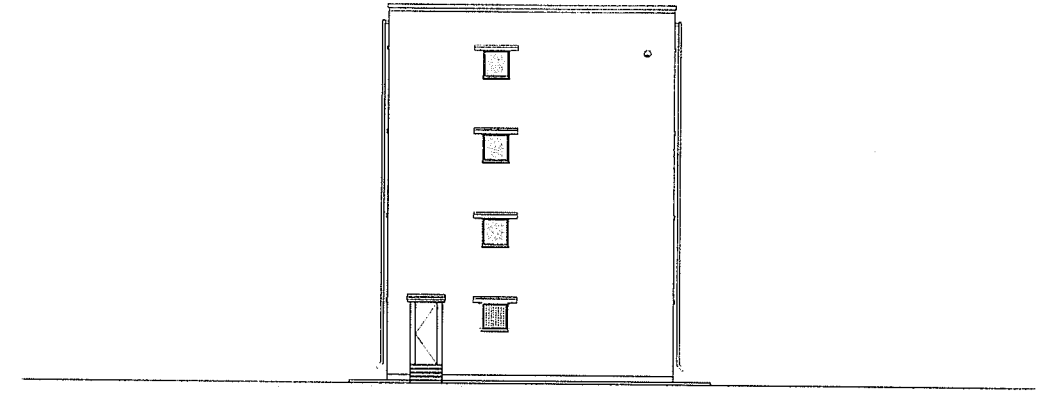
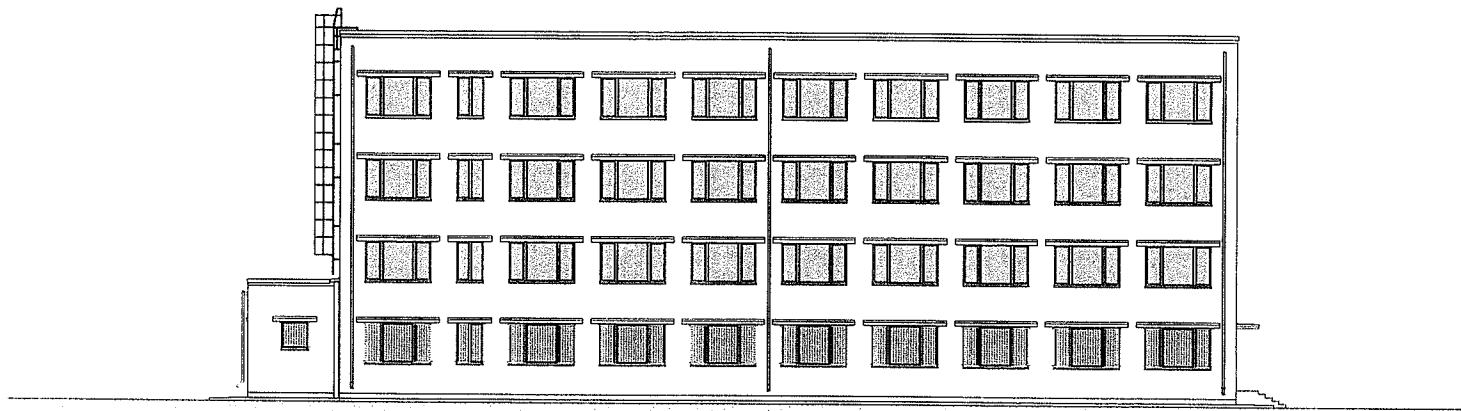


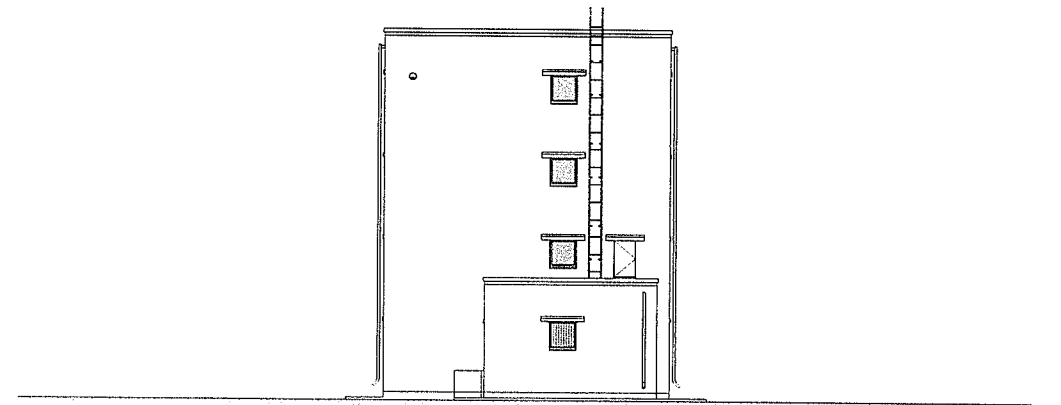
ELEVATION (CLASSROOM SIDE)



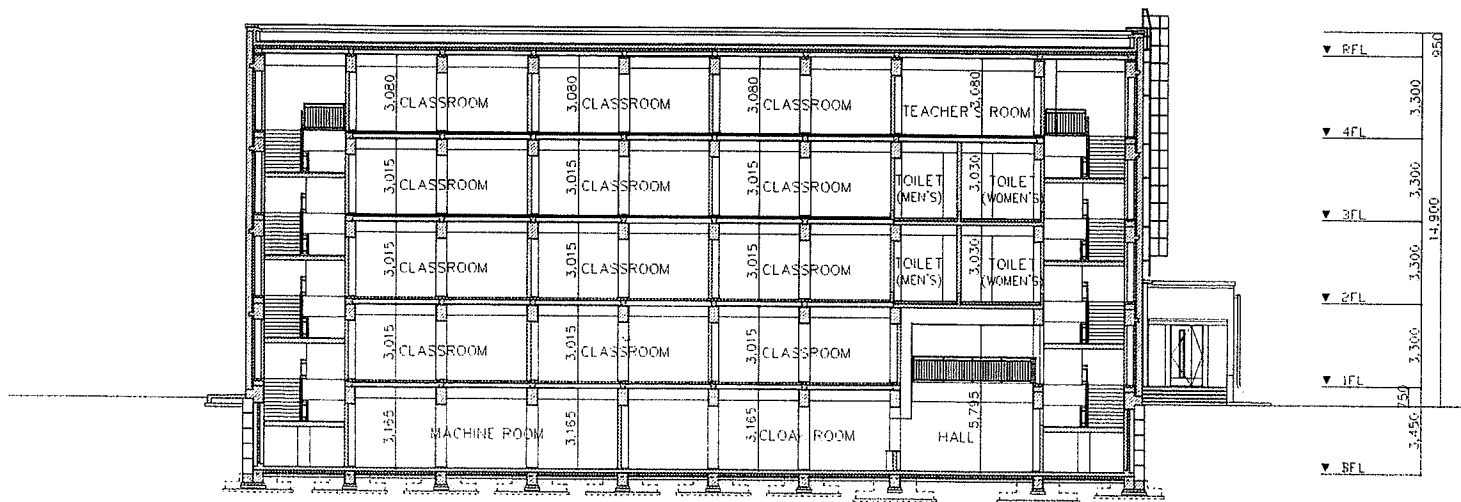
ELEVATION (CUB ENTRANCE SIDE)



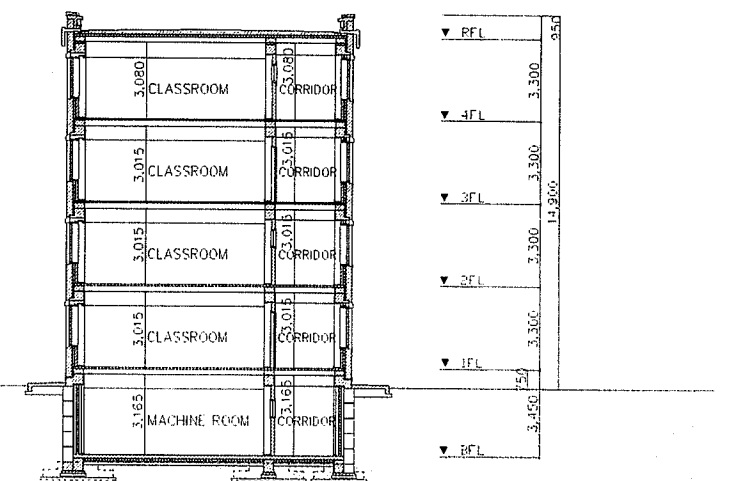
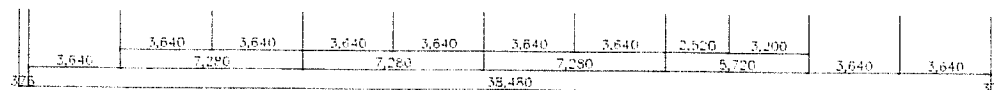
ELEVATION (CORRIDOR SIDE)



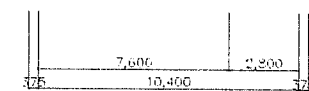
ELEVATION (ENTRANCE SIDE)



LONGITUDINAL SECTION



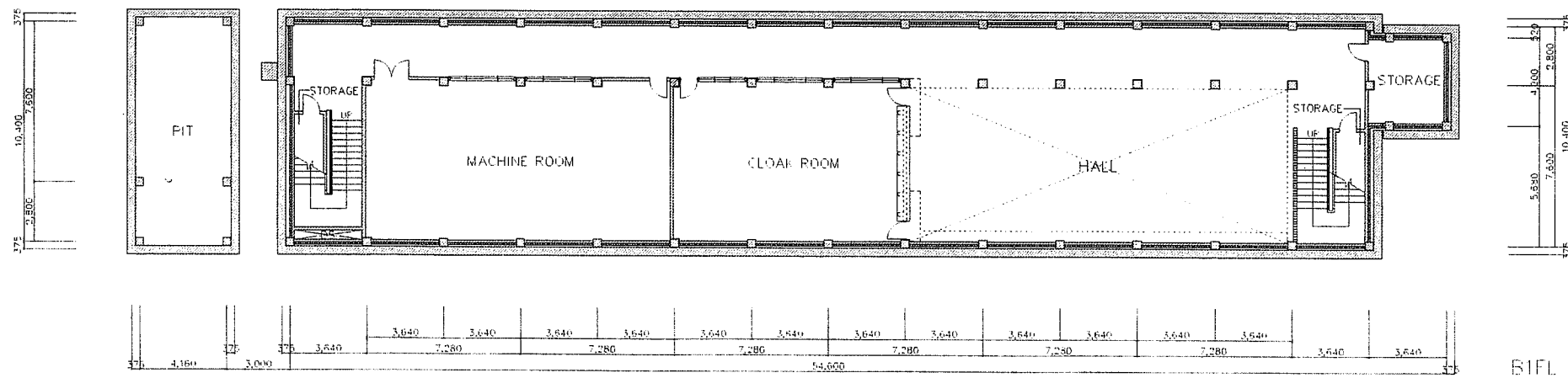
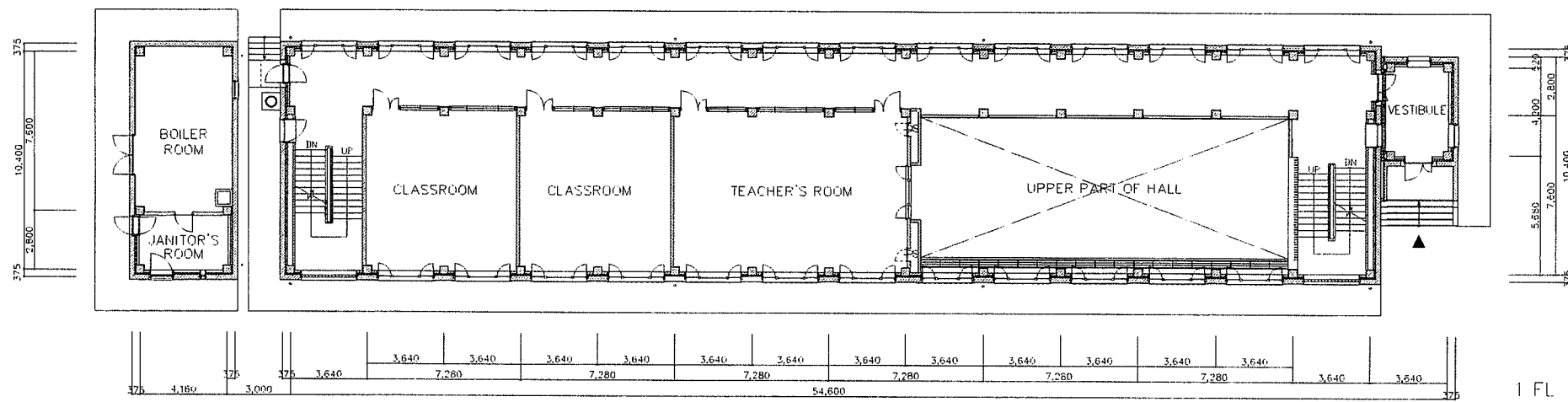
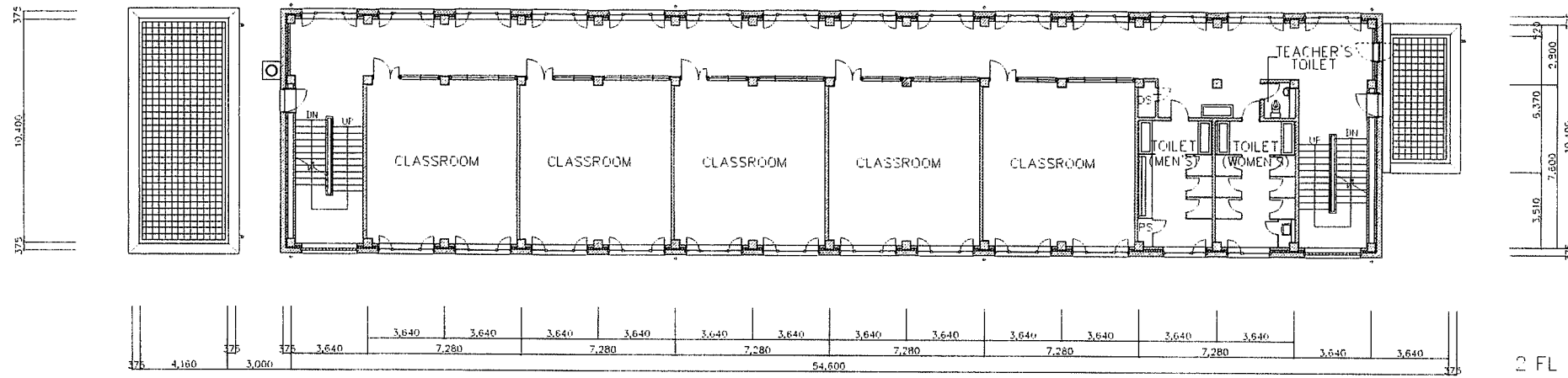
CROSS SECTION



TYPE-3 (12 CLASSROOMS) ELEVATION-SECTION

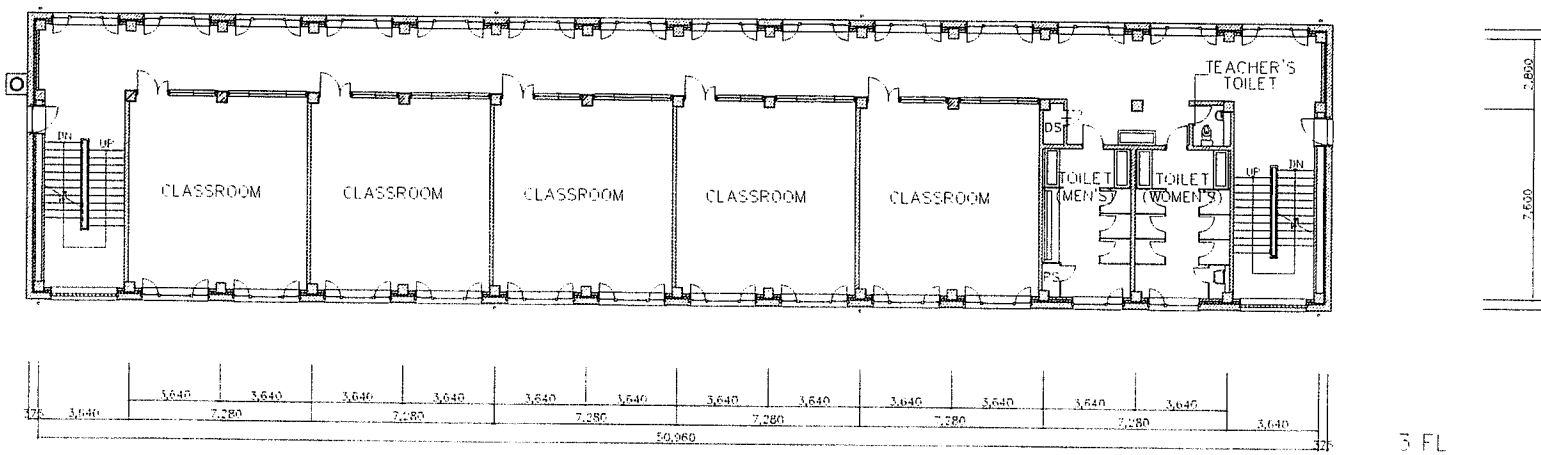
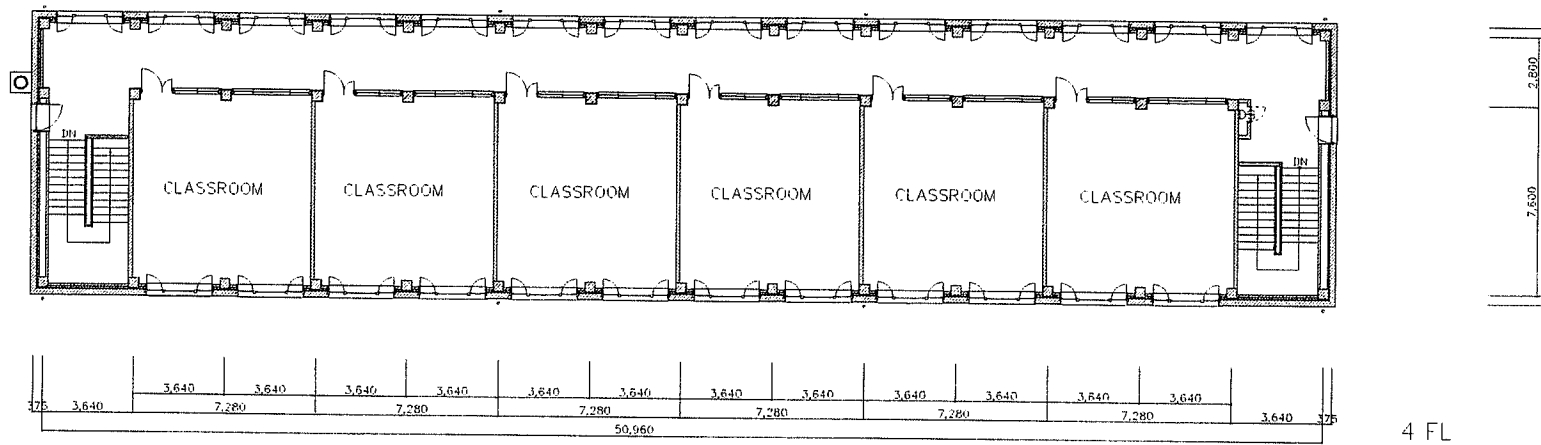
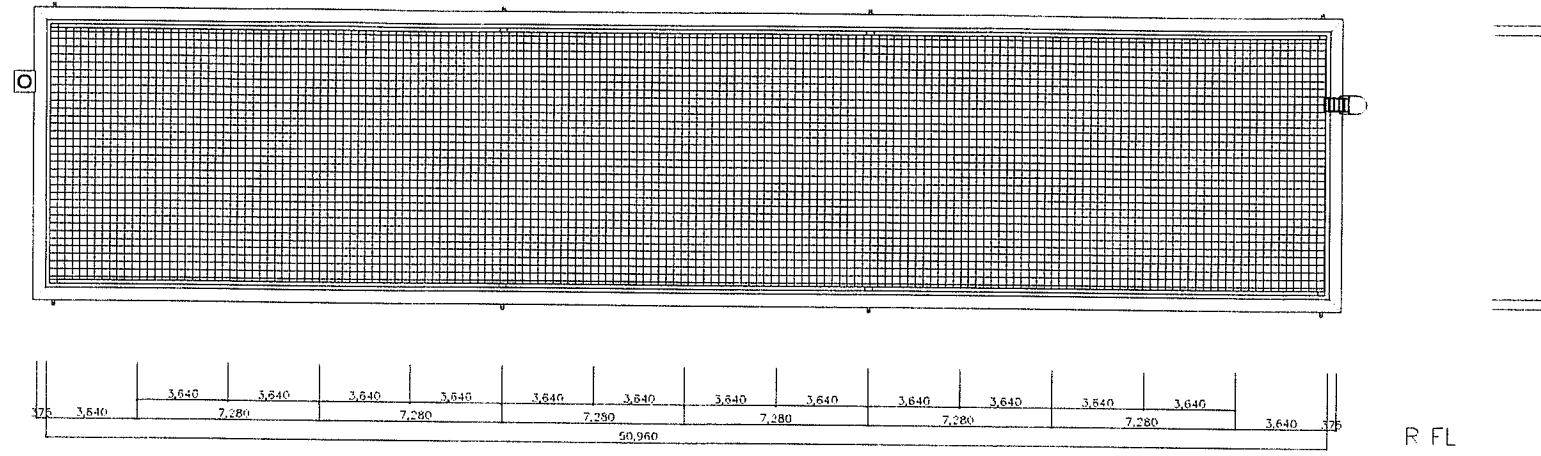
SCALE 1:300

※The drawings show R type. L type shall have mirrored plans of R type.



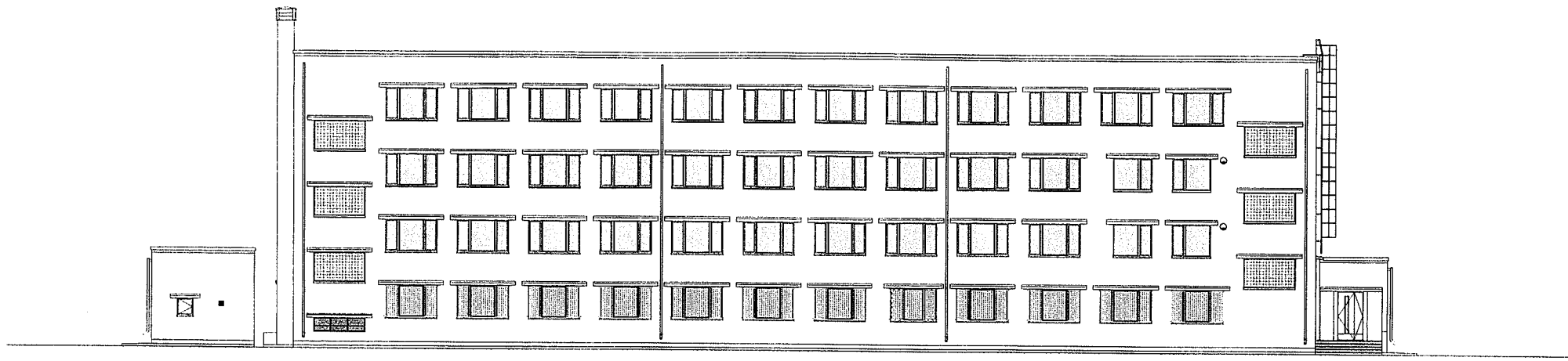
TYPE-4 (18 CLASSROOMS) PLAN-1  
SCALE 1 : 300

※The drawings show R type. L type shall have mirrored plans of R type.

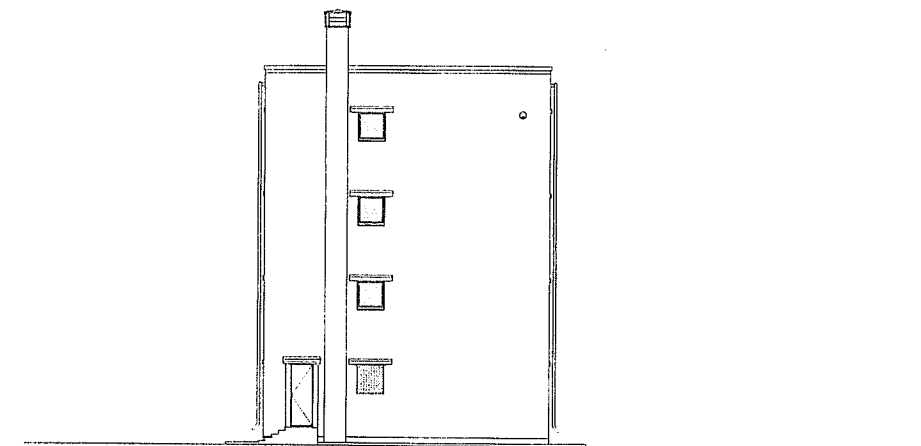


TYPE-4 (18 CLASSROOMS) PLAN-2  
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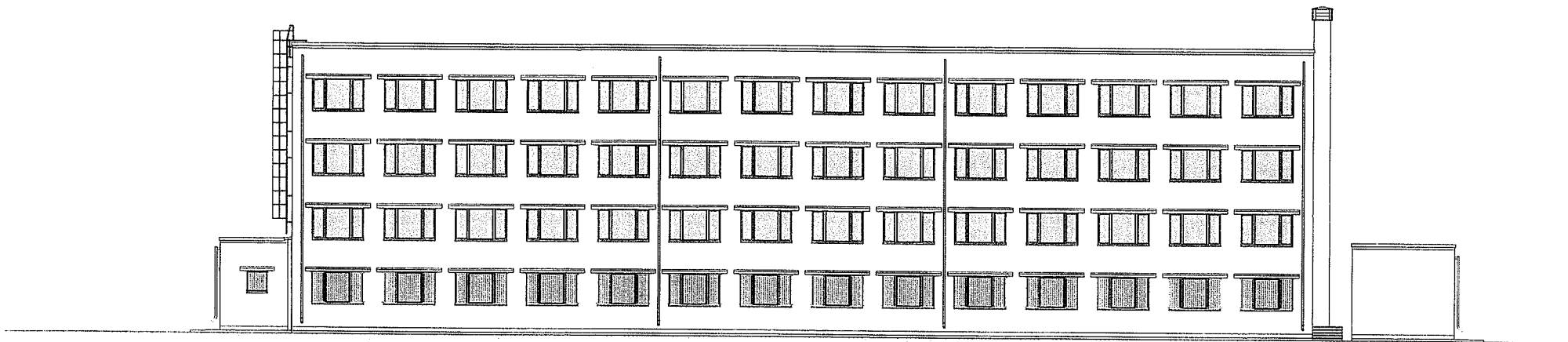
※The drawings show R type. L type shall have mirrored plans of R type.



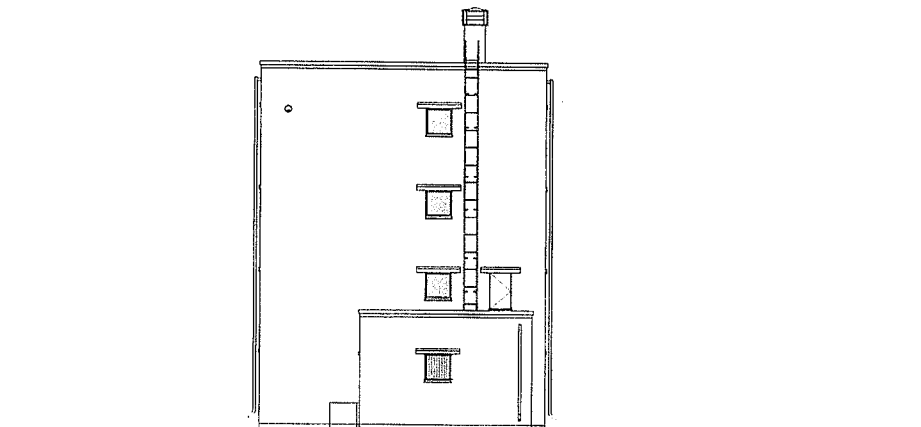
ELEVATION (CLASSROOM SIDE)



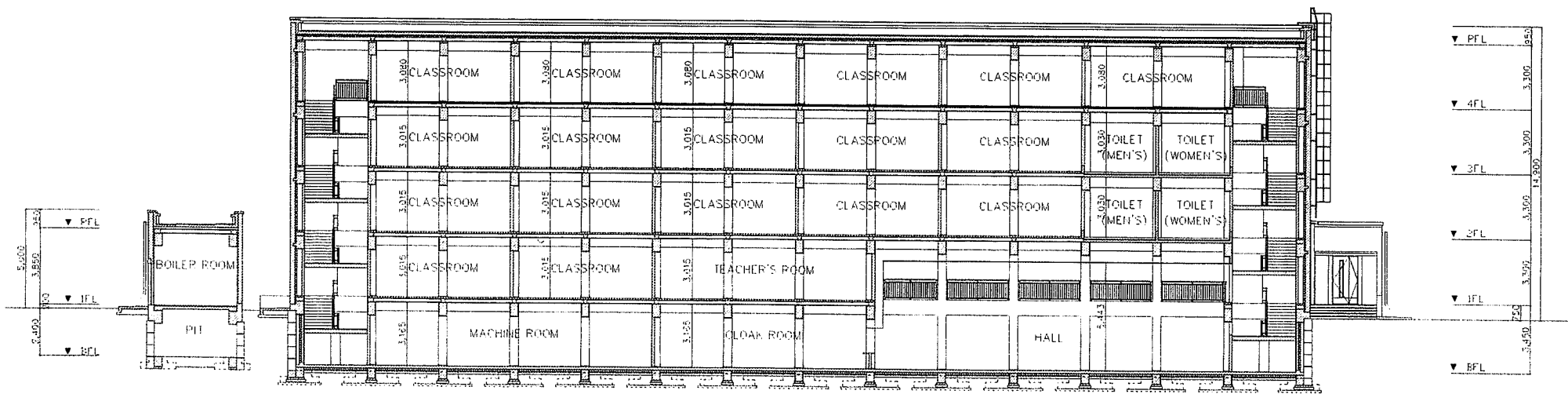
ELEVATION (SUB ENTRANCE SIDE)



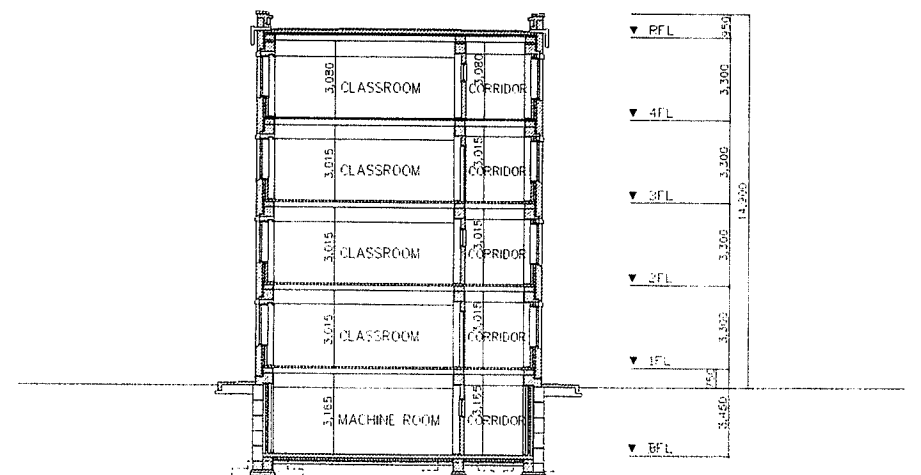
ELEVATION (CORRIDOR SIDE)



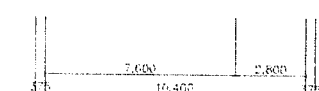
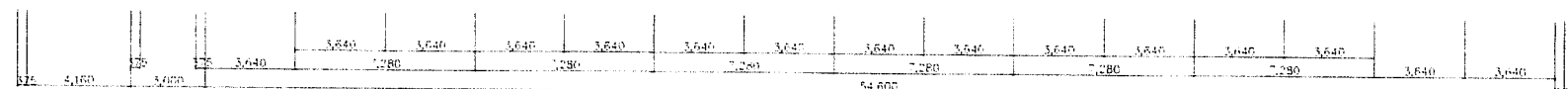
ELEVATION (ENTRANCE SIDE)



LONGITUDINAL SECTION



CROSS SECTION



TYPE-4 (18 CLASSROOMS) ELEVATION-SECTION  
SCALE 1 : 300

※The drawings show R type. L type shall have mirrored plans of R type.

## 2-2-4 Implementation Plan

### 2-2-4-1 Implementation Policy

The Project is to construct the facilities for 17 schools and provide educational equipment and furniture within a period of specified time with avoiding the cold winter and utilizing local contractors and locally available materials as much as possible. It is necessary to prepare construction plans fully, taking into account the construction capabilities of the Mongolian side, including local construction and material procurement.

#### (1) Principles for Project Implementation

The Project will be implemented on the basis of this report. After Project approval by the Japanese Government Cabinet Meeting, the Exchange of Notes for the Project will be signed by both the Mongolian and Japanese Governments. Then, the Project will be implemented in accordance with the following principles:

- ① The Project will be funded with tax money paid by the Japanese people and implemented under the rules of Japan's Grant Aid Cooperation within Japanese budgetary system.
- ② The Government of Mongolia will sign a contract with a consultant of Japanese nationality and entrust them a) to prepare the detailed designs of the Project, and b) to assist in tendering procedures for selection of a contractor, and c) to conduct construction supervision work in accordance with this report.
- ③ The Government of Mongolia will select a Japanese corporate contractor through a competitive bidding process and then sign a full term contract with the selected contractor for the construction of the Project and the procurement of necessary equipment and furniture.

#### (2) Principles for Project Construction

- ① To efficiently conduct construction within a limited time period and to employ local consultants and contractors who are familiar with local construction and material procurement as much as possible.
- ② To efficiently conduct construction under strict safety standards and quality control, as well as adhere to strict management of the construction schedules. Also, to transfer to the Mongolian side, the knowledge and practice of the Japanese

contractor in regards to those management and other standards and procedures.

- ③ To use, as much as possible, locally manufactured or easily available imported construction materials, equipment and furniture for the purpose of simple and economical maintenance of completed facilities as well as equipment provided in the Project.

### (3) Project Implementation Structure

As regards to the structure of implementation for the Project, the responsible agency concerned with the Mongolian side is MOSTEC. Actual work concerned with Project implementation will be undertaken by the Finance and Economy Department of MOSTEC. MOSTEC will take actual and full responsibility for the items listed below:

- ① The signing of the contract between the Japanese consultant and the contractor;
- ② The opening of and paying fees for the Project's bank account;
- ③ The issuing of the Authorization to Pay (A/P);
- ④ The approval of all necessary designs and documents;
- ⑤ The supervision of UBC Education Department which is the implementation agency for the Project;
- ⑥ The acquisition of budget and the allocation of funds to the Mongolian side for work done;
- ⑦ The issue of various certificates and documents, such as the Certificates of Completion, etc.

The implementing agency on the Project is UBC Education Department, and will take responsibility for items listed below:

- ① The applying for and acquiring of all necessary permits to start construction work;
- ② The re-confirmation of land possession and boundary lines;
- ③ The implementation and completion of all works borne by the Mongolian side.

## 2-2-4-2 Implementation Conditions

17 total Project schools are located in the center of UBC except Nalaikha District (about 50 km from UBC), and Baganor District (about 140 km from UBC).

The Project is to construct school buildings in a fairly vast area of which the climate is very severe. Thus, it is necessary to prepare very precise construction plans to suit the

area conditions. The following are policies regarding preparation of the construction plans.

### (1) Division of Construction Periods

The construction plans, which include approximately 36,000m<sup>2</sup> of total floor area, are divided into 3 stages with range to 3 years (1 stage in 1 year each) in order to keep each stage of construction at an appropriate size. Among 17 Project schools, the first and second stages are devoted to constructing the new schools, which are most urgently needed, and the second and third stages to those existing schools according to the priority list provided by the Mongolian side. Table 2-13 shows the Project schools in each construction stage.

Table 2-13 Project Schools and Classrooms in each Construction Stage

	1st Stage	2nd Stage	3rd Stage	Total
Name of School (Number. of Classrooms constructed in this Project)	No. 48 School (18) No. 61 School (18) No. 112 School (18) No. 114 School (18)	No. 115 School (18) No.116 School (18) No.97 School (6) No.87 School (18) No.39 School (6) No.68 School (6)	No.14 School(8) No.33 School(8) No.44 School(8) No.17 School(8) Iredui C.S (8) Goromt C.S (18) Borovsrol C.S (12)	
Number of schools	4	6	7	17
Total Number of classrooms to be constructed	72	72	70	214

C.S.: Complex School

The number within the brackets is the number of classrooms to be constructed in the Project

### (2) Schedule Planning

Project implementation includes a) the construction work, b) the mechanical/electrical work, and c) the furniture and equipment procurement work. Each work-step requires procurement of necessary materials and equipment, and the arrangement of skilled workers who can follow the work schedules. As various types of work will be conducted simultaneously at every Project site, the coordination of procurement and all the work arrangements, etc will be very detailed and complicated. Also, because the concrete work has to be completed in the limited summer time, work delays are not acceptable.

### (3) Measures for Winter Climate Construction

It is virtually impossible to perform any kind of earth work (digging, excavating, etc) in the frozen Mongolian winters without special construction procedures; and thus, should be avoided because of the prohibitive costs involved. Special attention to the condition of laborers will be considered during work on severely cold days. This should be observed and considered carefully in the preparation of the working schedule.

### (4) Preparation Work by Mongolian side Prior to Construction

Some Project school sites require land preparation, cut and fill, and construction of retaining wall by the Mongolian side prior to Project construction. Those works shall be conducted without delay so that Project construction will not be affected.

### (5) Prevention of Accidents to Students and School Staffs

At the Project sites on existing school grounds where new buildings will be constructed, strict safety measures should be initiated to prevent students and school staffs from possible injury.

### (6) Procurement Plan

The construction and finishing materials, furniture and equipment, etc, are divided into three categories: a) items which are produced in Mongolia, b) items which are not produced in Mongolia but are easily procured in the UBC marketplace, and c) items which must be imported from neighboring countries. Therefore, procurement schedules, including enough space to store supplies and materials, must be prepared with utmost care and detail.

## 2-2-4-3 Scope of Works

### (1) Scope of Japanese Side

In accordance with the principles laid out in the Grant Aid Cooperation Project of the Government of Japan, the following works will be undertaken by the Japanese side to provide:

- ① Construction of school buildings including 214 classrooms, toilets, teachers' rooms and cloak rooms;
- ② Basic school furniture;
- ③ Basic teaching materials and maintenance tools.



## (2) Scope of Mongolian Side

In accordance with the principles laid out in the Grant Aid Cooperation Project of the Government of Japan, the following works will be undertaken by the recipient country, in this case, Mongolian:

- ① Securing of Land for the Project;
- ② All land preparation, cut and fill work as well as retaining walls;
- ③ Removal of existing obstructions, including buried objects;
- ④ Securing of access roads to each Project site;
- ⑤ Securing of space for storage of construction materials;
- ⑥ Securing and connecting of temporary electrical power, water, and sewage lines for construction;
- ⑦ Securing and connecting of infrastructure lines to each Project site including but not limited to, power lines, heating supply lines, water supply pipes, drainage lines, and telephone lines;
- ⑧ Installation of gates and fences, planting of trees, and landscaping work;
- ⑨ The providing of equipment and furniture other than those covered by the Project

## 2-2-4-4 Consultant Supervision

In order to complete the huge amount of school building construction in this Project and do so simultaneously within the limited time period, it is absolutely necessary that construction supervision is done carefully and thoroughly, including the frequent reporting to, and close communication with, the implementing agency, as well as giving the appropriate directions and guidance to contractors.

The supervision work will be done in cooperation between the offices in Mongolia and Japan, and will proceed simultaneous communication to the resident architect as follows:

### (1) General Supervision

Control of overall Project schedules, including all works to be accomplished in the Project, overall technical evaluation, advice and assistance on all items outside the resident architect's expertise, and all necessary and periodic reporting to JICA headquarters will be conducted by the general supervisor. Architects and engineers who have been involved in the Project since the Detailed Design Study stage will support the general supervisor.

## (2) Supervision by Resident Architect

An architect involved in the development of the detailed designs will be assigned as a resident architect for Project construction in Mongolia. The resident architect will undertake, with the assistance of local consultants, various duties including consulting of daily work schedules, evaluation and advice on the shop drawings, approval of methodology, quality control guidance and use of materials, technical guidance and direction to contractors, necessary and periodic reporting to UBC Department of Education and to MOSTEC intermediate and completion inspections, collection of information and data related to the Project control and preparation of construction supervision reports. The consultant's main office will be established in UBC during three stages of the Project. The organization structure for Project construction supervision is as shown in Figure2-6.

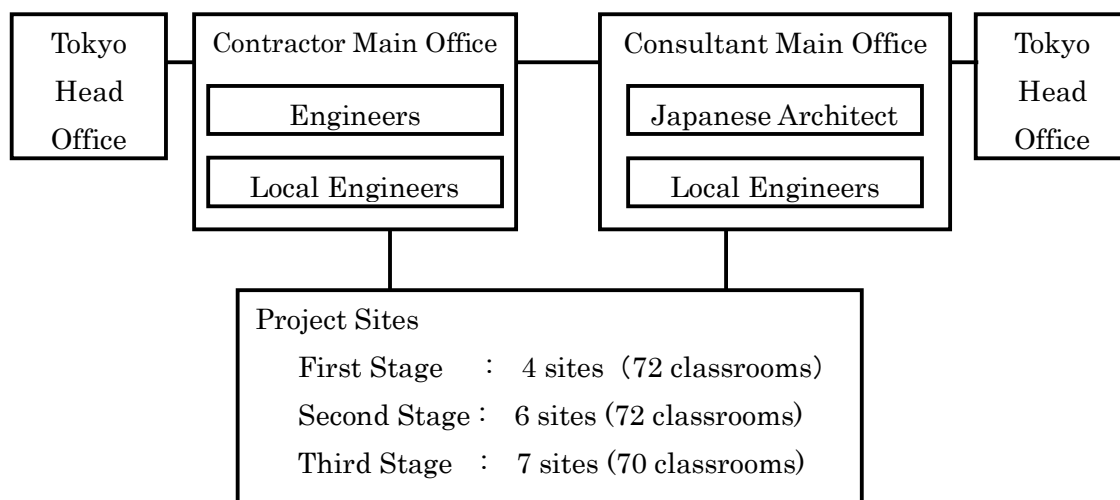


Figure 2-6 Organization Chart for Construction Supervision for the Project

## 2-2-4-5 Quality Control Plans

The quality control of the Project goes forward with the utmost attention to performance and the confirming of procedures and details, including the various tests and inspections as described in the construction plans, shop drawings and material samples, as well as closely following the items stipulated in the contract documents and the construction supervision plans. Table 2-14 shows the major items needing very careful quality control during the structural work stage.

Table 2-14 Major Quality Control Items During Structural Work

Work	QC Items	Method of Examination	Frequency of Examination
Earth Work	Confirmation of soil condition of finish grade	Observation	Once per site at the completion of excavation
Re-bar and Form Works	Re-bar material	Checking Mill sheets Tension Test	Every lot Every size
	Re-bar arrangement	Inspection for re-bar arrangement	Before concrete casting
	Form Work	Inspection for form work	Before concrete casting
Concrete Works	Materials	Cement : quality test results Aggregate : sieve analysis test Water : quality test results	At design of mix proportion
	Trial Mixing	Slump test, concrete temperature measurement, air content test, Chloride test	Every type of concrete
	Casting	Slump test, concrete temperature measurement, air content test, Chloride test	Upon concrete casting
	Concrete strength	Compression test for test pieces	Upon concrete casting
Pre-cast Concrete Panel	Materials and Capacity of Factory	Factory Inspection	Every Factory
	Strength	Deflection test Compression test	Every Factory

As Mongolia is cold country, the quality control shall also be as follows:

- ① In the winter, if floor slabs, tanks, or utility pipes in the underground pits are raised by frost heaving, cracks in the structure and water leakage might occur. To avoid this, the floor slabs, tanks, and utility pipes, etc. must be laid below the level of the frozen soil, or laid on improved soil.
- ② Water leakage in the roof from capillary action must be avoided.
- ③ The checking of contractor's blueprints and all other related inspecting should be strict and careful, so as not to make heat bridges.
- ④ Keep water and sewage water in the pipes from freezing.

- ⑤ The methodological plan for pre-cast concrete (PC) must be strict, because the re-bar arrangements cannot be checked after casting concrete is done. A good and reliable factory inspection system should be established.

#### 2-2-4-6 Procurement Plan

Regarding construction materials, cement imported from China and the reinforcement bars and aggregates, both of which originate in Mongolia, are available on the local market. As for finishing materials: bricks, which are produced in Russia, are available on the local market. Most other finishing materials, which come from China or Russia, are also available on the local market. Based on the field study results attained during the Basic Design Study period, the materials shown in Table 2-15 will be procured for the Project. Any materials which originate in Mongolia will be given priority after checking the quality.

Table 2 – 15 List of Construction Materials and Educational Equipment to be Procured

Materials & Equipment	Procurement	Product Origin	Remarks
(Materials for Building Construction)			
Cement	UBC	China	Easily available. No quality problem.
Concrete aggregates	Darkhan	Darkhan	Easily available. No quality problem.
Reinforcing bars and steel frames	Darkhan	Darkhan	Easily available. No quality problem. Have a factory following JIS (Japan Industrial Standards)
Forms for concrete work	UBC	China	Easily available. No quality problem.
Bricks	UBC	Russia & UBC	Easily available. No quality problem.
Pre-cast concrete products	UBC	UBC	Easily available. No quality problem.
Lumber	UBC	UBC	
Finishing materials	UBC	China	Easily available. No quality problem.
Metal accessories and fittings	UBC	China	
Glass and glass block	UBC	China	
Pain and water proofing materials	UBC	China	
Insulation materials	UBC	China	
(Furniture Work)			
Furniture	UBC	UBC	Lumber procured in Mongolia is used
(Materials for Electrical Work)			
Distribution board	UBC	China or Russia	Easily available. No quality problem.
Cables & wires	UBC		
Conduit pipe	UBC		
Lighting fixtures	UBC		
Small current equipment and alarms	UBC		
(Materials & Equipment for Water, Sewerage, and Heating)			
Galvanized steel pipes	UBC	China or Russia	Easily available. No quality problem.
Valves & pipe fittings	UBC		
Pumps & boilers	UBC		
Radiators	UBC		
Sanitary wares	UBC		
(Educational Equipment & Materials)			
Maps and charts	UBC	UBC	Easily available. No quality problem.
OHP	Japan or OECD member countries	Japan or OECD member countries	
Other educational equipment	China	China	
Maintenance Tools	China	China	

## 2-2-4-7 Implementation Schedule

For smooth implementation of the Project, all work and proceedings borne by the Mongolian and Japanese sides shall be done without any delay. After the Exchange of Notes for the Project are signed by the Governments of Mongolia and Japan, implementation of the Project will proceed with the Detailed Design stage, the tendering and signing of contract stage, the building construction and equipment procurement stage.

### (1) Detailed Design Stages

Based on the Basic Design of the Project, the tender documents will be prepared. The tender documents include Detailed Design drawings, specifications, bill of quantities. During the Detailed Design preparation stage, the consultants will hold discussions with the responsible agencies of the Government of Mongolia. After acquiring of the documents from the Government of Mongolia, the tender of construction will be conducted. It may take approximately four and half months for these procedures to take place and be completed.

### (2) Tendering and Signing of Contracts

After the Detailed Design stage, evaluation of the candidate contractors will be conducted in Japan (called P/Q, pre-qualification). Based on those pre-qualifications, the project implementation agency of Mongolia will call for the tendering of the Project witnessed by official personnel related to the Project. The lowest bidder will be further evaluated if the tendering contents are appropriate. After successful evaluation, a bidder will be selected as the contractor and will sign the Project construction contract(s) with the Government of Mongolia, which means MOSTEC. It will take approximately 2 months for these procedures to take place and be completed.

### (3) Building Construction and Equipment Installation Stages

After the signing of the contract and verification by the Government of Japan, the contractor will start construction work. From an experienced estimate of the total amount of work and components involved in the facilities, and supposing that the material and equipment procurement by the Mongolian side is smoothly conducted, construction may take 12 months per each construction stage. The schedule is shown in Figure 2-7.

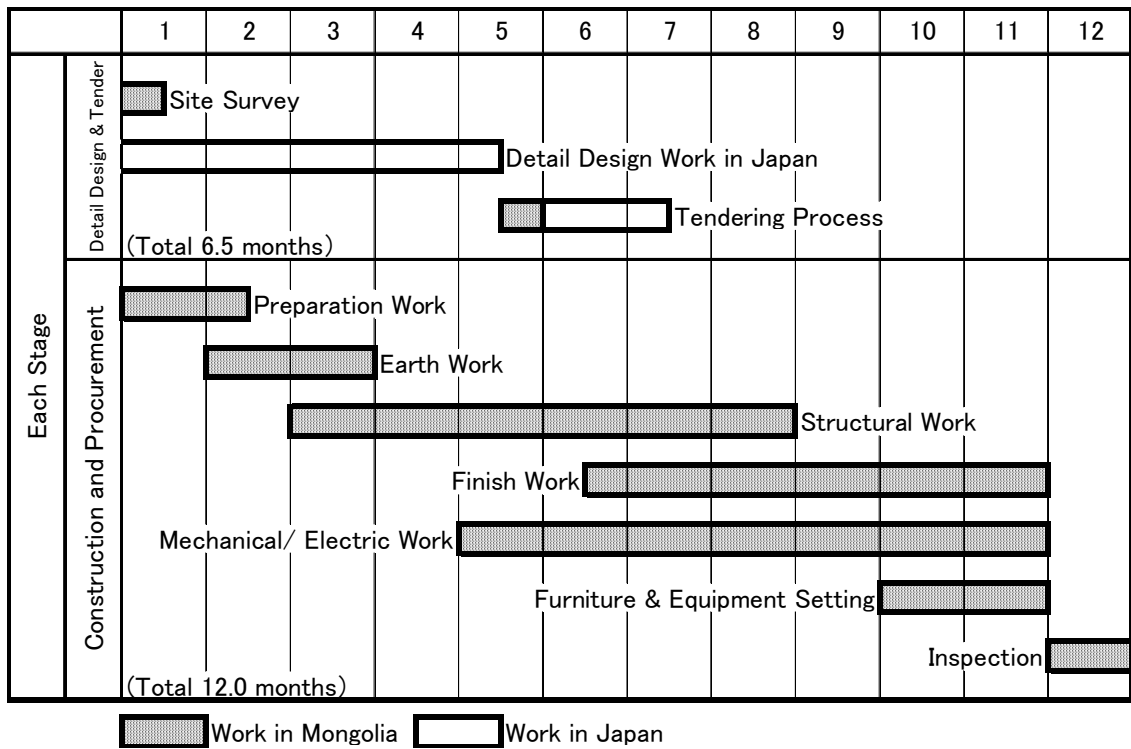


Figure 2-7 Construction Schedule

## 2-3 Obligations of Recipient Country

As a basic principle, the Government of Japan requests recipient country (Mongolia) to share the following obligations of the Project:

- (1) To provide the Japanese side, as soon as possible, the necessary information and materials required for the Project;
- (2) To secure the land for the Project and its building rights. To remove all existing obstacles on and under the ground on the site of Project schools, then level the ground, fill and/or cut as necessary and construct a retaining wall as required, all prior to the start of construction (see Table 2-16);
  - ① To fill and compact the fill (soil) for school site No.116 because this site is nearby a creek, and so has the possibility of being flooded;
  - ② To level the ground by filling or cutting as required at school sites No.17, No.39, No.61, No.112, and No.115;
  - ③ To demolish and remove, prior to construction, any and all existing structures and/or debris such as concrete and pavement pieces, border stones, trees, abandoned wooden huts, abandoned buried pipes and electric cables at the proposed school sites No.14, No.17, No.33, No.39, No.44, No.48, No.61, No.68, and at the Iredui and Borovsrol Complexes, and No.112.
- (3) To secure access roads leading to all construction sites planned in the Project, and improve them if necessary for easy access to each site. They must be in good enough condition so that vehicles carrying construction materials (pumping trucks and cement trucks, etc.) will be able to reach the sites safely;
- (4) To bear commissions, handing charges and other necessary fees related to the Bank Arrangement (B/A) and the Authorization to Pay (A/P) to a bank in Japan;
- (5) To acquire permits, approvals, and any other authorizations required for the work that is undertaken during the implementation process of this Project;
- (6) To ensure prompt unloading of and customs clearance at ports of disembarkation in the country and internal transportation therein of products, machinery, equipment, and materials purchased Japan's grant aid;
- (7) To exempt Japanese nationals from customs duties, internal taxes and fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contracts;
- (8) To accord Japanese nationals whose services may be required in connection with



the supply of the products and services under the verified contracts such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work;

- (9) To extend all infrastructure to the construction sites according to the Japanese side's request, which is based on the work schedules (see Table 2-16);

①Power Source for Heating Facility and Hot-water Supply System

When the Japanese side judges that it is possible to use a heating facility of UBC adjoining the construction site, the Japanese side will execute the piping work within the school site. On the other hand, the Mongolian side shall be responsible for piping work outside the site, extension work, and submission of an application to the Department of Heating at its own expense. When the Japanese side judges that it is impossible to use a heating facility of UBC, the Japanese side will install a coal boiler, whereas the Mongolian side shall pay fuel expenses.

②Water Supply and Drainage

When the Japanese side judges that it is possible to use a water supply pipe or main drainage pipe of UBC, the Japanese side will carry out the piping work within the school site. On the other hand, the Mongolian side shall be responsible for piping work outside the site, extension work, and applying for water service and sewage disposal at the Department of Water Supply and the Department of Sanitation at its own cost. When the Japanese side judges that it is impossible to use a water supply pipe or main drainage pipe of UBC, the Japanese side will install a water tank with a capacity for two-day supply and a sewage tank with the capacity for one week. The Mongolian side shall take responsibility to replenish water to the storage tank and collect waste from the waste tank by vacuum car.

③Electricity

As for the existing schools, the Japanese side shall provide one underground cable from the switchboard in the existing building to the new building which will be constructed in this Project.

As for the new schools, the Japanese side will build a lead-in pole at the boundary to the road within the school site and install a main cable. The Mongolian side shall install an integrating wattmeter and provide a cable to the wattmeter (only a portion outside the site), or build a lead-in pole outside the site, and apply for electricity service to the Power Bureau at its own expense.

④Telephone

The Japanese side will carry out the conduit installation work from the terminal board of the underground machine room to the outlet in the teachers' room. The Mongolian side shall be responsible for terminal equipment, wiring, and application for telephone lines to the Telephone Bureau.

⑤Party-line Television System and Cable System

The Japanese side will not install a joint TV receiving system nor a cable system.

- (10) To conduct additional work such as landscaping and installing gates and fences if necessary after the completion of the construction;
- (11) To use, manage, and maintain properly and effectively the facilities and equipment provided under this Project using Japan's grant aid;
- (12) To ensure all expenses required for the implementation of this Project outside the coverage of the grant aid;
- (13) To coordinate and settle various potential problems that may be posed by neighboring residents in relation to the implementation of the Project.


Table 2-16 List of Works to be done by Mongolian side

Name of School	Site Preparation	Removal/ Transfer of Obstacles	Infrastructure			
			Electricity	Heating	Water supply	Sewerage
<b>Existing School</b>						
No.14 School	None	Playground equipment	Connection from the board at the existing buildings	UBC Company	City water	Public sewerage
No.17 School	Cutting & Filling	Playground equipment		UBC Board	Water supply Wagon	Dipping up
No.33 School	None	Pavement		UBC Company	City water	Public sewerage
No.39 School	Cutting & Filling	Pavement		Private Company	Private well	Dipping up
No.44 School	None	Pavement		UBC Company	City water	Public sewerage
No.48 School	None	Trees, Cobblestones		UBC Company	City water	Public sewerage
No.68 School	None	Pavement		National Army	Private well	Public sewerage
No.87 School	None	Concrete lumps		UBC Board	Water supply Wagon	Dipping up
No.97 School	None	Heating pipe, Trees, Fence Pavement		UBC Company	City water	Public sewerage
Iredui CS	None	Curb		UBC Company	City water	Public sewerage
Goromt CS	None	None		UBC Board	City water	Public sewerage
Borovsrol CS	None	Playground equipment		UBC Board	City water	Public sewerage
<b>New School</b>						
No.61 School	Filling	Radio wiring	Extension of electric wires to the site	Installation of boiler (operation and maintenance to be done by Mongolian side)	Public water station	Dipping up
No.112 School	Cutting & Filling	Concrete lumps			Water supply Wagon	Dipping up
No.113 School	Cutting & Filling, Retaining wall	Wooden deserted house, Concrete lumps			Water supply Wagon	Dipping up
No.114 School	None	None			Water supply Wagon	Dipping up
No.115 School	Cutting & Filling	None			Water supply Wagon	Dipping up
No.116 School	Filling	None			Water supply Wagon	Dipping up

cs: complex school ,

UBC Company: Ulanbaatar Transmission Company

UBC Board: Ulaanbaatar Heating Stoves Utilization Board

 Work to be done by the Mongolian side

## 2-4 Project Operation Plan

### 2-4-1 Operation Plans

#### (1) Transfer of students (for new schools to be constructed in the Project)

During the site survey, it was confirmed that new school zones would be created for newly constructed schools in the Project (see Table 2-17). As those students who are living in these new school zone areas and currently going to other schools will be transferred to the new schools, an appropriate plan to promptly and smoothly implement the transfer after the completion of the construction needs to be prepared.

Table 2-17 New School Zones for Newly Constructed Schools in the Project

School	District	New School Zones
No. 61 School	Chingeltei	No. 12
No. 112 School	Songinokhairkhan	No. 7 (Half) and No. 9 (Half)
No. 114 School	Khan-uul	No. 9
No. 115 School	Songinokhairkhan	No. 1 (Half) and No. 20 (Half)
No. 116 School	Sukhbaatar	No. 15 (Half) and No. 16 (Half)

#### (2) Allocation of teachers

The number of teachers additionally required for both the existing schools and the newly constructed schools in the Project is shown in Table 2-18. The basis for all the below calculations assumes that every school operates with a double shift class system. The number of teachers additionally required at the existing schools after the completion of the Project is calculated by subtracting the “total number of existing teachers” from the “doubled number of both the existing and the newly constructed classrooms”. However, in case that teacher shortages are extreme at a school, the doubled number of classrooms to be constructed in the Project is set as the minimum necessary number of additional teachers for the school.

For the newly constructed schools in the Project, since it is assumed that 18 classrooms to be constructed in the Project will be used in a double shift class system at each school, the necessary number of additional teachers is simply calculated as 36 (the doubled number of classrooms to be constructed in the Project). However, since children who are expected to come to newly constructed schools will be transferred from other existing schools to which they are currently going, the teacher allocation in UBC should be done together with the transfer of students. Only the number of teachers not to be allocated

from other schools in UBC but to be additionally employed depending on the increase in the number of students between 2003 (the time of site survey) and 2005 is taken into account as the necessary number of teachers to be required for the newly constructed schools. (See. Table 2-18)

In addition, at least 15 subject teachers (one teacher per subject) as well as homeroom teachers are required for each new school in the Project; however, it is considered that the subject teachers will not be transferred from other schools as the homeroom teachers are<sup>6</sup>. In general, as there seems to be an adequate supply of teachers available in UBC, there are no foreseeable problems in regards to securing the number of any necessary additional teachers. However, it is important to allocate and/or recruit any teachers in an orderly and appropriate way and at the right time, making sure that budget funds for teachers' salaries are properly secured and disbursed so that each school can promptly start its school activities right after completion of the Project.

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<sup>6</sup> In No. 61 school requested as a school which will be newly constructed in the Project, since at least a foundation of school management is already existing (even though they are currently using house buildings as a temporarily school facility), there is no need to allocate a new head teacher and staffs. However, it is required for the school which is currently operated as a primary school to allocate additional 6 homeroom teachers (grade 6-11) and 15 subject teachers for starting operation of lower and upper secondary education.

Table 2-18 The Necessary Number of Teachers for the Project

Name of School	No. of Classes after the Project (2 shift)	No. of Homeroom Teachers (Present)	No. of Homeroom Teachers in Shortage	No. of Classes Added after the Project (2 shift)	Necessary No. of Homeroom teachers <sup>7</sup>	No. of Subject Teachers (present)	Necessary No. of Subject Teachers
No. 14 School	64	44	20	16	<b>16</b>	22	-
No. 17 School	86	52	34	16	<b>16</b>	11	-
No. 33 School	74	57	17	16	<b>16</b>	25	-
No. 39 School	74	52	22	12	<b>12</b>	18	-
No. 44 School	82	56	26	16	<b>16</b>	24	-
No. 48 School	90	74	16	36	<b>16</b>	16	-
No. 68 School	42	35	7	12	<b>7</b>	21	-
No. 87 School	40	40	0	36	<b>0</b>	8	-
No. 97 School	64	54	10	12	<b>10</b>	20	-
Iredui C. S.	140	121	19	16	<b>16</b>	0	-
Goromt C. S.	156	137	19	36	<b>19</b>	39	-
Borovsrol C. S.	78	75	3	24	<b>3</b>	0	-
No. 61 School	36	15	-	36	<b>4</b>	0	<b>15</b>
No. 112 School	36	-	-	36	<b>13</b>	-	<b>15</b>
No. 114 School	36	-	-	36	<b>12</b>	-	<b>15</b>
No. 115 School	36	-	-	36	<b>17</b>	-	<b>15</b>
No. 116 School	36	-	-	36	<b>36</b>	-	<b>15</b>
Total	-	-	-	-	<b>229</b>	-	<b>75</b>

## 2-4-2 Maintenance Plan

It depends on the size of the facilities and the type of necessary activities how maintenance program is implemented. For major repairs (roofs, heating systems, etc.), each school usually requests the government to allocate budget funds, which is different from its regular operating budget. However, it is rare that the funds are actually disbursed to the schools because of the chronic financial straits of the government. Because of this concern, the Asian Development Bank (ADB) has been supporting the

<sup>7</sup> For the newly constructed schools, not only children but also teachers are expected to transfer from other existing schools to newly constructed schools. Therefore, only the number of teachers not to be allocated from other existing (non-Project) schools but to be additionally employed depending on the increase in the number of students between 2003 and 2005 is taken into account as the necessary number of teachers for the new Project schools (to-be-built). For instance, No. 61 school requires 36 homeroom teachers in total in order to use 18 classrooms in a double shift class system. However 15 teachers were already working in the school and 17 teachers are expected to be transferred from other existing schools, so actual number of necessary homeroom teachers required after the completion of the Project is 4.

major repairs of existing school facilities (including School No. 33, a target school in this Project) in Mongolia. For minor and simple repairs (painting, replacing broken window and repairing broken chairs and desks, etc.) in common places such as corridors, stairs and toilet facilities, the budget funds are supposed to be covered by the regular school operating budget, and it is the school head teacher's responsibility to manage the funds. The simple, basic maintenance for each classroom is usually covered by the parents of students. For cleaning activities, while there are janitors assigned for the general daily cleaning in the common places, the students and parents are expected to clean the classrooms and purchase the necessary cleaning equipment. Thus, in Mongolia, because it is difficult to secure the necessary funds for school facility maintenance due to the lack of a dependable national budget, the parents are often forced to shoulder a fairly large financial burden to compensate for official budget shortages. Considering these issues, it is required for the government of Mongolia to properly earmark the necessary budget funds, as an official budget item in accordance with its budget system, for the appropriate school facility maintenance, and disburse the money in a dependable way so that the Project facilities will be maintained.

## 2-5 Project Cost Estimation

### 2-5-1 Project Cost

The total amount of the project cost needed for implementing the Grant Aid Project is approximately 2,886 million Japanese Yen. According to the conditions of the cost estimate shown below in section (3), the previously mentioned details of expenses based on the respective shares borne by Japan and Mongolia are calculated as shown below. This cost estimate is provisional and would be further examined by the Government of Japan for the approval of the Grant.

#### (1) Cost estimation borne by the Japanese side

(Total Floor Area 36,666.66m<sup>2</sup>)

Items		Estimated Cost (Million Japanese Yen)	
1) Facility	Building	2,483.2	2,602.9
	Furniture	84.6	
2) Procurement of Equipment		35.1	
3) Detailed Design & Supervision			266.1
Estimated Project Cost			2,869.0

#### (2) Cost estimation borne by the Mongolian side

(1,000 Tg)

Items	Stage 1	Stage 2	Stage 3	Total
Grading, Cutting, and Filling	13,810	91,324	2,324	107,476
Removal of Existing Obstacles	572	1,977	1,134	3,683
Extension of Infrastructure to the Construction Site	1,210	7,360	11,800	20,370
Construction of Gate and Fence	11,280	13,348	0	24,628
Charges Related to B/A etc.	3,226	3,226	3,226	9,678
Total (1,000Tg)	30,098	117,253	18,484	165,835
Total in Japanese Yen (¥1,000)	3,078	11,989	1,890	16,957

Currency Exchange Rate : ¥1 = 9.78Tg



### (3) Condition of Cost Estimate

- ① Period of cost estimate: September, 2003
- ② Currency Exchange Rate: 1.00 US\$=119.74Japanese Yen=1,170.88Tg
- ③ Period of Execution: from January, 2005 to February, 2008
- ④ Others: This Project shall be carried out under the system of the Grant Aid of the Japanese Government.

## 2-5-2 Operation and Maintenance Costs

### 2-5-2-1 Operation Cost

The estimated increase of operation expenses (electricity, water, sewage, heating, and personnel) brought on by the implementation of the Project should be borne by the government of UBC.

#### (1) Electricity

The meter-rate system (56 Tg/kw) is adopted in Mongolia, and electric fees at each school are calculated based on the estimate of electricity used. Since the duration of sunshine is long, little light is needed during the summer time (even in the second-shift classes). It is assumed that electricity is used for lighting for 6 months (120 days) in winter each year.

#### (2) Water

Each Project school may use either city water or water gotten from water-supply wagons or wells. Based upon the standards of Mongolia, it is estimated that the quantity of water used per day is 20 liters per person. Suppose that the facility is used for 180 days (20 days x 9 months) during one year. For a school that has no access to city water, it will use water supplied by water-supply wagons or by wells. The Mongolian side has not yet determined which water source will be used at each school. Hence, as a matter of convenience, it is assumed that a school will utilize water supplied by water-supply wagons.

- a. City water : 210 Tg/m<sup>3</sup>
- b. Water supplied by wagons : 1,000 Tg/m<sup>3</sup>

### (3) Sewage Disposal Expense

The sewage treatment method used at each target school of the Project is either discharged into the public sewerage system or picked up by vacuum wagons. Based upon the standards of Mongolia, the amount of sewage discharge per day is 20 liter per person. The expense of sewage disposal is estimated based upon the following rates, assuming that the facility is used for 180 days during a year.

- a. Discharge into the public sewerage system : included in City water bill
- b. Dipping up by vacuum wagons : 1,000 Tg/m<sup>3</sup>

### (4) Heating Expense

The power source of heating has two types: a central type from the City Heating Bureau or a regional heating system and a coal boiler installed at each school. In the central system, the rate is 210 Tg per month per 1m<sup>3</sup> of a building floor. On the other hand, for the coal boiler owned by the school, the expense of heating is estimated by multiplying the cost of coals (14,000 Tg/t) by the average amount of monthly coal consumption. The period during which time a heating system is used is assumed to be 7 months from October to April.

### (5) Labor Costs

After the completion of the Project, in addition to the teachers, 3 janitors and cleaning staffs in charge of the buildings constructed in the Project are needed to be hired. For new schools, 5 school staffs (a principal, a vice-principal, a secretary and an accountant) and 3 boiler engineers need to be hired.

Table 2-19 Number of Teachers and Staffs to be Additionally Hired

Name of School	Homeroom Teacher	Subject Teacher	Staff	Boiler Engineer
No. 14 School	16	-	3	-
No. 17 School	16	-	3	-
No. 33 School	16	-	3	-
No. 39 School	12	-	3	-
No. 44 School	16	-	3	-
No. 48 School	16	-	3	-
No. 68 School	7	-	3	-
No. 87 School	0	-	3	-
No. 97 School	10	-	3	-
Iredui C. S.	16	-	3	-
Goromt C. S.	19	-	3	-
Borovsrol C. S.	3	-	3	-
No. 61 School	4	15	3	3
No. 112 School	13	15	3+5	3
No. 114 School	12	15	3+5	3
No. 115 School	17	15	3+5	3
No. 116 School	36	15	3+5	3
Total	229	75	71	15

## 2-5-2-2 Maintenance Cost

For the maintenance of the facilities and equipment provided in the Project, the estimated increase of maintenance expenses should be borne by the government of UBC.

### (1) Maintenance of facilities

The following items as maintenance expenses for facilities should be secured.

#### ① Maintenance for deterioration

- Stains on walls (Cleaning of outside bricks, repainting of inside walls)
- Faded colors and/or cracks on inside walls and ceilings (Repainting of inside walls and ceilings)
- Wear and tear or exfoliation on the finishing material on the vinyl sheet floor (Recovering of the floor material)
- Fading color of a blackboard (Repainting)

- Damages on the lighting system caused by getting old (to change bulbs)
  - Leakage of water due to old waterproof material (to replace the waterproof material)
- ② Maintenance for broken portions of a building
- Door
  - Window glass
  - Toilet booth
  - Bulletin board
  - Damages on the plug
  - Water faucet
  - Toilet stools for students

In Mongolia the maintenance expenses to repair deteriorated parts of a building under ① are funded in the budget as expenditures for small repairs, whereas the maintenance expenses for broken portions on a building under ② is funded as expenditures for large repairs. Besides the above, there may be troubles with equipment such as damages to a building caused by freezing, electric systems, water supply and drainage, or the heating and ventilating system. In this Project, however, very careful consideration is paid at the time of designing so that trouble does not happen. Hence, it is considered that no large-scale repair work will be required for the time being. Based upon the unit prices established by UBC for large-scale and small-scale repair work, the annual repair expense is estimated. The additional annual cost for maintenance and operation after the Project Implementation is shown in Table 2-20.

## (2) Maintenance Expenses for Educational Equipment

Every Educational Equipment provided by the Project has long durability, and even though repair or replace of the Equipment is needed the cost will be minimal. Therefore the maintenance expenses for Educational Equipment is not taken into account.

### 2-5-2-3 Total Operation and Maintenance Cost

The increase in annual maintenance and maintenance expenses for both Provinces is shown in Table 2-20. Also, the calculating chart for maintenance and administrative costs for each school is shown in Table 2-21. According to the estimate, the expense in education budget is expected to increase an amount equivalent to about 4.63% in UBC.

The education budget of Mongolia in 2002 is approximately 1.7 times the budget in 1998, increased at a growth rate of 5-20% each year. The amount of expenditures incurred by the implementation of this Project is small in comparison to the growth rate of the entire education expenses. It is, therefore, inferred that the increase is an amount that can be sufficiently funded.

Table2-20 Additional Annual Cost for Maintenance and Operation in UBC after the Project Implementation (1,000Tg)

Items	UBC Educational Expenditure in primary & secondary education in 2002	Increased Annual Cost for Maintenance & Operation in UBC after the Project	Ratio of Increased Cost for Maintenance & Operation out of UBC Expenditure in 2002
Facility Maintenance Cost	983,071	25,238	2.57%
Electricity Cost	302,065	34,891	11.55%
Water & Sewerage Cost	328,432	79,455	24.19%
Heating Cost	2,169,655	129,044	5.95%
Labor Cost	9,397,245	340,980	3.63%
Total	13,180,468	609,608	4.63%

Item	Sub-Item	Unit Cost (Tg)	Unit	Phase I						Phase II						Phase III						Total
				No.48	No.61	No.112	No.114	No.115	No.116	No.39	No.87	No.97	No.68	No.14	No.17	No.33	No.44	Ir	Go	Bo		
Facility Repair Cost			m <sup>3</sup> per year	2799m <sup>3</sup>	2799m <sup>3</sup>	2799m <sup>3</sup>	2799m <sup>3</sup>	2799m <sup>3</sup>	2799m <sup>3</sup>	2799m <sup>3</sup>	2799m <sup>3</sup>	2799m <sup>3</sup>	2799m <sup>3</sup>	2799m <sup>3</sup>	2799m <sup>3</sup>	2799m <sup>3</sup>	2799m <sup>3</sup>	2799m <sup>3</sup>	1985m <sup>3</sup>			
Electricity Cost *1		700	m <sup>3</sup> per year	1,959	1,959	1,959	1,959	1,959	1,959	1,959	1,959	1,959	1,959	1,959	1,105	1,105	1,105	1,959	1,389			
Water Supply *2	City Water	56	Kwh	2,708	2,708	2,708	2,708	2,708	2,708	2,708	2,708	2,708	2,708	2,708	1,528	1,528	1,528	2,708	1,921			
	Water Wagon	210	Tg/m <sup>3</sup>	1,128											500	500	500	1,128	751			
Sewerage	Public sewer system	1,000	Tg/m <sup>3</sup>	0	5,328	5,328	5,328	5,328	5,328	5,328	5,328	5,328	5,328	1,790	0	0	0	0	0			
	Dipping up	1,000	Tg/m <sup>3</sup>		5,328	5,328	5,328	5,328	5,328	5,328	5,328	5,328	5,328	1,790	0	0	0	0	0			
Heating Cost	Central Heating *3	210	m <sup>3</sup> per year	13,578											6,127	6,127	6,127	6,660	7,660			
	Coal Boiler *4	630,000	per school per month		4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400	4,400	6,127	6,127	6,127	6,660	7,660	13,578			
	Additional principals and staffs	1,080,000	man year	3,240	3,240	8,640	8,640	8,640	8,640	8,640	8,640	8,640	8,640	3,240	3,240	3,240	3,240	3,240	3,240			
Labor Cost	Additional teachers	840,000	man year	13,440	15,960	23,520	22,680	26,880	42,840	42,840	42,840	42,840	42,840	10,080	10,080	10,080	13,440	13,440	13,440			
	Boiler engineer *5	60,000	man month		1,260	1,260	1,260	1,260	1,260	1,260	1,260	1,260	1,260									
	<b>Total</b>			36,053	40,183	53,143	52,303	56,503	72,463	72,463	72,463	72,463	72,463	25,133	25,133	25,133	31,739	31,739	27,473			
																				19,450		
																				41,213		
																				27,473		
																				19,450		
																				609,608		

\*1 56Tg/kw×0.02kW/m<sup>3</sup>h×6h/day×120day/year×120% (no need of light during the summer time)

\*2 The quantity of water used per day is 20 liters per person. Suppose that the facility is used for 180 days during one year.

\*3 Total floor space×3.3m×210Tg/m<sup>3</sup> per month×7 months

\*4 The cost of coals (14,000 Tg/t)×45t/month×7 months

\*5 60,000Tg×3 persons×7 months

Table 2-21 The Calculation Chart for Maintenance and Administrative costs after the Project (1,000 Tg)

## Chapter 3 Project Evaluation and Recommendations

# Chapter 3 Project Evaluation and Recommendations

## 3-1 Effects of the Project

### (1) Direct Effects

#### 1) Increasing Capacity in UBC to Accommodate Students

By constructing the Project's 214 classrooms (building 5 new schools and expanding 12 existing schools), an additional 17,120 students can be accommodated in those Project classrooms in UBC where school enrolment is rapidly expanding<sup>1</sup>.

#### 2) Improving the Learning Environment in the Project's Existing Schools

By constructing 124 classrooms at 12 existing schools under the Project, the total number of ordinary classrooms at the 12 schools will increase from 371 to 495 in 2007, and the number of students per classroom<sup>2</sup> will be reduced from 68.4 to 51.3 students. As a result of Project implementation, a more desirable learning environment for class operations will be realized at those Project schools which have been forced to conduct classes under triple shift system and have been using non educational facilities as temporary classrooms.

#### 3) Improving Children's Access to Schools and the Learning Environment in the Neighbouring Existing Schools

Through the Project's construction of 90 classrooms at 5 new schools, 7,200 more students can be accommodated. As a result, the access to schools for children is improved, especially for those who have been forced to ride the bus or walk 30 to 40 minutes through dark ger areas without street lamps. In addition, since a certain number of students will be transferred from the neighbouring existing schools into the new (to-be-built) Project schools, classroom shortages will also be alleviated and an improvement of the learning environment will be realized at those neighbouring schools.

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<sup>1</sup> The assumptions for this calculation are: 40 students per classroom and double-shift system.

<sup>2</sup> Number of students per classroom = Expected number of students in 2007 / (Number of usable classrooms × 2 (double-shift system)).



#### 4) Improving Conditions of the Toilet Facilities

By constructing an adequate number of toilet facilities in accordance with the number of classrooms built in the Project, toilet shortages will be significantly alleviated. Also, by constructing toilet facilities with doors and locks to keep privacy, the physical conditions will also be greatly improved, especially for girls.

#### (2) Indirect Effects

##### Use of Facilities for Non-Formal Education Programs

Project facilities are expected to be used not only for the purpose of “formal” basic education, but also for “non-formal” education which is currently being provided mainly by the NGOs in Mongolia. In terms of providing learning space for those non-formal education programs that target dropouts and street children, it is expected that the Project will contribute to the surrounding community.

### 3-2 Recommendations

#### 1) Monitoring and Technical Support of School Facility Maintenance by the Government

In the Project, it is expected that proper maintenance activities will be implemented at the schools. In the site survey, however, it was found that since allocated budgets for prevention and minor repair are limited compared with the one for major repair, maintenance activities at schools are mainly supported by the contributions from the parents and community. In order that proper maintenance activities are continuously and effectively implemented at all Project schools, it is indispensable to establish a follow-up system in order that the government officials periodically visit the schools and monitor the maintenance activities to provide the necessary managerial and technical support to the schools, as well as to make better adjustment of the budget distribution.

#### 2) Support for Opening New Schools

In that 5 schools will be newly opened in the Project, the preparation activities such as the scheduling of Opening Day, the forming of classes for students who will be transferred into the new schools from the existing schools, the new head teacher appointments and regular teacher assignments, etc, are expected to be done mainly at the government level. Although there has been little experience regarding the opening of new schools in UBC since the 1990s, the above-mentioned activities should be done

appropriately and according to proper scheduling and procedure. The government is also expected to support other preparation work at the school level such as the setting up of special classes, club activities and school regulations, as well as establishing school management committee and PTA and procuring any necessary equipment, etc.

### 3) Organizing the Appropriate Number of Special Classes

In the Mongolian public schools, there are two types of classes: “general classes”, to which entry requires no entrance examination and accepts children living in Horos within that school area; and, “special classes”, to which there are no area restrictions, but entry is limited to only those children who pass the entrance examination. It was found in the site survey that some schools restrict their number of “general classes” in favour of organizing more “special classes” which are promoted by the Government. Because of this tendency to increase “special classes”, the shortage of classrooms for “general classes” gets worse. In this way, if each Project school vastly increases its number of “special classes” after completion of the Project, it is expected that the targeted “Project Effect” of improving the total educational environment will suffer and not be achieved. Therefore, any organization of “special classes” should be closely examined along with securing adequate number of “general classes”.

### 4) Additional Facilities for Five New Project Schools

Components of the facilities to be constructed by the Project are: classrooms, teachers’ rooms and toilets. It is realized that other facilities such as gymnasiums, special classrooms, libraries, and head teacher’s offices, etc. are also required to make the schools fully equipped. Thus, it is recommended that the Mongolian side, to secure a better leaning environment at all the new Project schools, construct these additional facilities by its own efforts.

## Appendices

## 1 . List of Team Members

### Basic Design Study Team (August 25, 2003~September 22, 2003)

	Name	Job Title	Organization
1	Mr. Masaaki MATSUSHIMA	Leader	Director, 1st Project Management Div., Grant Aid Management Dept. JICA
2	Ms. Yuki SHIBUYA	Planning Management	Staff, 1st Project Management Div., Grant Aid Management Dept. JICA
3	Mr. Akira YOKOYAMA	Chief Consultant/ Architectural Design	Mohri, Architect & Associates, Inc.
4	Ms. Akane TOTANI	Education Planning / Social Environment	Mohri, Architect & Associates, Inc.
5	Mr. Hisafumi MICHIKAWA	Architectural Planning I	Mohri, Architect & Associates, Inc.
6	Mr. Kazuna KOIZUMI	Architectural Planning II	Mohri, Architect & Associates, Inc.
7	Mr. Haruo KANEKO	Procurement Planner/ Cost Estimator	Mohri, Architect & Associates, Inc.
8	Mr. Toshiyuki HANDA	Interpreter	Mohri, Architect & Associates, Inc.
9	Mr. Yutaka INAGAKI	Facility Planner	Mohri, Architect & Associates, Inc.
10	Ms. Aya ARAKAWA	Coordinator/ Education Planning II	Mohri, Architect & Associates, Inc.
11	Mr. Fugo YAMADA	Architectural Planning III	Mohri, Architect & Associates, Inc.

### Draft Report Explanation Team (January 12, 2004 ~ January 21, 2004)

	Name	Job Title	Organization
1	Mr. Toshio HIRAI	Leader	Resident Representative Mongolia Office, JICA
2	Mr. Toshiyasu TSURUHARA	Planning Management	Staff, Mongolia Office, JICA
3	Mr. Akira YOKOYAMA	Chief Consultant/ Architectural Design	Mohri, Architect & Associates, Inc.
4	Mr. Hisafumi MICHIKAWA	Architectural Planning I	Mohri, Architect & Associates, Inc.
5	Mr. Haruo KANEKO	Procurement Planner/ Cost Estimator	Mohri, Architect & Associates, Inc.
6	Mr. Toshiyuki HANDA	Interpreter	Mohri, Architect & Associates, Inc.

## 2. Study Schedule

### Basic Design Study

Date			Schedule			
			JICA	Consultants		
1	25-Aug	Mon	Narita→ULN			
2	26-Aug	Tue	AM: Courtesy call to JICA, Embassy of Japan			
3	27-Aug	Wed	AM: Discussion with MOSTEC/UBC			
4	28-Aug	Thu	AM: Discussion with MOSTEC/UBC			
5	29-Aug	Fri	AM: Discussion with MOSTEC/UBC	Explanatory Meeting w/ Principals		
6	30-Aug	Sat	Visit to the Sites (Phase III)			
7	31-Aug	Sun	Internal Meeting			
8	1-Sep	Mon	Discussion with MOSTEC/UBC, Visit to Japan Center	Site Survey		
9	2-Sep	Tue	Signing of M/D, Report to JICA & Embassy of Japan			Architectural Survey
10	3-Sep	Wed	ULN	Joint Site Survey	do.	Joint SS: 2,3
11	4-Sep	Thu	NRT	Architectural Survey	do.	Architectural Survey
12	5-Sep	Fri		do	do.	do.
13	6-Sep	Sat		Site Survey	do.	do.
14	7-Sep	Sun	Internal Meeting & Data Analysis			
15	8-Sep	Mon		Site Survey	Site Survey	Procurement Survey
16	9-Sep	Tue		do.	do.	do.
17	10-Sep	Wed		Visit to Gov. Agencies	do.	Site Survey
18	11-Sep	Thu		do.	do.	do.
19	12-Sep	Fri		do.	do.	do.
20	13-Sep	Sat		do.	do.	Procurement Survey
21	14-Sep	Sun	Internal Meeting & Data Analysis			
22	15-Sep	Mon		Architectural Survey	Social Environment Survey	Construction Survey
23	16-Sep	Tue		Discussion with UBC	do.	do.
24	17-Sep	Wed		do.	do.	do.
25	18-Sep	Thu		do.	ULN→NRT	do.
26	19-Sep	Fri		Report		do.
27	20-Sep	Sat		Data Analysis		ULN→NRT
28	21-Sep	Sun		do.		
29	22-Sep	Mon		ULN→NRT		

### Explanation on Draft Basic Design Report

Date			Schedule			
			JICA	Consultants		
1	12-Jan	Mon		NRT→ULN		
2	13-Jan	Tue	Courtesy call to JICA, Embassy of Japan, MOSTEC, MOFE, UBC			
3	14-Jan	Wed	Discussion with UBC			Cost Estimation Study
4	15-Jan	Thu	Discussion with UBC			do.
5	16-Jan	Fri	Discussion regarding M/D, Signing of M/D, Report to Embassy			do.
6	17-Jan	Sat		Site Visit (33, 44, 61)		
7	18-Jan	Sun		Internal Meeting		
8	19-Jan	Mon		Site Visit (65, 60, 92)		Cost Estimation Study
9	20-Jan	Tue		Architectural Survey, Report to JICA		do.
10	21-Jan	Wed		ULN→Beijing→NRT		

### 3. List of Concerned Parties in the Recipient Country

#### MOSTEC

Mr. B. ERDENESUREN	Deputy-Minister
Mr. P. GANSUKH	Director, Department of Finance and Economy
Mr. B. MUNKHBAATAR	Head, External Cooperation Division
Mr. G. BATBOLD	Director, Department of Primary and Secondary Education
Mr. N. AYURZANA	Officer, Policy and Implementation of Construction, Equipment, Investment
Ms. V. BATCHIMEG	Officer, External Affairs Division
Ms. N. DORJKHORLOO	Deputy Director, Department of Primary and Secondary Education
Ms. BADAMJAR	Officer, Department of Primary and Secondary Education
Mr. T. GELEGJAMTS	Head, Division of Coordination, Monitoring and Evaluation

#### Ministry of Finance and Economy

Mr. K. AMARSAIKHAN	Director-General, Department of Economic Cooperation Policy and Coordination
Mr. GANKHUYAG	Deputy Director, Department of Economic Cooperation Policy and Coordination
Ms. L. NASANBUYAN	Department of Economic Cooperation Policy and Coordination

#### Ministry of Foreign Affairs

Mr. Ya. BATSUURI	Deputy Director, Asia and American Department
Mr. Luvsantseren ERDENEDAVAA	Desk Officer, Asia and American Department

#### State Supervision Agency, Prime Minister's Office

Ms. DEMBEREL SUREN	State Supervisor
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#### Government Implementing Agency for Construction, Urban Development and Public Utilities of Mongolia

Mr. B. LKHAGVASUREN	Deputy Director
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Ulaanbaatar City

Mr. Choijinvyn SUMAAKHUU Vice Mayor

UBC, Department of Education

Mr. M. LKHANAAJAV Director

Mr. E. BAYARMAGNAI Staff for Capital Investment Construction

Mr. S. TUMURBAATAR Chief Manager

UBC, Education Center

Mr. G. AMARSANAA Methodologist of art, design & invention

UBC, Land Management Department

Mr. B. TUMURKHUYAG Director

UBC, Specialized Supervision Department

Mr. T. TSENGEL Chief of Environment and Infrastructure  
Supervision Division, State Senior Supervisor

Mr. BALDAN-OCHIR State Supervisor

Mr. DASHDORJ State Supervisor

UBC, Heating Stoves Utilization Board

Mr. GANBOLD Director

Mr. TS. ALTANTSETSEG General Engineer

Ulaanbaatar Transmission Heating Company

Mr. D. BYAMBA-OCHIR Deputy Director & Chief Engineer

UBC, Electricity Department

Mr. OYUNBAT

Fire Fighting Department, Implementing Agency of Mongolian Government

Mr. GANBOLD Administration Manager

Mr. J. GANBAATAR Chief of Fire Research and Study Battalion

Water Supply and Sewage Bureau

Mr. PUREVJAV Chief Engineer

Mr. T. NYAMDAVAA Water Sector Specialist

District Office

Mr. ENKHTUYA Chief of Social Development Department,  
Sukhbaatar District Office

Mr. DANGAA Education Officer, Sukhbaatar District Office

Ms. OTGONCHIMEG Chief of Social Development Department,  
Khan-uul District Office

Ms. BATDELGER Education Officer, Khan-uul District Office

Mr. L. NAIDAN Governor, Songinokhairkhan District

Ms. SAIKHANCHIMEG Chief of Social Development Department,  
Songinokhairkhan District Office

Ms. SUREN Education Officer, Songinokhairkhan District  
Office

Mr. BATBOLD Education Officer, Chingeltei District Office

Ms. GALSANJAV Education Officer, Bayangol District Office

Mr. GANTUMUR Chief of Social Development Department,  
Bayanzurkh District Office

Mr. TSEDENDAMBA Education Officer, Nalaikha District Office

Mr. G. LKHAGVAJAV Chief of Social Development Department, Baganor  
District Office

Ms. ORGODOL Education Officer, Baganor District Office



Ms. BAYARAA

Staff of Education Center, Baganor District

ADB (Asian Development Bank)

Mr. Darius F. Teter Deputy Country Director, ADB Mongolian Resident Mission

Ms. B. BAYASGALAN Social sector officer, ADB Mongolian Resident Mission

Mr. R. BANDII Project Manager, SEDP

UNICEF

Ms. B. URANCHIMEG Assistant Project Officer, Convergent Basic Social Services

ADRA(Adventist Development and Relief Agency)

Mr. Llewellyn Juby Country Director

Ms. Odgerel Program Manager

World Vision

Ms. Tsendmaa Tsegmed Informal Education Project Coordinator

Japan Center

Yoshifusa SHIKAMA President

Embassy of Japan

Toshiya YAMAGUCHI Second Secretary

JICA Mongolia Office

Toshio HIRAI Resident Representative

Akira SHIMIZU Assistant Resident Representative

Toshiyasu TSURUHARA Assistant Resident Representative

#### 4. Minutes of Discussions

**Minutes of Discussions**  
**on**  
**the Basic Design Study on the Project for**  
**the Improvement of Primary Education Facilities (phase III)**  
**in Mongolia**

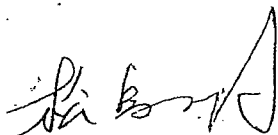
In response to a request from the Government of Mongolia, the Government of Japan has decided to conduct a Basic Design Study on the Project for the Improvement of Primary Education Facilities (phase III) (hereinafter referred to as "the Project"), and entrusted the study to Japan International Cooperation Agency (JICA).

JICA sent to Mongolia the Basic Design Study Team (hereinafter referred to as "the Team") headed by Mr. Masaaki MATSUSHIMA, Director, First Project Management Division, Grant Aid Management Department, JICA, and is scheduled to stay in the country from 25 August to 22 September 2003.

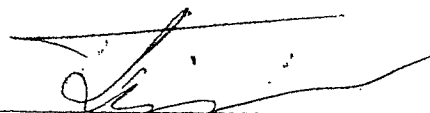
The Team held a series of discussions on the Project with the officials concerned of the Government of Mongolia and conducted a field survey at the study area.

In the course 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.

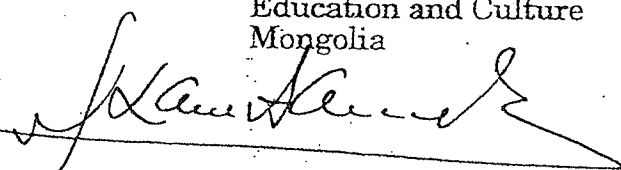
Ulaanbaatar, 2 September 2003



Mr. Masaaki MATSUSHIMA  
Leader  
Basic Design Study Team  
Japan International Cooperation  
Agency



Mr. Purevjav GANSUKH  
Director  
Department of Finance and Economy  
Ministry of Science, Technology,  
Education and Culture  
Mongolia



Mr. Mijidgombo LKHANA AJAV  
Director  
Education Department  
The Capital City of Ulaanbaatar  
Mongolia

(Witness)



Mr. Khosbayar AMARSAIKHAN  
Director General  
Department of Economic Cooperation,  
Policy and Coordination  
Ministry of Finance and Economy  
Mongolia

## ATTACHMENT

### 1. Objective of the Project

The objective of the Project is to improve the physical educational environment of basic schools in Capital City of Ulaanbaatar (hereinafter referred to as "UBC") by extending the capacity of existing schools, constructing new schools and providing basic educational equipment.

### 2. Project Sites

The Project sites are scattered in UBC. The 33 sites listed in Annex-2 have been confirmed as the candidate sites to be surveyed for the Project.

### 3. Responsible and Implementing Organization

3-1 The responsible organization is the Ministry of Science, Technology, Education and Culture (hereinafter referred to as "MOSTEC").

3-2 The implementing agency is the Education Department of UBC.

Based on the "The law for the management and finance of administrative organs (January 2003)", the MOSTEC is in the responsible position to secure the budget for the necessary measures to be taken by the Mongolian side for the Project. The organization chart of the MOSTEC and UBC is attached as Annex-1.

### 4. Items requested by the Government of Mongolia

After a series of discussions with the Team, the Mongolian side requested the items described in Annex-2 and Annex-3. JICA will assess the appropriateness of the request, and the final component of the Project will be determined after further study.

### 5. Japan's Grant Aid Scheme

5-1. The Mongolian side understood the Japan's Grant Aid Scheme explained by the Team, as described in Annex-5.

5-2. The Mongolian side will take the necessary measures, described in Annex-6 for the smooth implementation of the Project on condition that the Japan's grant aid is extended to the Project.

### 6. Schedule of the Study

6-1. The consultant team will proceed to further studies in Mongolia until 22 September 2003.

6-2. JICA will prepare a Draft Report in English and dispatch a mission to explain the outline of the Basic Design around December 2003.

6-3. In the event of the Draft Report being acceptable in principle by Mongolia, JICA will complete the final report and send it to the Government of Mongolia by around March 2004.

### 7. Other Relevant Items

#### 7-1. Selection criteria of the Project sites

Both sides agreed that the candidate schools were to be examined according to the selection criteria listed in Annex-4. The schools to be covered by the Project will be selected by the Japanese side according to the site survey and analysis in Japan, therefore the schools listed in Annex-2 are not confirmed subject to be aided by the Japanese Grant Aid.

#### 7-2. Scope of the Project

The Mongolian side requested the extension of existing schools and the new school construction. The Mongolian side confirmed that the reconstruction/rehabilitation of the damaged /over-aged existing school buildings is not included in the request for the Project.

#### 7-3. The priority order of candidate schools

The Mongolian side gave the priority order of candidate schools as shown in

Annex-2. The Mongolian side also explained that the new construction of schools takes precedence over the extension of existing schools.

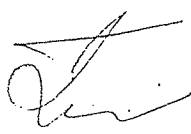
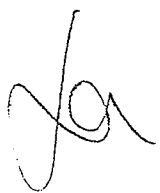
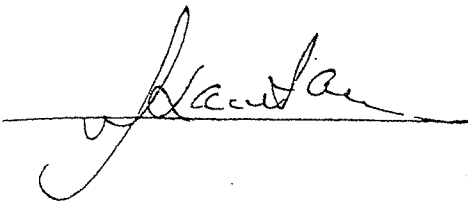
7-4. The number of classrooms to be constructed in one school  
The Mongolian side confirmed that there is no limitation to the number of classrooms to be constructed in one school. Although there used to be a school model that shows the maximum number of classrooms to be 32 in the past, the Mongolian side assured that the model is currently ineffective.

7-5. Schools to be supported by the Asian Development Bank  
The Mongolian side confirmed that the support for the No.12, 33 and 79 schools from the Asian Development Bank is limited to the renovation of the existing school buildings. The Mongolian side also assured that there is no duplication in the support from the Asian Development Bank and the request to Japan, which focus on the alleviation of classroom shortage through constructing new school buildings.

7-5.Land for the Project  
The Mongolian side agreed to provide the evidence of land ownership of the candidate schools authorized by the governor of UBC to the Japanese side by 19 September 2003.

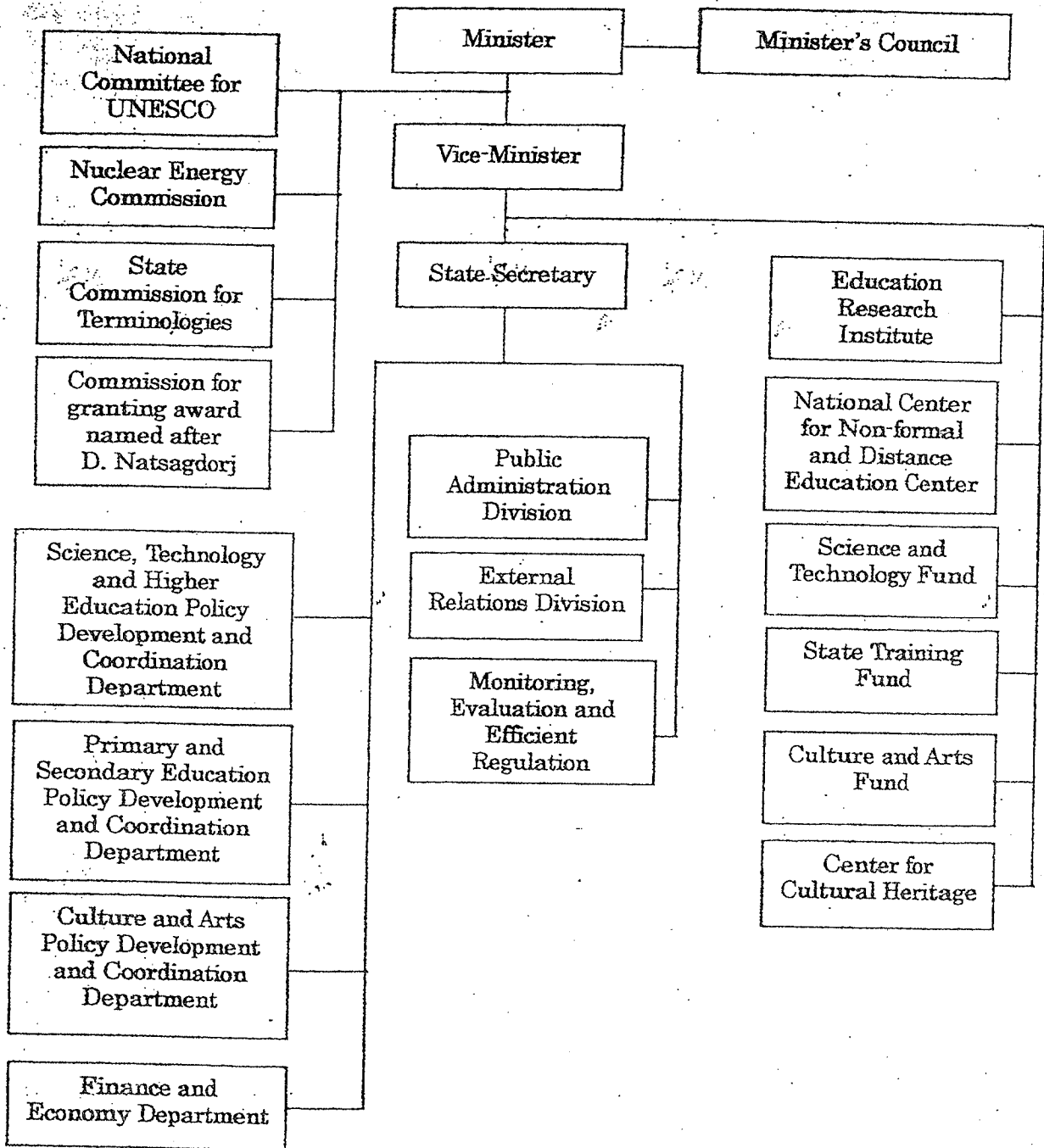
7-6. Demolishing work  
The Mongolian side agreed to implement demolishing works, which would be identified by Japanese side as necessary, before the commencement of Japanese construction.

7-7. Operation and maintenance  
The Mongolian side agreed to allocate necessary budget for teaching and administrative staff members for the proper and effective operation and maintenance of facilities and equipment covered by the Project.



Annex 1

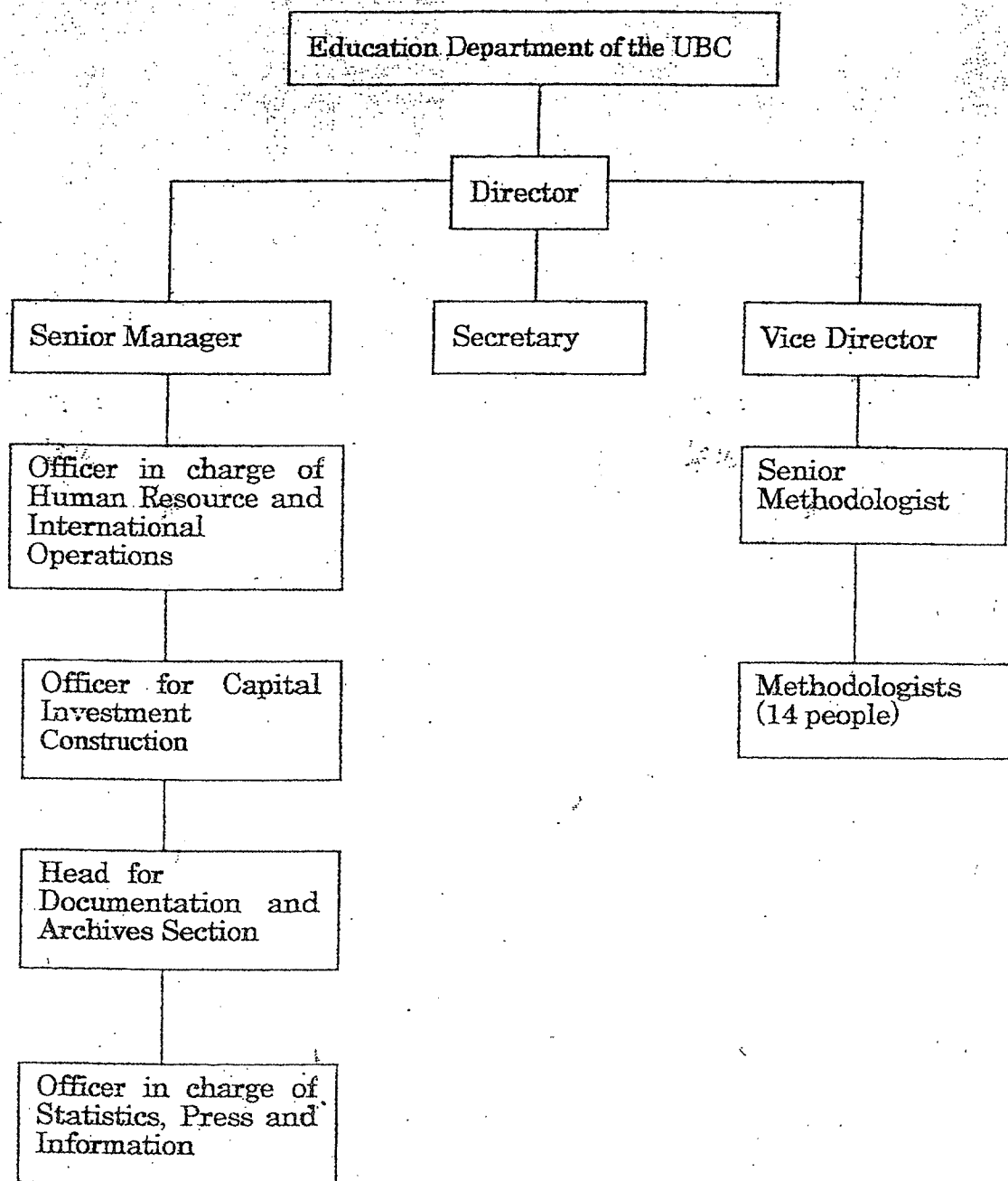
Organization Chart of the Ministry of Education, Culture and Science Technology



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Annex-1 Organization chart of Education Department of the Capital City of Ulaanbaatar



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