

MINISTRY OF EDUCATION
REPUBLIC OF MALDIVES

BASIC DESIGN STUDY REPORT
ON
THE PROJECT FOR
CONSTRUCTION OF THE SIXTH MALE' PRIMARY SCHOOL
IN
THE REPUBLIC OF MALDIVES

December 1997

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MOHRI, ARCHITECT & ASSOCIATES, INC.

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PREFACE

In response to a request from the Government of the Republic of Maldives the Government of Japan decided to conduct a basic design survey study on the Project for Construction of the Sixth Male' Primary School and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA sent to Maldives a study team from July 28 to August 24, 1997.

The team held discussions with the officials concerned of the Government of Maldives, 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 Maldives in order to discuss a draft basic design, and as this result, the present report was finalized.

I hope 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 Maldives for their close cooperation extended to the teams.

December, 1997



Kimio Fujita

President

Japan International Cooperation Agency

December, 1997

Letter of Transmittal

We are pleased to submit to you the basic design study report on the Project for Construction of the Sixth Male' Primary School in the Republic of Maldives.

This study was conducted by Mohri, Architect & Associates Inc., under a contract to JICA, during the period from July 15, 1997 to December 10, 1997. In conducting the study, we have examined the feasibility and rationale of the project with due consideration to the present situation of Maldives and formulated the most appropriate basic design for the project under Japan's grant aid scheme.

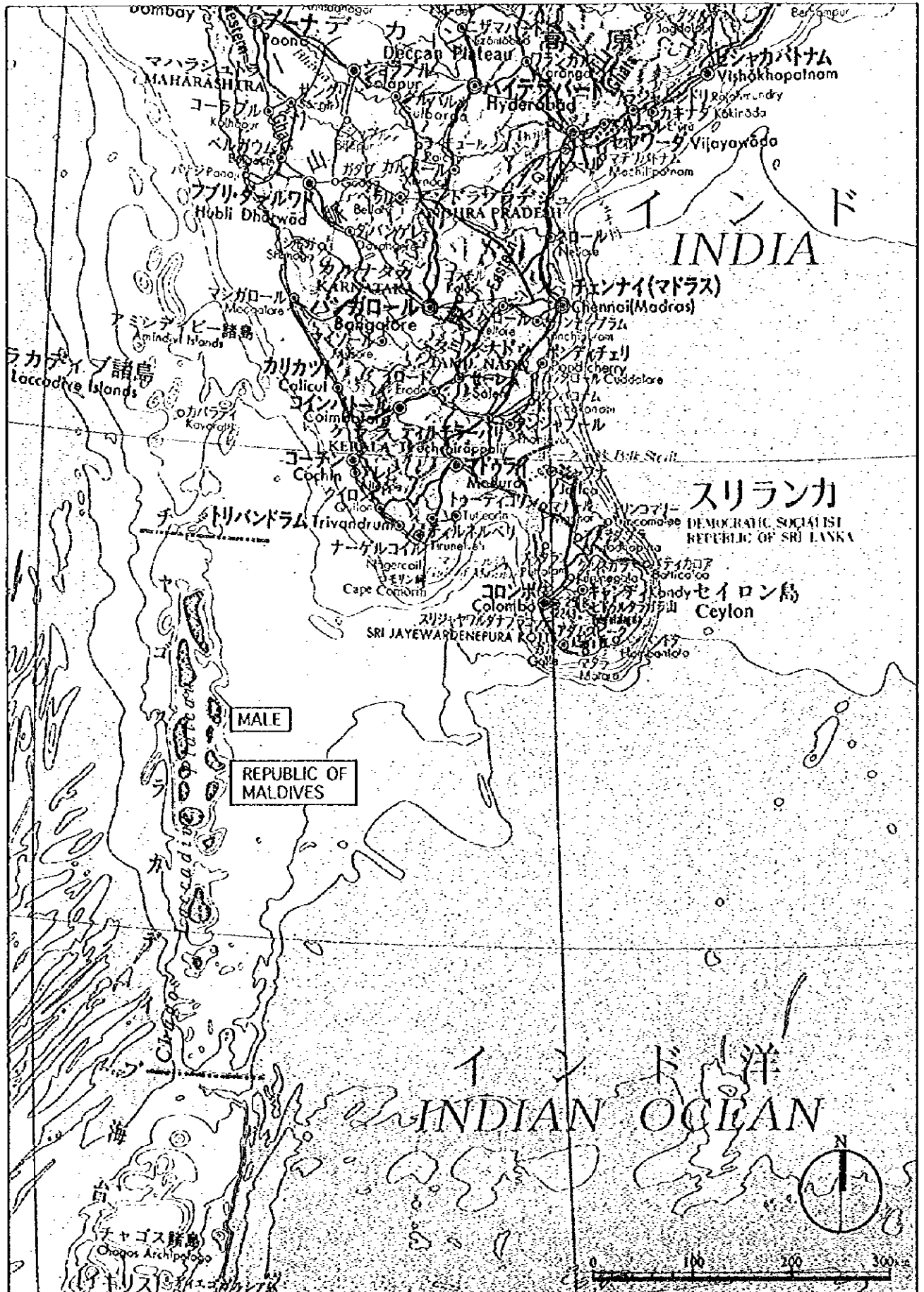
Finally, we hope that this report will contribute to further promotion of the project.

Very truly yours,



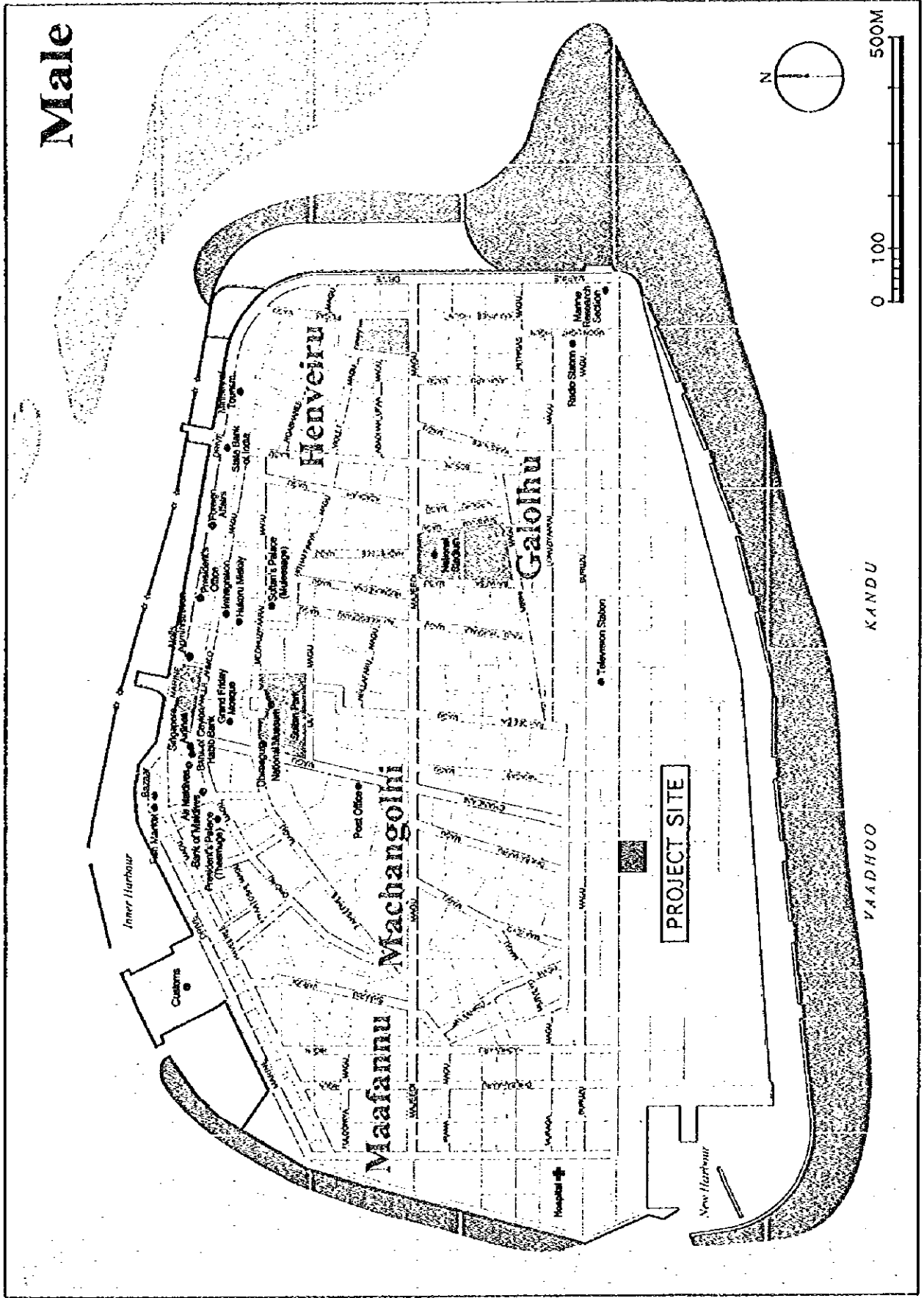
Kenichi Tanaka
Project Manager
Basic design study team on
The Project for Construction of
Sixth Male' Primary School
Mohri, Architect & Associates Inc.

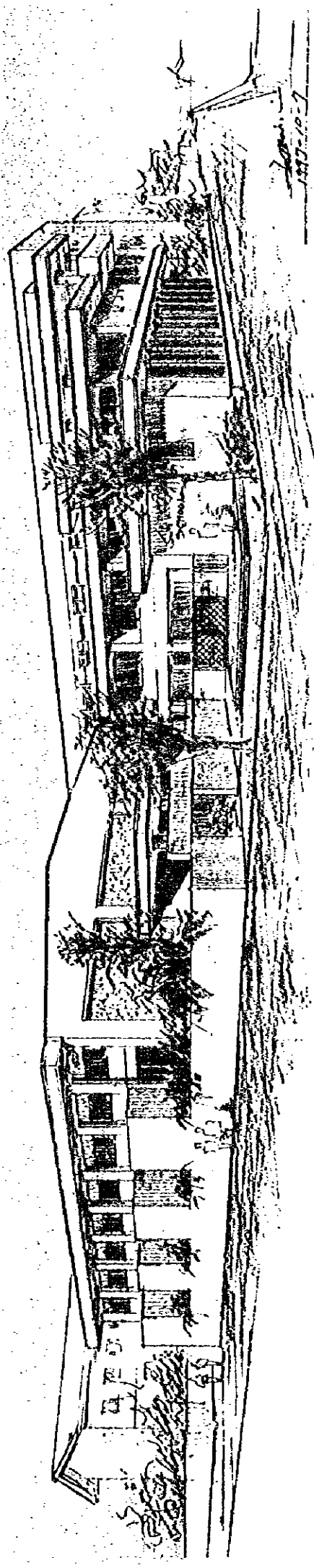
PROJECT AREA MAP



SITE LOCATION MAP

Male





PERSPECTIVE

Abbreviations

AEC	Atoll Education Centre
RLC	Community Resource Learning Centre
DEEC	Distance Education English Centre
DER	Department of External Resources
DM	Dhivehi Medium
DPE	Department of Public Examinations
EDC	Education Development Centre
EPSS	English Preparatory and Secondary School
GCE	General Certificate of Education
GDP	Gross Domestic Product
HDI	Human Development Index
HSC	Higher Secondary School Certificate
IDB	Islamic Development Bank
IHCS	Institute for Hotel and Catering Services
IHS	Institute for Health Sciences
ILO	International Labor Organization
ITE	Institute for Teacher Education
JSC	Junior School Certificate
MES	Male' English School
MOAA	Ministry of Atolls Administration
MOE	Ministry of Education
MOFT	Ministry of Finance and Treasury
MOPW	Ministry of Public Work
NFEC	Non-Formal Education Centre
NPEC	National Primary Education Curriculum
OPEC	Organization of Petroleum Exporting Countries
Rf	Rufiyaa (Currency of Maldives)
SEC	Science Education Centre
SSC	Secondary School Certificate
SSS	Southern Secondary School
STE	Secondary Teacher Education
UKG	Upper Kindergarten
UNICEF	United Nations Children's Fund
UPE	Universal Primary Education
VTC	Vocational Training Centre
WB	World Bank

Summary

The Republic of Maldives is located 675km southwest of Sri Lanka in the Indian Ocean and is composed of a double chain of atolls. The atolls consisting of 1,196 islands spread 754km north-south and 118km east-west. The country has an area of approximately 298k m². The size of each island is around 100k m², 2m above sea level. The population of 240,000 (as of 1995) live on 200 islands, with quarter of the population (around 63,000) living on the capital island of Male'.

An universal primary education plan was drawn up in 1980 to improve primary education and to promote anti-illiteracy education. As a result, the percentage of school attendance at primary schools increased by 134% (1996 The Europe Publication) and the illiteracy rate dropped to 7% (1996 the World Bank). The improvement of primary school education remains a top priority. The 1997-1999 Fifth National Development Plan and the 1996-2005 Education Master Plan aims at improving the quality of education in addition to lengthening the primary school education to 7 years, thereby changing the 5-5-2 system to a 7-3-2 system by the year 2000.

Compared to other regional atolls, the educational environment in Male' is far superior.

There are presently four public primary schools; the Fourth Male' Primary School was built in 1987 under the Grant Aid system of Japan. According to 1994 statistics, the total number of students in the four public primary schools in Male' was 7,500 (first - fifth grade). However, in order to cope with the yearly 3% increase in population and the lengthening of the primary education period, two new primary schools need to be constructed. The Fifth Male' Primary School will be constructed with aid from IDB and Japan has been requested to provide Grant Aid for the construction and procurement of materials for the Sixth Male' Primary School.

After evaluating the request by the Government of the Republic of Maldives, the Government of Japan decided to conduct a Basic Design Study on the construction of the Sixth Male' Primary School. The Japan International Cooperation Agency sent a Basic Design Study Team to the Maldives from July 28 to August 24, 1997.

The study team held a series of discussions concerning the request with the Ministry of Education and met with the people concerned in the Ministry of Construction for Public Works and other related organizations, collecting material and information necessary for the Basic Design. Based on the results of the study, the team evaluated the necessity

and appropriateness of the Project, the appropriateness of the contents of the Project including size, and the operation and maintenance systems. After returning to Japan, the most suitable type and size for the facility as well as the most suitable materials were decided upon. Also, the basic design and the cost for the Project was estimated. Thus, the outline of the Basic Design was formed and was explained to the Maldives side during discussions from October 12 to 21, 1997.

As a result of the study, there has been a revision to the requested contents by the Maldives side. The number of normal classrooms has been decreased to 35 and an audiovisual room has been added. Regarding the computer rooms which had been requested, lessons requiring the use of computers are currently not included in the school curriculum or the teacher training program thus, were omitted from the Project. The sports hall will be a single-storied building.

The facility will be an ordinary reinforced concrete structure with four floors. The basic size of normal classrooms will be 6m × 8m, 48m² as requested. The other rooms will be planned according to the number of students using it, the purpose of the room and necessary furniture. Electricity for lighting fixtures, power outlets and ceiling fans, facilities for water supply, drainage, toilets and ventilation will be supplied.

The necessary rooms for the facility, their size, purpose and the number of users are shown in the table below.

Table 1 Type and Size of Rooms

Name of Room	No.	Planned Size (m)	Remark (other rooms included)
Normal Classroom	35	1,716.39	Normal lessons (7 grades × 5 classrooms)
Art and Crafts Room	1	90.23	Including preparatory room
Music Room	1	90.23	Including preparatory room
Science Room	1	90.23	Including preparatory room
Audio Visual Room	1	90.23	Including preparatory room
Library	1	100.51	
Hall	1	573.75	Stage, Storage
General Office	1	132.78	Administrator's room, Printing room, Pantry
Staff Meeting Room	1	20.48	
Principal Office Ass. Principal Office	1	43.79	Secretary room, Toilet for principal
Staff Room	1	169.49	Teaching aids room, Tea room
Supervisor's Room	1	50.89	
Counselling Room	1	11.38	
First Aid Room	1	14.03	
Storage	1	38.62	Sports equipment storage, General storage
Prayer Room	1	53.02	
Toilet	11	300.62	Staff toilet, Student toilet, Hall toilet
Machine Room	1	31.91	Water supply pump, Transformer
Corridor and etc.	—	1,847.37	Corridor, Stairs, Pilotis and Lobby
Total		5,467.95	

As for equipment and materials, the minimum necessity for each subject, such as educational material, furniture and equipment, was considered for the Project. Items not related to the curriculum texts or those not included in the teacher training program were not listed. As a result, the following educational material, furniture and equipment were included in the Project and have been approved by the recipient country.

Table 2 List of Educational Equipment

Science	Thermometer, Magnifying Glass, Microscope, Beaker, Flask, Test tube, ----- Balance Ammeter, Volt meter, Molecular model set and etc.
Social Studies	Glob, World map, Basic Celestial Globe
Math	Area work with square cm, Centicube, Giant protractor, Giant set square, ----- Giant ruler, Giant compass, Fraction Apparatus, Clock face stamp, etc.
Physical Education	Floor mat, Spring board, Vaulting box, Balance beam, Foot ball goal, ----- Volley ball posts & net, Basketball goal, etc.
Art	Drawing board, Display board
Music	Piano, Drum, Mouth Organ, Cymbal, Triangle, Bell, Tambourines, etc.
Clinic	Eye sight test chart, Sitting height Measure, Weight scale, Height measure, ----- Heaemadynamo meter, Stethoscope , Stretcher

Table 3 Educational Furniture and Equipment List

Classroom	Student's desk & chair, Student's cabinet, Teacher's desk & chair, ----- Teacher's cabinet, Blackboard, Signboard.
Special Classrooms	Student's desk & chair, Teacher's desk & chair, Cabinet, Blackboard, ----- Signboard, Demonstration table, Counter, Sink.
Audio Visual Room	Student's desk & chair, Teacher's desk & chair, Cabinet, Blackboard, ----- Signboard, Blackout curtain, Video projector, Screen.
Library	Reading table & chair, Book shelf, Librarian's table & Chair, cabinet, ----- Magazine rack, Counter.
Hall	Steel folding chair, Speech desk, Folding chair carrier, Drop curtain etc.
General Office	Office desk & chair, Cabinet, Staff desk chair, White board
Staff Room	Staff table & chair, Staff locker.

The following results can be expected through the implementation of the Project:

a) Alleviation of Classroom Shortages at Primary Schools and Improvement of Educational Qualities:

When MOE changes the present primary education calendar from five years to seven years in 1999, there will be a 56 classroom shortage in Male'. Project implementation will provide 35 new classrooms that may eliminate 62.5% of the classroom shortage.

b) Alleviation of the Crowded Conditions in Secondary Schools and the Effects on Secondary Schools:

There are two public lower secondary schools and one public upper secondary school in Male'. Both the lower (sixth through tenth grades) secondary schools are very large, each having more than 50 classrooms which are overcrowded and operated under the double shift system. Once the Project is implemented, classroom shortage at primary schools will be alleviated. When the primary school year is changed to a seven year term system, 3,115 students of the public lower secondary schools will be shifted to the primary schools. Thus, the present overcrowded condition of 35.7 students per classroom in the secondary schools will be alleviated.

Further more, more children may attend the lower secondary schools. In addition, part of the less crowded lower secondary school classrooms may be used by the upper secondary school (eleventh and twelfth grades) and it will be able to expand the public upper secondary school that presently limits the number of the students to 400.

c) Indirect Effects:

Due to an insufficient number of public facilities for community residents because of the lack of land in Male', public schools' facilities, such as gymnasiums, classrooms, athletic grounds, are opened for public use when they are not being used for school activities.

After completing Project facilities, it is also expected that they will indirectly contribute to the community residents by providing a place for sporting events and social education when they are not being used for ordinary school activities.

Accordingly, sufficient results may be expected from the implementation of the Project and it is obvious that all of the conditions for receiving Japan's Grant Aid cooperation are being satisfied. In order that the Project may run smoothly and that it may further contribute to improving the educational environment, the following points will be necessary:

a) Accomplishment of Undertakings to be Borne by the Maldives Side:

As the Project is to be implemented under the cooperation of the two countries, it is absolutely necessary that the undertakings to be borne by the Maldives shall be completed in accordance with the Maldives side's schedule. In particular, removal of existing facilities and land clearing work at the Project site must be accomplished without delay. For this purpose, both sides should maintain close communications and the Maldives side's schedule shall be periodically confirmed.

b) Securing of Teachers and Staff Members

In order to effectively and efficiently utilize completed Project facilities, it is necessary to secure teachers and staff members, including both a principal and assistant principal. MOE plans to recruit teachers for first to fifth grade students at the Project school from those registered in ITE and to transfer present teachers at lower secondary schools to the Project school for sixth and seventh grade students. MOE has to assign a principal and assistant principal and hire clerical personnel. To fully utilize Project facilities, MOE's recruitment plan must be conducted without delay.

c) Appropriate Operation and Maintenance of Completed Project Facilities

One percent of the budgetary funds of the public primary schools is allocated to facility operations and maintenance costs. In addition to the permanent janitors, each school periodically hires temporary janitors to conduct appropriate facility operations and maintenance work. However, the promoting of school facility operations and maintenance work by community residents and students as a part of the ordinary educational program is recommended.

Consumable items and office use items will not be provided under the Project. Consumable items and office use items necessary for smooth educational activities shall be procured by the Government of Maldives.

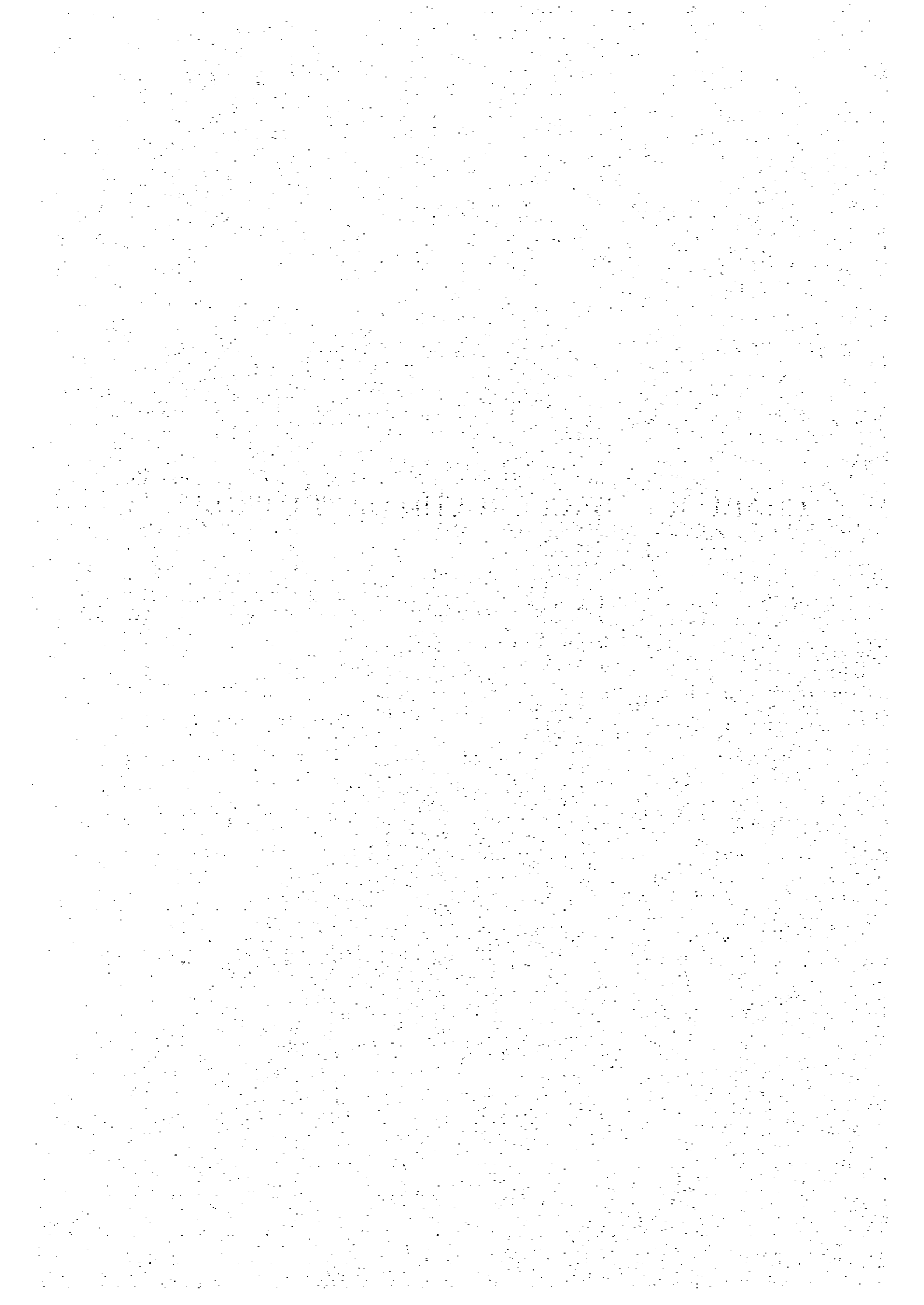
d) Problems Regarding Sixth and Seventh Grade Boys and Girls

The Government of Maldives has a policy to educate over sixth grade boys and girls separately. After finishing fifth grade education at primary schools, boys and girls receive secondary education at the boys schools and girls schools respectively. It is planned to conduct sixth and seventh grade coeducation at the Project schools. Thus, the Government of Maldives shall take necessary measures in this matter.

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CHAPTER 1 BACKGROUND OF THE PROJECT



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The Republic of Maldives is located 675km southwest of Sri Lanka in the Indian Ocean and is composed of a double chain of atolls. The atolls consisting of 1,196 islands spread 754km north-south and 118km east-west. The country has an area of approximately 298k m². The size of each island is around 100k m², 2m above sea level. The population of 240,000 (as of 1995) live on 200 islands, with a quarter of the population (around 63,000) living on the capital island of Male'.

An universal primary education plan was drawn up in 1980 to improve primary education and to promote anti-illiteracy education. As a result, the percentage of school attendance at primary schools increased by 134% (1996 The Europe Publication) and the illiteracy rate dropped to 7% (1996 the World Bank). The improvement of primary school education remains a top priority. The 1997-1999 Fifth National Development Plan and the 1996-2005 Education Master Plan aim at improving the quality of education in addition to lengthening the primary school education to 7 years, thereby changing the 5-5-2 system to a 7-3-2 system by the year 2000.

Compared to other regional atolls, the educational environment in Male' is far superior. However, since the late 1980s, the population in Male' has been increasing and it is estimated to continue to increase at 3% a year. According to the Ministry of Education's (MOE) data, there has been a yearly increase of 2.2% in the number of new first grade students.

Presently in Male', there are four public primary schools and two secondary schools. The Fourth Male' Primary School was constructed in 1987 through Japanese Grant Aid. The table below shows the number of classrooms per school. Considering the number of students, the sites of the schools are very small. The school yard with an area of 1,000m² to 1,500m², is very small compared to Japanese schools and it would be extremely difficult to construct additional buildings on the site. In order to cope with this lack of facilities and the increase in the number of students, the schools in Male' are using a double shift system.

With the natural increase in children and the further increase in the number of students through the merging of the sixth and seventh grades to the primary school system, the MOE estimates that there will be shortages of 58 classrooms by the year 2000 and 73 by 2004. Thus, the MOE believes that two new primary schools should be constructed. The Fifth Male' Primary School is to be constructed with aid from IDB. The Japanese Government was requested to provide Grant Aid for the construction and

procurement of equipment for the Sixth Male' Primary School. This Project is part of the facility improvement plan of the MOE, to relieve the overcrowded conditions of schools and to improve primary education in Male'.

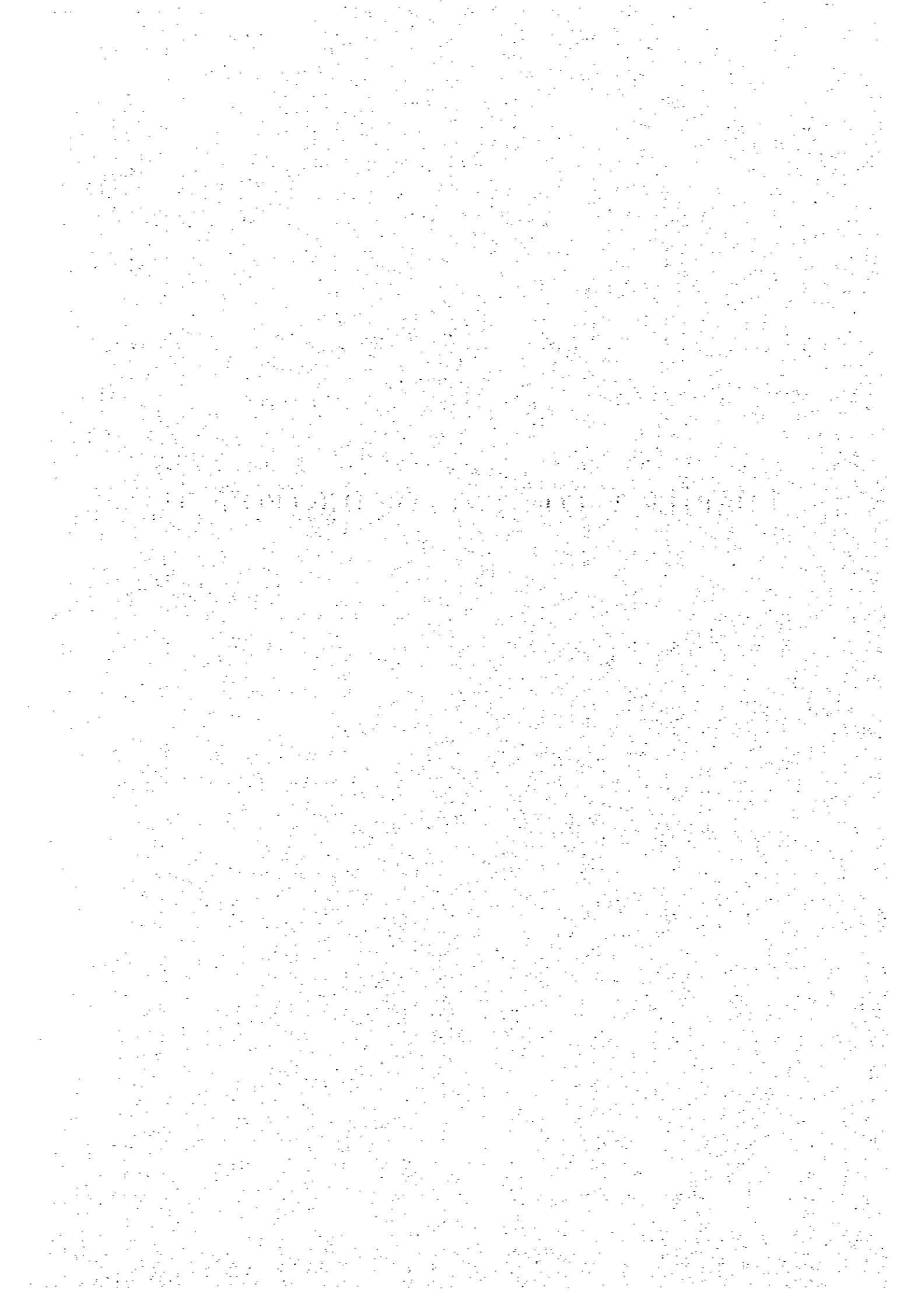
Table 1 -1 Index of Public Schools

Name of school	Number of student	Number of classes	Shift	Number of classrooms	Size of playground
Thajudhdheen	1,511	52	2	29	Medium
Iskandahr	2,055	66	2	33	Medium
Jamaaludhdheen	1,763	58	2	30	Medium
Kalaafaanu	1,641	56	2	28	Small
Anniniya	3,311	105	2	53	Small
Majcediyya	3,009	102	2	51	Large

Source: MOE

Notes : Size of playground (Large) 2,000-1,500 m² (Medium) 1,500-1,000 m² (Small) 1,000-500 m²

CHAPTER 2 CONTENTS OF THE PROJECT



Chapter 2 CONTENTS OF THE PROJECT

2-1 Objective of the Project

The Fifth National Development Plan, with regard to the educational field, states that the living standards of people must be improved. The extension of basic education and the lengthening of the basic education period to seven years by the year 2000 are the objectives of the Education Master Plan. The important objectives are to educate manpower and to increase the number of children receiving basic and secondary education. However, in Maldives, particularly in the capital of Male' where the population makes up 25% of the country's entire population, the lack of primary schools due to the increase in population is an obstacle to achieving this objective.

Thus, the Government of Maldives plans to construct two primary schools in Male', which will lengthen the present five year basic education system to a seven year one. This will solve the lack of classrooms in addition to allowing the increase of secondary students by absorbing the sixth to seventh grades into the primary school system. It will be an advantage not only to primary but also to secondary schools. Furthermore, special classrooms will be provided to meet the new sixth and seventh grade curriculums, thereby raising the quality of primary school education.

2-2 Basic Concept of the Project

2-2-1 School District

Previously, the Government of Maldives desired to have one primary school for each of the four administrative districts in Male', the capital city, with one administrative district being equivalent to one school district. Table 2-1 below shows the number of children aged to 6-12 in each of the administrative districts of Male'.

Table 2-1 Number of the 6-12 year Children in each of the Administrative Districts of Male' (1995)

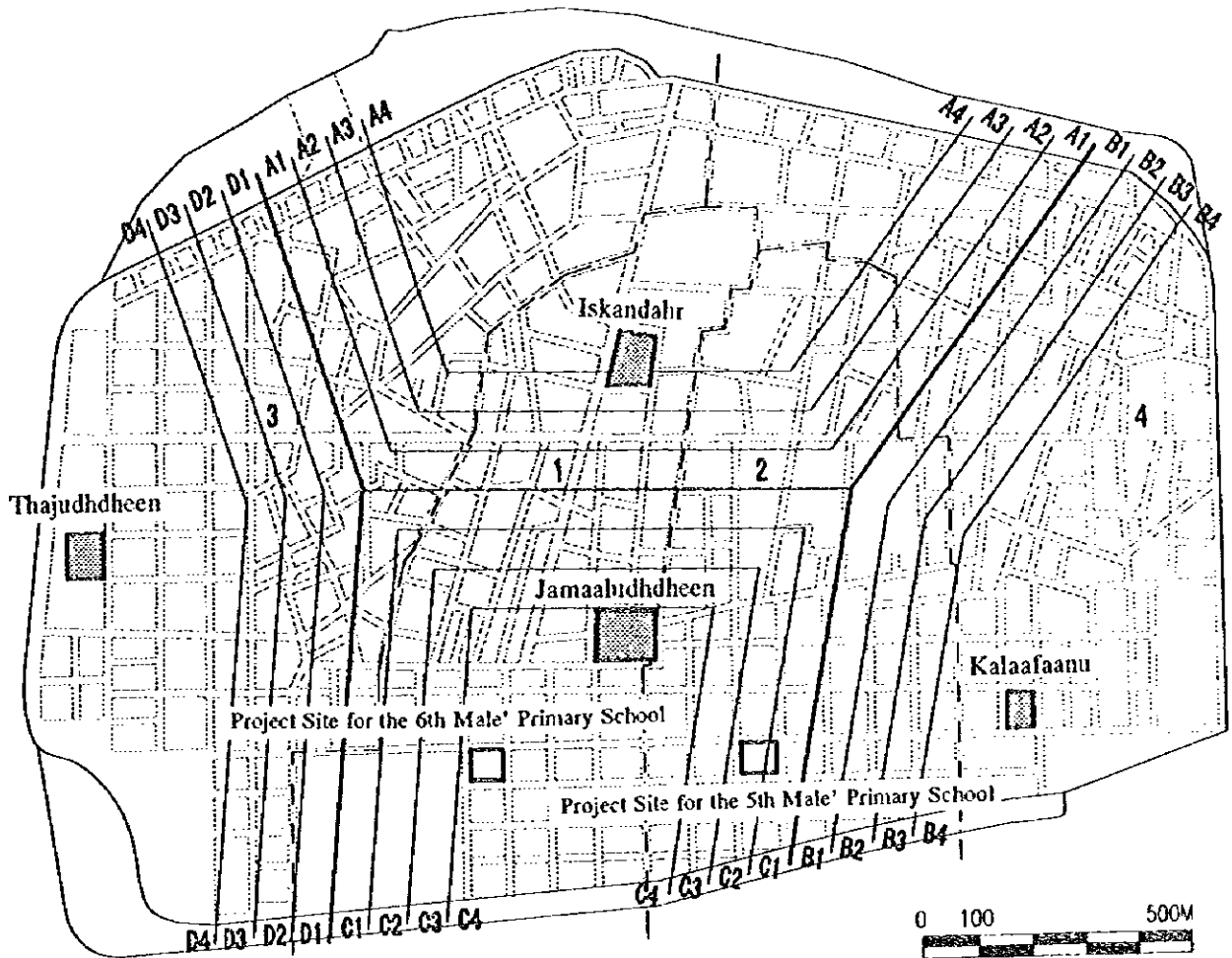
age	Administrative districts								Total
	Henveiru		Galolhu		Machchangolhi		Maafannu		
	boy	girl	boy	girl	boy	boy	boy	girl	
6	171	178	129	136	130	104	225	207	1,280
7	199	162	169	152	152	129	224	215	1,402
8	221	198	160	149	147	163	260	246	1,544
9	196	226	167	156	159	151	260	243	1,558
10	242	190	173	119	146	159	271	240	1,540
11	196	190	172	179	154	159	240	253	1,543
12	230	203	151	162	152	157	280	286	1,621
	2,802		2,174		2,062		3,450		10,488

Source : Population Census 1995

However, in recent years, the school district closest in distance is given priority regardless of the administrative district. Although the boundary of each school district is clearly indicated, the present situation is such that children are distributed equally to meet the increase or decrease in student numbers. Thus, there are cases where they have to attend schools outside their school district. With the addition of a Project school and a fifth Primary School, the school district system must be modified.

However, most of the schools in Male', including the two new schools, are located in the southern part of the island. Hence, it may be difficult to separate the school districts on a geographical bases. As the island of Male' is small, children are able to select whichever school location they choose. However, for this Project, Male' will be considered to be one large school district, and the scale of the facility will be decided upon the ratio of the number of school age children in Male' to the total number of classrooms.

Fig. 2-1 Primary School District in Male'



1:Machchangol 2:Galolhu 3:Maafannu 4:Henveiru - - - - - District Property

2-2-2 Appropriateness of school size

The requested number of normal classrooms (hereinafter referred to as classrooms) is 35. According to the estimate by the MOE (Table 2-2), when this Project is completed in 1999, the number of school age children from first to seventh grade in Male' will be 10,316. There are currently 120 classrooms in the 4 existing public primary schools. However, if the 6th and 7th grades are to be merged into the primary school system, a science laboratory needs to be added. Thus, deducting one classroom from each of the present schools for a science laboratory, the total number of classrooms in 1999 will be 116. According to the plan by the Republic of Maldives, the construction of the Fifth and Sixth Primary Schools each having 35 classrooms, will add a total of 70

new classrooms, therefore increasing the total to 186. The MOE plans to continue with the double shift system which will mean that the total number of classrooms will be 372.

If this is simply divided by the estimated population, one classroom will hold an average of 27.7 children. As the MOE hopes to have an average of 30 children to a class, the number is 2.3 below the expected average. However, the number of children in 2004 is estimated to increase to 11,312 which will mean an average of 30.4 to a class. Although the population of Maldives is estimated to continue increasing, the population of Male' is reaching maximum capacity and a rise after 2004 is hard to imagine. Therefore, the number of requested classrooms (35) is thought to be appropriate.

Table 2-2 Estimated Number of Students at Public Primary School in Male' (1997-2005)

	1997	1998	1999	2000	2001	2002	2003	2004	2005
Grade 1	1,427	1,458	1,490	1,523	1,556	1,591	1,626	1,661	1,698
Grade 2	1,396	1,427	1,458	1,490	1,523	1,556	1,591	1,626	1,661
Grade 3	1,342	1,396	1,427	1,458	1,490	1,523	1,556	1,591	1,626
Grade 4	1,378	1,342	1,396	1,427	1,458	1,490	1,523	1,556	1,591
Grade 5	1,470	1,466	1,430	1,482	1,516	1,549	1,583	1,618	1,654
Grade 6		1,561	1,534	1,498	1,543	1,579	1,614	1,650	1,686
Grade 7			1,581	1,539	1,502	1,539	1,575	1,610	1,646
Total Number of Students	7,013	8,650	10,316	10,416	10,588	10,827	11,068	11,312	11,561
Necessary Number of Classes	234	288	344	347	353	361	369	377	385
Necessary Number of Classrooms	117	144	172	174	176	180	184	189	193
Number of Existing Classrooms	120	116	116	116	116	116	116	116	116
Number of Lacking Classrooms			56	58	60	64	68	73	77

Source: MOE

- Notes :
1. 4th grade and lower grade students automatically move up to a higher grade .
 2. Number of 1st grade students increase by 1.1% annually .
 3. The rates of students remaining in the same grades are 6% of 6th graders and 10% of 7th graders .
 4. Although the number of existing classrooms is 120 science laboratory rooms will be necessary when the 6th and 7th graders are combined .

2-2-3 Appropriateness of the Number and Size of the Classrooms

(1) Requested Rooms for the Project

The requested rooms may be separated, as shown below, according to function.

- 1) General Teaching Space: Space for conducting lessons and other educational activities.
- 2) Administration and Staff Space: Space for school staff necessary to operate the school.
- 3) Ancillary Service Area: Service space, including toilets, corridors and so forth.

Based on the above mentioned groups, the type and size of the requested rooms are as follows:

Table 2-3 Requested Rooms

Name of Room	Number of Rooms	Floor Space (m ²)	Remarks
1) General Teaching Space			
Normal Classroom	35	48.0	
Art and Crafts Room	1	128.0	
Music Room	1	61.0	
Science Room	1	50.0	
Computer Room	1	41.0	
Audio-Visual Room	1	75.0	
Library	1	128.0	
Sports Hall	1	532.0	Including seats for audiences, Storage and Toilets
School Hall	1	290.0	Stage
2) Administrative and Staff Space			
Lobby	1	46.0	
General Offices	1	123.0	Including principal's room and printing room
Staff Meeting Room	1	15.0	
Principal's Office	1	12.0	
Assistant Principal's Office	1	12.0	
Staff Room	1	128.0	Including teaching materials, storage and a staff resting room
Supervisors' Room	1	48.0	
3) Ancillary Service Space			
Counselling Room	1	11.0	
First Aid Room	1	9.0	
Prayer Room	1	40.0	Ablution outside the prayer room
Sports Hall	1	34.0	
Office Store	1	11.0	
Staff's Toilet	1	32.0	One on the first floor
Student's Toilet	1	201.0	One on the first floor & two each on the second & above floors
Machine Room	1	7.0	
Stairs and Corridors	1	1,391.0	
Quiet area	1	-	Pilots for outdoor classes
Grand Total		5,108.0	

(2) Necessity of the Requested Rooms

The requested rooms will be evaluated according to the following criteria:

- 1) Are they necessary for the lessons presently being conducted ?
- 2) Are they in context with the present school system ?
- 3) Are they being adequately used in terms of the present curriculum ?

A) General Teaching Space

The table below shows the present curriculum implemented by the MOE. The MOE hopes to revise this curriculum after the year 2000, however, this Project will be planned based on the present curriculum.

Table 2-4 Present Curriculum (Periods a week)

	Grade1	Grade2	Grade3	Grade4	Grade5	Grade6	Grade7
Divehi	5	5	5	5	5	6	6
Islam	3	3	3	3	3	5	5
English	8	8	8	8	8	8	8
Math	6	6	6	6	6	7	7
Environment Studies	6	6	6	6	6	—	—
Practical Arts	3	3	3	3	3	3	3
Physical Education	2	2	2	2	2	1	1
Quran	2	2	2	2	2	—	—
General Science	—	—	—	—	—	5	5
Social Studies	—	—	—	—	—	5	5
Total	35	35	35	35	35	40	40

Source: MOE

1) Normal Classrooms

The necessity of normal classrooms is beyond question. The number of classrooms will be 35, as mentioned in Section 2-2-2 Appropriateness of School Size.

2) Art and Crafts Room

Art lessons in primary and secondary schools come under the subject of Arts(Practical Arts). This comprises of art, music, home economics and crafts, and is conducted for one period a week in both primary and secondary schools.

Art lessons in lower grades of primary schools are conducted in normal classrooms using color pencils. However, from the middle grades of primary schools, water colors will be used which will require wash basins. As craft work is also included, a special room will be required. Art rooms will be used once a week for each class from 3rd to 7th grades.

From 6th grade, the Practical arts will include woodworking, home economics and agriculture (including fishery). An arts lesson will be conducted once a week,

with the same subject being repeated every three weeks. Of the three subjects, farming may be conducted in the normal classrooms or outside. However, special rooms will be necessary for crafts and home economics as the lessons will center on woodwork, cooking and sewing. Thus, in this Project, crafts and home economics will be conducted in the art and crafts room. The frequency of use in the art and crafts room per grade per class for the two subjects will be one period a week ($1/3$ periods a week). Thus, it will mean two-thirds of an period for the two subjects of crafts and home economics.

3) Music Room

Music lessons will be conducted once a week for all grades, as part of the Practical Arts. Lower grades will learn songs, whereas middle and higher grades will also use instruments. Considering the high noise level, this room will be set apart from the normal classrooms. This room will be used by every class in all grades once a week.

4) Science Room

General Science, together with social studies in the primary schools, will center on the environment and will be conducted six times a week. The lessons are conducted in the normal classrooms using texts and simple equipment. In the existing secondary schools, science alone is taught five times a week, divided into chemistry, physics and biology each in a separate room. As secondary school science requires experiments, a special room is required. However, in the low 6th and 7th grades, science classes are conducted as general science, hence a common laboratory will be adequate. Currently, 40% of the science lessons in 6th and 7th grades are conducted in science laboratories and the remainder are conducted in classrooms. Thus, the science laboratories are used twice a week per class for 6th and 7th grades.

5) Computer Room

According to the present curriculum, lessons using computers are only conducted by 8th graders and above. Furthermore, teachers specializing in computers are not being trained by the Institute for Teacher Education. The Government of Maldives requested the introduction of computer rooms, so that future lessons

using computers or specializing in computers may be conducted. However, there are still no concrete plans for this and it is not mentioned in the revised curriculum after the year 2000. Therefore, the plan to have a computer room in this Project will not be included.

6) Audio-Visual Room

Although the curriculum does not stipulate any lessons using video tapes, the existing primary schools in Male' are using them in both their English and other lessons. The use of video tapes in teaching languages is a necessity, and it is also advantageous in teaching other subjects. Due to the lack of facilities and equipment, practical training in some subjects is difficult, as are social study tours. Thus, the use of video material is thought to be very beneficial. The educational material is partly purchased by the schools themselves but the majority are borrowed from the Education Development Center of the MOE. The necessity of tapes and videos is understood, therefore no problems can be seen in purchasing these materials. Thus, the construction of a properly equipped audio-visual room to conduct lessons using these educational materials is considered to be highly appropriate. English "listening" lessons are conducted once a week for each grade, thus the room will be used once a week per class for all grades.

7) Library

There are few bookstores in Maldives and the stock of books is limited. As imported books are expensive, the children cannot purchase them and they have to rely on libraries. Thus, the best place for a child to read books is the school library. As part of the English reading lesson, the library is used once a week by each class. The number of books in the school libraries vary, however, each school spends around 1% of the school operation fee (15,000 -20,000 Rufias) on purchasing books, with some assistance from the PTA. Considering the necessity of the school library and its frequent use, in addition to its use in school lessons and the obvious decline of problems in purchasing books, the construction of the library is thought to be appropriate. The use of the library in terms of English lessons is once a week per class per grade.

8) Sports Hall / School Hall

The sports & school hall is necessary for indoor physical education lessons and school meetings and presentations. As the existing schools have a sports/school hall, the construction of a hall is appropriate. The MOE requested a sports hall and school hall to be built separately on two floors. However, a single hall to serve both purposes will be constructed:

Based on the present curriculum, if half of the sports lessons are conducted in the sports hall and half are conducted outside, the sports hall will be used once a week by each class from 1st to 5th grade and once or twice a week by 6th and 7th grades.

Assuming that each special classroom is used at the same time by a class, that the weekly school periods for the 6th and 7th grade of the secondary schools is 40 periods, and that five classes per grade are to conduct lessons in the morning and afternoon (the morning and afternoon lessons are presently separated into higher and lower grades), the classrooms will be used as follows:

Table 2-5 Use Rate of Special Classrooms (to be used for ordinary classes)

	Class to be Held in the Room	Grade of Students to Use the Room	Number of Classes	Frequency of Use (period/week)	Room Use Time	Room Use Rate
Art & Crafts Room	Arts	3, 4, 5, 6, 7	25	1	25.0	70.7%
	Crafts & Home Economy Course	6	5	2/3	3.3	
	Total				28.3	
Music Room	Music	1, 2, 3, 4, 5, 6, 7	35	1	35.0	87.5%
Science Room	Science	6, 7	10	2	20.0	50.0%
Audio-Visual Room	English	1, 2, 3, 4, 5, 6, 7	35	1	35.0	87.5%
Library	English	1, 2, 3, 4, 5	25	1	25.0	41.7%
Sports Hall/ School Hall	Physical Education	1, 2, 3, 4, 5	25	1	25.0	75.0%
		6, 7	10	1/2	5.0	
	Total				30.0	

B) Administrative and staff space

9) Lobby

The lobby should be located between the main entrance of the school and the administration offices, acting as both a reception and notice area. As this will be part of an enlarged corridor, it will not be considered as a room.

10) General Office

The office will be responsible for running the general affairs and accounting of the school, with a total of 25 staff in the morning and afternoon. An office exclusively for this purpose is appropriate. The office will have an administrator's room, a printing room and a pantry (with hot water facilities) for the office staff.

11) Staff Meeting Room

A total of 150 teachers and staff are expected for the Project school, and it is appropriate that a staff meeting room should be set up. Meetings by the school principal, assistant principal, supervisor and head official are frequently conducted in the existing schools, thus the room should be able to hold around 12 people.

12) Principal's Office/ Assistant Principal's Office

As the double shift schooling system is being implemented in Maldives, the Principal is responsible for both mornings and afternoons, whereas there is a separate Assistant Principal for the morning and afternoon classes. As the Principal will be in the school the whole day, a private room will be allocated. As the Assistant Principal will have a shift system, one room will be used by two people. As there will be a secretary for the Principal and Assistant Principal, a secretary's room to serve both people will be set up.

13) Staff Room

The number of expected teaching staff for both mornings and afternoons is thought to be around 50. As with the children, the staff will also work on a double shift system. As the teachers will mostly spend their time in the classrooms, the staff

room will not have specific desks for each teacher. A table will be used by the staff in this room. The teacher's individual teaching materials will be placed in a personal locker. As the entire staff will meet before the start of school, the staff room should be able to hold around 50 people. A store room and kitchenette (with hot water facilities) will also be installed.

14) Supervisors' Room

In schools in Maldives, a supervisor for every eight teaching staff is assigned to supervise the staff. As with the teachers, the supervisors will also work on a double shift system. The supervisor will have his or her own desk and a separate room. A total of 8 supervisors for the morning and afternoon classes are expected for this Project school. Thus, the room should be able to accommodate this number.

C) Ancillary Service Space

15) Counselling Room

In order to prevent juvenile delinquency, the Government of Maldives is placing greater importance in student guidance. Thus, the primary and secondary schools in Male' have a counsellor to provide personal counselling and guidance if required. A counsellor for the morning and afternoon classes is planned for the Project school, and similarly for the existing schools, a counselling room will be set up.

16) First Aid Room

For the supervision of the student's health, the MOE requires that each school has a first aid room and a health worker. The existing primary and secondary schools all have a first aid room. The health worker is responsible for taking care of minor injuries, conducting regular physical measurements and supplying general health guidance. Studies reveal that first aid rooms are not frequently used, however they are a necessity in every school.

17) Prayer Room

Most of the people of Maldives are Islamic, and daily prayers are customary. Of the existing 6 public primary and secondary schools, 5 schools have prayer rooms. Some schools use the prayer room during lessons in Islam but more frequently, it is voluntarily used by students and staff for prayers. Although it is not in frequent use, a prayer room is thought to be necessary from the religious point of view.

18) Sports Hall and Office Store

Store rooms for both the sports hall and office are requested by Maldives, with additional store for school equipment, teaching material, supplies and documents also being necessary. In this Project, appropriate store rooms will be set up according to the type and location of each room.

19) Staff and Student's Toilet

The toilets will be constructed in appropriate places using appropriate materials, considering the high continuous usage. A toilet for use by physically disabled persons will be set up on the ground floor.

20) Machine Room

The Machine rooms that will be needed for this Project are: A pump room for water supply and an electric facilities room for power supply. As the pump room will require little space, the space under the stairs will be used.

21) Stairs and Corridors

They will be appropriately located on the plan.

22) Quiet area

As it becomes very hot in ordinary classrooms during hot weather in the Maldives, classes are often conducted in a cool outdoor environment, such as under trees. Thus, based on the request of the Maldives side, pitotis as a quiet area was designed for the Project facility, to conduct ordinary outdoor classes as well as simple athletic classes, in addition to using the gymnasium during rainy days.

(3) Size of the Rooms

The request asks for a 48m² normal classroom to seat 30 students. Considering the layout of furniture, this size is thought to be appropriate. The other rooms will also be based on the requested size, however, the appropriateness will be evaluated according to the use of the rooms, the number using the rooms and the layout of furniture.

(4) Standard of the Rooms

The standard of the rooms will be basically the same as the schools already constructed by the MOE and the Fifth Male' Primary School constructed by the IDB.

2-2-4 Appropriateness of Educational Equipment

(1) Appropriateness of Requested Items

The request for educational equipment amounts to 468 items, necessary for 10 subjects. However, this includes many miscellaneous items: those that are not used in the curriculum; those that are not included in the teacher training curriculum; those that are not used by teachers when teaching the subjects; those that are used only by a limited group of students; and expendable items such as drawing paper, pencils, erasers and even eye lotions. The requested items for this project will be evaluated according to the following seven relevant criteria as to the appropriateness of the items for each subject.

- 1) If it is used in the curriculum.
- 2) If it is in accordance with the contents of the school text.
- 3) If it is included in the teacher training curriculum and thereby teachers will use the item.
- 4) If it is actually already being used by teachers at existing schools.
- 5) If it is not a consumable item.
- 6) If it has no possibility of being taken outside school premises for personal use.
- 7) If it presents no maintenance or management problems. Other reasons (if it may be replaced by other requested items, if the use of the item is limited, etc.) .

(2) Appropriateness of Specifications

The equipment should be of a level suitable for primary and the 6th & 7th grade, students and should differ from those of higher education schools or research institutions. As the equipment will be used by many students, they should be durable items. Considering maintenance and management, in addition to ease in procuring consumable and spare items, the equipment used will be those easily accessible. Previously, educational equipment in Maldives has been imported through the STO (State Trade Organization). Considering ease in procuring consumable items and spare parts, educational equipment that may be imported through the STO will be selected.

(3) Appropriateness of Quantity

The requested quantity was evaluated on the assumptions that firstly, there are 30 students to a class and secondly, it is appropriate to the teaching methods, such as class grouping of the existing primary and secondary schools. However, results showed that the requested quantity varied widely and that the group structure and teaching methods for each item was unclear. Thus, the following criteria will be used to estimate the planned quantity:

- 1) If the item is to be used by each student, the total will be 30 per class.
- 2) If the item is to be used by each group of six students, the total will be 5 per class.
- 3) If the item is to be used by the teacher or school for all the students, or if it is to be used by the teacher for explaining something to the students, the quantity will be one.
- 4) For glass or breakable items to be used in science class, double the quantity will be necessary to include spare items.
- 5) As for items needed by teachers to explain concepts, the most effective way would be to have those items made by the teachers or by the students themselves. Thus, the quantity should be one for the entire school.

The educational items will be selected according to the Criteria for Appropriateness 1 to 7. The items marked "X" will be omitted and those marked "O" will be selected.

Table 2-6 Selection of Educational Equipment

List of Science Equipment (1)

ITEM No.	ITEM	STANDARD FOR THE SELECTION OF THE ITEM							NECESSITY
		1	2	3	4	5	6	7	
S 1	4mm stackable plugs, length 250mm, red (connecting wires)								○
S 2	4mm stackable plugs, length 250mm, yellow (connecting wires)								○
S 3	4mm stackable plugs, length 250mm, black (connecting wires)								○
S 4	Acrylic blocks, rectangular								○
S 5	Acrylic blocks, triangular 60, 60, 60 (prism)								○
S 6	Aluminium foil, reel				X				○
S 7	Anemeter (0-2A)								○
S 8	Aneroid Barometer	X							○
S 9	Balance								○
S10	Balance (Electronic)							X	○
S11	Bar magnets								○
S12	Beaker, pyrex 100ml								○
S13	Beaker, pyrex 250ml								○
S14	Beaker, pyrex 600ml								○
S15	Bell jar								○
S16	Bi-metallic strip (nickel chromium alloy and invar)								○
S17	Boss for retort stand								○
S18	Bulbs 1.5v								○
S19	Butane burner								○
S20	Clamp for retort stand								○
S21	Cobalt chloride (box)					X			○
S22	Concave lens								○
S23	Conical flask, 250ml, pyrex								○
S24	Convex lens								○
S25	Crocodile clips								○
S26	Day and Night Maximum and Minimum Thermometer								○
S27	Deflagrating spoon								○
S28	Droppers								○
S29	Evaporating basin diameter 90mm								○
S30	Filiter paper, diameter 90mm (box)					X			○
S31	Filter flask								○
S32	Forceps								○
S33	Funnel, 89mm diameter, polythene								○
S34	Geo-fix Project Globe (Mineral Testing Kit)	X							○
S35	Glass rods								○
S36	Glass tube, diameter 5mm								○
S37	Helical spring 5mm								○
S38	Litmus paper, blue (box)					X			○
S39	Litmus paper, red (box)					X			○
S40	Magnifying glass with handle								○
S41	Mass set, 100gram								○
S42	Mass set, 10gram								○
S43	Measuring cylinders (plastic 100ml)								○

- STANDARD FOR THE SELECTION OF THE ITEM :
- 1) If it is used in the curriculum.
 - 2) If it is in accordance with the contents of the school text.
 - 3) If it is included in the teacher training curriculum and thereby teachers will use the item.
 - 4) If it is actually already being used by teachers at existing schools.
 - 5) If it is not an expendable item.
 - 6) If it has no possibility of being taken outside school premises for personal use.
 - 7) If it presents no maintenance or management problems. Other reasons (if it may be replaced by other requested items, if the use of the item is limited, etc.).

List of Science Equipment (2)

ITEM No.	ITEM	STANDARD FOR THE SELECTION OF THE ITEM							NECESSITY
		1	2	3	4	5	6	7	
S44	Measuring cylinders (plastic 10ml)								○
S45	Measuring cylinders (plastic 250ml)								○
S46	Measuring tape								○
S47	Meter rule							x	○
S48	Microscope mini								○
S49	Molecular models, carbondioxide								○
S50	Molecular models, oxygen								○
S51	Molecular models, water								○
S52	Mortar pestles								○
S53	Newton meter, 0-10N								○
S54	Newton meter, 0-50N								○
S55	Plane mirror, (100mm x 100mm)								○
S56	Pitting compass								○
S57	power supplies or batteries								○
S58	Rain Gauge Kit	x							○
S59	Round bottom flask, pyrex (250ml)								○
S60	Rubber tubing, diameter 5mm								○
S61	Safty spectacles								○
S62	Scalpels								○
S63	Slide								○
S64	Slide cover slips, 18mmx18mm, square								○
S65	Spatula								○
S66	Stand retort								○
S67	Stopper size 2l								○
S68	Stopper size 3, one hole								○
S69	Stopper size 3l, two hole								○
S70	Stopper size 2l, one hole								○
S71	Syring, 10ml, 50ml								○
S72	Teas tube holders							x	○
S73	Teats, rubber, non roll								○
S74	Test tube racks (12 holes)								○
S75	Test tube (pyrex 150 x 16mm)								○
S76	Test tube (pyrex 150 x 21mm)								○
S77	Thermometers (red spirit, -10c -110c)								○
S78	Tiles, white (200mm x 200mm)								○
S79	Tongs								○
S80	Tripod stand								○
S81	Universal indeator paper, range 1-14(box)						x		○
S82	Voltmeter (0V-15V)								○
S83	Wall Thermometer								○
S84	Watch glass								○
S85	Wire gauze								○

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 - 2) If it is in accordance with the contents of the school text.
 - 3) If it is included in the teacher training curriculum and thereby teachers will use the item.
 - 4) If it is actually already being used by teachers at existing schools.
 - 5) If it is not an expendable item.
 - 6) If it has no possibility of being taken outside school premises for personal use.
 - 7) If it presents no maintenance or management problems. Other reasons (if it may be replaced by other requested items, if the use of the item is limited, etc.).

List of Social Studies & Environmental Equipment

ITEM No.	ITEM	STANDARD FOR THE SELECTION OF THE ITEM							NECESSITY
		1	2	3	4	5	6	7	
SE 1	16" Political Globe (ENGLISH)								○
SE 2	12" Physical Raised Relief Globe (ENGLISH)							×	○
SE 3	Ocean Feature and Land Mass Globe								○
SE 6	World Map with Wood Rack								○
SE 7	World Area Map (6 district / set)	×							○
SE 8	Solar System Planet Model								○

List of Mathematics Equipment

ITEM No.	ITEM	STANDARD FOR THE SELECTION OF THE ITEM							NECESSITY
		1	2	3	4	5	6	7	
MA 1	Area Work with square CM								○
MA 2	Centicube (Various Colors)								○
MA 3	Chrono-duples Geared Clock Face								○
MA 4	Clock Face Rubber Stamp								○
MA 5	Cubic Centimeter Plastic Cubes							×	○
MA 6	Geometrical Model Set							×	○
MA 7	Geometrical Shape in CM Multiple							×	○
MA 8	Geometry Construction Outfit (5 pec /set)	×							○
MA 9	Giant Transarent, Circular Protractor								○
MA10	Giant Transparent, Rular								○
MA11	Giant Compass for Blackboard Use							×	○
MA12	Learners Metric Measure							×	○
MA13	Meter Measuring and Comparison Road Set								○
MA14	Multi-shape Liter Set (3 pcs, /set)								○
MA15	Netweight General Purpose registering 8Kg.								○
MA16	Paragon Coating Frame								○
MA17	Plastic Geometrical Shapes	×							○
MA18	Plastic Grids for Area Work							×	○
MA19	Plastic Volume Cubes							×	○
MA20	Square Meter Tile, calibrated							×	○
MA21	Structuring and Apperciation	×							○
MA22	Traditional Stopwatch				×				○
MA23	Visual Fractions Apparatus (7 pcs./set)								○

- STANDARD FOR THE SELECTION OF THE ITEM :
- 1) If it is used in the curriculum.
 - 2) If it is in accordance with the contents of the school text.
 - 3) If it is included in the teacher training curriculum and thereby teachers will use the item.
 - 4) If it is actually already being used by teachers at existing schools.
 - 5) If it is not an expendable item.
 - 6) If it has no possibility of being taken outside school premises for personal use.
 - 7) If it presents no maintenance or management problems. Other reasons (if it may be replaced by other requested items, if the use of the item is limited, etc.).

List of Physical Education Equipment (1)

ITEM No.	ITEM	STANDARD FOR THE SELECTION OF THE ITEM							NECESSITY
		1	2	3	4	5	6	7	
EA- 1	Floor mats 3' x 6'-thickness-3."								○
EA- 2	Floor mats 3'x12'-thickness-3."							x	
EA- 3	Landing mats 12'x 8'-thickness-18."			x					
EA- 4	Tumbling runway 3' x 8'.			x					
EA- 5	Spring boards. (standard)								○
EA- 6	Vaulting box. (junior)								○
EA- 7	Balance beam. (Junior with floor mats)								○
EA- 8	Horizontal bars with landing mats.			x					
EA- 9	Somersault bells.							x	
EA-10	Beam protection pad.				x				
EA-11	Protection pad for horizontal bars.			x					
EA-12	Trampoline (Junior) with safety pads.			x					
EA-13	Foot ball. (Mini goal posts/Nets)								○
EA-14	Foot ball goal nets.								○
EA-15	Foot balls. size 4					x			
EA-16	Foot ball, (Coaching strategy display board)				x				
EA-17	Foot ball ground maker cones. (six colors)					x			
EA-18	Inflators							x	
EA-19	Volley ball posts. (adjustable)								○
EA-20	Volley ball nets (Standard)								○
EA-21	Volley ball (Antenas)								○
EA-22	Volley ball (Judges stands)								○
EA-23	Volley ball (Scoring No:Sets)								○
EA-24	Volley ball Posts (Safety Covers)				x				
EA-25	Volley ball (Mikasa)								
EA-26	Volley ball (Floor Marking Tapes)					x			
EA-27	Net ball posts (Adjustable)								○
EA-28	Net ball (Nets)								○
EA-29	Net ball (Standard)					x			
EA-30	Net ball (Scoring No:Sets)				x				
EA-31	Net ball (Post Covers)				x				
EA-32	Floater (Shoulders)					x			
EA-33	Pull Boarders					x			
EA-34	Kick Boards					x			
EA-35	Paddles					x			
EA-36	Safety Rope on stand and bobin.						x		
EA-37	Starters Guns (Electronic)							x	
EA-38	Megaphones					x			
EA-39	Lane Marker Floats with ropes.							x	
EA-40	Basket Ball boarders to be fixed on walls-with wall bracket.								○
EA-41	Ring Nets								○
EA-42	Basket balls Juniors					x			
EA-43	Basket balls Seniors					x			
EA-44	Scoring boards with Nos.								
EA-45	Startin blocks				x				

- STANDARD FOR : 1) If it is used in the curriculum.
 THE SELECTION OF 2) If it is in accordance with the contents of the school text.
 THE ITEM 3) If it is included in the teacher training curriculum and thereby teachers will use the item.
 4) If it is actually already being used by teachers at existing schools.
 5) If it is not an expendable item.
 6) If it has no possibility of being taken outside school premises for personal use.
 7) If it presents no maintenance or management problems. Other reasons (if it may be replaced by other requested items, if the use of the item is limited, etc.).

List of Physical Education Equipment (2)

ITEM No.	ITEM	STANDARD FOR THE SELECTION OF THE ITEM							NECESSITY
		1	2	3	4	5	6	7	
EA-46	Relay batons								○
EA-47	Starting Pistols (22 caliber)								×
EA-48	Blank pellets (22 caliber)								×
EA-49	Hurdles - (Adjustable)								×
EA-50	Putshot Juniors								×
EA-51	Discus Juniors								×
EA-52	Javelin Juniors								×
EA-53	High Jump. Posts								×
EA-54	High Jump Cross bars.								×
EA-55	High Jump Landing Mats.								×
EA-61	Posts (Portable with weights and wheels)								○
EA-62	Nets								○
EA-63	Badminton court floor spread roles with court markings.								○
EA-64	Badminton Racquets								○
EA-65	Badminton Shuttle cocks / Plastic (Carlton)								○
EA-66	Badminton Shuttles (Feather)								○
EA-67	Badminton Scoring No:Boards								○
EA-68	Table Tennis tables								○
EA-69	Table Tennis net uprights.								○
EA-70	Table Tennis Nets.								○
EA-71	Table Tennis Bats								×
EA-72	Table Tennis Ball (Match)								×
EA-73	Table Tennis floor Demarcates								×
EA-74	Table Tennis - (Scoring No. Boards)								×
EA-75	Hoops								×
EA-76	Skipping ropes								×
EA-77	Short ropes								×
EA-78	Long ropes								×
EA-79	Small bats	×							×
EA-80	Red rubber balls								×
EA-81	White rubber balls								×
EA-82	Green rubber balls								×
EA-83	Yellow rubber balls								×
EA-84	Blue rubber balls								×
EA-85	Stop watches								×
EA-86	Tennis racquets (junior)								×
EA-87	Tennis balls								×
EA-88	Tennis nets								×
EA-89	Tennis net post								×
EA-90	Tennis floor tapes								×
EA-91	Tennis net steel rope								×
EA-92	Tennis ball buckets								○

STANDARD FOR THE SELECTION OF THE ITEM :

- 1) If it is used in the curriculum.
- 2) If it is in accordance with the contents of the school text.
- 3) If it is included in the teacher training curriculum and thereby teachers will use the item.
- 4) If it is actually already being used by teachers at existing schools.
- 5) If it is not an expendable item.
- 6) If it has no possibility of being taken outside school premises for personal use.
- 7) If it presents no maintenance or management problems. Other reasons (if it may be replaced by other requested items, if the use of the item is limited, etc.).

List of Agricultural Equipment

ITEM No.	ITEM	STANDARD FOR THE SELECTION OF THE ITEM							NECESSITY
		1	2	3	4	5	6	7	
AG- 1	Hand garden Sets								
1-1	Forks			X					
1-2	Spades			X					
1-3	Weed collector			X					
AG- 2	Garden Forks (large)			X					
2-1	Spades(Large)			X					
AG- 3	Mammoties (small)			X					
AG- 4	Pick axe			X					
AG- 5	Crow bar			X					
AG- 6	Watering Cans			X					
AG- 7	Sprayers			X					
AG- 8	Wheel Barrow			X					

List of Wood Work Equipment

ITEM No.	ITEM	STANDARD FOR THE SELECTION OF THE ITEM							NECESSITY
		1	2	3	4	5	6	7	
W1	Carpenters Saws 2 sizes 18"			X					
W2	Smoothing planes with blade (iron) 2/50mm			X					
W3	Hammers-								
	(rounded)			X					
	claw			X					
W4-1	Chisels 1/4"			X					
W4-2	1/2"			X					
W4-3	1"			X					
W5	File rounded								
W5-1	Flat Traingular			X					
W5-2	Flat			X					
W5-3	Set			X					
W6-1	Grinder rough			X					
W6-2	smooth			X					
W7	Mallet (Wooden)			X					
W8	Wood Marker			X					
W9	Benchwise			X					
W10	Hand drill with drill bits			X					
W10-1	1/4			X					
W10-2	3/8			X					
W11-1	Screw driver star			X					
W11-2	Flat			X					
W12	Calipers (wood)			X					
W13	Work benches			X					
W14	Storage cupboard for tools			X					
W15	Measuring tape (steel)(3.5 metre)			X					
W16	Rulers steel			X					
W17	Flat saw			X					
W18	Wetling stone sharper			X					
W19	Back saws - with blades			X					
W20	Pliers			X					
W21	Wood ruler four fold 24"			X					
W22	Clamps			X					

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 - 2) If it is in accordance with the contents of the school text.
 - 3) If it is included in the teacher training curriculum and thereby teachers will use the item.
 - 4) If it is actually already being used by teachers at existing schools.
 - 5) If it is not an expendable item.
 - 6) If it has no possibility of being taken outside school premises for personal use.
 - 7) If it presents no maintenance or management problems. Other reasons (if it may be replaced by other requested items, if the use of the item is limited, etc.).

List of Home Science Equipment

ITEM No.	ITEM	STANDARD FOR THE SELECTION OF THE ITEM							NECESSITY
		1	2	3	4	5	6	7	
H 1	Chopper						X		
H 2	Scraper (Carrot)						X		
H 3	Forks						X		
H 4	Spoons						X		
H 5	Pots						X		
H 6	Pans - Roshi						X		
H 7	Coconut Scraper (metal)						X		
H 8	Trays						X		
H 9	Spatulas						X		
H10	Badles (Big)						X		
H11	Kettles						X		
H12	Boards and Rolling pin						X		
H13	Fridge (5.5 cc)				X				
H14	Set of knives						X		
H15	Blender						X		
H16	Vegetable cutter						X		
H17	Pans						X		
H18	Glasses						X		
H19	Vegerable Chopper						X		
H20	Kitchen Scale						X		
H21	Gas cooker with oven						X		
H22	Dinner set						X		
H23	Cutlery knives						X		

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 - 4) If it is actually already being used by teachers at existing schools.
 - 5) If it is not an expendable item.
 - 6) If it has no possibility of being taken outside school premises for personal use.
 - 7) If it presents no maintenance or management problems. Other reasons (if it may be replaced by other requested items, if the use of the item is limited, etc.).

List of Art Equipment (1)

ITEM No.	ITEM	STANDARD FOR THE SELECTION OF THE ITEM							NECESSITY
		1	2	3	4	5	6	7	
A 1	Blackboard (wall) Large							X	
A 2	White boards (8'x4') with movable stand							X	
A 3	Wash basins (ceramic with taps)							X	
A 4	Art Room Cupboards (white)							X	
A 5	Adjustable flat pupil desks.							X	
A 6	Adjustable chairs.							X	
A 7	Drying frames.					X			
A 8	Drawing Boards 24"x18"x1" with securely bonded formic surface								O
A 9	Teachers table 5'x3'							X	
A10	Teachers chair							X	
A11	Flat tables 5'x3'x21/2'							X	
A12	Display boards 8'x4'-6mm plywood with stand movable.							X	O
A13	Storage Cupboards							X	
A14	Paper Cutter					X			
A15	Artists Donkey chair 34"ht x 36" length x 16" width solid wood planed completely flat sanded very smooth with lacquered finish							X	
A16	Artists Easel hardwood sturdy for student use size 65"x70" height legs to adjust to flat position for storage.					X			
A17	P.O knives.							X	
A18	Pencil sharpener.							X	
A19	Scissors.								
A20	PENCILS, Hexagonal shape barrel, with out ersers								
a	B							X	
b	2B							X	
c	3B							X	
d	5B							X	
A21	ART ERASER, size: 2-1/2" x 7/8" x 7/16" Must be able to lift pencil sketch without disrupting finish surface of paper. 1 dozen per box.							X	
A22	PO knife Blades, stainless steel.								
a	No.011							X	
b	No.019							X	
c	No.022							X	
d	No.024							X	
A23	Drawing paper: size: 15"x18" sheets. Heavy wight, smooth texture, 5 reams cream color, specially adopted for fine pencil and ink work, watercolor and tempera. Should erase well. Packaged by the ream.							X	
A24	Watercolor paint sets, 25fl. Oz tubes								
a	18 colors per set, including one brush							X	
b	12 colors per set, including one brush							X	
A25	Artist's OIL BRUSHES, round								
	Red sable round brushes, polished long handles, nickel ferrules								
a	Size 1, 1/4" hair length							X	
b	Size 5, 19/32" hair length							X	
c	Size 7, 3/4" hair length							X	
d	Size 10, 1" hair length							X	

- STANDARD FOR : 1) If it is used in the curriculum.
 THE SELECTION OF THE ITEM 2) If it is in accordance with the contents of the school text.
 3) If it is included in the teacher training curriculum and thereby teachers will use the item.
 4) If it is actually already being used by teachers at existing schools.
 5) If it is not an expendable item.
 6) If it has no possibility of being taken outside school premises for personal use.
 7) If it presents no maintenance or management problems. Other reasons (if it may be replaced by other requested items, if the use of the item is limited, etc.).

List of Art Equipment (2)

ITEM No.	ITEM	STANDARD FOR THE SELECTION OF THE ITEM							NECESSITY	
		1	2	3	4	5	6	7		
A26	Artist's OIL BRUSHES, flat Red sable flat brushes, polished long handles, nickel									
a	Size 1F, 3/16" width, 5/8" hair length							X		
b	Size 2F, 1/4" width, 11/16 hair length							X		
c	Size 4F, 7/16" width, 13/16" hair length							X		
d	Size 8F, 13/16" width, 15/16" hair length							X		
A27	ARTIST'S PLASTIC ERASERS, Size: 2-1/2" x 7/16" Must be able to lift pencil sketch without disrupting surface finish of paper. 1 Dozen per box.							X		
A28	POSTER PAINT Sets, Six jars per set, 3/4 oz. Jar, consisting of one each : red yellow, green, white Nd black.							X		
A29	PLASTELS, a PLASTELS, Assorted Rainbow 24 different colors per box. b PLASTELS, Assorted Earthtone 12 different colors per box.							X		
A30	WATERPROOF BLACK INK, Drawing ink, thinable with water for washes, and suitable for air brushes. 1 oz. Bottles.							X		
A31	Linoleum Boods 4"x6" - 6"x8" - 12"x12"							X		
A32	Linoleum cutter Sets 30 sets							X		
A33	Printing rollers - rubbers 30 sets							X		
A34	Printin inks - yellow, Blue, Green Red, Black							X		
A35	Glazed papers - all colours							X		
A36	Mount Boards - grey or light brown							X		
A37	Acrylic colours - assorted colours							X		
A38	Tissue paper assorted colours							X		
A39	Glue Large size bottles							X		
A40	Oil painting Colours							X		
A41	Paper cutter							X		

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 5) If it is not an expendable item.
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 7) If it presents no maintenance or management problems. Other reasons (if it may be replaced by other requested items, if the use of the item is limited, etc.).

List of Music Equipment

ITEM No.	ITEM	STANDARD FOR THE SELECTION OF THE ITEM							NECESSITY
		1	2	3	4	5	6	7	
	1-5								
M 1	Side Drum	(Percussion)							○
M 2	Tenor Drum	(Percussion)							○
M 3	Bass Drum	(Percussion)							○
M 4	Melodica	With beater							○
M 5	Accordion								○
M 6	Cymbal	14"							○
M 7	Mouth Organ								○
	6-7								
M 8	Bass Drum	(Percussion)							○
M9	Side Drum	(Percussion)							○
M10	Cymbals	7" * 10"							○
M11	Traingles	With beater							○
M12	Tanbourines								○
M13	Clappers								○
M14	Bells								○
M15	Shakers								○
M16	Xylophone								○
M17	Mini Organ								○
M18	Piano								○
M19	Organ						x		○
M20	Recorders								○
M21	Metronome								○

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List of Health Equipment

ITEM No.	ITEM	STANDARD FOR THE SELECTION OF THE ITEM							NECESSITY
		1	2	3	4	5	6	7	
EE- 1	Medicine Chest							x	
EE- 2	Eye, Sight Test Chart								○
EE- 3	Sitting Height Measure								○
EE- 4	Auto, Weigh Scale								○
EE- 5	Height Measure								○
EE- 6	Haemadynao Meter with Stand								○
EE- 7	Stethoscope								○
EE- 8	Mouth Opener						x		
EE- 9	Set of 3 Pus Tray						x		
EE-10	Safty Chamber pot (Urinal)						x		
EE-11	Stretcher								○
EE-12	Clinical Thermometer					x			
EE-13	Measure					x			
EE-14	Storage Box (Chemicals)					x			
EE-15	Linen Set (Pillow with Cover, Sheet, Cage)					x			
EE-16	Anatomical chart						x		
EE-17	Nail Clipper						x		
EE-18	Matress Pad					x			
EE-19	Soap Dish With Stand (530 - 3211)						x		
EE-20	Pincette						x		
EE-21	Scissors						x		
EE-22	Scissor Set for Surgery (532 - 3412,3412)						x		
EE-23	First Aid Box					x			
EE-24	Cotton Roll (500 gm/pack)					x			
EE-25	Guaze					x			
EE-26	First Aid Bandage					x			
EE-27	Splint					x			
EE-28	Clinical Thermometer							x	
EE-29	Bowl					x			
EE-30	Cloths Basket with Stand					x			
EE-31	Taping Tape (36 roll / box)					x			
EF- 1	Surgical Sprit (100 cc / bottle)					x			
EF- 2	Tape Ban 10 x 15 cm					x			
EF- 3	Air Salompas, Spray					x			
EF- 4	Plaster (12 sheets / box)					x			
EF- 5	Flame loion (burn lotion)					x			
EF- 6	Optrex eye lotion					x			
EF- 7	Vision Eye drops					x			
EF- 8	Band Aid (150 sheets / box)					x			
EF- 9	Burnol					x			
EF-10	Aspirin					x			
EF-11	Glycerin 300cc					x			
EF-12	Ethyl spray					x			
EF-13	Soap					x			
EF-14	Towel					x			
EF-15	Small Towel					x			
EF-16	Itchy Lotion					x			
EF-17	Insect Spray					x			

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2-2-5 Appropriateness of Educational Furniture and Equipment

(1) Appropriateness of Items

Compared to the list of furniture in the existing schools, which was attached to the requested items list, the items and quantity requested do not conform to the facility contents and there seems to be excess and deficient items. Thus, only furniture and equipment that are absolutely necessary in school activity and comply to the use of each room will be selected.

(2) Appropriateness of Specification

The furniture for students and staff will be based on the standard design prepared by the MOE. As for furniture not included in the standard, they will be based on similar specifications. They should also be easily repairable and procurable. Equipment which is expensive or difficult to handle should be omitted.

(3) Appropriateness of Quantity

The quantity for each item will be based on the number of students using the item per class and the method of use stated in the Construction Plan. As the schools have a double shift system, furniture and equipment should be used both for the morning and afternoon classes. The MOE has stated that the classroom furniture for students should be adaptable to a future increase in student numbers and the request considers more than the basic allocated number of 30 students to a classroom. This will not be considered, as it is against the basic standard of the Project. Furthermore, an extra number of furniture and equipment will not be considered.

2-3 Basic Design

2-3-1 Design Concept

(1) Policy for Natural Conditions

- 1) In order to deflect strong sunshine during the mornings and afternoons, and to prevent southwesterly monsoon rains from getting into the classrooms, the building with normal classrooms should be located on an east-west axis.
- 2) Considering the hot and humid temperature, the rooms will be designed to allow as much ventilation as possible.
- 3) To prevent rain from getting in even with the windows open, there should be eaves or a balcony above the windows as well as appropriate sashes.
- 4) As the buildings may be affected by sea breezes, the use of steel even in furniture should be avoided as much as possible.
- 5) As reclaimed land will be used for the site, safety should be seriously considered through careful foundation works.
- 6) No air conditioning or heating systems will be installed.
- 7) There are no records of earthquakes and the area is omitted from the world's earthquake zones. However, from the point of view on safety, the buildings should be able to withstand a certain degree of lateral force.
- 8) In order to cope with the rise in the water level during the wet season, the ground floor of the building will be raised 700mm higher than the road surface.

(2) Policy for Social Conditions

1) Effective Use of the Site

In order to make effective use of the site on an island with high population density and in order to have as spacious a school as possible, the classroom building will have four floors. Due to the dense population, there is a shortage of space for

children to play and places to hold various activities. Thus, the roof top of the building will be used as a playground and a continuous pilotis will be installed in the school yard, so that it may be used for multipurpose.

2) Multipurpose Use of the School Facility

The Project school will be designed so as to cope with various extracurricular activities, such as extra curricular activities and use by local people.

3) Consideration for Religion

Considering the fact that the majority of Maldivians are Muslims, a prayer room and an ablution room will be set up.

4) Consideration for WID

Comparing to other countries have cultural background of Islamic, the position of women is high and there is practically no difference among the number of school boys and girls. The previous policy in secondary schools was to separate the girls and boys. Thus, public secondary schools were separated into boys and girls schools and private schools were also separated into morning and afternoon classes for boys and girls. However, primary schools are mixed and the teachers of both primary and secondary schools are also mixed. This is the most recent policy and the MOE states that the classes will be mixed even when the 6th and 7th grades are merged into the primary school system. Thus, the facility will be planned with co-education in mind.

5) Consideration for the Physically Disabled

In this Project, a slope and a toilet for physically disabled persons will be installed.

6) Use of Rainwater

Although Male' has recently been provided with a water supply system for drinking water, the rates are very expensive. Therefore, rainwater continues to be used as drinking water. In order to keep the running cost of the school low, a water supply system using rainwater will be considered.

(3) Policy for Construction Situations

1) Laws and Regulations concerning Construction

a) The Building Standards Act

In constructing buildings in Maldives, there are restrictions on the height of the building as well as its position in terms of the roads. Yet, there are no regulations similar to the Japanese Architectural Standards Specification. However, for this Project, the contents must be explained to the fire department, waterworks and sewer departments and the state-operated power company to receive permission.

b) School Construction Standards

There are no laws, regulations or standards in Male' with regard to school construction. When schools are to be constructed, the MOE entrusts the design of the school to the Ministry of Construction for Public Works, and the project is decided according to the representatives of both ministries.

2) Local Contractor

In densely populated Male', there is a mixture of one-storied houses and buildings with two to four floors. The old buildings are mostly constructed of coral blocks, however, due to the preservation of coral reefs in recent years, most of the construction is through reinforced concrete. In the northern part of the island along the coast, around 10 buildings (including those under construction) may be seen with maximum heights of 100 feet (around 30m).

There are five to six construction companies in Maldives that are capable of participating in the tender for big construction projects by the government. However, due to the small number of projects, these construction companies may possibly lack experience. Most of the foreign financed construction projects are performed by local companies, therefore, they are adequately capable of doing work as sub-contractors. The construction plan will be made with the use of local contractors in mind and with the use of local construction methods.

3) Local Expertise

Apart from individual architects, there are possibly four or five architectural offices in Male'. Three of these are organized by an architectural group currently

working for the Ministry of Construction for Public Works, and their standard is high. These expertise knowledgeable in local affairs will be asked to cooperate in the construction plan.

4) Construction Material

Maldives does not produce any raw materials for construction, nor does it have any facilities for producing construction related materials. Materials for construction such as cement, aggregate, reinforcing steel bars, aluminum sashes, finishing materials, including paints, and facility equipment are all imported from countries such as Sri Lanka, India, Singapore and UAE (Dubai). However, most of the high quality industrial products are imported from Singapore. This is due to the fact that exports, such as food products, are constantly being supplied through regular ships between Male and Singapore and the supply is reliable. The procuring of construction materials will be decided according to the cost, quality and future maintenance aspects.

5) Evaluation of Delivery Plan

The period between the start of construction to the delivery of reinforcement steel bars has great significance to the entire construction schedule. The shipment of cargo to Maldives is mostly through the sea route. Thus, in order that the construction will not be affected, the sea transportation schedule must be carefully planned. The time taken for the cargo to arrive from Sri Lanka, Singapore and India is 7-10 days, 20-25 days, and 5-7 days respectively. In order for these shipments to be delivered smoothly, care must be taken to prepare the necessary documents and procedures in advance. Cooperation with the Maldives ministries and agencies concerned is necessary for the customs clearance procedures at the port of Male'. As 100% of the construction material is imported, the time of delivery from the third country to the construction site must be carefully considered when preparing the shipment plan.

6) Labor

Although there has been a construction rush in Male' in recent years, most of the projects are small or medium sized in scale. The Maldives workers in these

projects are mediators or semi-skilled workers but the securing of skilled workers is difficult. Skilled workers are mostly from countries such as Sri Lanka, India and the Philippines. As the aim of this Project is to transfer technology to the Maldives side, Maldives workers will be fully utilized. The construction as a whole will be supervised and managed by Japanese engineers. Housing for the workers will be set up near the site, which has been provided by the MOE.

(4) Policy for the Maintenance and Management Capabilities of the Departments Concerned.

The plan of the facility should be set up so as to keep maintenance costs at a minimum. By having the local community participate in the Project, in preparing the site and constructing the walls, it is hoped that they will be more concerned about maintaining the school building in the future.

(5) Policy for Setting the Extent and Grade of the Facility and Equipment

The facility will be designed and the equipment plan will be prepared according to the conditions stated above while adhering to the basic policy, within the scope of Japan's Grant Aid Scheme.

Specifically, facilities to be constructed under the Project will be designed based on almost the same specifications applied to schools that were built in Male' by MOE and will be implemented under financial assistance from IDB. However, it is believed that the building standard under those specifications may lead to rusting at steel portions in the future. Thus, important steel portions of the Project school will be provided with anti-corrosion treatment. Considering maintenance ease and past records of procurement by the MOE, the equipment to be used will be the same as that widely used in the existing primary and secondary schools in Maldives. Equipment that may be easily procurable by agents in Male' will be chosen. As for school furniture and appliances, they will be supplied by the local furniture manufacturers, considering technical problems and ease of supply.

(6) Policy for Construction Schedule

Even though construction material is 100% imports, a single fiscal year, 12 months consisting, will be adequate for the construction of the Project school and procurement of equipment. However, the points that must be considered are the progress of work on the Maldives side and the delivery of material and equipment. Regarding the work to be done by the Maldives side, this will be confirmed at the detailed design stage. As 100% of the construction material will be imported, the plan must be specifically prepared with the delivery period of the material in mind.

2-3-2 Basic Plan

(1) Site and Arrangement Plan

Regarding the arrangement of the school buildings on the site, the effective use of the Project site which has been secured in such a densely populated island, is of utmost importance. The essential points are as follows:

- 1) By arranging the buildings along the boundary of the site, a quiet school yard may be secured, shielded from the roads and the neighboring areas.
- 2) Although the buildings will be constructed as close as possible to the boundary of the site in order to provide a spacious school yard, some space will be left open on the south side to provide natural lighting and ventilation.
- 3) In order to prevent strong sunlight from coming in during the mornings and afternoons, and to prevent southwestern monsoon rains in the wet season, the classroom building and sports hall which will be most affected will be arranged on a south to west axis.
- 4) The four-storied classroom building that was planned in order to provide more space for the school yard, will be arranged at the far end as it may be an oppressive sight.
- 5) As the road on the north side of the site is the island's principal road, the main entrance of the facility will be located on the northwest corner of the site. In

addition, taking into account traffic congestion that may be caused by parents coming to pick up their children after school, a second entrance will be built at the east side of the site.

- 6) For functional purposes, the management building will be arranged near the main entrance. As the hall will also be used by local people, it will also be arranged near the main entrance.

(2) Architectural Plan

1) Plan

The buildings that will surround the school yard will be arranged as stated in the Arrangement Plan, with the classroom building to the south; the sports hall to the north; the special room building to the east and the management building to the west. In order to have the moving line as short as possible in this courtyard type construction, a side corridor will be constructed on the school yard side and the window side of the rooms will face the road side. In planning the rooms, installation of a ventilation system will be considered due to the hot and humid climate. The stairs will be arranged on the four corners of the side corridor for convenience and more importantly, so that evacuation may be possible from both sides during emergencies. The plans for the main rooms are as follows:

a) Normal Classrooms

Based on local standards, the classrooms will be a 6m x 8m rectangular room. In order to shorten the distance between the teacher and students, the long side of the room will be the wall with a blackboard. The windows will be on the north and south sides to provide natural lighting and ventilation.

b) Special Rooms

The floor space for the four special rooms namely the art room, music room, science room and audiovisual room will be 70m², each with a 17m² preparation room for material and equipment storage. Considering the distance from the classrooms, two of these room will be located on the second and third floors next to the east side staircase of the four-storied classroom building.

c) Library

As the library requires a quiet atmosphere and as it needs to be arranged within easy access of the classrooms on all four floors, it will be arranged

independently on the third floor of the management building opposite the special rooms. A terrace with eaves will be constructed in order that the windows may be left open, even during the monsoon season. The area may also serve as an outdoor reading area during fine weather.

d) Hall

As the hall may be used by local people even during school hours, it will be arranged away from the classrooms, next to the main entrance on the first floor. The windows on the north and south will provide natural ventilation during the wet season. Paths will be installed on both sides of the stage so that people may enter from outside.

e) Administrative Offices

Administrative offices and related offices will be arranged on the first floor of the management building next to the main entrance, for easy entry and exit to the facilities, and for management and reception purposes.

f) Staff Room and Related Rooms

The staff room and related rooms will be conveniently situated on the second floor of the management building. The staff room will be arranged as close as possible to the classrooms. The supervisor's room will be arranged near the school yard so that the students' behavior may be observed. The principal and assistant principal's rooms will be arranged in a quiet area away from the school yard. The meeting room and counselling room will be arranged in the same manner.

g) Prayer Room

In order that both staff and students may use the prayer room, it will be arranged between the management building and classrooms, facing the corridor and surrounding the school yard. The shape of the room will be octagonal, with one of the walls facing Mecca. An ablution will be installed by the entrance of the room for cleansing.

h) School yard

The school yard will be the courtyard-like space surrounded by buildings. In order to enlarge the space of the school yard and for multipurpose use, the first

floor of the special room building will have an open pilotis on the same level as the school yard.

i) Rooftop Terrace

The rooftop of the special room building will be used as a terrace, approachable by two staircases. It will act as both a supplementary space for the inadequate school yard and also a hall, for sports and multipurpose use.

Table 2-7 Sixth Male' Primary School Project - Type and Size of Rooms

Name of Room	Quantity	Planned Size	Use and Number of People Concerned
GENERAL TEACHING AREA			
Classrooms	35	48 m ² /Class 1,716.39	Normal lessons (7 grades x 5 classrooms) 30 students per class, 1 teacher.
Art / Crafts Room	1		Arts & crafts lessons (all grades), Home economics (6 grades), 30 students per class (5 groups of 6), 1 teacher
Preparatory Room	1	90.23	To store equipment.
Music Room	1		Music lessons (all grades) 30 students per class, 1 teacher.
Preparatory Room	1	90.23	To store musical instruments .
Science Room	1		Science lessons (6-7 grades) 30 students per class (5 groups of 6), 1 teacher
Preparatory Room	1	90.23	To store chemicals and equipment. Preparatory room for assistant (1 permanent)
Audio Visual Room	1		Lessons using AV equipment , such as language and or environmental (1-5 grades). Multipurpose use .
Preparatory Room	1	90.23	To store educational texts and equipment
Library	1	100.51	Used as an ordinary library. Language (reading) lessons . 30 students per class, 2 librarians . Library to hold 3,000-4,000 books .
Hall	1		Sports lessons , school assembly , presentations . 1 basketball , 1 volleyball and 2 badminton courts . Part of the entire school (1,050) can stand inside and half of the students (525) and staff can be seated (600) . To be used locally for meetings , assemblies , parties and tests .
Stage	1		Drama lessons , school assembly , presentations .
Store	3	573.75	To store sports equipment .
Subtotal		2,751.57 m ²	

Name of Room	Quantity	Planned Size	Use and Number of People Concerned
ADMINISTRATIVE AND STAFF SPACE			
Lobby	-	Included in corridor.	Entrance to office and staff room. Notice wall.
General Office	1	132.78	For general office staff. 2 secretaries, 2 accountants Desks for 8 office staff. Table for 1 printing staff, 1 janitor, 2 messengers, and 5 cleaning staff.
Administrator's Room	1		1 administrator. To keep a safe etc.
Print Room	1		To install a printer. To store paper and stationery.
Pantry	1		Pantry for office staff. Sink and cooking stove.
Staff Meeting Room	1	20.48	To hold a total of 14 people, to include 1 principal, 2 assistant principals, 8 supervisors and 1 administrator.
Principal's Office	1	43.79	Principal's office (1)
Toilet	1		Private toilet.
Secretary's Room	1		Secretary's room for principal & assistant principals. Desks for 2 secretaries (1 in the morning and 1 in the afternoon)
Ass. Principal Office	1		Desks for assistant principals (1 in the morning and 1 in the afternoon).
Staff Room	1	169.49	Room for teaching staff. To hold 52 people for each shift. Table and personal lockers.
Teaching Aids	1		To store teaching aids and materials.
Tea Room	1		Pantry for teaching staff. Tea room. To hold around 10% of the staff (5 people).
Supervisor's Room	1		50.89
Subtotal		417.43 m ²	

Name of Room	Quantity	Planned Size	Use and Number of People Concerned
ANCILLARY SERVICE SPACE			
Counselling Room	1	11.38	To be used for counselling students. Counsellor (1)
First Aid Room	1	14.03	Emergency treatment of minor injuries and sickness. To conduct physical measurements. Nurse (1).
Sports Store	1	38.62	To store outdoor sports equipment, outdoor equipment and cleaning tools.
Storage	1		Storage beneath staircase. To store documents.
Prayer Room	1	53.02	Islamic prayer room. Lesson on Koran. Extracurricular activities. Ablution to be located outside.
Staff Toilet	2	300.62	Separate men / women toilets. Office staff (1st floor), Teaching staff (2nd floor).
Student Toilet	8		2 locations in classroom building. Water fountain. 1 toilet for physically disabled persons (ground floor).
Sports Hall Toilet	1		For people using sports hall and sports ground. Feet washing area.
Machine Room	1	31.91	Install water supply pump.
Electric Room	1		Install transformer.
Quiet area (pilotis)	1	1,847.37	To outdoor ordinary classes and athletic classes during rainy days
Circulation	-		Corridor, stairs, pilotis.
Subtotal		2,298.95 m ²	
Grand total		5,467.95 m ²	

2) Sectional Plan

a) First Floor Level

In order to prevent flooding during heavy rainfall, the first floor level will be 1m higher than the road level. In order to prevent rain from getting into the rooms through the corridors, the floor of the rooms will be 50mm higher than the corridor level.

b) Ceiling Height

The standard ceiling height of each building will be 3.5m. In order to prevent temperature rise in the rooms, the ceilings will be set high, which will create a favorable educational environment within the 50 to 70 m² floor space.

c) Slab Structure

By having the floors constructed of reinforced concrete slab, it will provide sound insulation. On the top floors in particular, it will provide adequate heat insulation of the roof.

d) Roof Type

Apart from the flat roof where the rooftop will be used, the other roofs will be a gable roof provided with sheet metal. This is appropriate in wet climate areas and areas where rainwater is used.

e) Eaves

In order to prevent strong sunlight from coming into the rooms, and to have the windows open to provide natural ventilation during the wet season, eaves will be installed over the windows.

3) Structural Plan

a) Ground Condition

The Project site is a 60m square flat reclaimed land located near the coast. Boring tests were conducted on a total of four corners of the site to the depths of 10m, with the standard penetration tests (SPT) at 1m intervals. The N values of the SPT test were in the range of 6 to 18 at around GL-1m, increasing with depth to the range of 10 to 21 at 2m, 10 to 26 at 3m and 20 to 30 at over 4m. The soil, was compacted sandy soil, mostly composed of weathered coral with coral conglomerates. All the bored samples showed no difference and there were

no pieces of rubble or corroded metal pieces that are typically seen in reclaimed land. The water level of the bored hole was not deep, being around GL-0.4 to 0.9m.

b) Foundation Type

The Project facilities consist of a four-storied reinforced concrete classroom building, a three-storied special classroom building, a three-storied (partly two-storied) management building and a single-storied sports hall, with the maximum weight of the building being around 5 t/m². The allowable bearing stress of the bearing ground according to the N value of the boring test, is estimated to be around 8 t/m² to 10 t/m² and the buildings may be directly constructed on the bearing ground. Thus, the foundation type will be a continuous footing foundation or independent footing foundation. As the ground water level is low, the foundation depth will be around 1m from the ground surface.

c) Allowable Bearing Stress

To the south of the Project site, there is a 25m long warehouse standing in an east to west direction along the border of the site, where cement, LPG tanks and gravel are stored. Furthermore, the open space to the north of the site is used as a stock pile space for sand and gravel. Thus, the ground of the site can be said to have been always surcharged with a heavy load. In particular, the southern part of the site where the four-storied classroom building is to be built, was stocked with large amounts of cement bags and the N value at GL-1m showed a high value of 18 to 26. Thus, the allowable bearing stress for building construction will be set at the values shown below, for the classroom building and other buildings:

Classroom building:	10 t/m ²
Other buildings:	8 t/m ²

The above values are estimated values from the N values. The final values shall be obtained from the plate bearing tests to be conducted before the start of construction work.

d) Building Structure Type

The Project site of Maldives is located to the south of India and to the west of Sri Lanka, with practically no seismic activities. As the only lateral force that needs to be considered in designing the buildings is the wind, the structures will

be a reinforced concrete rigid frame structures. To resist the lateral force, the walls will be a non-bearing concrete block structure. Although the local concrete walls are usually of solid concrete blocks, the blocks used for the Project will be hollow concrete blocks considering both resistance and lightness. The following are the structural types for the various buildings:

- ① Management Building: Three-storied (Partly two and single-storied)
Reinforced concrete rigid frame structure
Wall: Hollow concrete blocks (non-structural)
- ② Classroom Building: Four-storied
Reinforced concrete rigid frame structure
Wall: Hollow concrete blocks (non-structural)
- ③ Special Classroom Building: Three-storied
Reinforced concrete rigid frame structure
Wall: Hollow concrete blocks (non-structural)
- ④ Sports Hall:
Short side: Single-storied
Column: Reinforced concrete independent columns
Beam: Steel-frame lattice structure
End portion: Reinforced concrete structure
Wall: Hollow concrete blocks
Long Side: Reinforced concrete rigid frame structure
Wall: Hollow concrete blocks

e) Standards to be Conformed

The structural design of the Project facilities should conform to the Japanese Architectural Design Standard. However, the Japanese standard is based on the probability of large earthquakes and if the reinforced concrete columns based on this standard are used, in this case the sections of the columns will be too large and uneconomical. Thus, the design of the columns will be based on the American Concrete Institute (ACI) Standard. The standards to be conformed to are as follows:

- ① Japan Society of Architectures: Reinforced Concrete Structure Design Standard

- ② Japan Society of Architectures: Steel Structure Design Standard
- ③ ACI: Building Code Requirement for Reinforced Concrete (ACI 318)

f) Materials to be Used

- ① Concrete: Compressive strength $f_c = 210 \text{ kg/cm}^2$ or 180 kg/cm^2 (in case of a 4-sided cylinder strength). If the SO_4 content in the soil and the ground water are higher than the standard amount, sulfate resisting cement will be used and the water-cement ratio should be less than 50%.
- ② Reinforcing bar: $d \geq 16\text{mm}$ Yield Strength $f_y \geq 4,000 \text{ kg/cm}^2$
 $d < 16\text{mm}$ Yield Strength $f_y \geq 2,800 \text{ kg/cm}^2$
- ③ Steel frame: Yield Strength $f_y \geq 2,400 \text{ kg/cm}^2$
- ④ Concrete block: JIS A5406 Equivalent to Type A

g) Design Load

The structural design shall be prepared according to the following design loads:

- ① Live load capacity

Table 2-8 Live load Capacity

Structure Portion	Small Beam	Structure & Foundation
Trussed Saddle Roof	60	30
Flat Roof	80	60
Terrace and Corridor	230	180
Floor	230	210
Library	400	300

- ② Seismic Load: Not to be considered.
- ③ Wind Load: 100kg/m^2 (equivalent to the maximum wind velocity of 40m/sec.)

4) Facility Plan

a) Electrical Facilities

- ① Power Transformer Facility

A power room will be built up on the southeastern part of the building and 11 KV power will be received. A power transformer will be installed in the power room and 3 phase 4 wire 400V/230V power will be distributed in the Project buildings.

② Main Power Line

Conforming to BS Standards (British), the power will be supplied from the power room to the distribution panel of each building through wire conduits.

③ Electrical Equipment

Power will be supplied by the following equipment:

Well water pump: 1 set of automatic alternating two pumps, 2 locations

Ground water pump: 1 set of automatic alternating two pumps, 2 locations

The pumps will be installed in the pump room beneath the stairways located on the east and west side of the classroom building. As the pump room is constructed 1m higher than ground level, a drainage pump will not be installed in the pump room.

④ Lighting Fixtures

The lighting fixtures will be directly installed on the ceiling (the pipe hanging method will not be used because of rusting). Fluorescent lamps will be used. The luminous intensity will be based as follows:

Classroom, special room, library:	200 to 300 Lux:	Desk level
Prayer room:	200 to 300 Lux:	Floor level
Staff room and offices:	250 to 350 Lux:	Desk level
Sports hall/School hall:	250 to 350 Lux:	Floor level
Corridor and Pilotis:	30 - 50 Lux:	Floor level

For night use, an exterior light will be installed by the main entrance, near the bicycle stand area. For the sports and school hall, spotlights (additional work) and hanging fixtures will be installed. Base lighting will be installed on the stage ceiling to lighten up the stage. Power outlets will be installed on the stage for footlights (additional work). Outlets will also be installed in the catwalk for movable spotlights.

⑤ Power Outlets

Outlets will be installed in all the rooms. Outlets will be installed in the special classroom for electrical appliances (supplementary load). An AC power supply and sleeves will be installed in the principal's room, assistant principal's room, administrator's room, audio-visual room and the science room. Two electric portable stoves will be installed in the pantry of the office and staff room and power will be supplied.

⑥ Announcing System

An announcing equipment system will be installed for the announcement of school matters and chimes for the beginning and ending of lessons. The speakers will not be installed in the classrooms but in the exterior corridors.

The announcing equipment will be installed in the office. Special announcing equipment will be installed in the sports hall (including a microphone and a wireless microphone). Furthermore, this equipment may be linked to a stereo. Amplifiers will be placed on the wings of the stage.

⑦ Telephone Equipment

Telephone outlets will be installed in the office, head officer's room, principal's room, secretary's room, supervisor's room, meeting room and staff room (additional work). Conduits for telephone wires will be installed to each room. A telephone switchboard will be installed in the office (additional work).

⑧ Lightning Rod

A lightning rod conforming to BS standards will be installed.

b) Water Supply, Drainage and Sanitary Facilities

① Well Water Facility

Two wells will be bored within the site (costs to be borne by the Maldives side). The two pumps will be operated automatically and alternately. The water will be stored in an elevated tank (well water use: 2 locations on the east and west) and will be used for flushing the toilets and washing the dishes in the staff room kitchenette.

② City Water Supply Facility

Rainwater will be generally used, with city water as a supplement during dry weather. A water storage tank will be installed in the pit area under the floor (use of building structure). Two pumps will be operated automatically and alternately, storing the water in the elevated water tank and supplying the water to the taps.

Rainwater will be collected from the eaves trough of each building. In order to exclude the first drops of rainwater, a stop valve will be installed on the

edge of the eaves trough. The city water will be brought in from one location on the site and the meter will be installed by the Maldives side. The water tank will store both rainwater and city water.

A purifier (paper filter is available locally) will be installed in the drinking fountain and kitchenette. Water will be supplied to the ablution, next to the prayer room.

③ Drainage System

Sewage and waste water will be directly discharged into the sewer line under the road on the east and west side of the site through different routes.

④ Sanitary Facility

Although the toilet bowls for the student's and staff toilets will be basically Asian type toilet bowls, there will be one western type for the boys' and girls' toilets. The toilets will be flushed by the water in the tank in each booth (well water). Each booth will be equipped with a Moslem shower. City water will be supplied for this device.

A total of five sinks will be installed for the science laboratory and art room, to be supplied by tap water. A sink will also be installed in the kitchenettes of the office and staff room. Both well water and city water will be supplied.

⑤ Ventilation System

Ventilation systems will be installed in the following rooms:

- Power room: Class 3 ventilation

Pump room: Class 3 ventilation

Toilet for principal's room: Class 3 ventilation

Ventilation systems will not be installed in the toilets and kitchenettes.

⑥ Ceiling Fan

Ceiling fans will be installed in each room, as well as the sports/school hall.

5) Building Material Plan

The type of finishing work to be adopted for the Project buildings, reason for the adoption, and the comparison with the local methods are listed in the following table:

Table 2-9 Adopted Building Methods and materials

Building Portion		Adopted Method or Materials	Reason for Adopting
Foundation		Reinforce Concrete	Following to local method
Columns & Beams		Reinforce Concrete	Ditto
Floor	Structure	Reinforce Concrete	Ditto
	Finish	Mortar trowel finish	Ditto
Exterior Wall	Structure	Reinforced concrete block	Ditto
	Finish	Paint on mortar	Ditto
Roof	Structure	Reinforce Concrete	Durability / Heat insulation
	Finish	Aluminum-Zinc steel sheet	Durability / Anti-corrosion
Ceiling		Paint on mortar	Ditto
Interior Wall		Paint on mortar	Ditto
Windows		Aluminum window frame	Ditto

(3) Equipment Plan

1) Educational Equipment

Educational equipment to be provided for the project school is listed in the following tables;

Table 2-10 Educational Equipment list

List of Science Equipment (1)

	Items	Specification	Number		Purpose of Use	Requested	
			Reason	QTY		No.	QTY
1	4mm plugs	L= 250mm red (connection wire)	G5/T5	30	Study of electricity	S1	30
2	4mm plugs	L= 250mm yellow (connecting wire)	G5/T5	30	Study of electricity	S2	30
3	4mm plugs	L= 250mm black (connecting wire)	G5/T5	30	Study of electricity	S3	30
4	Acrylic blocks, rectangular	114 × 65 × 17mm	G1/T 1	6	Propety of light	S4	5
5	Acrylic blocks (prism)	59 mm 60° 60°, 60°	G1/T 1	6	Propety of light	S5	12
6	Ammeter	Dual range 0A -5A	G2/T2	12	Study of electricity	S7	12
7	Balance	200g mass set	G1/T 1	6	Measurement	S9	7
8	Bar magnets	Chrome Steel L=100mm	G2/T2	12	Physical process	S11	12
9	Beaker	Pyrex 100ml	G1/T 1 ※	12	Science basic use	S12	12
10	Beaker	Pyrex 250ml	G1/T 1 ※	12	Science basic use	S13	12
11	Beaker	Pyrex 600ml	G1/T 1 ※	12	Science basic use	S14	12
12	Bell jar	H=300mm D=200mm	T1	1	Study of respiration	S15	1
13	Bi-metallic strip	Brass & steel, 200 × 15 × 1mm with handle	T 1	1	Heat & expansion	S16	1
14	Boss for retort stand	120m × 30mm	G2/T2	12	Basic use for science	S17	12
15	Bulbs	1.5v with holders	G2/T2 ※	24	Electricity	S18	24
16	Butane burner	Portable, weight =220g	G1/T2	7	Heating	S19	7
17	Clamp	250 (L) × 90 (J) × 8 (D)	G2/T2	12	Science basic use	S20	12
18	Concave lens	D=50, F=200mm	G1/T1	6	Propety of light	S22	6
19	Conical flask	Capacity = 250ml	G1/T1 ※	12	Basic use for science	S23	12
20	Convex lens	D=50, F=200mm	G1/T1	6	Propety of light	S24	6
21	Crocodile clips	D= 4mm	G10/T10	60	Electricity	S25	60
22	Max. & min. thermometer	50 × 10 × 4cm	1/SCI room	1	Instrument for measuring temperature	S26	2
23	Deflagrating spoon	L=150mm without needle	T 1	1	Combustion of chemical	S27	1
24	Droppers	D=1.7 cm L=110mm	G6/T6 ※	72	Science basic use	S28	72
25	Evaporating basin	D= 90mm	T 1	1	Heating & evaporating	S29	1
26	Filter flask	250 cc Stopper =33	T 1 ※	2	Basic use for science	S31	2
27	Foeccepts	L=110mm blunt end	T 1	1	Biology observation	S32	2
28	Funnel	D=89mm polythene	G2/T2	12	Filtration and other use	S33	12
29	Glass Rod	D= 5 L=250mm	G1/T1 ※	12	String use	S35	12
30	Glass tube	D=5mm 30/pack	G3/T3	1	Set up for basic exp.	S36	18
31	Helical Spring	D=37mm L=32mm	G1/T1	6	Study of weight	S37	8
32	Magnifying glass	D=63mm L=145mm	G1/I	6	Bio Observation	S40	6
33	Mass set	100g case	G1/T1	6	Force & materials	S41	6
34	Mass set	10g case	G1/T1	6	Force & materials	S42	6
35	Measuring cylinder	100ml polypropylene	G1/T1	6	Measurement	S43	6

List of Science Equipment (2)

	Items	Specification	Number		Purpose of Use	Requested	
			Reason	QTY		No.	QTY
36	Measuring cylinder	10ml polypropylene	G1/T1	6	Measurement	S44	6
37	Measuring cylinder	250ml polypropylene	G1/T1	6	Measurement	S45	6
38	Measuring Tape	L=2m W=13mm	G1/T1	6	Measuring an object	S46	6
39	Microscope mini	× 40, × 100, × 400	G1/T1	6	Observation	S48	6
40	Molecular model set	oxygen, water, CO ₂	T 1	1	Study of molecules	S49	1
41	Mortar pestles	Porcelain D=11cm	T1	1	To grind into powder	S52	1
42	Newton meter	0-10N	G1/T1	6	Study of weight force	S53	6
43	Newton meter	0-50N	G1/T1	6	Study of weight force	S54	6
44	Plane mirror	Plastic 100mm × 100mm	G1/T1	6	Study of light	S55	6
45	Plotting compass	D=20mm	G1/T1	6	Study of magnetic force	S56	6
46	Dry cell holders		G3/T3	18	Electricity	S57	8
47	Round bottom Flask	Pyrex 250ml	G1/T1 ※	12	Basic use for science	S59	2
48	Rubber tube	D= 5mm L=12m	G1/T1	1	Basic use for exp.	S60	7
49	Safety Spectacles	Middle school students	Stud.1/T1	31	To protect students' eyes	S61	5
50	Scalpels	L=113mm Blade=45mm	T1	1	Study of a plant	S62	1
51	Slide	76,26, 0.8-1.0 100,box	G1/T1	1	for microscope	S63	2
52	Slide cover	18mm, 18mm, 100,box	G1/T1	1	for microscope	S64	2
53	Spatula	Stainless steel L=100mm, W=4	G3/T3	18	Basic use for reagent	S65	8
54	Stands retort	Base 250 × 160mm, Rod l=60cm	G2/T2	12	Basic use for exp.	S66	2
55	Stopper	Size 21mm	G1	5	For an experiment	S67	5
56	Stopper	Size 21mm one hole	G1	5	For an experiment	S68	5
57	Stopper	Size 31mm one hole	G1/T1 ※	12	For an experiment	S69	2
58	Stopper	Size 31mm two holes	G1/T1 ※	12	For an experiment	S70	2
59	Syringe	Plastic 100ml	G1/T1 ※	12	Study of pressure	S71	2
60	Test tube holders	wooden L=180mm	G1/T1	6	To hold a test tube	S73	6
61	Test tube rack	12holes	G1/T1	6	To keep test tubes	S74	6
62	Test tube	Pyrex 150 × 16 mm	G6/T6 ※	72	Science basic use	S75	2
63	Test tube	Pyrex 150 × 24 mm	G6/T6 ※	72	Science basic use	S76	2
64	Thermometers	Red spirit, - 10 ~ 110 °C	G1/T1	6	Science exp. use	S77	2
65	Tile	L=150, W=150 white	G1/T1	6	Observation of a plant	S78	6
66	Tongs	Brass L= 200	G1/T1	6	Heating Experimental use	S79	6
67	Tripod stand	H= 200, Side125mm	G1/T1	6	Heating experimental use	S80	6
68	Voltmeter	0-15v	G2/T2	12	Study of electricity	S82	6
69	Wall thermometer	- 30 ~ 50 °C wooden case	l/sci room	1	To observe temperature	S83	5
70	Watch glass	D=80	G1/T1	6	To put chemical	S84	6
71	Wire gauze	L = 150, W = 150 ceramiccenter	G1/T1 ※	12	Heating experimental use	S85	2
72	Test tube brush	L=200	G1/T1	6	Cleaning a test tube	--	--

- NOTE) 1 For the items with the sign of ※ in column 3, extra (twice as many as calculated based on the column of the reason) is held,
 2 Though any test tube brush is not requested, it is definitely needed to clean the test tubes. Therefore, NO.72 is added in the listed above.

List of Social Studies & Environmental Education Equipment

	Items	Specification	Number		Purpose of Use	Requested	
			Reason	QTY		No.	QTY
73	Globe	Political 300mm	1/School	1	Geographical study	SE1	3
74	Globe	Physical Relief 300mm	1/ School	1	Geography	SE2	3
75	World map	1130 × 1300mm	1/School	1	Geography	SE6	3
76	Basic Celestial Globe	D=300mm	1/ School	1	Constellation	SE8	1

List of Mathematics Equipment

	Items	Specification	Number		Purpose of Use	Requested	
			Reason	QTY		No.	QTY
77	Area work with square cm	25 × 25cm 2/pack	1/ School	1	Concept of area	MA1	5
78	Centicube	Wooden 1cm cubes 1000 base 10 cube	1/ School	1	Concept of volume	MA2	5
79	Classroom clock face	D = 350mm	1/ School	1	Study of time	MA3	2
80	Clock face Rubber Stamp	D=5cm with stamp ink	Stud2	15	Study of time	MA4	100
81	Geometrical model set	Wooden, 27shapes (9 different shapes)	1/ Stud	1	Concept of shape	MA6	5
82	Giant protractor	Plastic D=60cm	1/Grade	7	Study of angle	MA9	3
83	Giant ruler	Acrylic resin L=1m	1/Grade	7	To draw a straight line	MA10	5
84	Giant compass	Aluminum L=60cm	1/Grade	7	Blackboard use	MA11	5
85	Multi-shape liter set	5 containers	1/School	1	Volume of liquid	MA13	10
86	Giant set square	Wood 45° & 60° ,30° Side=60cm	1/School	7	Study of angle	MA14	10
87	Netwight general Purpose registering 5kg	Capacity 5kg,	1/School	1	Weight	MA15	5
88	Geoboard	225 × 225 11 × 11pins	GI/TI	6	Study of polygon	MA16	5
89	Visual fraction apparatus	Wooden, from 1 to 1/12 SIZE 100 cm × 60cm	1/ School	1	Concept of Fractions	MA23	5

List of Physical Education Equipment

	Items	Specification	Number		Purpose of Use	Requested	
			Reason	QTY		No.	QTY
90	Floor Mat	1.2m × 6m × 50mm	2 / 15 Stud	4	Basic tumbling	EA1	4
91	Spring board	55cm × 100cm × 20cm	1 / 30 Stud	1	For vaulting box	EA5	3
92	Vaulting box (junior)	8 section	1 / 30 Stud	1	Jump with leg parting	EA6	1
93	Balance beam	Wooden, W=10cm height = changeable	1 / 30 Stud	1	Balancing	EA7	1
94	Foot ball	Mini goal 3m × 2m	1 / 30 Stud	1	Study of foot boal	EA13	1
95	Volley ball posts	Net , antennae, post covers	1 / 30 Stud	1	Study of volley ball	EA19	2
96	Volleyball judge stand	H=1.5 - 1.8m	1/school	1	For a judge	EA22	1
97	Net ball posts	H=2.4-3m D=50mm one set with nets & rings	1 / 30Stud	1	Study of net ball game	EA27	2
98	Relay batons	L=300 D=32 6 different colore	5/ 30 Stud	1	Baton pass	EA46	7
99	Badminton Posts	D=50mm net	1 / 15 Stud	2	Study of badminton	EA61	4
100	Table tennis table	T=19mm	1 / 15 Stud	2	Study of Table tennis	EA68	4
101	Table tenis post	With net	1/ 15 Stud	2	For teble tennis table	EA69	8
102	Basketball goal	Goals & nets	1 / School	1	Study of basket ball	EA40	3
103	Ball cabinet	1.3m × 0.3m × 1.5m	1/ School	1	Storage of ball for hall use	EA92	2
104	Ball cabinet	Wheelaway 700 × 800 × 1020mm	1/ School	1	Storage of balls for ground use	-	-
105	Scoring unit	Table top	1/ School	1	Scoring	EA23	5

List of ART Equipment

	Items	Specification	Number		Purpose of Use	Requested	
			Reason	QTY		No.	QTY
106	Drawing Board	Board 45 × 60 ×	1/Stud	30	Drawing a picture	A8	40
107	Display board *	1800 × 900 , pole (4) Stabiliser foots (4)	1/2 group	3	Display students' work	A13	8

List of Music Equipment

	Items	Specification	Number		Purpose of Use	Requested	
			Reason	QTY		No.	QTY
108	Side Drum	35 × 14cm stand, sticks	2/class	2	Study of percussion instrument	M1	4
109	Tenor Drum	30 × 20 3kg belt, stick	2/class	2	Study of percussion instrument	M2	2
110	Bass Drum	46 × 25 belt, stick	2/class	2	Study of percussion instrument	M3	2
111	Melodica	Alto 32 keys	SI/TI	31	Study of melody and notes	M4	20
112	Accordion	Junior size 27 keys	2/class	2	Study of melody and notes	M5	4
113	Cymbals	D= 24cm	1/class	1	Study of percussion instrument	M6	2
114	Mouth organs	Soprano 32 keys with case	SI/TI	31	Study of melody and notes	M7	40
115	Bass Drum	56 × 25cm belt, stick	2/class	2	Study of percussion instrument	M8	1
116	Side Drum	30 × 20cm 2.8kg belt, sticks	2/class	2	Study of percussion instrument	M9	4
117	Cymbals	D=18cm	1/class	1	Study of percussion instrument	M10	2
118	Cymbals	D=30cm	1/class	1	Study of percussion instrument	M11	2
119	Triangle	L=21cm with a beater	6/class	6	Study of rhythm	M12	12
120	Tambourines	D= 21cm with 6 jingles	6/class	6	Study of rhythm	M13	20
121	Clappers	Wooden castanets	6/class	6	Study of rhythm	M14	8
122	Bells	Jingle stick 32.5 × 2cm	6/class	6	Study of rhythm	M15	12
123	Xylophone	Soprano chromatic 22keys	6/class	6	Study of melody and notes	M16	1
124	Mini organ	61keys (electric 220v)	1/music room	1	Teacher's use	M17	1
125	Piano	Electric 88keys (220v)	1/hall	1	Teacher's use	M18	2
126	Recorders	Soprano with carrying case	SI/FI	31	Study of melody & notes	M20	40
127	Metronome	40-208 beat/min	1/music room	1	Study of rhythm	M21	2

List of Clinic Equipment

	Items	Specification	Number		Purpose of Use	Requested	
			Reason	QTY		No.	QTY
128	Eye sight test chart	Distance=5m ring pattern	1/Health room	1	Eye sight test	EE02	1
129	Sitting height measure	Sitting Height 40 ~ 110cm	1/Health room	1	Physical examination for students	EE03	1
130	Weight scale	Auto weight scale, calibrated 200g	1/Health room	1	Physical examination for students	EE04	1
131	Height measure	Range 75 ~ 200cm	1/Health room	1	Physical examination for students	EE05	1
132	Haemadynamo meter	Range 0-300mmHg with stand	1/Health room	1	For blood pressure	EE06	1
133	Stethoscope	80cm	1/Health room	1	For item No. 132	EE07	1
134	Stretcher	Aluminum with casters 54cm × 203cm	1/Health room	1	For emergency use for a sick student	EE11	1

2) Educational Furniture and Equipment

Furniture to be provided for the Project school is listed in the following table.

Table 2-11 Furniture to be provided under the project

NAME OF ROOM	No.	Educational Furniture	No.	Size(W*D*H)	Notes
Classrooms(1 ~ 35)	35	Student's Desk (L:Grade 6,7)	30	600* 400* 720	For Two Students For Two Students
		(M:Grade 3,4,5)	15	1100* 450* 490	
		(S:Grade : 1,2)	15	1000* 400* 440	
		Student's Chair (L:Grade 6,7)	30	340* 430* 665	
		(M:Grade 3,4,5)	30	310* 445* 588	
		(S:Grade : 1,2)	30	300* 418* 540	
		Student's Cabinet	3	1800* 400* 900	
		Teacher's Chair	1	390* 450* 920	
		Teacher Table	1	1200* 600* 760	
		Teacher's Cabinet	2	1200* 450* 1875	
		Blackboard	1	3600* 125* 1200	
Signboard	2	1800* *1500			
Art / Crafts Room	1	Student's Table (For 6students)	5	3000* 900* 850	
		Student's Stool	30	300* 300* 420	
		Teacher's Desk	1	1200* 600* 760	
		Teacher's Chair	1	390* 450* 920	
		Cabinet	1	1200* 450* 1800	
		Blackboard	1	3600* 125* 1200	
		Signboard	2	1800* *1500	
Counter, Sink	5		For Washing		
Preparatory Room	1	Built-in Shelves			
Music Room	1	Student's Desk	30	600* 400* 580	
		Student's Chair	3	360* 360* 420	
		Teacher's Chair	1	390* 450* 920	
		Teacher's Desk	1	1200* 600* 760	
		Cabinet	1	1200* 450* 1800	
		Blackboard	1	3600* 125* 1200	
		Signboard	2	1800* *1500	
Preparatory Room	1	Built-in Shelves			
Science Room	1	Student Table (For 6students)	5	3000* 900* 850	
		Stool	31	300* 300* 420	
		Demonstration Table	1	2400* 900* 850	
		Cabinet	1	1200* 450* 1800	
		Blackboard	1	3600* 125* 1200	
		Signboard	2	1800* *1500	
		Counter, Sink	5		
Preparatory Room	1	Teacher's Desk	1	1200* 600* 760	
		Teacher's Chair	1	390* 450* 920	
		Cabinet	3	1800* 450* 1800	
		Chemical Refrigerator	1		

NAME OF ROOM	No.	Educational Furniture	No.	Size(W*D*H)	Notes
Audio Visual Room	1	Student's Desk	30	600* 400* 580	
		Student's Chair	30	360* 360 *420	
		Teacher's Chair	1	390* 450* 920	
		Teacher's Desk	1	1200* 600* 760	
		Cabinet	1	1200* 450*1800	
		Blackboard	1	3600* 125*1200	
		Signboard	2	1800* *1500	
		Blackout Curtain			
		Video Projector	1		
		Screen	1	3600* *2700	
Preparatory Room	1	Built-in Shelves		* 600	
Library	1	Reading Table (For 6persons)	5	1800* 750* 700	
		Reading Chair	30	360* 360* 420	
		Book Shelf	10	1800* 350*1800	
		Magazine Rack	1	700* 450*1000	
		Counter	1	1800*1200* 750	
		Librarian's Table	2	1200* 600* 760	
		Librarian's Chair	2	390* 450* 920	
		Cabinet	2	1200* 450*1800	
Hall	1	Steel Folding Chair	600	462* 440* 735	
Stage	1	Speech Desk	1	880* 650*1470	A Set For Stage Lighting & Setting
		Folding chair's Carrier (For 80)	8	1000*4050*752	
		Drop Curtain	2		
		Batten			
Store Lobby	3	Built-in Shelves		* 600	
		Signboard	4	1800* *1500	
General Office	1	Office Desk	12	1000* 700* 700	
		Office Chair	12	390* 450* 920	
		Cabinet	12	1200* 450*1800	
		Staff Table (For 3persons)	2	1500* 750* 750	
		Staff Chair	6	390* 450* 920	
		White Board	2	2400* 120*1200	
Administrator's Room	1	Administrator's Desk	1	1400* 800* 700	
		Administrator's Chair	1	680* 700* 900	
		Book Shelf	1	900* 450*1800	
		Locker	1	600* 450*1800	
		Chair (For Guest)	2	390* 450* 920	
Print Room	1	Built-in Shelves		* 300	
Pantry	1				
Staff Meeting Room	1	Meeting Table (For 3persons)	4	1500* 750* 750	
		Chair	14	390* 450* 920	
		White Board	1	2400* 120*1200	

NAME OF ROOM	No.	Educational Furniture	No.	Size(W*D*H)	Notes
Principal's Room	1	Receiving Furniture Set Principal's Desk principal's Chair Book Shelf Locker	1 1 1 1 1	1600* 800* 700 680* 700* 900 900* 450*1800 600* 450*1800	
Toilet	1				Mirror etc.
Secretary's Room	1	Office Desk Office Chair	2 2	1000* 700* 700 390* 450* 920	
Ass. Principal's Room	1	Ass. Principal's Desk Ass. Principal's Chair Book Shelf Locker Chair (For Guest)	2 2 2 2 4	1600* 800* 700 680* 700* 900 900* 450*1800 600* 450*1800 390* 450* 920	
Staff Room	1	Staff Table (For 3persons) Staff Chair Staff Locker (For 16persons)	18 54 7	1500* 750* 750 390* 450* 920 1200* 400*1850	
Teaching Aids	1	Built-in Shelves		* 600	
Pantry	1	Staff Table (For 3 Persons) Staff Chair Refrigerator	6 6 1	1500* 750* 750 390* 450* 920	
Supervisor's Room	1	Supervisor's Desk Supervisor's Chair Book Shelf Locker	8 8 8 8	1400* 800* 700 680* 700* 900 900* 450*1800 600* 450*1800	
Counselling Room	1	Counsellor's Desk Counsellor's Chair Cabinet	1 3 2	1000* 700* 700 390* 450* 920 1200* 450*1800	
First Aid Room	1	Health Assistant's Desk Health Assistant's Chair Cabinet Stool Steel Bed	1 1 2 2 1	1000* 700* 700 390* 450* 920 1200* 450*1800 ϕ 300* 450 2050* 910* 750	
Sports Store	1	Built-in Shelves		* 600	
Storage (1),(2)	1				
Player Room	1	Book Shelf for Koran	2	1200* 450*1800	
Staff Toilet	2				Mirror etc.
Student Toilet	8				
Sports Hall Toilet	1				
Machine Room	1				
Electric Room	1				
Circulation	—				