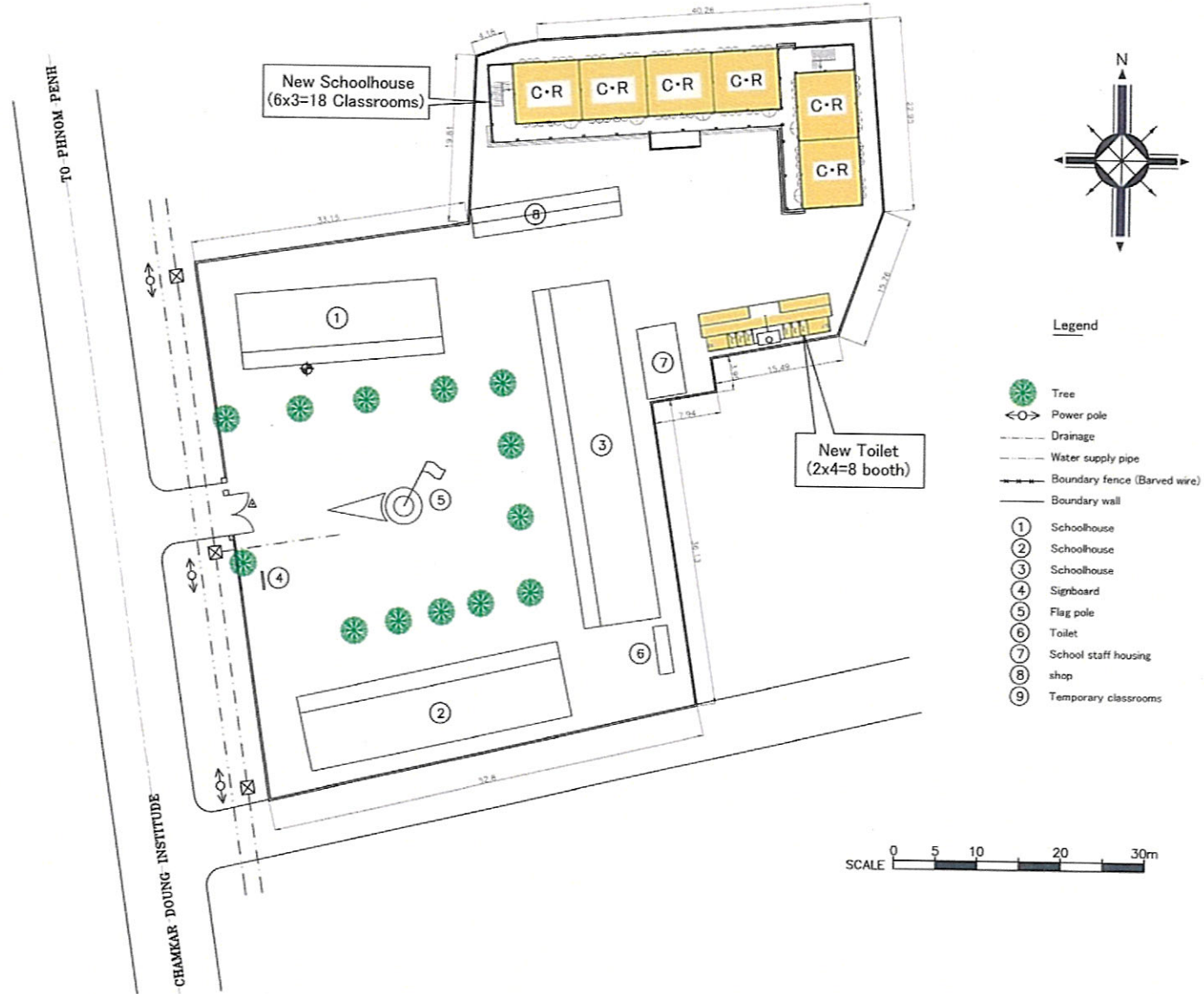


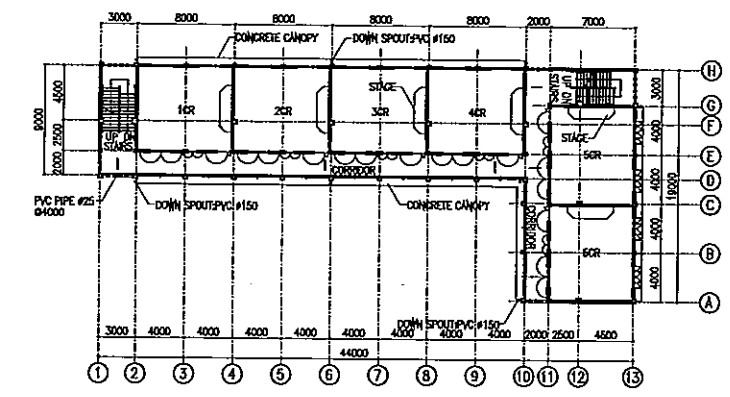
2.2.3 Basic Design Drawings

The basic design drawings of the Project are included on the following pages.

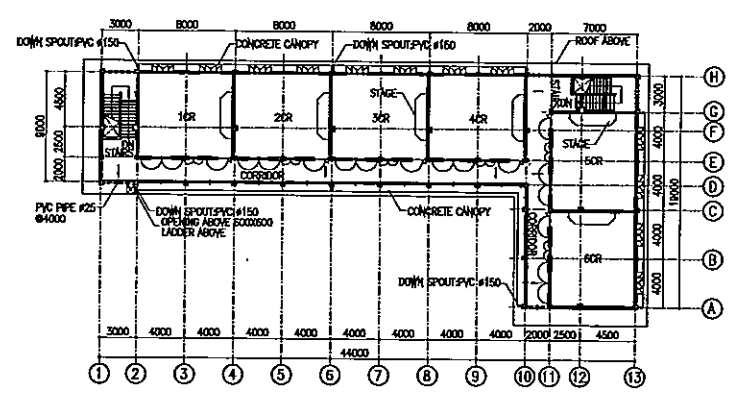
1. No.1 Phoum Russey School : Site Plan
2. No.1 Phoum Russey School : Floor Plan
3. No.1 Phoum Russey School : Elevation, Section
4. No.2 Chak Tomuk School : Site Plan
5. No.2 Chak Tomuk School : Floor Plan
6. No.2 Chak Tomuk School : Elevation, Section
7. No.3 Sophak Mongkul School : Site Plan
8. No.3 Sophak Mongkul School : Floor Plan
9. No.3 Sophak Mongkul School : Elevation, Section
10. No.4 Pochen Tong School : Site Plan
11. No.4 Pochen Tong School : Floor Plan
12. No.4 Pochen Tong School : Elevation, Section
13. No.5 Chamreun Rath School : Site Plan
14. No.5 Chamreun Rath School : Floor Plan
15. No.5 Chamreun Rath School : Elevation, Section
16. No.6 Chamreun Cheat School : Site Plan
17. No.6 Chamreun Cheat School : Floor Plan
18. No.6 Chamreun Cheat School : Elevation, Section
19. No.6 Chamreun Cheat School : Toilet: Plan, Elevation, Section



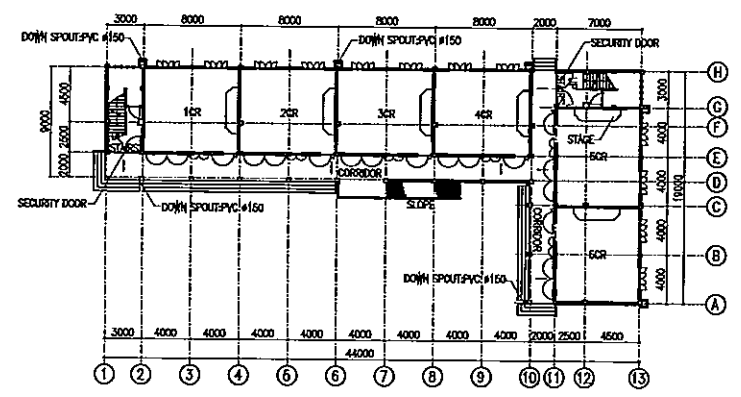
① PHOUM RUSSEY PRIMARY SCHOOL



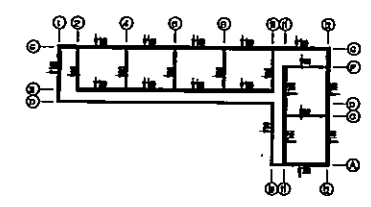
FIRST FLOOR



SECOND FLOOR



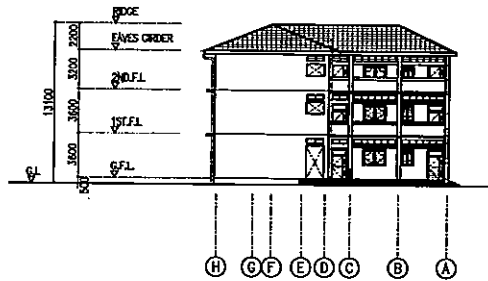
GROUND FLOOR



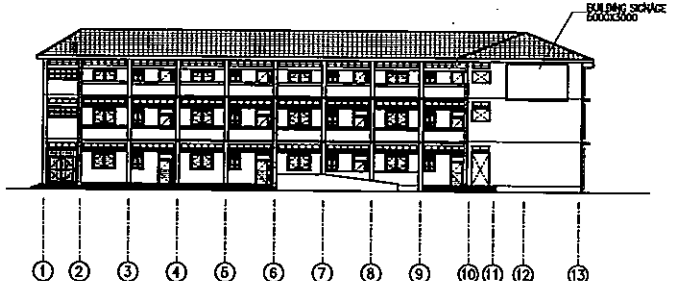
BRICK WALL KEY-PLAN

LEGEND
 [Hatched pattern] : WALL THICKNESS=100mm
 [Solid line] : WALL THICKNESS=80mm

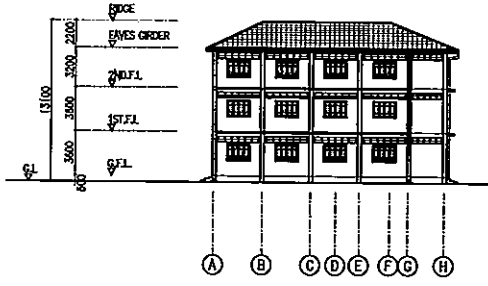
PROJECT NAME	IMPLEMENTATION AGENCY	TITLE	SCALE	DATE	DESIGNED	CHECKED	APPROVED	DWG No.
THE PROJECT FOR CONSTRUCTION OF ADDITIONAL CLASSROOMS FOR PRIMARY SCHOOLS IN THE KINGDOM OF CAMBODIA(PHASE II)	DEPARTMENT OF EDUCATION, YOUTH AND SPORTS, PHNOM PENH MUNICIPALITY	PLAN NO.1 PHOUM RUSSEY PRIMARY SCHOOL	1/200					
				yec YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN			REV.	0



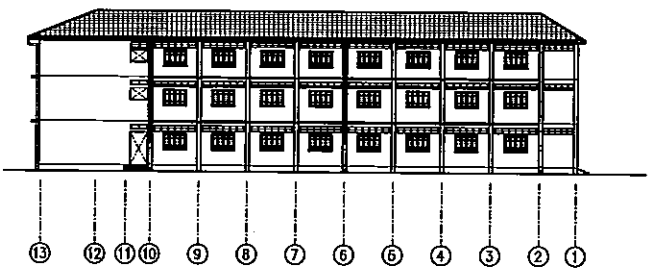
LEFT ELEVATION
SCALE 1/200



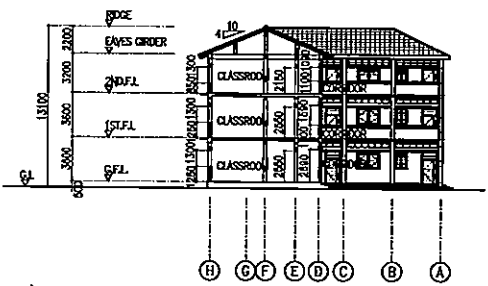
FRONT ELEVATION
SCALE 1/200



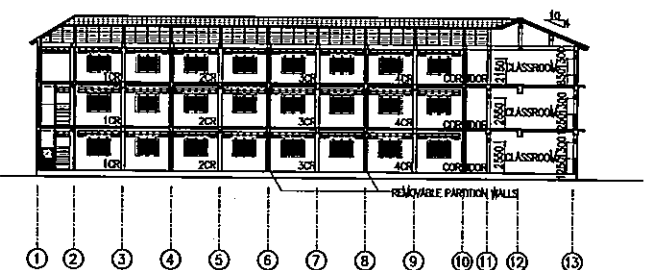
RIGHT ELEVATION
SCALE 1/200



BACK ELEVATION
SCALE 1/200

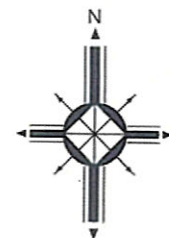
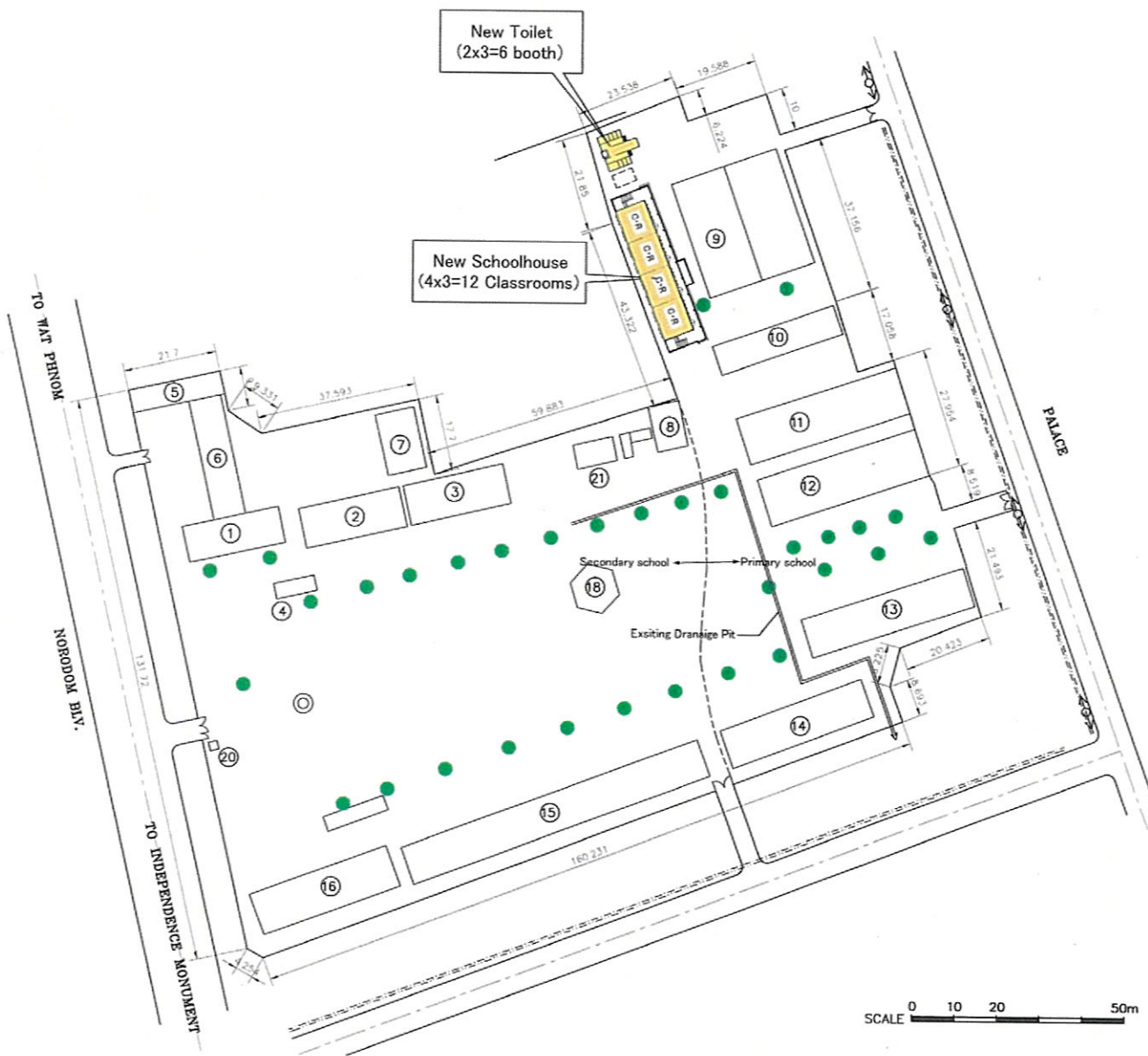


SECTION B-B
SCALE 1/200



SECTION A-A
SCALE 1/200

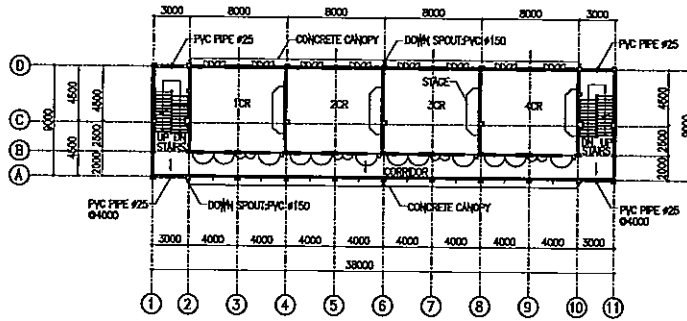
PROJECT NAME	IMPLEMENTATION AGENCY	TITLE	SCALE	DATE	DESIGNED	CHECKED	APPROVED	DWG No.	
THE PROJECT FOR CONSTRUCTION OF ADDITIONAL CLASSROOMS FOR PRIMARY SCHOOLS IN THE KINGDOM OF CAMBODIA(PHASE II)	DEPARTMENT OF EDUCATION, YOUTH AND SPORTS, PHNOM PENH MUNICIPALITY	ELEVATION & SECTION NO.1 PHOUM RUSSEY PRIMARY SCHOOL	1/200						
							YACHYO ENGINEERING CO., LTD. TOKYO, JAPAN		
								REV.	0



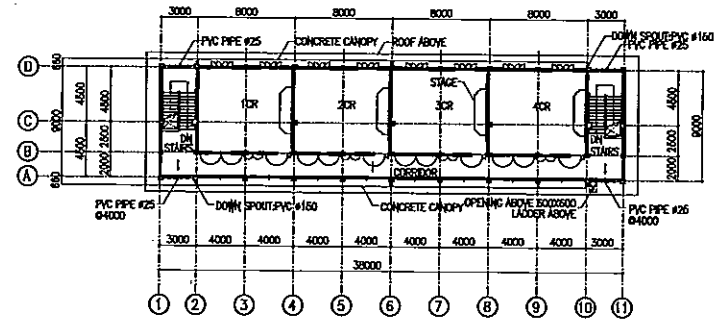
Legend

- Tree
- Powerpole
- Drainage
- Water supply pipe
- Boundary fence (Barbed wire)
- Boundary wall
- ① Schoolhouse
- ② Schoolhouse
- ③ Schoolhouse
- ④ Schoolhouse
- ⑤ Schoolhouse
- ⑥ Schoolhouse
- ⑦ Schoolhouse
- ⑧ Library
- ⑨ Shop
- ⑩ Schoolhouse
- ⑪ Schoolhouse
- ⑫ Schoolhouse
- ⑬ Schoolhouse
- ⑭ Schoolhouse
- ⑮ Schoolhouse
- ⑯ Schoolhouse
- ⑰ Parking
- ⑱ Office
- ⑲ Flag pole
- ⑳ Guard House
- ㉑ Toilet

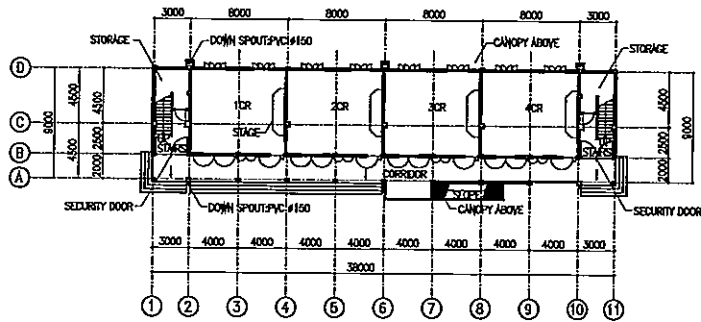
② CHAK TOMUK PRIMARY SCHOOL



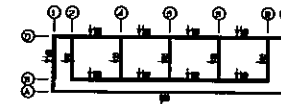
FIRST FLOOR



SECOND FLOOR



GROUND FLOOR

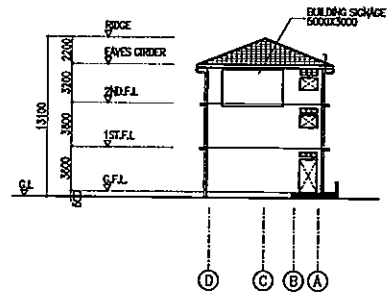


BRICK WALL KEY-PLAN

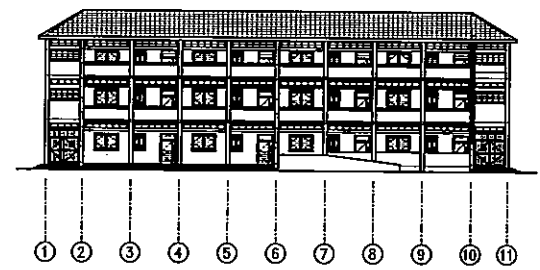
LEGEND

- : ALL THICKNESS=100mm
- : ALL THICKNESS=80mm

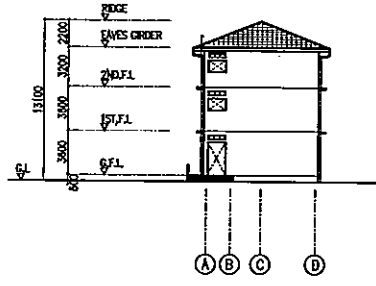
PROJECT NAME	IMPLEMENTATION AGENCY	TITLE	SCALE	DATE	DESIGNED	CHECKED	APPROVED	DWG No.
THE PROJECT FOR CONSTRUCTION OF ADDITIONAL CLASSROOMS FOR PRIMARY SCHOOLS IN THE KINGDOM OF CAMBODIA(PHASE II)	DEPARTMENT OF EDUCATION, YOUTH AND SPORTS, PHNOM PENH MUNICIPALITY	PLAN No.2 CHAK TOMUK PRIMARY SCHOOL	1/200					
				YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN				



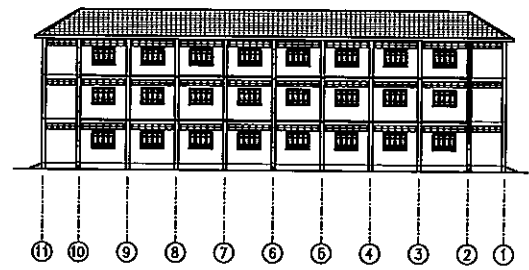
LEFT ELEVATION
SCALE 1/200



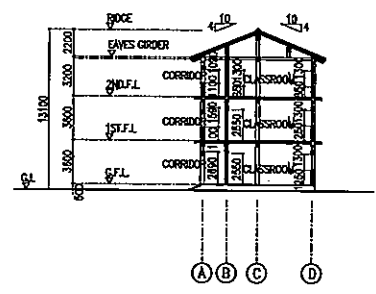
FRONT ELEVATION
SCALE 1/200



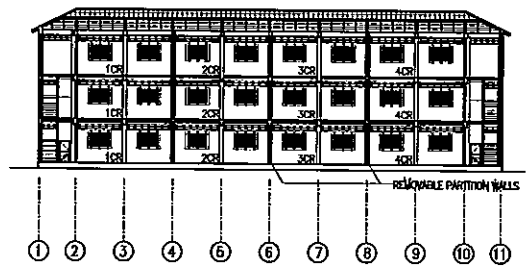
RIGHT ELEVATION
SCALE 1/200



BACK ELEVATION
SCALE 1/200

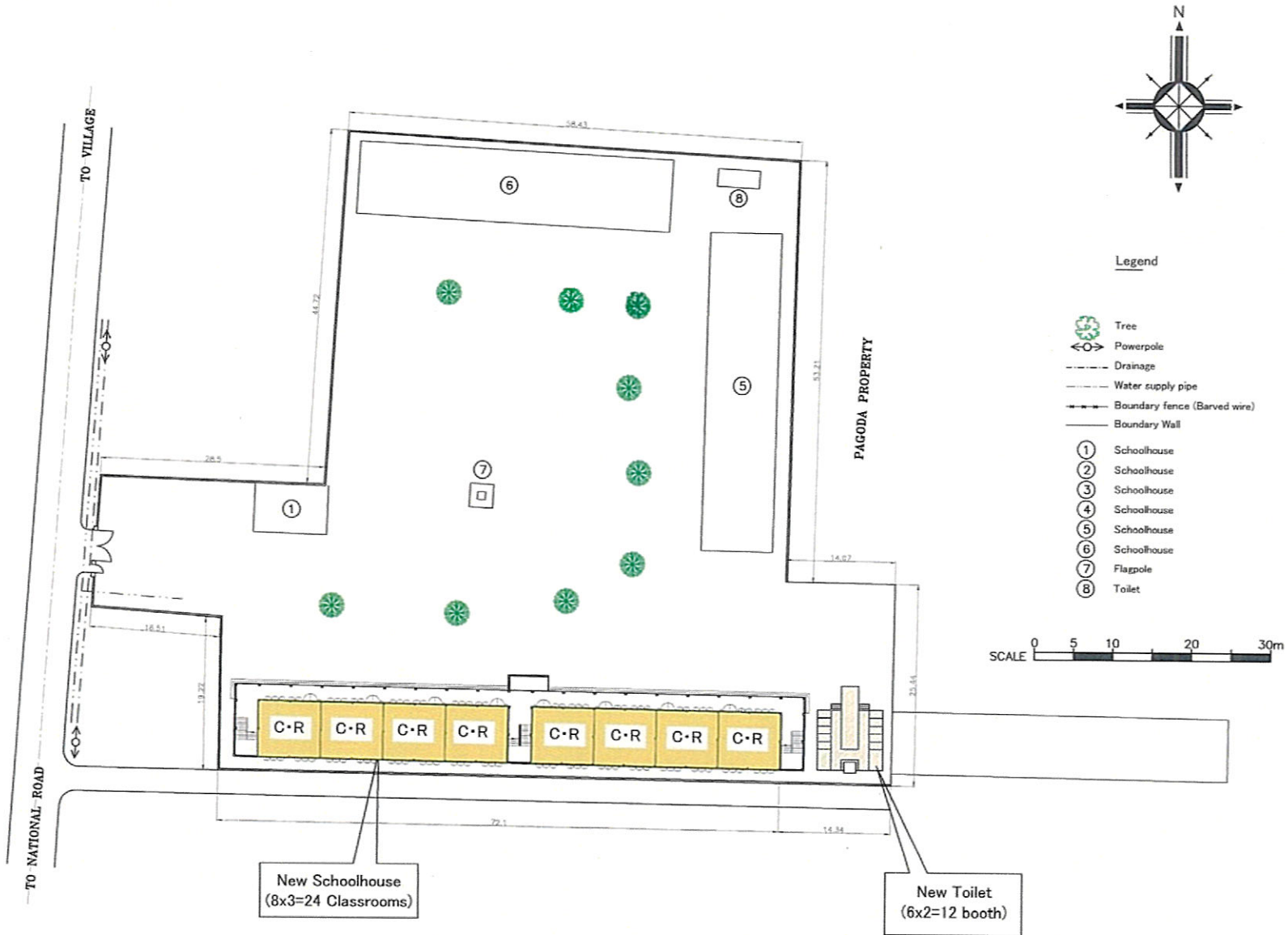


SECTION B-B
SCALE 1/200

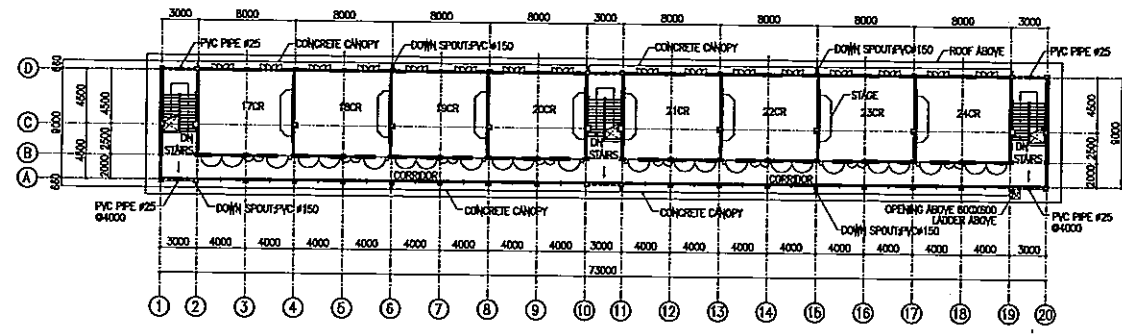


SECTION A-A
SCALE 1/200

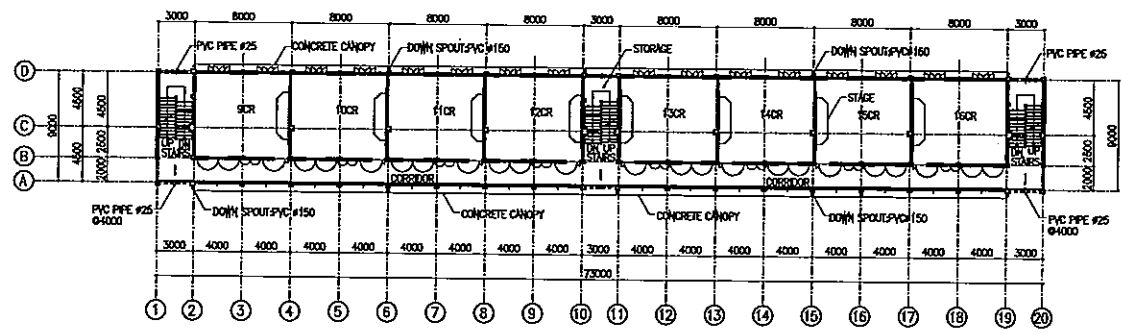
PROJECT NAME	IMPLEMENTATION AGENCY	TITLE	SCALE	DATE	DESIGNED	CHECKED	APPROVED	DWG No.	
THE PROJECT FOR CONSTRUCTION OF ADDITIONAL CLASSROOMS FOR PRIMARY SCHOOLS IN THE KINGDOM OF CAMBODIA(PHASE D)	DEPARTMENT OF EDUCATION, YOUTH AND SPORTS, PHNOM PENH MUNICIPALITY	ELEVATION & SECTION No.2 CHAK TOMUK PRIMARY SCHOOL	1/200						
							YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN		
								REV.	0



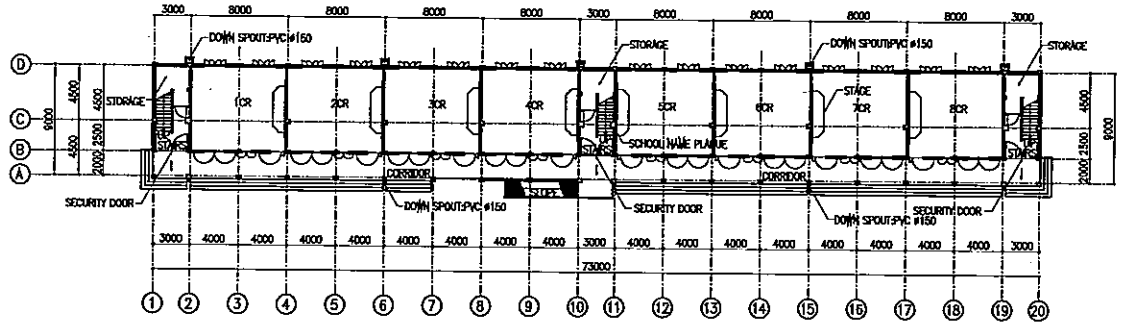
③ SOPHAK MONGKUL PRIMARY SCHOOL



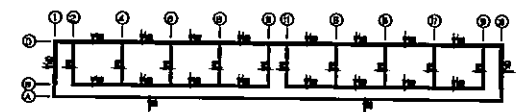
SECOND FLOOR



FIRST FLOOR



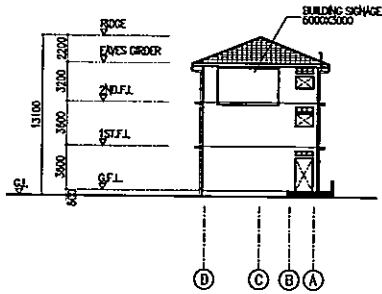
GROUND FLOOR



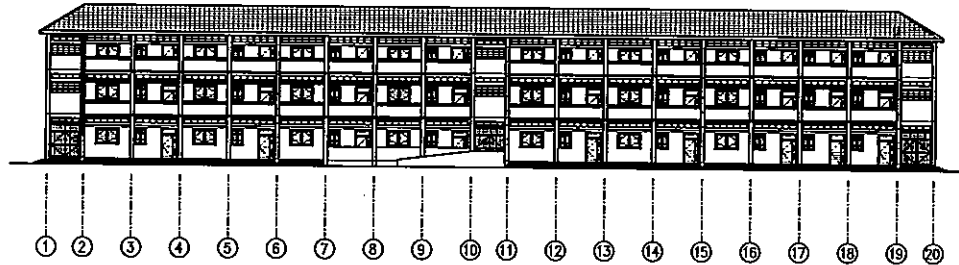
BRICK WALL KEY-PLAN

LEGEND
 [Hatched Pattern] : WALL THICKNESS=100mm
 [Solid Line] : WALL THICKNESS=80mm

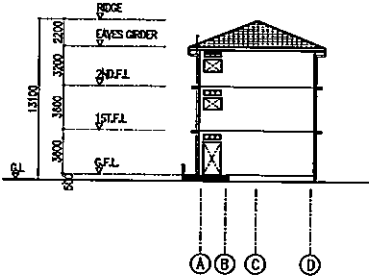
PROJECT NAME	IMPLEMENTATION AGENCY	TITLE	SCALE	DATE	DESIGNED	CHECKED	APPROVED	DWG No.
THE PROJECT FOR CONSTRUCTION OF ADDITIONAL CLASSROOMS FOR PRIMARY SCHOOLS IN THE KINGDOM OF CAMBODIA(PHASE II)	DEPARTMENT OF EDUCATION, YOUTH AND SPORTS, PHNOM PENH MUNICIPALITY	PLAN No.3 SOPHAK MONGKUL PRIMARY SCHOOL	1/200					
YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN							REV.	0



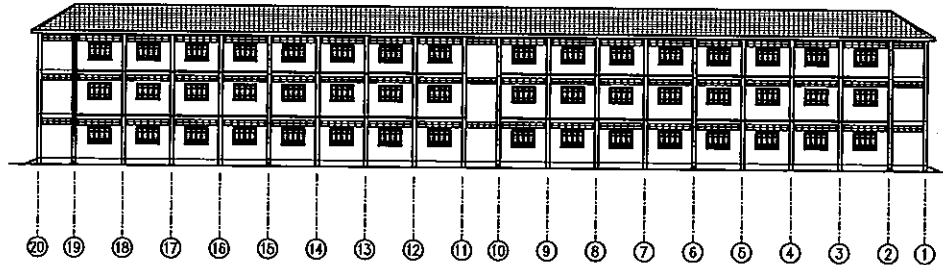
LEFT ELEVATION
SCALE 1/200



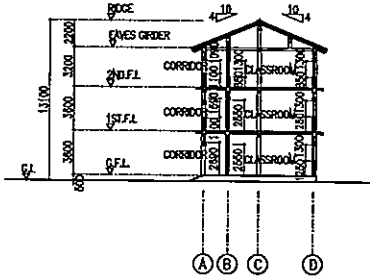
FRONT ELEVATION
SCALE 1/200



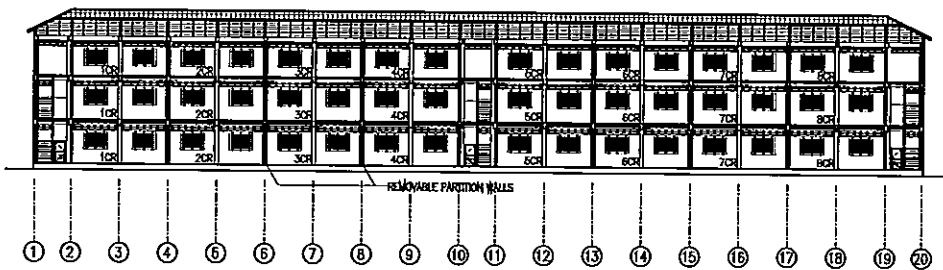
RIGHT ELEVATION
SCALE 1/200




BACK ELEVATION
SCALE 1/200



SECTION B-B
SCALE 1/200

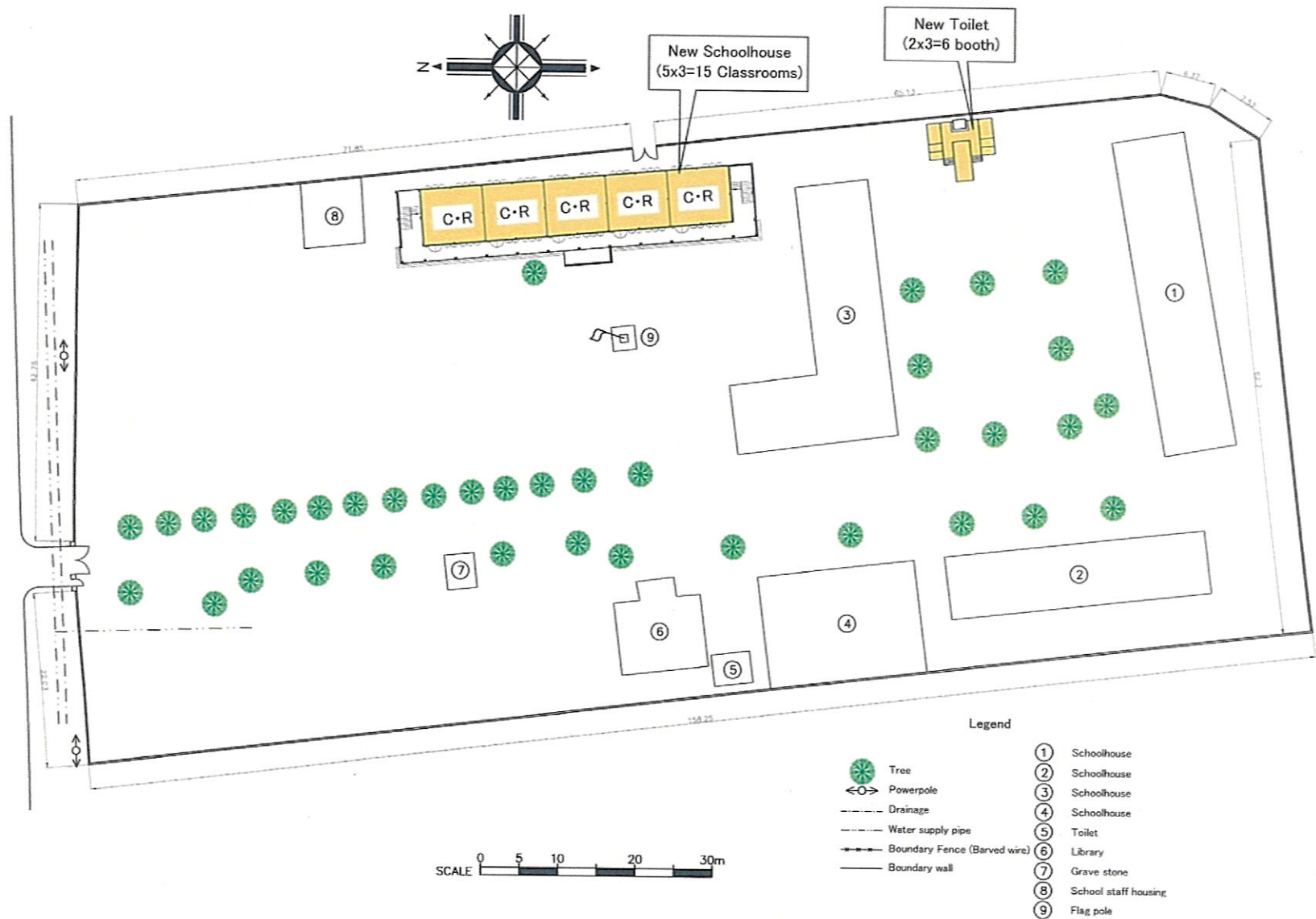


SECTION A-A
SCALE 1/200

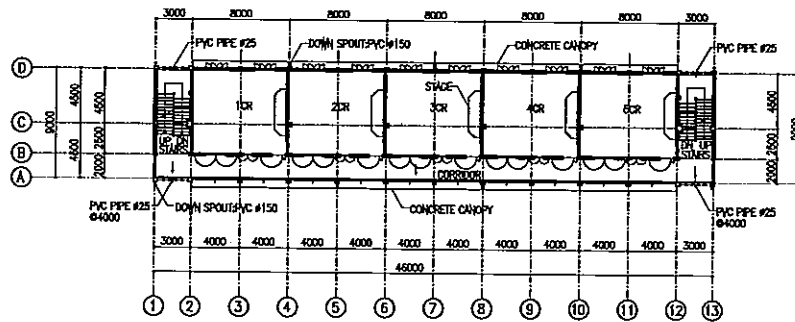
PROJECT NAME	IMPLEMENTATION AGENCY	TITLE	SCALE	DATE	DESIGNED	CHECKED	APPROVED	DWG No.
THE PROJECT FOR CONSTRUCTION OF ADDITIONAL CLASSROOMS FOR PRIMARY SCHOOLS IN THE KINGDOM OF CAMBODIA(PHASE II)	DEPARTMENT OF EDUCATION, YOUTH AND SPORTS, PHNOM PENH MUNICIPALITY	ELEVATION & SECTION No.3 SOPHAK MONGKUL PRIMARY SCHOOL	1/200					
 YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN							REV.	0

TO PHNOM PENH

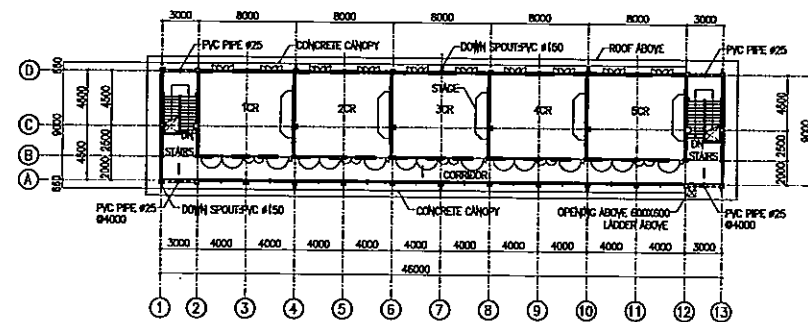
TO POCHEN TONG AIRPORT



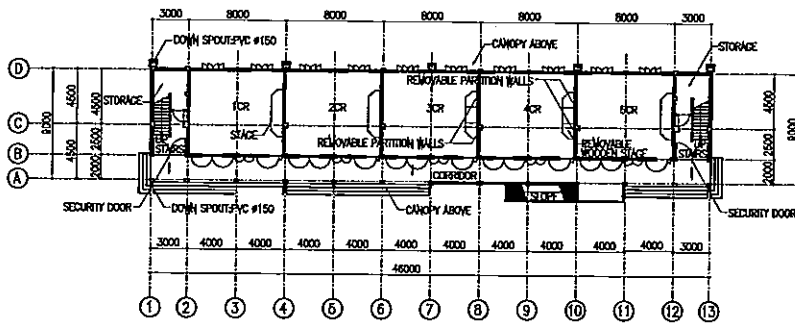
④ POCHEN TONG PRIMARY SCHOOL
(Core School)



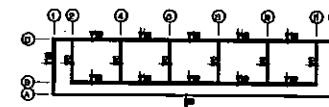
FIRST FLOOR



SECOND FLOOR



GROUND FLOOR



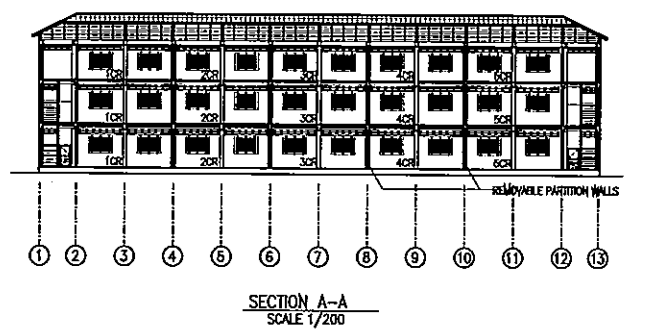
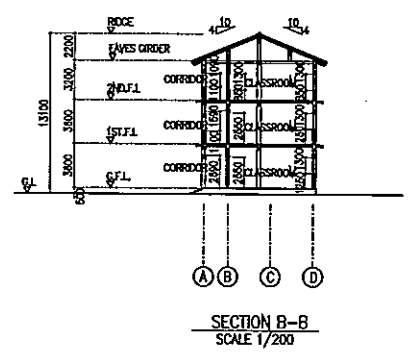
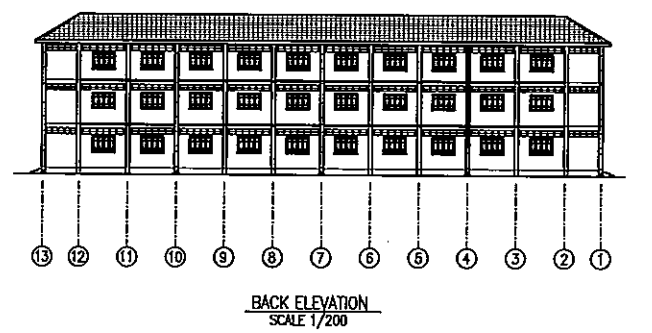
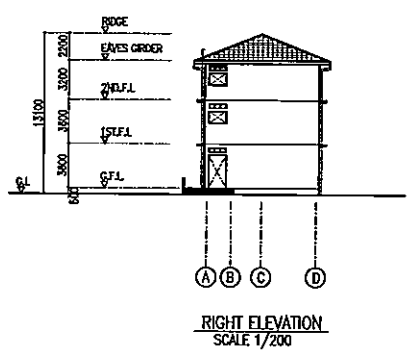
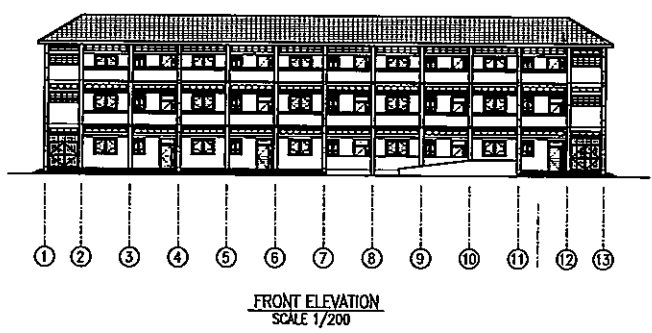
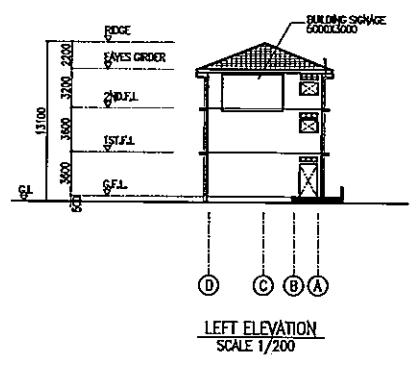
BRICK WALL KEY-PLAN


LEGEND

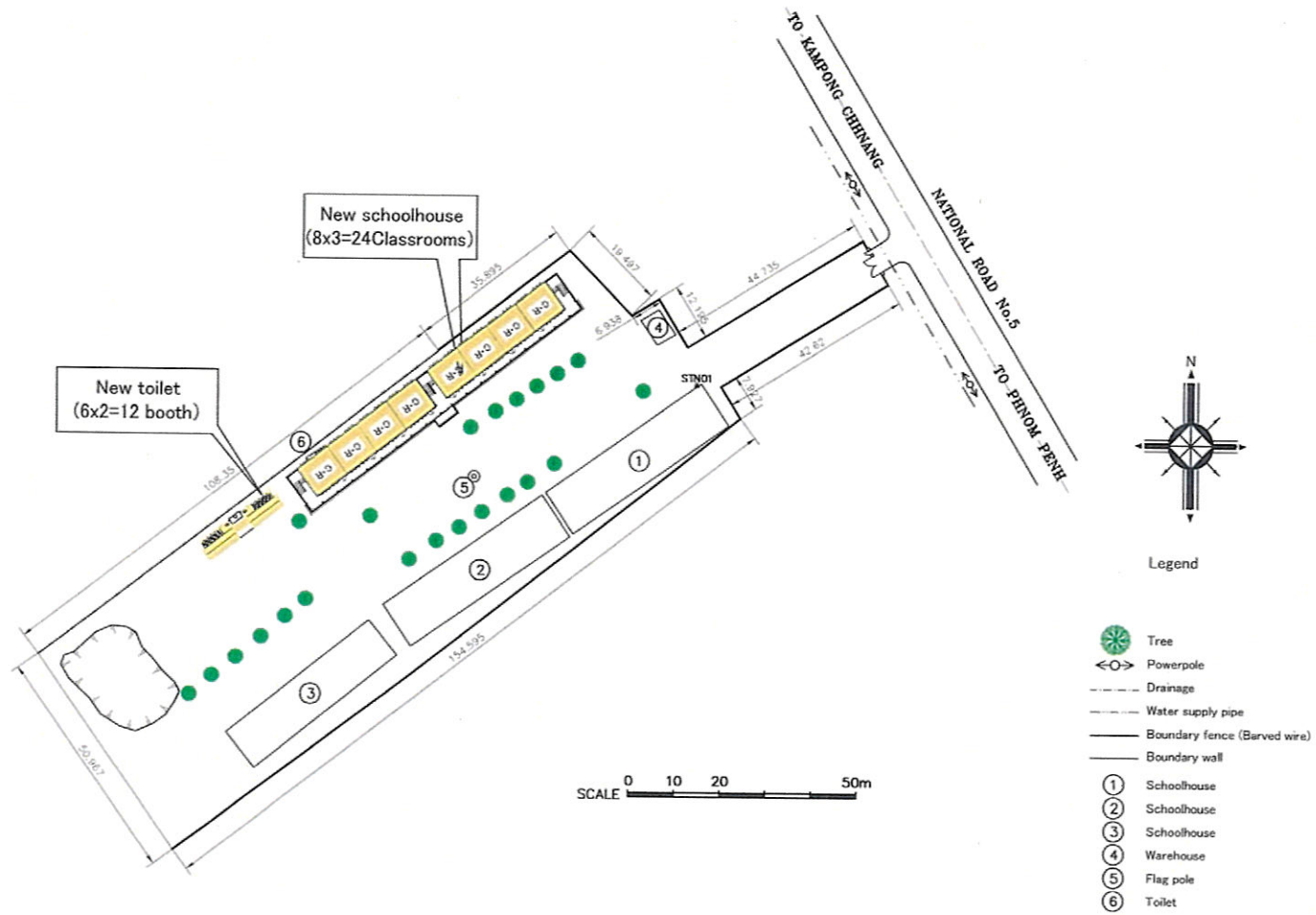
- : WALL THICKNESS=160mm
- : WALL THICKNESS=80mm

39

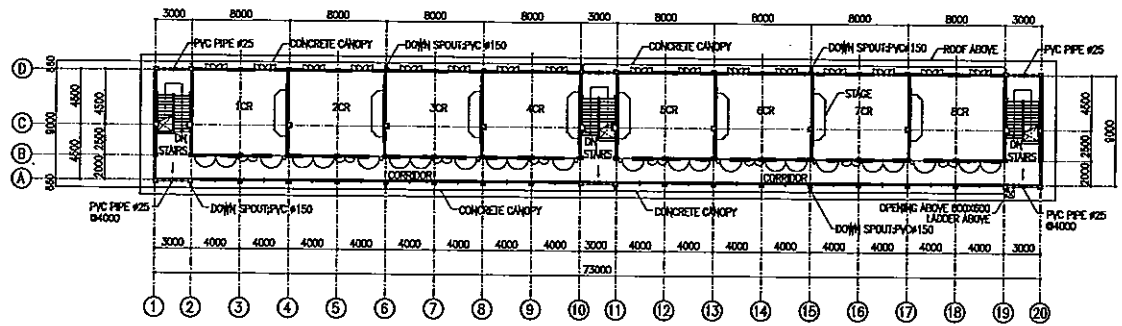
PROJECT NAME	IMPLEMENTATION AGENCY	TITLE	SCALE	DATE	DESIGNED	CHECKED	APPROVED	DWG No.
THE PROJECT FOR CONSTRUCTION OF ADDITIONAL CLASSROOMS FOR PRIMARY SCHOOLS IN THE KINGDOM OF CAMBODIA(PHASE II)	DEPARTMENT OF EDUCATION, YOUTH AND SPORTS, PHNOM PENH MUNICIPALITY	PLAN No.4 POCHEN TONG PRIMARY SCHOOL	1/200					
YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN							REV.	0



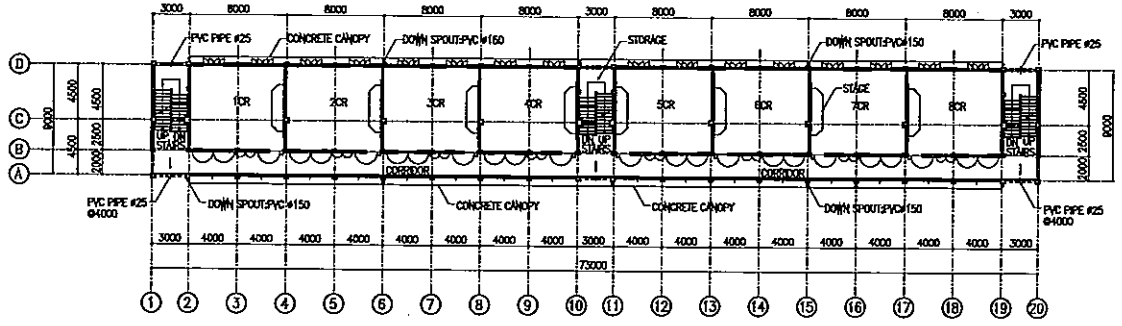
PROJECT NAME	IMPLEMENTATION AGENCY	TITLE	SCALE	DATE	DESIGNED	CHECKED	APPROVED	DWG No.
THE PROJECT FOR CONSTRUCTION OF ADDITIONAL CLASSROOMS FOR PRIMARY SCHOOLS IN THE KINGDOM OF CAMBODIA(PHASE II)	DEPARTMENT OF EDUCATION, YOUTH AND SPORTS, PHNOM PENH MUNICIPALITY	ELEVATION & SECTION No.4 POCHEN TONG PRIMARY SCHOOL.	1/200					
				 YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN				REV.



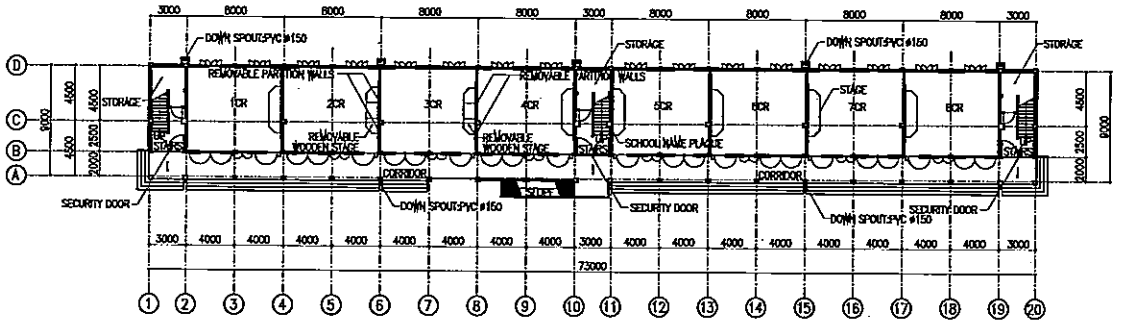
⑤ CHAMREUN RATH PRIMARY SCHOOL
(Core School)



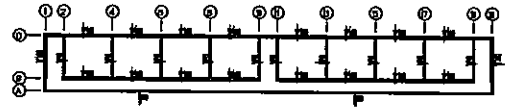
SECOND FLOOR





FIRST FLOOR



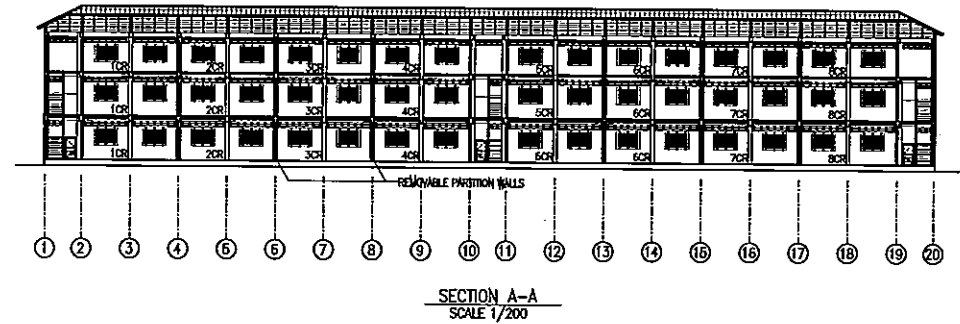
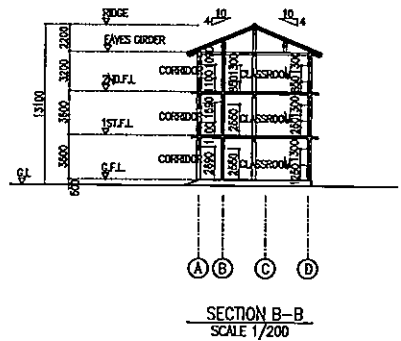
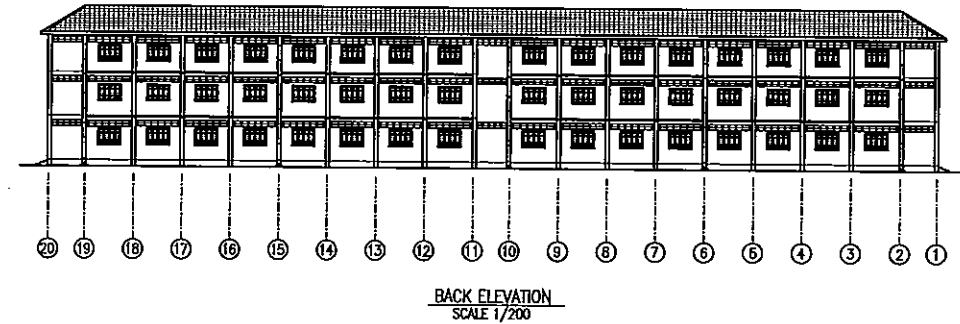
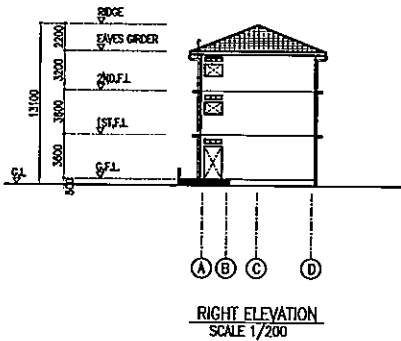
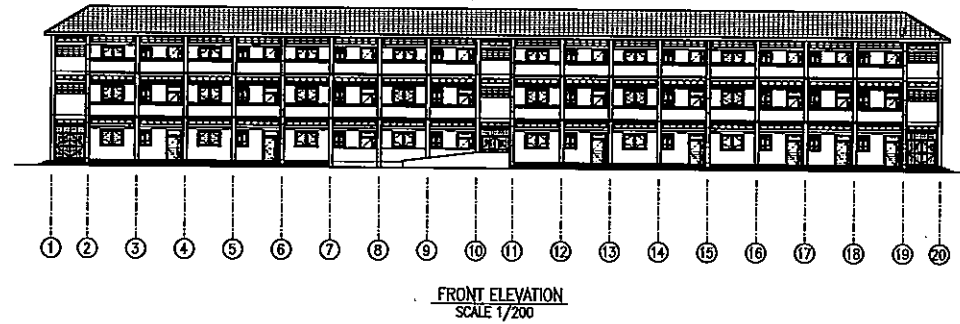
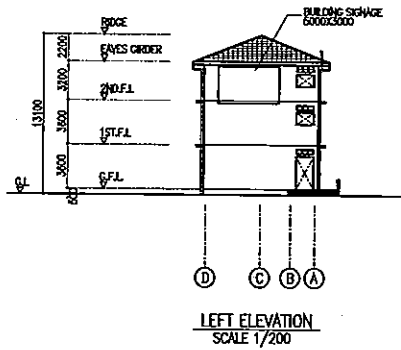
GROUND FLOOR



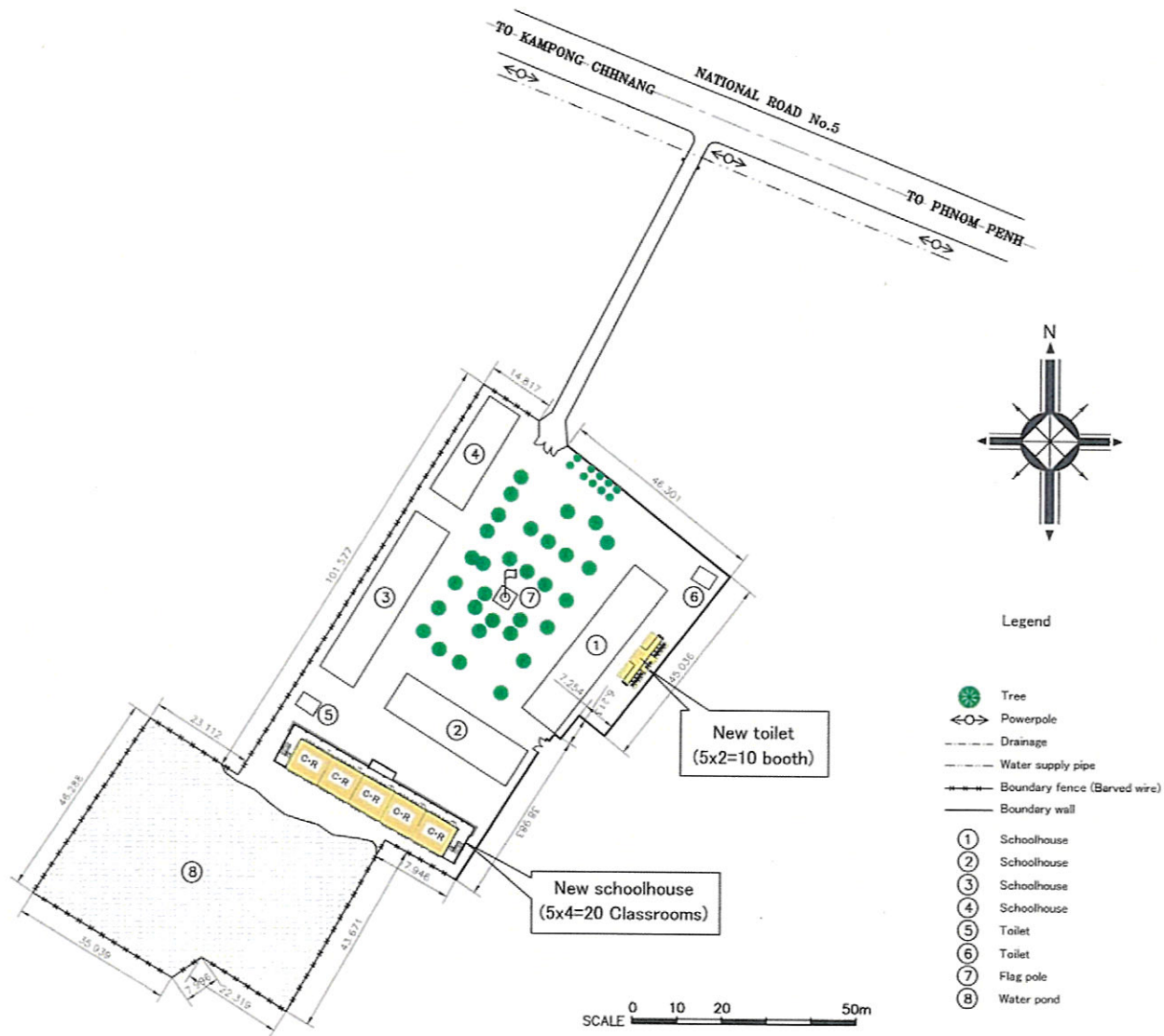
BRICK WALL KEY-PLAN

LEGEND
 WALL THICKNESS-160mm
 WALL THICKNESS-80mm

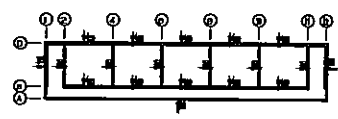
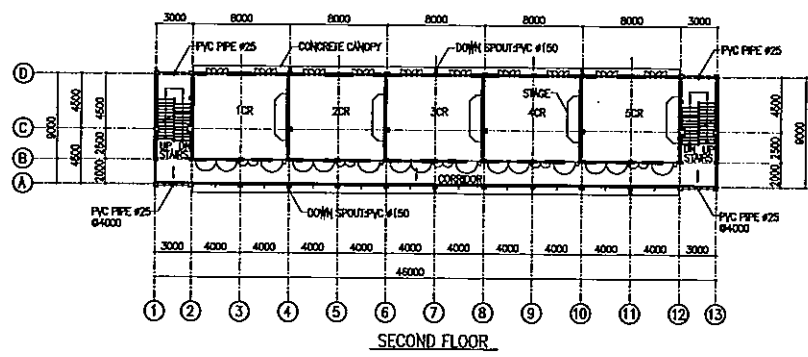
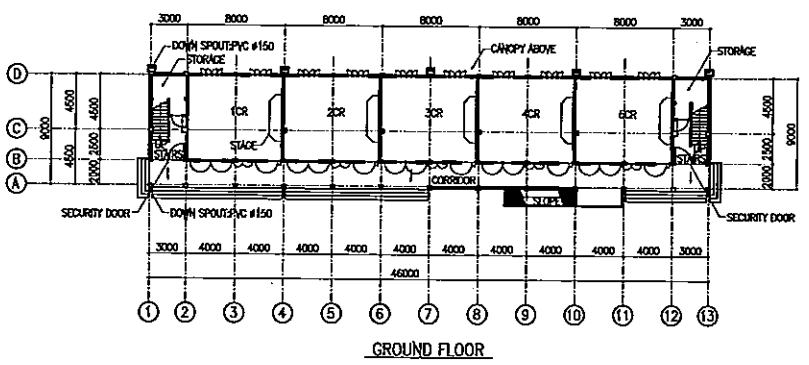
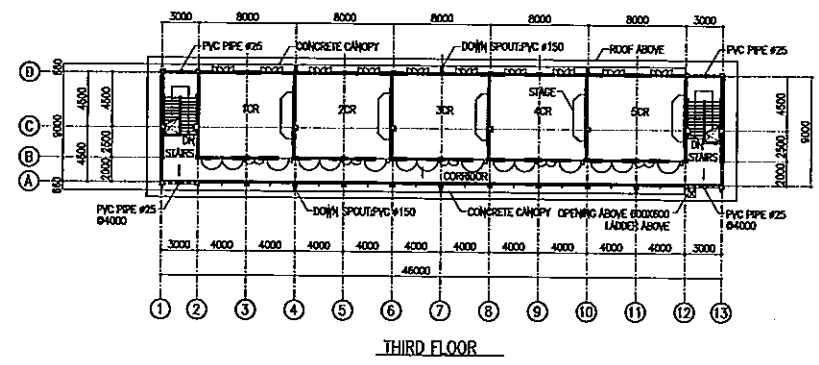
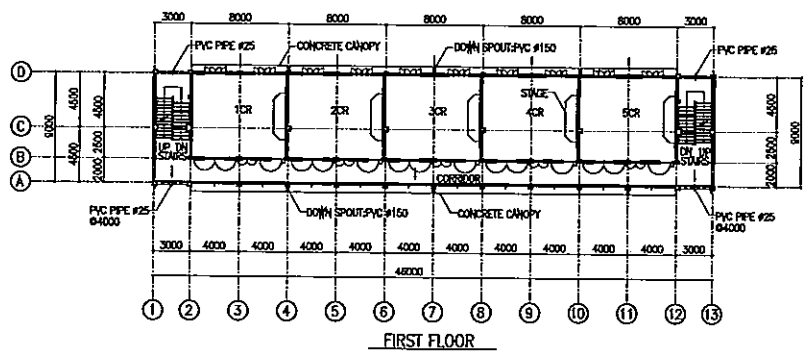
PROJECT NAME	IMPLEMENTATION AGENCY	TITLE	SCALE	DATE	DESIGNED	CHECKED	APPROVED	DWG No.
THE PROJECT FOR CONSTRUCTION OF ADDITIONAL CLASSROOMS FOR PRIMARY SCHOOLS IN THE KINGDOM OF CAMBODIA(PHASE II)	DEPARTMENT OF EDUCATION, YOUTH AND SPORTS, PHNOM PENH MUNICIPALITY	PLAN No.5 CHAMREUN RATH PRIMARY SCHOOL	1/200					
yec YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN							REV.	0



PROJECT NAME	IMPLEMENTATION AGENCY	TITLE	SCALE	DATE	DESIGNED	CHECKED	APPROVED	DWG No.
THE PROJECT FOR CONSTRUCTION OF ADDITIONAL CLASSROOMS FOR PRIMARY SCHOOLS IN THE KINGDOM OF CAMBODIA(PHASE II)	DEPARTMENT OF EDUCATION, YOUTH AND SPORTS, PHNOM PENH MUNICIPALITY	ELEVATION & SECTION No.5 CHAMREUN RATH PRIMARY SCHOOL	1/200					
				YACHIYO ENGINEERING CO., LTD. TOKYO, JAPAN				REV.



⑥ CHAMREUN CHEAT PRIMARY SCHOOL

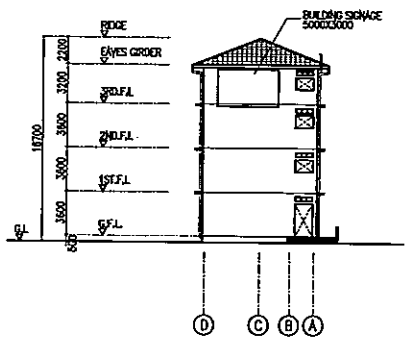


LEGEND
 [Hatched pattern] : WALL THICKNESS=100mm
 [Solid line] : WALL THICKNESS=80mm

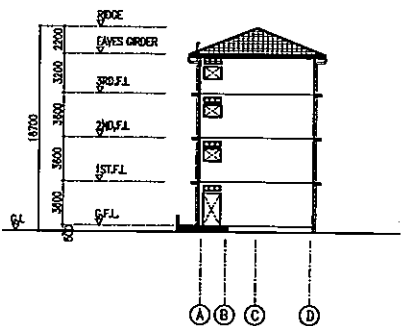
BRICK WALL KEY-PLAN

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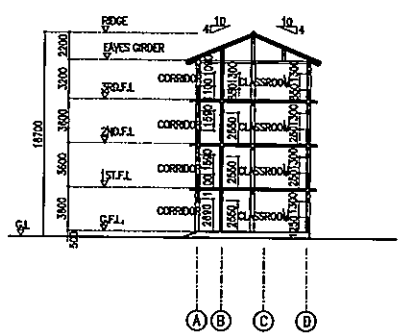
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 TOKYO, JAPAN



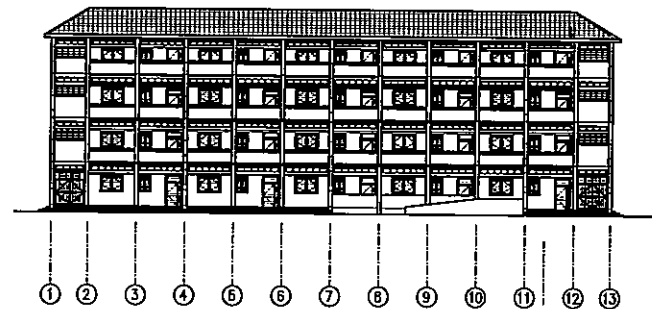
LEFT ELEVATION
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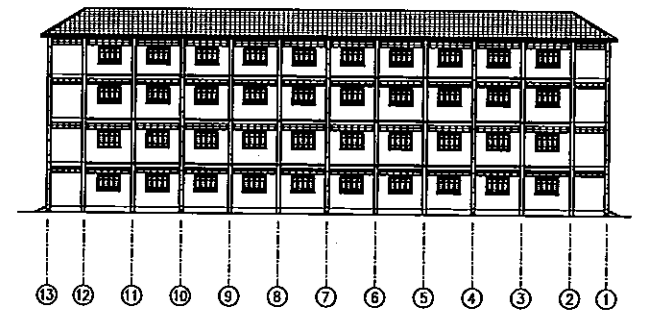
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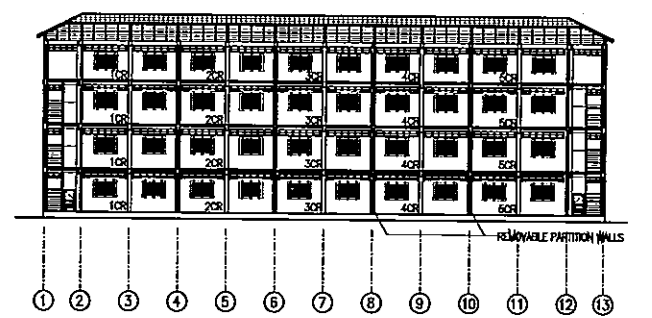
SECTION B-B
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FRONT ELEVATION
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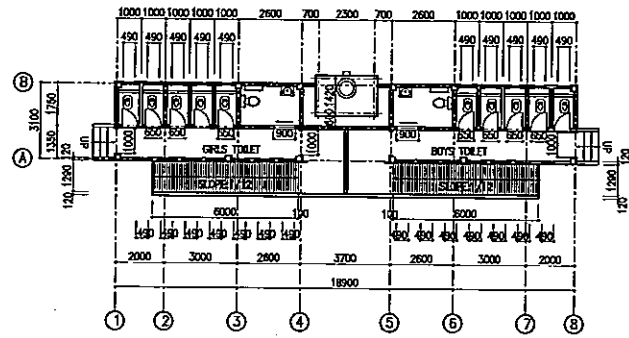


BACK ELEVATION
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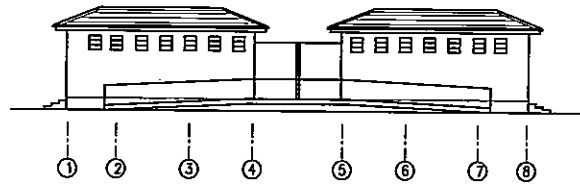


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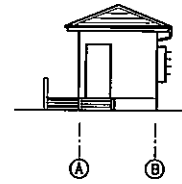
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THE PROJECT FOR CONSTRUCTION OF ADDITIONAL CLASSROOMS FOR PRIMARY SCHOOLS IN THE KINGDOM OF CAMBODIA(PHASE II)	DEPARTMENT OF EDUCATION, YOUTH AND SPORTS, PHNOM PENH MUNICIPALITY	ELEVATION & SECTION No.6 CHAMREUN CHEAT PRIMARY SCHOOL	1/200					
 YACHIYO ENGINEERING CO. LTD. TOKYO, JAPAN							REV.	0



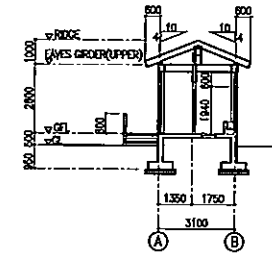
GROUND FLOOR



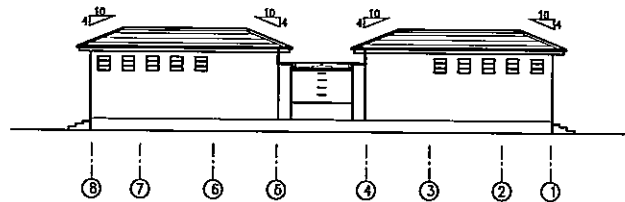
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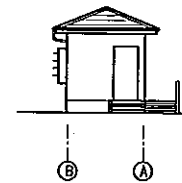
RIGHT SIDE ELEVATION




SIDE SECTION



BACK ELEVATION



LEFT SIDE ELEVATION

PROJECT NAME	IMPLEMENTATION AGENCY	TITLE	SCALE	DATE	DESIGNED	CHECKED	APPROVED	DWG No.
THE PROJECT FOR CONSTRUCTION OF ADDITIONAL CLASSROOMS FOR PRIMARY SCHOOLS IN THE KINGDOM OF CAMBODIA(PHASE II)	DEPARTMENT OF EDUCATION, YOUTH AND SPORTS, PHNOM PENH MUNICIPALITY	TOILET PLAN,ELEVATION,SECTION No.6 CHAMREUN CHEAT PRIMARY SCHOOL	1/100					
 YACHTYO ENGINEERING CO., LTD. TOKYO, JAPAN							REV.	0

2.2.4 Implementation Plan

2.2.4.1 Implementation Plan / Procurement Plan

(1) Implementation Policy

The Project will be implemented within the framework of the grant aid scheme of the Government of Japan. Consequently, the Project will only be implemented after the approval of project implementation by the Government Japan and the signing of the Exchange of Notes (E/N) by the both governments. Basic matters and particularly important points in implementing the Project are described below.

1) Project Implementing Body on the Cambodian Side

The competent agency on the Cambodian side responsible for implementation of the Project will be the Ministry of Education, Youth and Sports (MoEYS) and Phnom Penh Municipality (PPM). The implementing body will be the Department of Education, Youth and Sports, Phnom Penh Municipality (DEP). For smooth implementation of the Project, the DEP should appoint a person responsible for the Project under close communication and discussions with the Japanese consultant and suppliers in order to obtain the cooperation of teaching staff and schools by providing sufficient explanation on and making them aware of the need for an increase in classrooms at primary schools to be constructed under the Project.

2) Consultant

A Japanese consultant will conclude a design and supervision agreement with the Phnom Penh Municipality (PPM) and will execute detailed design and work supervision pertaining to the Project. In addition, the Consultant will prepare tender documents and conduct the tendering on behalf of the main project implementing body of the PPM.

3) Contractor

Contractor of Japanese firms selected by the Cambodian side through open competitive bidding in accordance with the framework of Japan's grant aid scheme will carry out the construction of facilities and procure construction materials under the Project. The suppliers are expected to carry out their duties on fragile ground. In addition, competency in safe and secure execution and implementation results on extremely small land area, competency in planning equipment transportation in and out on very narrow roads, and competency in ensuring adequate safety for pupils and neighboring residents is also expected. In particular, the site of No. 6 Chamureun Cheat school is very narrow and soft facing the pond. The access will cross the school yard. The 4 storey building will require piling of more than 20m deep and the contractor should have such

experiences and capability. Even after the completion of the Project, it is important to have competency in sufficient aftercare service.

4) Necessity for Dispatching Japanese Engineers

Since facility construction under the Project includes the construction of six (6) schools in a single year and involves equipment and materials procurement, domestic transportation and site operations, management should be mutually coordinated. Local builders are not very skilled in quality control based on shop and manufacture drawings, and there appears to be a particular lack in competency with regards to a safe temporary work plan or schedule control. In addition, since many temporary sites will be taken at the same time, a superintendent capable of consistent control and instruction of the overall construction should be dispatched from Japan.

5) Basic Principles on Implementation

- ◇ To be completed in one fiscal year.
- ◇ To ensure that quality control, safety control and schedule control are treated as high priority in principle.
- ◇ To efficiently utilize local companies and consultants who are experienced and who are familiar with competency in procurement and labor control in order to ensure quality control and schedule control.
- ◇ To plan an implementation scheme to ensure schedule control due to the simultaneous progress of six (6) schools by effectively utilizing a number of local companies.
- ◇ To pay maximum attention to noise or vibration during the construction work within the school yard and the municipality so as not to disturb existing school operations and surrounding buildings.
- ◇ To pay special attention to worker safety and ensuring that construction materials do not fall from three or four story buildings during construction work.

3.2.4.2 Implementation and Procurement Conditions

(1) Progress Scheduling

A detailed implementation plan should be formulated in order to ensure the smooth progress of construction work. In particular, attention should be paid to the following points during implementation of the Project.

- ◆ The work scheduling should take into account the location of construction in relation to existing school buildings, access roads conditions and surrounding conditions.
- ◆ Since some school yards are flooded during the rainy season (between May and October), a progress scheduling should take into account the meteorological conditions in Cambodia.
- ◆ Since land for storing construction materials and equipment and for processing materials cannot be created within each school yard, efficient implementation progress should be planned by selecting the most appropriate location for the simultaneous construction of six schools and by finding a way to install a temporary storage area for materials or workshop.
- ◆ Since the six schools are scattered throughout the municipality and suburbs, a phased and efficient application plan for temporary materials and construction equipment should be formulated.
- ◆ In order to avoid inconveniencing the surrounding residents, a progress schedule for a construction method should be formulated.

(2) Procurement Plan

Although construction materials locally procurable on the local market are selected in principle, reinforcing bars and other steel products are scheduled to be procured from third countries such as Thailand in order to ensure quality. In addition, since many of the construction materials locally procurable are also products that can be imported from a third country, detailed procurement in line with the implementation plan such as confirmation of inventory or quality assurance should be planned.

(3) Temporary Enclosure and Safety Measures

Since lessons will continue during the construction of new school buildings, in order to ensure the safety of school-related persons and construction-related parties, the directions of traffic flow should be separated. However, land under the Project is generally situated at the back of the lot with only one main entrance. Moreover, in the case of a school implementing a three-shift system, the frequency of pupils coming and going from school is high. It is therefore difficult to separate the flow completely. Consequently, in addition to temporary enclosures and in the interests of safety several guards will be posted at each school.

(4) Local Builders

1) Skilled Workers

Although construction sites can be observed everywhere in Phnom Penh, peeling, cracking and uneven coloring of the finishing materials or curving of wall surfaces on existing buildings is often seen. There are few skilled workers and the technical level doesn't appear to be very high. In

addition, due to the lack of specialization, one skilled worker often works at a number of construction sites. Therefore, when procuring skilled workers for the Project sufficient technical capacity should be confirmed.

2) Quality Control

As described above, in Cambodia skilled workers are not specialized. Therefore, in order to ensure quality, completed work should be thoroughly checked at each stage of construction particularly in accordance with the shop and manufacturer's drawings. At the same time, technical capacity and overall quality should be improved by providing technical guidance. Proper supervision by local builders during each job is therefore essential.

2.2.4.3 Scope of Work

The work share between the Japanese and Cambodian sides is described in the following table.

Table 2-14 Work Share between the Japanese and Cambodian Sides

Work Item	Scope of Work		Remarks
	Japan	Cambodia	
1. School Building Construction			
(1) Security of construction land (lot) and land formation			Including felling of trees, etc.
(2) Provision of temporary land			Construction materials storage yard, etc.
(3) Temporary enclosures at construction sites, etc., temporary construction			
(4) Security for access to construction lot			
(5) Construction work of school buildings (classrooms)			
(6) Fences, gates for schools			
2. Toilet Building Construction			
(1) Security of construction land (lot) and land formation			Including felling of trees, etc.
(2) Temporary enclosure at construction sites, etc., temporary construction			
(3) Construction work of toilet buildings			
3. Electric & Water Supply, Drainage Works *1			
(1) Electric work & water supply work within the lot			
(2) Electric work & water supply work outside the lot			
(3) Application to EDC and authorities of water and road			
4. Procurement, Manufacturing & Installation of Furnishings			(Only for additional classrooms to be built)
(1) Whiteboards			
(2) Classroom desks & chairs for pupils & teachers			
5. Other			
(1) Application for building permit			

(Note): Indicates the scope of work.

*1: Electric and water supply work

- ◆ Electricity: Under the Project, a switch board to connect electric power to the lot will be installed, from which the Japanese side will install wiring and equipment including wiring to the existing distribution panel. Including application to the EDC, connection work to the switch board will be taken by the Cambodian side.
- ◆ Water supply and drainage: Piping within the lot and installation of equipment under the Project will be taken by the Japanese side; whereas application to the authorities of water and road, piping work outside the lot and connecting work to sewerage pipes will be taken by the Cambodian side.

2.2.4.4 Consultant Supervision

In accordance with the grant aid scheme of the Government of Japan, the Consultant will organize a reliable project team responsible for the detailed design and supervision of the construction work taking the purpose of the basic design into account for the smooth implementation of the Project. The Consultant will make sure that the target sites in the Project sufficiently recognize various circumstances in Cambodia at the work supervision stage, and maintain consistency in scheduling, quality control, and work quality and safety control at each school.

(1) Basic Principles for Work Supervision and Procurement Supervision

The Consultant will supervise the progress of the construction work and procurement of equipment and materials in order to complete the work within the fixed construction period and will secure quality and the delivery schedule of equipment and materials stated in the Contract documents. The Consultant will also take care in order to ensure safety at construction sites.

The key areas of major work supervision and procurement supervision are described as follows.

1) Schedule Control

So that suppliers can meet delivery dates, the implementation schedule planned at the time of contract and actual progress conditions will be compared monthly or weekly. If any delay in the schedule is anticipated, the Consultant will warn suppliers and ask them to propose and carry out alternative measures and will also instruct them to complete the construction work and the delivery of equipment and materials within the contracted construction period.

A comparison of the planned schedule and actual progress will include the following items.

Confirmation of work progress (condition of construction equipment and materials procurement and construction work progress)

Confirmation of actual delivery of equipment and materials (construction materials and equipment and furnishings)

Confirmation of temporary construction and preparation of construction machinery (when needed)

Confirmation of planned input and actual input of engineers, skilled workers and laborers, etc.

2) Quality and Work Progress Control

Supervision of facilities constructed and construction materials manufactured and delivered so that they satisfy the facilities, quality and work progress required in the contract documents will be conducted in the following manner. After confirmation and checking, should quality or work volume need to be confirmed, the Consultant will immediately ask the supplier to make necessary corrections, alterations or modifications.

Checking of shop drawings for the construction work and specifications of utilized construction materials

Checking of manufacturer's drawings and specifications of furnishings and fittings

Witnessing of manufacturing or production sites of construction equipment and materials or checking plant inspection results (when needed)

Supervision and confirmation of work quality completed and finished

Table 2-15 Primary Quality Supervision Plan

Type of Work	Quality Supervision Item	Inspection Method		Inspection Frequency
Piling Work	Pile bearing capacity	Surcharge inspection		1 spot at each site
Foundation Work	Compaction degree	Visual inspection		All locations of foundation base Plant bearing test depending on circumstances
Backfilling Work	Delivered soil quality check	Grain size analysis & CBR test		1 spot at borrow pit
	Ant repellent spray	Spray certificate inspection		Once at each site
		Visual inspection		
Form Work	Work quality completed	Visual & measurement inspection, photographs		All members (components)
Reinforcement Work	Materials	Mill sheet test		All lots
		Tensile strength test		Reinforcement without mill sheet
	Built-up inspection	Visual inspection		All members
Concrete Work	Materials	Cement	: Strength test	All batcher plants (components)
		Aggregate	: Grain size analysis	
		Water	: Water test	
	Test mixing	Compressive strength test		All batcher plants
Ready-mix concrete	Temperature, slump & air content		Before concrete placement Once collecting specimen (test piece) per 150 m ² Strength test 7 & 28 days later collection On-site sealed curing	
	Compressive strength test			

Since the majority of materials locally procured under the Project will be produced in Cambodia or a third country, elaborate quality checks prior to on-site delivery is essential. The quality of these materials varies more than Japanese products due to a lack of quality control at the manufacturing and production stages.

In the quality control of goods (such as cement mortar) to be manufactured and utilized at the sites, regulations following the execution of control criteria at the formulation stage of an implementation plan will be established and will become the guiding principles for quality control.

3) Safety Control

Supervision will be provided in order to prevent accidents at the construction sites and any injuries and accidents to a third person (especially pupils) during the construction period through discussions and cooperation with persons responsible for safety control from the suppliers. The key points with respect to on-site safety control are described below.

- Establishment of safety control regulations and appointment of safety manager

- Prevention of accidents through periodical checking of construction machinery

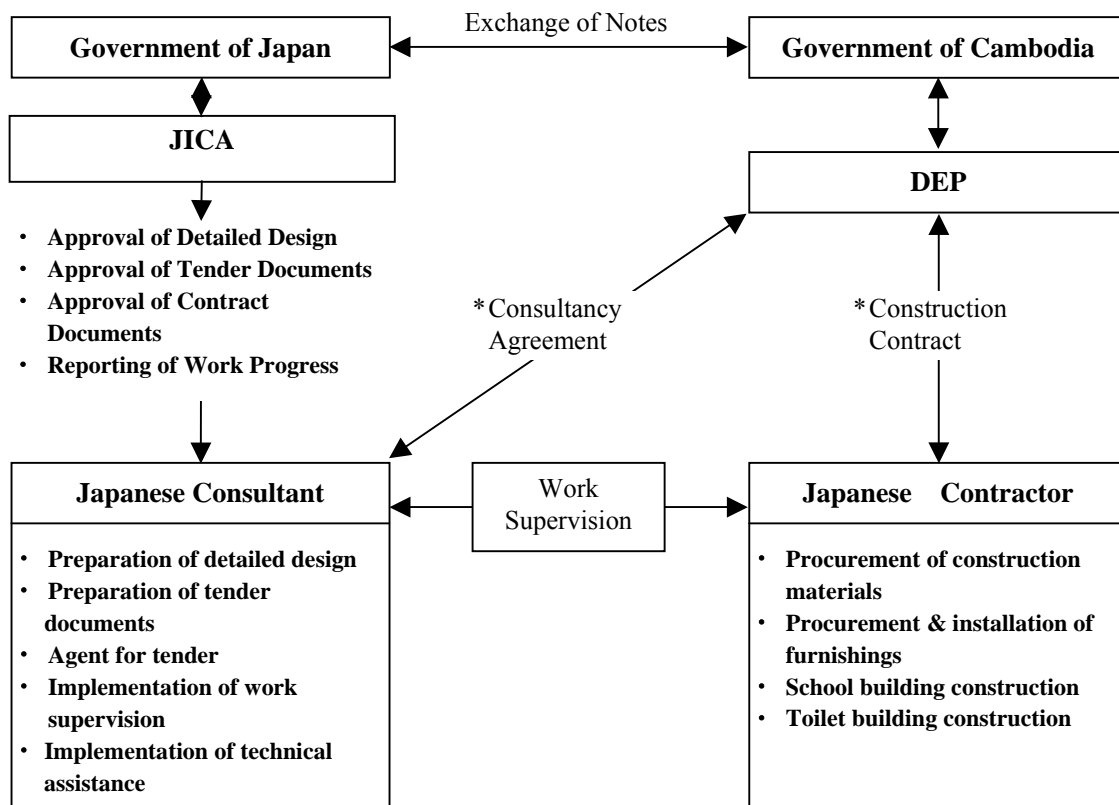
- Preparation of routes for construction vehicles and transporting machinery, etc. and strict adherence to safe driving rules

- Utilization of safe facilities and periodical inspections

- Enforcement of appropriate welfare measures and rest days for workers

4) Project Implementation Relationship

The inter-relationship between the implementing bodies of the Project including work supervision time is illustrated in the following diagram.



* (Note): Both the consultancy agreement and the construction contract should be verified by the Government of Japan.

Figure 2-8 Project Implementation Relationship

2.2.4.5 Procurement Plan

Most of the materials to be procured and utilized under the Project are locally procurable. In addition, materials and equipment for civil engineering and architectural work at the target sites include aggregates, cement, timber and coating materials, etc. produced in Cambodia or a third country, which are available on the market and can therefore be easily procured locally. Although steel materials or reinforced bars are available on the local market, since the storing conditions are poor and mill sheets cannot be obtained, these materials will be procured from a third country. Among neighboring countries Thailand is the most influential due to its industrialized economy and therefore is the most suitable place in the interests of ensuring quality. As for transportation routes, unloading will take place at the Port of Sihanoukville in Cambodia. After customs clearance, delivery will be made overland on National Road No. 4 to Phnom Penh, so special attention should be given to weight limits. It is also possible to lease or procure construction machinery and transporting vehicles locally so there should be no impediments to the implementation of the Project. Accordingly, the places of procurement of construction materials to be utilized under the Project are listed below.

Table 2-16 List of Construction Materials and Equipment to be Procured

Name of Materials & Equipment	Place of Procurement			Remarks
	Local		Third Nation	
	Locally Produced	Imported		
Reinforced bars & steel frames				No quality assurances for locally procurable products due to inventory control problem
Portland cement				No problems with local procurement in both quantity & quality
Aggregates for concrete				No problems with local procurement in both quantity & quality
Concrete form materials				No problems with local procurement in both quantity & quality & caution for deformations
Hollow bricks				Despite no problems with local procurement in both quantity & quality, severe rise in price due to reduction in yield from policies to protect forests & to prevent careless felling
Colored cement tiles				
Ventilating & • face blocks				No problems with local procurement in both quantity & quality
Concrete blocks				Local products exist, but no large quantities
Colored slate plates				No problems with local procurement in both quantity & quality
Galvanizing profiled metal sheet for roofing				No problems with local procurement in both quantity & quality
Color profiled metal sheet for roofing				No problems with local procurement in both quantity & quality
Heat insulators				No problems with local procurement in both quantity & quality
Tiles				No problems with local procurement in both quantity & quality
Coating materials				No problems with local procurement in both quantity & quality
Furniture				No problems with local procurement in both quantity & quality
Whiteboards				Problems with locally procurable products such as large deformations
Materials for Electric Equipment Work				
Cable				No problems with local procurement in both quantity & quality
Lighting equipment				No problems with local procurement in both quantity & quality
Switches & outlet sockets				No problems with local procurement in both quantity & quality
Switchboards				No problems with local procurement in both quantity & quality
Materials for Water Supply & Drainage Work				
Galvanizing steel pipes				No problems with local procurement in both quantity & quality
Toilet stools, urinals & wash basins				No problems with local procurement in both quantity & quality
PVC pipes				No problems with local procurement in both quantity & quality

2.2.4.6 Technical Assistance (Soft Component)

(1) Background of Technical Assistance

Each school, with support of the School Supporting Committees and communities, has been dealing with the maintenance of the school facilities such as repair and cleaning. Furthermore, most of the six target schools have prepared facility maintenance system, for example, annual plan, and budget or persons responsible for its implementation. The following improvement, however, is considered necessary to ensure the long-term utilization of the facilities to be constructed by this project.

<Facility Repair Management>

Currently, apart from minor repairs of desks, doors, windows, keys, some paintwork, etc, which are generally done at the time of PAP disbursement, the facilities tend to be repaired only when they are badly damaged. It is necessary to do preventive repair work for facilities periodically.

<Cleaning Management>

Although school buildings and yards are maintained relatively well, almost all toilets are kept in bad conditions giving out odors caused by own structures and mal-maintenance. Accordingly, the importance of toilet cleaning and its sanitary management should be re-disseminated.

The structure of toilets to be constructed by the Project is different from that of the existing toilets. Specific technical skills are necessary to maintain the new toilet in good conditions.

Necessary fund should be secured in order to ensure periodic disposals of toilet sludge and regular repair work.

(2) Goal of Technical Assistance

The Technical Assistance aims to increase the target schools' capacity to ensure sustainable facility maintenance and to diffuse the same maintenance method widely to other schools through the Department of Education, Youth and Sports, Phnom Penh Municipality (DEP), and has the following objectives.

- 1) Directors and teachers of the schools understand facility maintenance methods, especially those of toilets and windows.
- 2) A long-term facility repair plan is formulated and preventive repair work is done periodically.
- 3) The framework of facility maintenance with active and sustainable involvement of DEP is developed.

(3) Outcome of Technical Assistance

The outcomes of the Technical Assistance are described below.

- 1) Toilets are maintained in satisfactory conditions over the long term.
- 2) Basic facility structures such as roofs, walls, toilets and water supply systems are understood, and the importance of facility maintenance and sanitary management is re-understood by the directors and teachers of the target schools.
- 3) Long-term facility repair plan is formulated.
- 4) Maintenance guideline is prepared for the target schools, and both monitoring and maintenance guideline are prepared for DEP.
- 5) DEP understands the school facility maintenance conditions better through active involvement.

(4) Monitoring the Outcome

- 1) Level of understanding sludge disposal from toilets: There is no opportunity to confirm it during the period of Technical Assistance; instead, the outcome is confirmed by the result of the interview to school directors and teachers from the point of the proper understanding about new toilets and the size of sludge disposal funds then mobilized.
- 2) Understanding of basic facility structures and the importance of facility maintenance and sanitary management: the outcome is confirmed by monitoring as these items being included in monitoring items.
- 3) Long-term facility repair plan: the outcome is monitored whether it is really prepared, covers all necessary repair items in it, plans a repair fund mobilizing, and is reflected to the next budget plan.

(5) Activities of Technical Assistance (Input Plan)

The following activities are carried out as the Technical Assistance so that the maintenance method for the facilities of the Project can be understood and put into practice.

1) Preparation of Schemes for Technical Assistance

The Consultant will prepare schemes in line with the following contents.

structure of the facilities of the Project, maintenance of the facility of the Project,
sanitary management especially of toilets, long-term facility maintenance

2) Formation of Task Force

Formation of task force on the Cambodian side is indispensable for the effective and efficient implementation of the Technical Assistance. The task force should sufficiently understand the intentions of the Consultant, inform activities of the Technical Assistance to the concerned parties, and monitor maintenance activities after the completion of facility construction. The task force is formed by DEP and consists of the personnel of DEP.

3) Orientation for the directors, teachers and SSC members of the Schools

The schools are informed about the contents of the facilities to be constructed, construction schedule, model school observation visit and seminars on facility maintenance. In addition, the importance of facility maintenance by the schools is emphasized. DEP takes the initiatives in preparing the orientation, and the Consultant explains.

4) Model School Visit for Observation

The school directors and teachers visit model schools selected by DEP and the Consultant, observe good examples of facility maintenance and management systems and share the ideas through discussions with the model schools' teachers so that they understand better how to maintain the school facilities in good conditions.

5) Observation of Toilets during Construction Work

Since the toilet of the Project adopts a different type compared with existing toilets, new technical skills are required for its maintenance. So the system of toilet should be well understood through actual observation of its structure during the construction.

The observation is prepared by DEP with cooperation of the consultant and the contractor.

6) Seminar

DEP holds a Seminar on "how to maintain facilities in good conditions" supported by the Consultant who explains the facility structure and an effective method on facility maintenance, necessity of sanitary management, and the formulation of a long-term repair plan.

7) Preparation of Guideline for Facility Maintenance

In due consideration of the above-mentioned model school observations and seminar, ways of improving the school facility maintenance are examined and analyzed through discussions among the concerned parties for developing their awareness.

A participatory-type method among the concerned parties is adopted in preparing “the guideline for facility maintenance” based on a model prepared by the Consultant and by incorporation of local ideas in order to enhance the awareness and ownership of the concerned parties. The Consultant comments on the progress and provide instructions.

8) Preparation of Guideline for Formulation of Long-term Repair Plan

Same as above 7), a participatory-type method is adopted in preparing the guideline based on a model prepared by the Consultant and incorporation of local ideas

9) Preparation of Monitoring Guideline for Facility Maintenance

A guideline for the monitoring of maintenance activities in the schools is prepared by active involvement of DEP. The Consultant prepares a draft guideline. Based on this, the task force prepares and completes the guideline by itself. The Consultant supports it through the comments, evaluates, and feedback to it.

Based on the guideline, DEP is required to monitor facility maintenance conditions at least once a year, feedback it to the schools, and report the results to the JICA office in Cambodia.

(6) Procurement Method of Resources for Technical Assistance

At the present time, the activities of DEP about school facility maintenance are limited. However, in the interests of sustainable facility maintenance after the completion of the Project, DEP should deepen its awareness of the present school facility maintenance conditions and form a school support system accompanied with technical assistance, etc. Accordingly, the Japanese Consultant, by encouraging the sustainable involvement of DEP, helps promote better communication between DEP and the schools and also the own initiative of the schools. In addition, the Japanese Consultant should encourage both DEP and the schools in providing sustainable facility maintenance through self-efforts by collaborating mutually even after the completion of the Project.

The task force is set up through the unwavering support of DEP in order to secure the smooth implementation of the Technical Assistance and sustainable application after the completion of the Technical Assistance.

The task force plays a useful role for promotion of the Technical Assistance, and supervises, if necessary, the facility in order to secure the smooth and sustainable maintenance in satisfactory conditions even after the completion of the Project.

(7) Work Schedule of Technical Assistance

Table 2-17 The Technical Assistance will be carried out according to the following schedule

Month	1	2	3	4	5	6	7	8	9	10	11	12	13
Activity Items		Preparation & Implementation										Monitoring	
		Implementation (operation and maintenance)											
Period		1.3 months										0.5 month	

(8) Output of Technical Assistance

The output to be obtained through the implementation of the Technical Assistance under the Project is listed below.

- 1) Schemes of Technical Assistance (Consultant)
- 2) Guideline for Facility Maintenance (all schools and DEP)
- 3) Guideline for Formulation of Long-term Repair Plan (all schools and DEP)
- 4) Monitoring Guideline for Facility Maintenance (DEP)

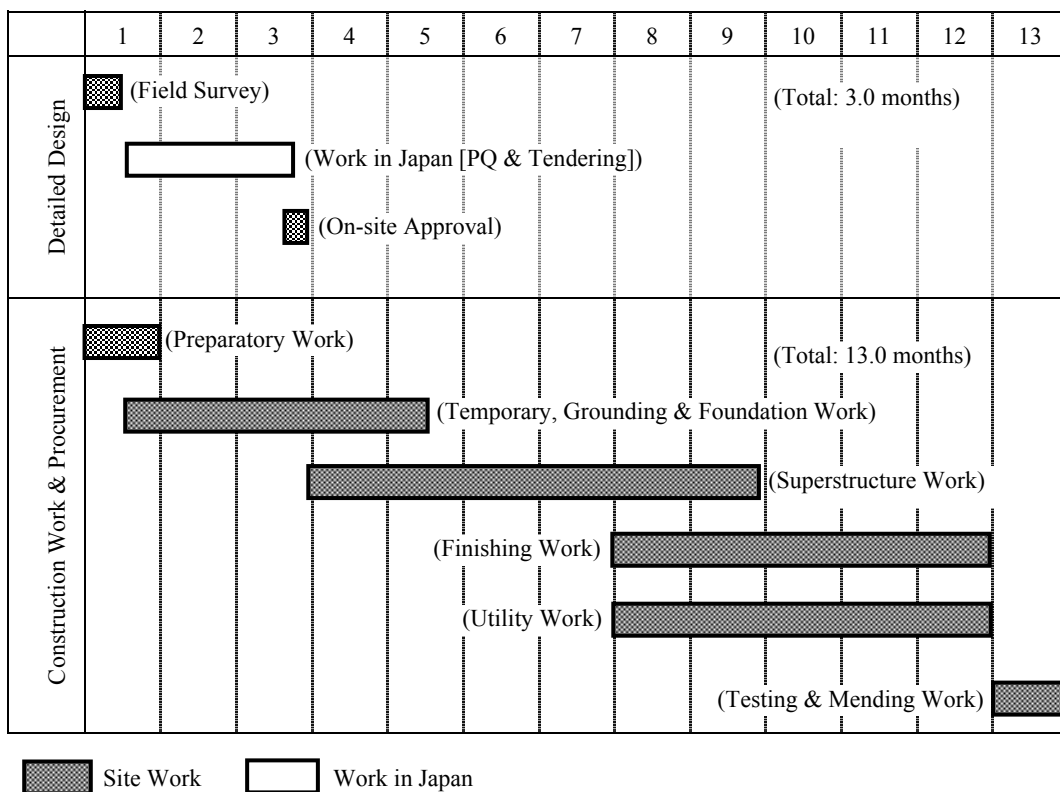
(9) Obligations of Cambodian Side

- 1) DEP forms the task force to cooperate in the implementation of the Technical Assistance.
- 2) DEP contacts and instructs schools subject to the implementation of the Technical Assistance at its own responsibility.
- 3) The task force takes the initiative in discussing with the Consultant, obtaining the involvement of concerned schools, promoting the Technical Assistance and completing the guidelines for facility maintenance and formulation of Long-term Repair Plan.
- 4) The task force takes the initiative in completing the monitoring guideline at the final stage of the Technical Assistance through discussions with the Consultant.
- 5) DEP continues to monitor the facility maintenance conditions at least once a year after completion of the Technical Assistance. And DEP prepares report on the monitoring results at each school year end for consecutive three years and sends it to JICA in Cambodia immediately.

2.2.4.7 Implementation Schedule

The following project implementation schedule has been prepared in accordance with the grant aid scheme of the Government of Japan.

Table 2-18 Project Implementation Schedule



2.3 Obligations of Cambodia

In implementing the Project, in addition to the scope of work on the Cambodian side described in 2-1-1-3: “Scope of Work”, general undertakings to be implemented and taken by the Cambodian side under the Japanese grant aid scheme are shown in the following table.

Table 2-19 Undertakings Taken by Cambodia

Item
1. Provision of information & data necessary for the project implementation
2. Application & acquisition of approval & permission to related governmental agencies
3. Removal of the existing dilapidated school buildings & ground leveling, sufficient ground leveling at construction lot prior to the commencement of construction work by the Japanese side
4. Tax exemption for materials and products to be procured under the Project
5. Permission for Japanese nationals to stay or enter Cambodia in relation to provision of services under a verified contract
6. Tax exemptions such as taxes & custom duties normally imposed on Japanese nationals in Cambodia in relation to provision of materials & products or services under a verified contract
7. Payment of service charges to a bank in Japan for opening a bank account
8. Bearing of all expenses other than those covered by the Japanese grant aid in implementing the Project
9. Appointment of counterparts specialized under the Project in transferring application and maintenance skills
10. Correct and effective utilization and maintenance of equipment & materials to be procured under the Japanese grant aid & facilities
11. Security & maintaining of transporting routes for construction materials
12. Securing site safety for concerned parties during the construction period

Table 2-20 Scope of Work on the Cambodian Side

		1	2	3	4	5	6
	Cambodian side work	Demolition and removal of existing buildings	Demolition and removal of existing toilets	Demolition and removal of others	Connection to water supply pipe	Connection to the main drainages	Electricity connection to the distribution panel
1	Phoum Russey		(north)	*1			
2	Chak Tomuk			*2			
3	Sophak Mongkul	(2 buildings)		*3		*5	
4	Pochen Tong	(1 buildings)		*4			
5	Chamureun Rath						
6	Chamureun Cheat						

: Work to be done before commencement of construction work

: Work to be done after completion of the classroom building

*1: North end fence and school market (columns and roof)

*2: Part of school market

*3: South east part of fence

*4: Relocation of the east gate, tree

*5: Manholes and diversion of existing drainage pipe on south east side

2.4 Project Operation and Maintenance Plan

2.4.1 Operation Plan

School operations are carried out by principals and deputy principals as administrators through the support and cooperation of curriculum committees, SSCs, CSCs, local communities and parents, etc.

The number of teachers to be increased in line with the implementation of the Project is estimated to be 113 persons. However, the municipality of Phnom Penh will have a surplus of teachers until 2009, so new enrolment of teacher training has been suspended. It is therefore possible to hire qualified teachers who are on stand by. The securing of teachers is not expected to be a problem. Incremental salaries associated with the increase in teachers are approximately 200 million Riel, which is small at approximately 0.1% annually of the teacher-related budget of the Ministry of Education, Youth and Sports (MoEYS). In addition, the said budget is increasing at an average rate of 13% annually (2001 to 2005), so we expect it can be sufficiently handled.

Table 2-21 Number of Additional Teachers Required at Target Schools

	1 Phoum Russey School	2 Chak Tomuk School	3 Sophak Mongkul School	4 Pochen Tong School	5 Chamreun Rath School	6 Chamreun Cheat School	Total
No. of Classrooms after Project Implementation	28	42	34	28	35	34	201
No. of Classes after Project Implementation	56	84	68	56	70	68	402
No. of Teachers Aside from Administrative Posts	44	69	52	45	36	43	289
No. of Additional Teachers Required	12	15	16	11	34	25	113

2.4.2 Maintenance Plan

For facility maintenance, small-scale and large-scale repairs will fall within the budget of the PAP; whereas large-scale repairs will be covered through the donations of local communities or by calling on the DEP. There is a system in which students are responsible for cleaning duty on a daily basis and on shifts.

Necessary maintenance in line with the implementation of the Project will include painting of the inside and outside of schools, cleaning and management of toilets and repair of educational furniture. This can be jointly implemented by schools, SSCs and local communities, so no new organization or function is necessary.

2.4.3 Operation and Maintenance Cost

Except for the personnel expenses of teachers, the operation and maintenance cost is covered by the school unit in Cambodia.

In line with the implementation of the Project, an increase in electricity and water charges as maintenance cost is anticipated. Since it is also necessary to periodically remove sludge from septic tanks, the cost of each is calculated as follows. Since the Project will promote a reduction in the maintenance cost for school buildings, toilets and educational furniture, etc. included the project components by utilizing highly durable coating materials such related costs will be minimal. However, coating materials should be repainted at least every 10 years, so repair cost for furnishings, etc. occasionally arise.

Electricity Cost

In line with the implementation of the Project, electricity charges to be paid will increase due to additional lighting systems to be installed in new classrooms and toilets for the handicapped at the candidate schools. The estimated annual incremental electricity cost at target schools is shown in the following table.

Table 2-22 Annual Electricity Cost at Target Schools

School Name	Planned No. of Classrooms	Incremental Electric Energy (kWh/month)	Electricity Cost (1,000 Riel/year)		
			Current State	Incremental Cost	Total
1. Phoum Russey	18	45.6	1,200	383	1,583
2. Chak Tomuk	12	30.4	12,000	521 (Of those, cost for well pumping: 266)	12,521
3. Sophak Mongkul	24	60.8	300	511	811
4. Pochen Tong	15	38.0	1,440	585 (Of those, cost for well pumping: 266)	2,025
5. Chamreun Rath	24	60.8	600	511	1,111
6. Chamreun Cheat	20	50.7	1,500	426	1,926
Total	113	286.3	17,040	2,937	19,997

(Note) Calculation of incremental electricity cost is as follows.

- 1) Annual number of days in operation : 38 weeks/annual × 5 days/week = 190 days/year
- 2) Lighting system : 40W at all classrooms × 2 lights, daily usage of 2 hours
- 3) Power consumption for water supply well pumps : 2kWh/school/day
- 4) Electric charge : Surcharge on the basic charge : 700Riel/kWh

Water Supply Cost

Although water charges to be paid will increase in line with the implementation of the Project, they will not appear at the Chak Tomuk school due to the utilization of the existing well water. Phoum Russey school will continue to obtain its water from a private water service company (1,000 Riel/ m³) and other schools will utilize the municipal water services (although Pochen Tong school presently utilizes a well, it is scheduled to utilize municipal water services from April 2005). Calculation of the estimated annual incremental water charges at target schools is shown in the following table.

Table 2-23 Annual Water Supply Cost at Target Schools

School Name	Planned No. of Classrooms	Increased No. of Pupils	Water Supply Cost (1,000 Riel/year)		
			Current State	Incremental Cost	Total
1. Phoum Russey	18	1,440	840	821	1,661
2. Chak Tomuk	12	960	0	0	0
3. Sophak Mongkul	24	1,920	800	1,127	1,927
4. Pochen Tong	15	1,200	0	705	705
5. Chamreun Rath	24	1,920	1,800	1,127	2,927
6. Chamreun Cheat	20	1,600	500	939	1,439
Total	113	9,040	3,940	4,719	8,659

(Note) The Calculating conditions for the incremental electricity cost are as follows.

- 1) Annual number of days in operation : 38 weeks/annual × 5 days/week = 190days/year
- 2) Water volume utilized : Increase number of pupils in the planned classrooms × 3 ℓ/day
- 3) Municipal water charge : Surcharges on the basic charge: 1.03 Riel/ ℓ

Capability to Cover Utility Charges

Electric and water charges are covered by revenue other than the PAP. The current amount borne by parents at target schools is 100 to 300 Riel monthly per pupil. However, some parents are in arrears, so the rate of payment by parents at each school is estimated to be 40% to 93% (E in Table 2-24).

Table 2-24 Burden Charges of Parents and Collection Ratio (Riel)

School Name	(A) No. of Pupils	(B)	(C)	(D)	(E)
		Total Amount of Payment by Parents (Monthly Amount)	Average Payment Amount (Per pupil)	Standard Burden Charge (Per pupil)	Ratio of Payments by Parents Estimated
1. Phoum Russey	1,838	110,000	60	150	40%
2. Chak Tomuk	3,571	1,000,000	280	300	93%
3. Sophak Mongkul	2,118	192,000	91	200	45%
4. Pochen Tong	1,809	Payment by SSC & Shops	-	-	-
5. Chamreun Rath	1,733	160,000	92	200	46%
6. Chamreun Cheat	2,043	180,000	88	100	88%

In addition to the above-mentioned payment ratio, the estimated amount of payments by parents after the implementation of the Project is based on the standard burden charge per pupil (D in Table 2-24) and increase in number of pupils (A in Table 2-25).

- ◇ Schools applicable for burden (5 schools) : Chak Tomuk, Sophak Mongkul, Pochen Tong, Chamreun Rath and Chamreun Cheat schools
- ◇ School attempting to bear burden (1 school) : Phoum Russey school

Although the Phoum Russey school is the only school required to carry the burden. According to the principal of the said school, other expenses totaling 1.06 million Riel can be reduced so it is possible to make up for the incremental utility expenses. Accordingly, the target schools should be able to bear the incremental amount of electric and water charges in line with the implementation of the Project.

Table 2-25 Estimated Incremental Maintenance Cost and Capability to Bear (1,000 Riel)

School	Incremental Cost (Annual)					(F) School Capacity to Pay
	(A) Increased No. of Pupils	(B) Electric Charge	(C) Water Charge	(D) Total = B + C	(E) Estimated Parents Payment Amount	
					= Ax (above D x above E)	= E-D
1. Phoum Russey	1,440	383	821	1,204	1,034	-170
2. Chak Tomuk	960	521	Well water	521	3,226	2,705
3. Sophak Mongkul	1,920	511	1,127	1,638	2,089	451
4. Pochen Tong	1,200	585	705	1,290	SSC& shops bear	
5. Chamreun Rath	1,920	511	1,127	1,638	2,127	489
6. Chamreun Cheat	1,600	426	939	1,365	1,692	327

Toilet Sludge Collection Charge

Periodic collection of sludge from toilet septic tanks is required. The estimated annual sludge collection charge at target schools is shown in Table 2-25. The sludge collection charge can be paid by the PAP and is sufficient considering the incremental amount of the PAP in relation to the increase in number of pupils (6,000 Riel per pupil).

Table 2-26 Sludge Collection Charge

School Name	Increased No. of Pupils	Sludge Volume (m ³)	Sludge Collection Charge (1,000 Riel)
1. Phoum Russey	1,440	14.4	202
2. Chak Tomuk	960	9.6	134
3. Sophak Mongkul	1,920	19.2	269
4. Pochen Tong	1,200	12.0	168
5. Chamreun Rath	1,920	19.2	269
6. Chamreun Cheat	1,600	16.0	224

(Note) Calculating conditions for sludge collection charge

- 1) Sludge volume : 0.01m³/annual/pupil
- 2) Moisture factor : 0.5
- 3) Collection charge : US\$7/m³(Phnom Penh Waste Management Corporation)

Facility Maintenance (Building Repair) Cost

The required annual cost (including reserve funds) which is estimated as 0.1% of the construction cost anticipated for facility maintenance (building repair) is demonstrated in the following table.

Table 2-27 Estimated Facility Maintenance Cost

School Name	Facility Maintenance Cost (1,000 Riel)
1. Phoum Russey	2,609
2. Chak Tomuk	1,901
3. Sophak Mongkul	3,407
4. Pochen Tong	2,187
5. Chamreun Rath	3,375
6. Chamreun Cheat	3,161
Total	16,640

This falls under approximately 40% of the present PAP budget. However, considering the incremental amount of the PAP corresponding to the increase in number of pupils (6,000 Riel per pupil) and support from the Department of Education, Youth and Sport, Phnom Penh Municipality (DEP), it should be possible to bear these expenses.

2.5 Estimated Project Cost

2.5.1 Estimated Project Cost of Requested Japanese Assistance

The total cost of the Project to be implemented in accordance with the Japanese grand aid scheme will be approximately ¥521 million. The breakdown of expenses between Japan and Cambodia based on the scope

of work described earlier is estimated in Table 2-28 (Expenses borne by Japan: ¥519 million) and the expenses borne by Cambodia (¥2 million shown in the Appendix) respectively. This cost estimate is provisional and would be further examination by the Government of Japan for approval of the Grant.

Expenses Borne by Japan

Total estimated cost: approximately ¥519 million

Table 2-28 Expenses Borne by Japan

Phnom Penh Municipality, 6 schools, 113 classrooms, 6 toilet facilities (total floor area: approx. 9,550m²)

		Estimated Cost (million yen)		
Facilities	School Building	372	457	457
	Toilet	46		
	Furniture	39		
Equipment		0		
Detail Design, Supervision, Technical Assistance		62		

Estimation Conditions

The above-mentioned amount was calculated based on the following estimation conditions.

1. Integrated time : March 2005
2. Exchange rate : 1.00 US\$ = ¥108.00
3. Work period : The construction work will be completed in a single fiscal year. The detailed design, construction period and implementation schedule required are as shown in the report.
4. Other : The Project will be implemented in accordance with the grant aid scheme of the Government of Japan.

2.5.2 Operation and Maintenance Cost

Annual revenue in 2004 of the target schools under the Project and incremental amount of operation and maintenance cost in line with the implementation of the Project are shown in Table 2-29. The operation and maintenance cost to be increased in line with the implementation of the Project accounts for 4 to 32% of the annual revenue of each target school in 2004. Therefore, an additional subsidy from the Phnom Penh Municipality (PPM) is deemed necessary, and the total incremental amount is Riel 25.562 million which is 0.1% of the budget of the DEP. Considering the scale of the recent educational budget of the PPM, the increased amount is judged to be sufficiently covered.

Table 2-29 2004 Annual Revenue and Incremental Amount of Expenditures Associated with the Project Implementation (1,000 Riel)

Item School Name	2004 Annual Revenue			Incremental Amount of Expenditures Associated with the Project Implementation			Ratio of Incremental Amount of Expenditures (= B/A)
	PAP	Other Revenue	Total (A)	Operation Cost	Maintenance Cost	Total (B)	
1. Phoum Russey	11,528	3,100	14,628	1,406	2,609	4,015	27.4%
2. Chak Tomuk	21,884	41,400	63,284	655	1,901	2,556	4.0%
3. Sophak Mongkul	13,208	7,520	20,728	1,907	3,407	5,314	25.6%
4. Pochen Tong	11,356	1,920	13,276	1,458	2,187	3,645	27.5%
5. Chamreun Rath	10,898	5,400	16,298	1,907	3,375	5,282	32.4%
6. Chamreun Cheat	12,758	2,560	15,318	1,589	3,161	4,750	31.0%

2.6 Important Matters Related to the Implementation of the Requested Japanese Assistance

The following are matters requiring special attention and which have a direct influence on the smooth implementation of the requested Japanese assistance.

In order to smoothly execute the relevant construction work, the Cambodian side should remove existing facilities at the subject schools. In the case of removal, since the number of classrooms will decrease, so the Department of Education, Youth and Sports, Phnom Penh Municipality (DEP) is required to provide notification three (3) months prior to commencement so that removal work can begin at an appropriate time. Since this falls within the tendering period, the Consultant should be responsible for and urge the DEP to begin construction at the appropriate time.

In addition, after the commencement of services, the DEP should provide monitoring and guidance on maintenance through periodic visits to the facilities.

CHAPTER 3 PROJECT EVALUATION AND RECOMMENDATIONS

CHAPTER 3 PROJECT EVALUATION AND RECOMMENDATIONS

3.1 Project Effects

The expected effects of the Implementation of the Project are described below.

Direct Effects

Current Situation and Problems	Improvement Measures Under the Project	Effects and Degree of Improvement Under the Project
1) Since the number of classrooms is insufficient for the number of pupils, classes are overcrowded and implemented on a 3-shift schedule.	One hundred thirteen (113) additional classrooms will be constructed at the 6 target schools.	Of the 13,000 pupils at the target schools, the current number of 126 persons per classroom will be improved to 80 persons. A 2-shift system and 40-person classes will be possible. Mobil classes will be solved.
2) Some target schools continue to utilize dangerously deteriorated school buildings.	Dangerously deteriorated school buildings will be removed and replaced with newly-constructed classrooms.	Education can be provided in safe and suitable classrooms at all target schools.
3) There are not enough toilets at target schools.	The water supply and drainage system for men's and women's toilets will be improved.	Approximately 13,000 target pupils will utilize sanitary toilets.

Indirect Effects

Current Situation and Problems	Improvement Measures Under the Project	Effects and Degree of Improvement Under the Project
1) There are no classrooms and toilets for wheelchairs.	Of the men's and women's toilets at target schools, one toilet booth will be multi-purpose accessible by wheelchair. Slopes will be installed on the first floor.	Disabled persons such as those who use wheelchairs can attend school. The reasons hindering girls from attending school will be reduced.
2) Since there are no meeting rooms at the target schools, there is no space to hold general meetings or group activities.	Portable partitions will be installed between 2 rooms at core schools so that general meetings can be held.	Group activities will become more frequent thus improving the educational environment.
3) Few classrooms at the target schools have adequate lighting.	A lighting system will be provided for all classrooms. At core schools, a spacious double classroom-size room can be utilized.	It is possible to utilize the facilities for community meetings and adult education or vocational training, etc.

3.2 Recommendations

The Cambodian side should undertake the following to ensure the success and continuation of the Project effects.

- 1) To ensure that lessons at the target schools will be implemented appropriately after the handing over of facilities under the Project, a total 113 additional teaching staff should be secured and their proper arrangements made without delay.
- 2) To ensure suitable maintenance of the facilities to be improved under the Project, an appropriate operation and maintenance scheme should be enforced at SSC and at each school.

APPENDIX

1. Member List of the Study Team

1-1 Members of the Basic Study Team

Name	Assignment	Position
Mr. Tomoyuki Tada	Team Leader	Grant Aid Management Department, JICA
Ms. Ayako Omura	Planning Management	Grant Aid Management Department, JICA
Mr. Naoyuki Minami	Chief Consultant / Architectural Planning	Yachiyo Engineering Co., Ltd.
Mr. Tatsuru Ogawa	Architectural Design	Yachiyo Engineering Co., Ltd.
Mr. Tadayuki Ogawa	Facility Planning	Yachiyo Engineering Co., Ltd.
Mr. Noboru Osakabe	Education Planning / Operation and Maintenance Planning	Yachiyo Engineering Co., Ltd.
Mr. Hisayuki Yamamoto	Cost Estimate / Procurement / Construction Planning	Yachiyo Engineering Co., Ltd.
Mr. Masatsugu Komiya	Monitoring and Evaluation	Yachiyo Engineering Co., Ltd.
Mr. Naoki Hara	Education Planning (2)	Yachiyo Engineering Co., Ltd.

1-2 Members of the Explanation Team on the Basic Design Report

Name	Assignment	Position
Mr. Norihiro Ikeda	Team Leader	Grant Aid Management Department, JICA
Mr. Naoyuki Minami	Chief Consultant / Architectural Planning	Yachiyo Engineering Co., Ltd.
Mr. Noboru Osakabe	Education Planning/ Operation and Maintenance Planning	Yachiyo Engineering Co., Ltd.
Mr. Hisayuki Yamamoto	Cost Estimate / Procurement / Construction Planning	Yachiyo Engineering Co., Ltd.

2. Study Schedule

(1) Field Survey Schedule

No.	Day	Date	Contents of Field Survey					Stay at	
			Official Member	Chief Consultant Group	Consultant A-Group	Consultant B-Group	Consultant C-Group		
			(Mr. Tomoyuki Tada/Ms. Ayako Omura)	(Mr. Naoyuki Minami / Mr. Ken Ogawa / Mr. Tadayuki Ogawa)	(Mr. Noboru Osakabe / Mr. Naoki Hara)	(Mr. Hisayuki Yamamoto)	(Mr. Masatsugu Komiya)		
1	1/10	Mon.	<ul style="list-style-type: none"> · Trip {Tokyo (10:55) → Bangkok (15:55) by JL717} · Trip {Bangkok (17:30) → Phnom Penh (18:45) by TG698} 					-	Phnom Penh
2	1/11	Tue.	<ul style="list-style-type: none"> · Courtesy call to Embassy of Japan (EOJ) and JICA Cambodia office · Kick off meeting with Ministry of Education/Youth/Sport(MOEYS) and PPM · Courtesy call to Governor and Deputy Governor of Phnom Penh Municipality(PPM) 					-	Phnom Penh
3	1/12	Wed.	<ul style="list-style-type: none"> · Discussion with MoEYS and PPM regarding explanation of Inception Report and submission of Questionnaires · Site Survey (No.1 Phoum Russey, No.2 Chak Tomuk, No.4 Puchen Tong) 					-	Phnom Penh
			Group meeting with No.4 Puchen Tong and the cluster schools	Meeting with local contractor about soil investigation and topographic survey works					
4	1/13	Thu.	<ul style="list-style-type: none"> · Site Survey (No.3 Sophak Mongkul, No.5 Chamreun Rath, No.6 Chamreun Cheat) 					-	Phnom Penh
			Preparation for Community meeting	Ditto					
5	1/14	Fri.	<ul style="list-style-type: none"> · Meeting with aid agencies(ADB, EU, UNICEF and Norway) 					-	Phnom Penh
			Group meeting with No.5 Chamreun Rath and the cluster schools	Market survey for local subcontractor and construction material supplier					
6	1/15	Sat.	<ul style="list-style-type: none"> 1st Community meeting (No.5 Chamreun Rath) * Team Leader Mr. Tada will arrive at Phnom Penh on 18:45 					-	Phnom Penh
7	1/16	Sun.	<ul style="list-style-type: none"> AM: 2nd Community meeting (No.1 Phoum Russey) PM: 3rd Community meeting (No.4 Puchen Tong) *Mr. Tada: Trip {Tokyo → Bangkok → Phnom Penh} *Mr. Hara: Trip to Japan Lv. Phnom Penh 20:25 by TG699 					-	Phnom Penh
8	1/17	Mon.	Discussion on M/D with MoEYS and PPM					-	Phnom Penh
9	1/18	Tue.	<ul style="list-style-type: none"> Discussion on M/D with MoEYS and PPM · Survey for the educational situation and school facilities management situation · Market survey for local subcontractor and construction material supplier · Survey for related construction regulation/lows and approval 					-	Phnom Penh
10	1/19	Wed.	<ul style="list-style-type: none"> · M/D signing Ceremony · Reporting to EOJ/JICA · Trip {Phnom Penh (20:25) → Bangkok (21:30) by TG699} · Trip {Bangkok (22:55)} · Survey for the educational situation and school facilities management situation · Survey for population trend and an infrastructure situation · Survey for the educational situation and school facilities management situation · Survey for population trend and an infrastructure situation 					-	Phnom Penh
					Ditto				
11	1/20	Thu.	<ul style="list-style-type: none"> →Tokyo (06:35) by JL704} · Survey for the schools in the cluster 					-	Phnom Penh
12	1/21	Fri.	<ul style="list-style-type: none"> - · Discussion with PPM 					-	Phnom Penh
13	1/22	Sat.	<ul style="list-style-type: none"> - · Survey of the schools 					-	Phnom Penh
14	1/23	Sun.	<ul style="list-style-type: none"> - Team meeting, Data analysis Mr. T. Ogawa · Trip {Phnom Penh (20:25) → Bangkok (21:30) by TG699} · Trip to Japan {Bangkok 22:55 by JL704} 					-	Phnom Penh

No.	Day	Date	Contents of Field Survey				Stay at	
			Official Member (Mr. Tomoyuki Tada/Ms. Ayako Omura)	Chief Consultant Group (Mr. Naoyuki Minami / Mr. Ken Ogawa / Mr. Tadayuki Ogawa)	Consultant A-Group (Mr. Noboru Osakabe / Mr. Naoki Hara)	Consultant B-Group (Mr. Hisayuki Yamamoto)		Consultant C-Group (Mr. Masatsugu Komiya)
15	1/24	Mon.	-	· Survey for the educational situation and school facilities management situation · Activity situation survey of other donors (ADB, WB, UNICEF, EU, NGO)		· Market survey for local subcontractor and construction material supplier · Survey for related construction regulation/laws and approval	-	Phnom Penh
16	1/25	Tue.	-	Ditto		Ditto	-	Phnom Penh
17	1/26	Wed.	-	· Discussion and confirmation of the obligation for Cambodian side · Preparation of the "Field Report"			· Trip {Tokyo → Bangkok} · Trip {Bangkok → Phnom Penh}	Phnom Penh
18	1/27	Thu.	-	· Visit for 1 st Stage School Construction Site · Discussion and confirmation of the obligation for Cambodian side · Survey for the educational situation and school facilities management situation · Preparation of the "Field Report"		Market survey		Phnom Penh
19	1/28	Fri.	-	Ditto		Market survey		Phnom Penh
20	1/29	Sat.	-	Ditto		Market survey		Phnom Penh
21	1/30	Sun.	-	Team meeting, Data Arrangement				Phnom Penh
22	1/31	Mon.	-	Submission and explanation of the Field Report				Phnom Penh
23	2/1	Tue.	-	Ditto				Phnom Penh
24	2/2	Wed.	-	· Obtaining the approval of the Field Report · Greeting to MoEYS and PPM				Phnom Penh
25	2/3	Thu.	-	Reporting to EOJ and JICA Cambodia office about Basic Design Study Field Survey				Phnom Penh
26	2/4	Fri.	-	· Trip {Phnom Penh (20:25)→Bangkok (21:30) by TG699} · Trip {Bangkok (22:55)}				-
27	2/5	Sat.	-	→Tokyo (06:35) by JL704}				-

(2) Schedule for Explanation on the Basic Design Study

No.	Date	Day	Contents of Study		Stay at
			Official Member (JICA) (Norihiro Ikeda)	Consultant Group (Naoyuki, Minami, Noboru Osakabe, Hisayuki Yamamoto)	
1	5/26	Thu.		Trip {Tokyo → Bangkok → Phnom Penh}	Phnom Penh
2	5/27	Fri.		· Courtesy call and Meeting with JICA Cambodia office · Courtesy call and Kick off meeting with Ministry of Education/Youth/Sport(MOEYS) and PPM on Draft Report	Phnom Penh
3	5/28	Sat.		Site survey and discussion with DEP and the Principals	Phnom Penh
4	5/29	Sun.	Trip {Tokyo → Bangkok → Phnom Penh}	Team meeting	Phnom Penh
5	5/30	Mon.	Presentation and Discussion on the Draft Report and Discussion on M/D with DEP Meeting with JICA Cambodia office		Phnom Penh
6	5/31	Tue.	Meeting with ADB Supplementary survey		Phnom Penh
7	6/1	Wed.	Discussion on M/D with DEP Supplemental survey		Phnom Penh
8	6/2	Thu.	Discussion on the Basic Design with DEP M/D signing Ceremony		Phnom Penh
9	6/3	Fri.	Reporting to EOJ and JICA Trip {Phnom Penh → Bangkok}		
10	6/4	Sat.	Trip {Bangkok →Tokyo}		

3. List of Parties Concerned

<u>Party and Name</u>	<u>Position</u>
Ministry of Education, Youth and Sport (MoEYS)	
H.E Im Sethy	Secretary of State
Mr. Lor Lath	Director of Materials and State Property Department
Mr. Sam Sereirath	Director of Planning Department
Mr. Chorm Chheang Ly.	Director of Primary Education Department
Mr. Soy Yeng	Deputy Director of Primary Education Department
Mr. Oum Hoeung	Director, Education, Youth and Sports Service (MEO: Municipal Education Office), PPM
Mr. Meas Ngoek	Deputy Director, MEO, PPM
Mr. Chea Cheath	Deputy Director, MEO, PPM
Mr. Chea Sreen	Director of Department of Land Organization, Construction and Cadastre.
Mr. Em Ham Khuon	Chief of Planning Office, MEO, PPM
Mr. Mao Pao	Deputy Chief, EMIS, Planning Dept.
Mr. Suong Yen	Chief, Construction
Mr. Lim Sovanna	Engineer
Mr. Yang Yano	Director of Cultural Relation Scholarship Dept.
Ms. Kan Neary	Deputy Director of Cultural Relation Scholarship Dept.
Mr. Chap Sophoan	Chief of Cultural Relation Scholarship Dept.
Mr. Ouk Sambath	Deputy Chief, Planning Office, MEO, PPM
Phnom Penh Municipality (PPM)	
H.E Kep Chuk Tema	Governor
Mr. Map Sarin	Vice-Governor
Mr. Sisowath Pheanuroth	Vice-Governor
Mr. Hun Chan Rith	Chief of Cabinet
Mr. Kim Savuth	Deputy Chief of Cabinet
Mr. Nuon Someth	Deputy Chief of Cabinet, Personal Assistant to the Governor
Mr. Nak Takavuth	Director of BRS-MPP
Ms. Mom Sandap	Director of Planning Department
Mr. Chin Dor	Staff
Mr. Cheam Heng	Staff

Study Schools

Mr. Yang Yan	Principle, Phoum Russey School
Mr. Sim Lundy	Principle, Chak Tomuk School
Mr. Pa Sovann	Principle, Sophak Mongkul School
Mr. Seng Bn Sang	Deputy Principle, Sophak Mongkul School
Mr. San Samneang	Principle, Pochen Tong School
Mr. Tim Song	Principle, Chamreun Rath School
Mr. Pan Kum	Deputy Principle, Chamreun Rath School
Mr. Poch Thavak	Principle, Chamureun Cheat School
Mr. Norng Lim Hean	Chief, District Education Office
Mr. Nap Tho	Deputy Chief, District Education Office
Mr. Sok Rl	Chief of SSC, Pochen Tong School
Mr. Sos Math	Chief of SSC, Chamreun Cheat School
Mr. Hou Samorn	Chief of SSC, Chamreun Rath School
Mr. Hue Mora	Chief Honor of SSC, Chamreun Cheat School

4. Minutes of Discussions (M/D)

Minutes of Discussions
on
The Basic Design Study on the Project for Construction of
Primary Schools in Phnom Penh, Phase II
in
The Kingdom of Cambodia

In response to a request from the Government of the Kingdom of Cambodia (hereinafter referred to as "Cambodia"), the Government of Japan has decided to conduct the Basic Design Study on the Project for Construction of Primary Schools in Phnom Penh, Phase II (hereinafter referred to as "the Project"), and entrusted the Basic Design Study to Japan International Cooperation Agency (hereinafter referred to as "JICA").

JICA sent to Cambodia the Basic Design Study Team (hereinafter referred to as "the Team"), which is headed by Mr. Tomoyuki Tada, Director of Project Monitoring & Coordination Team, Administration & Coordination Group, Grant Aid Management Department, JICA. The Team is scheduled to stay in the country from 10th January to 4th February, 2005.

The Team held discussions with the officials concerned of Cambodia 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. Based on this agreement, the Team will proceed to further works and prepare the Basic Design Study Report.

Phnom Penh, 19th January, 2005 *h*



H.E. *Chhak Tema*
Governor
Phnom Penh Municipality
The Kingdom of Cambodia

Mr. Tomoyuki Tada
Leader
Basic Design Study Team
Japan International Cooperation Agency
Japan



H.E. *Im Sethy*
Secretary of State
Ministry of Education, Youth and Sport
The Kingdom of Cambodia

ATTACHMENT

1. Objective of the Project

The objective of the Project is to improve the educational environment of primary education in Phnom Penh through the construction of additional school buildings in existing schools.

2. Project Sites

The Project sites are located in Phnom Penh as shown in Annex-1.

3. Responsible and Implementing Organization

The Ministry of Education, Youth and Sport and Phnom Penh Municipality will take overall responsibility of the Project. The implementing organization of the Project is the Department of Education Youth and Sport, Phnom Penh Municipality. The organization chart is attached as Annex-2.

4. Items requested by Cambodia

4.1. After a series of discussions with the Team, the contents of the Project as shown in Annex-3 were requested by the Cambodian side. The Team will further study on Chak Tomok primary school regarding the relevance and urgency of the additional classrooms in its Cluster.

4.2. The Cambodian side agreed that final components of facilities and equipment shall be decided based on the further analysis in Japan. The number of classrooms to be provided by the Project shall be considered in order to meet possible growth of the population and the current shortage of classrooms in the catchment area, which is equivalent to the Clusters of the proposed schools. The result of the analysis shall be explained to Cambodia in the Draft Report.

4.3. The Cambodian side further understood that the components of the Project, in particular the number of classrooms may be finally reduced because of limited budget to be allocated to the Project by the Government of Japan.

5. Japan's Grant Aid Scheme

5.1. The Cambodian side understood the Japan's Grant Aid Scheme as explained by the Team and described in Annex-4.

5.2. The Cambodian side will take the necessary measures, as described in Annex-5, for smooth implementation of the Project, on the condition that Japan's Grant Aid is decided to be applied to the Project.

5.3. The Cambodian side will ensure the tax exemption and swift custom clearance for the Project, including necessary provision of the budget.

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6. Schedule of the Study

- 6.1. The consultant members of the Team will proceed to further studies in Cambodia until the 4th February, 2005.
- 6.2. JICA will prepare the Draft Report of Basic Design in English and dispatch the Team in order to explain its contents around May 2005.
- 6.3. In case that the contents of the Draft Report are accepted in principle by the Cambodian side, JICA will complete the Basic Design Study Report and send it to Cambodia around July, 2005.

7. Other Relevant Items

7.1. Demolishing work

The Cambodian will undertake the demolishing work of the existing buildings in advance to the Project implementation.

7.2. Provision of documents

The Cambodian side agreed to provide a certificate or other documents, which prove no disputes and problems concerning land usage of the Project sites to be occurred. The documents will be provided to the Team by 1st February, 2005.

7.3. Allocation of teaching and administration staff

The Cambodian side will assign the sufficient number of teaching and administrative staff to satisfy the increase of the facilities by the completion of the Project.

7.4. Operation and maintenance

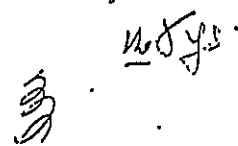
The Cambodian side agreed to provide necessary budget and technical input for proper and effective operation and maintenance of the buildings of the Project including the financial coverage. In particular, the budget for sewage treatment and electricity supply for the schools covered by the Project shall be primarily secured by the Cambodian side.

7.5. Soft Component

The Cambodian side requested the Team to study the details of technical assistance to improve the school operation and maintenance as one of the components of the Grant Aid scheme. This "soft component" will be further examined by the consultant members of the Team and the result shall be explained to Cambodia in the Draft Report.

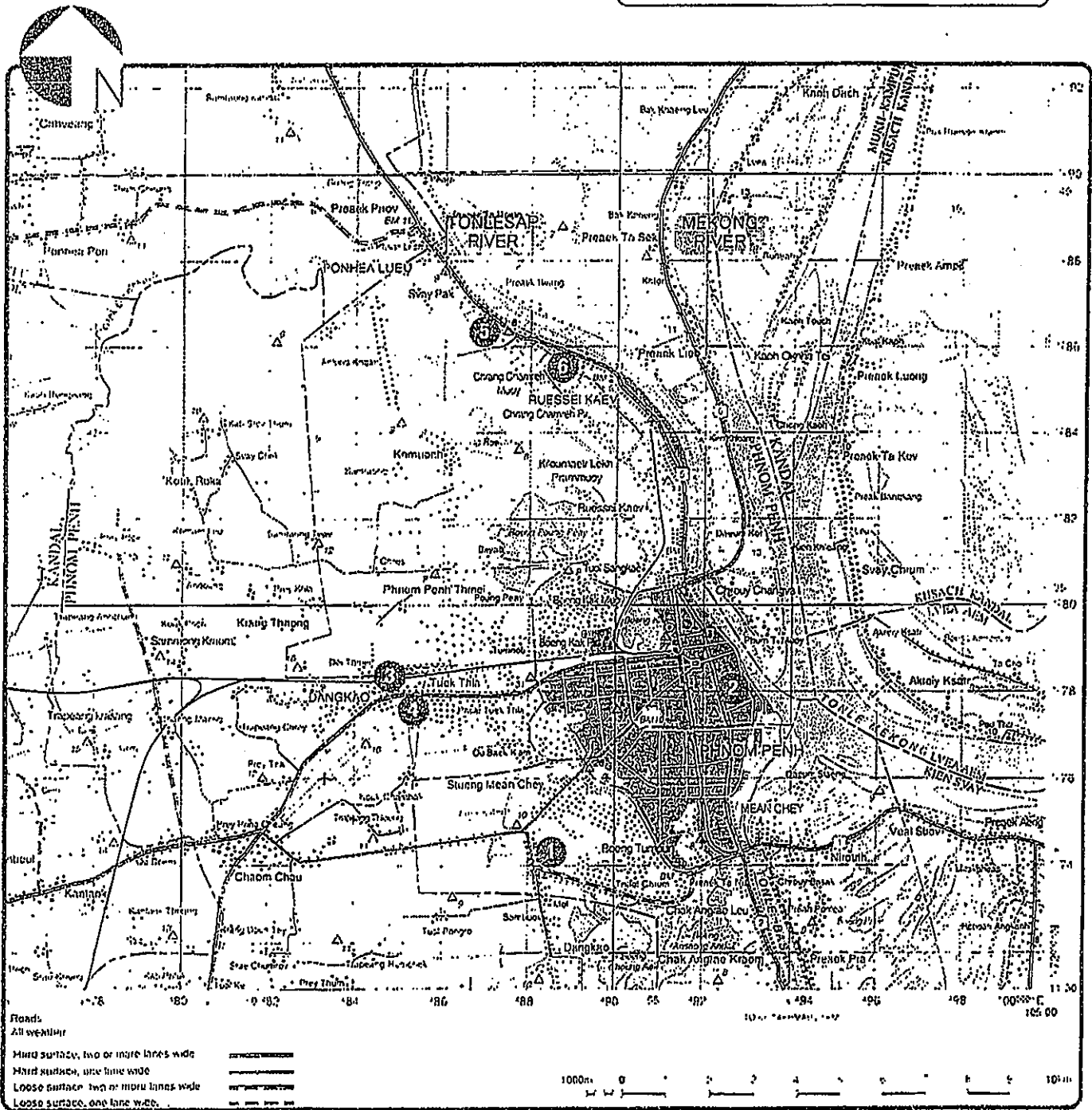
7.6. Environmental Impact Assessment

The Cambodian side will consult with Department of Environment, Phnom Penh Municipality based on Environmental Impact Assessment and take due process in the case the Project requires the relocation of the existing markets in the Project sites. The implementation of the Project is only able to carry out with its settlement.



Annex-1 Project Sites

- Project Schools**
- ① Phoum Russey
 - ② Chak Tomuk
 - ③ Sophak Mongkul
 - ④ Pochen Tong
 - ⑤ Chamreun Rath
 - ⑥ Chamreun Cheat

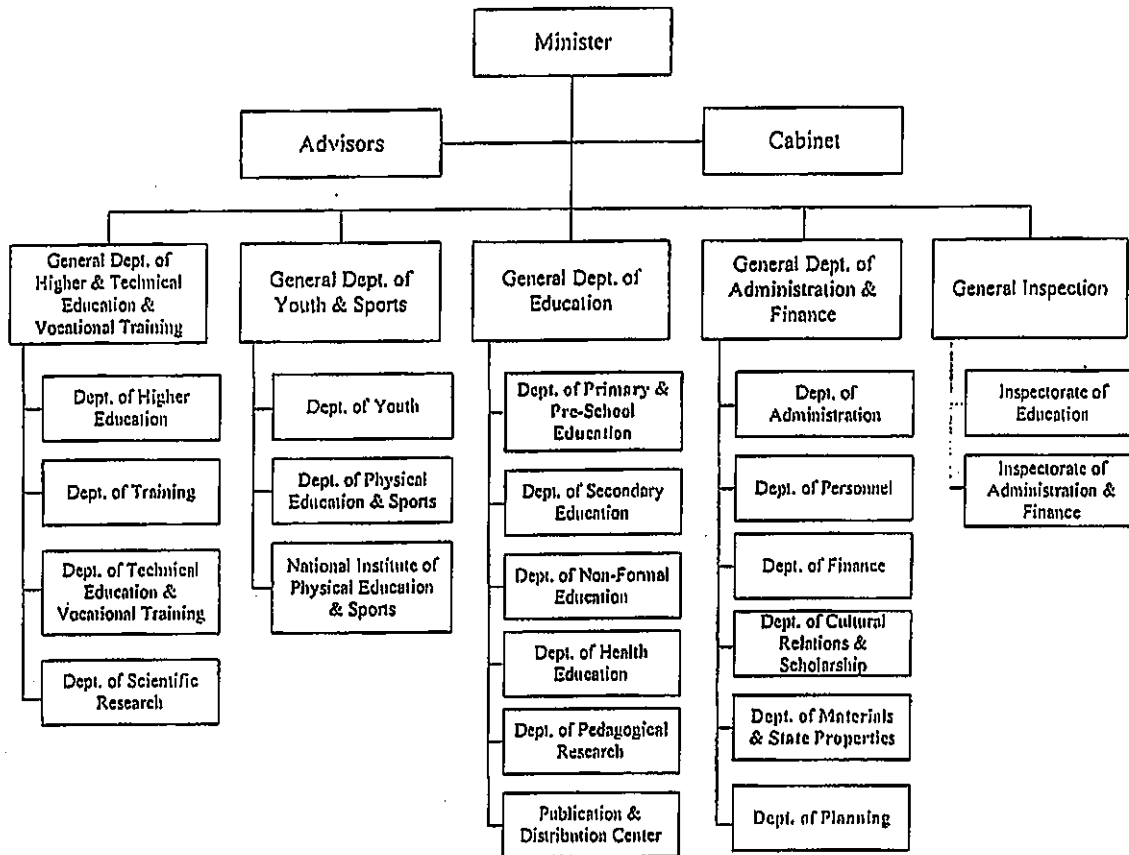


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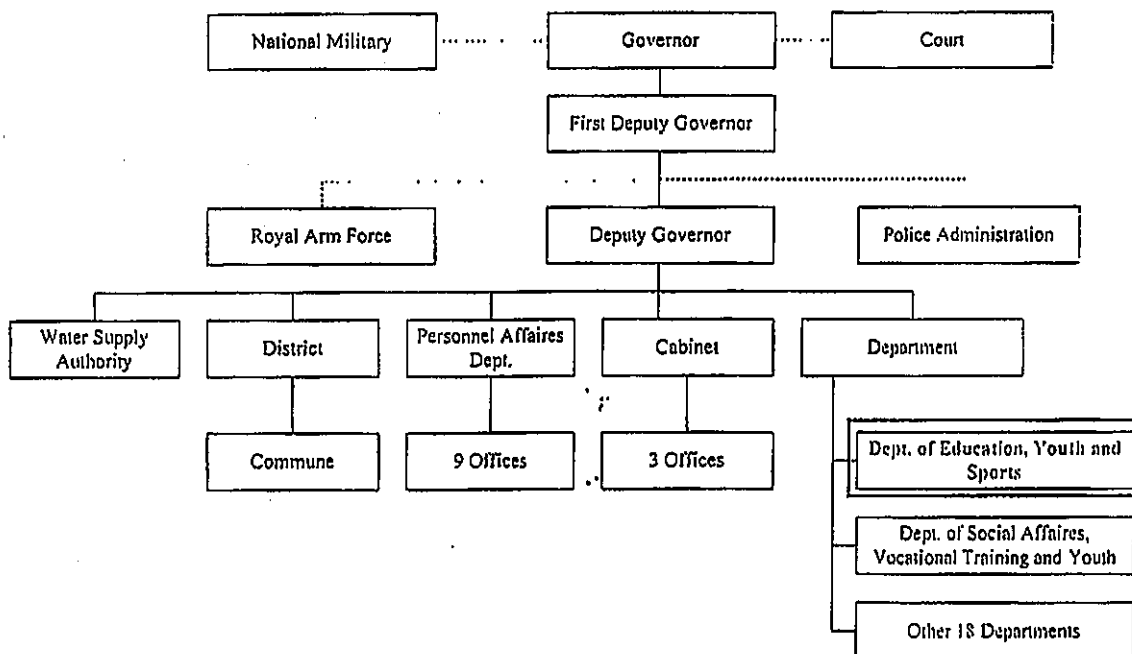
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Annex-2 Organization Chart

1) Organization of Ministry of Education, Youth and Sports (MoEYS)



2) Organization of Phnom Penh Municipality



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Annex-3 Components Requested for the Project

Facilities:

-classrooms listed on the following table:

Name of school	No. of classroom	Remarks
Phoum Russey	18	
Chak Tomuk	12	Number of classrooms may be changed after the further study (see Attachment 4.1.)
Sophak Mongkul	24	2 rooms for library and administration office are included
Pochen Tong	15	*
Chamreun Rath	24	*
Chamreun Cheat	20	
Total	113	

* Core school requires for the installation of a removable partition wall between 2 classrooms to hold Cluster level meetings.

-toilets

-electrical wiring and lighting in classrooms

Equipment:

-desks and chairs for students

-desks and chairs for teachers in classrooms

-whiteboards for classrooms

Soft Component:

-technical assistance for the operation and maintenance of school facilities

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Annex-4 Japan's Grant Aid Scheme

(1) Grant Aid Procedure

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

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

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

Secondly, JICA conducts the study (Basic Design Study), using Japanese consulting firms.

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

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

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

(2) Basic Design Study

1) Contents of the Study

The aim of the Basic Design Study (hereinafter referred to as "the Study"), conducted by JICA on a requested project (hereinafter referred to as "the Project"), is to provide a basic document necessary for the appraisal of the Project by the Government of Japan. The contents of the Study are as follows:

- a) confirmation of the background, objectives and benefits of the Project and also institutional capacity of agencies concerned of the recipient country necessary for the Project's implementation;
- b) evaluation of the appropriateness of the Project to be implemented under the Grant Aid Scheme from the technical, social and economic points of view;
- c) confirmation of items agreed on by both parties concerning the basic concept of the Project;

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- d) preparation of a basic design of the Project; and
- e) estimation of costs of the Project.

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

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

2) Selection of Consultants

For the smooth implementation of the Study, JICA uses a consulting firm selected through its own procedure (competitive proposal). The selected firm participates in the Study and prepares for a report based upon the terms of reference set by JICA.

At the beginning of implementation after the Exchange of Notes, for the services of the Detailed Design and Construction Supervision of the Project, JICA recommends the same consulting firm which participated in the Study to the recipient country in order to maintain the technical consistency between the Basic Design and Detailed Design.

(3) Japan's Grant Aid Scheme

1) What is Grant Aid?

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

2) Exchange of Notes (E/N)

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

3) "The period of the Grant" means the one fiscal year which the Cabinet approves the project for. Within the fiscal year, all procedure such as exchanging of the Notes, concluding contracts with consulting firms and contractors and final payment to them must be completed.

However, in case of delays in delivery, installation or construction due to

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unforeseen factors such as weather, the period of the Grant Aid can be further extended for a maximum of one fiscal year at most by mutual agreement between the two Governments.

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

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

5) Necessity of "Verification"

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

6) Undertakings required to the Government of the recipient country

- a) to secure a lot of land necessary for the construction of the Project and to clear the site;
- b) to provide facilities for distribution of electricity, water supply and drainage and other incidental facilities outside the site;
- c) to ensure prompt unloading and customs clearance at ports of disembarkation in the recipient country and internal transportation therein of the products purchased under the Grant Aid;
- d) 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;
- e) to accord Japanese nationals whose services may be required in connection with the supply of the products and services under the verified contracts such as facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work;
- f) to ensure that the facilities constructed and products purchased under the Grant Aid be maintained and used properly and effectively for the Project; and
- g) to bear all the expenses, other than those covered by the Grant Aid, necessary for the Project.

7) "Proper Use"

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

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8) "Re-export"

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

9) Banking Arrangement (B/A)

a) The Government of the recipient country or its designated authority should open an account in the name of the Government of the recipient country in a bank in Japan (hereinafter referred to as "the Bank"). The Government of Japan will execute the Grant Aid by making payments in Japanese yen to cover the obligations incurred by the Government of the recipient country or its designated authority under the verified contracts.

b) The payments will be made when payment requests are presented by the Bank to the Government of Japan under an Authorization to Pay (A/P) issued by the Government of recipient country or its designated authority.

c) Commission of payment will be arranged and covered by the Government of the recipient country.

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Annex-5 Necessary Major Undertakings by Each Government

No	Items	To be covered by Grant Aid	To be covered by Government of Cambodia
1	To secure land		0
2	To clear, level and reclaim the site when needed		0
3	To construct gates and fences in and around the site		0
4	To construct roads		
	1) Within the site	0	
	2) Outside the site		0
5	To construct the building	0	
To provide facilities for the distribution of electricity, water supply, drainage and other incidental facilities			
1) Electricity			
	a. The distributing line to the site		0
	b. The drop wiring and internal wiring within the site	0	
	c. The main circuit breaker and transformer	0	
2) Water Supply			
	a. The city water distribution main to the site		0
6	b. The supply system within the site (receiving and/or elevated tanks)	0	
3) Drainage, Waste and Sewage			
	a. The city drainage main (for storm, sewer and others) to the site, the regular pumping-up collection from cesspit or relevant maintenance		0
	b. The drainage system (for toilet sewer, ordinary waste, storm drainage and others) within the site	0	
4) Furniture and Equipment			
	a. General furniture		0
	b. Whiteboards, desks and chairs for teachers and students	0	
To bear the following commissions to a bank of Japan for the banking services based upon the B/A			
7	1) Advising commission of A/P		0
	2) Payment commission		0
To ensure prompt unloading and customs clearance at the port of disembarkation in recipient country			
8	1) Marine(Air) transportation of the products from Japan to the recipient country	0	
	2) Tax exemption and customs clearance of the products at the port of disembarkation		0
	3) Internal transportation from the port of disembarkation to the project site	0	
9	To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work		0
10	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contracts		0
11	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant		0
12	To bear all the expenses, other than those to be borne by the Grant, necessary for construction of the facilities as well as for transportation and installation of the equipment		0

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Minutes of Discussions
On the Basic Design Study on the Project for
Construction of Primary Schools in Phnom Penh, Phase II
In the Kingdom of Cambodia
(EXPLANATION ON DRAFT REPORT)

In January 2005, the Japan International Cooperation Agency (hereinafter referred to as "JICA") dispatched the Basic Design Study Team on the Project for Construction of Primary Schools in Phnom Penh, Phase II (hereinafter referred to as "the Project") to the Kingdom of Cambodia (hereinafter referred to as "Cambodia"), and through discussions, field survey, and technical examination of the results in Japan, JICA prepared a draft report of the study.

In order to explain and to consult the Cambodian side on the components of the draft report, JICA sent to Cambodia the Draft Report Explanation Team (hereinafter referred to as "the Team"), which was headed by Mr. Norihiro IKEDA, Team Director of Education and Vocational Training Team, Project Management Group-2, Grant Aid Management Department, JICA, from May 26 to June 3.

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

Phnom Penh, June 2, 2005



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H.E. *h* Chuk Teana
Governor
Phnom Penh Municipality
The Kingdom of Cambodia

IKEDA
Mr. Norihiro IKEDA
Leader
Draft Report Explanation Team
JICA
Japan

witnessed by



Sethy
H.E. Sethy
Secretary of State
Ministry of Education, Youth and Sport
The Kingdom of Cambodia

ATTACHMENT

1. Components of the Draft Report

The Cambodian agreed and accepted in principle the components of the draft report explained by the Team.

2. Japan's Grant Aid scheme

The Cambodian side understood the Japan's Grant Aid Scheme and the necessary measures to be taken by the Government of Cambodia as explained by the Team and described in Annex-4 and Annex- 5 of the Minutes of Discussions signed by both parties on January 19, 2005.

3. Schedule of the Study

JICA will complete the final report in accordance with the confirmed item and send it to the Government of Cambodia by the end of August, 2005.

4. Other relevant issues

4-1. Schools covered by the Project

Both sides confirmed the final request of the schools and related facilities covered by the Project as shown in Annex-1. The Cambodian side agreed that the Japanese side would make final decision on this matter through further study in Japan.

4-2. Work to be undertaken by the Cambodian side

The Cambodian side confirmed that they would complete the preparation works in the identified construction sites in the recipient schools prior to the commencement of construction by the Japanese side.

Both sides understood the work as shown in Annex-2 should be undertaken by the Cambodian side. Both side confirmed the necessary measures to be taken by each government (Annex-3).

4-3. Allocation of Personnel and Budget

The Cambodian side agreed to allocate necessary budget and personnel for the preparation work to be undertaken by the Cambodian side as well as for the proper operation and maintenance of the facilities covered by this Project.

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4-4. Proper Use and Maintenance

Both sides understood that proper use and maintenance of the facilities would be indispensable for their long-term use. The Cambodian side assured the Japanese side that it would facilitate the proper use and maintenance of facilities in the schools covered by the Project with active involvement of concerned parties such as Phnom Penh Municipality, schools and communities.

Both sides understood the importance of the school management and proper maintenance, for which the Cambodian side promised to allocate enough number of personnel and budget.

4-5. Technical Assistance (Soft Component)

The Japanese side explained the contents and its implementation schedule for "Technical Assistance (Soft Component)" which aims to improve the school operation and maintenance through technical assistance within this Project.

The Cambodian side understood and agreed to the draft plan as of May 2005 (see Annex-4), and promised that the Department of Education Youth and Sport, Phnom Penh Municipality will supervise its activities under their responsibility.

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Schools and facilities covered by the Project

No.	School	Category						
		Classroom	Toilet booth-			Furniture		
			Girls	Boys	Multipurpose	Desk & Chair (Students)* (set)	Desk & Chair (Teachers) (set)	White Board (board)
1	Phoum Russey	18	3	3	2	360	18	36
2	Chak Tomuk	12	2	2	2	240	24	24
3	Sophak Mongkul	24	5	5	2	480	15	48
4	Pochen Tong	15	2	2	2	300	24	30
5	Chamreun Rath	24	5	5	2	480	20	48
6	Chamreun Cheat	20	4	4	2	400	113	40

* 60% will be for lower grade (Grade-1 to Grade-3), and 40% will be for higher grade (Grade-4 to Grade-6).

Work to be undertaken by the Cambodian side

		1	2	3	4	5	6
School	Cambodian side work	Demolition and removal of existing buildings	Demolition and removal of existing toilets	Demolition and removal of others	Connection to water supply pipe	Connection to the main drainages	Electricity connection to the distribution panel
1	Phoum Russey		■ (north)	■ *1	■		■
2	Chak Tomuk			■ *2	■		
3	Sophak Mongkul	■ (2 buildings)		■ *3		■ *5	■
4	Pochen Tong	□ (1 buildings)		■ *4	■	■	■
5	Chamureun Rath		■		■		■
6	Chamureun Cheat				■		■

■: Work to be done before commencement of construction work

□: Work to be done after completion of the classroom building

*1: North end fence and school market (columns and roof)

*2: Part of school market

*3: South east part of fence

*4: Relocation of the east gate, tree

*5: Manholes and diversion of existing drainage pipe on south east side

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Necessary measures to be taken by each government

NO	Items	To be covered by Grant Aid	To be covered by Cambodian side
1	To secure land		●
2	To clear, level and reclaim the site when needed		●
3	To construct gates and fences in and around the school		●
4	To construct roads		
	1) Within the site	●	
	2) Outside the site		●
5	To construct the building	●	
6	To provide facilities for the distribution of electricity, water supply, drainage and other incidental facilities		
	1) Electricity		
	a. The distributing line to the site.		●
	b. The drop wiring and internal wiring within the site	●	
	c. The main circuit breaker and transformer	●	
	2) Water Supply		
	a. The City water distribution main to the site		●
	b. The supply system within the site (receiving and/or elevated tanks)	●	
	3) Drainage, Waste and Sewage		
	a. The city drainage main(for storm, sewer and others) to the site, the regular pumping-up collection from cesspit or relevant maintenance		●
	b. The drainage system for toilet sewer, ordinary waste and storm	●	
	4) Furniture and Equipment		
	a. General furniture		●
	b. Whiteboards, desks and chairs for teachers and students	●	
7	To bear the following commissions to a bank of Japan for the banking services based upon the B/A		
	1) Advising commission of A/P		●
	2) Payment commission		●
8	To ensure prompt unloading and customs clearance at the port of disembarkation in recipient country		
	1) Transportation of the products from Japan to the recipient country	●	
	2) Tax exemption and customs clearance of the products at the port of disembarkation		●
	3) Internal transportation from the port of disembarkation to the project site	●	
9	To accord Japanese nationals whose services may be required in connection with the supply of the products and the services under the verified contract such facilities as may be necessary for their entry into the recipient country and stay therein for the performance of their work		●

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NO	Items	To be covered by Grant Aid	To be covered by Cambodian side
10	To exempt Japanese nationals from customs duties, internal taxes and other fiscal levies which may be imposed in the recipient country with respect to the supply of the products and services under the verified contract		●
11	To maintain and use properly and effectively the facilities constructed and equipment provided under the Grant Aid		●
12	To bear all the necessary expenses, other than those to be borne by the Grant Aid		●

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**TECHNICAL ASSISTANCE
(SOFT COMPONENT)
ON
THE PROJECT
FOR
CONSTRUCTION OF PRIMARY SCHOOLS
IN PHNOM PENH (PHASE II)
IN
THE KINGDOM OF CAMBODIA

(DRAFT)**

As of MAY 2005

Japan International Cooperation Agency (JICA)

Yachiyo Engineering Co., Ltd.

1. Background of Technical Assistance

Each school, with support of the School Supporting Committees and communities, has been dealing with the maintenance of the school facilities such as repair and cleaning. Furthermore, most of the six target schools have prepared facility maintenance system, for example, annual plan, and budget or persons responsible for its implementation. The following improvement, however, is considered necessary to ensure the long-term utilization of the facilities to be constructed by this project.

<Facility Repair Management>

Currently, apart from minor repairs of desks, doors, windows, keys, some paintwork, etc, which are generally done at the time of PAP disbursement, the facilities tend to be repaired only when they are badly damaged. It is necessary to do preventive repair work for facilities periodically.

<Cleaning Management>

- 1) Although school buildings and yards are maintained relatively well, almost all toilets are kept in bad conditions giving out odors caused by own structures and mal-maintenance. Accordingly, the importance of toilet cleaning and its sanitary management should be re-disseminated.
- 2) The structure of toilets to be constructed by the Project is different from that of the existing toilets. Specific technical skills are necessary to maintain the new toilet in good conditions.
- 3) Necessary fund should be secured in order to ensure periodic disposals of toilet sludge and regular repair work.

2. Goal of Technical Assistance

The Technical Assistance aims at increasing the schools' capacity to ensure sustainable facility maintenance and has the following objectives.

- 1) Directors and teachers of the schools understand facility maintenance methods, especially those of toilets and windows.
- 2) A long-term facility repair plan is formulated and preventive repair work is done periodically.
- 3) The framework of facility maintenance with active and sustainable involvement of the Department of Education, Youth and Sports, Phnom Penh Municipality (DEP), is developed.

3. Outcome of Technical Assistance

The outcomes of the Technical Assistance are described below.

- 1) Toilets are maintained in satisfactory conditions over the long term.
- 2) Basic facility structures such as roofs, walls, toilets and water supply systems are understood, and the importance of facility maintenance and sanitary management is re-understood by the directors and teachers of the target schools.
- 3) Long-term facility repair plan is formulated.
- 4) Maintenance guideline is prepared for the target schools, and both monitoring and maintenance guideline are prepared for DEP.
- 5) DEP understands the school facility maintenance conditions better through active involvement.

4. Monitoring the Outcome

- 1) Level of understanding sludge disposal from toilets: There is no opportunity to confirm it during the period of Technical Assistance; instead, the outcome is confirmed by the result of the interview to school directors and teachers from the point of the proper understanding about new toilets and the size of sludge disposal funds then mobilized.
- 2) Understanding of basic facility structures and the importance of facility maintenance and sanitary management: the outcome is confirmed by monitoring as these items being included in monitoring items.
- 3) Long-term facility repair plan: the outcome is monitored whether it is really prepared, covers all necessary repair items in it, plans a repair fund mobilizing, and is reflected to the next budget plan.

5. Activities of Technical Assistance (Input Plan)

The following activities are carried out as the Technical Assistance so that the maintenance method for the facilities of the Project can be understood and put into practice.

1) Preparation of Schemes for Technical Assistance

The Consultant will prepare schemes in line with the following contents.

- ① structure of the facilities of the Project,
- ② maintenance of the facility of the Project,
- ③ sanitary management especially of toilets,
- ④ long-term facility maintenance

2) Formation of Task Force

Formation of task force on the Cambodian side is indispensable for the effective and efficient implementation of the Technical Assistance. The task force should sufficiently understand the intentions of the Consultant, inform activities of the Technical Assistance to the concerned parties, and monitor maintenance activities after the completion of facility construction. The task force is formed by DEP and consists of the personnel of DEP.

3) Orientation for the directors, teachers and SSC members of the Schools

The schools are informed about the contents of the facilities to be constructed, construction schedule, model school observation visit and seminars on facility maintenance. In addition, the importance of facility maintenance by the schools is emphasized. DEP takes the initiatives in preparing the orientation, and the Consultant explains.

4) Model School Visit for Observation

The school directors and teachers visit model schools selected by DEP and the Consultant, observe good examples of facility maintenance and management systems and share the ideas through discussions with the model schools' teachers so that they understand better how to maintain the school facilities in good conditions.

5) Observation of Toilets during Construction Work

Since the toilet of the Project adopts a different type compared with existing toilets, new technical skills are required for its maintenance. So the system of toilet should be well understood through actual observation of its structure during the construction.

The observation is prepared by DEP with cooperation of the consultant and the contractor.

6) Seminar

DEP holds a Seminar on "how to maintain facilities in good conditions" supported by the Consultant who explains the facility structure and an effective method on facility maintenance, necessity of sanitary management, and the formulation of a long-term repair plan.

7) Preparation of Guideline for Facility Maintenance

In due consideration of the above-mentioned model school observations and seminar, ways of improving the school facility maintenance is examined and

analyzed through discussions among the concerned parties for developing their awareness.

A participatory-type method among the concerned parties is adopted in preparing "the guideline for facility maintenance" based on a model prepared by the Consultant and by incorporation of local ideas in order to enhance the awareness and ownership of the concerned parties. The Consultant comments on the progress and provide instructions.

8) Preparation of Guideline for Formulation of Long-term Repair Plan

Same as above 7), a participatory-type method is adopted in preparing the guideline based on a model prepared by the Consultant and incorporation of local ideas

9) Preparation of Monitoring Guideline for Facility Maintenance

A guideline for the monitoring of maintenance activities in the schools is prepared by active involvement of DEP. The Consultant prepares a draft guideline. Based on this, the task force prepares and completes the guideline by itself. The Consultant supports it through the comments, evaluates, and feedback to it.

Based on the guideline, DEP is required to monitor facility maintenance conditions at least once a year, feedback it to the schools, and report the results to the JICA office in Cambodia.

6. Procurement Method of Resources for Technical Assistance.....

At the present time, the activities of DEP about school facility maintenance are limited. However, in the interests of sustainable facility maintenance after the completion of the Project, DEP should deepen its awareness of the present school facility maintenance conditions and form a school support system accompanied with technical assistance, etc. Accordingly, the Japanese Consultant, by encouraging the sustainable involvement of DEP, helps promote better communication between DEP and the schools and also the own initiative of the schools. In addition, the Japanese Consultant should encourage both DEP and the schools in providing sustainable facility maintenance through self-efforts by collaborating mutually even after the completion of the Project.

The task force is set up through the unwavering support of DEP in order to secure the smooth implementation of the Technical Assistance and sustainable application after the completion of the Technical Assistance.

The task force plays a useful role for promotion of the Technical Assistance, and supervises, if necessary, the facility in order to secure the smooth and sustainable maintenance in satisfactory conditions even after the completion of the Project.

7. Work Schedule of Technical Assistance

Month	1	2	3	4	5	6	7	8	9	10	11	12	13
Activity Items		Preparation & Implementation										Monitoring	
		Implementation (operation and maintenance) →											
Period		1.4 months										0.6 month	

8. Output of Technical Assistance

The output to be obtained through the implementation of the Technical Assistance under the Project is listed below.

- 1) Schemes of Technical Assistance (Consultant)
- 2) Guideline for Facility Maintenance (all schools and DEP)
- 3) Guideline for Formulation of Long-term Repair Plan (all schools and DEP)
- 4) Monitoring Guideline for Facility Maintenance (DEP)

9. Obligations of Cambodian Side

- 1) DEP forms the task force to cooperate in the implementation of the Technical Assistance.
- 2) DEP contacts and instructs schools subject to the implementation of the Technical Assistance at its own responsibility.
- 3) The task force takes the initiative in discussing with the Consultant, obtaining the involvement of concerned schools, promoting the Technical Assistance and completing the guidelines for facility maintenance and formulation of Long-term Repair Plan.
- 4) The task force takes the initiative in completing the monitoring guideline at the final stage of the Technical Assistance through discussions with the Consultant.
- 5) DEP continues to monitor the facility maintenance conditions at least once a year after completion of the Technical Assistance. And DEP prepares report on the monitoring results at each school year end for consecutive three years and sends it to JICA in Cambodia immediately.

5. COST ESTIMATION BORNE BY THE RECIPIENT COUNTRY

The main cost items to be borne by the Cambodian side are listed below.

Leveling and access road	:	(0)	(0)
Demolition of existing deteriorated buildings and removal of obstacles from the site	:	US\$9,200	(approx. ¥ 1.0 million)
Demolition and reconstruction of fences and gates by the site	:	US\$1,800	(approx. ¥ 0.2 million)
Connection of water supply, drainage and electricity	:	US\$5,500	(approx. ¥ 0.6 million)
Commissions for banking arrangement and payment	:	US\$700	(approx. ¥ 0.1 million)
Total		US\$17,200	(approx. ¥ 1.9 million)

6. References

No.	Title	Media	Organization	Year
1	Statistical Year Book	original	National Institute of Statistics	2003
2	Building the Future of Cambodia	copy	UNICEF Cambodia	2003
3	Phnom Penh Drainage System	drawings	Department of Public Works and Transport	2004
4	Architectural Regulation	Copy	Land Management, Urban Planning, and Construction	-
5	Road and Bridge Design Standard	Copy	Ministry of Public Works	-
6	Basic Study Report for Science Education in the Kingdom of Cambodia	Copy	JICA	2004
7	Flood Emergency Rehabilitation Project	Copy	World Bank	2001
8	National Poverty Reduction Strategy	Copy	Council for Social Development	2003
9	Education in Cambodia	Copy	Ministry of Education, Youth and Sport	2003
10	Education Management Information System - Statistical Data	CD	Education Management Information System	2003
11	Education Strategic Plan 2001-2005	Copy	Ministry of Education, Youth and Sport	2001
12	Education Sector Support Program 2001-2005	Copy	Ministry of Education, Youth and Sport	2001
13	Education Statistics and Indicators	Copy	Ministry of Education, Youth and Sport	2004