatano/Dr. Kamei/ Mr. Wong	<ul style="list-style-type: none"> <li>• Discussion on the contents of Questionnaire and list of equipment (8:15-9:45)</li> <li>• Meeting with PPPG-Math re. relationship with IKIP-Yogyakarta and survey of PPPG facilities (10:20-12:00)</li> </ul>
		Bandung Mr. Akazawa/Mr. Shimada/ Mr. Miyatake Mr. Miyoshi/Mr. Miyazawa	<ul style="list-style-type: none"> <li>• Discussion on the facility planning for sizing of each room (8:30-17:00)</li> </ul>
7.	Aug. 9 (Sun)	YOG(7:30)→CGK(8:30) GA203 CGK(10:00)→BDN(10:45) MZ3700 Ms. Muramatsu/ Dr. Teratani/Mr. Umemiya/Mr. Hatano/Dr. Kamei/Mr. Wong	Joint Meeting (by all members) (16:00-19:00)
		Bandung Mr. Akazawa/Mr. Shimada/ Mr. Miyoshi/Mr. Miyatake/Mr. Miyazawa	Joint Meeting (16:00-19:00) (Analysis of collected data and information)
8.	Aug. 10 (Mon)	Bandung All members	<ul style="list-style-type: none"> <li>• Meeting with Vice Rector II for explanation of Grant Aid, schedule and purpose of B/D study (8:30-9:30)</li> </ul>
9.	Aug. 11 (Tue)	Bandung (6:00)→Jakarta (9:30) (by Train) Ms. Muramatsu/ Dr. Teratani/ Mr. Umemiya/Mr. Hatano/Mr. Wong	<ul style="list-style-type: none"> <li>• Meeting on the contents of Minutes of Discussion with DGHE, JICA, reps. of IKIP Bandung, IKIP Yogyakarta and IKIP Malang</li> </ul>
		Bandung Mr. Akazawa/Mr. Miyatake/ Mr. Shimada/Mr. Miyoshi/Mr. Miyazawa	<ul style="list-style-type: none"> <li>• Meeting with local contractors re. (1) request of unit price list and (2) Sublet of natural conditions survey. (10:30-14:00)</li> <li>• Meeting with PDAM to discuss water supply connection in the IKIP campus (10:00-11:00)</li> </ul>
10.	Aug. 12 (Wed)	Jakarta Ms. Muramatsu/ Dr. Teratani/ Mr. Umemiya/Mr. Hatano/Mr. Wong	<ul style="list-style-type: none"> <li>• Signing of Minutes(13:00-13:30)</li> <li>• Meeting with DGPSE to explain and discuss re. primary and secondary education</li> <li>• Meeting with Embassy of Japan for brief reporting of study by official members and consultant. (14:45-15:30)</li> <li>• Meeting with Embassy of Japan for brief reporting and discussion on the study by official members and consultant. (16:00-17:00)</li> </ul>
		Ms. Muramatsu CGK(20:00)→SIN(22:30)SQ163 (Join to the D,B/D in South Africa) Dr. Teratani/Mr. Umemiya CGK(22:30) JL726	<ul style="list-style-type: none"> <li>• Survey of relevant educational facilities (primary and secondary schools, PPPG and ITB) (8:30-16:30)</li> <li>• Meeting with TELKOM to discuss telephone line connection in the IKIP campus (10:00-11:00)</li> </ul>
		Bandung Mr. Akazawa/Mr. Miyoshi/Dr. Kamei/Mr. Miyatake/Mr. Miyazawa/ Mr. Shimada/Mr. Miyoshi/Mr. Miyazawa	

No	Date	Place	Activity
6.	Aug. 8 (Sat)	Yogyakarta Ms. Muramatsu/ Dr. Teratani/ Mr. Umemiya/Mr. Hatano/Dr. Kamei/ Mr. Wong	<ul style="list-style-type: none"> <li>• Discussion on the contents of Questionnaire and list of equipment (8:15-9:45)</li> <li>• Meeting with PPPG-Math re. relationship with IKIP-Yogyakarta and survey of PPPG facilities (10:20-12:00)</li> </ul>
		Bandung Mr. Akazawa/Mr. Shimada/ Mr. Miyatake Mr. Miyoshi/Mr. Miyazawa	<ul style="list-style-type: none"> <li>• Discussion on the facility planning for sizing of each room (8:30-17:00)</li> </ul>
7.	Aug. 9 (Sun)	YOG(7:30)→CGK(8:30) GA203 CGK(10:00)→BDN(10:45) MZ3700 Ms. Muramatsu/ Dr. Teratani/Mr. Umemiya/Mr. Hatano/Dr. Kamei/Mr. Wong	Joint Meeting (by all members) (16:00-19:00)
		Bandung Mr. Akazawa/Mr. Shimada/ Mr. Miyoshi/Mr. Miyatake/Mr. Miyazawa	Joint Meeting (16:00-19:00) (Analysis of collected data and information)
8.	Aug. 10 (Mon)	Bandung All members	<ul style="list-style-type: none"> <li>• Meeting with Vice Rector II for explanation of Grant Aid, schedule and purpose of B/D study (8:30-9:30)</li> </ul>
9.	Aug. 11 (Tue)	Bandung (6:00)→Jakarta (9:30) (by Train) Ms. Muramatsu/ Dr. Teratani/ Mr. Umemiya/Mr. Hatano/Mr. Wong	<ul style="list-style-type: none"> <li>• Meeting on the contents of Minutes of Discussion with DGHE, JICA, reps. of IKIP Bandung, IKIP Yogyakarta and IKIP Malang</li> </ul>
		Bandung Mr. Akazawa/Mr. Miyatake/ Mr. Shimada/Mr. Miyoshi/Mr. Miyazawa	<ul style="list-style-type: none"> <li>• Meeting with local contractors re. (1) request of unit price list and (2) Sublet of natural conditions survey. (10:30-14:00)</li> <li>• Meeting with PDAM to discuss water supply connection in the IKIP campus (10:00-11:00)</li> </ul>
10.	Aug. 12 (Wed)	Jakarta Ms. Muramatsu/ Dr. Teratani/ Mr. Umemiya/Mr. Hatano/Mr. Wong	<ul style="list-style-type: none"> <li>• Signing of Minutes(13:00-13:30)</li> <li>• Meeting with DGPSE to explain and discuss re. primary and secondary education</li> <li>• Meeting with Embassy of Japan for brief reporting of study by official members and consultant. (14:45-15:30)</li> <li>• Meeting with Embassy of Japan for brief reporting and discussion on the study by official members and consultant. (16:00-17:00)</li> </ul>
		Ms. Muramatsu CGK(20:00)→SIN(22:30)SQ163 (Join to the D.B/D in South Africa) Dr. Teratani/Mr. Umemiya CGK(22:30) JL726	<ul style="list-style-type: none"> <li>• Survey of relevant educational facilities (primary and secondary schools, PPPG and ITB) (8:30-16:30)</li> <li>• Meeting with TELKOM to discuss telephone line connection in the IKIP campus (10:00-11:00)</li> </ul>
		Bandung Mr. Akazawa/Mr. Miyoshi/Dr. Kamei/Mr. Miyatake/Mr. Miyazawa/ Mr. Shimada/Mr. Miyoshi/Mr. Miyazawa	

No	Date	Place	Activity
11.	Aug. 13 (Thu)	Jakarta Mr. Hatano/Mr. Wong	Joint Meeting (Analysis of collected data and information)
		Bandung Mr. Akazawa/Mr. Shimada/ Mr. Miyatake/ Mr. Miyoshi/Mr. Miyazawa  Dr. Kamei  BDN (16:35)→ CGK (17:10) MZ3610	<ul style="list-style-type: none"> <li>• Meeting to discuss scope of works undertaken by IKIP and Indonesian side.(9:00-13:00)</li> <li>• Meeting to discuss Labo layout (Physics Dept.) and space for installation of equip. at exist Labo (8:30-12:00)</li> <li>• Meeting to discuss contents of Answer to the Questionnaire (Chap.4) (9:00-12:00)</li> </ul>
12.	Aug. 14 (Fri)	Jakarta Mr. Hatano/Dr. Kamei Mr. Akazawa/Mr. Shimada/ Mr. Miyoshi/Mr. Miyatake Mr. Hatano/Dr. Kamei/Mr. Wong Mr. Miyoshi	<ul style="list-style-type: none"> <li>• Meeting with DGHE for intermediate reporting of IKIP Bandung, etc.(10:00-12:00)</li> <li>• Meeting with PGSM Project, Bogor re. their equipment supply for IKIPs.(13:30-15:00)</li> </ul>
13.	Aug. 15 (Sat)	Jakarta	Internal meeting and analysis of collected data and information
14.	Aug. 16 (Sun)	Jakarta	Internal meeting and analysis of collected data and information
15.	Aug. 17 (Mon)	CGK (11:30)→YOGYA (12:35) GA204	Team meeting and analysis of collected data and information
16.	Aug. 18 (Tue)	Yogyakarta All Consultant Team Members  Mr. Hatano/Dr. Kamei  Mr. Akazawa/Mr. Shimada/Mr. Miyatake  Mr. Miyoshi	<ul style="list-style-type: none"> <li>• Meeting with IKIP Yogyakarta re. equipment, renovation and and survey of existing facilities (8:30-12:00)</li> <li>• Meeting with IKIP Yogyakarta re.IKIP's maintenance system and curriculum (14:30-16:30)</li> <li>• Meeting with IKIP Yogyakarta re. Answer to the Questionnaire (Chap.5) and further meeting schedule (14:30-17:00)</li> <li>• Meeting with IKIP Yogyakarta (Math/Chem Dept.) re. equipment supply (14:00- 17:00)</li> </ul>
17.	Aug. 19 (Wed)	Yogyakarta All Consultant Team Member  Mr. Akazawa/Mr. Shimada/Mr. Miyatake Mr. Hatano	<ul style="list-style-type: none"> <li>• Meeting with Rector and Vice Rectors (8:00-9:00)</li> <li>• Meeting with IKIP Yogyakarta re. renovation (10:45-16:45)</li> <li>• Meeting with IKIP Yogyakarta re. Rector's Report etc. (11:30-12:30)</li> </ul>
18.	Aug. 20 (Thu)	Yogyakarta Mr. Hatano/Dr. Kamei/ Mr. Akazawa/Mr. Shimada  Dr. Kamei  Mr. Akazawa/Mr. Shimada/Mr. Miyatake/Mr. Wong Mr. Miyoshi/Mr. Miyazawa	<ul style="list-style-type: none"> <li>• Survey of relevant facilities in Yogyakarta (PPPG, Senior Secondary, Primary and Junior Schools and BPG. (8:00-14:00)</li> <li>• Meeting with Vice Rector II re. maintenance &amp; budget (14:30-15:40)</li> <li>• Meeting with each dept. staff re. Renovation (9:00-12:30)</li> <li>• Meeting with each dept. staff re. contents of equipment (15:00-17:00)</li> </ul>



No	Date	Place	Activity
11.	Aug. 13 (Thu)	Jakarta Mr. Hatano/Mr. Wong Bandung Mr. Akazawa/Mr. Shimada/ Mr. Miyatake/ Mr. Miyoshi/Mr. Miyazawa  Dr. Kamei  BDN (16:35)--> CGK (17:10) MZ3610	Joint Meeting (Analysis of collected data and information)  <ul style="list-style-type: none"> <li>• Meeting to discuss scope of works undertaken by IKIP and Indonesian side.(9:00-13:00)</li> <li>• Meeting to discuss Labo layout (Physics Dept.) and space for installation of equip. at exist Labo (8:30-12:00)</li> <li>• Meeting to discuss contents of Answer to the Questionnaire (Chap.4) (9:00-12:00)</li> </ul>
12.	Aug. 14 (Fri)	Jakarta Mr. Hatano/Dr. Kamei Mr. Akazawa/Mr. Shimada/ Mr. Miyoshi/Mr. Miyatake Mr. Hatano/Dr. Kamei/Mr. Wong Mr. Miyoshi	<ul style="list-style-type: none"> <li>• Meeting with DGHE for intermediate reporting of IKIP Bandung, etc.(10:00-12:00)</li> <li>• Meeting with PGSM Project, Bogor re. their equipment supply for IKIPs.(13:30-15:00)</li> </ul>
13.	Aug. 15 (Sat)	Jakarta	Internal meeting and analysis of collected data and information
14.	Aug. 16 (Sun)	Jakarta	Internal meeting and analysis of collected data and information
15.	Aug. 17 (Mon)	CGK (11:30)-->YOGYA (12:35) GA204	Team meeting and analysis of collected data and information
16.	Aug. 18 (Tue)	Yogyakarta All Consultant Team Members  Mr. Hatano/Dr. Kamei  Mr. Akazawa/Mr. Shimada/Mr. Miyatake  Mr. Miyoshi	<ul style="list-style-type: none"> <li>• Meeting with IKIP Yogyakarta re. equipment, renovation and and survey of existing facilities (8:30-12:00)</li> <li>• Meeting with IKIP Yogyakarta re. IKIP's maintenance system and curriculum (14:30-16:30)</li> <li>• Meeting with IKIP Yogyakarta re. Answer to the Questionnaire (Chap.5) and further meeting schedule (14:30-17:00)</li> <li>• Meeting with IKIP Yogyakarta (Math/Chem Dept.) re. equipment supply (14:00- 17:00)</li> </ul>
17.	Aug. 19 (Wed)	Yogyakarta All Consultant Team Member  Mr. Akazawa/Mr. Shimada/Mr. Miyatake Mr. Hatano	<ul style="list-style-type: none"> <li>• Meeting with Rector and Vice Rectors (8:00-9:00)</li> <li>• Meeting with IKIP Yogyakarta re. renovation (10:45-16:45)</li> <li>• Meeting with IKIP Yogyakarta re. Rector's Report etc. (11:30-12:30)</li> </ul>
18.	Aug. 20 (Thu)	Yogyakarta Mr. Hatano/Dr. Kamei/ Mr. Akazawa/Mr. Shimada  Dr. Kamei  Mr. Akazawa/Mr. Shimada/Mr. Miyatake/Mr. Wong Mr. Miyoshi/Mr. Miyazawa	<ul style="list-style-type: none"> <li>• Survey of relevant facilities in Yogyakarta (PPPG, Senior Secondary, Primary and Junior Schools and BPG. (8:00-14:00)</li> <li>• Meeting with Vice Rector II re. maintenance &amp; budget (14:30-15:40)</li> <li>• Meeting with each dept. staff re. Renovation (9:00-12:30)</li> <li>• Meeting with each dept. staff re. contents of equipment (15:00-17:00)</li> </ul>

No	Date	Place	Activity
19.	Aug. 21 (Fri)	YOG (6:45) → SUB (7:45) MZ518 Surabaya → Malang (By Car) Mr. Hatano/ Mr. Akazawa/Mr. Shimada	<ul style="list-style-type: none"> <li>Meeting with IKIP Malang re. meeting schedule, Answer to the Questionnaire, equipment and renovation (13:00-17:00)</li> <li>Meeting with Dean FPMIPA re. PGSM equip. and maintenance system (14:00-15:00)</li> </ul>
		Yogyakarta Mr. Miyoshi/Mr. Miyatake/Mr. Miyazawa  Dr. Kamei	<ul style="list-style-type: none"> <li>Visiting PGSD and meeting with IKIP Yogyakarta each dept. staff re. contents of equip (8:30-16:00)</li> <li>Meeting with IKIP Yogyakarta re. maintenance system and curriculum.</li> </ul>
20.	Aug. 22 (Sat)	Malang Mr. Hatano  Mr. Akazawa/Mr. Shimada	<ul style="list-style-type: none"> <li>Meeting with Dean FPMIPA re. programme, and other general matter (13:00-17:00)</li> <li>Meeting with each dept. staff re. renovation etc. (8:30-12:00)</li> </ul>
		Yogyakarta Mr. Miyoshi/Dr. Kamei Mr. Miyatake/Mr. Miyazawa	Discussion and confirmation on each proposed equipment plan.
21.	Aug. 23 (Sun)	Malang Mr. Hatano/ Mr. Akazawa/Mr. Shimada YOG (6:45) → SUB (7:45) MZ518 Surabaya → Malang (By Car) Mr. Miyoshi/Dr. Kamei Mr. Miyatake/Mr. Miyazawa	<ul style="list-style-type: none"> <li>Team Meeting (17:00-18:30) and analysis of collected data and information</li> <li>Team Meeting (17:00-18:30) and analysis of collected data and information</li> </ul>
22.	Aug. 24 (Mon)	MALANG → SUB (By Car) SUB (18:00) → JKT (19:20) GA323 Mr. Hatano/  Mr. Akazawa/Mr. Shimada	<ul style="list-style-type: none"> <li>Survey of relevant facilities in Malang (Primary, Junior Secondary, Senior Secondary schools, Brawijaya Univ. etc. (8:00-14:00)</li> <li>Meeting with Vice Dean re. renovation in book IV (17:00-18:30)</li> <li>Meeting with Vice Rector IV re. IKIP/FPMIPA maintenance system (13:00-13:40)</li> </ul>
		Malang Mr. Miyoshi/Dr. Kamei Mr. Miyatake/Mr. Miyazawa	<ul style="list-style-type: none"> <li>Survey of relevant facilities in Malang (Primary, Junior Secondary, Senior Secondary schools, Brawijaya Univ. etc. (8:00-14:00)</li> <li>Meeting with Dean re. renovation (14:00-17:00)</li> <li>Meeting with each dept. staff re. list of equipment and labo. layout (14:00-15:00)</li> </ul>

No	Date	Place	Activity
19.	Aug. 21 (Fri)	YOG (6:45) → SUB (7:45) MZ518 Sulabaya → Malang (By Car) Mr. Hatano/ Mr. Akazawa/Mr. Shimada	<ul style="list-style-type: none"> <li>• Meeting with IKIP Malang re. meeting schedule, Answer to the Questionnaire, equipment and renovation (13:00-17:00)</li> <li>• Meeting with Dean FPMIPA re. PGSM equip. and maintenance system (14:00-15:00)</li> </ul>
		Yogyakarta Mr. Miyoshi/Mr. Miyatake/Mr. Miyazawa  Dr. Kamei	<ul style="list-style-type: none"> <li>• Visiting PGSD and meeting with IKIP Yogyakarta each dept. staff re. contents of equip (8:30-16:00)</li> <li>• Meeting with IKIP Yogyakarta re. maintenance system and curriculum.</li> </ul>
20.	Aug. 22 (Sat)	Malang Mr. Hatano  Mr. Akazawa/Mr. Shimada	<ul style="list-style-type: none"> <li>• Meeting with Dean FPMIPA re. programme, and other general matter (13:00-17:00)</li> <li>• Meeting with each dept. staff re. renovation etc. (8:30-12:00)</li> </ul>
		Yogyakarta Mr. Miyoshi/Dr. Kamei Mr. Miyatake/Mr. Miyazawa	Discussion and confirmation on each proposed equipment plan.
21.	Aug. 23 (Sun)	Malang Mr. Hatano/ Mr. Akazawa/Mr. Shimada	<ul style="list-style-type: none"> <li>• Team Meeting (17:00-18:30) and analysis of collected data and information</li> </ul>
		YOG (6:45) → SUB (7:45) MZ518 Surabaya → Malang (By Car) Mr. Miyoshi/Dr. Kamei Mr. Miyatake/Mr. Miyazawa	<ul style="list-style-type: none"> <li>• Team Meeting (17:00-18:30) and analysis of collected data and information</li> </ul>
22.	Aug. 24 (Mon)	MALANG → SUB (By Car) SUB (18:00) → JKT (19:20) GA323 Mr. Hatano/  Mr. Akazawa/Mr. Shimada	<ul style="list-style-type: none"> <li>• Survey of relevant facilities in Malang (Primary, Junior Secondary, Senior Secondary schools, Brawijaya Univ. etc. (8:00-14:00)</li> <li>• Meeting with Vice Dean re. renovation in book IV (17:00-18:30)</li> <li>• Meeting with Vice Rector IV re. IKIP/FPMIPA maintenance system (13:00-13:40)</li> </ul>
		Malang Mr. Miyoshi/Dr. Kamei Mr. Miyatake/Mr. Miyazawa	<ul style="list-style-type: none"> <li>• Survey of relevant facilities in Malang (Primary, Junior Secondary, Senior Secondary schools, Brawijaya Univ. etc. (8:00-14:00)</li> <li>• Meeting with Dean re. renovation (14:00-17:00)</li> <li>• Meeting with each dept. staff re. list of equipment and labo. layout (14:00-15:00)</li> </ul>

No	Date	Place	Activity
23.	Aug. 25 (Tue)	JKT(07:00) → BDN(07:35) MZ3700 Mr. Hatano/ Mr. Akazawa/Mr. Shimada	<ul style="list-style-type: none"> <li>• Meeting with Dean etc. re. survey and meeting schedule, and agenda of meeting(10:15-11:30)</li> <li>• Meeting with each dept. staff re. planning and layout of each Labo (14:00-15:00)</li> <li>• Meeting with dept. staff re. telephone, power supply etc. (14:00-15:00)</li> </ul>
		<u>Malang</u> Dr. Kamei  Mr. Miyoshi/Mr. Miyatake/Mr. Miyazawa	<ul style="list-style-type: none"> <li>• Meeting with Vice Dean re. educational plan (10:00-16:00)</li> <li>• Survey of existing facilities and meeting with each dept. staff re. equipment list and renovation. (9:30-17:00)</li> </ul>
24.	Aug. 26 (Wed)	<u>Bandung</u> Mr. Hatano/Mr. Akazawa/Mr. Shimada	<ul style="list-style-type: none"> <li>• Meeting with each dept. staff re. each Labo. Layout (8:00-16:30)</li> </ul>
		<u>Malang</u> Dr. Kamei  Mr. Miyoshi/Mr. Miyatake/Mr. Miyazawa	<ul style="list-style-type: none"> <li>• Meeting with Vice Dean etc. re. IKIP O&amp;M budgetary plan (9:00-16:00)</li> <li>• Meeting with each dept. staff re. Computer Room (9:00-)</li> </ul>
		MALANG → SUB (By Car) SUB (18:00) → JKT (19:20) GA323 Mr. Miyatake	<ul style="list-style-type: none"> <li>• Collection of data and survey of existing facilities and furniture.</li> </ul>
25.	Aug. 27 (Thu)	<u>Malang</u> Dr. Kamei  Mr. Miyoshi/Mr. Miyazawa	<ul style="list-style-type: none"> <li>• Meeting with Vice Dean etc. re. teachers license (9:00-16:00)</li> <li>• Meeting with each dept. staff re. Requested items of equipment (9:00-15:00)</li> </ul>
		<u>Bandung</u> Mr. Hatano/Mr. Akazawa/Mr. Miyatake  Mr. Shimada	<ul style="list-style-type: none"> <li>• Meeting with Vice Dean and each dept. staff re. each Labo. layout and survey of site (9:30-16:30)</li> <li>• Site survey of existing facilities and collection of data(9:00-)</li> </ul>
		JKT(07:00) → BDN(07:35) MZ3603 Mr. Miyatake	
26.	Aug. 28 (Fri)	<u>Malang</u> Dr. Kamei  Mr. Miyoshi/Mr. Miyazawa	<ul style="list-style-type: none"> <li>• Survey of Primary and Junior Secondary Schools in Malang (8:00-10:00)</li> <li>• Meeting with each dept. staff re. labo layout (9:00-11:30)</li> </ul>
		MALANG → SUB (By Car) <u>Bandung</u> Mr. Hatano/ Mr. Akazawa/Mr. Shimada/ Mr. Miyatake	<ul style="list-style-type: none"> <li>• Meeting with Vice Dean and each dept. staff re. labo. layout, site layout and scope of works. (9:00-16:30)</li> </ul>
		BDN(16:00)→JKT (19:00)by Train Mr. Hatano	

No	Date	Place	Activity
27.	Aug. 29 (Sat)	Mr. Miyoshi/Dr. Kamei/Mr. Miyazawa	<ul style="list-style-type: none"> <li>• Survey of Draft Chamber factory in Surabaya</li> <li>• Team meeting and analysis of collected data and information</li> </ul>
		SUB (16:00) → CGK (17:20) GA319 Bandung Mr. Akazawa/Mr. Shimada Mr. Miyatake	<ul style="list-style-type: none"> <li>• Meeting with each dept. staff re. each labo layout with utility requirements. (9:00-17:30)</li> </ul>
28.	Aug. 30 (Sun)	Jakarta Mr. Hatano/Dr. Kamei/Mr. Miyoshi/ Mr. Wong/Mr. Miyazawa	Team meeting and analysis of collected data and information
		Bandung Mr. Akazawa/Mr. Shimada Mr. Miyatake	Team meeting and analysis of collected data and information
29.	Aug. 31 (Mon)	Jakarta Mr. Hatano/Dr. Kamei/Mr. Miyoshi/ Mr. Miyazawa/Mr. Wong	<ul style="list-style-type: none"> <li>• Meeting with DGHE re. report of survey at 3 IKIPs (10:30-12:00)</li> </ul>
		Bandung Mr. Akazawa/Mr. Shimada Mr. Miyatake	<ul style="list-style-type: none"> <li>• Meeting with Vice Dean etc. re. Questionnaire, Scope of Works, Site Survey Schedule(10:00-16:00)</li> </ul>
30.	Sept. 1 (Tue)	Jakarta Mr. Hatano/Dr. Kamei/Mr. Miyoshi/ Mr. Wong/Mr. Miyazawa	9:00- Meeting with DGHE (Report on survey and discussion results of IKIP Bandung, IKIP Yogyakarta and IKIP Malang, etc.)
		BDN(16:35)→JKT (17:10)MZ3610 Mr. Akazawa/Mr. Shimada Mr. Miyatake	<ul style="list-style-type: none"> <li>• Meeting with Vice Dean etc. re. Supporting facilities and on collection of data, information and questionnaires. (9:00-13:30)</li> </ul>
31.	Sept. 2 (Wed)	Jakarta Mr. Miyoshi/Mr. Miyazawa Mr. Hatano/Dr.Kamei	<ul style="list-style-type: none"> <li>• Survey of Labo. equip. supplier etc (8:00-9:00)</li> <li>• Meeting with ADB re. PPPG project etc. (8:00-9:00)</li> <li>• Meeting with PGSM Office, Jalarta</li> <li>• Meeting re. local conditions transportation, custom clearance, etc. (9:00-10:00)</li> </ul>
		Mr. Miyoshi/Mr.Akazawa/Mr.Shimada/ Mr. Wong	
32.	Sept. 3 (Thu)	Jakarta All Consultant Team Members	<ul style="list-style-type: none"> <li>• Report to DGHE and discussions re. Chap.11, PGSM equip. etc. (17:00-18:00)</li> </ul>
33.	Sept. 4 (Fri)	Jakarta	<ul style="list-style-type: none"> <li>• Report to JICA (14:00-15:30)</li> </ul>
34.	Sept. 5 (Sat)	CGK (22:30) JL726 →	
35.	Sept. 6 (Sun)	→ NRT (JL726)	

No	Date	Place	Activity
27.	Aug. 29 (Sat)	Mr. Miyoshi/Dr. Kamei/Mr. Miyazawa	<ul style="list-style-type: none"> <li>Survey of Draft Chamber factory in Surabaya</li> <li>Team meeting and analysis of collected data and information</li> </ul>
		SUB (16:00) --> CGK (17:20) GA319 Bandung Mr. Akazawa/Mr. Shimada Mr. Miyatake	<ul style="list-style-type: none"> <li>Meeting with each dept. staff re. each labo layout with utility requirements. (9:00-17:30)</li> </ul>
28.	Aug. 30 (Sun)	Jakarta Mr. Hatano/Dr. Kamei/Mr. Miyoshi/ Mr. Wong/Mr. Miyazawa	Team meeting and analysis of collected data and information
		Bandung Mr. Akazawa/Mr. Shimada Mr. Miyatake	Team meeting and analysis of collected data and information
29.	Aug. 31 (Mon)	Jakarta Mr. Hatano/Dr. Kamei/Mr. Miyoshi/ Mr. Miyazawa/Mr. Wong	<ul style="list-style-type: none"> <li>Meeting with DGHE re. report of survey at 3 IKIPs (10:30-12:00)</li> </ul>
		Bandung Mr. Akazawa/Mr. Shimada Mr. Miyatake	<ul style="list-style-type: none"> <li>Meeting with Vice Dean etc. re. Questionnaire, Scope of Works, Site Survey Schedule(10:00-16:00)</li> </ul>
30.	Sept. 1 (Tue)	Jakarta Mr. Hatano/Dr. Kamei/Mr. Miyoshi/ Mr. Wong/Mr. Miyazawa	9:00- Meeting with DGHE (Report on survey and discussion results of IKIP Bandung, IKIP Yogyakarta and IKIP Malang, etc.)
		BDN(16:35)-->JKT (17:10)MZ3610 Mr. Akazawa/Mr. Shimada Mr. Miyatake	<ul style="list-style-type: none"> <li>Meeting with Vice Dean etc. re. Supporting facilities and on collection of data, information and questionnaires. (9:00-13:30)</li> </ul>
31.	Sept. 2 (Wed)	Jakarta Mr. Miyoshi/Mr. Miyazawa Mr. Hatano/Dr.Kamei	<ul style="list-style-type: none"> <li>Survey of Labo. equip. supplier etc (8:00-9:00)</li> <li>Meeting with ADB re. PPPG project etc. (8:00-9:00)</li> <li>Meeting with PGSM Office, Jalarta</li> <li>Meeting re. local conditions transportation, custom clearance, etc. (9:00-10:00)</li> </ul>
		Mr. Miyoshi/Mr.Akazawa/Mr.Shimada/ Mr. Wong	
32.	Sept. 3 (Thu)	Jakarta All Consultant Team Members	<ul style="list-style-type: none"> <li>Report to DGHE and discussions re. Chap.11, PGSM equip. etc. (17:00-18:00)</li> </ul>
33.	Sept. 4 (Fri)	Jakarta	<ul style="list-style-type: none"> <li>Report to JICA (14:00-15:30)</li> </ul>
34.	Sept. 5 (Sat)	CGK (22:30) JL726 -->	
35.	Sept. 6 (Sun)	--> NRT (JL726)	

**LIST OF PERSONS CONCERNED IN THE RECIPIENT COUNTRY**

**[1] Basic Design Survey (August 3~September 6, 1998)**

1. Embassy of Jaapan  
Mr. Takashi Kato : First Secretary, Embassy of Japan
2. JICA Jakarta Office  
Mr. Ryo Suwa : Resident Representative  
Mr. Nobuhiko Hanazato : Assistant Resident Representative
3. JICA's Expert  
Mr. Takashi Shimozawa : Visiting Professor IKIP Bandung, UI
4. DGHE (Directorate General of Higher Education)  
Dr. Bambang Sohendro : Director General  
Dr. Satryo Soemantri : Director for Academic Affairs
5. BAPPENAS  
Dr. Fasli Jalal : Chief, Bureau for Region, Education and Culture  
Dr. Yadi Haryas : Head of Primary and Secondary Education Division  
Dr. Abdul Mabk : Head of Higher Education Division
6. DGPSE  
Dr. Abdul Azis Hoesein : Director for Teacher Training and Technical Staff Training  
Drs. H. Syafel Alim, MA : Vice Director
7. ADB  
Mrs. Dian S. Prijomastiko : Project Officer, Health Education
8. GTZ  
Mrs. Dian S. Prijomastiko : Project Officer, Health Education
9. PGSM Project (World Bank)  
Mr. Alfonso de Guzman : Senior Education Specialist  
Ms. Betsy Ann Balzano : Teacher Education Specialist  
Ms. Jacqueline Baptist : Economist  
Dr. Simbolon : Project Manager

10. IKIP Bandung

Prof. Dr. H. Hamid Hasan, M.A.	:	Deputy I Rector
Dr. Utari Sumarmo	:	Dean
Prof. Dr. H. Achmad A. Hinduan, M.Sc.	:	Local Coordinator
Drs. Harry Firman, M.Pd.	:	Vice Local Coordinator/Vice Dean I
Dr. Sumar Hendayana, M.Sc.	:	Secretary Local Coordinator (Head of Chem. Ed. Dept.)
Drs. H. Harun Imansyah, M.Ed.	:	Vice Secretary of Coordinator
Dra. Roswati Mudjiarto	:	Treasurer/Vice Dean II
Drs. Karno To, M.Pd.	:	Vice Treasurer (IKIP Project)
Ir. Herman	:	Infrastructure Maintenance Dept.
Drs. Budi R. Mulyantna	:	Infrastructure Maintenance Dept.
Mr. Acep Sudanoi	:	Utility Div.
Drs. Yahya	:	Planning (IKIP Project)
Drs. Herman	:	Planning (IKIP Project)
Drs. Harlas Gunawan	:	Building Planning (IKIP Project)
Drs. Enoch M. Syah	:	Building Planning (IKIP Project)
Drs. Sutiana	:	Staff of IKIP Project
Drs. R. Irwan Surasetia	:	Staff of IKIP Project
Drs. Kosim Rukmana, M.Sc.	:	Task Team A, Mathematics Edu.
Dra. Rini Marwati, M.Si.	:	Task Team A, Mathematics Edu.
Drs. Dadan Dasari, M.Si.	:	Task Team A, Mathematics Edu.
Drs. Didi Suryadi, M.Ed.	:	Task Team B, Mathematics Edu.
Drs. Karso	:	Task Team B, Mathematics Edu.
Drs. Yusuf Hilmi, M.Sc.	:	Task Team A, Biology Edu.
Drs. Riandi, M.Si.	:	Task Team A, Biology Edu.
Drs. Unang Sumarno	:	Task Team A, Biology Edu.
Dr. H. Eddy M. Hidayat, M.A.	:	Task Team B, Biology Edu.
Drs. Taufik Rahman, M.Pd.	:	Task Team B, Biology Edu.
Drs. Koesmadji W., M.Sc.	:	Task Team C, Biology Edu.
Drs. Bambang Supriyatno, M.Si.	:	Task Team C, Biology Edu.
Drs. Omang Wirasasmita	:	Task Team A, Physics Edu.
Drs. Taufik Ramlan, M.Si.	:	Task Team A, Physics Edu.
Drs. Unang Purwana	:	Task Team B, Physics Edu. (Secretary)
Drs. E. Budikase	:	Task Team B, Physics Edu.
Drs. Rahmat Setiadi, M.Sc.	:	Task Team C, Chemistry Edu.
Drs. Diana Rochintaniawati, M.Ed.	:	Task Team C, Sci. & Math. Primary Edu.



11. IKIP Yogyakarta
- Drs. Djemari Mardapi, M.Pd., Ph.D. : Vice Rector I
- Drs. Suhardi, M.Pd. : Dean of FPMIPA
- Drs. Sugeng Mardiyono, MappSc., Ph.D : Vice Dean I for Academic Affair
- Drs. Suharyanto, M.Pd. : Vice Dean II for Adm. Finance Affair
- Dr. Nurfini Aznam : Vice Dean III for Student Affair
- Drs. Marsigit, MA : Vice Loc. Coordinator of JICA/Secretary
- Drs. Sukirman, M.Pd. : Head of Math. Educ. Dept.
- Drs. Amin Genda, P.M.Pd. : Head of Physics Educ. Dept.
- Prof. Dr. Sukardjo : Head of Chemistry Educ. Dept.
- Drs. Yoni Suryani, SU : Head of Biology Study Programs
- Drs. M. Fauzan, M.Sc. : Head of Computer Math. Lab.
- Drs. A. Sardjana, M.Pd. : Head of Math. Educ. Lab.
- Drs. Sumadji, M.Pd. : Head of Biology Education Department
- Drs. Drajat Pramiadi, M.Si. : Head of Biology Educ. Lab.
- Drs. Suharto, M.Si. : Head of Chemistry Educ. Lab.
- Drs. Sutiman : Secretary for Chemistry Education Dept.
- Dra. Faizah : Member of Task Team C, Math. Educ.
- Drs. Djoko Sudomo, MA : Coord. Task Team C, Physics Educ.
- Drs. KH. Sugiyarto, Ph.D. : Member of Task Team D, Chemistry Educ.  
Head of Inorganic Chemistry Laboratory
- Drs. Slamet Suyanto, Med. : Coord. Task Team B, Biology Educ.
- Drs. Slamet MT : Head of Electronic Laboratory
- Drs. Sharto, M.Si. : Head of Chemistry Research Laboratory
12. IKIP Malang
- Drs. Murdibyono, M.A. : Vice Rector IV
- Drs. Gatot Muhsetyo, M.Sc. : FPMIPA Dean
- Drs. Lukman Hakim : Vice Dean I (Equipment Plan)
- Drs. H. Yusuf Kastawi : Vice Dean II (Renovation Plan)
- Drs. Kadim Masjkur, M.Pd. : Vice Dean III (Education Plan)
- Drs. Herawati Susilo, M.Sc. Ph.D. : Coordinator - LOC (Local Org. Committee)
- Drs. Istamar Syamsuri, M.Pd. : Vice Coordinator - LOC
- Drs. Ibrohim, M.Si. : Secretary - LOC (Biological Ed. Dept.)
- Suharijono, S.H. : Treasurer LOC/Head of Adm. Office
- Drs. Muchtar A. Karim, M.A. : Head of Mathematics Department
- Dr. Wartono, M.Pd. : Head of Physics Department

- |                                   |   |                                     |
|-----------------------------------|---|-------------------------------------|
| Drs. Sodik Ibnu, M.Si.            | : | Head of Chemistry Department        |
| Drs. Noviar Darkuni, M.Si.        | : | Head of Biology Department          |
| Drs. Sutarman                     | : | Head of Physics Laboratory          |
| Drs. Sarwono, M.Pd.               | : | Head of Biology Laboratory          |
| Drs. Sirwaji                      | : | Head of Workshop                    |
| Drs. Edy Bambang Irawan, M.Pd.    | : | Secretary of Mathematics Department |
| Drs. Sutopo, M.Si.                | : | Secretary of Physics Department     |
| Drs. Cholis Sa'dijah, M.Pd., M.A. | : | Task Team B, Mathematics Education  |
| Drs. Abdus Salam, M.Pd.           | : | Task Team D, Mathematics Education  |
| Muchtar A. Karim                  | : | Instructor of Math. Educ. Dept.     |
| Drs. Sri Mulyati                  | : | Staff. Math. Educ. Dept.            |
| Drs. Supriyono K.H., M.Pd., M.A.  | : | Task Team A, Physics Education      |
| M. Sodik Ibnu                     | : | Chem. Ed. Dept.                     |
| Drs. Sринi Murtinah, M.Sc. Ph.D.  | : | Task Team B, Chemistry Education    |
| Drs. Mackinnu, M.Sc. Ph.D.        | : | Task Team C, Chemistry Education    |
| Drs. Darsono Sigit                | : | Staff Biology Education Dept.       |
| Drs. Hadi Margono                 | : | Task Team A, Biology Education      |
| Drs. Susetyoadi Setjo, M.Pd.      | : | Task Team B, Biology Education      |
13. PPPG - Bandung
- |                           |   |                                   |
|---------------------------|---|-----------------------------------|
| Mrs. Dian S. Prijomastiko | : | Project Officer, Health Education |
| Mr. Jane Listiana         | : | Head of Publication Section       |
| Mr. Mede Aeex M.          | : | Professional Staff                |
| Mr. Beegja                | : | Director                          |
| Dr.(med) Bagia Waluya     | : | Head of PPPG                      |
| Drs. I Made Alit          | : | Instructor                        |
14. SMP 12 (Public Junior Secondary School - Bandung)
- |             |   |                  |
|-------------|---|------------------|
| Drs. Surono | : | School Principal |
| Drs. Saadah | : | Science Teacher  |
15. SDP Negeri Setiabudhi (Setiabudhi Publik Primary School - Bandung)
- |                 |   |                  |
|-----------------|---|------------------|
| Drs. Ratmaja    | : | School Principal |
| Mimin Milaswati | : | Teacher          |
16. PPPG Mathematics - Yogyakarta
- |                        |   |                                     |
|------------------------|---|-------------------------------------|
| Dr. Ismail             | : | Vice Rector II                      |
| Mr. Mashari Subagijono | : | Head Master of PPPG MATH.           |
| Mr.Herry Soekarman     | : | Head of Technical Services Division |

17. BPG - Yogyakarta
- |                        |   |                           |
|------------------------|---|---------------------------|
| Mr. Umar Supaadi       | : | Head of Technical Service |
| Mr. Singgih Trihastuti | : | Lecturer                  |
| Mrs. Suharji           | : | Lecturer                  |
| Mr. Summrdi            | : | Lecturer                  |
| Mr. Aris Mvaawdar      | : | Lecturer                  |
| Mr. Muji Kaharjo       | : | Lecturer                  |
| Mr. Djunaedi           | : | Lecturer                  |
18. UGM
- |                           |   |                                   |
|---------------------------|---|-----------------------------------|
| Mrs. Dian S. Prijomastiko | : | Project Officer, Health Education |
|---------------------------|---|-----------------------------------|
19. SD Negeri Percobaan (Primary School, Malang)
- |                   |   |                    |
|-------------------|---|--------------------|
| Mrs. Titit Sungsi | : | Head Master        |
| Mr. Ir. Syaao     | : | Parent Association |
19. Primary School (SD) Babarsari, Yogyakarta
- |                |   |              |
|----------------|---|--------------|
| Mr. Sardal Das | : | Head Teacher |
|----------------|---|--------------|
20. SLTP Negeri 4 (Junior Secondary School, Malang)
- |                      |   |                                |
|----------------------|---|--------------------------------|
| Mr. Muidjono. S      | : | Head Master                    |
| Mr. Nasib Ibnu. A    | : | Teacher                        |
| Mr. Wartono          | : | Head of Physics Dept.          |
| Mr. Lilik Ermawah    | : | Wk. SLTP 4                     |
| Mr. Muchter A. Karim | : | Head of Math. Ed. Dept.        |
| Mr. Herawati         | : | Leader of Local Org. Committee |
| Mr. Kadir Masjkur    | : | Ass. Dean III                  |
| Mr. Moh Toha         | : | Math. Teacher                  |
21. SMU Negeri 8 (Senior Secondary School, Malang)
- |                      |   |                           |
|----------------------|---|---------------------------|
| Mrs. Endang Ernawahi | : | Lab. Coordinator          |
| Mr. Sucipto          | : | Chemistry Teacher         |
| Mr. Kamsiadi         | : | Chemistry Teacher         |
| Mr. Herawah          | : | Leader of Local Org. Com. |
| Mr. Muchtar Karim    | : | Head of Math. Ed. Dept.   |
| Mr. Wartono          | : | Head of Physics Ed. Dept. |
| Mr. Scswandi         | : | Physics Teacher           |
| Mr. Suhardjito       | : | Physics Teacher           |

22. SD Penanggungan I Malang  
Mrs. Suherjani :
23. SLTP 10 (Junior Secondary School, Malang)  
Drs. Muchlis Ridwasw : Head Master
24. SDN 1 Buring (Primary School, Malang)  
Drs. Dra. Mamik Surutani : Head Master
25. SDN Penanggungan I , Malang  
Mr. Suherjau : Head of SD  
Mr. Herauoti : Leader of LOC  
Mr. Muehtar A. Karius : Head of Math. Ed. Dept.
26. MIPA - Brawijaya University, Malang  
Mr. Supraptiui : Vice Dean I  
Mr. Herawati : Leader of LOC  
Mr. Muehtar A. Karim : Head of Math. Ed. Dept.  
Mr. Setiyono : Lecturer (Chemistry)  
Mr. Subagio : Lecturer (Chemistry)  
Mr. Hadi Martono : Biology Ac. Staff  
Mr. Novcar D. : Biology Ac. Staff  
Mr. Susetyo Adi S. : Biology Ac. Staff  
Mr. Sarwono : Biology Ac. Staff
27. PLN, Bandung  
Drs. H.Akhmad Sodikin : Marketing Manager
28. TELKOM, Bandung  
Ms. A.A. Komang Sawitr : Staff of Service Point Division
29. PDAM, Bandung  
Mr. Abas Hidayat : Chief of Distribution Clean Water  
(Division Air Bersih)  
Mr. Harto : Documentation of Planning Division  
Mr. Muhamad Muslim : Supervisor of Planning Division  
Mr. Adang Basit : Meter Checker Section (Seksi Pencatat Meter)  
PDAM, Consumer Service Division  
(Bagian Hubungan Langgan)  
Mr. Abas Hidayat : Chief of Distribution Clean Water  
(Division Air Bersih)

30. **BITA**

Ir. Arie Prihandono : President Director

Ir. Sugiharto : Manager

31. **PT. BONDONGAN INDAH**

Mr. Ervianto : Director

Mr. N.E. Sadani : Staff

Minutes of Discussions  
on  
the Basic Design Study on the Project for  
Development of Science and Mathematics Teaching for  
Primary and Secondary Education  
in  
the Republic of Indonesia

In response to a request from the Republic of Indonesia, the Government of Japan has decided to conduct a Basic Design Study on the Project for Development of Science and Mathematics Teaching for Primary and Secondary Education in the Republic of Indonesia (hereinafter referred to as "the Project"), and entrusted the study to Japan International Cooperation Agency (JICA).

JICA sent to Indonesia the Basic Design Study Team headed by Ms. Yoshie Muramatsu, Second Study Division, Grant Aid Study Department, JICA, and is scheduled to stay in the country from the 3rd August to the 5th September, 1998.

The team held a series of discussions on the Project with the officials concerned of Indonesia and conducted a field survey at the study area.

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

The Team will proceed to further work and prepare the Basic Design Study Report.

Jakarta, 12 August, 1998

*Yoshie Muramatsu*

Ms Yoshie Muramatsu  
Leader  
Basic Design Study Team  
Japan International Cooperation Agency

*Bambang Soehendro*

Prof. Dr. Bambang Soehendro  
Director General for  
Directorate General of Higher Education  
Ministry of Education and Culture

## ATTACHMENT

### 1. Objective of the Project

The Government of Indonesia and the Japanese implementation study team have confirmed by the Record of Discussions dated 14 July, 1998, that the Government of Indonesia will implement the Project for Development of Science and Mathematics Teaching for Primary and Secondary Education in cooperation with the Government of Japan, and the measures to be taken by the Government of Japan under the technical cooperation scheme.

Both sides also agreed the outputs of the project is (a) to improve the quality of undergraduate education, (b) to improve degree programs for in-service teachers, and (c) to strengthen administrative and management system focusing on 3IKIPs (IKIP Bandung, IKIP Malang, IKIP Yogyakarta).

The objective of the Grant Aid Project is to contribute the implementation of the above-mentioned project, which aims to develop science and mathematics teaching for primary and secondary education, by constructing a building for FPMIPA IKIP Bandung and providing equipment for FPMIPA of 3IKIPs in cooperation with the Japanese technical cooperation.

### 2. Responsible and Executing Organization

The responsible organization of the Project is the Directorate General of Higher Education (DGHE), Ministry of Education and Culture. The executing organization is IKIP Bandung, IKIP Malang, and IKIP Yogyakarta.

The Central Project Implementation Management (CPIU) will be established and take responsibilities to coordinate 3 IKIPs both for the Japanese technical cooperation and for the Grant Aid Project. The Director General for DGHE will chair the CPIU and the office of CPIU will be settled at IKIP Bandung.

The Local Project Implementation Unit (LPIU) will be established at each IKIP under CPIU and take responsibility to coordinate and manage the Japanese technical cooperation and the Grant Aid Project at each IKIP. The Rector of each IKIP will chair the LPIU. The Dean, as a academic coordinator for the implementation of the technical cooperation, and P2T (institution project manager), as a physical coordinator for the implementation of the Grant Aid Project, will support it.

After implementation, each IKIP will be responsible for the maintenance of the building and equipment granted under the Japan's Grant Aid.

### 3. Project Sites

#### (1) IKIP Bandung

The project site shown in Annex-1.1 has been confirmed as the candidate site for construction of Science and Mathematics Education Building (FPMIPA).

All of the equipment provided under the Japan's Grant Aid would be installed in the new building; however, some equipment may be installed temporarily by the time of completion in the existing buildings illustrated in Annex-1. 1.

(2) IKIP Malang

Existing buildings shown in Annex-1.2 have been confirmed as the project site for equipment installation.

(3) IKIP Yogyakarta

Existing buildings shown in Annex-1.3 have been confirmed as the project site for equipment installation.

Due to delay of construction of chemistry building, Japanese side has not confirmed the new chemistry building as the project site.

The Indonesian side will resume the construction in September, 1998 and complete it by January, 1999. Japanese side will confirm the progress of the construction in December, 1998, and the new building would be recognized as the project site if the construction has been almost completed and the date of completion were promised.

4. Contents of the Request by DGHE

(1) After a series of discussions, DGHE requested the items attached as Annex-2.

The list of equipment is based on the request items confirmed with IKIP Bandung, which should be regarded as a 'standard' list for each IKIP. In principle, the equipment for IKIP Malang and IKIP Yogyakarta should be also selected to satisfy the 'standard'.

The final list of requested equipment for each IKIP, including the quantity and specifications, will be completed during the field survey.

Regarding the particular equipment requested by an IKIP, special consideration should be given, following the criteria described 4. (3).

(2) Both Sides have agreed on the criteria for the basic design of the requested building as follows.

- 1) Classrooms and laboratories for basic experiment and practice for science and mathematics will be given a top priority.
- 2) The type of rooms should satisfy the minimum functions to comply with the curriculum for Science and Mathematics teaching for primary and secondary education, and the activities with Japanese technical cooperation.
- 3) The size and number of rooms should accommodate the minimum requirement necessary to comply with circumstances at present and near future, such as number of students and teaching staff, education and teaching method, etc.
- 4) A building should be designed cost-consciously; especially, running cost should be saved as much as possible.
- 5) The specification of building should satisfy the building standards in Indonesia.



- 6) A building should secure the enough durability against climate and predictable natural disasters.
  - 7) A building should be able to be built with materials procured easily and cost effectively in Indonesia and surrounding countries. A building should also be able to be built and maintained with locally procurable techniques.
  - 8) Should other criteria be recognized through the Basic Design Study, they should be applied to the building design.
- (3) Both Sides have agreed on the criteria for the basic design of the requested equipment as follows.
- (a) Each equipment to be selected for the Grant Aid Project should satisfy following criteria.
- 1) Basic educational equipment, which is necessary for teacher-training for science and mathematics in primary and secondary education level, will be procured for 3IKIPs by the extent which satisfies an equal level for teacher-training.
  - 2) Each equipment should satisfy the minimum requirements complied with basic activities for teachers training for science and mathematics in primary and secondary education level at present and in the near future.
  - 3) The necessity of basic equipment for curriculum and teaching material development should be examined by the present activity in each IKIP and expected activity with the Japanese technical cooperation.
  - 4) The equipment to be utilized only for research purposes should be excluded.
  - 5) The specification of each equipment should have enough durability against the climate and under proper using conditions.
  - 6) Equipment should be procured in Indonesia as much as possible.
  - 7) The maintenance of equipment should be easy and inexpensive, and consumables and spare parts must be supplied continuously by 3IKIPs.
  - 8) Should other criteria be recognized through the Basic Design Study, they should be applied to the equipment selection.
- (b) The equipment with higher priority given in the Grant Aid Project is:
- 1) the equipment to be replaced with the existing one which has already been deteriorated or outdated,
  - 2) the equipment to be added to the existing one which is short of quantity in consideration of the laboratory experiments or classes,
  - 3) the equipment indispensable to practical education,
  - 4) the equipment relevant to curriculum for primary and secondary education.
- (c) The equipment with lower priority given to the Grant Aid Project is:
- 1) the equipment with some difficulties in installation and utility conditions,
  - 2) the equipment less utilized because of less frequent experiments,

- 3) the equipment with financial and marketing difficulties in the procurement of consumables and spare parts.
- 4) the expensive equipment in its operation and maintenance.
- (4) The final contents of the Project will be decided by the Japanese side at its discretion.

#### 5. Japan's Grant Aid Programme

The Indonesian side has understood the system and characteristics of Japan's Grant Aid Programme explained in Annex-3 by the Team.

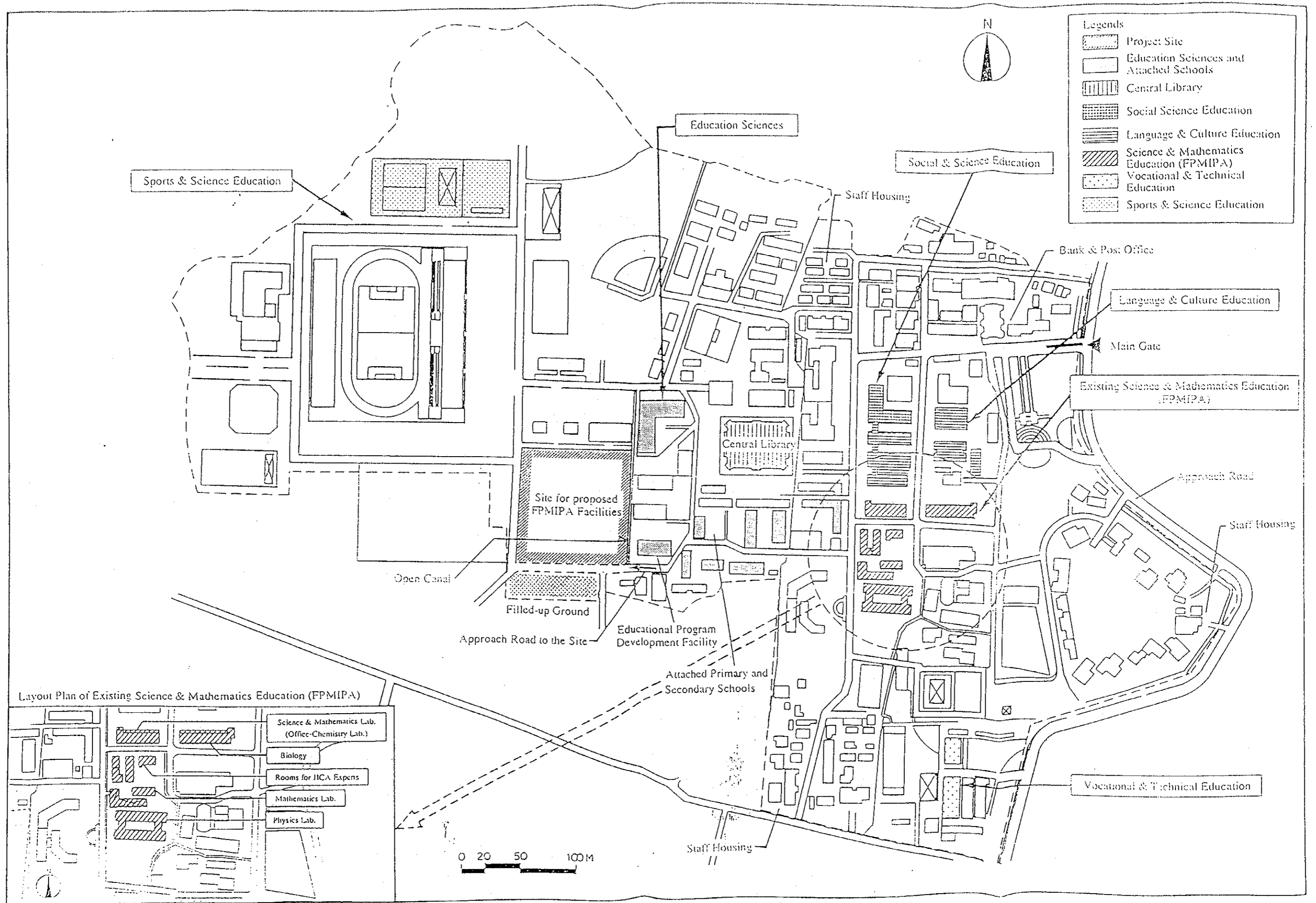
#### 6. Necessary Measures to be Taken by the Indonesian Side

- (1) On condition that the Grant Aid Programme by the Government of Japan is extended to the Project, the Indonesian side will take the necessary measures described in Annex-4 for smooth implementation of the Project. Moreover, the implementing agency will secure the proper and effective operation and maintenance of the buildings and equipment provided under the Project.
- (2) DGHE should also take the necessary measures which is described in the Record of Discussions on the Japanese technical cooperation.
- (3) IKIP Bandung assigns (a) staff member(s), who is in charge of the Project and responsible to supervise the construction and maintenance of the building, to accompany the study team surveying the project site.
- (4) IKIP Malang and IKIP Yogyakarta assign (a) staff member(s), who is in charge of the Project and responsible to supervise the renovation and maintenance of the existing buildings, to accompany the study team surveying the project site.
- (5) Each IKIPs assigns (a) officer(s), who is in charge of the Project and responsible for operation and maintenance of the equipment, to accompany the study team surveying the project site.
- (6) For the smooth operation while surveying the existing facilities, the DGHE shall secure that concerned teaching and administration staffs in 3IKIPs assist the survey.

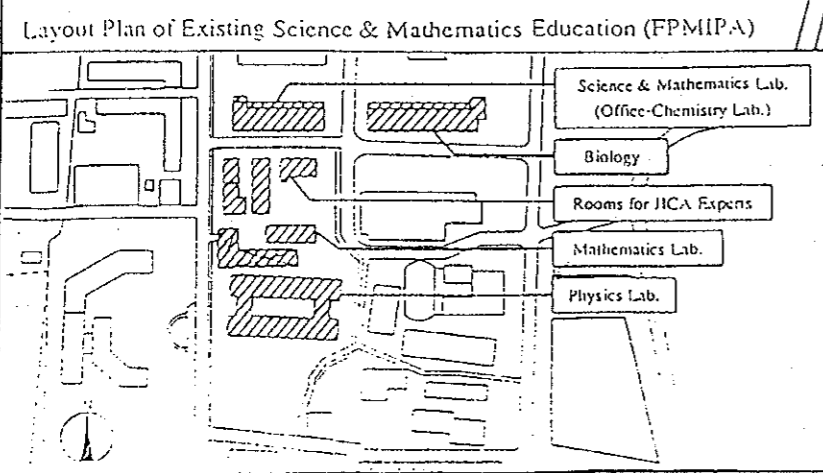
#### 7. Further Schedule of the Study

- (1) JICA will prepare a draft report of the Study, and dispatch a mission in order to explain the contents to the Indonesian side around December, 1998.
- (2) In case that the contents of the report is accepted in principle by the Indonesian side, JICA will complete the final report of the Study and will send it to Indonesia around March, 1999.

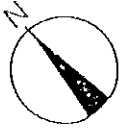





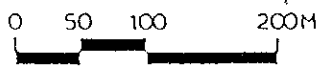
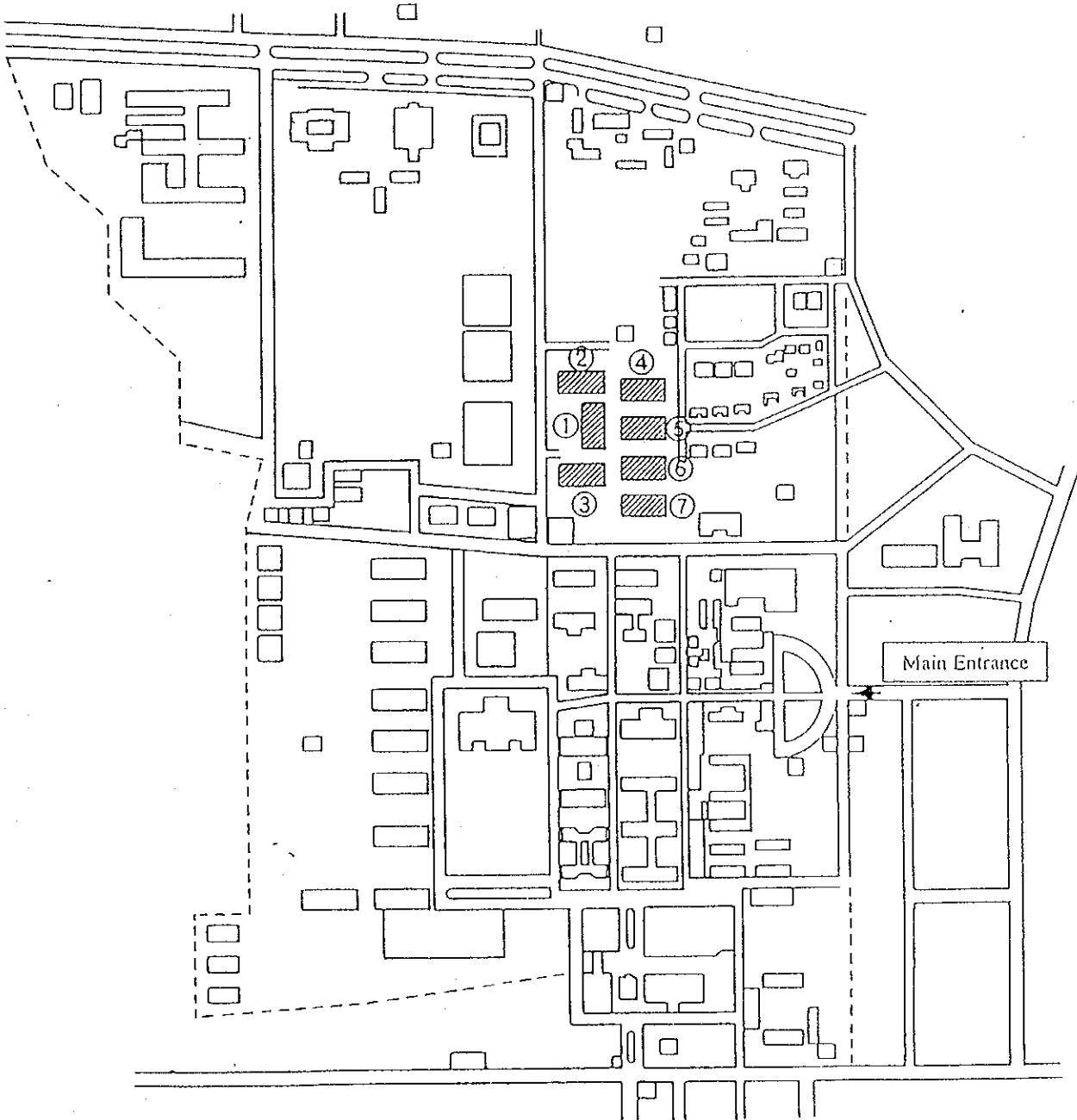
- Legends**
- Project Site
  - Education Sciences and Attached Schools
  - Central Library
  - Social Science Education
  - Language & Culture Education
  - Science & Mathematics Education (FPMIPA)
  - Vocational & Technical Education
  - Sports & Science Education



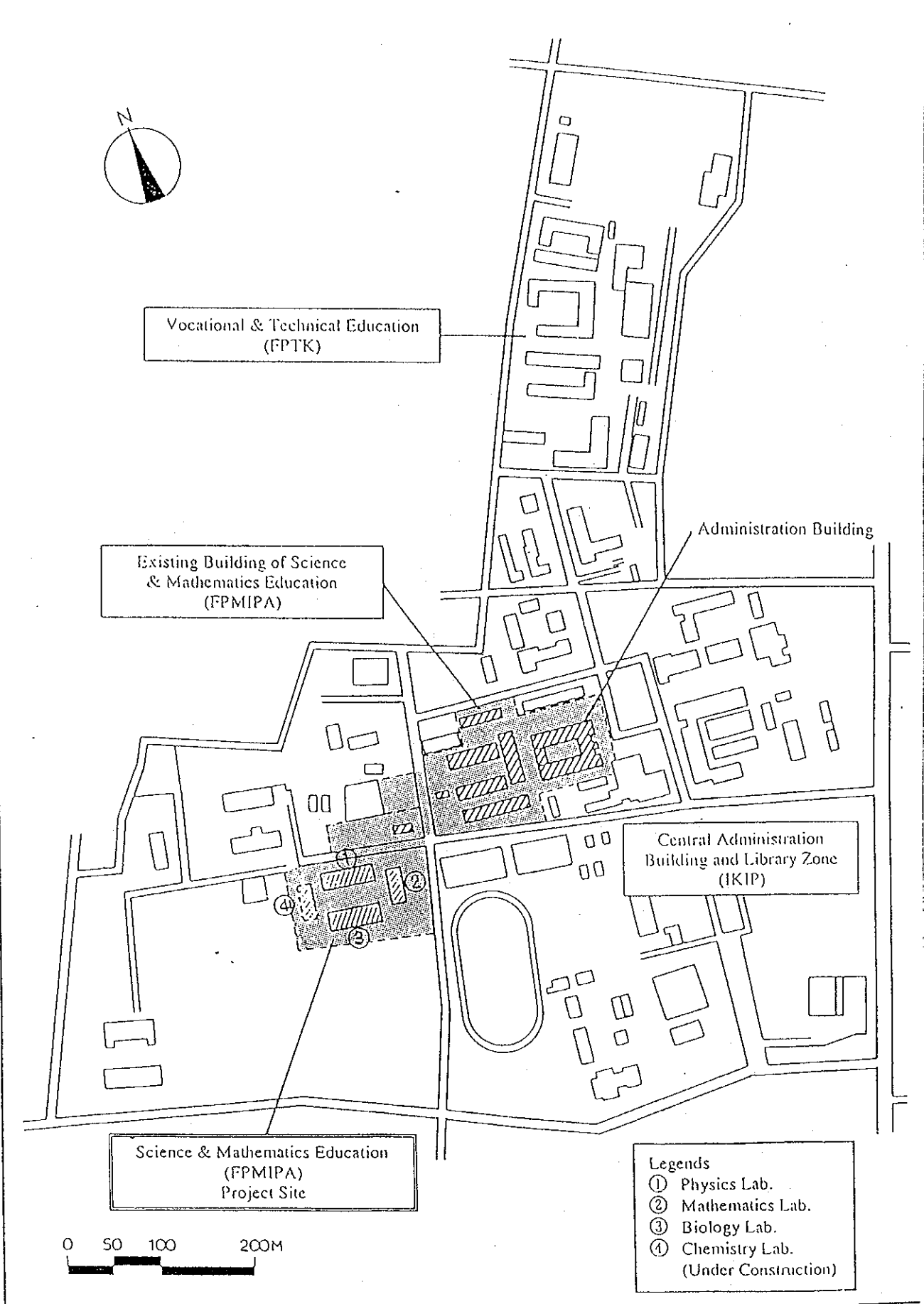




- Legends:
- ① Administration
  - ② Common Classroom
  - ③ Chemistry Laboratory
  - ④ Mathematics Laboratory
  - ⑤ Physics Laboratory
  - ⑥ Biology Laboratory
  - ⑦ General Laboratory
  -  FPMIPA Facilities Area (Science & Mathematics Education)



Annex-1.2 IKIP MALANG Campus Plan



Annex-1.3 IKIP YOGYAKARTA Campus Plan

*M*

## Items Requested by DGHE (Building)

The contents of the request finally submitted by the Indonesian side regarding the facilities at FPMIPA IKIP Bandung are as follows :

Division	Facilities
<p>I Laboratories</p> <p>I-1 Mathematics Laboratories</p> <p>I-2 Physics Laboratories</p> <p>I-3 Chemistry Laboratories</p> <p>I-4 Biology Laboratories</p>	<p>Computer Room</p> <p>Secondary Teaching Laboratory</p> <p>Primary Teaching Laboratory</p> <p>Lecturers Room</p> <p>Basic Physics Laboratory</p> <p>Electronics Laboratory</p> <p>Intermediate &amp; Advance Physics Laboratory</p> <p>Earth &amp; Space Science Laboratory</p> <p>Lecturers Room</p> <p>Basic Chemistry Laboratory</p> <p>Organic / Bio &amp; Food Laboratory</p> <p>Physical &amp; Inorganic Chemistry Laboratory</p> <p>Analytical Chemistry Laboratory</p> <p>Instrumental Analysis Laboratory</p> <p>Lecturers Room</p> <p>General Biology / Plant Structure Laboratory</p> <p>Ecology Laboratory</p> <p>Physiology Laboratory</p> <p>Animal Structure Laboratory</p> <p>Microbiology Laboratory</p> <p>Lecturers Room</p>
<p>II General and Common Classrooms</p>	<p>Classrooms</p> <p>Auditorium</p> <p>Cafeteria</p> <p>Curriculatorium</p> <p>Workshop</p>
<p>III Administration Division, Etc</p>	<p>Dean Office &amp; Experts Room, etc.</p> <p>Administration Office, etc.</p> <p>Other Rooms (Lavatories etc.)</p>

Note 1 Both sides confirm that each facilities mentioned above includes the related common spaces such as corridors storage, machine room, the necessary utilities such as electricity, water supply, sewage, telecommunication, etc. The details of such common spaces and utilities will be discussed further between the Japanese and Indonesian side.

2 The size and capacity of facilities will be determined after further studies





## STANDARD EQUIPMENT LIST

## PHYSICS

Item	Equipment	Item	Equipment
P- 1	AC/DC Ammeter	P- 54	Experimental App., of Ohm's Law
P- 2	AC/DC Voltmeter	P- 55	Experimental Apparatus for Charles' Law
P- 3	Acrylic Glass Block	P- 56	Experimental Ball Set for pendulum
P- 4	Air Table for Dynamics	P- 57	Experimental Resistor Set
P- 5	Ampere Law Experimental Apparatus	P- 58	Experimental Spring Set
P- 6	Amplifier	P- 59	Faraday's Effect App.,
P- 7	Analog Auto Measuring Apparatus	P- 60	Faraday's Magnetic Induction Experimental Set
P- 8	Balmer Series of Hydrogen	P- 61	Flat Bar Set
P- 9	Basic Logic Circuit Trainer Panel	P- 62	Frank-Hertz Apparatus
P- 10	Beaker	P- 63	Free Fall Experimental Apparatus
P- 11	BNC Coaxial Cable	P- 64	Function Generator
P- 12	Bunsen Burner	P- 65	Galvanometer
P- 13	Capacitor Set	P- 66	Gauss Meter
P- 14	Circuit for Multiflexier and Demultiflexier	P- 67	Gyroscope with stand base
P- 15	Circuit Trainer	P- 68	Hall Effect Experimental Set
P- 16	Coil for Magnetizing	P- 69	Halogen Lamp Light Source
P- 17	Condenser Circuit Experimental Apparatus	P- 70	Helical Spring Pendulum Set
P- 18	Coulomb Meter	P- 71	He-Ne Gas Laser
P- 19	Counter Circuit	P- 72	High Frequency Circuit Trainer
P- 20	DC Ammeter	P- 73	Hydrometer
P- 21	DC Microammeter	P- 74	I/O Interface board
P- 22	DC Microvoltmeter	P- 75	Induction Coil Set
P- 23	DC Milliammeter	P- 76	Integrating Watt Meter
P- 24	DC Millivolt meter	P- 77	Iron Stand
P- 25	DC Voltmeter	P- 78	Jolly Balance
P- 26	Density Measuring Materials	P- 79	Kater's Reversible Pendulum Set
P- 27	Diffraction Grating Prism	P- 80	Kerr Effect Experimental Set
P- 28	Digital Circuit Tester	P- 81	LC Experimental Demonstrator
P- 29	Diode Set	P- 82	LCR Bridge
P- 30	Du Noy Surface Tension Meter	P- 83	Lead Wire Set, 10 pcs.
P- 31	Dynamic Cart with Track	P- 84	Leaf Electroscope
P- 32	e/m Experimental Apparatus	P- 85	Lens Set(Convex)
P- 33	Elasticity of Flexure Apparatus	P- 86	Lens with holder
P- 34	Electric Circuit Trainer	P- 87	Light Detector
P- 35	Electric Current -Magnetic Field Measuring App	P- 88	Light Transmitter and Reciever
P- 36	Electric Furnace	P- 89	Light Velocity Measuring Apparatus
P- 37	Electric Turntable Set	P- 90	Linear Air Truck
P- 38	Electromagnet	P- 91	Linear Expansion Apparatus
P- 39	Electromagnetic Force Demonstrator	P- 92	Logic Circuit Experimental Apparatus
P- 40	Electronic Circuit Experimental Apparatus	P- 93	Logistic Circuit Trainer
P- 41	Electronic Digital Counter	P- 94	Low Frequency Oscillator
P- 42	Electronic Precision Balance	P- 95	Lux Meter
P- 43	Electrostatic Fields Apparatus Set	P- 96	Magnet Model
P- 44	Equipotential Experimental Set	P- 97	Magnetic Circuit Training App.,
P- 45	Eudiometer	P- 98	Main Voltage Wave Observing Apparatus
P- 46	Experimentat App., of Second Law of Motion	P- 99	Measuring Tape
P- 47	Experimental App. 'of Critical Angle of Liquid	P- 100	Mercury Tongs
P- 48	Experimental App. 'of Refraction of Liquid	P- 101	Michelson Interferometer
P- 49	Experimental App., for Coulomb's Law	P- 102	Microscope Objective Lens
P- 50	Experimental App., for First Law of Motion	P- 103	Milikan's Elementary Charge App.,
P- 51	Experimental App., for Hook's Law	P- 104	Multimeter, digital
P- 52	Experimental App. for Parallel Plate Capacitor	P- 105	One-mol Substances
P- 53	Experimental App., of Boyle-Charles' Law	P- 106	Optical Bench Set