JAPAN INTERNATIONAL COOPERATION AGENCY

THE DEPARTMENT OF EDUCATION, CULTURE AND SPORTS
THE REPUBLIC OF THE PHILIPPINES

BASIC DESIGN STUDY REPORT

ON

THE PROJECT FOR

THE EDUCATIONAL FACILITIES IMPROVEMENT PROGRAM (PHASE I)

IN

THE REPUBLIC OF THE PHILIPPINES

JULY 1993

MOHRI, ARCHITECT & ASSOCIATES, INC.

JAPAN INTERNATIONAL COOPERATION AGENCY

THE DEPARTMENT OF EDUCATION, CULTURE AND SPORTS
THE REPUBLIC OF THE PHILIPPINES

BASIC DESIGN STUDY REPORT

ON

THE PROJECT FOR

THE EDUCATIONAL FACILITIES IMPROVEMENT PROGRAM (PHASE I)

IN

THE REPUBLIC OF THE PHILIPPINES

JULY 1993

MOHRI, ARCHITECT & ASSOCIATES, INC.

PREFACE

In response to a request from the Government of the Republic of the Philippines, the Government of Japan decided to conduct a basic design study on the Project for the Educational Facilities Improvement Program (Phase I) and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to the Philippines a study team headed by Mr. Takuo Kidokoro, Director of First Project Management Division, Grant Aid Project Management Department, JICA, and constituted by members of Mohri, Architect & Associates, Inc. from February 21 to March 15, 1993.

The team held discussions with the officials concerned of the Government of the Philippines and conducted a field study at the study area. After the team returned to Japan, further studies were made. Then, a mission was sent to the Philippines in order to discuss a draft report and the present report was prepared.

I hope that this report will contribute to the promotion of the project and to the enhancement of friendly relations between our two countries.

I wish to express my sincere appreciation to the officials concerned of the Government of the Republic of the Philippines for their close cooperation extended to the study team.

July 1993

Kensuke Yanagiya

Kensuke Yanagiya
President
Japan International Cooperation Agency

July 1993

Mr. Kensuke Yanagiya
President
Japan International Cooperation Agency
Tokyo, Japan

Letter of Transmittal

We are pleased to submit to you the basic design study report on the Project for the Educational Facilities Improvement Program (Phase I) in the Republic of the Philippines.

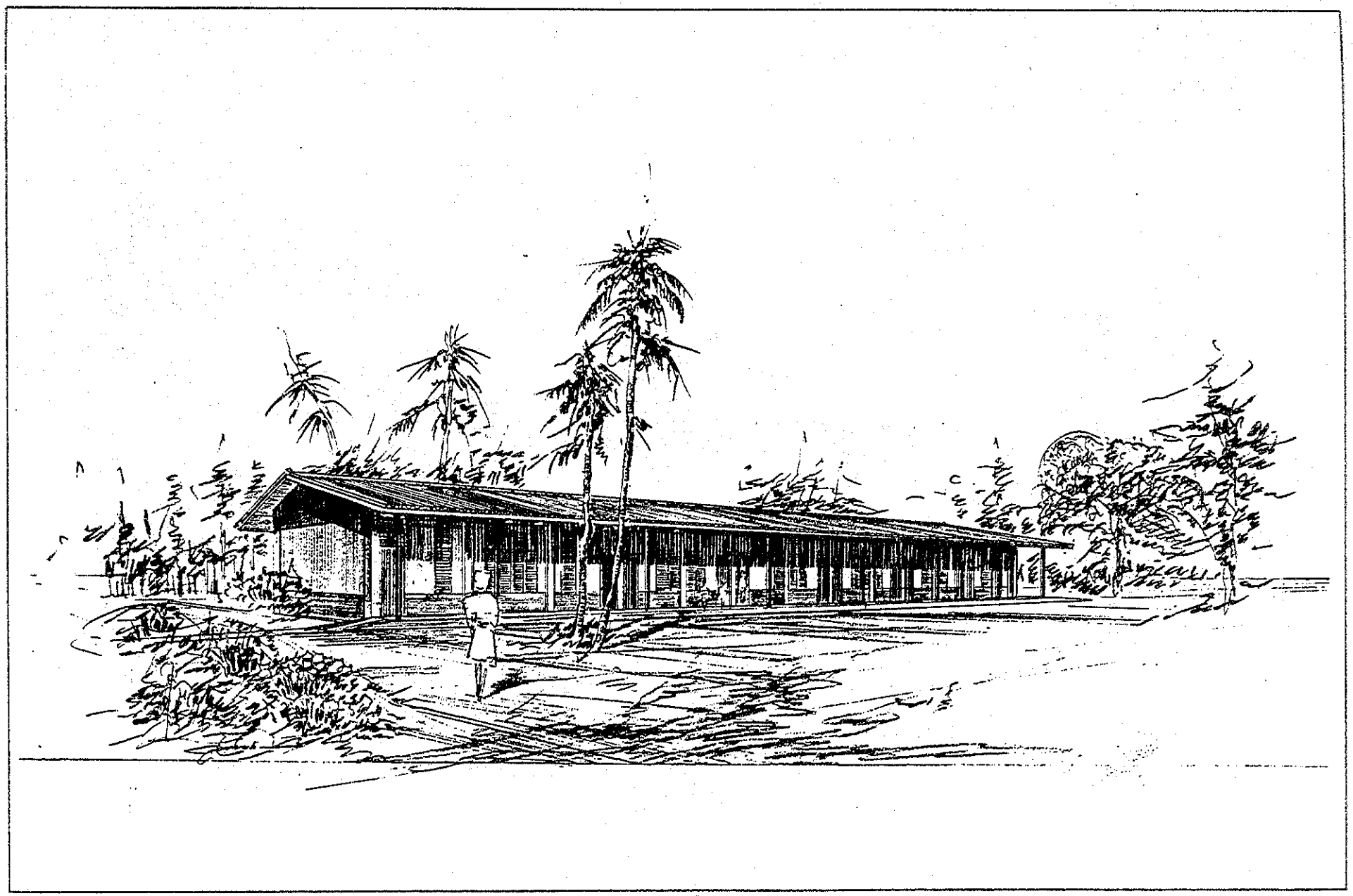
This study was conducted by Mohri, Architect & Associates, Inc., under a contract to JICA, during the period of February 16 to July 30, 1993. In conducting the study, we have examined the feasibility and rationale of the project with due consideration to the present situation of the Philippines and formulated the most appropriate basic design for the project under Japan's grant aid scheme.

We wish to take this opportunity to express our sincere gratitude to the officials concerned of JICA, the Ministry of Foreign Affairs. We would also like to express our gratitude to the officials concerned of the Department of Education, Culture and Sports, the JICA Philippines Office, and the Embassy of Japan in the Philippines for their cooperation and assistance throughout our field survey.

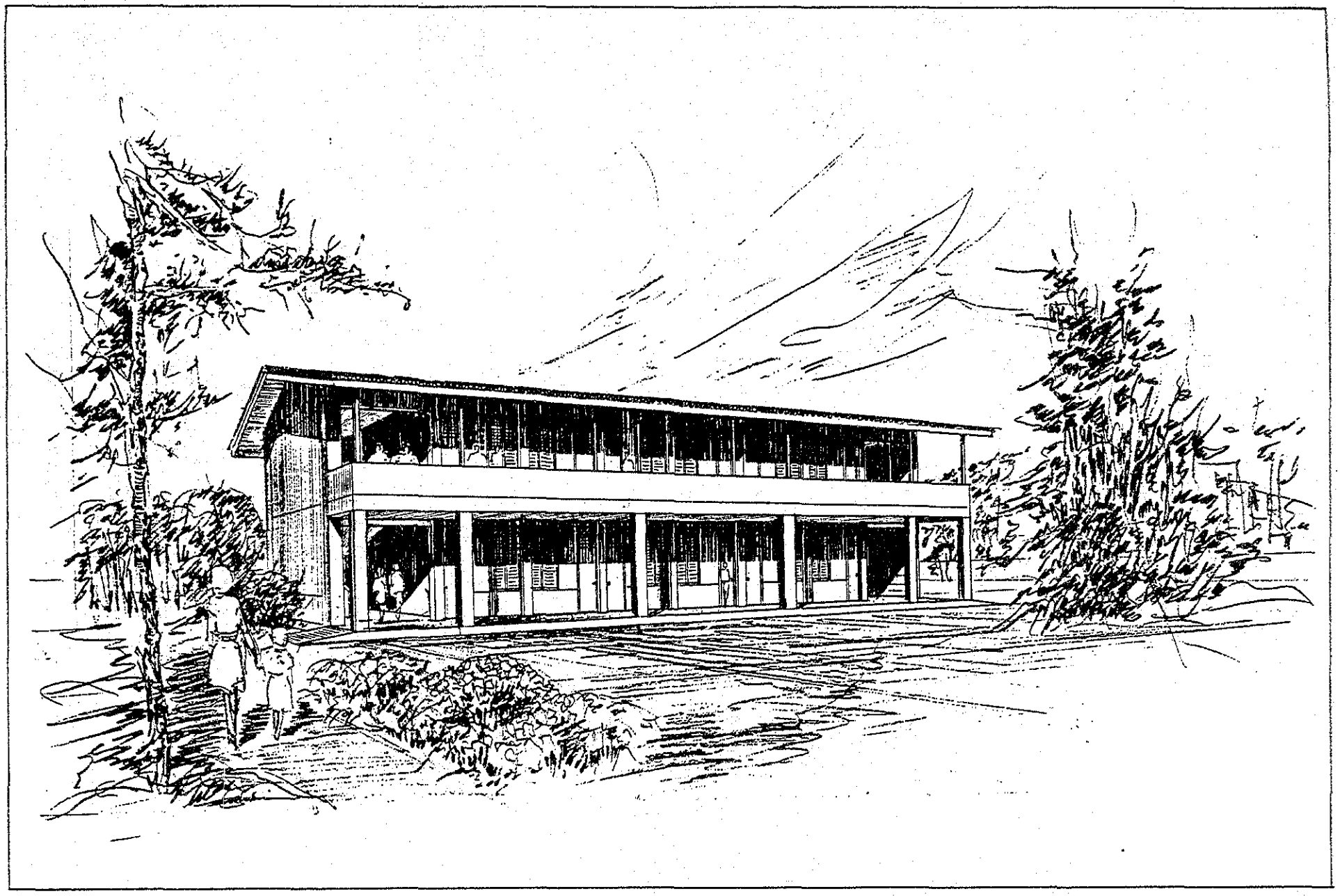
Finally, we hope that this report will contribute to further promotion of the Project.

Very truly yours,

Takenobu Mohri
Project manager
Basic design study team on the
Project for the Educational Facilities
Improvement Program (Phase I)
Mohri, Architect & Associates, Inc.

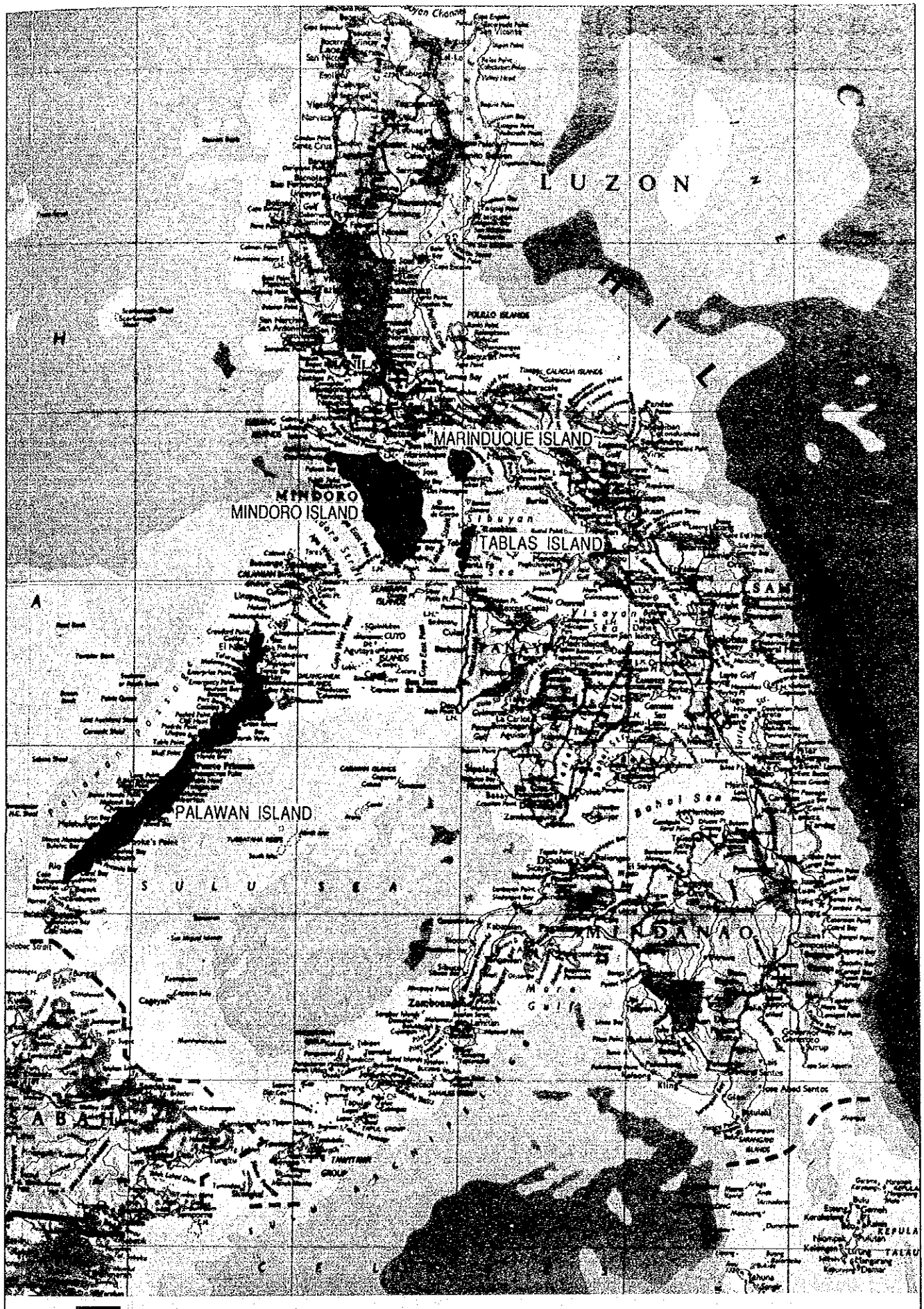


PERSPECTIVE DRAWING TYPE SC



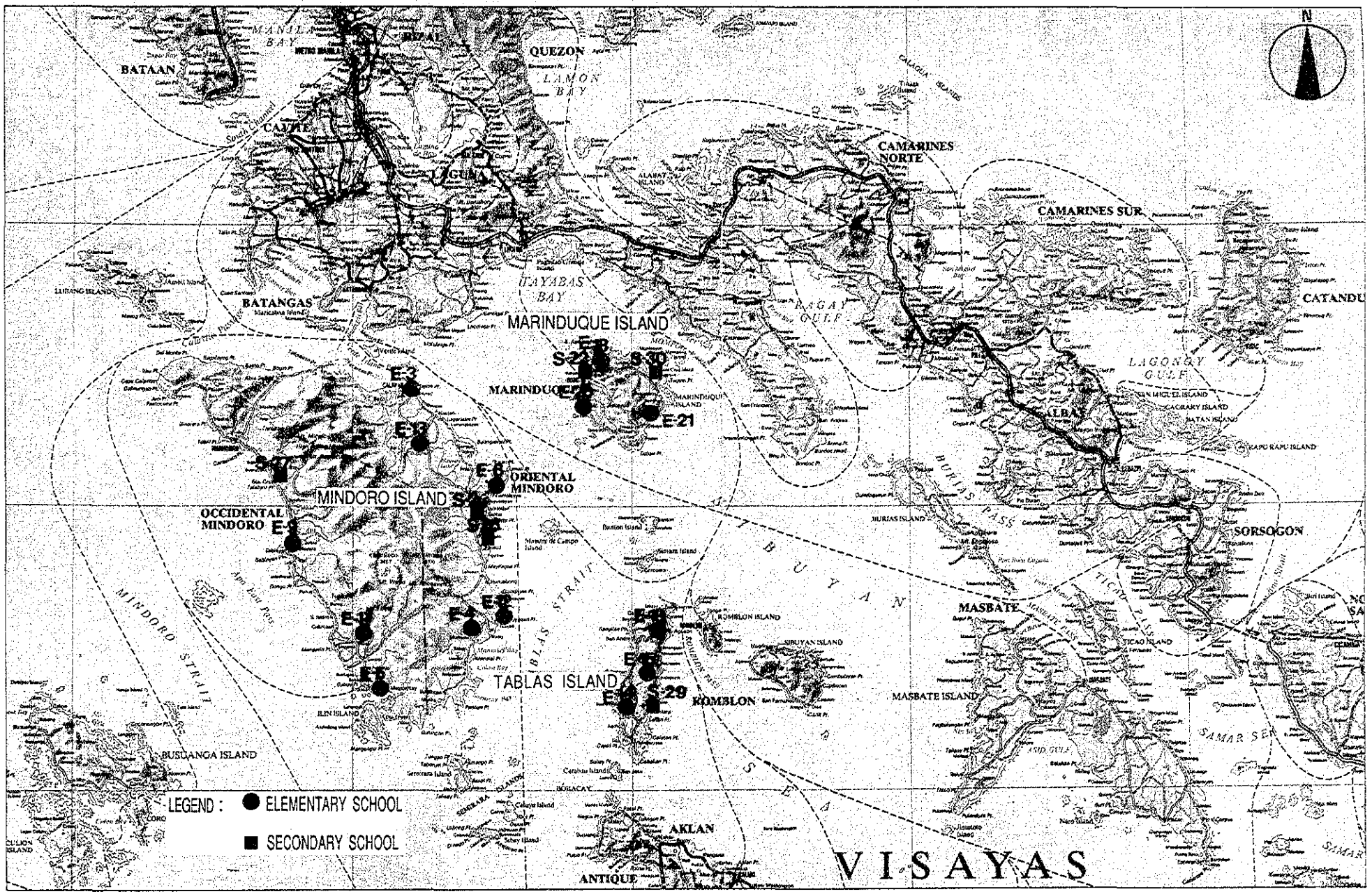
PERSPECTIVE DRAWING TYPE D

MAP OF THE PHILIPPINES

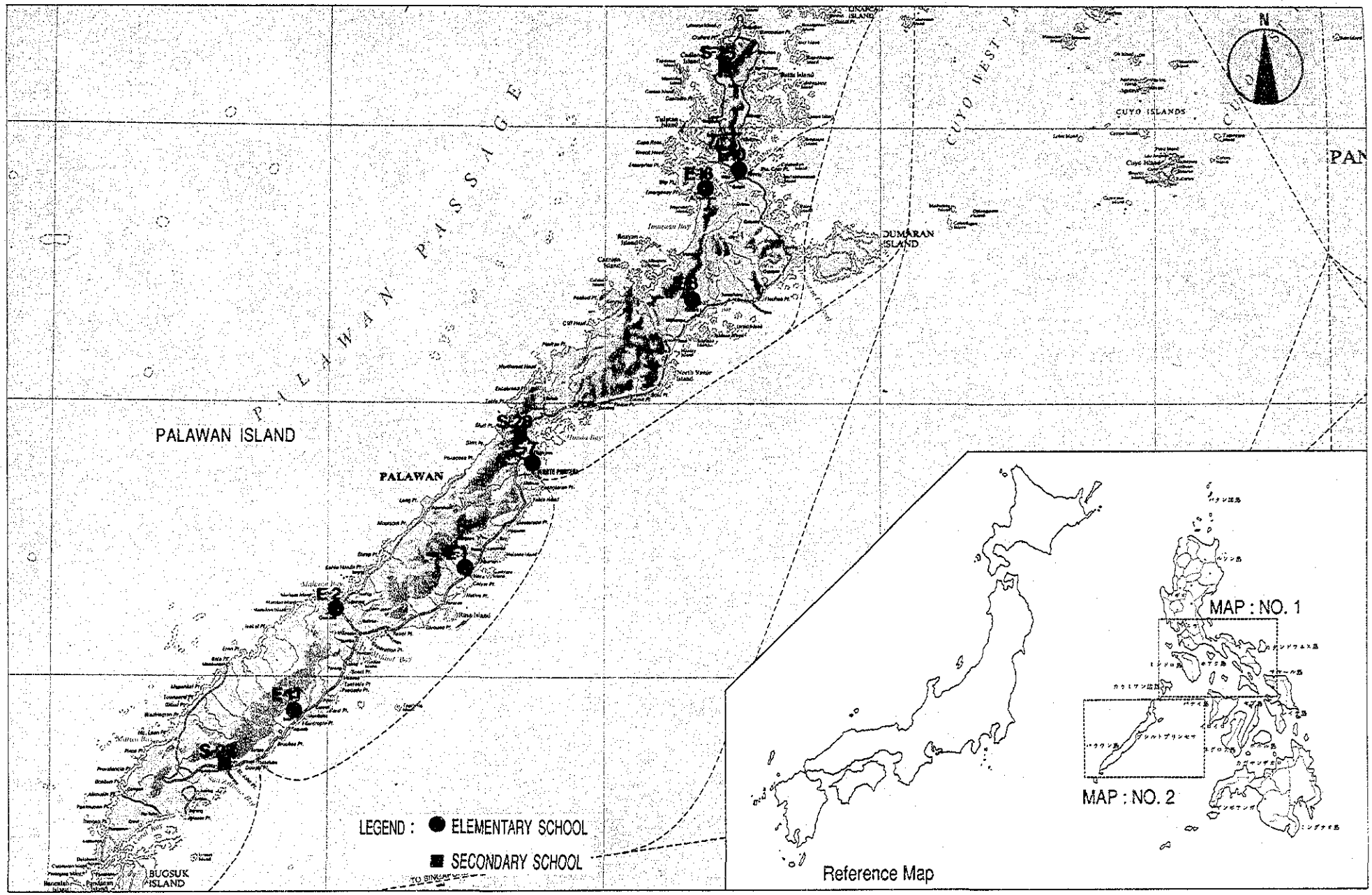


Phase I Project Area, Region IV (Southern Tagalog Region)

PROJECT LOCATION MAP : NO. 1



PROJECT LOCATION MAP : NO. 2



SUMMARY

SUMMARY

The Government of the Republic of the Philippines (hereinafter referred to as the Philippines) established the Medium-term Philippine Development Plan 1987-1992 and the Updates of the Philippine Development Plan 1990-1992 and has been making every effort to improve the country's educational situation by strengthening education management and improving educational facilities. As a result, the number of primary and secondary school children increased from 13.1 million in 1987 to 15.1 million in 1992. However, due to the two large typhoons that devastated the country in 1987, a great deal of damage was inflicted on school facilities. Thus, the Government of Japan has been providing grant aid cooperation to the Project for Constructing Primary and Secondary Schoolbuildings that aims at building schoolbuildings with typhoon-resistant prefabricated structures for 360 schools located in the areas most severely damaged by the typhoons. Phase V of the project will be completed in fiscal year 1993.

The Government of the Philippines is preparing the New Medium-term Philippine Development Plan 1993-1998 and, in particular, is willingly preparing the foundation for primary education aimed at furthering manpower development. In spite of the Government's efforts, there still remains a serious lack of school facilities. In addition to the damage to school facilities caused by such natural calamities as typhoons and the eruptions of volcanoes, the construction of new educational facilities to meet the annual population increase of 2.4% is a foremost subject for the Government.

For the above reason, the Government emphasized building many low-cost primary and secondary schoolbuildings and established the Project for the Educational Facilities Improvement Program to build the schoolbuildings of approximately 630 schools during a five year period employing Philippine construction methods. The Government selected 30 schools in Region IV (Southern Tagalog) for the Phase I Project and requested grant aid cooperation from the Government of Japan.

In response to the request of the Government of the Philippines, the Japan International Cooperation Agency (hereinafter referred to as

JICA) dispatched a Basic Design Study Team to the Philippines from February 21 to March 15, 1993. The Study Team held a series of discussions on the Project with officials concerned from the Department of Education, Culture and Sports (hereinafter referred to as DECS), the project implementing agency, and officials from the Region IV Administrative Office, and conducted field surveys in the Project Area.

Upon returning to Japan and after carefully examining the appropriateness of the Project, the Project management structure, and the effects of the Project based on the field survey results, the Study Team determined the facility size of each Project school and the most adequate types of equipment and materials to be used. As a result, the Team prepared the Draft Report of the Project and visited the Philippines from May 16 to 25, 1993 to present the report, along with explanations, to the Philippine side.

The purpose of the Project is to build the schoolbuildings of 30 schools (21 primary and 9 secondary schools) in Region IV with reinforced concrete structures employing Philippine construction methods. In the Basic Design, 10 standard schoolbuilding types (6 for primary schools and 4 for secondary schools) having different numbers of classrooms were set up and a proper type is to be selected from the standard types according to size, needs, and the site conditions of each Project school.

The Project's primary and secondary schools were selected by the Philippine side by giving priority to those seriously lacking classrooms. Schools which may receive financial assistance from other countries or international organizations are not included in the Project.

Following are the summaries of the schoolbuildings to be built and the equipment units to be provided by the Project:

1. Summary of Schoolbuildings

School	Building Type	Number of Classrooms and Facility	Total Floor Space
Primary Schools	A Type	3 Classrooms + Toilet	236.00㎡
	B Type	4 Classrooms + Toilet	302.50㎡
	C Type	5 Classrooms + Toilet	369.00㎡
	D Type	6 Classrooms + Toilet	607.70㎡
	C+A Type	8 Classrooms + Toilet	568.50㎡
	C+B Type	9 Classrooms + Toilet	635.00㎡
Secondary Schools	SA Type	3 Classrooms + Science Laboratory + Toilet	335.75㎡
	SB Type	4 Classrooms + Science Laboratory + Toilet	402.25㎡
	SC Type	5 Classrooms + Science Laboratory + Toilet	468.75㎡
	SC+C Type	10 Classrooms + Science Laboratory + Toilet	801.25㎡

*Two doors are to be installed to each classroom for easy entering and exiting.
*One classroom is to accomodate 40 primary school students or 42 secondary school students.
*One separate toilet will be built at each of the Project schools except for one secondary school whose toilet was built by the U.S. Agency for International Development.

2. Summary of Equipment

	school Type	Room Type of Use Purpose	Equipment Item
General Educational Equipment	Primary schools	Classrooms	Teachers' desks, Chair, and filing cabinets. Students' chair-desks (large, medium, and small types) and closets. Blackboards and bulletin boards.
	Secondary Schools	Classrooms	Teachers' desks, chairs, and filing cabinets. Students' chair-desks, and closets. Blackboards and bulletin boards.
		Science Laboratories	Demonstration workbenches. experiment tables. Students' chair-desks and closets, storage shelves and steel shelves. Blackboards and bulletin boards.
Science Laboratory Instruments	Secondary School	General Science	Platform balance, anemometer, hand lens, stop watch, magnetic compass, thermometer.
		Biology	Microscope, slide glass, cover glass.
		Chemistry	Triple beame balance
		Physics	Dynamic carts, electroscope, prism set, multitester, logic gates, tuning fork set, Free fall apparatus, and other miscellaneous instruments.

*Science laboratory instruments will not be provided to the Project's five secondary schools that will be included in the Secondary Education Instructional Equipment Program (Phase II)

The main characteristic of the Project is to construct the schoolbuildings of 30 schools in a short period of time on the four widely scattered islands in Region IV. Accordingly, it will be necessary to draw up an appropriate construction schedule and management plan. It is planned that the science laboratory instruments and deep well hand pumps will be procured in Japan and that all other building construction materials and equipment will be procured in the Philippines. The selection of materials and equipment was conducted by carefully taking into consideration the easy maintenance of the facilities.

The Project implementing agency's budget that will be necessary for the maintenance and management of primary and secondary schools is distributed to the Department of Public Works and Highways (DPWH) by DECS according to each school principal's request. With this budget, DPWH will repair, maintain, and manage the school facilities. The number of classrooms to be built by the Project is only 0.4% of the existing classrooms in Region IV. Region IV's 1993 budget for the maintenance and management of school facilities has been increased 29.8% over the previous year's amount. Thus, it is considered that Region IV's budget will be sufficient for maintaining and managing Project facilities.

The implementation of the Project will have the following effects:

(1) Increased Opportunities for Children to Attend School

A total of 152 classrooms (98 for primary schools and 54, including 9 science laboratories, for secondary schools) will be constructed under the Project. These classrooms will accommodate 5,810 students. As a result, this Project will represent a significant contribution towards increasing the opportunities for children to attend school.

(2) Contribution to Area Residents

The Project's school facilities will not only be used for education purposes (including two or three shift classes), it will also be used for places of refuge for area residents

during periods of natural calamities and for meetings. Such additional use of the Project's school facilities will be a beneficial contribution to the area residents.

(3) Activation of Rural Economies

The construction of many schoolbuildings in the rural areas of the Philippines will provide employment opportunities for rural residents. The local procurement of construction materials and equipment other than science laboratory instruments will make a substantial contribution towards stimulating the rural economies of the Philippines.

In view of the above, it is expected that the implementation of the Project will result in bringing about beneficial effects in various fields and is deemed to be appropriate and extremely worthwhile to carry out the Project with Japanese grant aid cooperation.

CONTENTS

CONTENTS (cont'd)

CONTENTS (cont'd)

CHAPTER 1. INTRODUCTION

CHAPTER 1 INTRODUCTION

The Government of the Philippines established the Medium-term Philippine Development Plan (1987-1992) and has made an effort to build a foundation for the country's manpower development. Due to the annual occurrence of natural hazards, such as typhoons, and an annual population increase rate of 2.4%, the country still lacks 81,217 classrooms (50,126 for primary schools; 31,091 for secondary schools). Thus, the Government launched an educational facilities improvement program to construct schoolbuildings for approximately 360 schools throughout the country using domestic construction methods within a 5-year period. The Government selected the Southern Tagalog Region (Region IV) as the Phase I project and requested the Government of Japan for grant aid to construct the schoolbuildings in that region.

Based on the request, JICA dispatched (for the period February 21 to March 15, 1993) to the Philippines the Basic Design Study Team headed by Mr. Takuo Kidokoro, Director, First Project Management Division, Grant Aid Project Management Department. (Note: Please refer to Appendices 2, 3, 4, and 5 for information concerning the members of the Study Team, the Study schedule, and members of concerned personnel of the Government of the Philippines, and the Minutes of Discussions.)

The Basic Study Team and members of the Philippine side held a series of meetings. The Study Team conducted a site study of the Phase I Project schools and their related facilities and engaged in the collection of necessary data. The Team also confirmed such matters as the range of cooperation by the Government of Japan and the undertakings to be borne by the Philippine side.

Upon returning to Japan, and after reviewing the results of the field study, the Study Team determined the size of each schoolbuilding, prepared a list of appropriate and essential classroom equipment and materials, made a rough estimate of the Project cost, prepared the Project construction plan, and the results were written up in the Basic Design Draft Report.

JICA sent to the Republic of the Philippines a draft report explanation team headed by Mr. Katsuo Shyoji, Officer, First Project Management Division, Grant Aid Project Management, JICA from May 16 to 25, 1993. The team held a series of discussions with officials concerned from the Government of the

Philippines on the Basic Design Study Draft Report. The matters agreed upon at the discussions were written up in the Minutes of Discussions and were signed by both sides on May 21, 1993.

Based on the above, this report compiles information pertaining to schoolbuilding sizes, the basic design, and the Project construction plan. This report also provides an evaluation of the Project and makes certain recommendations.

CHAPTER 2. BACKGROUND OF THE PROJECT

CHAPTER 2 BACKGROUND OF THE PROJECT

2-1 Education Situations in the Philippines

2-1-1 Present Education Situations in the Philippines

Starting from the 16th century and lasting for four centuries, the Philippines was under the rule of Spain, the United States of America, and Japan. Even now the education system in the Philippines is strongly influenced by the Spanish and American systems.

The major education system introduced by the Americans was the 7-4-4 centralized education system -- 7 years of primary education, 4 years of secondary education, and 4 years of higher education -- with free primary education, the establishment of pilot schools, and coeducation.

Recently, the decentralization of education system has been attempted -- 6 years of primary education, 4 years of secondary education, and then on to a university.

Since 1988, secondary education has been free and all local public primary and secondary schools have been nationalized and placed under the administration of the central government.

The Philippine education system is shown in Table 2-1. The education performance indicators of the Public Primary Education Activities and the Public Secondary Education Activities are shown in Tables 2-2 and 2-3 respectively.

Table 2-1 The Philippine Education System

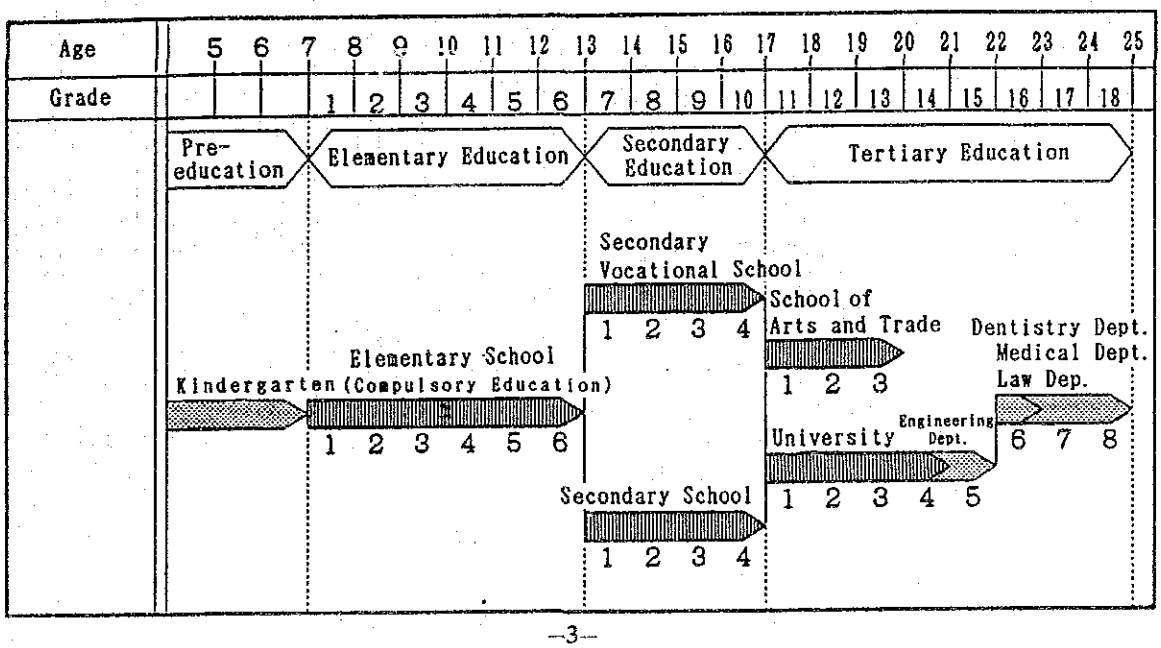


Table 2-2 The Education Performance Indicators of the Public Secondary Activities (1990-1991)

Region	Partici-pation Rate	Cohort Survival Rate	Retention Rate	Graduation Rate	Dropout Rate	Completion Rate	Transition Rate	Repetition Rate	Rate of School Leavers	Gross Teacher-Pupil Ratio
NCR	80.85%	89.51%	96.57%	99.38%	0.45%	88.96%	98.87%	1.26%	3.63%	1:33
CAR	95.76%	61.33%	86.65%	95.84%	0.73%	58.78%	90.83%	2.62%	13.02%	1:30
Region I	99.36%	82.96%	97.41%	98.60%	0.82%	81.80%	99.50%	1.90%	3.28%	1:29
Region II	89.73%	68.13%	92.00%	98.68%	0.93%	67.23%	93.29%	1.37%	7.68%	1:34
Region III	99.88%	81.97%	96.58%	98.41%	0.94%	80.67%	97.47%	0.78%	3.66%	1:35
Region IV	99.41%	77.29%	92.90%	96.72%	1.16%	74.75%	94.99%	1.50%	7.07%	1:35
Region V	98.15%	65.64%	92.13%	97.18%	2.05%	63.79%	93.56%	2.84%	8.65%	1:33
Region VI	92.61%	65.91%	89.61%	94.95%	1.99%	62.58%	92.92%	2.66%	11.41%	1:31
Region VII	93.69%	63.97%	91.03%	95.05%	3.26%	60.81%	91.94%	3.71%	10.33%	1:33
Region VIII	92.89%	55.68%	88.14%	95.28%	3.21%	53.06%	89.74%	1.96%	11.78%	1:28
Region IX	97.87%	49.54%	83.89%	95.36%	2.22%	47.24%	86.20%	2.81%	16.26%	1:34
Region X	95.76%	62.42%	86.82%	95.86%	2.06%	59.83%	88.40%	2.90%	14.47%	1:35
Region XI	97.43%	62.64%	88.42%	97.18%	1.73%	60.88%	92.01%	1.89%	11.33%	1:37
Region XII	107.24%	50.12%	86.81%	94.11%	2.40%	47.17%	88.93%	1.64%	12.83%	1:39
Total	95.26%	68.15%	91.25%	96.83%	1.69%	65.99%	93.47%	2.05%	9.06%	1:33

CAR: Cordiller Adminstrative Region
Source: DECS-Office of Planning Service

Table 2-3 The Education Performance Indicators of the Public Secondary Education Activities (1990-1991)

Region	Partici-pation Rate	Cohort Survival Rate	Retention Rate	Graduation Rate	Dropout Rate	Completion Rate	Transition Rate	Repetition Rate	Rate of School Leavers	Gross Teacher-Pupil Ratio
NCR	42.08%	78.86%	90.84%	94.97%	7.98%	74.89%	78.45%	2.44%	9.00%	1:27
CAR	33.33%	69.06%	88.79%	93.97%	6.64%	64.90%	67.76%	2.78%	10.79%	1:26
Region I	44.55%	85.41%	92.73%	97.48%	4.38%	83.26%	74.24%	0.86%	7.61%	1:31
Region II	29.49%	72.55%	85.83%	95.04%	5.78%	68.95%	62.65%	1.33%	12.43%	1:28
Region III	30.43%	78.34%	88.60%	96.69%	5.68%	75.75%	60.21%	1.29%	10.14%	1:36
Region IV	32.65%	79.69%	89.51%	93.65%	6.73%	74.63%	59.47%	1.82%	9.87%	1:31
Region V	30.97%	66.40%	81.26%	93.65%	6.58%	62.18%	64.09%	1.98%	16.44%	1:33
Region VI	45.01%	89.82%	86.69%	89.07%	6.22%	80.00%	84.75%	2.72%	12.60%	1:33
Region VII	24.36%	63.92%	87.07%	92.06%	7.56%	58.84%	57.48%	3.48%	15.36%	1:36
Region VIII	30.79%	63.76%	84.93%	94.33%	9.08%	60.14%	72.76%	2.75%	15.89%	1:31
Region IX	27.48%	64.07%	81.09%	92.60%	8.65%	59.33%	66.09%	2.36%	17.00%	1:34
Region X	30.82%	66.27%	83.72%	91.96%	8.21%	60.94%	64.28%	2.74%	16.49%	1:32
Region XI	33.61%	69.55%	86.12%	94.36%	7.38%	65.63%	65.90%	2.15%	13.24%	1:34
Region XII	30.17%	74.91%	74.20%	87.50%	6.71%	65.55%	64.38%	2.74%	22.97%	1:29
Total	33.82%	74.97%	86.61%	93.50%	6.89%	70.09%	67.42%	2.19%	12.74%	1:31

Source: DECS-Office of Planning Service (OPS)

1) Number of Schools, Pupils, and Teachers

There were 34,081 public and private primary schools in the Philippines as of 1991 (June 1991-March 1992). Approximately 10.55 million pupils attended those schools.

During the 1990 school year, there were 291,172 teachers in public primary schools and 81,543 teachers in public secondary schools.

The number of primary schools, pupils, and teachers are shown in Table 2-4. The number of secondary schools, pupils and teachers are shown in Table 2-5.

Table 2-4 Number of Primary Schools, Students and Teachers (1991)

Region	Primary Schools			Number of Students			Number of Teachers		
	Total	Public	Private	Total	Public	Private	Total	Public	Private
NCR	805	466	399	1,158,417	861,588	296,829	N/A	26,474	N/A
CAR	1,107	1,066	41	203,557	181,530	22,027	N/A	5,991	N/A
Region I	2,269	2,197	72	597,802	573,644	24,158	N/A	19,734	N/A
Region II	1,823	1,765	58	401,256	388,192	13,064	N/A	11,412	N/A
Region III	2,635	2,453	182	1,037,464	946,746	90,718	N/A	27,515	N/A
Region IV	4,194	3,893	301	1,433,603	1,330,335	103,268	N/A	37,718	N/A
Region V	2,898	2,822	76	796,630	747,764	21,866	N/A	22,903	N/A
Region VI	3,132	3,008	124	955,762	920,171	35,591	N/A	29,448	N/A
Region VII	2,635	2,549	86	752,886	718,754	34,132	N/A	21,400	N/A
Region VIII	3,061	3,034	27	564,828	555,397	9,431	N/A	19,047	N/A
Region IX	2,423	2,379	44	591,782	577,552	14,230	N/A	16,132	N/A
Region X	2,483	2,390	93	634,024	609,424	24,598	N/A	17,128	N/A
Region XI	2,359	2,211	148	798,191	749,281	48,910	N/A	20,239	N/A
Region XII	2,257	2,216	41	658,903	644,337	14,566	N/A	16,031	N/A
Total	34,081	32,449	1,632	10,588,105	9,804,717	753,388	N/A	291,172	N/A

Note) The number of teachers were those during the 1990 school year.
N/A: No data available
Source: DECS-Office of Planning Service (OPS)

Table 2-5 Number of Secondary Schools, Students and Teachers (1991)

Region	Secondary Schools			Number of Students			Number of Teachers		
	Total	Public	Private	Total	Public	Private	Total	Public	Private
NCR	346	101	245	583,074	343,138	239,936	N/A	12,177	N/A
CAR	176	97	79	86,410	49,287	37,123	N/A	1,766	N/A
Region I	515	354	161	295,259	211,448	83,811	N/A	6,351	N/A
Region II	218	127	91	162,877	102,562	60,315	N/A	3,304	N/A
Region III	468	273	195	451,559	246,853	204,706	N/A	6,583	N/A
Region IV	808	473	335	615,524	355,990	259,534	N/A	10,649	N/A
Region V	461	313	148	280,483	194,589	85,894	N/A	5,632	N/A
Region VI	521	374	147	416,076	329,841	86,235	N/A	9,724	N/A
Region VII	373	205	168	281,933	148,630	133,303	N/A	3,951	N/A
Region VIII	358	284	74	186,039	143,263	42,776	N/A	4,536	N/A
Region IX	261	190	71	166,014	123,421	42,593	N/A	3,327	N/A
Region X	400	236	164	228,505	143,638	84,867	N/A	4,314	N/A
Region XI	365	195	170	280,432	185,045	95,387	N/A	5,304	N/A
Region XII	280	172	108	173,966	117,836	56,130	N/A	3,925	N/A
Total	5,550	3,394	2,156	4,208,151	2,695,541	1,512,610	N/A	81,543	N/A

Note) The number of teachers were those during the 1990 school year.
N/A: No data available
Source: DECS-Office of Planning Service (OPS)

2) Teacher Training

There were 809 public and private colleges and universities in the Philippines in 1991. 525 of them have teacher training courses. About 49,000 students graduated from these courses in 1991.

To obtain teaching credentials after graduating, a student must pass the Board Examination for Teachers. In 1991, 14,848 students passed the examination.

The teacher position classification system in the Philippines is similar to that in Japan; there is a principal, vice principal, and teacher. However, many secondary schools have department heads under the principal.

The required courses and credits needed to become a primary or secondary teacher are shown in Table 2-6.

Table 2-6 Required Courses and Credits for Teacher Credentials

Required Courses	Primary School Teacher	Secondary School Teacher
General Education Courses	107 Units	93 Units
Major Courses	37	30
Optional Courses	0	0
Special Courses		
Major	0	18
Minor	0	9
Total	144 Units	156 Units

3) Contents of Education in the Philippines

The uniqueness of the Philippine education is the variety of languages. Presently, primary education is conducted using three languages: English and Tagalog as the official languages and each area's local language.

(1) Primary Education Curriculum:

The new primary education curriculum was introduced in 1985. Compared to the previous curriculum, it emphasized the development of the basic abilities of reading, writing, calculating and the development of pride in being a Filipino. Table 2-7 shows the primary education curriculum. The characteristics of the curriculum are as follows.

a) To teach the importance of public health in addition to the classes on character building, science, and health.

b) Introduction of subjects that will be helpful in social life.

c) Development of basic reading, writing, and calculating capabilities, pride as Filipinos, and the manpower that will be useful in developing the country.

Table 2-7 New Primary Education Curriculum (units: minutes/day)

Subject	Grade					
	1	2	3	4	5	6
Character Building	20-30	20-30	20	20	20	20
Tagalog Language	60	60	60	60	60	60
English Language	60	60	60	60	60	60
Math	40	40	40	40	40	40
Citizen and Culture	40	40				
History, Geography, Work Ethics			40			
History, Geography, Civics				40	40	40
Science and Health			40	40	40	40
Art and Physical Education			40	40	40	40
H.E. and Livelihood Education				40	60	60
Total	220-230	220-230	300	340	360	360

(2) Secondary Education Curriculum:

Similar to primary education, secondary education is conducted on a bilingual basis, using both English and Tagalog. The term of secondary education is four years.

The secondary education level corresponds to junior high school and high school education in Japan, but the term is two years shorter.

As six years of education are taught in four years, the content is rich and the level is high considering the age of the students.

In accordance with the Secondary Education Development Program (SEDP) that was established in 1989, the new curriculum is in effect. The contents of the curriculum are shown in Table 2-8.

Table 2-8 Secondary School Curriculam

Grade	1		2		3		4	
Subject (min/dy)	Unit	min/dy	Unit	min/dy	Unit	min/dy	Unit	min/dy
Filipino	1	40	1	40	1	40	1	40
Araling Panlipunam	1	40	1	40	1	40	1	40
PE.H.M	1	40	1	40	1	40	1	40
Values Education	1	40	1	40	1	40	1	40
English	1	40	1	40	1	40	1	40
Mathematics	1	40	1	40	1	40	1	40
Science & Technology	1.5	60	1.5	60	1.5	60	1.5	60
Technology	1.5	60	1.5	60				
Home Economics					2	80	2	80
Total	9	360	9	360	9.5	380	9.5	380

(3) Contents of Textbooks

The textbooks used in the Philippines were greatly influenced by those used in the United States and Europe and are rich in content.

As the history of textbook development in the Philippines is short, some textbooks are no longer appropriate for present Philippine situations.

Since 1980, emphasis was placed on providing education in the country's own language as well as on the country's history and social studies in order to develop the individual's identity as a Filipino. In accordance with the SEDP, more emphasis has been placed on value oriented education and on manufacturing and production skills.

Textbooks published by the Government are provided to students free of charge. On an average, one textbook is used by two public primary school and by three and one half public secondary school students.

4) Education Budget

The 1992 education budget was about 34.5 billion pesos. This was about 11.2% of the Government of the Philippine's total budget and, as it exceeds the previous year's education budget, it is the largest. From these figures, it can be understood how strongly the Government acted to promote the country's educational policies. The percentage of education expenditures in relation to the Government's total expenditures from 1984 through 1992 are shown in Table 2-9.

Table 2-9 Budget of the Department of Education, Culture and Sports as a Percentage of the National Government Budget:1984 to 1992

Fiscal Year	Budget (in million Peso)		Percentage(%)
	Government	DECS	
1984	92,107.0	5,613.1	6.09
1985	92,511.0	6,145.9	6.64
1986	115,102.0	8,712.2	7.57
1987	194,266.0	12,321.9	6.34
1988	162,250.0	15,100.3	9.31
1989	227,421.0	23,578.8	10.37
1990	255,780.0	28,177.8	11.02
1991	298,950.0	32,950.0	11.02
1992	308,370.0	34,530.0	11.20

Source: DECS-OPS

2-1-2 Education Problems in the Philippines

The following are primary and secondary education problems:

1) Chronic Shortage of School Facilities:

Presently there are 81,217 classrooms (50,126 in primary schools and 31,091 secondary schools) are lacking. Additionally, to meet the needs of the increasing number of students caused by an annual population growth of 2.4%, the construction of new classrooms is required each year. Also, every year typhoons inflict damage on school buildings. Thus, due to classroom shortages, many schools have initiated a two-shift system (morning classes and afternoon classes). Some schools that have severe classroom shortages had to incorporate a three-shift system.

2) Teacher Shortage

Although there was an increase of approximately 17,000 primary and secondary school teachers during 1991, there still remains a shortage of 12,284 teachers (9,358 primary and 2,926 secondary school teachers) due to the increase of school-age children. To overcome this shortage, DECS is taking the following measures:

a. Increasing the number of students per teacher and each teacher's hours;
b. Mobilizing non-teaching personnel to perform actual teaching work;
c. Redistributing teachers according to the present number of students.

3) Shortage of Textbooks and Other Teaching Materials

According to DECS's objectives, one textbook is supposed to be provided to each student. In reality, however, due to the insufficient budget and poor transportation system, textbooks are not delivered at the above rate to the remote areas of the Philippine archipelago that consists of some 7,000 islands.

Educational TV programs and audio-visual education are provided only to certain private schools having the necessary equipment.

4) High Dropout Rate

Of the total 9.73 million public primary school in the Philippines in 1991, 9.06% (about 880,000 students) dropped out. During that same year, of the total 2.56 million public school secondary school students, 12.74% (about 330,000 students) dropped out.

The major reasons for the high dropout rate can be attributed to the lack of parents' understanding of education, household poverty, and children being considered as a labor source.

5) Heavy Burden of Language Studies

Education in the Philippines is conducted in three languages: English; Tagalog; and one local language. The study of these languages poses a heavy burden on the students and is one of the reasons why the school dropout rate is so high.

6) Number of School Days Per Year and the Number of School Years

There are 185 school days per year at primary and secondary schools in the Philippines -- this is about two weeks shorter than for schools in other countries. There are ten school years for primary and secondary schools. There are only four other neighboring countries having ten years of primary and secondary schooling. There are eight countries having eleven years, and the remaining countries have 12 years.

The short school year and the fewer school years are education obstacles. Thus, it is planned to extend annual school days to 200 starting the 1993 school year.

2-2 Outline of the Related Projects

2-2-1 National Education and Manpower Development Project

The Government of the Philippines established the Medium-term Philippine Development Plan 1987-1992 to improve the standard of living and maintain the growing economy and society by restoring the country's economy, stabilizing prices, increasing income, leveling out regional differences, increasing job opportunities, increasing competitiveness in the industrial field, and improving the balance of international payments. The final objective of the plans is to decrease the low income group and improve the living standards of the Philippine people.

Due to frequent natural disasters and political instability, the country is facing economic problems, such as a drop in GNP growth and employment rate. Thus, the Medium-term Philippine Development Plan 1987-1992 was revised and the Update of the Philippine Development Plan 1990-1992 was launched.

The most important policy of the Government of the Philippines is the stabilization of the economy. But, more importance has been placed on manpower development to promote the development of industries. For this reason, the Government has been aiming to improve fundamental education, primary and secondary education.

The major objectives of the manpower development are as follows:

1) Association between education and training at all levels.
2) Increase educational opportunities for the children of poor families.
3) Acceleration of medium and high level manpower development, increase the number of trained potential workers, and increase productivity and people's independence.
4) Development of feelings for values that is necessary for social reform and development.
5) Restoration, enhancement, and promotion of the country's cultural assets and properties.

To improve secondary education, the Government of the Philippines launched the Secondary Education Development Plan 1989-1993. The plan intends to develop secondary education by improving the curriculum, teach training, and school facilities. Aid from various foreign agencies, including Japanese grant aid cooperation, have been assisting in the implementation of the plan.

As for primary education, "Education for All (EFA)" was announced by Presidential Ordinance No. 480. According to EFA, the term for the improvement of primary education was set to be 1990 to 2000.

Established items for the improvement of primary education are as follows:

1) The institutionalization of early childhood care and development.
2) The universalization of quality primary education.
3) The eradication of illiteracy.
4) Continuing education for adults and out of school youth.

The new government under President Ramos that came into power in June 1992 has been preparing the New Medium-term Philippine Development Plan 1993-1998 that will succeed the Medium-term Philippine Development Plan 1987-1992.

In the new plan, the following manpower development objects are clarified:

1) Meet basic minimum needs of the population.
2) Provide focused basic services to the more disadvantaged sectors.
3) Harness the country's human resources toward international competitiveness.

In the new plan, the improvement of primary education is emphasized and the continuation of the Education for All policy is promised. Also, it specifies in detail that the construction of primary schools in such remote areas that do not have school facilities shall be conducted.

2-2-2 Public Primary and Secondary School Construction Program

The Government of the Philippines established the 6-year School Construction Plan (1987-1992) as part of the Medium-term Philippine Development Plan 1987-1992 with the objective of building 40,252 primary and secondary school classrooms, 3,598 multipurpose facilities, 1,608 workshops, and 804 science laboratories, rebuilding 28,553 classrooms, and repairing 58,876 classrooms.

Because of damage caused by natural disasters, such as typhoons, that occur every year, schoolbuilding deterioration, and the increase in the number of students due to population growth, there remains a shortage of 81,217 classrooms (50,126 for primary schools and 31,091 for secondary schools). Thus, since 1990, DECS has been taking the following action:

1. To repair classrooms with the cooperation of DPWH and local Parent Teachers and Community Associations (PTCA).
2. To place a maximum of 55 students in one classroom.
3. To hold double or triple shift classes.
4. To utilize gymnasiums and offices as classrooms.
5. To rent private facilities for classroom use.
6. To build makeshift classrooms

It is also planned to build primary schools in remote areas to normalize the regional differences of primary education for the promotion of the Education for All program.

As the establishment of the Secondary Education Development Plan 1989-1993, barangay high schools were nationalized. High schools using rented school facilities must have their own property under Government policy.

As described above, the construction of primary and secondary schools is a subject to be urgently solved by the Government of the Philippines.

The Public Primary School Construction Program for 1993 is shown in Table 2-10. The Public Secondary School Construction Program for 1993 is shown in Table 2-11.

Table 2-10 1993 Public Primary Schoolbuilding Cost
(Unit in thousand Pesos)

Region	Classrooms New Construction Amount	Other Facilities New Construction, Replacement and Rehabilitation Amount	Total Amount
NCR	12,339	21,635	33,974
CAR	43,375	10,734	54,109
ARMM	47,847	10,781	58,628
Region I	0	30,249	30,249
Region II	0	17,938	17,938
Region III	53,097	39,483	92,580
Region IV	300,446	52,112	352,558
Region V	28,418	33,969	62,387
Region VI	0	44,819	44,819
Region VII	79,271	30,956	110,227
Region VIII	36,083	28,989	65,072
Region IX	101,333	17,698	119,031
Region X	87,311	27,553	114,864
Region XI	260,997	28,680	289,677
Region XII	179,483	14,404	193,887
Total	1,230,000	410,000	1,640,000

Notes: * The figure includes the costs for the rebuilding and repair of classrooms, the construction and repair of non-classrooms, and the construction of toilets.

Only DECS's schoolbuilding construction program with its own budgetary fund is listed. Schoolbuilding construction with foreign aid is not included.

Table 2-11 1993 Public Secondary Schoolbuilding Construction Program
(Unit: in thousand Pesos)

Region	New Construction						
	Physical Target			Amount			
	Clsrms.	Sci.Lab.	Workshop	Clsrms.	Sci. Lab.	Workshop	Total
NCR	502	103	129	115,460	41,200	51,600	208,260
CAR	64	12	16	14,720	4,800	6,400	25,920
ARMM	50	10	3	11,500	4,000	1,200	16,700
Region I	290	60	75	66,700	24,000	30,000	120,700
Region II	123	25	31	28,290	10,000	12,400	50,690
Region III	353	72	91	81,190	28,800	36,400	146,390
Region IV	481	99	123	110,630	39,600	49,200	199,430
Region V	278	57	72	63,940	22,800	28,800	115,540
Region VI	465	96	120	106,950	38,400	48,000	193,350
Region VII	197	40	50	45,310	16,000	20,000	81,310
Region VIII	202	42	53	46,460	16,800	21,200	84,480
Region IX	144	29	36	33,120	11,600	14,400	59,120
Region X	212	44	55	48,760	17,600	22,000	88,360
Region XI	270	56	70	62,100	22,400	28,000	112,500
Region XII	122	25	31	28,060	10,000	12,400	50,460
Total	3,753	770	955	863,190	308,000	382,000	1,282,951

*Note: Only DECS's schoolbuilding construction program with its own budgetary fund is listed. School-building construction with foreign aid is not included.

2-3 Conditions of Education in the Project Area

The Project Area (Region IV - Southern Tagalog) is made up of 16 school districts. In 1992, there were 4,319 public and private primary schools, and approximately 1.44 million students and 40,810 teachers. There were 818 secondary schools, approximately 640,000 students and 12,211 teachers.

The number of primary schools and the number of students and teachers in each school district are shown in Table 2-12. The number of secondary schools and the number of students and teachers in each school district are shown in Table 2-13. The education indexes in Region IV are shown in Table 2-14.

Table 2-12 The Number of Primary Schools and the Number of Students and Teachers in Region IV (1992)

Division	Number of School			Number of Student			Number of Teacher		
	Public	Private	Subtotal	Public	Private	Sub-total	Public	Private	Subtotal
AURORA	102	6	108	24,742	519	25,261	755	20	775
BATANGAS	584	27	611	180,592	7,530	188,122	5,901	84	5,985
CAVITE	314	71	385	168,410	16,008	184,418	4,630	378	5,008
LAGUNA	325	88	413	173,927	20,434	194,361	4,563	733	5,296
MARINDUQUE	168	2	170	34,727	611	35,338	1,143	15	1,158
OCC. MINDORO	212	7	219	51,544	1,502	53,046	1,584	33	1,617
OR. MINDORO	392	11	403	101,111	2,316	103,427	2,803	47	2,850
PALAWAN	504	13	517	102,482	1,936	104,418	2,602	54	2,656
QUEZON	744	26	770	206,219	5,092	211,311	6,016	92	6,108
RIZAL	171	60	231	142,215	24,147	166,362	3,447	457	3,904
ROMBLON	181	2	183	44,497	202	44,699	1,512	5	1,517
BATANGAS CITY	79	8	87	27,573	4,861	32,434	955	111	1,066
CAVITE CITY	11	12	23	11,915	1,360	13,275	444	23	467
LIPA CITY	65	9	74	23,267	4,891	28,158	653	114	767
LUCENA CITY	39	10	49	22,022	4,382	26,404	571	104	675
SAN PEDRO CITY	64	12	76	23,669	3,964	27,633	866	95	961
OTAL	3,955	364	4,319	1,338,912	99,755	1,438,667	38,445	2,365	40,810

Table 2-13 The Number of Secondary Schools and the Number of Students and Teachers in Region IV (1992)

Division	Number of School			Number of Student			Number of Teacher		
	Public	Private	Subtotal	Public	Private	Subtotal	Public	Private	Subtotal
AURORA	14	8	22	5,042	5,042	10,485	236	N/A	N/A
BATANGAS	75	56	131	44,770	46,111	90,881	134	N/A	N/A
CAVITE	42	38	80	60,999	28,938	89,937	2,151	N/A	N/A
LAGUNA	68	67	135	51,717	48,378	100,095	1,579	N/A	N/A
MARINDUQUE	31	11	42	11,488	5,335	16,823	355	N/A	N/A
OCC. MINDORO	25	6	31	14,235	4,010	18,245	423	N/A	N/A
OR. MINDORO	28	24	52	24,162	17,477	41,639	810	N/A	N/A
PALAWAN	37	15	52	31,339	4,824	36,163	977	N/A	N/A
QUEZON	77	60	137	60,245	32,676	92,921	1,799	N/A	N/A
RIZAL	16	37	53	28,486	41,681	70,167	808	N/A	N/A
ROMBLON	20	6	26	15,797	1,801	17,598	624	N/A	N/A
BATANGAS CITY	12	4	16	13,131	4,811	17,942	463	N/A	N/A
CAVITE CITY	1	5	6	6,305	2,074	8,379	253	N/A	N/A
LIPA CITY	14	8	22	8,240	8,024	16,264	241	N/A	N/A
LUCENA CITY	0	5	5	0	3,321	3,321	0	N/A	N/A
SAN PEDRO CITY	3	5	8	3,905	8,863	12,768	150	N/A	N/A
TOTAL	463	355	818	380,262	263,366	643,628	12,211	N/A	N/A

Note) N/A : Not available

Table 2-14 Education Indexes in Region IV

		Number of Schools	Number of Classrooms	Number of Students (Ten thousand)	Number of Teachers	Education Performance Indicators			
						Participation Rate (%)	Cohort Survival Rate (%)	Transition Rate (%)	Pupil/ Teacher (%)
Elementary School	National Level	32,449 * (100%)	270,463 (100%)**	980 * (100%)	291,172 (100%)	95.26	68.15	93.47	1:33
	Region IV	3,893 * (12%)	33,357 (12%)**	133 * (14%)	37,718 (13%)	99.41	77.29	94.99	1:35
Secondary School	National Level	3,394 * (100%)	25,389 (100%)**	270 * (100%)	81,543 (100%)	33.82	74.97	67.42	1:31
	Region IV	473 * (14%)	4,470 (17%)**	36 * (13%)	10,649 (13%)	32.65	79.69	59.47	1:31

Notes) * :1991 figure
** :1992 figure

Region IV is the largest administration region in the Philippines. It has the most schools, students and teachers in the country.

By comparing Region IV's education conditions with other regions, the secondary school participation rate and transition rate are lower than the country's average. However, other Region IV education indexes are higher than the country's average. From these figures, it can be understood that a strong emphasis is placed on education in Region IV.

Region IV covers a part of the main island of Luzon and a group of many remote islands. In the part of Luzon where typhoons hit every year, 49 primary and secondary schools were constructed in 1991 under the Project for Constructing Primary and Secondary Schoolbuildings (Phase III).

The Project for the Education Facilities Improvement Program (Phase I) includes 4 remote islands that are located in an economically poor area.

2-4 Background and Contents of the Request

1) Background of the Request

The Government of the Philippines established the Medium-term Philippine Development Plan 1987-1992 and has continued its efforts to build the foundation of manpower development. However, due to natural disasters, such as the destruction caused every year by typhoons, and its 2.4% annual population growth, the country has a chronic shortage of primary and secondary school facilities. Presently, there is a requirement for constructing 81,217 classrooms (50,126 for primary schools and 31,091 for secondary schools).

Under the above-mentioned situation, the country's economy is in critical condition due to damages caused by recent large typhoons, a large-scale earthquake, volcano eruptions, and social instability, such as coup attempts and the outbreak of the Middle East War. Thus, it is extremely difficult to conduct schoolbuilding construction on the country's budgetary fund alone. Yet, the construction of school facilities is an urgent subject for the country and to improve the education situation, the Government of the Philippines established the Project for the Educational Facilities Program for building the schoolbuildings of approximately 630 schools . Construction will

be by the Philippine method and will take five years to complete.

The Government selected 30 schools in Region IV (Southern Tagalog) for the Project and requested grant aid cooperation from Japan to build the schoolbuildings for these schools.

2) Contents of the Request

The contents of the request call for building the schoolbuildings of approximately 630 schools within five years using locally procured materials and employing the Philippine construction method. 55 school sites (30 Project schools and 22 alternative schools) in Region IV (Southern Tagalog) were selected by the Philippine side for Phase I of the Project. The major items of the request contents are as follows:

	Elementary School	Secondary School
Schoolbuilding	A Type: 3 classrooms + Toilet(Male/Female) A Type: 4 classrooms + Toilet(Male/Female)	SA Type: 3 Classrooms + Science Laboratory + Toilet(Male/Female) SB Type: 4 Classrooms + Science Laboratory + Toilet(Male/Female) SC Type: 5 Classrooms + Science Laboratory + (Two-storied) Toilet(Male/Female)
Equipment	Sets of basic need edcational equipment in school facilities.	

Notes) SC Type is a two-storied building. Others are one-storied buildings.

CHAPTER 3. OUTLINE OF THE PROJECT

CHAPTER 3 OUTLINE OF THE PROJECT

3-1 Objective of the Project

The Government of the Philippines has placed stress on the development of manpower and has been continuing its efforts to upgrade the quality of education, and to improve and construct educational facilities.

The Government of Japan has offered grant aid cooperation to the Government of the Philippines to construct the schoolbuildings of 360 schools located in the high typhoon damaged areas with typhoon resistant structures within a period of 5 years (the project is to be completed in 1994). Due to the financial difficulties being experienced by the Government of the Philippines, and because of the occurrence of further natural disasters and the high annual population increase rate of 2.4%, the Philippines still lacks many educational facilities.

To improve this situation, the Government of the Philippines established the Educational Facilities Improvement Program and requested grant aid cooperation from the Government of Japan to construct schoolbuildings of approximately 630 primary and secondary schools within a five year period employing domestic construction methods.

The objective of the Project is to construct the schoolbuildings of 30 schools located on four islands (Mindoro, Marinduque, Palawan, and Tablas) in Region IV (Southern Tagalog) as the Program's Phase I Project.

3-2 Study and Examination of the Request

3-2-1 Evaluation of the Appropriateness and Necessity of the Project

As previously described, there is a chronic lack of primary and secondary school facilities in the Philippines. It is believed that the construction of approximately 81,217 classrooms (about 50,126 primary and 31,091 secondary school classrooms) is presently necessary. Under this situation, the Government of the Philippines is facing an economic crisis as a result of natural calamities, such as frequent large typhoons, strong earthquakes, and volcano eruptions, and because of the unstable social conditions brought on by the Middle East Gulf War.

Thus, for the Government of the Philippines, it is extremely difficult to fund school construction on its own. Nevertheless, schoolbuilding construction is an urgent matter for the country and the construction of many schoolbuildings employing domestic construction methods will provide an increased number of children with the opportunity to enter school, and will contribute to the improvement of the country's primary and secondary education.

Implementation of the Project will bring about the improvement of the country's education program and will make a significant contribution to establishing the foundation for the country's manpower development. Therefore, its is sufficiently appropriate and necessary to implement the Project.

3-2-2 Evaluation of Project Implementation and Management Plan

It is believed that the present staff and budget will suffice for the management of Project facilities after the schoolbuildings of 30 schools in Region IV are completed.

The 1993 budgetary amount allocated for education in Region IV is approximately 3.7 billion pesos. This figure is a 29.8% increase over the previous year's. Presently there is a total of 37,827 classrooms (33,357 primary and 4,470 secondary school classrooms) in Region IV. The number of classrooms, including science laboratories, are to be constructed under the Project is 152. This is a 0.4% increase over the present number of classrooms. By taking into account the 29.8% increase of the educational budgetary amount over the previous year's, it is assumed that the management of Project facilities may be covered by the present staff and budget plan in Region IV.

The shift of budget allotments over the past three years for Region IV is shown in Table 3-1.

Table 3-1 The Budgeted Amount for DECS Region IV Regional Offices (Pesos)

Year	1991	1992	1993
Budgeted Amount	2,901,966,000	2,842,057,296	3,687,492,000
Increase Rate	—	-2.00%	+29.8%

3-2-3 Examination of the Relationship Between the Project and Other Similar Projects and Foreign Grant Aid Programs

The Government of the Philippines has been making an effort to upgrade the quality of education, and improve and construct educational facilities. With its own budget, it would be extremely difficult to achieve the goal of school facilities improvement program; thus, the Government of the Philippines has requested financial assistance from foreign countries. For this reason, Project schools were selected during the field survey period so that they would not be overlapped with the aid from other assisting organizations.

Other educational field projects that receive financial assistance from foreign organizations and those that are related to the Project are outlined as follows:

1) Asian Development Bank (ADB) Project

As a part of the country's Secondary Education Development Project(SEDP), it is planned to construct 673 secondary schoolbuildings, provide educational equipment and laboratory facilities, improve the curriculum and textbooks, and educate teachers within a five year period under by financial aid from the ADB loan. There are two types of schoolbuildings designed in the plan -- single-story and two-story buildings each having four classrooms, a science laboratory, a workshop, a library, teachers' rooms, and toilets etc.
The project also provides each project school with science education equipment for general science, physics, chemistry, biology, and mathematics use, as well as equipment for vocational and home economics education.

The project started during the last Quarter of 1988 and it was planned to complete 487 schools, including secondary schools, in Region IV by the end of 1992. However, project implementation is running behind schedule. By the end of 1992, the construction of 432 was completed, educational equipment was provided to 339 schools, and science laboratory equipment was delivered to 157 schools. During fiscal year 1992, it was planned to build 127 schools, including 16 schools in Region IV.
The progress of the schoolbuilding construction project financed by ADB is shown in Tables 3-2 and 3-3. The progress of the educational

equipment supply project that is also financed by ADB is shown in Tables 3-4 and 3-5.

Table 3-2 Progress of the Schoolbuilding Construction Project Financed by the ADB (as of Nov. 30, 1992)

(Unit:Schools)

Accomplishment	Batch Number							Total
	1st	2nd	3rd	4th	5th	6th	7th	
100	85	71	83	81	61	51	-	432
Below 100-80	0	0	1	2	2	24	-	29
Below 80-60	0	0	0	0	2	3	1	6
Below 60-40	0	0	0	0	0	1	3	4
Below 40-20	0	0	0	0	1	1	5	7
Below 20	0	0	0	0	0	9	19	28
Not yet started	0	0	0	0	0	9	98	107
	85	71	84	83	66	98	126	613

Table 3-3 Progress of the Schoolbuilding Construction Project in Each Region financed by the ADB (as of Dec. 31, 1992)

(Unit:Schools)

Region	Batch Number							Total
	1st	2nd	3rd	4th	5th	6th	7th	
NCR	4	3	6	5	5	-	10	33
CAR	4	-	2	2	2	-	-	10
Region I	10	2	4	4	4	7	6	37
Region II	8	2	3	2	2	5	4	26
Region III	5	12	8	8	6	12	16	67
Region IV	12	7	9	11	8	11	12	74
Region V	3	6	9	8	6	9	7	53
Region VI	6	6	7	8	6	9	13	49
Region VII	5	7	8	8	6	10	9	57
Region VIII	6	7	7	6	5	7	6	47
Region IX	8	4	5	4	4	8	6	39
Region X	4	6	5	7	4	6	12	44
Region XI	6	6	7	6	5	8	10	48
Region XII	4	3	4	4	3	6	5	29
Grand Total	85	71	84	83	66	98	126	613

Table 3-4 Status of Furniture Procurement
(as of December 31, 1992)

(Unit:Schools)

Batch No.	No. of Packages	Awarded	Accomplishment	
			Delivered	On-going
1st	85	85	79	6
2nd	71	71	68	3
3rd	84	84	67	17
4th	83	83	66	17
5th	66	66	46	20
6th	98	83	13	70
Total	487	472	339	133

Table 3-5 Status of Equipment Delivery by Region (as of December 31, 1992)

(Unit:Schools)

Region	Number of Targetted Schools	Number of schools that received			
		3pkgs. a/	4pkgs. b/	5pkgs. c/	Total
NCR	47	4	9	3	16
CAR	10	1	-	-	1
I	37	5	1	4	10
II	26	8	-	-	8
III	72	5	2	23	30
IV	81	8	-	32	40
V	59	-	-	17	17
VI	58	1	1	7	9
VII	63	25	-	-	25
VIII	51	-	-	-	-
IX	43	-	-	-	-
X	44	-	-	-	-
XI	53	1	-	-	1
XII	29	-	-	-	-
Total	673	58	13	86	157

a/ 1 package each of G.S., Biology and Math I-IV
b/ 1 package each of G.S., Math I-IV, H.E & I.A.
c/ 1 package each of G.S., Biology, Math I-IV, H.E. and I.A.

2) Australian International Development Assistance Bureau's (AIDAB's) Philippines-Australia Science and Mathematics Education Project (PASMEP)

To improve the quality of science and mathematics education by providing teacher education, curriculum improvement, management support, and science education equipment, the Government of Australia initiated this 5-year project under its grant aid cooperation program.

The science education equipment is classified into 4 packages: mathematics; physic; chemistry; biology. The equipment units are to be given free of charge to secondary schools in each region according to the school sizes. The project is planned to cover 375 schools throughout the country.

Table 3-6 List of AIDAB'S PASMEP Recipient Schools for the Last Three Years (Unit:School)

Region													Total
NCR	CAR	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	
12	13	11	43	10	10	11	11	91	12	9	71	10	9	322

3) Schoolbuilding Construction and Educational Equipment Supply Project by the United States' Assistance for International Development and Economic Support Fund (USAID and ESF)

This project is to construct schoolbuildings and provide educational equipment with grant aid cooperation from the United States. The project was terminated August 31, 1992 due to the withdrawal of U.S. Forces from the Philippines.

Table 3-7 shows the schools completed under the project during the past three years.

Table 3-7 List of USAID-ESF Recipient Schools for the Last Three Years (Unit:Schools)

Year	Region														Total
	NCR	CAR	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	
1990	-		7	1	1	7	3	-	1	5	6	3	2	-	36
1991	6	8	11	24	2	11	18	17	13	10	11	10	3	8	152
1992	1	13	40	65	27	4	2	10	5	5	2	4	5	8	191
Total	7	21	58	93	30	22	23	27	19	20	19	17	10	16	382

4) Deutche Gesellshaft fur Technische Zusammenarbeit's (GTZ's) Science and Mathematics Educational Equipment Improvement Plan

This plan intends to improve science and mathematics education by developing science and mathematics textbooks, standardization of textbooks and experimental methods, establishment of production and supply system of textbooks, and providing teacher training.

Under the plan, the Government of the Philippines will construct the National Science and Mathematics Educational Material Center and will manage the constructed facility.

GTZ will turn over part of the educational material production facility at no charge.

The plan also includes sending specialists and for the training of teachers.

5) Japanese Grant Aid Projects

The Government of Japan has provided the Philippines' educational fields with financial and technical assistance on numerous occasions in the form of general grant aid and cultural grant aid for individual projects.

Henceforth, the Government of Japan intends to extend the comprehensive cooperation that covers the Philippine high level organizations to the local level, ie., from the development project level to the dissemination program level, for the improvement of the science and mathematics education at primary and secondary schools.

The Minutes of Discussions on the package cooperation for the development of elementary and secondary science and mathematics education in the Philippines were signed by the Government of Japan and the Government of the Philippines on March 25, 1992.

This Project for the Educational Facilities Improvement Program (Phase I) is placed as a part of the package cooperation.

Grant aid projects related to the package cooperation are as follows:

1) The Project for Constructing the National Learning Resource Center for Teacher Training in Science and Mathematics Education

The grant aid cooperation was provided for the construction of the center for the re-education and training of primary and secondary school science and mathematics teachers, and for the installation of equipment units to be used in conducting experiments and training.

(The Exchange of Notes for the project was signed by both governments in October 1988 and 2.04 billion yen was granted by the Government of Japan. The project was completed in March 1990.)

2) The Project for Constructing Primary and Secondary Schoolbuildings (Phase 1-5)

The purpose of this project is to construct the schoolbuildings for the primary and secondary schools that were damaged by large typhoons in 1986 and 1987. The buildings are to be typhoon-resistant prefabricated structures.
The outline of the five phases of the project is as follows:

	Project Area	Exchange of Notes Signed Date	Grant Aid Amount	Construction Completion Date
Phase I	Region V	Oct 24, 1988	2,576 billion yen	Feb 18, 1990
Phase II	Region VIII	July 13, 1990	2,659 billion yen	Sep 25, 1991
Phase III	Regions II & IV	Aug 21, 1991	2,745 billion yen	Oct 15, 1992
Phase IV	Regions VI & X	Aug 7, 1992	2,795 billion yen	Exp. Oct 1993
Phase V	Regions I & III	July 15, 1993	2,920 billion yen	Exp. Sep 1994

3) The Project for Assistance to Secondary Education Instructional Equipment Program

This project is for the installation of equipment for science, biology, physics, chemistry, engineering, and home economics classes in 210 secondary schools in Regions V and VIII as the Phase I Project and in 241 secondary schools in Regions II, IV, and X as the Phase II Project. (The Exchange of Notes for the Phase I Project was signed by both governments in April 1991 and 540 million yen was granted by the Government of Japan. The phase I project was completed in March 1992. The Exchange of Notes for the phase II project was signed by both governments in April 1992 and 598 million yen was granted by the Government of Japan. The project was completed in December 1992.)

3-2-4 Evaluation of Requested Facilities and Equipment

The Project facilities requested by the Government of the Philippines include classrooms and toilets for primary schools, and classrooms, science laboratories, and toilets for secondary schools. First priority will be given to the construction of classrooms to alleviate the country's chronic classroom shortage. Thus, it is thought that the Project facilities are appropriate.

The equipment units requested are the minimum education necessities, such as desks and chairs for the teachers and the pupils, blackboards, shelves in the classrooms, and demonstration tables, workbenches, stools, storage cabinets, blackboards, bulletin boards, side shelves, and steel shelves for the science laboratories. It is also planned to provide basic experimental instruments for the effective use of the science laboratories.

3-2-5 Evaluation of the Appropriateness of the Project Area

As for the basis of Project Area selection, the Government of the Philippines desires to include such areas that are most seriously lacking school facilities.

In 1991, Region IV lacked 13,211 classrooms (7,695 primary and 5,516 secondary school classrooms). Region IV is the region that lacks the most school facilities in the country.

The areas selected for the Project are the four very economically poor islands that are remote from Luzon. Thus, it is believed that the selected areas have a high priority for schoolbuilding construction and are appropriate for the Project.

3-2-6 Basic Cooperation Policies

In view of the above evaluations, the effects, reality, and the country's capability to put the Project into operation have been confirmed.

As the contents of the Project comply with the grant aid system, it has been judged that the Project may be undertaken in accordance with the grant aid cooperation program of the Government of Japan. With this grant aid cooperation program in mind, a basic design study will be carried out after

evaluating the contents of the Project.

3-3 Project Description

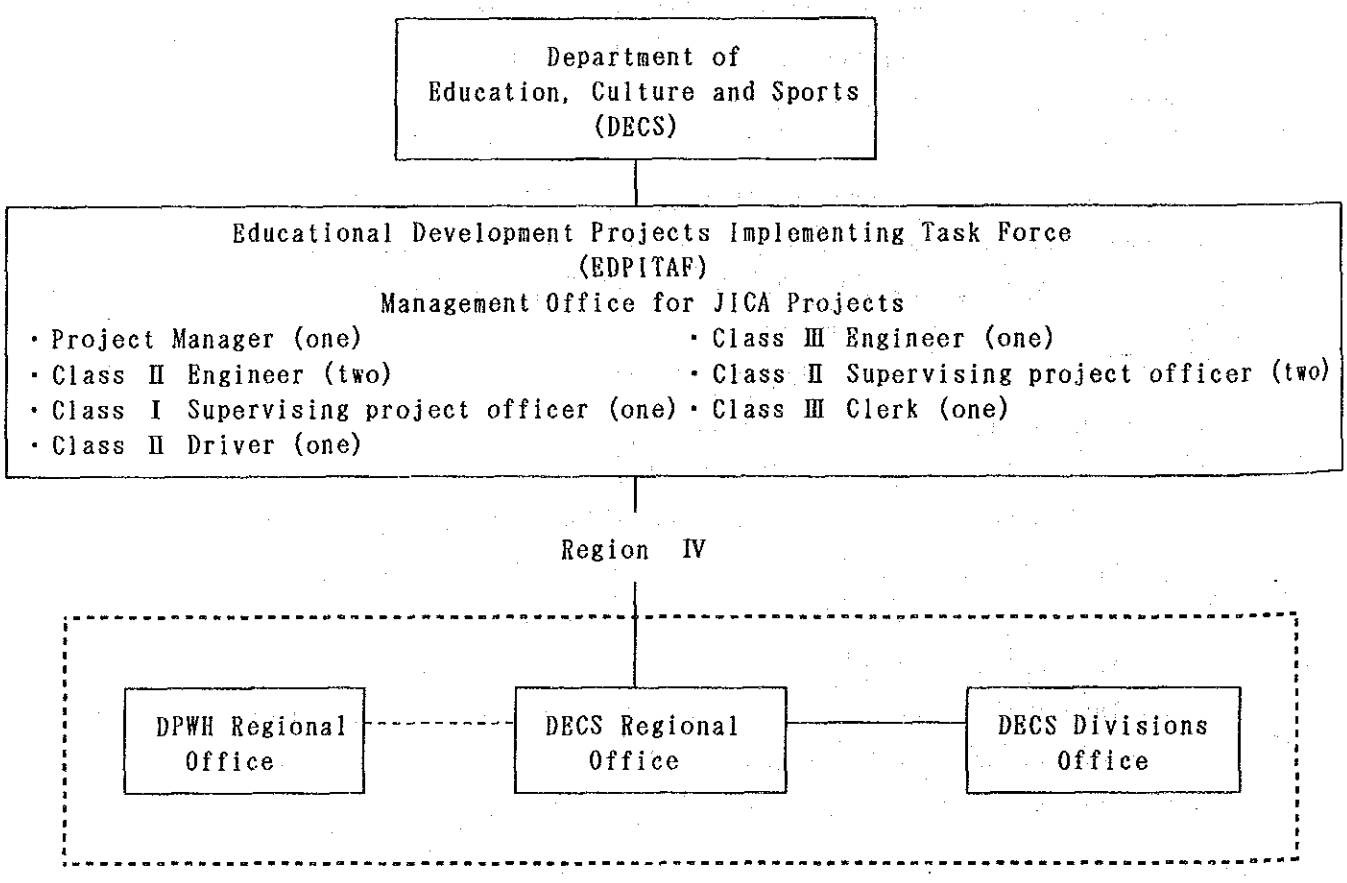
3-3-1 Executing Agency and Operational System

The Project will be implemented under the supervision of the Educational Development Projects Implementing Task Force (EDPITAF) of DECS, with the cooperation of the DECS regional office in Region IV, and under the guidance of DECS.

EDPITAF will establish a management office for the JICA Project. It will consist of a manager, three engineers, three project management personnel, one level III clerk, and one driver. The management office will be responsible for Project supervision and will provide the guidance for the management of the Project facilities once the Project is completed.

The organization of the Project executing agency is shown in Fig. 3-1.

Figure 3-1 Project Implementation Organization



3-3-2 Standards and Background of Selecting Project Schools

The standards for selecting the areas and schools for the Project will include those areas and schools that have a serious shortage of schoolbuildings. Other selection standards are as follows:

1. Schools having sufficient space to build on;
2. Schools located in heavily populated areas;
3. Schools not expected to receive aid from USAID or ADB (schools having completed buildings and are conducting normal classroom activities are excluded);
4. Schools having adequate access roads for the transportation of building material.

During the field survey period for the basic design study of the Project, 30 Project schools and 22 alternative schools sites that were selected by the Philippine side were investigated. After returning to Japan, the study team selected 30 schools for the Project based on the data collected during the field survey and on DECS' school selection standards.

The 30 selected schools were agreed upon by the Philippine side once the Draft Report of the Basic Design Study on the Project was explained to them by the study team. However, discrepancy in the number of existing classrooms at the F. Ubay Elementary School was later noted. Thus, as a result of the discussions held with the Philippine side, this school was deleted from the list and the San Pedro Central School was selected for the Project (see DECS' request for an alternative Project school attached in Appendix 6).

3-3-3 Selection of Building Size for Each Project School

As Project school site conditions, sizes, and educational activities vary from school to school, 10 types of schoolbuildings (6 for primary schools and 4 for secondary schools) were established to suit the situation at each school.

The number of deficient classrooms in each school varies from 3 to 32. The Project's primary schoolbuildings are designed as the 3-classroom "A" Type, the 4-classroom "B" Type, the 5-classroom "C" Type, the 6-classroom two-story "D" Type, the 8-classroom "C+A" Type, and the

9-classroom "C+B" Type. For the secondary schools, the buildings are designed as the 3-classroom + science laboratory "SA" Type, the 4-classroom + science laboratory "SB" Type, and the 5-classroom + science laboratory "SC" Type and the 10-classroom + science laboratory "SC+C" Type. By taking into consideration the classroom needs and site conditions of each school, one of these schoolbuilding types shall be selected.

Considering the schools' control of sanitary conditions and the hygiene training given to the students, a toilet will be built in a separate part of each schoolbuilding. One Project school that already has a toilet that was built with USAID is excluded from the toilet construction of the Project.

The size and site condition of each Project school are shown in Table 3-8.

Tabl 3-8 Size and Site Condition of Each Project School

Recipient Schools	Enrollement 1992 -93	Enrollement 1993 -94	No of Teachers & Adm. staff 1992-93	No of Class Rms Science Lb. Work Shops	School Type	Road Condition	Approx. Site Area (m²)	Site Terrain	Soil Type	Leveling Required	Water Supply	Elec. Avail.
ELEMENTARY SCHOOL												
E- 1. NARRA CENTRAL SCHOOL	2,100	2,300	52	50	C+B(9)	Good	17.60x54.00	Flat	Sandy	None	Public	Yes
E- 2. QUEZON CENTRAL SCHOOL	1,556	1,700	36	34	C+A(8)	Good	Enough Space	Flat	Clayey	None	Well(12M)	Yes
E- 3. ADRIATICO MEMORIAL ELEMENTARY SCHOOL	2,276	2,500	65	42	D(6)	Good	18.52x36.50	Flat	Sandy	Slight	Well(9M)	Yes
E- 4. B. DEL MUNDO ELEMENTARY SCHOOL	955	1,100	20	21	C(5)	Fair	Enough Space	Flat	Sandy	None	Well(6M)	Yes
E- 5. SIETE ELEMENTARY SCHOOL	1,339	1,345	40	27	C(5)	Good	Enough Space	Flat	Sandy	Slight	Well(12M)	Yes
E- 6. JUAN MORENTE PILOT	1,804	2,204	52	41	C(5)	Fair	Enough Space	Flat	Clayey	Slight	Public	Yes
E- 7. SAN PEDRO CENTRAL SCHOOL	1,091	1,190	28	27	C(5)	Good	Enough Space	Flat	Clayey	None	Public	Yes
E- 8. A. SORIANO MEMORIAL ELEMENTARY SCHOOL	1,711	1,801	14	38	C(5)	Fair	21.20x60.00	Flat	Sandy	Slight	Public	Yes
E- 9. SABLAYAN ELEMENTARY SCHOOL	1,027	1,100	19	26	C(5)	Good	12.00x39.50	Flat	Sandy	Slight	Public	Yes
E-10. ABONGAN CENTRAL SCHOOL	656	750	17	10	C(5)	Fair	12.00x43.20	Flat	Clayey	None	None(6M)	None
E-11. IPILAN ELEMENTARY SCHOOL	510	535	17	9	C(5)	Good	20.00x46.00	Flat	Sandy	None	Well(9M)	Yes
E-12. LIBERTAD ELEMENTARY SCHOOL	605	675	18	13	C(5)	Good	12.65x120.00	Flat	Clayey	None	Well(9M)	Yes
E-13. MALAYAS ELEMENTARY SCHOOL	1,034	1,100	26	23	B(4)	Good	Enough Space	Flat	Clayey	Slight	Well(9M)	Yes
E-14. LOOC CENTRAL SCHOOL	1,211	1,400	36	28	B(4)	Good	13.00x30.10	Flat	Clayey	None	Public	Yes
E-15. CONCEPCION CENTRAL SCHOOL	447	514	15	8	B(4)	Good	30.30x45.00	Rolling	Clayey	Yes	Public	Adj.
E-16. PORT BARTON CENTRAL SCHOOL	445	490	15	14	A(3)	Good	12.00x36.60	Flat	Sandy	Slight	Public	None
E-17. ADELA ELEMENTARY SCHOOL	522	576	15	11	A(3)	Fair	Enough Space	Flat	Sandy	None	Well(9M)	Yes
E-18. MOGPOG ELEMENTARY SCHOOL	1,102	1,200	30	26	A(3)	Good	25.00x28.75	Flat	Sandy	None	Public	Yes
E-19. SAN AGUSTIN CENTRAL SCHOOL	814	840	27	20	A(3)	Good	Enough Space	Flat	Sandy	None	Well(9M)	Yes
E-20. MASIGA ELEMENTARY SCHOOL	581	620	18	14	A(3)	Good	25.00x50.00	Flat	Clayey	None	Well(12M)	Yes
E-21. SUHA ELEMENTARY SCHOOL	283	311	10	6	A(3)	Fair	Enough Space	Flat	Clayey	None	Spring (15M)	Adj.
SECONDARY SCHOOL												
S-22. MARINDUQUE NATIONAL HIGH SCHOOL	2,500	2,616	101	44	SC+C(10)	Good	Enough Space	Flat	Sandy	None	Public	Yes
S-23. RIO TUBA BARANGAY HIGH SCHOOL	501	550	13	2	SC(5)	Fair	Enough Space	Flat	Sandy	None	Well(12M)	Adj. (50M)
S-24. BULBUGAN BARANGAY HIGH SCHOOL	757	820	19	13	SC(5)	Good	14.50x65.00	Flat	Clayey	Slight	Well(12M)	Yes
S-25. EL NIDO BARANGAY HIGH SCHOOL	505	550	12	4	SC(5)	Poor	Enough Space	Rolling	Clayey	Yes	Spring	None
	*Toilts were constructed by the financial aid of USAID											
S-26. ALCADESMA BARANGAY HIGH SCHOOL	430	450	13	7	SC(5)	Fair	Enough Space	Flat	Clayey	None	Well(12M)	Adj. (30M)
S-27. BARAHAN BARANGAY HIGH SCHOOL	250	275	7	6	SC(5)	Fair	Enough Space	Flat	Sandy	None	Well(12M)	None
S-28. PALAWAN INS	483	520	11	9	SB(4)	Good	15.00x40.00	Flat	Clayey	None	Well(16M)	Yes
S-29. ALCANTARA NATIONAL HIGH SCHOOL	468	533	13	12	SA(3)	Good	22.90x39.85	Flat	Sandy	None	Public	Yes
S-30. MATALABA NATIONAL HIGH SCHOOL	387	408	12	6	SA(3)	Good	Enough Space	Flat	Clayey	None	Well(30M)	Yes

3-3-4 Project Area Locations and Conditions

The Project Area includes the four Region IV islands of Mindoro, Marinduque, Palawan, and Tablas. The Project schools are scattered throughout the entire Region IV area that stretches some 500 km from north to south and approximately 460 km from east to west. The purpose of the Project is to construct the schoolbuildings of 21 primary and 9 secondary schools (30 in all) on these islands.

The infrastructure for the Project will include electric and water supplies and drainage facilities. The electric power in Region IV is 220V. Presently, four Project schools have no electricity. As for the water supply, 11 schools receive city water while 18 schools use well water. One school has no water supply facility at all.

For those schools having no electricity, electric wires will be installed under the Project to prepare for the future electric supply. For these schools, the schoolbuildings should be so designed as to allow normal classroom activities until the time electricity can be provided.

Under the Project, a well will be constructed for the school having no water supply facility.

As drainage facilities are not fully installed, septic tanks will be installed and the sewage from toilets will be treated by the infiltration method. Rainwater and other drainage will also use the ground infiltration method.

Region IV can be divided into two groups: a part of the main island of Luzon and the remote island area.

In the Luzon part, the schoolbuildings of 49 primary and secondary schools were constructed in 1991 by the Project for Constructing Primary and Secondary Schoolbuildings (Phase III).

This Project for the Educational Facilities Improvement Program (Phase I) is to construct the schoolbuildings of 30 primary and secondary schools in the five school districts in the remote island area that is detached from the economy of the main island of Luzon.

The number of schools included in the above-mentioned Phase III Project and this Project is shown in Table 3-9.

Table 3-9 The Number of Schools Included in the Project for Constructing Primary and Secondary Schoolbuildings(Phase III) and the Project for the Educational Facilities Improvement Program(Phase I)

Project Name	Area	School District	Primary Schools	Secondary Schools	Total
Project for Constructing Primary and Secondary Schoolbuildings (Phase III)	Part of Luzon In Region IV	Aurora	1	1	2
		Batangas	4	9	13
		Cavite	2	7	9
		Laguna	2	3	5
		Quezon	5	8	13
		Rizal	1	4	5
		Batangas City	1	0	1
		Cavite City	0	0	0
		Lipa City	0	0	0
		Lucena City	1	0	1
		San Pablo City	0	0	0
		TOTAL	17	32	49
Project for the Educational Facilities Improvement Program(Phase I)	Remote Island Area in Region IV	Marinduque	3	2	5
		Occidental Mindoro	5	2	4
		Oriental Mindoro	3	1	7
		Palawan	7	3	10
		Romblon	3	1	4
		TOTAL	21	9	30
		GRAND TOTAL	38	41	79

3-3-5 Outline of Facilities and Equipment

1) Outline of the Facilities

As described in Section 3-3-3, an appropriate schoolbuilding was selected from the 10 types of domestic construction (6 types for primary schools and 4 types for secondary schools) according to the number of students, and the land and schoolbuilding conditions.

An outline of each schoolbuilding type is shown in Table 3-10.

Table 3-10 Outline of Schoolbuilding Types

Building Type	Number of Classrooms	Total Floor Area (m^2)
Primary School		
A Type	3 + Toilet	236.00 m^2
B Type	4 + Toilet	302.50 m^2
C Type	5 + Toilet	369.00 m^2
D Type	6 (2 stories) + Toilet	607.70 m^2
C+A Type	8 + Toilet	568.50 m^2
C+B Type	9 + Toilet	
Secondary School		
SA Type	3 + Science + Toilet	335.75 m^2
SB Type	4 + Science + Toilet	402.25 m^2
SC Type	5 + Science + Toilet	468.75 m^2
SC+C Type	10 + Science + Toilet	801.25 m^2

Note: Floor area includes corridor space.

2) Outline of Equipment Plan

The equipment to be provided to the Project schools will be the basic education equipment and science laboratory instruments delineated in DECS' specifications. The outline of the equipment plan is shown in Table 3-11 .

Table 3-11 Outline of Equipment to be Provided

	School	Type of Room Subject	Name of Equipment Unit
General Educational Equipment	Primary Schools	Classrooms	-Teachers' desks, chairs and filing cabinets -Students' chair-desks (large, medium and small) and closets -Blackboards and bulletin boards
	Secondary Schools	Classrooms	-Teachers' desks, chairs and filing cabinets -Students' chair-desks and closets -Blackboards and bulletin boards
		Science Laboratories	-Demonstration workbench -Experimental tables and stools -Students' closets and chair-desks -Blackboards and bulletin boards -Storage lockers and steel shelves
Science Laboratory Instruments	Secondary Schools	General Science	Platform balance, anemometer, hand lens, stop watch, magnetic compass, thermometer
		Biology	Microscope, slide glass, cover glass
		Chemistry	Triple beam balance
		Physics	Dynamic carts, electroscope, prism set, multi-tester, logic gates, tuning fork set, Free fall apparatus and other miscellaneous equipment.

3-3-6 Maintenance and Management Plan

After Project facility construction and delivery, the maintenance and management of the facilities will be undertaken by the Region IV local office of the Department of Public Works and Highways (DPWH). The costs will be allotted by DECS.

Since 1980, DECS has been able to secure funds for the Maintenance and Other Operating Expenditures (MOOE) for simple repair work, and for the Capital Outlay (CO) for repair and construction work. DECS has been conducting repair work at various schools under the guidance of DPWH.

When repair or maintenance work becomes necessary, a request is made by the school principal and it is submitted to DECS' local office for evaluation.

After being evaluated, the request is sent to DECS' central office. DPWH's central office is then notified of the costs. After being approved by the Department of Budget and Management (DBM), the final budget is decided upon.

Based on the budget, DECS' central office determines the amount to be allocated to each school. Then, DPWH's engineering section will prepare the maintenance and repair program. Each school principal will be notified of the program.

The construction contractors will be selected by DPWH's engineering section. The maintenance and repair work will be conducted under the supervision of DECS and DPWH.

Since 1990, DECS has been able to carry out procedures for small-scale repair and maintenance work quickly with the cooperation of each school district's PTA and other local agencies.

The flow of school facility maintenance and repair work is shown in Table 3-12.

Table 3-12 Flow of Maintenance and Repair Work

Responsible Department	Work Flow Order and Content
DECS	1. Examine the necessity of repair work requested by each school's principal and submit necessary budget and work proposal to DECS's local office.
DECS	2. DECS's local office examines the proposal and submits to DECS's Central Office a list of the schools needing repair work.
DECS	3. DECS's Central Office notifies DPWH of DECS's budget.
DPWH	4. DPWH's Central Office submits a proposal to DBM's Infrastructure Program.
DBM	5. Examine the submitted proposal and budget request and notifies DPWH the limit of available budgetary funds.
DPWH	6. DPWH's Central Office notifies DECS's Central Office of the amount of the budget.
DECS	7. Determine amount of money to be allocated to each school according to the needs of the school and the priority and notifies DPWH.
DPWH	8. DPWH's Central Office delivers the budget document to its Engineering Section.
DPWH	9. DPWH's Engineering Section sets up the repair and maintenance program according to the budget document and notifies each school principal of the program.
DECS	10. Notify each school of the repair and maintenance program.
DECS	11. Manage overall repair and maintenance work.
DPWH	12. Manage repair and maintenace work until its completion.
DPWH	13. Deliver repaired or maintained school facilities to DECS.
DECS	14. Accept repaired or maintained school facilities from DPWH.

By adding new school facilities it will become necessary to secure teachers and staff personnel to operate and maintain them. It will also be necessary to obtain the funds to cover maintenance and management costs.

The number classrooms to be constructed represents about 0.4% of the existing classrooms in Region IV.

As described in Section 3-2-2, the 1993 budget for education in Region IV has been increased 29.8% over the previous year's. Thus, Region IV's educational budget will be sufficient to cover the cost of the additional school facility maintenance and repair work.

There will be no need to increase the number of teachers for the Project because the purpose of the Project is to solve the classroom shortages at existing schools that either conduct classes outdoors, are under temporary repair, or are utilizing rented facilities by providing them with permanent classrooms. In reality, however, two or three-shift classes are being conducted at these schools to solve classroom shortages. To eliminate these two or three-shift classes, an increase of teachers may be required.

In 1991, there was a shortage of about 17,500 teachers throughout the country. To overcome this problem, DECS is taking action to increase the number of students per teacher, increase teachers' hours, and mobilize non-teaching personnel to perform actual teaching work.

In Region IV's Project Area, there are approximately 50,000 primary and secondary school teachers. This figure is an increase of 1,540 (3.2%) over the previous year's. The teacher shortage is slowly but surely being improved. DECS has promised giving priority to dispatching teachers to project schools, Thus, it is judged that the teacher shortage problem will not affect project schools.

Project school facilities and equipment have been selected with the view of keeping maintenance and repair work costs low. However, as wooden doors, jalousies, elevated tank support structures, pumps, fluorescent lights, etc. will only last for several years, they will have to be inspected periodically. Also, from an aesthetic point of view, the floors should be waxed and the walls and ceilings painted every so often even if the work is not absolutely necessary for building maintenance purposes.

The average annual maintenance and management costs for an average size "B" type schoolbuilding having well water and electric supply are as shown in Table 3-13.

Table 3-13 Operation, Management and Maintenance Annual Costs for One Schoolbuilding

Item	Material Costs (pesos)	Labor Costs (pesos)	Maintenance Frequency	Annual Costs (converted) (Pesos)	Remarks
Wooden Doors & Jalousies	3,200	1,350	Once every other year	2,275	Requires painting and repair work
Toilet tiles	405	1,035	Once every three years	480	Requires repair or replacement of broken tiles
Elevated water tank support structures	750	660	Once every other year	705	Requires anti-corrosion maintenance work
Pumps	19,500	490	Once every seven years	2,855	Pumps should be replaced approximately every 7 years
Fluorescent lamps	650	210	Once every year	860	Replacement is required periodically
Electric fee	200 /month			2,400	
Water fee	220month			2,640	
Total				12,215	

CHAPTER 4. BASIC DESIGN

CHAPTER 4 BASIC DESIGN

4-1 Design Policies

By taking into account the feature that the Project is to construct many facilities for schools that are scattered over a wide area, a careful examination of the construction methods and construction plan was conducted for the Project's basic design.

The purpose of the Project is to construct school facilities that will alleviate the classroom shortages of each Project school. Thus, by carefully examining the arrangement relationship between an existing schoolbuilding and one that is to be constructed, the consideration of a construction procedure that will not interfere with daily classroom activities was included as a design criterion.

In the preparation of the facility plan, first priority was given to having as many classrooms as possible by simplifying the facility types. The equipment plan was prepared by taking into consideration future expansion work.

Based on the contents of the request from the Government of the Philippines and the series of discussions held with concerned officials of the Government, the following Basic Design policies were established.

1) Design Policies for Natural Conditions

By taking into consideration the country's natural conditions, such as the frequent devastating typhoons that occur every year, and the characteristics of the tropical climate, the Basic Design shall be prepared as follows:

1. The Philippines suffers from the effects of typhoon every year, and also large earthquakes. The schoolbuildings to be built under the Project will be used places of refuge for area residents during natural calamities. Thus, the schoolbuildings must be designed to be sufficiently strong to withstand those elements.

The Philippines is located in the tropical climate zone. It has an annual temperature of from 26 to 27℃. Thus, the natural ventilation system shall be utilized to its maximum extent by providing large openings in the schoolbuildings. Also, high ceilings shall be installed to maintain a thick air strata under ceilings for insulation purposes. The installation of electric wiring shall be designed to accommodate ceiling fans that will allow classroom activities to be conducted comfortably (fan installation shall be undertaken by the Philippine side).

Open corridors with roofs should be built to offer shelter to the teachers and students as they move from classroom to classroom on rainy days. The corridors shall be designed to prevent rain, mud, and dirt from entering the buildings.

Some Project schools are located near the seaside. For these schools, the possibility of salt damage must be taken into account for their design. Also, anti-termite treatment of the wooden portions must be planned in the design.

In those areas that are subjected to possible damage by flooding, the adoption of elevated foundations should be planned.

As a general principle, natural lighting should be fully utilized. Electric lighting shall only be used on such occasions when classes are conducted on dark, rainy days or at night. Thus, it is quite important that the building be designed to receive sufficient light at the center of the classrooms. For this reason, building beam spans shall be limited to 8 m. Wooden jalousies with glass louvers shall be adopted to effectively allow natural lighting.

2) Design Policies for Social Conditions

The design shall be prepared by respecting the school facility design standards of the Philippines and by taking into consideration the living mode of the people.

School facilities in the Philippines are not only used for children's educational purposes. But they are also used as meeting places by area

residents and as places of refuge during times of calamities. For this reason, to create large spaces, the installation of movable partitions separating classrooms shall be designed.

By taking into account the possibility of double-shift classes or meetings held at night, all schoolbuildings shall be designed to have lighting systems. For those schools that presently have no electric power supply, electric wires should be installed so that one can be connected in the future.

According to Philippine accessibility laws (Batas Pambansa Bilang 344), the installation of sloped accesses and special toilets for handicapped pupils shall be planned. Further, for student safety, the use of columns in the classroom shall be avoided.

3) Design Policies for Local Construction Field Situations

There is a National Building Code in the Philippines that corresponds to the Building Design Standards in Japan. Similar to Japan, it is mandatory to submit formal applications to obtain the various permits needed to start construction.

As for the domestic construction contractors and consultants concerned, their engineering skills are generally high. It is believed that they can be used for the Project. But, prior to hiring them, careful screening would be necessary.

There are a number of highly skilled construction workers available in the Philippines. However, it would be necessary to hire qualified workers based on the type of work and the construction schedule.

4) Policies for Using Local Firms, and Local Equipment and Materials

Generally, the proficiency of local construction contractor and consultant firms are high. It will be possible to use the contractors for building construction, finish work, and equipment installation. Local consultant firms will be able to assist in construction supervision work under the guidance of Japanese consultants.