



CRITERIA & STANDARDS FOR CHILD-FRIENDLY SCHOOLS

Volume I REHABILITATION

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FOREWORD

On behalf of the Ministry of Education, I am pleased to present The Manual on Criteria and Standards for Child-Friendly Schools.

This study focuses on the present physical and Sanitation condition of the school buildings and suggests strategies which are expected to be of particular interest and practical use for the policy makers, programme planners and operational managers not only for the Ministry of Education but also other international/national partners at the central, governorate, and district levels involved in the reconstruction of the education sector infrastructure in Iraq. It will also be of interest to the Ministry's development partners and to policy makers and planners in other sectors.

This report aims to set a baseline of priorities for any required action towards rehabilitation of school buildings. It was made to provide practical standards and design criteria to be used as guidelines for rehabilitation of child friendly schools environments; taking into consideration traditions and environmental aspect of Iraq with a focus on primary schools.

This report consists of three sections. The first section is an overview of the education system in Iraq. Within this section some problems related to the educational system were highlighted such as, the enrollment rate, reasons behind students being away from schools and other problems.

Section two illustrates the basic use of the term "Child Friendly Schools" and its objectives, component and the methodology of applying it based on international experience.

The third section deals with the school building environments, classifying the school area into major categories; that are teaching spaces, non-teaching spaces, school exterior facilities and boundary walls.

The contribution of the United Nations Children's Fund (Unicef) in preparing this study is highly appreciated. I would also like to record my deep appreciation for the efforts of all the staff of the Ministry of Education who contributed to the preparation and finalization of this important study.



Dr. Abdul Falah Al-Sudani
The Minister of Education,
Baghdad, Iraq
7 February, 2006

Foreword	i
Table of Contents	ii
Tables & Figures	iv
Abbreviations & Damages	v
□	6

SECTION 1: OVERVIEW OF THE EDUCATION SYSTEM IN IRAQ

Preamble & Background	8
The 2003-2004 School Survey	9
• Objectives	9
Shortage Of School Buildings	10
Building And Reconstruction Needs	10

SECTION 2: CHILD-FRIENDLY SCHOOLS

□	13
Definition Of Child-Friendly Schools	14
Characteristics	14
• Healthy For Children	14
• Effective With Children	14
• Protection Of Children	14
• Involvement With Families	15
Components Of Child-friendly Schools	15
• Community And Family-based	15
• Schools Are Healthy Learning Places	15
• Enhancing Teacher Capacities And Moral	16
• Rights Based Schools	17
• Schools Provide An Education Based	17
• Schools Are Flexible, Respond To Diversity	17
How To Implement The Child Friendly Programme	18
Towards Effective And Protective Schools	18
Community Participation Towards Healthy School Environment	18

SECTION 3: SCHOOL DESIGN AND STANDARDS

School Environment	20
Teaching Spaces	21
Classrooms	21
Library	23
Computer Room	23
Non Teaching Space	23
Administration Section	23
Multipurpose Hall	23
Sanitation Unit/toilets	23
Canteen	24
Store	24
Corridors, Terraces And Staircases	24
Laboratories	24
School Exterior Facilities And Premises	24
Play Yards	24
Garden	24
Access Ramps	24
Boundary Walls	24
Environmental Design Factors	25
Temperature	25
Ventilation	25
Lighting	25
Acoustics	26
Minimum Standards For School Rehabilitation	25
Structural System And Civil Work	26
Interior Walls And Ceilings	26
External Walls	27
Fence Wall	27
Floors	29
Roofs	29
Doors And Windows	29

School Facilities And Premises	30
School Yards And Pathways	30
Access Ramps	31
□	31
La□	31
Electrical System	33
Miscellaneous	33
School Furniture	34
Anthropometrical Data And Furniture Sizes	35
Beyond Rehabilitation	36
Recommendations	39
Proposed Studies	40

TABLES

Table (1): Number Of Doubled Schools	9
Table (2): Number And Type Of Damaged Schools	11
Table (3): Type Of Construction Material For School Buildings	12
Table (4): Need For Extra Classrooms	21
Table (5): Types Of Perimeter Fences In Schools	27
Table (6): Number Of Schools With School Yard	30
Table (7): Number Of School With Playground And Sport Facilities	31
Table (8): Number And Condition Of Latrines In Schools	31
Table (9): Student Chair Dimensions	35
Table (10): Design Category For Students Chair Dimensions	36

FIGURES

Figure (1): Different Classrooms Layout Planning	22
Figure (2): Ratio Between Standing Height (SH) And Comfortable Furniture	35
Figure (3): Cases Of Adding Accommodation To School Building	37
Figure (4): Prospect For Developed Environment Of School's Canteen	38
Figure (5): Prospect For Developed Environment Of School's Exteriors Facilities	38
Figure (6): Prospect For Developed Environment Of School's Play Yard	39
Figure (7): Prospect For Developed Environment Of School's Latrines Unit	39

LIST OF ABBREVIATIONS

MOE	Ministry Of Education
UNICEF	United Nations Children’s Fund
ESS	Educational Statistic Survey
GDP	Gross Domestic Product
GNI	Gross National Income
OFFP	Oil For Food Programme
PTA	Parents-Teachers Association
CSO	Central Statistical Organization
GER	Gross Enrolment Ratio
NER	Net Enrolment Ratio
CRC	Children Rights Convention
KAP	Knowledge, Attitude, and Practices

DAMAGE LEVEL

DAMAGES DEFINITIONS

DESCRIPTION

A

- Broken windows , doors locks and hinges, roof tiles,
- Superficial surface damage from bullet impact
- Can be repaired

B

- Up to 30 roof damage
- Moderate shelling or bullet impact on walls and roofs
- Partial fire damage
- Can be repaired.

C

- Over 30 roof damage
- Major wall damage
- Severe fire damage
- Need for floors replacement
- Doors and windows destroyed
- All plumbing and wiring are missing or destroyed
- Flooded with water
- Can be repaired

D

- Destroyed
- Needs reconstruction
- Can not be repaired

INTRODUCTION

This report provides a brief description on the education status in Iraq. A legacy of destroyed and severely damaged buildings which accommodate schools and health facilities were the witnesses of an obvious regression by all means.

The continued deterioration and accumulated neglect associated with reduction of school maintenance and new construction funds caused an increased demand for new school buildings to suppress the shortage, and to rehabilitate/maintain the existing school buildings in order to keep these schools operating at their optimum.

Although this report focuses on the immediate needs which concern the number of students, classrooms overcrowding, missing of basic needs and health requirements, it provides a baseline for the new education system which goes beyond fulfilling the basics towards rebuilding the capacities and having a system that embodies new terms of high importance like child friendly schools.

This does not only targets schools that do not carry the ordinary/traditional definition of an educational institution but it goes far beyond to ensure the safety and healthiness of the learning environment to make the school a desirable place for the student

The topics of this report focus on the present situation of the education system in general and the primary education in particular for it represents the majority in terms of school buildings and students.

Points were formulated after many meetings with MOE's educational experts and educational planners. Figures presented in this report are based on the 2003-2004 school survey and studies done by other organizations; they were combined together to serve the purpose of the report.

This report represents an overview and tries to deal with the basic needs of rehabilitation of primary schools in Iraq. Schools development and new construction will be covered in a separate study.

This report consists of three sections. The first section is an overview of the educational system in Iraq. It gives an overview of the system, distribution of students and teachers, curriculum, and examinations. Within this section some problems related to the educational system were highlighted such as, the enrollment rate, reasons behind students being away from schools and other problems.

Section two illustrates the basic use of the term "Child Friendly Schools" and its objectives, component and the methodology of applying it based on international experience.

The third section deals with the school building environments, classifying the school area into major categories; that are teaching spaces, non-teaching spaces, school exterior facilities and boundary walls.

OBJECTIVES

The objectives of this report are oriented towards providing an overview of the rehabilitation problems and proposed solutions; Therefore, they were classified by giving basic information on education in Iraq in addition to outlining the problems and constrains that face the education system.

This report aims to set a baseline of priorities for any required action towards rehabilitation, developing and new construction. It was made to provide practical standards and designs to be used as guidelines for rehabilitation and reconstruction of child friendly schools environments; taking into consideration traditions and environmental aspect of Iraq with a focus on primary schools.

Paying more attention to the primary education at this time may help to increase the enrollment rate at early stages, and also decrease dropout and repetition rates and bring the education forward.

SECTION 1:

OVERVIEW OF THE EDUCATION SYSTEM IN IRAQ



Preamble and Background

Primary education is a six years compulsory study that ends with a national terminal exam to be taken by all primary school students in order to proceed to the intermediate level.

Iraq schools used to be considered of the best in the Middle East. Whereas today millions of children are attending schools that lack even basic water or sanitation facilities, have crumbling walls, broken windows and leaking roofs.

This decay is the result of decades of neglect and under funding during the sanctions era, as well as the impact of three wars, starting with the Iran- Iraq war.

The national school survey held in early 2004 stated that since March 2003, over 700 primary schools have been damaged due to bombing (one third of those are located in Baghdad) and more than 200 others were burned while over 3,000 schools were looted.

Construction of new schools or primary health centers stopped completely a long the past decade, with the increase number of population (growth) and migration of huge number of people seeking safe haven and jobs caused a rapid increase in the intensity of cities. The existing schools buildings with their bad conditions were neither enough nor suitable to accommodate children. Many schools have had to double up, with a quarter of all primary schools in Iraq running two or three shifts per day meaning reduced classroom time for each shift. The 2003-2004 school survey showed that primary schools are mostly overcrowded in Basra governorate, in which over 600 primary schools are sharing buildings.

The first volume of the school survey reports was released in October 2004, shows that one third of primary schools in Iraq lack any water supply and almost half are without any sanitation facilities. The worst affected governorates are Thi qar, Salaheldin and Diala, where more than 70 per cent of primary school buildings have malfunctioning water systems.

4,334,609 students are currently enrolled in primary schools, up from 3.6 million in 2000. However, there are not enough desks, chairs, or classrooms. The survey reveals that despite of all difficulties, overall enrollment flourished in the 2003/2004 academic year. But it also shows that the number of suitable school facilities has failed to keep pace with demand.

DOE	Number Of Schools In The Building		
	1	2	3
Ninevah	818	200	6
Salaheldin	375	194	22
Tamim	425	117	5
Diala	528	112	0
Baghdad / Risafa 1	268	66	5
Baghdad / Risafa 2	196	106	2
Baghdad / Karkh 1	384	41	3
Baghdad / Karkh 2	203	114	0
Anbar	308	256	13
Babil	168	275	16
Kerbala	86	120	13
Najaf	174	119	0
Qadissia	327	73	0
Muthana	207	31	0
Wasit	469	21	0
Thi qar	328	221	64
Misan	308	35	0
Basra	194	235	71
Dohuk	641	43	3
Erbil	842	122	4
Sulaimaniya	1,225	129	27
Total	8,484	2,630	254

Table (1): Number Of Doubled Schools

THE 2003-2004 SCHOOL SURVEY

This item presents a brief documentation for the survey and its stages in addition to the methodology adapted in the survey as well as plain analysis of the results.

• Objectives

The objectives of the educational survey in Iraq were defined to give indicators for any future study and planning action in education sector in Iraq.

The present status of school buildings and type/amount of damages posed to these buildings for much more accuracy in assessment.

The technical statistical staff in MOE in cooperation with the UNICEF carried out the first qualitative survey on education in Iraq.

The survey covered all schools in Iraq, which gave around 19,331 schools of all levels of educational, from which 13,914 are primary schools.

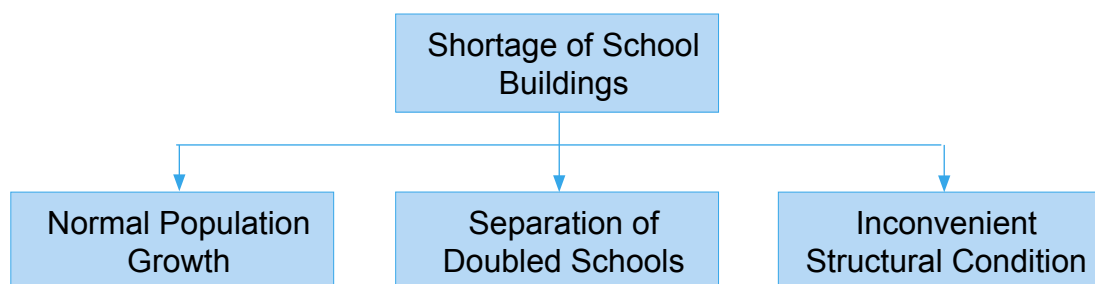
MOE used to conduct annual school surveys for serve of educational and planning purposes, but the virtue of this survey came from it was the first one after the war with all the inconvenient condition associated with this effort.

SHORTAGE IN SCHOOL BUILDINGS

Out of the 11,939 schools requiring repair, more than 1,800 schools have been renovated during the second half of 2003. Thus more than 10,000 schools currently require repair, half of them require major reconstruction or demolition and total rebuilding. In addition to the constraints mentioned above, it should be stated that, there is a considerable shortage of school buildings.

A significant proportion of schools work in two or three shifts and the number of hours students are in schools is therefore limited. This restricts access to education, limits the use of effective methods of teaching/learning, and deprives school from physical education and art lessons as well as extracurricular activities. There is also no time or space for parents/teachers interaction.

To overcome the problem of shifting in double school and the overcrowding of children in classes, new schools have to be built. The current plan is to build 4,500 schools over the next 4 years.



BUILDING AND RECONSTRUCTION NEEDS

The figures concerning the proportion of schools requiring repair were also discussed during the Inter-Agency Meeting held in Amman in November 2003 and the following table shows the consensus reached:

School Type	Not Damaged	Damage Class (A)	Damage Class (B)	Damage Class (C)	Damage Class (D)
Kindergarten	79	371	72	96	9
Primary Schools	1,271	5,929	1,451	2,098	529
Secondary Schools	255	1,782	311	369	36
Vocational Schools	23	109	29	47	5
Teachers' Institutes	5	34	11	8	0
Yafi'een Schools	0	7	2	3	0
Total	1,633	8,232	1,876	2,621	579

NOTES ON DAMAGES

Class	A	Small Repairs
Class	B	Damages 30%
Class	C	Damages 60%
Class	D	Major Damages Can Not Be Repaired

See list of abbreviation and damages for details of damages classes

Table (2) Number of Damaged Schools and Type of Damage

Source: ESS 2003/04

In addition to the fully damaged schools and the ones that need rehabilitation, shortage is due to the doubled schools and schools which are already in an improper school building such as sugar canes or mud as it is shown in table (3).

Governorate	Building Material of the school				
	Brick	Stone	Pre-cast Concrete	Mud	Tent or Sugared Cane
Ninevah	297	559	8	112	38
Salaheldin	288	159	10	116	18
Tamim	148	320	5	72	2
Diala	562	56	9	13	0
Baghdad / Risafa 1	324	0	15	0	0
Baghdad / Risafa 2	280	1	18	1	4
Baghdad / Karkh 1	407	7	10	3	1
Baghdad / Karkh 2	273	20	23	1	0
Anbar	199	354	20	3	1
Babil	427	6	0	2	24
Kerbala	207	10	1	0	1
Najaf	275	4	1	4	9
Qadissia	309	7	2	7	15
Muthana	229	5	1	2	1
Thiqr	455	20	14	97	37
Wasit	397	64	0	24	5
Misan	242	5	15	56	25
Basra	472	10	7	9	2
Dohuk	355	257	3	72	0
Erbil	493	377	1	84	13
Sulaimaniya	463	589	17	248	64
Total	7,162	2,830	180	936	260

Table (3): Type of Construction Material for School Buildings

Source: ESS 2003/04

SECTION 2:

CHILD-FRIENDLY SCHOOLS



INTRODUCTION

The last two decades witnessed a clear descending of the number of students attending schools, attributing that to wars and the socio-economic factors, which made families not to encourage their children to attend schools.

The concept of a rights-based school involves the concerns of equity and quality of protection and community involvement based on the CRC which did not only demand basic education for all, but they powerfully describe what that education should look like.

A rights-based school ensures that children can realize their rights both in and out of school. This can also be called “child-friendly schools”. Such schools are health promoting, gender-sensitive, learning environment which helps protecting children.

The challenge for the new century is to make education, of a decent quality, available to all children. The time has come to guarantee that the substance of that education is of such quality that every child will want to stay in school and every parent will want to keep his or her children in schools.

DEFINITION OF CHILD-FRIENDLY SCHOOLS

Child-friendly schools can be defined as the schools concerned about the present and future best interests of the developing child. These schools should encourage participation, openness, and all actions in the interests of children and provide learning institutions that support the effective and inclusive education.

Child friendly schools are never ending products. They reflect the concept of working within the community as a part of the educational system, in order to mobilize the efforts toward becoming a better place for learning.

CHARACTERISTICS

Child-friendly schools should have the following general characteristics:

1. Healthy For Children:

- **Promotes mental and physical health:** promote healthy psychosocial practices and guarantees school hygiene for a safe and enjoyable environment.

2. Effective With Children

- **Understanding the child in a broad context:** is concerned with what happens to children before they enter the system (e.g. their readiness for school) and once they have left the classrooms back in their homes, community, and workplace.
- **Is child-centred:** encourage participation, creativity, and self-esteem; adaptation of a structured child-centred curriculum and teaching-learning methods, and considers the need of children on top of the others’.
- **Is gender-sensitive and girl-friendly:** promote parity of girls and boys and eliminate gender stereotypes and provide facilities, curricula and a learning system that encourages girls’ participation.
- **Promotion of quality learning outcomes:** encourages children to think critically, solve problems, express opinions, and learn how to learn; helps children master the skills of reading, writing, and calculating and the knowledge and skills required to play an effective role in the new century.
- **Customizing the education methodology with children’s environment:** ensures that curricular content responds to the learning needs of individual children as well as to the general objectives of the education system and the local environment and traditional knowledge of the community.

3. Protection Of Children

- **Reflect and realize the rights of every child:** promote and monitor the well-being and rights of all children; defends and protects all children from abuse and harm, both inside and outside the school.
- **Is gender-sensitive and girl-friendly:** promote parity of girls and boys and eliminate gender stereotypes and provide facilities, curricula and a learning system that encourages girls’ participation.

4. Involvement With Families:

- **Provide an affordable and accessible education:** especially to families who are most at-risk due to conflicts, poverty and other forms of exclusion.
- **Is family focused:** attempt to strengthen families and help children, parents, and teachers establish harmonious and collaborative partnerships.
- **Is community based:** strengthen school governance through a decentralized, community-based approach; encourage parents, local government, and community organizations to help manage and financial affairs; promote partnerships and networks focused on child rights.

COMPONENTS OF CHILD-FRIENDLY SCHOOLS

To start implementing the child-friendly school system, a plan of activities should be prepared that includes the characteristics described above, as detailed below:

1. Community And Family-based Learning Environment:

- Active parents-teachers associations (PTAs).
- Systematic information on processes and characteristics of schools and classrooms should be known to parents and teachers, e.g. language of instruction and language pupils speak at home, structure and pattern of interaction between and among pupils and teachers, etc.
- Teachers accompany girls to school and follow their attendance.
- Monthly teachers' meetings.
- Support a bi-monthly newsletter (educational/recreational)
- Establish harmonious and collaborative partnerships between parents and children.
- Inter-sectoral co-ordination with local municipalities, health and social welfare authorities.
- Share information on child's development with parents.
- Encourage community members to participate as resource persons.
- Create community based projects for the children.
- School leads volunteer community activities.
- School involvement in solving community problems.
- Bring community experts into the schools.

2. Schools Are Healthy Learning Places:

- **Physical infrastructure and Psycho-social**
 - Safe and accessible water and sanitation system made available and being maintained.

- Access to safe Garbage disposal that is environmental friendly and well taken care of.
- Safe, adequate, and accessible play grounds made available and regularly maintained.
- Access to classrooms with adequate lighting, proper ventilation, and proper furniture, having no crowdedness, and applied to regular maintenance.
- A safe pleasant school
- Learning for life.
- Curriculum links.
- Child-friendly material.
- **Some kinds of health services**
 - Medical screening, epidemiological profile, status of health services.
 - Immunisation.
 - Nutritional status.
 - First aid.
 - Personal hygiene
 - Provide confidential counselling, health & nutrition services
 - Develop policies for the school to be smoking/drug free.

3. Enhancing Teacher Capacities And Morale:

- Teachers' training
- Teachers' support mechanisms
- Access to knowledge and information.
- Provision of teaching aids.
- Capacity building of teachers to be able to participate in action research and reflective thinking, be an active team member and share experiences and information, self-learning and seek professional development, be part of a team/ community of learners, become a constructive/leader, learn and create realities with peers, Learn and create realities with children, participate in curriculum design and evaluation, enrich curriculum through research technology and projects, and produce learning aids.

4. Rights-based Schools, Gender Sensitive And Girls Friendly

- Respect for the child's ideas, experience and potential.
- Facilitate learning, encourage activity based learning
- Teacher as a source of love
- Teachers as a child's friend
- Teacher as a model
- Build relationships based on trust
- Learn with the children
- Gender sensitive
- Non-discriminatory
- Teacher as source of positive attitudes and values
- Accept and tolerate diversity, and realize individual children's talents.
- Care for the child's physical and emotional well-being
- Make a mutual agreement, 'social contract' on discipline
- Encourage student participation in class management
- Promote self esteem
- Celebrate collective progress
- Ensure time on task
- Ensure joy and fun in learning
- Perform continuous and authentic assessment
- Inspire the spirit of tolerance and respect other ethnic groups and religions.

5. Schools Provide Education Based On The Reality Of Children's Lives And Promote Quality Learning Outcomes

- Life skills based curricular & extra curricular (mainstreamed or added) in the curricula
- Encourage children to develop, implement and participate in additional activities for developing leaderships and organizational skills

6. Schools Are Flexible, Respond To Diversity And Act To Ensure Inclusion And Equality Of Opportunities

- Sensitisation of school principals, teachers and students about gender issues and integration of children with disabilities
- Influence media to address education issues especially the ones related to girls' education and early childhood development

HOW TO IMPLEMENT THE CHILD-FRIENDLY SCHOOLS PROGRAMME

In order to implement the framework of child-friendly school's project taking into consideration the Iraqi context, UNICEF formulated a strategy for implementation in collaboration with the Ministry of Education and other NGOs operating in Iraq. Recommendations concerning community participation were also formulated.

- **Towards Effective And Protective Schools**

MOE's participation is fundamental to ensure the sustainability of school rehabilitation/ reconstruction and to upgrade the education system in Iraq. UNICEF strategy will be as follows:

1. A detailed report on the concept, theory, objectives and proposed activities of the child-friendly school's project will be submitted to the Ministry of Education for approval and endorsement.
2. A study tour shall be conducted by the responsible staff of MOE to one of the best practices in the region. The visit will enable MOE officials to adapt such experience and customize it for the Iraqi criteria. Another alternative will be consulting international experts to work jointly with MOE to put a plan of action suitable for the Iraqi criteria from technical and managerial aspects.
3. The proposed plan of action for the programme after the approval of the MOE shall be as follows:
 - a. Start a pilot project of 5-6 schools in selected governorates, preferably schools rehabilitated by UNICEF.
 - b. Assign a project manager and a supervision committee from MOE.
 - c. Organize a workshop for selected head masters, supervisors, teachers, families and students of the selected schools to explain to them the concept and objectives of the project and its applications and interventions.
 - d. Organize a workshop to develop the materials for the CFS.
 - e. Organize sessions for master trainers to be able to train the teachers of the selected schools on the manuals developed by the experts to enhance teachers' capacity and to promote the learning processes and teachers' attitudes and prepare them for the implementation of this project in their schools.
4. All the components of child-friendly schools, which are mentioned in the preceding item, should be included in the activities of the programme in these selected schools and connect them to the educational curriculum.

- **Community Participation Towards Healthy School Environment**

The community role is essential to ensure the sustainability of school rehabilitation/ reconstruction. This role could be reactivated through the following:

1. Re-activate PTA (parents-teachers association), and have them interfere since the early planning stage of school rehabilitation. That can be achieved through regular PTA meetings.
2. Advocate for hygiene practices among mothers and children, addressing healthy and hygiene exercises (e.g. cleaning toilet after defecating, cleaning, washing hands, and use waste baskets for getting rid of papers and solid waste).
3. Mobilize religious and social leaders to advocate for cleanness and hygiene practices in schools.
4. Include school hygiene and sanitation practices in the new curriculum and teacher-training programmes.
5. Encourage the local community to voluntarily assist teachers and students in school cleaning campaigns and arrange competitions among schools.
6. Involve the local municipality to participate in cleaning the school surroundings, collection of solid waste and removing any contaminated water/waste water.
7. Use media and newspaper to advocate friendly usage, maintaining and cleaning schools, and design messages to encourage the cooperation and integration in these kinds of campaigns, including children with disabilities in school activities.

SECTION 3:

SCHOOL DESIGNS AND STANDARDS



THE SCHOOL ENVIRONMENT

The school environment can be divided into teaching spaces, non teaching spaces, and school facilities and premises.

a. Teaching Spaces:

- Classroom
- School Library
- Computer room

b. Non-Teaching Spaces:

- Administration section
- Auditorium
- Sanitation Units/Toilets
- Canteen
- Store
- Corridors and terraces

c. School Facilities And Premises

- Play ground
- Garden
- Access ramps
- Boundary fence

a. Teaching Spaces

CLASSROOMS: School size can be measured by the number of its classrooms, for that can give an indication for the built-up area and other required facilities.

It was recorded that about 98,151 spaces of all 140,887 total spaces were used as classrooms in primary schools in Iraq, nevertheless there are an obvious shortage in the number of classrooms due to the current overcrowding problem which may reach 71 students/ classroom as in some schools in Basra.

Adequacy of Classrooms	Number of Schools
No need	3,803
Needed / not enough space	476
Needed /enough space	6,956

Table (4): Needs For Extra Classrooms

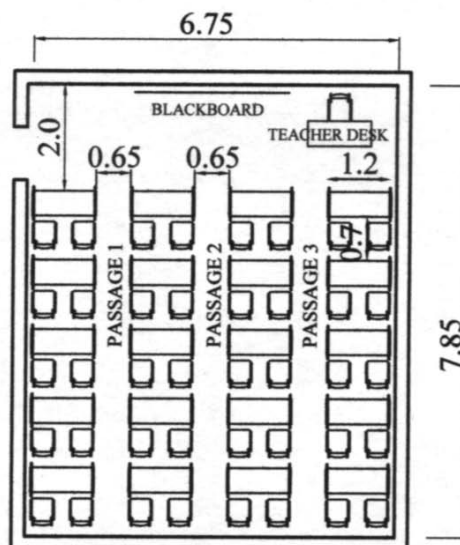
A large number of schools are in need of new classrooms. Table (4) gives an indication about the number of schools that are in need of new classrooms to be built with a total number of 32,817classrooms.

The dimensions of classrooms depend on the ultimate number of students per classroom, in some developing countries, the ideal number lies between 35 and 45, but in others it goes as far as 55. It is envisaged to use 40 students per classroom as an appropriate number in Iraq. Classroom dimensions in most primary schools ranges between 4.5-6.0m wide by 6.5-7.0m long, depends on the design used and location (Urban or Rural).

Based on the assumption of having 40 students per classroom having each desk standard dimensions 1.2x1.0m with the seat, using 4 rows x 5 desks, the dimensions of a classroom having an area of 45-53m² will depend on the layout arrangement of desks as shown in figure (1) below.

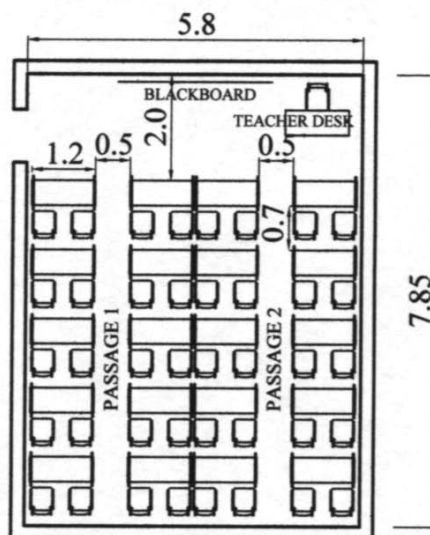
A 40-students classroom with three passage-arrangement and 2m distance from the blackboard.

Net classroom area is 53m²



A 40 students classroom with two passage-arrangement and 2m from blackboard.

Net classroom area is 45.5m²



A 30 students classroom with four passage-arrangement and 2m from blackboard.

Net classroom area is 53.3m²

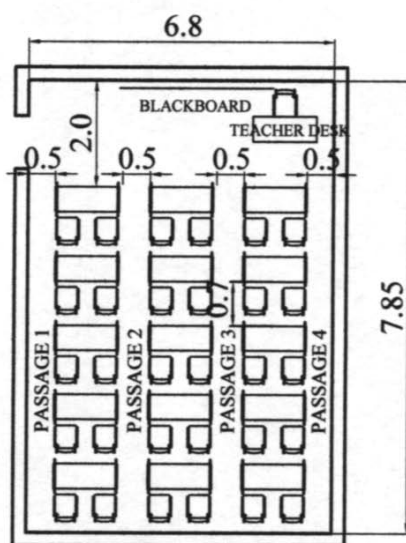


Figure (1): Different Classroom Layouts

SCHOOL LIBRARY: Libraries may exist in many types in the primary schools, either there is a defined space for the library or they may use other spaces for that task, such as a spare room, stores or even shelves.

It was recorded that there are 6,128 primary schools without libraries of any kind and only 1,421 schools have defined spaces for libraries, while the rest used the available room or shelves.

There is no standard size for the library room; it depends on several factors including the number of divisions within the same grade, the total number of students in the school and the frequency of using the library. It can be as small as the normal classroom size.

COMPUTER ROOM: Despite the fact that no primary school in Iraq so far has a computer room, but it is necessary to consider including it in the future. The size of the computer room varies with the number of classes, students and the proposed number of computers. The dimensions could start from a normal classroom size.

b. Non Teaching Spaces

ADMINISTRATION SECTION: The administration section occupies around 3-7% of the school space, and 10% of the non teaching area, for it was recorded that 16.27% of the total rooms are used for administrative purposes. The administrative section may include the Head Teacher's room,

Deputy Head Teacher's room, Teacher's room, Head Teacher's secretary room and/or clerks' room in addition to the water closets.

AUDITORIUM: is a multi-purpose hall and an important school facility, which could be utilized for physical training activities, exams, theatre, ..etc. It should have a stage, acoustic insulation, good ventilation and enough lighting, the size of the hall should be designed based on the maximum number of audiences expected to attend a school convention. If it's designed for indoor sport activities as well, then the standard sport court will control the size but it should not be less than 120m².

WATER CLOSETS: The design and the number of units in the water closet depend on the number of student and gender. The best practice is one toilet unit per 25 students. In cases of already existing schools and/or limited spaces, one toilet unit can be allocated for 45 students. Separate units should be considered for boys and girls.

It was found that there are about 47,945 toilets benefiting about 4,334,609 students resulting in an average of 90.4 students per toilet, of which more than 50% are out-of-order due to leakage or blockage.

If we consider 45 students per toilet, then the primary school students will need 96,324 toilets in total. From that, at least half of them have to be newly constructed. Concerning teachers' latrines, ESS showed that there are 15,178 toilets of which 2,978 toilets are blocked and 1,750 are abandoned.

It is advised to separate the water closets from the school building; drinking fountain is to be incorporated and preferable to be covered somehow and washing basin should be well fixed or even built from the side.

In schools with disabled children, there should be grab bars and ramps to make the toilets easily accessible.

SCHOOL CANTEEN: Currently, the provision of canteen in the Iraqi primary schools is rare. In some schools a classroom is converted into a canteen. It is advised to build a separate room for the canteen with at least 4mx4m dimensions. It could be attached to the school building with door and window lead to the yard.

STORE: Store rooms should be available to store books, stationary and teaching aids. The size of the store depends on the number of students and expected storage space needed.

CORRIDORS, TERRACES AND STAIRCASES: The size varies from one school design to another depending on the number of students and the overall area of the school. At least 3.0m wide corridors would be considered.

The staircases should be designed with maximum safety precautions; the riser height should not exceed 15-18cm, the tread is 30 cm and the frequent landing should be every 10 steps at maximum. Guardrails have to be of proper height and not less than 1m long from the bottom of the stairs to the end.

LABORATORIES, Although labs are so important to enhance the understanding of the practical applications of the scientific theoretical curricula, a large number of primary schools have no proper space for labs.

Some schools do have some Science or Biology lab equipments, but they don't have a proper place to utilize these equipments. The ESS showed that only 982 primary schools have laboratories.

c. School Exterior Facilities And Premises

PLAY GROUND: Depending on the land area, there should be at least Basket Ball and Volley Ball yards, which can be even combined together. The size of the court is designed to suit children between 6 and 12 years of age. Applying steel poles and borderlines' markers should be also considered. A drainage system with a small slope should be also considered to prevent the accumulation of water in the yard.

GARDEN: It is necessary to plant some trees around the school especially in countries with hot weather from April to October. Flowers and plants can be also planted either in the front yard or at the school entrance. It is also possible to use the school garden as a teaching aid or an outdoor activity.

ACCESS RAMPS: Access ramps should be applied in school with disabled children to help them enter the school classrooms, water closets and other school facilities, 1.0m wide ramps with a 16-20% slope should be applied to make places accessible to all.

BOUNDARY WALLS: The height of the boundary wall should not exceed 2.0m from the walkway or curbstone level. If more height is desired, steel guardrail can be used. Two gates should be made available; 3.0x2.0m and 2.0x2.0m double or 1.0x2.0m single.

ENVIRONMENT-FRIENDLY DESIGN FACTORS

Environmental aspect should be considered at the early design stages of any rehabilitation or new construction practice, such as choosing the best mass transit orientation.

Rehabilitation has a restricted role, dealing mostly with protection of openings, providing insulation and promoting natural ventilation for thermal comfort.

Suitable lighting is another factor in which environmental coherence is attributed. Below are factors to be considered in any school design:

1. Temperature:

- Precautions should be considered regarding the direction of the school building to reduce the infiltration of direct sun light into the classrooms, and also placing sun sheds on windows.
- Using clay bricks inside walls is recommended for its high degree of heat insulation or two layers of concrete blocks with void or polystyrene materials to reduce heat transfer.
- Heaters could be used in classrooms especially in northern Iraq with mountainous cold areas.

2. Ventilation:

Ventilation should be considered in designing the school rooms, such as having enough windows and ceiling fans and enough exhaust fans in water closets. This factor can be enhanced by the proper orientation of the new construction or additional classroom.

3. Lighting:

Day light should be the main source of light, except in the cloudy winter days in which day light would not be sufficient; therefore, electrical lighting with a range of 300-500 Lux (lighting Unit) in classroom should be applied.

4. Acoustics

The surrounding environment should be considered carefully when choosing a schools construction site. It should be away from noise caused by traffic, industry or any source of sound pollution. This will be of high importance for classroom students for it ensures high efficiency of the in-door sound transition factor which results in better concentration and lecture understanding.

SCHOOL REHABILITATION STANDARDS

Many schools were seriously damaged or looted during the war and its aftermath and any action toward putting those into order will require a certain level of repair to preserve the functionality of these schools

School damages vary from complicated to simple one. The complicated damages are those which are related to defects in the structure due to foundation movement of any sort.

Damages of this kind are either clearly visualized or can be traced through indicators such as cracks in walls or heaving off-floors and sacking of slabs, cantilevers and steel joists due to corrosion or spoiling of concrete. Treatment of such damages requires special action, which means that each case should be taken by its own surrounding and the reasons behind that defect.

The simple damages are those which can affect only the plastering and finishing items. They are easily visualized such as hair cracks, the raising dampness in walls and roofs, walls scratches in addition to the normal deterioration of finishing as a result of neglect or due to some harmful materials.

The following standards should be also considered. These standards are concerned with different schools' divisions, which are teaching spaces, non-teaching spaces, and school facilities and premises.

STRUCTURAL SYSTEM AND CIVIL WORK

1. Interior Wall And Ceiling:

Nearly 6,824 schools with 40,619 rooms have serious cracks in walls, while the rest need normal maintenance.

In places where the school ground is lower than the street level or in case of high water levels and due to rising dampness, the lower 1.5m of the classroom walls must be exposed to stripping of the old plastering exposing the brick surface and cement plastering and then applying three layers of oil paint.

To keep desks away from classroom walls, and to protect the walls from scratching, the lower edge of the walls needs a special treatment, such as to cast a concrete kicker strip, 17cm width 7cm height all around the classroom. Another alternative will be surrounding the classroom walls with a wooden strip of suitable width to the height of desks

Deteriorated Classroom wall's finishing



The same classroom after rehabilitation

Work was done under UNICEF supervision



2. External walls:

The school exterior surfaces are to be repaired and painted with emulsion paint, taking into consideration applying acceptable colors and patterns to achieve a child-friendly environment.

3. School Fence:

Schools' fences are made of different kinds of materials. The following table gives an idea about the types used.

Material	Good Condition	Damaged/ Repairable	Damaged/ Unrepairable
Cement Blocks	3,676	1,335	2,086
Wire Mesh	32	21	157
Other	10	52	20

Leaving about 3,556 schools without any sort of fences.

Table (5): Types of perimeter fences in schools

Perimeter fences to be demolished and rebuilt if it is in dangerous condition or some height to be added if the fence is low. The finishing is preferred to be cement plastered and then sprayed with cement mortar fluid taking into consideration applying acceptable colors and patterns.



External Wall's Damages



External walls after rehabilitation
The work was done under UNICEF supervision



External walls of bad condition



External walls after rehabilitation
The work was done under UNICEF supervision



A school fence in bad condition



School fence after rehabilitation
The work was done under UNICEF supervision

4. Floor:

They are either paved by tiles or cast with concrete. The ESS showed that there are about 21,548 rooms with bad flooring and about 30,065 rooms with damaged floors and need to be replaced.

The floors are to be treated if there is a need to do so such as, cement grouting for mosaic. If heavily damaged, it should be removed and either tiled with mosaic tiles on 10cm thick screed layer or concreted only. Proper joints with mastic can be also applied. For floors that are lower than street level, a new raising concrete slab to be done.



Damaged cement tiles in a classroom



Classroom floor after rehabilitation
The work was done under UNICEF supervision

5. Roof:

The ESS shows that there are only 4,103 schools with no water leakage from their roofs. The roof is to be treated in a way to ensure water tightness and appropriate slopes. In case of concrete tiles, all edge pieces have to be removed and replaced with cement mortar with very high slope. All expansion joints are to be repaired so as to become operational. All damaged rain gutters are to be replaced with three-inch, 80cm long steel pipes. A mesh filter is to be placed at the upper opening of the vertical drainage pipes to prevent external bodies such as gravel, leaves, etc. from entering and clogging the pipes.

6. Doors and Windows:

It was recorded in the ESS that the total number of rooms which have no doors is 9,121 rooms whereas 53,778 rooms and classrooms have damaged doors out of the overall number of 140,887 rooms mentioned in the survey.

For most of the school design layout outs, classrooms' doors are directly open to outside. Thus, they are subjected to heat, sunlight, dust and even to rain.



Toilet's door in bad condition



Toilets' doors after rehabilitation

Doors are to be replaced with steel for they are more durable and easier to maintain. This will include main gate(s). Additional details can be added for these doors to reduce the hazard of being harmful for children during use.

Steel door panel and frame sections are to be supplied according to local specifications. New doors should be supplied with appropriate hardware which includes door lock, hinges. Finally, oil painting of red oxide paint layer is recommended. The child-friendly schools criteria should be considered when choosing the doors' colours. According to student, red or orange colors are more appealing.

For schools whose design is enclosed and classrooms are opened to interior corridors, wooden doors can be an option.

All broken glass is to be replaced, frames painted, handles replaced if broken, and a fine steel mesh is to be installed on all windows from the outside.

SCHOOL EXTERIOR FACILITIES AND PREMISES

1. School Yards and Pathways:

It was found that the playgrounds with an area greater than 600m² should be cast according to specifications. If a suitable playground already exists, that needs to be repaired; a play yard is preferred to be prepared for sports like basketball and volleyball by applying alienation rings and poles.

Status of School Yards	Number of Schools
None	990
Available but not paved	3,953
Available / paved	3,382
Available/ not good	1,188
Available/ damaged	3,021

Table (6): Number Of Schools With Yards

Playground		Sports Supplies	
None	9,846	None	6,382
Available/damaged	593	Available/not adequate	1,770

Table (7): Number of schools with playground and sport facilities

2. Access Ramps:

It is necessary to design access ramps at the entrance, yards and near toilets for physically handicapped children on wheelchairs so, to allow him/her access all school facilities.

3. Gardens:

The ESS showed that 7,818 schools had no garden and 1,957 with damaged ones. Wherever possible, flower beds are to be built or provided either on the original ground level, if the water table permits or elevated to avoid the problem.

SANITARY SYSTEM

1. Latrines:

The ESS showed that there is an extreme need for latrines to be built for many reasons. Records indicate that there are 5,332 units has no sewerage network, while the sewerage network is not working in 632 unit and about 1,245 has no water tank for water supply.

All eastern type (Turkish) seats are to be removed and replaced with new one.

Wrong use of the toilets, shortage of the fixtures, such as the flush tank, bad construction, shortage of water and lack of daily inspect for cleaning are among reasons behind the deficiency of school latrines.

	Latrines for students	Latrines for teachers
Blocked	11,847	2,978
Abandoned	18,121	1,750
Total	47,945	9,353

Table (8): Number And Condition Of Latrines In Schools

It was found that most of the clogging in the drainage is caused by blockage in the (U) shaped water traps. If that happens, then it is recommended to replace the (U) shaped traps with (L) shaped in schools where there is a shortage of water. Otherwise (U) traps is recommended to be used in schools where water is available.

Manholes should be not be more that 2m away from seats to facilitate flushing or ramming. The number of seats would be increased according to the number of students at the rates mentioned earlier.



Deteriorated latrine



Latrines after rehabilitation.

In some cases the old latrines is too deteriorated to be rehabilitated and would have to be abandoned and new ones should be built. A typical layout is prepared for these units to be a baseline for any further design.

The teacher's latrines are to be treated as well.

The floor of the latrine should be pre-cast with plain concrete with a suitable slope to the gullies or the seats. For new latrines, concrete floor is recommended to be raised 70cm from the school yard level.



deteriorated latrines



Latrines after rehabilitation

New Latrines unit in a school in Baghdad with 2 water tanks on the ground and two others on steel towers with water pumps.



Whether the old latrines are to be rehabilitated or new ones be built, walls of at least 1.5m height should be covered with ceramic tiles for a better durability and ease of washing.

All steel doors for the latrines should be replaced. Main door of the water closet should be replaced with grilled steel bar doors for better ventilation.

Each water closet must be provided with at least two washing basins to allow the children wash their hands before leaving.

The old water fountains of drinking water are to be replaced with new ones with ceramic tiles and well covered. Water should be available using galvanized tanks on the ground and on steel towers (never on roofs) with water pumps. The number of tanks and towers will depend on the pressure and availability of the water in the mains. Towers are to be located in places that can't be reached by students.

A suitable area in front of the latrines should be paved and connected with wide pathways to the main playground.

Special attention should be paid for supplying a latrine of western type toilets with washing basins for physically handicapped.

Old water pipes and sewage pipes are to be replaced.

And for the newly constructed unit is recommended to use a slightly inclined roof with minimum layers.

ELECTRICAL SYSTEM

The ESS showed that about 2,540 primary schools have no electrical installments at all, where most of the schools are suffering from bad installation in addition to the continues electricity cut-off.

All rooms in the school should be provided with a ceiling fan. In large halls or classrooms, two fans are to be installed.

If the schools original wiring is intact it could be repaired, but if the wiring is damaged or not there at all then new installments are to be fitted reaching all rooms, corridors, latrines, and external lighting. The distribution boards should be replaced if damaged or missing.

Every classroom and administration room must be fitted with four fluorescent brackets, a switch, and a 13A switch plug. Corridors and yards should also be illuminated.

The outlets of all indoor and outdoor spaces should be 1.2-1.5m height, well covered with extra protection.

For better ventilation, at least one exhaust fan should be installed in Latrines.

MISCELLANEOUS

Any swamps caused by overflowing sewerage systems should be filled with sand. The source of the flooding is to be repaired so as to remedy the problem.

During the assessment, some modifications can be done to the school buildings with little costs which may serve the children. This is left for the engineers' judgment.

To assure better ventilation in latrines, the upper 50cm of walls could be left totally open.

SCHOOL FURNITURE

School furniture acquires a considerable importance in any school design. Any school regardless of its condition would not function properly without a proper, safety, suitable and comfortable furniture.

Its importance is derived from the fact that students spend relatively much more time on their desks than the time spent on other school activities. Thus, an acceptable learning environment would not be achieved without comfortable furniture.

A designated team used the surveys and studies held in other countries in the region of similar conditions, to determine the standard dimensions of school furniture. The team took advantage of two anthropometric surveys conducted in Iran and Palestine.

The team took the average of students' measurements mentioned in these two surveys as an indicator for local students' measurements and used it in determining the dimensions of school furniture.

It was found that the use of body sizes of constant ratio between the sizes of various parts of the body to the height of the child would be convenient.

Samples were prepared and tested. Revisions and modifications were applied to the samples before it reached its final/approved dimensions. Figure (2) shows that the critical dimensions of furniture are determined in relation to the height of the child. It is possible to use these measurements to determine furniture sizes, as shown in tables (13) and (14).

School furniture is of high importance, and can be considered as much important as the design of the school building itself.

The following factors should be considered when designing the school furniture:

1. Designs for students' desks (tables and seats) should be revisited by exploring experience of surrounding countries.
2. These desks should be light (prevent heavy material), durable, and safe (no sharp edges or nails).
3. Blackboard should be painted regularly to ensure clear vision.
4. Teacher should have table and chair inside the classrooms.
5. Teachers' room should be equipped with appropriate cupboards, tables and chairs.
6. Head master's room should be adequately furnished with a desk, a chair, visitors' seats and a conference table.
7. Laboratories should be equipped with complete science apparatus (depending on the subject), closets, and washing basins.
8. Libraries should be furnished with shelves, tables, and chairs

ANTHROPOMETRICAL DATA AND FURNITURE SIZES

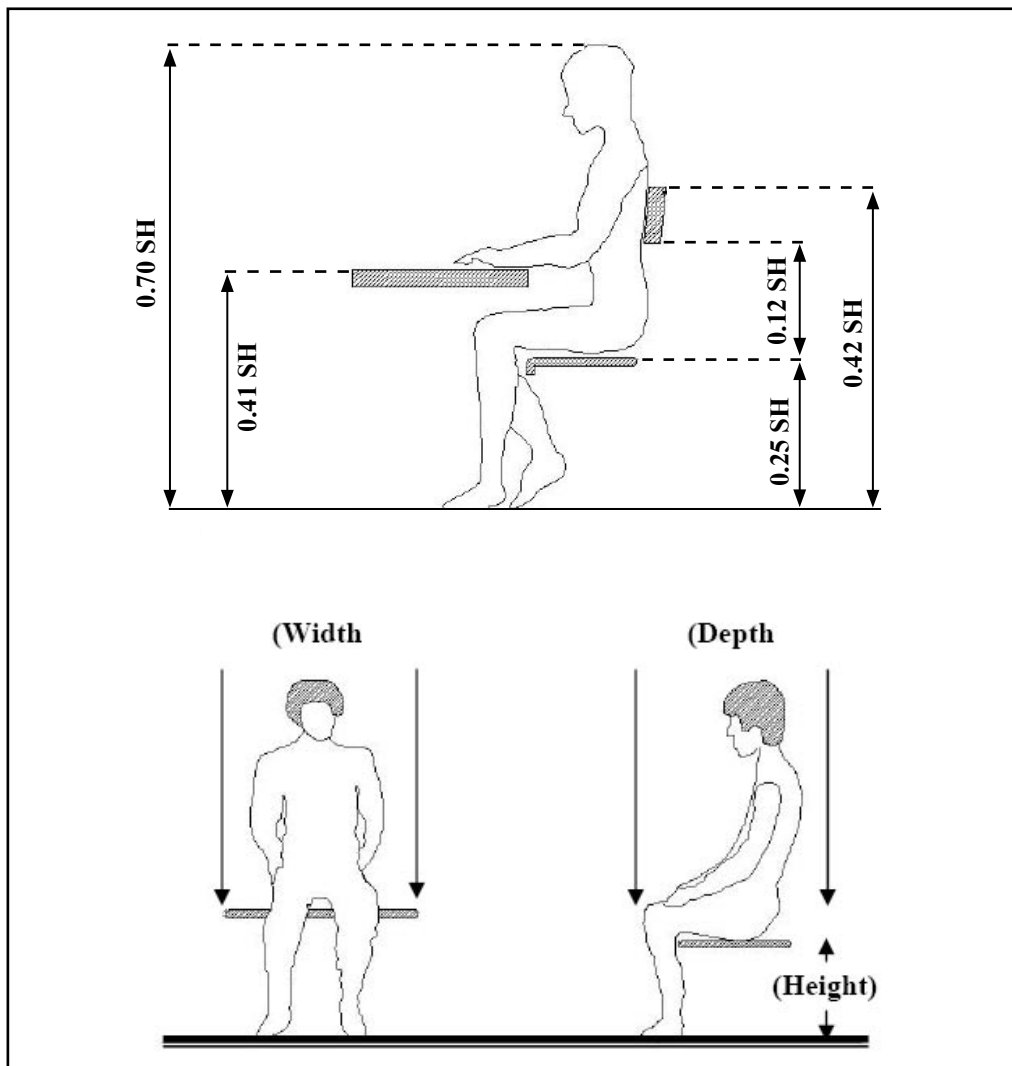
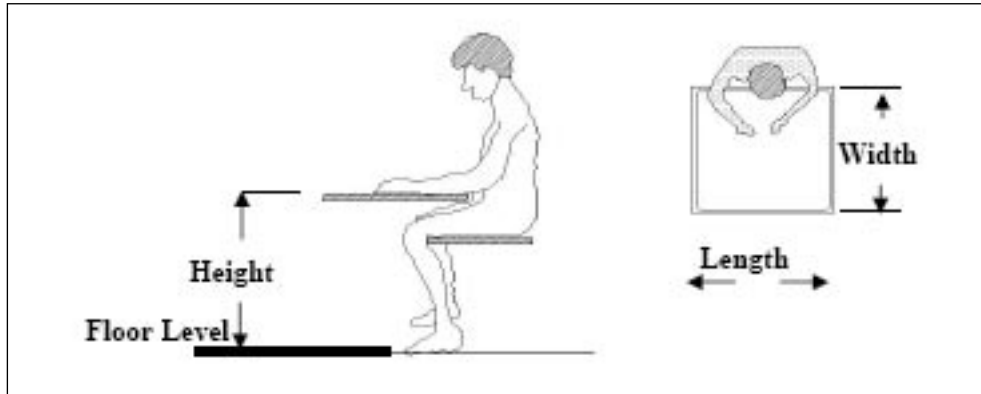


Figure (2): Ratio between Standing Height (SH) and comfortable furniture

Categories	Dimensions (mm)			
	A	B	C	D
Chair Width	278	317	353	379
Chair Depth	326	372	415	445
Chair Height	302	344	384	412

Table (9): Student's Chair Dimensions



Design categories	Dimensions (mm)			
	A	B	C	D
Height	496	564	630	675
Length	510	510	580	580
Width	470	470	560	560

Table (10): Design Categories For Students' Chairs Dimensions

BEYOND REHABILITATION

Rehabilitation is to restore to the good condition of the building or to customize the building for new tasks.

It is important to repair, and maintain the school building to keep it functioning at its optimum. But restoring the former design of the building may not be considered as the ultimate solution for all planning processes, improvements and upgrading needs.

Development of school building can be as:

1. Improvement of existing status; by adopting some spaces for new accommodations and functions which were missing in old building such as indoor spaces like library, scientific labs, computer room, canteen, multipurpose hall, and even gymnasium if it is possible, or as outdoor spaces like school yards play grounds and gardens.
2. Adding new building to the same plot; this may come in several forms depending on each case:
 - Adding a new building/extension to meet the requirement of normal population growth.
 - Adding a new building to fulfill the upgrading requirements of different space or where the existing spaces do not comply with the real requirements.

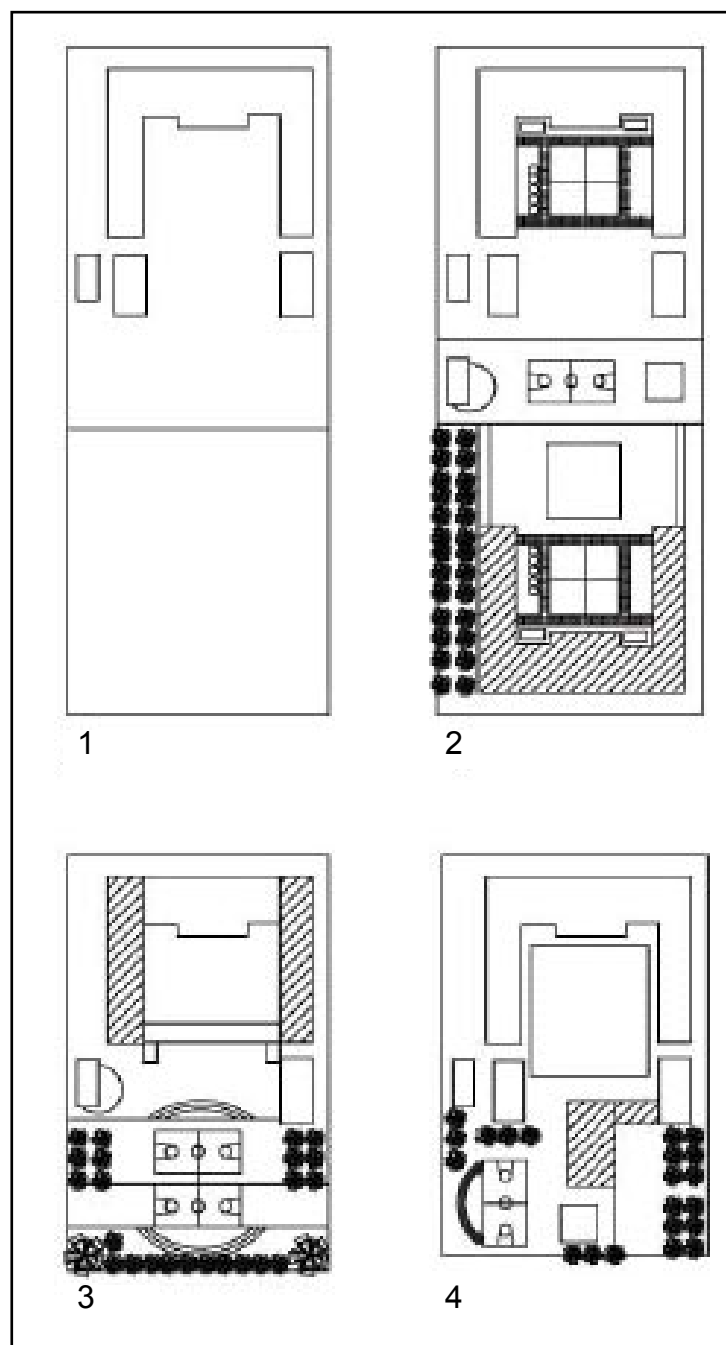
In either case, the extended area may use the same structure by means of adding new floor to the existing one, for example, adding new classrooms, library or studio, or adding a new building attached to or integrated with the exist building.

In case of adding new floor, the add-on shall follow the same structure condition and could be merged with the existing building, such as location of staircase, integration of services, and height of floors.

As for new separate buildings, this is related directly to the availability of vacant space, so that not to affect the school accommodation.

In some schools in Baghdad the built up area is only 10% of the plot area, in which some plots are more than 15000m². In most cases the percentage of built up area will not exceed 35%; therefore, spaces for new buildings are available in most cases.

Examples of school developments will be the following drawings and sketches:



**Figure (3): Cases of adding an extension to an existing school building.
The new extensions denoted by hatched lines**

1. Mass of typical school design, with built up area around 10% of the total plot area, main mass is usually near the proprietary line leaving the rest of the area unused.
2. New school building may be added in case there is a need. This can be part of the old school, and the common facilities will be located in between. Totally new schools can be built wherever the area permits.
3. Additional floor may be added to the same building for various reasons. Selection of the place and location is to be checked according to structural, architectural, and environmental aspects.
4. Adding new separate building to complete the court enclosure, such as a multipurpose hall.



Figure (4): Prospects For Developed Environment Of School Canteen



Figure (5): Prospects For Developed Environment Of School's Exterior Facilities

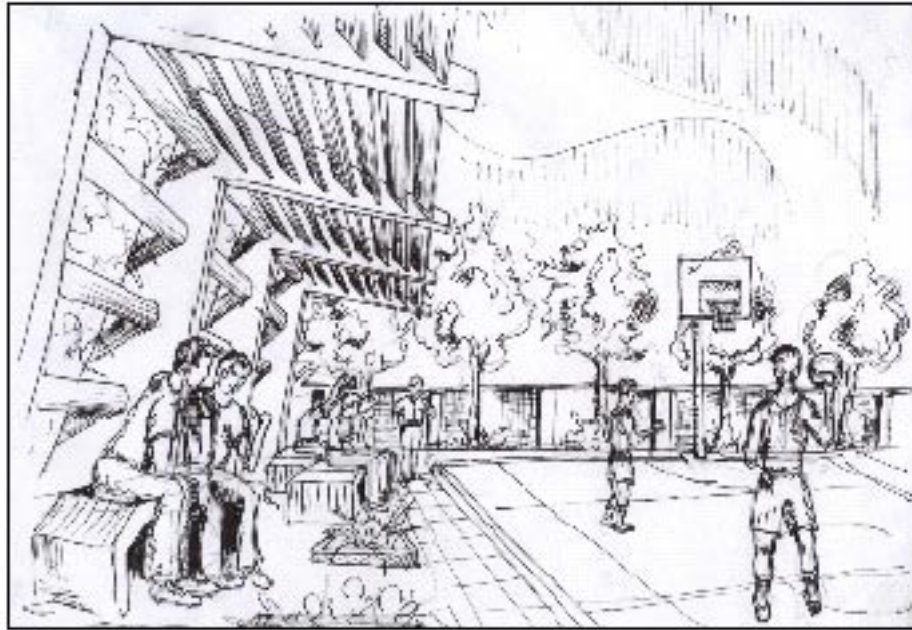


Figure (6): Prospect For Developed Environment Of A School’s Play Playground



Figure (7): Prospect For Developed Environment Of School’s Water Closet

RECOMMENDATIONS

- It is important to start a dialogue on technical aspects of school rehabilitation, to come up with realistic school designs and standards. This will take into consideration the environmental and cultural criteria of Iraq.
- Endorse/apply the minimum standards for rehabilitation of existing schools to improve the learning environment.
- All construction/rehabilitation should address disparities in of rural and urban locations, regional disparities, gender disparities, and children whom were internally displaced.

- Substantial preference should be given to construction/rehabilitation where communities support and encourage participation of girls in education, sports/recreation and cultural activities.
- Some priorities should be considered when selecting school for rehabilitation. They are:
 - At least 50% of the selected schools are in rural areas.
 - Priority should be granted to the crowded schools with multiple shifts and crowded classrooms.
 - Selected buildings should be public property and designed to be used as a school building
 - Priority should be granted to schools with very bad conditions, such as unavailability of either source of clean water, unavailability of latrines, or inadequate number of functioning latrines).

THE PROPOSED STUDIES

Below are some topics that need to be dealt with in separate studies. These studies will reflect the actual status of primary school buildings. The results will act as indicators for any required action towards rehabilitation, development and new construction:

- **Out door activities**

Reviewing reports and literatures concerning the outdoor spaces in the primary schools in Iraq showed that most of these reports gave hints on their condition without a clear image of their actual use, although there is a common agreement on their importance.

The proposed study will concentrate on the condition of these spaces and suggests ways to improve these spaces from structural and behavioral point of view.

- **Environmental comfort**

As mentioned in the report, the thermal factor is considered as a major aspect in any evolution of the environmental coherence.

A field survey on the ratio between the total areas of the openings to the space area for different orientation will give a good indication about the required treatments and will suggest methods of illumination for these spaces and classrooms in particular.

- **Setting the priorities**

Priorities will be set according to targets. These priorities may change upon certain conditions. We would like to have an idea of how these priorities will affect specialist, teachers, students, and others.

- A design handbook for new construction of schools will help the designers and MOE specialists to assure the efficiency of the design within the Iraqi context. The handbook may also include standards for designing school furniture, including school desks and chairs, teachers' tables and chairs, furniture for head teachers, and laboratories.

For more information about
The Criteria and Standard for Child-Friendly Schools, contact:
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