(ii) Equipment for Vocational Training

Some of the equipment for practical training provided for each vocational training course is not in the proper conditions for effective practical training due to a shortage of equipment, inconsistent models and incomplete set of tools. Especially because of old models, the graduates entering the work force after having been trained on such equipment are at a serious disadvantage. Furthermore, the equipment is not stored generally in proper condition so that some of them are often inoperable. The equipment currently provided for the vocational training include the followings.

Table 10 Current Equipment for Vocational Training

Course	Major Equipment
Wood Working/Construction	Bench Drill Press, Disc Sander, Grinder, Band Saw, etc.
Auto-Mechanics	Compressor, Welder, Air Powered Parts Washer, Hydraulic Bench Drill Press, Hydraulic Jack, etc.
Drafting	Drafting Table, Drawing Board, Drafting Scale
Home Economics	Refrigerator, Range, Cooking Table, Counter, Electric Sewing machine, Manual Sewing Machine, Iron, Scissors
Business	Personal Computer, Printer, Electric Typewriter
Agriculture	Grass Mower, Farming tools
Electrics	Tools

(2) Private High Schools

1) Assumption High School

This school is attached to the Catholic church, being well-known in the country as majority of the students are college preparatory students. It has about 130 students in total, only one class for each grade and a total of 12 teachers in charge of one respective subject. The annual tuition is $550, and the registration fee is $30 per year. Added expenses include $80 per year for the school lunch. Although the financial burden of parents is very high in comparison to public schools, many of the students come from upper class families aiming at college matriculation. As the subsidy from the government is only $12,000 (1992), and its sole source of revenue stems from tuition fees, it seems that the school management has been facing financial difficulties. The number of graduating students and students advancing in each grade for 1992 are given below.

Table 11 Status of Promotion and Graduation in Assumption High School

Grade	Sep. 1992		Jun. 1993	Status
9	45	→	38	Immigrated abroad (5), Dropout (2)
10	38	→	38	Immigrated abroad (1), Transferred (1)
11	28	→	22	Immigrated abroad (3), Dropout (3)
12	24	→	23	Dropout (1)

Thirteen students among the graduates in 1992 obtained scholarships to study abroad (eight to US , two to Hawaii and three to Pohnpei) , six students entered CMI, and others were unknown. All the graduates passed the entrance examination of the College of Micronesia in Pohnpei.

2) Seventh Day Adventist School

This school is operated by the Protestant association, and consists of pre-school, kindergarten , elementary school, and high school. In addition, it offers English training classes for the elementary students who go on to the high school. The number of students in 1992 was 150 and the number of graduates was 32.

The annual tuition is $495; the enrollment fee, $40; the textbooks fee, $6; and the graduation fee, $30. The graduates go on to CMI, colleges in Fiji, etc. The number of teachers is seven. Most of them are volunteer teachers from the US who are paid only $1,000 per year for accommodations and the remainder of their living expenses are paid at their own expense. In 1993 it is planned to set up courses in computer and construction.

3) Calvary High School

Calvary High School is operated by a Christian church consisting of kindergarten, elementary school and high school. There are sixteen teachers and 300 high school students, with three classes in grade 9, two classes in grade 10 and one class each in grades 11 and 12. The annual tuition is $500, and the enrollment fee is $30. The annual average rate of dropouts is about 15 percent with the main reason of defaults in tuition payment. Most of the graduates go on to the vocational training schools in Palau, and some of them enter vocational schools in the US and the College of Micronesia, and a few go on to CMI.

2.2.3 Employment and In-Service Training of Teachers

(1) Shortage in Number and Capacity of Teachers

The current situation in the Republic is that as the quality and capability of Marshallese teachers are not developed adequately foreign contract teachers and volunteers are employed to fill the gap.

In 1970's most of the teachers were high school graduates, but now those who hold two year college Associate Degree are increasing in number. However, it is said that capacities of about 48 percent of primary education and 68 percent of secondary education teachers of public schools leave much to be desired. There is only a handful of teachers with four year Bachelor Degree.

The shortage of capable teachers with long experience is largely due to extremely low salaries. As a result, competent teachers transfer to the private sector or other government agencies, while teachers with little experience and training remain in the schools. At present a project is underway to cope with this problem in the Ministry of Education.

1) Summer Teacher Training Program

A Summer Teacher Training Program has been implemented for the development of the capacity of high school teachers since June 1993. This program is conducted with the cooperation of the Ministry of Education, CMI and the University of Guam during the summer holidays from June to August.

The program is prepared for the teachers of public high schools, but private high school teachers are also eligible to participate. But the enrollment fee of $15 as well as transportation and accommodation fees are paid by the participants since the intention of this program is to allow teachers to become qualified for salary increases. The content of the program is described as follows.

(i) Summer Teacher Training Program

Those who acquire 6 units in this program are entitled to salary increases according to the salary standard. Teaching guidelines to basic educational subjects and technical subjects such as computer, accounting, etc. are given in CMI seminars. English language seminars are mainly conducted at the University of Guam.

(ii) Special Program/Workshop

This program is conducted by the Australian International Development Assistance Bureau (AIDAB) to provide guidance in educational instruction for teachers in high schools.

(iii) Continuing Education Basic Skill Program

This program is conducted as a part of General Education Development (GED) for dropouts of high schools and the general public over the age of 16 to educate themselves and better prepare for employment irrespective of obtaining credits. The subjects include English, mathematics, science, social studies, etc.

2) In-Service Teacher Training Program

In this program secondary education teachers who are currently in service and have not completed the higher education are selected to participate in a two to four year teacher training program in colleges and universities at home or abroad. The colleges include CMI, the Community College of Micronesia, the University of Guam, the University of New Zealand , Fiji Engineering College, etc. It is determined that this program will be conducted in the five-year plan starting in 1993 subsidized by a US grant.

Under this program the seminar is planned to be provided for 19 teachers in six fields. It is also planned that US PCV and JOCV will be sent as substitute teachers during the period of this program. The request has been already made to both countries to fund salaries for substitute teachers. The outline of the plan is described as follows.

Table 12 In-Service Teacher Training Program

Unit: Person

Field	'93	'94	'95	'96	'97	Total
Home Economics Teacher	2	1	-	-	-	3
General Vocational Training Trainer	1	1	2	2	2	8
Mechanics Teacher	1	1	-	-	-	2
Secondary Education Mathematics Teacher	-	1	1	-	-	2
Agriculture Teacher	-	-	1	1	1	3
Industrial Technology Teacher	-	-	-	1	-	1
Total	4	4	4	4	3	19

In addition to the above-mentioned program, the South Pacific Bureau of Educational Assessment plans to send educational consultants to MIHS during the summer holidays this year in order to provide teacher training concerning preparation of regular examinations and evaluations of student achievements.

(2) Salary Structure of Teachers

The salaries of public school teachers are based on a Salary Grade Table as those of other government employees, but the salary structure is incomplete because a firm

certification system has not been formed to evaluate capabilities of teachers and the upper limit of the salary level is low.

The Ministry of Education is formulating a Teacher Certification Policy Guide and Procedure with the assistance of ADB aiming at the implementation in 1993. This plan is to create a system in which salaries are determined according to five categories which establish guidelines on qualifications and experience, and it will be implemented in a full-scale in a five-year plan. The objective of this system is to renovate the salary scale of teachers and to secure the teachers with higher capability. It is expected that prospected teachers will tend to seek for higher credentials as the teachers with capability and experience will be able to obtain higher certification and salary corresponding to the certification in this system. The outline of this plan is described as follows.

Table 13 Salary Structure of Teacher Certification Policy Guide & Procedure

Certification Name	Certification Requirements	Salary Structure
1. Temporary Cert.	-In-Service teachers not graduating from high school -No renewal; to be abolished after 1996	6-8
2. Provisional Cert.	-High School graduates or equivalent with TOEFL Score of above 450 -Graduates with AS or BA, without teaching experience -Effective for 3 years after issued	8-10 AS 17 BA 18
3. Professional I	-Graduate with AS with teaching experience for more than 1 year -Graduates with AS out of educational sector, but with Provisional Cert	17-20
4. Professional II	-Graduates with BA with teaching experience for more than 1 year -Graduates with BA out of educational sector, but with Provisional Cert -Effective for 5 years after issued	22-23
5. Professional III	-Graduates with BA with multiple degrees -Graduates with MA -Effective for 5 years after issued	24-25

2.2.4 Future Plan for School Construction

(1) Majuro Middle School

In 1991 the ADB sent a study team to review the needs of the development of the human resources in the Republic of Marshall Islands and formulate specific action programs to address severe manpower shortages in selected priority sectors. As a result, the ADB dispatched a Fact Finding Mission in 1992 and submitted the final report pertaining to basic education.

Thereafter, in 1993 the ADB sent an Appraisal Mission on the Basic Education Development Project . The project will be executed in three general aspects of the educational sector. The activities are categorized into the following:

(i) Development of relevance and quality (Curriculum reform, teacher training, construction of a demo school, development of instructional materials, etc.)

(ii) Capacity rationalization (Institutional development, construction of a new middle school due to the integration of higher grades in the elementary schools in Majuro)

(iii) Project implementation and sustain ability (Establishment of Project implementation rooms, financing operation costs, etc.)

The project includes the construction of Majuro Middle School as grades 7-8 of the elementary schools in Majuro will be integrated into the middle school for which new buildings will be constructed. The construction site of Majuro Middle School is in the campus of MIHS. The capacity of the building is 720, and the construction work is planned to be completed in 1996.

(2) High Schools

It is planned to build two new public high schools; one in Wotje and the other in Ebeye. The high school in Wotje for which the construction is already in progress is scheduled to open in September 1994. However, it seems that the construction work on the public high school in Ebeye will be considerably behind schedule due to a lack of funds. It is also planned to build a private high school in Ebeye and in Ailinglaplap.

At present both public and private high schools are confined to the four islands of Majuro, Kwajalein, Jaluit and Ailinglaplap, and students are forced to matriculate to one of the four islands in order to receive an education. If the new construction of the public high schools is implemented as planned by the government, a school district system will be set up to balance the location of public and private facilities, and thereby enhance opportunities to receive a secondary education. An outline of the construction project of high schools is described as follows.

Table 14 Outline of Construction Project of High Schools

Classification	Name of School	Location	Description
Public	Northern Islands High School	Wotje	Construction work is divided into four periods. First period started already in 1992. -1st Period: 8 classrooms (Started in November 1992, and scheduled to be completed in September 1993. Class for Grade 9 will start in 1994.) -2nd Period: To be estimated for Dining Room and Girls Dormitory scheduled by 1994. -3rd Period: Construction of vocational Training Building, Agriculture/Marine Technology Building and Sports Ground. -4th Period: Construction of Boys Dormitory, Administration/Library Building.
	Jemita High School	Ebeye	Construction was approved, but not scheduled due to fund shortage 8 Classrooms, Dining Room, etc.
Private	Queen of Peace High School	Ebeye	Class already started in 1991, and scheduled to expand every year. Class will start as follows. 1991 (Grade 9) 1992 (Grade 9 & 10) 1993 (Grade 9, 10 & 11) 1994 (Grade 9, 10, 11 & 12)
	Jeh Seventh Day Adventist High School	Ailinglaplap	Class started in 1993 for Grade 9 & 10. Grade 9 (22), Grade 10 (16), Teachers (2). Future expansion plan is not scheduled.

2.2.5 Social Education

(1) Campaign Against Drug Abuse and Drinking by Youth

In the Republic a private group called "Jodrik-Nan-Jodrrikdrik" established with the financial help from the Ministry of Health and Welfare three years ago has carried on a grass roots movement against drugs by visiting each school and presenting a short play and music. In MIHS a school counselor provides individual guidance to students concerning their fears and the bad effects of drug abuse and drinking. The schools and private groups are actively engaged in this campaign because some of the

youth who are in the habit of drug abuse and drinking have committed suicide and experienced pre-marital pregnancy.

(2) Non-formal Education

1) National Training Council

In 1992 the Parliament approved the establishment of National Training Council as an organization under the direct jurisdiction of the Minister of Education. This organization is to provide the technical training for those who are not enrolled. Funds from the United Nations Development Project (UNDP) totaling $700,000 have been allocated for a period of three years to cover the salary of the chairman and other operational costs. Furthermore, it was decided last year that the Alien Works Fund, established to provide vocational training for Marshallese people, using five percent of the taxes paid by foreign workers, will also be used to cover the operation costs of the council.

In 1992 the training was provided on the four subjects including carpentry, automobiles/machines, cooking and sewing in CMI. In 1993 it is planned that five experts on carpentry, automobiles/machines, electricity, etc. will be dispatched for three years from the United Nations Volunteers (UNV).

2) Evening High School

As the 1988 census shows a high unemployment rate of 39 percent for ages from 15 to 19 and 23 percent for ages from 20 to 24, the unemployment in the youth is a significant social problem in the country. The government of the Republic put an emphasis on non-formal education to cope with this problem of the youth. Thus, in 1992 the Ministry of Education started the evening high school program held after normal classes at MIHS so that the youth who have not received formal school education or who have left school before graduation can acquire foundation skills and life competencies.

In 1992 the recipients were divided into two age groups of 15 to 17 (60 youths) and 18 to 20 (40 youths), and the classes in the general subjects of English and mathematics were provided to the former group and the classes in foundation skills in English, mathematics and social studies as well as life competencies (personality formation, problem solving/decision making, human relationships, etc.) were provided to the latter group. In 1993 it is planned that the training in foundation skills and life competencies will be provided in the same school to 150 youths ranging from 17 to 20 years of age.

3) Activities by Christian Associations

In the Republic the social education is provided by Christian associations. Every year events called Youth Convention are held for two weeks in Majuro. The program of the event includes a youth speech contest, lectures by government agencies on national policies, the problems faced by the country and the measures to solve them, a debate by the selected youth from each island, presentation of local chorus groups, etc. This meeting attracts quite a number of youth as a great event in a country where there are no recreational and entertainment facilities, and the number of attendants at this meeting reaches 2,000 to 5,000. The church building where the meeting is held is full of the invited guests and overflown with a great number of spectators.

Table 15 Non-Formal Education by Christian Associations

Name	Activities	No. of Participants	Period
United Church of Christ	Youth Convention	5,000	2 weeks early June
			2 weeks end of June
Assembly of God	Youth Convention	3,000	2 weeks early July
Reform Congregational Church	Youth Convention	2,000	2 weeks end of July

(3) Sports and Cultural Activity Group

Recently in Majuro sports activities are a popular form of recreation. However, it is difficult for inhabitants to secure space for sports activities due to limited land and housing developments to cope with a growing population. Specifically, the following sports groups are struggling to find a place for exercises and matches.

Table 16 Major Sports and Cultural Activities Groups

Type		No. of Groups	Activities & Tournament Period
Sports	Basketball	18 Teams	Community Matches Dec. - Mar.
	Volleyball	22 Teams	Community Matches Jun. - Aug.
	Softball	15 Teams	Island Tournament Jun. - Aug.
	Tennis	25 Teams	
	Billfish Club	18 Boats	Nov. & Irregular Convention
Culture	Yokwe Yuk Women Club	20 for each community	Instruction on weaving work, cooking and food service.

2.2.6 Current Problems and Roles of the Project

As mentioned before, the population of the enrollment age has been markedly increasing in Majuro. It rose by as much as 80 percent from 1980 to 1992, and it is foreseen that this tendency will continue hereafter. Consequently, the number of students is relatively larger in the lower grades despite the number of dropouts at every grade in primary education. As the rate of dropouts decreases and more students seek for higher education, it is forecasted that the number of students who go on to secondary education will further increase in Majuro where 40 percent of the total number of primary students are already enrolled. Therefore, it is considered that the improvement of the facilities and equipment in MIHS will make a great contribution to strengthening secondary education in the country.

It is also considered that the Educational and Cultural Center will play a significant role in fostering sound youth and instilling self-reliance among its youth as opportunities of the social education for those who are not enrolled and space for sports activities of youth is in shortage in the country where half the total population is under the age of 15.

2.3 Outline of Related Projects

2.3.1 Second Five-Year Development Plan

Five objectives which will be pursued by the government in the plan are to:

(i) Achieve self-sustaining economic growth (to ensure a continued increase in the real incomes of the Marshallese people).

(ii) Increase employment opportunities (to improve the high unemployment rate and create employment opportunities for the youth who are annual source of new human resources).

(iii) Improve the quality of life (to improve health, sanitation and nutrition as well as family birth plan, to raise the educational standard of students as well as facilities and teaching staff, and to update and revise curricula).

(iv) Balance urban-rural development and equitable distribution of incomes (to correct the imbalance of the rural semi-subsistence sector and the urban monetized sector and the disparities in standards of living and real income levels by adopting a comprehensive national development strategy).

(v) Achieve national identity and unity (to enhance the protection and preservation of the common culture and heritage as well as national spirit in order to promote economic development through unity of the nation).

Based on these objectives, the following measures will be taken in the educational sector.

-Expansion and improvement of school facilities.
-Enhancement of the quality of education.
-Securing additional financial resource and optimal utilization of educational development sources.
-Raising the level of educational programs in secondary education.
-Participation in the educational services in the local communities.
-Improvement of educational planning, operation, administration and evaluation.

The following programs will be conducted in the period of the development plan (1991/92-1995/96).

-Transfer of the public elementary school to the administration by the local government.
-Establishment of a district educational committee and improvement of the participation in school activities in the local community.
-Expansion of opportunities of the training for on-educated youth, strengthening of vocational education.
-Preparation for higher education.
-Development of the higher educational capacity of CMI
-Study and reform of curriculum
-National standards for examination and evaluation of achievement as well as teacher certification.
-Improvement of the educational administration by formulating human resource development plan and introducing computerization.
-Construction of school buildings, teachers' dormitory and library in MIHS as stipulated in the capital investment development project.

2.3.2 Ten-Year Educational Master Plan

The Ten-Year Educational Master Plan was formulated in 1989 with the technical assistance from the US. Some of the recommendations in the master plan were reflected into the Second Five-Year Development Plan. Especially, the following recommendations were given pertaining to secondary education.

(1) Secondary education has not yet reached the stage of national implementation for the following reasons:

(i) The majority of elementary school graduates have not been prepared for secondary education.
(ii) Public high school enrollment rate has expanded less than 20 percent of the high school age population over the past ten years.
(iii) The national economy does not have the capacity to absorb the number of higher educated citizens produced by a universal secondary education policy.
(iv) The nation needs to concentrate its limited human resources on strengthening primary education.
(v) The national economy is not strong enough to support the substantial cost of expanding secondary schools.

(2) Based on the above-mentioned viewpoints, the following recommendations were given.

-Increase financial assistance to private high schools.
-Change the goals of public high schools from college preparation to vocational preparation and training for jobs that are or will be available in the RMI.
-Limit development of public high schools to population centers with employment markets sufficient to absorb the graduates of a strong vocational high school program.
-Formulate and implement basic education and vocational training programs for out-of-school youth.
-Expand access to external job markets and training resources for unemployed youth, combined with counseling and preparation services, as part of the basic education and vocational training programs.

In addition, the Project is planned based on the above-mentioned recommendation that development of public high schools should be limited to population centers.

2.4 Background and Contents of the Request

2.4.1 Background of the Request

In the Republic of the Marshall Islands over half of the population is under 15 years of age and about 68 percent of the population is concentrated on two atolls, Majuro and Kwajalein. Especially in Majuro, the capital of the Republic, the population is growing rapidly, not only due to natural growth but also to migration from the outer islands. Furthermore, this population growth is expected to continue at this current level, and it is estimated that the population will expand 2.75 times present level in Majuro by

the year 2025. Therefore, it is extremely important in the RMI that appropriate measures for the youth should be taken. Currently, the following problems are caused by this population increase.

(i) The educational facilities are in shortage in the face of increasing student population.
(ii) The educational facilities are old and inadequate for classes and practical trainings.
(iii) The number of teachers with sufficient experience and capabilities is insufficient in view of the student population.
(iv) The educational equipment and teaching materials are too old to produce the desired educational effect.
(v) Places for fostering healthy and sound youth are lacking such as social educational, sports and recreational facilities.

The educational goals of the national development plan are to establish comprehensive vocational and social education in the secondary educational system. In particular, the construction of some additional school buildings of MIHS, which is the only public high school in Majuro, and upgrading of equipment for vocational training as well as the construction of the Educational and Cultural Center are included as major educational projects. However, as the national financial structure in the RMI is not self-sustaining but dependent on the financial assistance from the US under the Compact of Free association, the implementation of the above-mentioned projects with self-sustaining funds is limited. Consequently, a request for a grant aid was made to the government of Japan pertaining to these constructions and upgrading in February 1992.

As a result of examing the content of the request, the government of Japan decided to implement a basic design study on the Project.

2.4.2 Contents of the Request

(1) Objective of the Requested Project

The objective of the Project is to construct some additional school buildings of MIHS, upgrade educational equipment for vocational training, and construct the Educational and Cultural Center in Majuro in the Republic of Marshall Islands so that they will contribute to the enhancement of the secondary and social education in the Republic.

(2) Executing Agency

The executing agency after the completion of the Project will be Marshall Islands High School.

(3) Works To Be Executed

1) High School Facilities
   (i) Entrance Hall
   (ii) General Classrooms (7)
   (iii) Special Classrooms (6)
   (iv) Workshop (4)
   (v) Library, office, Conference Room, First Aid Room, Teachers' Room
   (vi) Dressing Room/Locker
   (vii) Toilet/Shower
   (viii) Sports Shell
   (ix) Sports Ground
   (x) Dormitory
2) Equipment for vocational training in MIHS
3) Multi-purpose Hall (Educational and Cultural Center)

CHAPTER 3 CONTENTS OF THE PROJECT

CHAPTER 3 CONTENTS OF THE PROJECT

3.1 Objective

The objective of the Project is to renovate deteriorated school buildings of Marshall Islands High School (MIHS) in Majuro in the Republic of Marshall Islands (RMI) and cope with the increasing student population of the secondary education by constructing some additional school buildings of MIHS, to strengthen the vocational education by upgrading vocational training equipment, and to improve social education including educational programs provided by the Ministry of Education by constructing an Educational and Cultural Center.

3.2 Study and Examination on the Contents of the Request

3.2.1 Study and Examination on the Appropriateness and Necessity of the Project

As a result of the analysis of the appropriateness and necessity of the Project based on the discussion with the government of the Republic, the examination of the prevailing conditions in the secondary and social education in the Republic, and the survey of the construction site, it is considered to be appropriate to implement the Project. The result of the analysis is described as follows.

(1) Necessity of the Reconstruction of the Facilities of MIHS

As over half of the population is comprised of youth in the RMI, it is essential that the educational facilities should be expanded to cope with the growing student population. The elementary schools in Majuro are already faced with the problem of not being able to accommodate their current number of enrolled students. It is also anticipated that the high schools will encounter similar problems due to the state of the existing facilities in the face of increasing number of enrollment population and applicants.

In private high schools the severe condition of school management due to a limited budget makes it difficult to accept more students. It is indicated in the Second Five Year Development Plan that the educational policy of the public high schools emphasizes vocational training while private high schools stress their curriculum on college preparatory education. Therefore, expectations of both the government and private sectors are high that public high schools will provide more human resources with sufficient vocational training in the nation's employment structure which lacks

adequately skilled youth. It is anticipated that public high schools will fulfill the needs of a growing number of youth seeking for vocational education and training.

In MIHS most of the school buildings were constructed in the latter half of the 1960s so that the considerable deterioration and safety problems have hindered efficient education and demand renovation.

(i) The school buildings currently used by the grade 8 are so deteriorated that they are extremely inadequate as educational facilities.

(ii) The number of classrooms required for the students to be enrolled hereafter is in shortage.

(iii) The Sports Shell which was damaged by a typhoon was partially repaired but it is in a dangerous condition with cracks all over the building.

(iv) The facilities in the administration department including Principal's Room, First Aid Room, Counselor Room, Library, etc. are not only old but also lacking reasonable layout and sufficient space.

(v) Insufficient dormitory restricts the opportunity to attend the school for the students from the outer islands who have no relatives to board with.

Thus, it is considered to be necessary to reconstruct a portion of the school buildings of MIHS which is the only public high school in Majuro.

(2) Necessity of Equipment for Vocational Training

The job market in the Marshall Islands often requires technical training on the part of the applicant. The vocational education program in MIHS has incorporated a large number of practical training courses in their vocational curriculum to meet the industrial needs of the country. Under an educational policy of fostering self-reliance in its graduates, the basic emphasis of its vocational classes is on practical training sessions. However, the effectiveness of the training has been undermined due to an inconsistency of equipment models and a shortage of equipment. As the number of students per teacher is not so large, the training effect can be raised by providing proper number of equipment to the students.

Therefore, it is considered to be necessary to provide appropriate equipment for the following courses in order to raise the effect of the training and satisfy the industrial needs of the country.

(i) Wood Working (Taken by nearly all the male students as a basic skill for the vocational training)

(ii) Construction (As there is no skilled construction workers to meet the demand in public works and private developments of social infrastructure to cope with the

formation of self-sustaining economy and population centralization, training of Marshallese skilled workers is required.)

(iii) Auto-Mechanics (As the number of automobiles is rapidly increasing in the expansion of urbanization, there is a large demand for car repairs. Thus, the training of auto-mechanics is required.)

(iv) Drafting (As there is a large demand for construction and mechanical repairs as mentioned above, the training of shop drawing and assembly draftsman is required.)

(v) Sewing (Taken by the majority of female students to learn home sewing skills and technical skills in clothing construction.)

(vi) Cooking (Taken by the majority of female students to learn ordinary home cooking as well as professional cooking and serving skills.)

(vii)Computer (Technical and clerical sectors in Majuro are becoming computerized. Taken in the lower grades as compulsory subjects.)

(viii)Secretarial Type (Major subject required for employment taken by female students to obtain general accounting and secretarial skills.)

(ix) Agriculture (Important subject to learn basic gardening skills for the country depending on imports for the agricultural products.)

(3) Necessity of the Construction of the Educational and Cultural Center

In the RMI where the government has just started forming self-sustaining economy the unemployment rate of the youth is high because of few opportunities for employment and shortage of youth who have received secondary education to meet the needs of employers. It means that an environment which will allow young people to lead sound social lives has not been provided. Therefore, the important measures to be taken to solve the problems of youth is to reeducate unemployed youth and to facilitate sports and recreational activities that foster cooperative group action. But the insufficient facilities in social education has produced the following problems.

(i) The facilities of CMI are used for the non-formal education program sponsored by the Ministry of Education because there is no special facilities. But usage is restricted by the class schedules of CMI and the enrollment capacity is also limited.

(ii) Local communities as well as youth are highly interested in the sports. More and more people are interested in sports year after year so that only a limited number of youth are able to use the facilities. In addition, adequate facilities for the increasing sports population are also lacking.

(iii) There is no appropriate place for observing traditional culture and heritage as well as public halls or other locations where community people can participate in social education.

Therefore, it is considered that the construction of an Educational and Cultural Center will make a great contribution to solving the problems of youth as a place to perform programs conducted by the Ministry of Education and MIHS such as non-formal education programs, sports and participation of community people in social education.

(4) Appropriateness of the Implementation of the Japanese Grant Aid

At present there is only one public high school in Majuro and one in Jaluit. As stated above, the Ministry of Education is promoting a construction plan of two more public high schools one of which is under construction, but there is no prospect of starting the work for the other due to a lack of funds. The government of the RMI has formulated an educational policy to strengthen the secondary education, but it is difficult to secure financial resource in the country where the majority of the revenue of the RMI is dependent on the financial assistance from the US which has been reduced year after year.

The cost of the reconstruction of the MIHS, improvement of the equipment and the construction of the Educational and Cultural Center is so large that it exceeds the limit of the nation's finance due to the circumstances described above. It will require an extensive period of time to build the human resource which is one of the basic elements in establishing self-sustaining economy through the secondary education. However, it is urgently required to cope with the problem in the RMI who has no outstanding economic resources except fishery products. Thus, it is considered to be appropriate to implement the Project under the Japanese grant aid program.

3.2.2 Study and Examination on Plan of Operation

(1) Personnel Plan

Marshall Islands High School is under the jurisdiction of the Vocational/Secondary Bureau of the Ministry of the Education which is responsible for the educational administration of secondary and vocational education in coordination with the School Improvements Bureau and the CMI. The principal has the authority in personnel affairs, but the budget for personnel costs is administered by the Ministry of Education.

The number of the teachers in MIHS in 1992 was 42 with 17 administrative staff. It is planned to employ ten more teachers in 1995 in order to cope with an increase of

enrolled students. The placement of new teachers is illustrated later in Section 3.3.2 (1) 2) Classroom Use Plan. In 1996 it is planned to employ three staff members for the operation and maintenance of the Educational and Cultural Center. The personnel plan of MIHS is shown in the following table.

Table 17 Personnel Plan of MIHS

	92 (Actual)	95	96
Principal	1	1	1
Deputy Principal	2	2	2
Curriculum Staff	1	1	1
English Teacher	10	12	12
Science Teacher	5	6	6
Mathematics Teacher	5	6	6
Social Studies Teacher	4	5	5
Vocational Training Teacher	18	23	23
School Nurse	1	1	1
Counselor	2	2	2
Librarian	2	2	2
Secretary	1	1	1
Clerk	7	7	7
Center Manager	-	-	1
Center Janitor	-	-	2
Total	59	69	72

(2) Budget Plan

Transitions in the annual budget of the Ministry of Education, the agency responsible for the Project, and MIHS, the executing agency is described in the following table. The budget for MIHS is included in the budget of the Ministry of Education, comprising around 10 percent of the actual budget of the Ministry. In 1992/93 there was no budget carried over from the previous year, but the actual budget was increased which shows the emphasis of the government in the education.

Personnel costs comprise about 90 percent of the total budget of MIHS, the total amount of which increased in 1992/93. Electricity costs are not included in the following table as they are covered by the Ministry of Finance. Therefore, electricity costs pertaining to the buildings and equipment to be upgraded in the Project will not be paid by MIHS. Further, it is reviewed to raise the salaries of teachers, and the Ministry of Education is formulating a policy to cope with increasing personnel costs.

Table 18 Transition of Annual Budget of the Ministry of Education and MIHS

	1988/89	1989/90	1990/91	1991/92	1992/93
(1) Ministry of Education	11,742	11,951	9,748	7,048	9,008
(i) Actual Budget for Current Year	Unknown	8,630	6,698	6,675	9,008
(ii) Carried Over from Previous Year	Unknown	3,321	3,053	373	0
(2) MIHS	963	856	607	761	716
(i) Personnel Expense	678	764	577	596	680
(ii) Other Expenses	285	92	30	165	36

Unit) $1,000
Source) Internal Data of the Ministry of Education

3.2.3 Study and Examination on Relationship and Duplication with Similar Projects and Grant Aid of International Organizations

The school buildings of MIHS were repeatedly enlarged from the latter half of 1960s to the latter half of 1980s. The construction of this enlargement and the repair work of the buildings damaged by the typhoon in 1992 were conducted under the grant aid from the US. In this way construction and renovation of MIHS were funded by the financial aid from the US, but it is difficult to fund the renovation costs of MIHS under the domestic budget as grant aid for member countries in the Compact of Free Association is decreasing and the revenue of the RMI is reduced.

As to the equipment in MIHS, the government of Australia provided five units of personal computers for English language training in 1992 under its grant aid program.

As to teaching staff, the teachers have been sent from PCV in the US and JOCV from Japan as mentioned before. Furthermore, the in-service training for teachers has been conducted with the technical assistance from the government of the US and Australia.

Although MIHS has been a recipient of the above-mentioned grant aid, there is no duplication of grant aid from other organizations for this Project.

3.2.4 Study and Examination on Components of the Project

The Project aims at the improvement of public secondary education in Majuro and social education for youth in general including high school students. The former pertains to the reconstruction of some school buildings in MIHS and upgrading its vocational

training equipment, and the latter pertains to the construction of the Educational and Cultural Center. The functional elements in the Project are described below. The Educational and Cultural Center will be used for classes of MIHS as well as a center for sports and social education in the community.

Table 19 Components of the Project

Components		Facilities & Equipment
Improvement of Secondary Education	(i) To respond to the increased enrollment population	General Classrooms, Special Classrooms, Dormitory
	(ii) To strengthen vocational training	Special Classrooms, Equipment for vocational training
	(iii) To respond to aging and insufficient facilities	Sports Shell, Administration related rooms, Sports Ground
Improvement of Social Education	(i) To respond to special programs of high school/Ministry of Education	Educational and Cultural Center
	(ii) To respond to inadequate indoor sports space	
	(iii) To respond to participation of communities in social education	

3.2.5 Study and Examination on Content of Requested Facilities and Equipment

The content of the requested facilities and equipment was studied in accordance with the following policies in consideration of the background of the request and the result of the discussions on the field survey.

(i) The educational policy in the RMI in which the mission of the public high schools is changed to emphasize the vocational training and focus on strengthening educational service in the community should be reflected into the content of the Project.

(ii) The scope of the facilities in MIHS should be estimated based on the number of rooms required by the reconstruction of the old buildings and the classroom utilization plan to cope with the growing number of enrolled students.

(iii) The content and the scale of the Educational and Cultural Center should be based on the policy that it is to be used for classes of MIHS and the educational programs of the Ministry of Education.

(iv) The existing office furniture and general equipment should be used to its utmost capacity and replaced by the self-reliant efforts of the RMI. The minimum number of educational equipment should be supplied for practice of vocational training conducted in MIHS.

(v) As to the building layout and structure, safety and convenience factors which was strongly requested by the RMI should be reflected in the basic design.

(1) Study and Examination on Scope of Facilities

1) Target Year

If the Project is implemented, it is assumed that the construction of the facilities and upgrading of equipment will be completed in 1996. Therefore, the scope of facilities of the Project will be targeted for 1996.

2) Projected Number of Students and Classes in MIHS

The number of students and class in MIHS at the target year will be estimated based on the following flow chart.

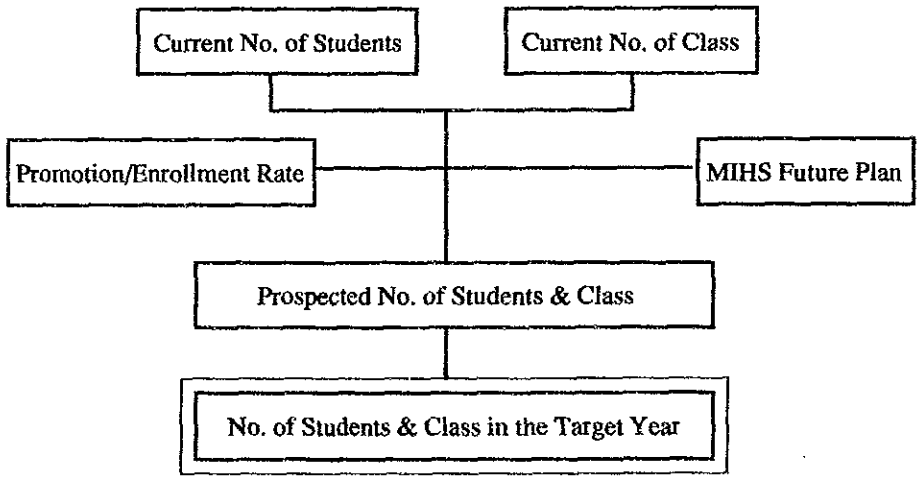

Figure 2 Projected Number of Students and Classes in MIHS

(i) Projected Number of Students and Classes

(Enrollment Plan)

In MIHS it is planned to expand its enrollment of new students in response to the increasing number of applicants. Enrollment figures from 1992 to the target year of 1995 are projected as in the following table.

Table 20 Targeted Quota of Students

	1992 (Actual)	1993 (Scheduled)	1994 (Planned)	1995 (Planned)
Targeted quota	240	300	300	330
No. of Class in Grade 9	8	10	10	11

(Ratio of Enrollment and Advancement)

In MIHS an entrance examination is held to accept the targeted quota of students, but the final enrollment number is below the quota every year. The Project is planned based on the estimation that the enrollment ratio for the academic year of 1993 to 94 will be the same as 93 percent in 1992, and it will be somewhat increased in 1995 due to the expanded facilities.

The advancement rate will be estimated based on 1992 figures and the number of registered students for 1993.

(Projected Number of Students and Classes)

Based on the above analysis, the projected number of students and classes is shown in the following table.

Table 21 Projected Number of Students & Class by Grade

		1992	1993	1994	1995
Grade 9	Enrollment Plan	240	300	300	330
	Enrollment Rate	93 %	93 %	93 %	95 %
	No. of Students	224	279	279	314
	No. of Class	8	10	10	11
Grade 10	Advancement Rate	73 %	87 %	80 %	85 %
	No. of Students	222	194	223	237
	No. of Class	6	6	8	8
Grade 11	Advancement Rate	90 %	70 %	80 %	85 %
	No. of Students	150	155	155	190
	No. of Class	6	6	6	7
Grade 12	Advancement Rate	87 %	87 %	87 %	90 %
	No. of Students	117	130	135	140
	No. of Class	5	5	5	5
Total	Total No. of Students	713	758	792	881
	Total No. of Class	25	27	29	31

(ii) Number of Students by Class in the Target Year

The number of Students by Class in the target year is shown in the following table.

Table 22 Number of Students by Class in the Target Year (1995)

Grade	No. of class	Number of Students by Class											Total
9	11	29	29	29	29	29	29	28	28	28	28	28	314
10	8	30	30	30	30	30	29	29	29	-	-	-	237
11	7	28	27	27	27	27	27	27	-	-	-	-	190
12	5	28	28	28	28	28	-	-	-	-	-	-	140
													881

3) Shortage of Classrooms

The number of class will be increased from 25 in 1992 to 31 in 1995, an increase of six classes. As it is also necessary to expand training rooms to enhance the effects of vocational training, seven general classrooms and four training classrooms will be required as shown in the following section 3.3.2 (1) 2) Classroom Use Plan.

(2) Analysis of Requested Facilities

The outline of the major requested facilities and the result of the analysis are described as follows.

Table 23 Outline and Analysis of Requested Facilities (1/3)

Requested Facilities	Examined Facilities	Analysis of Purpose and Necessity
1. High School		
(1) General Classroom 7	7 (with storage for instruction materials)	As sub instruction materials are not owned by students, storage for storing and lending them is required.

Table 23 Outline and Analysis of Requested Facilities (2/3)

Requested Facilities	Examined Facilities	Analysis of Purpose and Necessity
(2) Training Rooms 6: (i) Home Economics (Cooking) (ii) Home Economics (Sewing) (iii) Food Service (iv) Clothing Construction (v) Secretarial Type (vi) Computer	Training Rooms 4: (i) Food Service (ii) Clothing Construction (iii) Secretarial Type (iv) Computer with Preparation Room	Cooking and Sewing in Home Economics should be conducted in the existing training rooms, and a training room exclusively used for Home Economics should be excluded. Preparation rooms which are installed in the existing training rooms are necessary for efficient training.
(3) Workshop	New construction of Workshop is excluded. Internal renovation of the following training rooms in the existing vocational training building. (i) Auto-mechanics (ii) Wood Working (iii) Storage	New construction of workshop used by groups beside MIHS will be excluded. Electric wiring work of some training rooms in the existing vocational training building will be conducted for providing training to the students in MIHS.
(4) Administration (i) Library (ii) Teachers' Room (iii) Office (iv) Conference Room (v) First Aid Room (vi) Entrance Hall (vii) Storage (viii) Toilet	(i) Library (ii) Excluded (Note 1) (iii) Office(Note 2) (iv) Conference Room (Note 3) (v) First Aid Room (vi) Entrance Hall (vii) Storage (viii) Toilet (For teachers & students) (ix) Principal Room (x) Deputy Principal Room (2) (xi) Counselor Room (2) (xii) Water Reservoir	Note 1: In the system where a classroom is allotted to each teacher there is no need to install Teachers' room as preparation for classes and office work can be performed in each classroom. Note 2: It will be renovated as space for general office work including student registration and accounting. Note 3 : It is required to be newly installed as there is no conference rooms where general meetings of management staff can be conducted.
(5) Sports Shell	Sports Shell (1 Basketball court, Stage, Locker, Storage)	Renovation is required as it is in a dangerous condition due to conspicuous aging.
(6) Locker/Shower	Excluded.	Currently it is not installed, and there is no need for the use.
(7) Sport Ground (with 300m field track)	200m field track	As the site is very small, more than 200m track cannot be secured.
(8) Dormitory To provide boarding until about 40 % of the new students secure their lodgings.	(i) Bedroom (ii) Common Space including kitchen.	As it is difficult for about 15 % of the students coming from outer islands to find lodging quickly, dormitory for 18 students in Grade 9 is required.

Table 23 Outline and Analysis of Requested Facilities (3/3)

Requested Facilities	Examined Facilities	Analysis of Purpose and Necessity
2. Educational and Cultural Center		
Request includes the center surrounded by walls with an arena with 2 basketball courts, indoor bleachers with capacity of about 600, locker rooms with shower for 2 teams.	(i) Basketball court 2 (Note 5) (ii) Stage (Note 6) (iii) Indoor Bleachers (Note 7) (iv) Storage (v) Locker room (vi) Toilet (vii) Water Reservoir (viii) Bldg. Wall (Note 8)	Note 5 : 2 basketball courts are required for multiple team games and matches. Note 6 : Stage is required for lectures on social educational activities beside sports. Note 7 : Strong request from the government in the RMI was accepted for the installation of indoor bleachers with a capacity of about 600 to be available in rainy weather. Note 8 : Strong request from the government in the RMI was accepted to install walls surrounding the building to protect the exhibited items and equipment in the Center and to prevent the rain from pouring into the building in spite of reduced ventilation effects.

(2) Result of the Analysis of Major Equipment

Requested equipment in subjects considered essential in vocational training were reviewed based on the following policies.

In the training provided in MIHS one set of equipment is allotted either to one student or to a small group of students. The former pertains to drafting, computer, and secretarial type, and the latter pertains to other subjects. It is planned that the students are divided into following groups.

Table 24 No. of Students & Groups in Training

Subject	No. of Students in Training	No. of Groups	No. of Students Per Group
(1) Wood Working	30	6	5
(2) Construction	24	4	6
(3) Auto-Mechanics	24	4	6
(4) Drafting	24	-	-
(5) Cooking	24	6	4
(6) Sewing	24	6	4
(7) Computer	24	-	-
(8) Secretarial Type	30	-	-
(9) Agriculture	24	4	6

According to the training groups, the equipment shall be provided for each subject based on the following policies.

Table 25 Requested Equipment and Examination

Requested Courses	Reviewed Courses	Examination Policy
1) Wood Working	Same	Lacking equipments are required to be used with the existing processing machines.
(2) Construction	Same	Lacking equipments are required.
(3) Auto-Mechanics	Same	It is necessary to supplement the minimum equipments required for the existing training rooms.
(4) Drafting	Same	Basic drafting and mechanical drafting equipments are required.
(5) Cooking	Same	Equipments are required for cooking training rooms corresponding to the number of increasing students and classes.
(6) Sewing	Same	Equipments are required for sewing training rooms corresponding to the number of increasing students and classes.
(7) Computer	Same	Equipments are required for computer training rooms corresponding to the number of increasing students and classes.
(8) Secretarial Type	Same	Equipments are required for typing training rooms corresponding to the number of increasing students and classes.
(9) Agriculture	Same	Minimum equipments for the training of Agriculture are required.
(10) Metal Processing	Excluded	It was planned to create Metal Processing, but it was excluded as the content was not fixed.
No Request	Maintenance equipments	Equipments for repairing the existing and planned equipments, and making parts are required.

3.2.6 Study and Examination on Necessity of Technical Assistance

The Project aims at enhancement of secondary education by increasing the number of students enrolled in the high school and providing more efficient vocational training,

and improvement of sports and social education for the youth including unenrolled students.

In order to raise these effects, the following factors will be significant.

(i) Improvement of the content of curriculum and training methods in vocational education.

(ii) Fostering competent Marshallese teachers and strengthening of in-service training.

(iii) Active participation in social education by communities to lift the educational spirit of the communities.

These factors are also pointed out in the Second Five Year Development Plan. However, in the implementation it is essential to formulate comprehensive policies for practical social education centering on secondary education, and not deal with these factors as individual measures, and complete the personnel for implementing the policies concerned. At present technical assistance is provided by foreign countries including the US, and it is considered that the promotion of above-mentioned comprehensive policies with this cooperation will make a great contribution to effective implementation of the Project.

3.2.7 Basic Policy of Implementation of the Grant Aid

As it was confirmed that appropriateness of the objective and the expected effects of the Project correspond to the system of the Japanese grant aid, and the operation capability of the implementing organization is feasible, it was considered to be appropriate to implement the Project under the Japanese grant aid program. Therefore, the outline of the Project will be discussed in the following sections to conduct the most appropriate basic design on the premise that the Japanese grant aid will be provided.

However, as stated in the section 3.2.5 Study and Examination on Content of Requested Facilities and Equipment, a portion of the request was excluded from the Project.

3.3 Outline of the Project

3.3.1 Executing Agency and Operational Structure

The operation of the facilities and equipment in MIHS and the Educational and Cultural Center will be conducted by MIHS. A new department to oversee operation of the newly constructed Educational and Cultural Center will be established in MIHS and the principal of MIHS will be responsible for its operation and management.

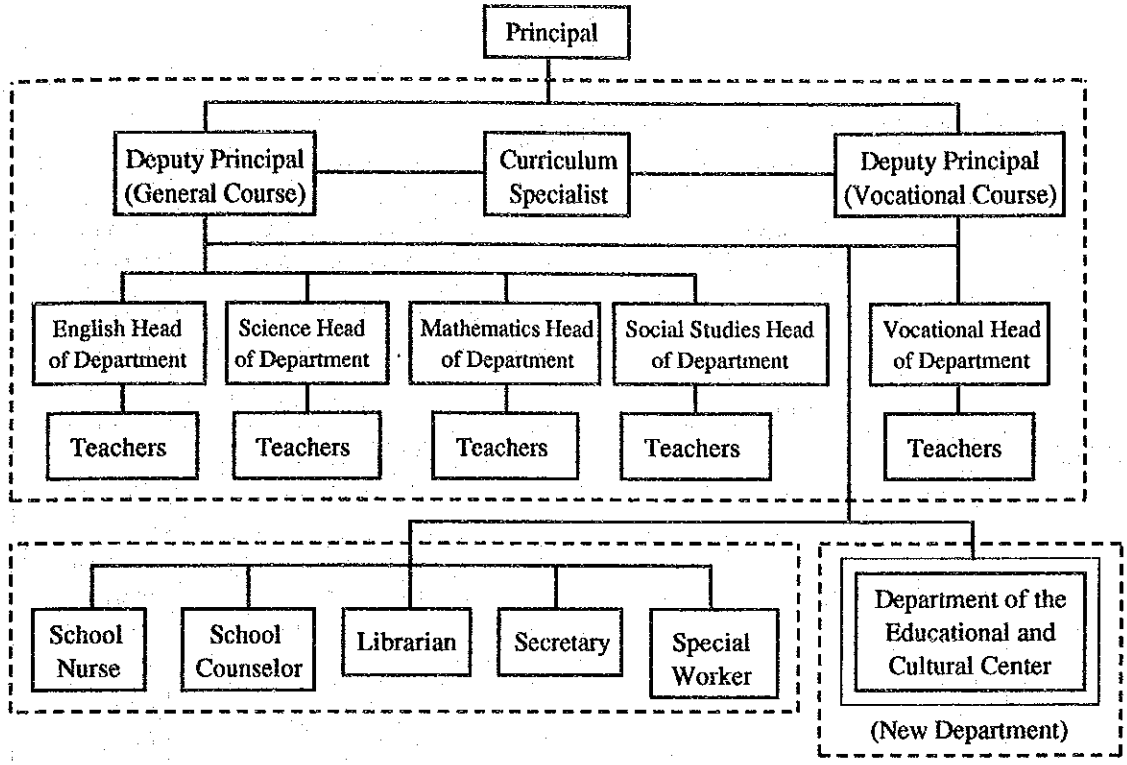

Figure 3 Organizational Chart of MIHS

3.3.2 Plan of Operation

(1) Curriculum Plan of MIHS

1) Curriculum

The following curriculum is planned for MIHS.

Table 26 Curriculum of MIHS (1/2)

Course	Grade 9	Grade 10		Grade 11		Grade 12	
	Compulsory	Compulsory	Elective	Compulsory	Elective	Compulsory	Elective
English Japanese	-Reading	-Reading	 -Japanese	-Reading	-Speech -Journalism -Japanese	-Reading	-Speech -Journalism -Japanese
Mathematics	-General Math		-Pre Algebra		-Algebra -Applied Math -Geometry		-Algebra -Applied Math
Science	-General Science	-General Science		-General Science	-Biology -Chemistry -Atoll ecology		-Biology -Chemistry -Atoll Ecology

Table 26 Curriculum of MIHS

Course	Grade 9	Grade 10		Grade 11		Grade 12	
	Compulsory	Compulsory	Elective	Compulsory	Elective	Compulsory	Elective
Social Studies	-Geography	-Micronesian Culture		-Government	-Human Relations -World History	-Pacific Area	-Human Relations -Current Events
Physical Education	-Physical Education	-Physical Education					
Computer		-Keyboard			-Computer		-Computer
Secretarial Type			-General Typing -General Accounting		-Secretary / Type -Secretarial Work -General Accounting -General Commerce		-Secretary / Type -Secretarial Work -Hearing Type -General Commerce -Economics -Office Work
Home Economics	-Cooking	-Sewing	-Food Service -Sewing		-Food Service -Clothing Construction -Child Care		-Food Service -Food Statistics -Clothing Construction -Child Care
Drafting			-General Drafting		-Architecture Drafting -Mechanical Drafting		-Architecture Drafting -Mechanical Drafting -Computer Drafting
Wood Working / Construction	-Wood Working		-Construction		-Construction		-Construction
Auto-Mechanics			-Mechanics		-Automobile		-Automobile
Agriculture	-Farming				-Gardening		-Gardening
Electrics			-Electrics		-Electrics		-Electrics

2) Classroom Use Plan

The use plan of the buildings to be reconstructed in the Project and revisions of the use are as follows.

(i) Demolition and Removal of the Existing School Buildings

The subjects of electrics and agriculture are conducted in the general classrooms buildings used by Grade 8, but the buildings are to be demolished and removed due to aging. After the demolition the classes of these two subjects will be conducted in the existing administration building. Agriculture has training for which equipment are planned to be installed in the Project. Agriculture classroom which also serves for storage pertains to the existing library. Administration rooms in the existing administration building will be transferred to the new building in the Project.

(ii) Revision of Classrooms Pertaining to Expansion of Subjects

Training in architectual drafting conducted in the existing Drafting Department will be continued in the existing vocational training building. As mechanical drafting is scheduled to open, it is necessary to secure a training room apart from the architectual drawing training room, for which a classroom adjacent to the architectual drawing room is planned to be used.

Therefore, mathematics currently conducted in the classroom planned for mechanical drafting will be conducted in the general classroom to be newly constructed in the Project.

(iii) Use Plan of General Classrooms

MIHS provides seven class periods a day except lunch time. In the system where students change classrooms according to subject , the classrooms are maintained by teachers and used for class preparation and other school affairs. Normally at least one hour is allotted for this work. Consequently, the hours of the classes conducted in seven classrooms will be 42 hours maximum.

The number of classes scheduled to be conducted in the general classrooms to be reconstructed by the Project is 39 hours in total including 13 hours of English, 7 hours of mathematics, 7 hours of science, 7 hours of social studies, and 5 hours of mathematics which will be transferred from existing classrooms (See the table below).

Therefore, in the seven classrooms to be newly constructed one class of transferred mathematics, 2 classes of English and one class each of mathematics, science and social studies will be conducted. Five teachers for the subjects except transferred mathematics are planned to be newly employed. Further, one more classroom will be used for English, mathematics, science and social studies for one period respectively by the existing teachers.

Table 27 Use Plan of New General Classrooms

Grade	No. of Increased Class	Compulsory Elective	Subject	Required No. of Hours
(i) Subject for Increased Enrolled Students				
Grade 9	3	Compulsory	English	2 Hours x 3 Class= 6 Hours
		Same as Above	Basic Mathematics	1 Hour x 3 Class= 3 Hours
		Same as Above	General Science	1 Hour x 3 Class= 3 Hours
		Same as Above	Geography	1 Hour x 3 Class= 3 Hours
			Sub-Total	15 Hours
Grade 10	2	Compulsory	English	2 Hours x 2 Class= 4 Hours
		Same as Above	General Science	1 Hour x 2 Class=2 Hours
		Same as Above	Micronesian Culture	1 Hour x 2 Class=2 Hours
		Elective	Pre Algebra	1 Hour x 1 Class= 1 Hour
			Sub-Total	9 Hours
Grade 11	1	Compulsory	English	2 Hours x 1 Class= 2 Hours
		Same as Above	General Science	1 Hour x 1 Class= 1 Hour
		Same as Above	Government	1 Hour x 1 Class= 1 Hour
		Elective	Biology	1 Hour x 1 Class= 1 Hour
		Same as Above	Human Relations	1 Hour x 1 Class= 1 Hour
		Same as Above	Algebra	1 Hour x 1 Class= 1 Hour
		Same as Above	Applied Math	1 Hour x 1 Class= 1 Hour
		Same as Above	Geometry	1 Hour x 1 Class= 1 Hour
		Same as Above	Speech	1 Hour x 1 Class= 1 Hour
			Sub-Total	10 Hours
(ii) Subjects Transferred Existing Classrooms				
Grade 10		Elective	Pre Algebra	1 Hour x 1 Class= 1 Hour
Grade 11 & 12		Same as Above	Applied Math	1 Hour x 4 Class= 4 Hours
			Sub-Total	5 Hours
Total				39 Hours

(iv) Use Plan of Special Classrooms

(Computer Training Room)

Computer is a compulsory course for Grade 10, and the Computer Training Room is used for two hours for two increased classes. Further, if Computer is

selected by Grade 11 and 12, it is used for 4 hours as two hours a day is required. Thus, the Computer Training Room is used for six hours in total.

(Secretarial Type Training Room)

Secretarial Type Room is used for five hours in total for general typing for Grade 10, secretarial type and secretarial work for Grade 11, and secretarial type and hearing type for Grade 12 due to an increased number of classes.

(Cooking Training Room)

Three hours for general cooking for Grade 9 will be required due to an increased number of classes. Currently in the existing cooking training room general cooking for Grade 9 and food service for Grade 11 and 12 are conducted in the same period. Therefore, it is planned that Grade 9 will use the existing cooking training room and Grade 11 and 12 will use the new training room.

(Sewing Training Room)

Two hours for general sewing for Grade 10 will be required due to an increased number of classes. As the training content is different, it is planned that Grade 10 will conduct training of general home sewing in the existing sewing room and Grade 11 and 12 will conduct training of vocational sewing in the new Sewing Training Room.

It is planned that the teachers for the above courses of the vocational training will be newly employed.

(v) Use Plan of Sports Shell

Physical education is a compulsory course for Grade 9 and 10. For the physical education in 1992 all the eight periods of a day were filled with classes including two periods of a combined class.

In 1995 the classes including combined class will be divided into the first semester and the second semester. The Sports ground to be upgraded in the Project will allow the combined class to be taught as normal class. One teacher of the physical education will be added to cope with the class increases.

(2) Operation Plan of the Educational and Cultural Center

The following programs are planned for the Center.

1) MIHS Class

(i) Cultural Heritage Special Class: The training in the following subjects will be conducted as special courses of Micronesian Culture and Wood Working by elderly persons and women in the local group as instructors. (Mat Weaving/Hat Weaving, Shell Craft, Traditional Food, Folk Tales, Traditional Medicine)

(ii) Drama: Drama performance presented twice a year, including practice, rehearsal and set construction.
When normal classes are given in the Center, the school bus will be used to transport students from MIHS which is located about 2.5 km away from the Center.

2) Sports

(i) High School Tournament Matches: Basketball and volleyball tournament matches of six high schools in Majuro including MIHS, conducted after school from Monday to Friday.

(ii) Community Youth Team Tournament Matches: Tournament matches of 22 volleyball teams and 18 basketball teams, conducted on Saturday and Sunday.

3) Social Education

(i) Teacher Training Program by the Ministry of Education: Lectures and seminars for teacher training are provided.

(ii) Vocational Training Class by National Training Council: Lectures excluding vocational training practice are provided.

(iii) Sound Youth Campaign by private groups: Presentation of short dramas and musical shows to combat drug abuse, Aids, alcoholism among youth.

(iv) Youth Speech Contest and Youth Debate: Activities of Youth Convention conducted by Christian church groups.

3.3.3 Location and Condition of Project Site

The construction site includes the two locations of MIHS and the Educational and Cultural Center. The condition of each site is as follows. However, the government of the RMI requested to change the Project site for the Educational and Cultural Center when the draft report was explained. After the basic design study, the government of RMI decided to build a convention hall adjacent to Nitijela Hall, and change the Project site to a place where there was an airport. But since a study has not been conducted concerning a new site, the results of the study will be described in the following on the location which was confirmed at the basic design study for the Project site of the Center.

(1) Location of Construction Site and Condition of Infrastructure

1) Construction site 1 (MIHS)

(i) Location and Area

MIHS is located in Rita District in DUD with a campus of approximately 4.5 ha surrounded by a residential area. The land which is under a contract agreed between the owner and the Ministry of Interior and Outer Island Affairs as a representative of the government of the RMI is used by MIHS with the right of use from the Ministry.

(ii) Access Road

Access to the site is made through the trunk road running through Majuro in the west of the site and the district road in the south. The north side of the site is adjacent to the adjoining land and the east side faces the ocean.

(iii) Infrastructure Installation

Along the trunk road in the western area of the site a high voltage power line of 4.16 KV is installed from which the power required for the planned facilities can be drawn. The power in take work will be conducted under the supervision of the Marshall Energy Company (MEC).

The comprehensive plan of the water and sewage system in the country is formulated by the Capital Improvement Project (CIP) under the jurisdiction of the Ministry of Public Works, and the actual execution and maintenance work is conducted by Majuro Water & Sewer Co. Ltd.(MWSC) As it is difficult to secure water supply all over Majuro throughout the year, water is supplied to all the homes for a limited time of the day, and most of the facilities and houses are trying to cope with the water shortage by owning a water reservoir.

In MIHS a water reservoir is installed as water service is supplied for only several hours after 5:00 P.M. It is necessary to install a new water reservoir for the planned facility. In the premise of the school the piping for water, sea water for toilet, and sewage has been already installed.

The telephone system in the RMI is in fairly good condition. National Telecommunication Authority (NTA) is in charge of telephone installations. Currently two lines including one telephone and one facsimile are used in MIHS.

2) Construction Site 2 (Educational and Cultural Center)

(i) Location and Area

The construction site for the Educational and Cultural Center with the area of approximately 1.0 ha is located in Delap district in DUD adjacent to Nitijela Hall and the Administration Block. The land contract has been signed, and currently it is vacant.

(ii) Access Road

The site is surrounded by roads at three sides except in the west adjoining to Nitijela Hall. These roads are branch roads of the Majuro trunk road with a narrower width and the surface is not paved.

(iii) Infrastructure Installation

A high voltage power line of 13.8 KV is installed between the construction site of the Educational and Cultural Center and the Nitijela Hall site from which the power line will be installed into the Center.

The piping system is installed in which the rain water collected on the roof of the Administration Block will be transferred to the reservoir in the back of the national hospital built on the east side of the Project site, and sent back to the Administration Block after being filtered and sterilized. Therefore, it is appropriate to adopt the supply system through this water piping for the Center. It is also possible to connect the sea water line and sewage with the public pipings installed under the road in front of the construction site.

The installation of telephone will be made from the power line installed in front of the construction site.

(2) Natural Conditions

1) Description of Natural Conditions

Majuro has an average temperature of 27.3 °C with little yearly variation in values. The rainfall is of a squall type, and the annual depth of precipitation is 3,360mm. In terms of the monthly rainfall pattern, they have a little rain in January to March, with a gradual increase from April through October when the maximum precipitation is reached. Throughout the year stable trade winds blow from east-northeast, the mean wind speed being 3 to 6 m/sec.

The RMI is located outside the typhoon course, and does not suffer from typhoons very much. From recent damage records in Majuro, there have been flood damage due to a flood tide in 1979, and building damage caused by typhoon gales in 1992. Climatic data from the Majuro Meteorological Station is shown below.

Table 28 Climatic Data

Month	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.	Year
Average temperature(°C)	27.1	27.3	27.3	27.2	27.4	27.2	27.2	27.4	27.4	27.4	27.3	27.1	27.3
Precipitation (mm)	210	256	214	276	278	305	329	289	325	351	325	302	3360
Relative humidity (%)	79	80	81	81	83	82	81	81	81	80	82	81	
Mean wind speed (m/s)	6.1	5.1	5.4	5.4	5.3	4.4	3.8	3.1	2.9	2.8	3.4	4.7	

Notes: (i) The shown data of average temperature and precipitation are the average from 1959 to 1991.

(ii) The shown data of relative humidity and mean wind speed are the average from 1989 to 1991.

2) Topography and Geography

(i) Description of Topography and Geology

In both of the Project sites the geology consists of a distributed alternation of coral calcareous gravel strata and solidified coral rock. During the site survey, boring exploration was performed at three points in the construction site of the Educational and Cultural Center.

The exploration results revealed that the N-values ranged from 10 to 20 in the section from the surface stratum to around the level of minus 5m, showing a distribution of hard layers of solidified coral. Around the section of minus 5m to minus 7m, however, loose strata were found, and cavities in strata beds were often discovered, which indicates the need for a reduced building load to avoid settling buildings on hollowed areas.

(ii) Properties of Soil

(Grain Size Distribution)

A grain-size accumulation curve was prepared from the soil sample taken from a point of 1.45m below the surface layer (See Appendix Fig. 1). The curve in the shape of a gentle "S" indicates that grain sizes are distributed in a wide range. The uniformity coefficient (Uc), which represents the grain size distribution, was calculated as follows:

$Uc = D60/D10 = 4.5/0.07 = 64.3$

This value reveals that soil particles of different grain size are abundant in the surface layer, indicating tight soil.

(Distribution of N-value)

The bore log (See Appendix Fig. 2) shows a similar geological structure existent at all the three points of boring exploration. In the section from the surface layer down to the level of minus 5m, N-values of 10 to 11 are dominant, although hard

layers of N-values of 56 up to 65 are partially included, while in the section between minus 5 m to minus 7 m, loose layers are distributed. Since the fairly firm soil stratum in the section down to minus 5 m level is not thick enough, careful consideration has to be made on the foundation design of the buildings. In view of the facts that the buildings planned in the Project do not have a heavy upper load, and the surface layer is firm soil, it is possible to prevent settling of the buildings in the loose strata if the load is not borne by one point in the foundation structure but rather dispersed over the whole foundation. The outline of soil properties is shown below.

Table 29 Soil Properties of Project Site for Educational and Cultural Center

Depth (m)	N-value	Soil Properties
0 to below	10 or more	Topsoil is down to minus 0.3m; underneath crushed stone and sand
-2 to -4	50 or more	Pale brown/white coral limestone and slightly firm solidified stone.
-4 to -7	2 to 12	Pale brown/white gravel-mixed silt sand and slightly firm solidified stone.
-7to -14	10 to 33	Pale brown/white coral limestone and slightly firm solidified stone.
-14 to -15	10 to 45	Pale brown/white gravel-mixed silt sand and solidified stone.
-15 to below	10 to 95	Pale brown/white coral limestone and firm solidified stone.

(Unconfined Compression Test)

A soil sample was taken from the stratum of minus 13m depth, and subjected to an unconfined compression test. The sample had an apparent specific gravity of 2.73 in saturated condition, and a dry specific gravity of 2.42, which shows limestone abundant in void. An unconfined compressive strength of 162 kg/cm^2 was measured, which has similar strength to that of blinding concrete. Judging also from the test result, a structure type of foundation in which the upper load is carried by the whole foundation is preferred as mentioned above.

(Ground water Level)

The test result shows that ground water is found at a level of about one meter below the ground surface. Since only a submerged gravity of a solid from which soil buoyancy is deducted works effectively for friction force in a layer lower than a ground water level, ,the bearing capacity is reduced. The building foundation in this case, therefore, should be placed at a level one meter below the ground surface so that it will not be affected by the ground water level.

3.3.4 Outline of Facilities and Equipment

The outline of the facilities and equipment of the Project is described as follows.

(1) Facilities.

1) High School

The Project includes the construction of General Classroom and Administration Building, Special Classroom Building, Sports Shell and Dormitory, the rehabilitation of training rooms on the first floor of the existing vocational training building, and leveling of Sports Ground.

In consideration of the site area, the layout of existing school buildings and the building space required for the Project, it is appropriate that the General Classroom and Administration Building and Special Classroom Building will be two-story buildings, while Sports Shell and Dormitory will be one-story building.

(General Classroom and Administration Building: Two-story, approximately 1,700m^2)

- General classrooms are used for general courses and general advanced courses.
- The administration related floor is used by the staff responsible for administration and school affairs, consisting of rooms for adjustment of the operation schedule of the Educational and Cultural Center, accounting, counseling and guidance, and other general office work.

(Special Classroom Building : Two-story, approximately 670 m^2)

- Used for trainings of the vocational courses including cooking, sewing, secretarial type, and computer.

(Sports Shell: One-story, approximately 970 m^2)

- Used for physical education with one basketball court.

(Dormitory: One-story, approximately 310 m^2)

- Used for dormitory for new students coming from the outer islands until they find lodgings. After they find their lodgings, it will also be used as temporary lodgings for teachers.

(Renovation of the existing vocational training building)

- As equipment for vocational training is upgraded in the Project, electricity wiring required for new equipment and installation of a chain block for lifting heavy loads will be conducted in the auto-mechanics training room.

(Sports Ground)

- A 200m athletic track will be leveled for athletic games performed in the physical education class.

2) Educational and Cultural Center (Two-story, approximately 3,500 m^2)

Sports activities, lectures and exhibitions will be held in this Center. The arena which is to be used not only for tournament matches of high schools but also for community people should be large enough to hold two basketball courts. It will also be used for a space for exhibitions. A stage will be installed for giving lectures in social education.

When the draft report was explained, the government of the RMI requested to change the Project site for the Center, but the contents of the facilities of the Center were agreed on what is stated in this report.

In order to use these facilities properly, equipment for electricity, telephone, air-conditioning, water supply and sewage, and fire alarm will be installed as required.

(2) Equipment

The equipment for vocational training will be provided in the Project.

(i) Wood Working Equipment

Wood Working equipment includes carpenter tools; belt sander, disc sander, woodturning lathe, band saw, etc. for making wooden drawers.

(ii) Construction Equipment

Small tools lacking in the existing equipment in Construction will be provided.

(iii) Auto-Mechanics Equipment

Tools for auto repair include air compressor, parts washer, steam cleaner, shop press, etc.

(iv) Drafting Equipment

Drafting equipment includes drawing boards, T-Square, lettering set, etc.

(v) Cooking Equipment

Cooking equipment includes oven, ice maker, microwave oven, refrigerator, cooking tools, etc.

(vi) Sewing Equipment

Sewing equipment includes electric sewing machine, manual sewing machine, cutting board, sewing tools, etc.

(vii) Computer Equipment

Computer equipment includes personal computer, printer, UPS/AVR, etc.

(viii) Secretarial Type Equipment

Secretarial Type equipment includes electric typewriters which are prevalent in the RMI.

(ix) Agriculture Equipment

Agriculture equipment includes grass mower, power mist blower, chain saw, etc. for farmwork.

(x) Maintenance Workshop Equipment

Maintenance equipment includes lathe, drill press, bench grinder, power hack saw, arc welder, metal shear, etc. to repair the vocational training equipment and make parts.

3.3.5 Operation and Maintenance Plan

(1) Operation and Maintenance System

The following measures should be taken for operation and maintenance of the facilities and equipment improved in the Project.

The supervisor responsible for the operation and maintenance of all the facilities and equipment is the principal of MIHS. Vocational head of Department is in charge of the daily operation of the equipment for vocational training to be provided in the Project. Precision instruments should be protected from the salt air breeze by not opening the windows frequently. The deputy principal is in charge of the maintenance of school buildings. Specifically, a janitor will perform daily cleaning, inspection and repairs of damaged parts of the outer walls of the buildings and equipment installed outside to reduce the effects of erosion by salty breezes.

For the use of the Educational and Cultural Center, public notices should be posted to allow other youth groups besides MIHS and community people to use the Center. Cleaning and clearing will be done by those who use the Center and this will be the general rule regarding the Center's use. Operation and maintenance of the building and equipment of the Center will include daily cleaning, inspection and repair as in the new school building. The Department of the Educational and Cultural Center to be newly established will be in charge of operation and maintenance. Fees will not be collected for use of the Center.

(2) Personnel Plan

The number of personnel will be increased from 59 to 72, including, as Section 3.2.2 (1) Personnel Plan shows, ten high school teachers and three staff members for the Educational and Cultural Center. The graduates of CMI and overseas colleges will be employed as high school teachers. It is expected that the supervisors at the Center will be transferred from the Ministry of Education.

(3) Operation and Maintenance Costs

The operation and maintenance costs of the facilities and equipment to be upgraded in the Project will be summarized as follows.

1) Electricity Costs

Table 30 Annual Electricity Costs

1) MIHS					
A)	Basic Charge	$10/month	x	12 months	=$120
B)	Demand Charge				
(i)	Monthly Demand	Rated Power(kw)	x	Demand Rate	=Demand (kw)
	Lamps/Outlets	134.9	x	0.6	=80.9
	Air-conditioning	40.0	x	0.9	=36.0
	Water supply pump	3.0	x	0.7	=2.1
	Equipment	35.0	x	0.5	=17.5
	Sub-Total				136.5
(ii) Demand Charge	= [(Demand x Hour x Days/month) - 100kwh] x Unit Price x month				
	= [(136.5 x 7 x 20) - 100] x 0.12 x 10 =$22,812				
C)	Annual Cost = Basic Charge + Demand Charge = 120 + 22,812 ≒ $22,930				
(2) Educational and Cultural Center					
A)	Basic Charge	$10/month	x	12 months	= $120
B)	Demand Charge				
(i)	Monthly Demand	Rated Power(kw)	x	Demand Rate	=Demand (kw)
	Lamps/Outlets	115.4	x	0.6	=69.2
	Water supply pump	3.0	x	0.7	=2.1
	Sub-Total				=71.3
(ii) Demand Charge = [(71.3 x 6 x 20) - 100] x 0.12 x 12 = $12,177					
C) Annual Cost = Basic Charge + Demand Charge = 120 + 12,177 ≒ $12,290					

Electricity costs consist of a basic and demand charges. Electricity of public facilities is charged by a basic charge if the consumption volume is less than 100 kw/month, and a demand charge of $0.12/kwh is added to volumes exceeding 100 kw.

The total annual elecricity cost of MIHS and the Center is approximately$35,220.

2) Water Supply and Sewage Costs

The water supply and sewage charges of public facilities consist of a flat rate; $8/month for water supply and $7/month for sewage (including sea water and sewage); $15/month in total.

$15/month x 12 months x 2 = $360

The total annual water supply and sewage cost of MIHS and the Center is $360

3) Telephone Costs (excluding international calls)

(i) MIHS

The actual record of the annual telephone costs in 1992 was $1,662.04. The telephone cost of the newly installed two lines in the Project is expected to be $830, a 50 percent increase.

(ii) Educational and Cultural Center

As it is anticipatd to use telephone less often, the frequency is to be specified as follows. The annual telephone cost is estimated to be $900.

$ 0.5/min. x 10 min./day x 15 days x 12 months = $900

4) Repainting Cost of the Building

It is expected that the walls of the building are repainted once every five years so that the annual repainting costs including the paint cost, is estimated as follows.

(i) MIHS

$16,000 ÷ 5 years = $3,200

(ii) Educational and Cultural Center

$18,000 ÷ 5 years = $3,600

5) Equipment Replacement and Consumption Cost

(i) MIHS

- Replacement of Air-conditioning equipment after 10 years is expected to require $2,700/year.
- Replacement of lamps after 3 years is expected to require $2,500/year.
- Replacement of water supply pump parts after 5 years is expected to require $400/year.
- Cost of consumed equipment parts and accessories is expected to require $2,000/year.

Thus, the annual equipment replacement and consumption cost is expected to be $7,600.

(ii) Educational and Cultural Center

- Replacement of Air-conditioning equipment after 10 years is expected to require $200/year.
- Replacement of lamps after 3 years is expected to require $2,300/year.
- Replacement of water supply pump parts after 5 years is expected to require $300/year.

Thus, the annual equipment replacement and consumption cost is expected to be $2,800.

6) Total Annual Operation and Maintenance Cost

The total annual operation and maintenance cost is expected to be approximately $54,500. However, as the electricity cost is paid directly by the Ministry of Finance, the cost shared by MIHS will be about $19,000.

Table 31 Estimated Annual Operation and Maintenance Cost

Item	MIHS	Educational and Cultural Center
Electricity	$22,930	$12,290
Water & Sewage	$ 180	$ 180
Telephone	$ 830	$ 900
Bldg. Repaint	$ 3,200	$ 3,600
Replacement & Consumption	$ 7,600	$ 2,800
Total	$34,740	$19,770

The operation and maintenance cost for about ten years after the implementation of the Project is expected to be required in the periods shown in the following table.

Table 32 Period in Which Operation and Maintenance Cost is Required

Item	1year	2year	3year	4year	5year	6year	7year	8year	9year	10year
1) Electricity	Annual electricity charge is $ 35,220									
2) Water Supply & Sewage	360	360	360	360	360	360	360	360	360	360
3) Telephone	1730	1730	1730	1730	1730	1730	1730	1730	1730	1730
4) Repainting	0	0	0	0	34000	0	0	0	0	34000
5) Replacement & Consumption	2000	2000	16400	2000	5500	16400	2000	2000	16400	34500
Total	4090	4090	18490	41590	41590	18490	4090	4090	18490	70590

Note 1) As electricity charge is paid by the Ministry of Finance, it is not included in the total.
Note 2) Price is as of 1993.

3.4 Technical Assistance

At present Japan Overseas Cooperation Volunteers (JOCV) are sending teachers to MIHS. Such cooperation in the educational sector by JOCV will continue to be required. In the educational activities after the implementation of the Project, the government of RMI has no intention of requesting further technical assistance from Japan except from

JOCV. However, as stated in Section 3.2.6, it is considered to be necessary to formulate a comprehensive policy for secondary and social education and to establish a system to implement this policy and it is essential to receive technical assistance from advanced countries in this sector.

CHAPTER 4 BASIC DESIGN

CHAPTER 4 BASIC DESIGN

4.1 Design Policy

The basic design of the facilities and equipment in the Project is based on the following policies.

(1) The scale of the facilities should correspond to the increasing number of enrollments in secondary education, and the educational policies aiming at emphasizing vocational education in public high schools and strengthening social education should be reflected on the content of the facilities.

(2) The structure of the buildings should be planned in consideration of the ground condition of coral rock, and the layout and appearance should be conducted in coordination with the existing buildings.

(3) Natural conditions such as salt breezes from the ocean, wind direction, strong sunshine, concentrated rainfall, etc. should be considered.

(4) The standard of the facilities should meet the local operation capability; namely they should be easy enough to be operated and maintained and able to be renewed in the country.

(5) The construction materials should be selected based on a comprehensive analysis of the use purpose, durability, cost, etc., and the construction work should be conducted in the range of construction technology and existing construction machines available in the field.

(6) The specification should be provided for the equipment for vocational training in compliance with the standard of existing equipment and availability of expendable supplies and spare parts as well as repair capability.

4.2 Study and Examination on Design Criteria

4.2.1 Conditions of the Scale of the Facilities

(1) Seismic Intensity

As there is no earthquake in the RMI, the seismic intensity is zero.

(2) Wind Load

In the RMI the wind pressure indicated by the US Uniform Building Code (UBC) is adopted. The standard wind velocity in the RMI is 44.7 m/sec. The wind pressure is to be calculated using this standard wind velocity in the following sequence.

P (Wind pressure) = Ce x Cq x Qs x I

However,
- Ce : Coefficient determined by height of building and rough density of the ground surface (1.30)
- Cq : Coefficient of wind velocity, depending on portion of the building.
- Qs : Standard Wind Velocity (44.7 m/sec)
- I : Importance Coefficient (1.15)

The wind pressure obtained by this calculation is almost the same as the wind pressure required in the Construction Law in Japan.

(3) Criteria of the Floor Area of Classroom and Office

The area of the main rooms in the buildings to be upgraded in the Project was specified with reference to the area of the existing buildings in MIHS or the area by room indicated in the Data of Architectural Design compiled by the Japan Institute of Architecture. The following table shows the criteria of floor area calculation of the Project.

Table 33 Criteria of Floor Area Calculation of Classroom & Office (1/2)

Name of Room	Reference	Value Adopted in the Project
General classroom	Existing Building (General Classroom 1) Capacity 30 to 35 persons 9.6m x 9.3m = 89.3m^2 2.97 to 2.55m^2/person	Capacity 28 to 30 persons 8.0m x 9.0m = 72.0m^2 2.57 to 2.40 m^2 /person
Principal's Room	Existing Building (Administration Room) 6.0m x 9.0m = 54.0 m^2	8.0m x 3.0m = 24.0m^2
Deputy Principal's Room	ExistingBuilding (Admin.Bldg. , Vocational Training Bldg. 2) 6.6m x 3.9m = 25.7 m^2 7.6m x 8.7m = 66.1 m^2	3.0m x 6.0m = 18.0m^2

Table 33 Criteria of Floor Area Calculation of Classroom & Office (2/2)

Name of Room	Reference	Value Adopted in the Project
First Aid Room	Existing Bldg. (Administration Room) 3.2m x 5.4m = 17.3m^2	3.0m x 6.0m = 18.0m^2
Counselor Room	Existing Bldg. (Administration Room) 3.2m x 3.9m = 12.5m^2 3.5m x 5.4m = 18.9m^2	3.0m x 4.0m = 12.0m^2
Office	Existing Bldg. (Administration Room) 6.5m x 3.9m = 25.4m^2	6.0m x 8.0m = 48.0m^2
Library	Existing Bldg. (Administration Room) 125.7m^2	21.0m x 8.0m = 168.0m^2

4.2.2. Condition of Equipment Selection

The equipment for the vocational training is to be selected based on the following policies.

(1) Basic and general-purpose equipment for training should be selected, and advanced technical equipment will be excluded.

(2) Equipment which require extremely advanced skills for use and professional operation and maintenance will be excluded.

(3) Equipment which require special or expensive expendable supplies and materials with special costs for operation will be excluded.

(4) Special equipment requiring high voltage and power or a large amount of water will be excluded.

(5) Equipment which is durable for the frequent use and easy to maintain, repaire and inspect will be included.

(6) Equipment for which repair parts, expendable supplies and experimental materials are available in the RMI will be included.

4.3 Basic Plan

The Project site includes two locations including the one on the campus of MIHS and the one for the Educational and Cultural Center. The content of the plan for the Educational and Cultural Center is based on the result of the study of the site which was confirmed at the basic design study.

4.3.1 Site and Layout Plan

The construction site includes two locations including the one on the campus of MIHS and the one for the Educational and Cultural Center.

(1) Campus in MIHS

The campus of MIHS which stretches about 400m from south to north and about 90 to 150m from west to east has 13 buildings including the printing building owned by the Ministry of Education. The layout plan is to be formulated based on the following policies.

(i) Access to the Site

The access to the site is located in two places facing the public road running in the west side of the site and the district road running in the south side of the site. This access will be used for the Project.

(ii) Demolition of the Existing Buildings

The existing five buildings including general classroom buildings 2, 3, 4, Sports Shell and Dormitory will be demolished by the government of the RMI where new facilities will be completed.

(iii) Infrastructure

Water supply will be provided to the planned facilities by using the existing pipes in the site. For electricity the existing transformer on the column will be transferred in the site by the government of the RMI.

(iv) Layout Plan

In the campus of MIHS General Classroom & Administration Building, Special Classroom Building, Sports Shell and Dormitory will be newly constructed, electric wiring in the interior of the existing vocational building will be renovated, and 200m field track will be leveled.

General Classroom & Administration Building and Special Classroom Building will be located close to the existing classrooms in the south side near the access to the public road. Due to the restrictions in the layout of the existing buildings General Classroom & Administration Building will be adjacently