



ABBREVIATIONS

BH	Bosnia and Herzegovina
CS	Central School
DA	Dayton Agreement
DP	Displaced Persons
FD	Federation of Bosnia and Herzegovina
IMG	International Management Group
MFTER	Ministry of Foreign Trade and Economic Relations
OHR	Office of the High Representative
PCU	Project Coordination Unit
PIU	Project Implementation Unit
RS	Republika Srpska
SS	Satellite School
UIP	Unit for Implementation of Project for construction, reconstruction and equipping school facilities
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNHCR	United Nations High Commissioner for Refugees
UNICEF	United Nations Children's Fund
WB	World Bank

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CHAPTER 1 BACKGROUND OF THE REQUEST

CHAPTER 1 BACKGROUND OF THE REQUEST

1-1 Background of the Request and Project

Before the war in B&H, eight years of elementary school education and an attendance rate of 53% for secondary schools were qualified facts. However, 80% of school facilities were damaged during the war. After the DA in 1995, as part of the social sector reconstruction project, elementary school facilities have been actively reconstructed through the cooperation of such international organizations as the World Bank, EU, UNHCR, UNESCO and aid organizations of countries centered in Europe. The Emergency Education Reconstruction Project, sponsored mainly by the World Bank since 1996, has reconstructed elementary schools in addition to providing textbooks. Next more schools were reconstructed in Phase Two of this Project, thus ending this assistance for elementary school facilities.

On the other hand, the major aid activities, which assist the return of refugees, will also come to an end in 1999. It is assumed that aid to B&H will change from post-war reconstruction projects to economical development projects. The education sector has many problems to deal with such as unifying the school curriculum, which is now separated according to race, and improving school texts. However, no action has been or is being planned to be taken to resolve these problems. Furthermore, schools in some areas are suffering from a lack of classrooms due to a great flow of refugees into that area. There are also access problems due to the division of the area into the FD and RS. As these schools do not fit into the category of damaged schools, they are exempt from aid projects.

Due to the above reasons, the Government of Japan received a request for Grant Aid to reconstruct elementary school facilities from the Government of Bosnia and Herzegovina. The Preparatory Study was conducted in 1998. The Basic Design Study, completed in 1999.

In the Basic Design Study, facilities and equipment were planned in consideration of future improvements in the quality of education based on the education level in BH, architectural regulations, and the perception that the emergency reconstruction of damaged facilities was no longer necessary. However, after carefully examining the components and scope identified in the Basic Design Study, the Ministry of Foreign Affairs reached the conclusion that it was necessary to modify the project. This decision was made in light of post-war conditions and the affects of the war in HB, such as a large influx of population due to conflict, or classroom shortages caused by changes of entity lines. After, the Ministry notified the Government of Bosnia and Herzegovina that the Basic Design Study would be changed, and the Government of Bosnia and Herzegovina agreed.

Based on that decision, JICA dispatched a study team for an Implementation Review on the Basic Design Study.

1-2 Contents of the Request

(1) The List of the Requested Schools

The list of the requested schools at the Preparatory Study is as shown below.

1) The list of requested schools

The Federation of Bosnia and Herzegovina

No.	Canton	Municipality	Name of School
FD 1	1	Buzim	Varoska Rijeka
FD2	3	Gradacac	Vida
FD 3	3	Tuzla	Pasci
FD 4	6	Vitez	Stari Vitez
FD 5	7	Mostar	II Dr. Ante Starcevic
FD 6	4	Doboj Jug	Mustafa Mulic
FD 7	3	Gradacac	Edhem Mulabdic
FD 8	2	Orasje	Bok
FD 9	2	Orasje	Prud

Republika Srpska

No.	Municipality	Name of School
RS 1	Banja Luka	No Name
RS2	Bijeljina	Sveti Sava
RS 3	Lukavica	Sveti Sava
RS 4	Ribnic	Previja
RS 5	Srpsli Sanski Most	Ostra Luka

2) Contents of the Requested Project

Constructing school Facilities

Primary School Building composed of the following:

- Normal Classroom, Special Classroom, Library, Staff Room, Storage Space, Multi Purpose Hall and etc.
- Toilet, Water Supply and Drainage, Electric and Heating Facilities,

Providing Equipment

- Basic Furniture
- Basic Equipment for primary education level

(2) The contents of Basic Design

After the Preparatory Study of the Project, two requested schools, FD-8 and FD-9, were withdrawn and the school of Ivo Andric located in the same canton as those two schools was requested in place of them. Furthermore the school of Pasic, FD-3, was changed to another school (Sjenjak) located in the same municipality (Tuzla). Therefore, in the Basic Design Study, following 13 schools were requested in the end.

The Federation of Bosnia and Herzegovina

No.	Canton	Municipality	Name of School
FD 1	1	Buzim	Varoska Rijeka
FD2	3	Gradacac	Vida
FD 3	3	Tuzla	Pasci
FD 4	6	Vitez	Stari Vitez
FD 5	7	Mostar	II Dr. Ante Starcevic (IliyaJakovljevic)*
FD 6	4	Doboj Jug	Mustafa Mulic (21. Mart)*
FD 7	3	Gradacac	Edhem Mulabdic
FD 8	2	Domalijevec	Ivo Andric

*new school name identified in the Study for Implementation Review

Republika Srpska

No.	Municipality	Name of School
RS 1	Banja Luka	No Name
RS2	Bijeljina	Sveti Sava
RS 3	Lukavica	Sveti Sava
RS 4	Ribnic	Previja
RS 5	Srpsli Sanski Most	Ostra Luka

2) Contents of the Requested Project

Constructing School Facilities

On the Basic Design Study, the contents of facilities composed of ordinary classrooms, special classrooms, Administration rooms and libraries is based on the “Norm”, which is the facility regulation for elementary schools in BH. The gymnasium will also be included in large schools.

The architectural facilities will be reinforced concrete structures, based on the local work method, and heating facilities will be planned in all the facilities considering usage during the winter season.

School No.	Normal Classroom	Science Laboratory	Art and music room	Foreign Language room	Work Shop	Library	Gymnasium	Story	Floor Area (m ²)
FD 1	3	1	0.5	0.5	1	1	1	2.5 Stories/Basement	1,726.65
FD 2	9	1	1	1	1	1	1	3.5 Stories/Basement	2,441.30
FD 3	9	1	1	1	1	1	1	2 stories	2,460.00
FD 4	5	1	0.5	0.5	0.5	1		2 stories	1,415.65
FD 5	12	2	1	1	1.5	1	1	2 stories	3,225.95
FD 6	4	1	1	1	1	1	1	3 stories	1,904.00
FD 7	5	1	0.5	0.5	0.5	1		2 stories	1,429.40
FD 8	5	1	0.5	0.5	0.5	1		2 stories	1,415.65
RS 1	9	1	1	1	1	1	1	2 stories	2,467.20
RS 2	2	2	1	1	1.5	1		2 stories	1,312.65
RS 3	9	1	1	1	1	1	1	2 stories	2,467.20
RS 4	2	1	0.5	0.5	0.5	1		2 stories	1,152.60
RS 5	5	1	0.5	0.5	0.5	1		3 stories	1,499.80
Total	79	15	10	10	11.5	13	7	-	24,918.05

Providing Equipment

On the Basic Design Study, the furniture and appliances were selected according to minimum necessity furniture standards, which will be used in planned rooms. The components were mainly, student's and teacher's desks and chairs, and blackboards in the classrooms. The components of educational equipment were based on selection criteria, since the items requested from BH were varying. The cheaper items were excluded from the components in this project, expecting ownership of BH itself.

	Room / Subject	Main Item
Furniture & Appliances	Normal Room, Foreign language Room, Music and Art Room	Students Desk / Chair, Teacher's Desk / Chair, Blackboard, Closet, Whiteboard, Bulletin Board
	Science Laboratory	Stool, Experimental Table, Demonstration Table
	Work Shop	Stool, Working Table, Blackboard, Whiteboard
	Cabinet	Teacher's Desk / Chair / Closet
	Library	Reading Table / Chair, Bookshelf, Reception Desk with Chair
	Administration Room	Teacher's Desk / Chair, Closet
Educational Equipment	Basic Teaching Aids	OHP, Screen, Television, Video Recorder
	Foreign Language	Wall Pictures, Educational Film
	Mathematics (Lower Grade)	Wall Pictures
	Mathematics (Higher Grade)	Abacus, Compasses, Rulers, Models
	Geography	Thermometer, Barometer, Maps
	Physical Education	Box Horse, Balance Bean, Spring Board, Ping-Pong Table
	Physics	Wall Pictures, Equipment for Electrical Experiences, Measurements
	Chemistry	Metals & Alloys Collection, Wall Pictures, Molecular Model, Crystal Model
	Music	Piano, CD Player
Biology	Microscope, Dissection Equipment, Wall Pictures, Human Model	

CHAPTER 2 CONTENTS OF THE PROJECT

CHAPTER 2 CONTENTS OF THE PROJECT

2 - 1 Objective of the Project

The objective of this Project is to reshape the basic education facilities at 13 sites in the regions of the FD and RS which were damaged by the conflict, and to improve the educational environment, while improving the facilities and access for students.

2 - 2 Basic Concept of the Project

2 - 2 - 1 Basic Concept of the Project

After modification of Basic Design by the Ministry of Foreign Affairs, all the requested site were reviewed and re-planned based on the Japanese Grant Aid efficiency and relevance and following orientations.

- (1) The Norm (i.e. the standard for constructing school in the former Yugoslavia) should be remained just as a reference.
- (2) The number of classrooms should be limited to the number sufficient for the eight-grade basic school to conduct lessons with 36 pupils per a class under double shift system.
- (3) Special classrooms will not be settled I principal, because all ordinary classrooms are planned to fulfil the functions for any special subject. However, shared science laboratory will be planned to conduct science related school subjects which require laboratory lessons and to be used for other subjects.
- (4) An additional classrooms will be considered to conduct foreign language lessons as an elective subject according to the scale of school facility.
- (5) Gymnasium and its related facilities (i.e. dressing room, preparation room) should be excluded from the project.
- (6) Only “shared science laboratory” shall be accompanied with a “cabinet”. Teacher’s room and/or storage should be utilized as substitute for the “ cabinets”.
- (7) Closed stack system library will be planned instead of open stack system library and the browsing area will be shared with other facilities basically.
- (8) The management section of the school (principal’s room, teacher’s room, first aid room, etc) should be designed at minimum scale by planning the utmost combination and common use. The reception room should be excluded from this scope.
- (9) The allocation of classroom is to be planned as one-side way type.
- (10) The equipment and the furniture to be provided should be limited to the minimum items and numbers necessary for the facility to be constructed.

2-2-2 Selection of Project Sites

(1) Criteria for Selection:

On the Basic Design Study, Site selection among 13 requested school sites will be according to the criteria, and all the 13 schools were selected as a target school.

Priority will be given to sites where there is a clear need for educational facilities, where there is a minimal number of students in the school district.

Site Ownership: Legal rights should be clearly defined and understood by the school, the Ministry of Education or local government. Accordingly, there must be no illegal occupants on site.

Access: Sites should have access roads allowing the passage of construction vehicles.

Topography and Natural Conditions: Site topography should not pose problems for construction. Obstacles such as existing buildings or trees should be removed. Sites should not be at threat from flooding, ground subsidence or snow damage.

Safety Problems/ Social Problems: Dangerous items (for ex. mines) should be removed from sites and the areas surrounding should be safe from environmental and social hazards. Refugeism must not be encouraged and racial separation must not be promoted through the implementation of the Project.

There should be no competing plans for project sites by the government or other donors.

Furthermore, in the study for the Implementation Review

The efficiency of the Japanese Grant Aid shall be insured

If the number of classrooms needed is less than 4 (the minimum facilities scale when 8 grades and 2 shift), these schools shall be excluded from this project, and become target of a Grassroots Grant Aid project. The number of necessary classrooms was based on the Norm of the Basic Design. In this Implementation Review, that number in each site was based on the minimum necessary for school management.

(2) Sites Having Problems

As giving the details later, FD4 and RS4 were excluded from this Project. Other sites except for two schools that have some problem and require corrective measures are described below:

1) FD1: Varoska Rijeka

This school construction site fell prey to flooding in 1999 when a neighbouring river overflowed. In this case, as there is no alternative construction site, certain preventive measures must be taken. Large-scale land reclamation work should however be avoided. It is deemed that raising the floor heights of the buildings on site is the appropriate action in this instance.

2) FD2: Vida

When the site survey of the Basic Design Study Project was conducted, this school construction site was being used as a lumber storage yard. It is necessary that this yard, along with some existing facilities, be removed so that Project implementation can proceed. As the responsible, executing organization has agreed to this removal work, there should be no further obstacles to construction.

3) FD5: Dr. Ante Starcevic

As unauthorized facilities exist on this school site, it is necessary that they be relocated or removed to allow Project implementation. Concerned municipality personnel have promised to take the appropriate actions.

4) FD8: Ivo Andric

During the war, the existing school facilities were destroyed by bombing. When the field surveys for the Project were conducted, the site had not yet attained a landmine clearance certificate. However, this was issued by the Federal Ministry of Physical Planning and Environment of FD on December 22, 1999. It is considered that Project implementation can now proceed.

5) RS3: Sveti Sava

After the war, many serb refugees relocated to Srpsko Novo Sarajevo, where this candidate school is situated. Most of the students attending the school are the children of displaced persons. As has been pointed out by other aid donors, any assistance provided in this area may give rise to problems of DP settlement. There exist no primary schools with sufficient facilities and the candidate school is operated within a very poor environment on rented facilities. Approximately one half of the students are the children of the residents who were already in the area prior to the war (47% of area residents are in this category). Furthermore, many DP have now been living in the area for almost four years and it is unlikely that they will return to their own homeland in the near future. For these reasons, it is considered appropriate to include this school in the Project.

2-2-3 Criteria for Selecting the Number of Students

(1) Preconditions

In general, candidate schools shall conduct a double shift system.

The usual number of students limited to a class is 36 students.

DP shall be included in the student estimates.

The target year, for considering the increase in the number of students shall be the year 2003 when the construction is assumed to be completed.

When considering the increase in student numbers, the increase or decrease in the school enrolment rate shall not be considered.

The estimated number of returning refugees is extremely small according to UNHCR material. Thus, this factor will not directly affect the student increase rate.

The rate of population increase in B&H is estimated as 0.05% per year which the United Nations, Population Division, Department of Economic and Social Affairs applied when estimating the population of B&H in 2050.

(2) An Estimate of the Number of Students to be Accommodated

Since the purpose of this project is to rectify the problems posed by limited facilities, the total number of students to be accommodated in each school shall be calculated according to the sum of the following: the number of existing students in the project schools, the number of excess students of other schools in the vicinity,

the number of students being transferred from surrounding schools.

The number of existing students in the project school

The actual number of students at the time of the Basic Design Study shall be considered as the number of existing student in the project schools.

The number of excess students of other school in the vicinity

In the case of excess students, from other schools in the vicinity, that can be admitted to the project schools because of limited facilities, the number of excess students shall be considered as the number of new students to be accommodated. The total number of excess students shall be calculated according to the following equation to be conducted double shifts classes in other schools. (If there are several schools in the vicinity, the total number of excess students shall be added up):

Number of Excess Students =

(Present Number of Classes – Number of Existing Classrooms × Number of 2-shift classes) × the Average number of Students per Class

The Number of Students being Transferred from Surrounding Schools

With Project implementation, the total estimated number of students transferred from surrounding schools in order to rectify access problems, shall be considered the number of new students being accommodated. In the case of Satellite Schools being upgraded to Central Schools, to improve access, higher grade students from the central schools in the vicinity who are transferred to the Project schools shall be considered as new students. Figures will be adjusted accordingly.

Working from the above calculation, the total number of students to be accommodated in each school at the time of the Basic Design Study (1999) and also in the target year (2003) is as shown below.

Table 2-1 The Number of Students in the Project Schools

No.	Canton	School Name	1999	2003
FD1	1	Varoska Rijeka	444	445
FD2	3	Vida	797	799
FD3	3	Sjenjak	601	602
FD4	6	Stari Vitez	229	229
FD5	7	Dr.Ante Starcevic	864	666
FD6	4	Mustafa Mulic	582	583
FD7	3	Edhem Mulabdic	279	280
FD8	2	Ivo Andric	124	124
RS1	-	Untitled	670	670
RS2	-	Sveti Sava	1,389	1,392
RS3	-	Sveti Sava	699	700
RS4	-	Nikola Mackic	266	267
RS5	-	Ostra Luka	211	211

2-2-4 Estimating of the Number of Classrooms

(1) The way of estimation

- The average number of pupils per grade is to be calculated by dividing the total number of students in a candidate school by 8.
- The smallest number of classrooms is to be calculated by making a class with 36 students at most per each grade.
- The smallest number of classrooms is determined as followings: the number of class in each grade \times 8 grades \div 2 shift classes (4 times of the largest class mentioned above).
- The number of classrooms is minus the number of existing classrooms from the smallest class calculated above.

(2) Number of necessary classroom

Based on the calculation done above, the total number of classroom to be constructed in each candidate school will be shown below.

Table 2-2 The total number of classrooms to be constructed in each candidate school

School No.	No. of Student (Y 2003)	Average Students per grade	Most classes per each grade	Suitable Classroom	Existing Classroom	Necessary Classroom
FD-1	445	55.6	2	8	3	5
FD-2	799	99.9	3	12		12
FD-3	602	75.3	3	12		12
FD-4	1461	182.6	6	24	24	
FD-5	866	108.3	4	16		16
FD-6	583	72.9	3	12	5	7
FD-7	280	35	1	4		4
FD-8	124	15.5	1	4		4
RS-1	670	83.8	3	12		12
RS-2	1392	17.4	5	20	14	6
RS-3	700	87.5	3	12		12
RS-4	267	33.4	1	4	3	1
RS-5	211	26.4	1	4		4

(3) Screening

Screening shall be conducted based on the above criteria and calculation for site selection.

Table 2-3 Screening of Candidate Sites

No.	School Name	Selection Criteria						Result	Remarks
FD1	Varoska Rijeka								Flooded in the past
FD2	Vida								Remove lumberyard
FD3	Sjenjak								
FD4	Stari Vitez						×	×	No classroom needed. To be excluded from the Project.
FD5	Dr. Ante Starcevic								Illegal occupants on site
FD6	Mustafa Mulic								
FD7	Edhem Mulabdic								
FD8	Ivo Andric								Mines were removed
RS1	Untitled								
RS2	Sveti Sava								
RS3	Sveti Sava								Possibility of encouraging refugees to stay
RS4	Nikola Mackic						×	×	One classroom needed. To be excluded from the Project
RS5	Ostra Luka								

Notes1 : :No Problem : Some problems (can be solved) ×: Problems ?: Certificate not submitted

In the results of the above screening, FD-4 and RS-4 were excluded from this project, while 11 schools will be targeted in this project.

2-2-5 Establishing Joint Components

In this project, the joint facility components will be planned based on the concept of the Implementation Review mentioned before.

(1) Normal Classrooms

Normal classrooms are, without doubt, necessary. However, as noted, the differing demands of lower and higher grades mean that their classroom types need to be considered separately.

Normal Classrooms for Lower Grades (Grade One to Four):

One normal classroom is provided for each class and all subjects (except physical education) are taught there. The furniture and equipment should be appropriate for lower grade use.

Normal Classrooms for Higher Grades (Grade Five to Eight):

In B&H, higher grade teaching is centred on subject courses. There are separate rooms for each subject and students have to change rooms accordingly.

In small schools, however, such as in those found in farming areas, it is difficult to comply with this system. In such instances, therefore, classes are taught in one classroom as per the lower grades. As the teaching methods depend on the discretion of the school operating members, it may not be appropriate to consider all the classrooms in the Project as special rooms.

Except for those subjects which require the installation of special equipment and for those that, due to their nature, require a separate space, it shall be assumed that higher grade lessons are conducted in normal classrooms. The choice of teaching methods shall be entrusted to the school.

Shared Science Laboratory

In BH, teacher demonstrations are common in science classes, whereas student participation is rare. However, this situation might be caused by a shortage of equipment, but easily ameliorated so students can participate in the near future. For this reason, it should be considered in facility planning.

For science classes, water taps and sinks to wash experimental equipment, and demonstration space is required. Exclusive equipment is also needed. Therefore, acquiring the necessary science classroom equipped is crucial. In this Project, a Shared Science Laboratory will be provided in all the project schools, and the number of classrooms will be calculated as described below.

1) Precondition

- The number of classes per week for higher grades per week is 26 in the single shift class.
- All classes of biology, physics, and/ or chemistry in the higher grades are to be taught in the science laboratory.
- The number of science classes for each class in the higher grades is 1 per week, thus, minimum of 16 will be used in following calculation.

2) The number of necessary classrooms:

Based on the precondition, the number of shared science laboratories will be estimated in accordance with the number of classrooms per grade.

Table 2-4 The number of necessary shared science laboratory

No. of Classes per Grade	Total No. of Science classes / week	Use rate per week	Necessary No. of C.R.
1	16 / 52	30.8%	1
2	32 / 52	61.5%	1
3	48 / 52	92.3%	1
4	64 / 52	123.1%	2
5	80 / 52	153.0%	2

According to the calculation above, FD-5 (4 classes in each grade) and RS-2 (5 classes in each grade) need 2 shared science laboratories. The others require only one.

Cabinet for a Shared Science Laboratory

For the main purpose of stocking the science equipment and preparation of science

classes, a cabinet will be provided in the shared science laboratory. Consistent with the meaning of “Cabinet” as defined by the Norm, the cabinet also has a role as a teacher’s room for higher grades. However, in this project, a cabinet will not be provided except for in shared science laboratories on the condition that all teachers will stay in the teacher’s room.

Foreign Language Room

Foreign languages are taught in grades 4 to 8 in FD and grades 5 to 8 in RS, and as many as 2 to 4 classes per week. Within the classes per week (16 to 27 classes: different in areas or grades), 8 to 16 classes are supposed to be assigned for foreign language class in each grade. The class has a selection system of various languages (FD: English, German, and French. RS: English, French, and Russian). These classes are taught in different languages and grades. Foreign language classes occur more frequently. For this class operation, it’s possible to allocate the classroom according to each language, and by having the language class simultaneously in each grade, since there are some classes in each grade in a school having more than 8 classrooms. However, in the case of less than 8 classrooms, the number of classes per each grade will be one (1), in which case, it’s impossible to allocate the classroom by language when setting the number of classrooms with same number of classes. Therefore, in a small- scale school, increasing the number of classrooms for a language class is required. The calculation for increasing the number of classrooms is shown below.

1) Precondition

- Foreign language class is held in each higher grade, not in multi grade class.
- At least 2 kinds of foreign language class are held simulataneously.
- Foreign language class is held in each classroom
- It is impossible to divide an ordinary classroom

2) The necessary number of Foreign Language Classroom (Shared ordinary classroom)

The number of foreign language classes in each grade as follows.

- In the case of 1 class per grade: $1FL(1+1/2) =$ equivalent 1.5 classrooms.
- In the case of 2 classes per grade: $2FL(1+1) =$ equivalent 2 classrooms.
- In the case of 3 classes per grade: $3FL(2+1) =$ equivalent 3 classrooms.
- In the case of 4 classes per grade: $4FL(2+2) =$ equivalent 4 classrooms.
- In the case of 5 classes per grade: $5FL(2+3) =$ equivalent 5 classrooms.

The proportion of classrooms for higher and lower grades

Basically, the half of necessary classrooms will be for lower grades. The rest will be for classrooms of higher grades. The shared science laboratory will be included in the number of classrooms for higher grades. If the number of classrooms provided is an odd number, the number of classrooms for higher grades will be kept.

(2) Closed Shelf Library:

As the purchase of books is problematic in B&H, libraries in basic schools are under

great demand, with time limits being routinely placed on users. Where no library exists, schools commonly make use of a simple reading corner. Libraries are divided into open and closed-shelf types according to school. In order to equip libraries built under the Project, a great deal of money needs to be spent (except in the case of some existing schools). However, libraries as resource centres are continually evolving. Current media and reference materials are now easily accumulated and accessed via the internet and resultantly, library resources are in even greater demand. In light of this trend, there will be one established in each Project school.

In this project, from the point of view that a minimum necessity of facilities be provided, the shelf or closed library will be given, while the browsing space will be excluded. In small scale schools, alternative space in the form of a bookshelf will be planned at the backside of an ordinary classroom to be used as browsing space. In the large schools, where the number of books and users will be higher, an easily accessible, closed shelf library will be planned around the Hall.

(3) Rooms Related to the Management of Schools

Teacher's Room

Most of the schools have double shift or triple shifts and teachers change accordingly. Teachers do not have own desk but keep their belongings in a locker. In most cases, the teachers room is also used for school meeting and meeting with guests, parents and local residents, with the furniture typically arranged around a big table. Teachers rooms, combined with meeting rooms, shall be provided to Project schools.

The area for the teacher's room will be settled by the standard grid of the buildings, calculating the number of teachers in each school, and 4.5 m² for one teacher as the standard. From the result of Basic Design Study, 0.05 per student (20 students per one teacher) will be the standard for the calculation. In this project, the number of teachers for a single shift class will be accommodated in the calculation for the floor area, however double shift classes were not accounted for.

Administration Office:

There are few office personnel in the basic schools in B&H. In most cases, the principal, vice-principal, secretary and treasurer are responsible for administration. Thus, a principal's room and a space to accommodate a few staff members shall be also provided.

First Aid Room and Other Room:

Although the existing school do not have specialist permanently on staff, they are sometimes equipped (with dental treatment chairs, for ex) for visiting doctors. Considering the inadequacies of the hospital system in BH, it may be important to have such medical facilities on site. The equipment required for dental treatment is expensive, however, considering the frequency of use, and its maintenance is difficult. Provision will not be made for its inclusion in the Project although a simple first aid room shall be installed. Dental treatment shall be future's responsibility of BH.

The Administration Room, including a small kitchen, will be of a minimum scale and utilised as a shared space, for example an Administration Room can be shared with a First Aid room. By dividing the administration room and first aid room using a mobile partition, it is possible to use the room flexibly.

The area of the administration office is supposed to accommodate 1 or 2 officials, the principal's room, and a small kitchen will be planned in the same area of all the project schools. Therefore, management related rooms will be consistent at every school.

(4) Service Facilities

Kitchen:

In order to supply hot water to the staff and to supply school lunches in some schools, a simple kitchen shall be provided.

Entrance Hall:

For the main purpose of the writing area for the students in double shift class and students waiting area before and after the classes, the entrance hall for multi purpose usage except for going in and out will be provided.

Toilets:

Flush toilets as per the country's standards shall be installed (In the Norm: 1 stool and 2 urinals per 50 male students. 1 stool for 25 female students).

Janitor's Room:

In general, the cleaning staffs of the school conduct the cleaning of the basic schools in B&H. The housekeeper conducts repair and maintenance. A number of school personnel are employed for this purpose and thus, a janitor's room shall be provided.

Others:

Project Schools requiring the installation of boilers shall be provided with a boiler room.