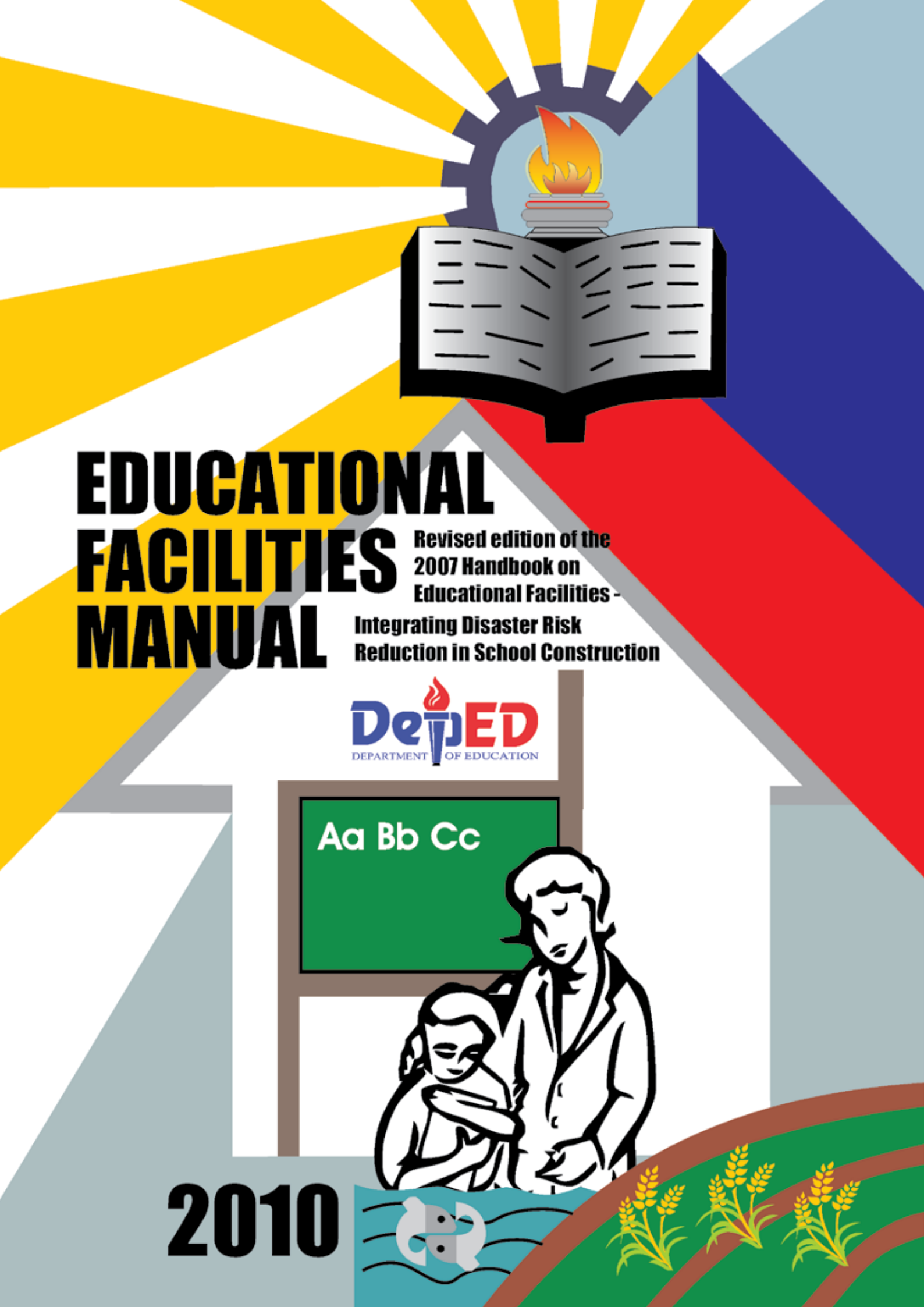
EDUCATIONAL FACILITIES MANUAL

Revised edition of the 2007 Handbook on Educational Facilities - Integrating Disaster Risk Reduction in School Construction

DepED
DEPARTMENT OF EDUCATION



2010

DepED
EDUCATIONAL
FACILITIES MANUAL

(Revised Edition of the 2007 Handbook on Educational Facilities -
Integrating Disaster Risk Reduction in School Construction)

PHYSICAL FACILITIES AND SCHOOLS' ENGINEERING DIVISION
OFFICE OF PLANNING SERVICE
Department of Education
Pasig City
2010

Message

The impact of climate change (devastation, death, diseases) and the projected changes in the future has compelled government leaders and the general public to realize that we inhabit a single planet and share responsibility for its upkeep.

This realization led the Department to prepare this material entitled "***Educational Facilities Manual (Revised edition of the 2007 Handbook on Educational Facilities - Integrating Disaster Risk Reduction in School Construction)***," another milestone in my administration to address the need to provide up-to-date information and reference material on education facilities in our public schools. The Manual will assist our field implementers as well as our policy makers and stakeholders in the management of educational facilities in the light of pursuing effective mitigation of the effects of climate change and risk reduction in schools. What is required is sometimes the most difficult to accomplish, so that the Manual will serve as a tool for the entire DepEd family to come and work together and find common solution(s), for the common good of our children and our country.

The 2010 Manual lays down the policies and standards that will equip the DepEd officials and personnel as well as school managers with a comprehensive guide that can be used for educational, research and development, monitoring and evaluation on physical facilities to serve as tools for effective decision making.

Empowerment of our school principals is a big step towards decentralization of educational management. This Manual will aid our school officials in making informed decisions regarding educational facilities. Ultimately, an improved physical learning environment in the classroom and the school will help contribute to the attainment of the goal of quality basic education for all.

I therefore enjoin all our education officials to use this Manual and disseminate its contents.

JESLI A. LAPUS
Secretary

Foreword

This **Educational Facilities Manual** is a revision of the 2007 Educational Facilities Handbook. The Department, through the Physical Facilities and Schools Engineering Division of the Office of Planning Service (PFSED-OPS) saw the urgent need for the revision of this material in the face of a common concern and interest – the challenge of climate change and disaster risk reduction in schools.

This Manual is a product of consultations with DepED Central and regional/division offices, as well as with personages from the United Architects of the Philippines (UAP), Philippine Institute of Civil Engineers (PICE), the Heritage Conservation Society, and the Commission on Audit (COA), National Disaster Coordinating Council (NDCC), the Asian Disaster Preparedness Center (ADPC), and member agencies of the Education in Emergencies cluster. To strengthen its reliability, it was subjected to in-house and field validations with Schools Division Superintendents, School Principals, Physical Facilities Coordinators, and Promotional Staff of the Division Offices.

It is specifically prepared to provide the DepED central, regional and field officials with a reference material to facilitate the efficient and effective management of educational facilities. The school principals as they assume their new roles as managers under a decentralized set-up of the Department will find this material very useful, with its discussion on various hazards that may result to disasters when not given priority attention through preparedness, and risk reduction. Topics include school building construction guidelines: current practices and improvements needed, among others. With the needed information easily available, this will aid in policy formulation and decision making relative to educational facilities management as well as in the prompt and prudent resolution of issues, problems and other concerns.

This collaborative project was implemented as a major contribution to the adoption of the Hyogo Framework for Action through Mainstreaming Disaster Risk Reduction into Development Planning, Policy Formulation and Implementation in the Education Sector, with focus on the construction of public school buildings.

This material puts together statutory provisions, rules, regulations, standards, guidelines, and instructions (including illustrations, samples, etc.), on the effective management and supervision of school facilities which otherwise would not be easily accessible to the field, as well as pertinent provisions of applicable laws on procurement, on accessibility, on classroom allocation, disaster risk reduction, etc.

With this Manual, management of educational facilities will be without much difficulty, efficient and effective, thus contributing to the achievement of the quest for quality education.

RAMON C. BACANI
Undersecretary

Introduction

This Manual is a result of thorough research, extensive consultation and collaboration with expert groups and individuals in the face of both natural and human-induced hazards and their impact to the education sector particularly on educational facilities.

This material is in response to the call for us to come together and exchange ideas, to reach the grassroots and involve all sectors of society in a collaborative, heroic endeavor to serve our common home – Planet Earth. Readers will find new concepts and items, all of these implemented/to be implemented with the aim of making the information more understandable and quickly accessible to users. Language of the present time was adopted to keep in tune with emerging and new developments and practices in making schools safe and applying green schools technology on educational facilities.

It is with pride that I introduce this Manual to our school heads, supervisors, teachers, and other stakeholders and clientele of the Department to become a part of readily available reference materials for the sound, efficient and effective management of educational facilities and resources, and making these safe and conducive to teaching-learning activities. Its use will help and encourage support to the thrust of school-based management as embodied in the principles of the Schools First Initiative.

JESUS L. R. MATEO
Assistant Secretary

Acknowledgment

This material was revised and validated in a series of workshops participated in by selected school administrators, education supervisors, Physical Facilities Coordinators, DepED Project Engineers/Architects, and the Physical Facilities and Schools' Engineering Division (PFSED) of this Department.

The DepED particularly the PFSED wishes to express its gratitude to all the people involved at the development of the various phases of the revision. Without their valuable comments and suggestions, this manual would not have been realized. Likewise, proper acknowledgment is extended to the resource persons, representatives and consultants, specifically from the Philippine Association of Civil Engineers (PICE), United Architects of the Philippines (UAP), Heritage Conservation Society (HCS), Commission on Audit (COA), DepED Regional Directors, Schools Division Superintendents, as well as the management particularly, the Research and Information Management Unit (RIMU) of the PFSED and support staff, for their efforts in coming up with this revised edition.

We owe a great deal to the work of previous and present writers and editors of the Handbook. We must mention in particular, the Bureau of Elementary Education which prepared the 1993 edition, Philippine Green Building Council (PhilGBC), Philippine Domestic Construction Board (PDCB), Construction Industry Authority of the Philippines (CIAP), Asian Disaster Preparedness Center (ADPC), National Disaster Coordinating Council (NDCC) through the Office of Civil Defense (OCD), Department of National Defense (DND), United Nations Development Programme (UNDP), and the European Commission Humanitarian Aid department (ECHO).

Finally, gratitude is extended to the Secretary, Undersecretaries for Regional Operations, Presidential Assistant for Education, and Assistant Secretary for Planning and Development, for their inspiration and support in making this project possible.

The names of all people credited and acknowledged for the development of this Manual are found at the end of this material.

OLIVER R. HERNANDEZ
Chief, PFSED-OPS

Table of Contents

Chapter I.

EDUCATIONAL FACILITIES FOR BASIC EDUCATION 24

A. Educational Facilities Defined 25

B. Importance of Educational Facilities 25

C. Basic Principles on Educational Facilities 25

D. The Educational Facilities Program 26

E. School Mapping 26

1. School Mapping Process 26

a. Specific Areas of Expansion 26

(1) Rationalization of existing facilities 26

(2) Provision of new or additional facilities 27

b. Initial Steps in School Mapping 27

(1) Diagnosis of the existing situation 27

(2) Projection of future requirements 27

(3) Drawing up of perspective school map 27

2. Basic Data Needed for the Conduct of School Mapping 28

a. Education Data 28

b. Population Data 28

c. Other Planning Data 28

3. Expected Results of School Mapping 28

a. School buildings requiring repairs 28

b. Schools requiring additional classrooms 28

c. Opening of New Schools 28

d. Phasing out of existing schools 28

e. Resource Allocation 28

f. Environmental Mapping 28

4. Methodological Stages in the Preparation of the Detailed Local School Map 28

5. Specific Outputs of School Mapping 29

6. The School Mapping Exercise (SME) of DepED 29

a. The Components of SME 29

b. Questions Addressed by SME 30

c. Levels of Responsibility 30

F. School-Community Relations 31

G. Ergonomics 31

H. Anthropometry 32

1. Types of Body Measurement 32

a. Static Measurements 32

b. Dynamic Measurements 32

2. Methods of Taking Part-Body Measurements 32
3. Procedures in Taking Part-Body Measurements 32
I. Thermal Comfort 33
J. Visual Comfort 33
1. Quantity of Light 33
2. How to Achieve Visual Comfort by Natural Day Light 34
K. Acoustical Comfort 34
1. Sources of Sounds 34
2. Ways of Achieving Acoustic Comfort 35
3. Desirable Aural Environment 35
L. Color 35
1. Importance of Color 35
2. Guidelines on the Use of Color 35
3. Color Scheme Adopted by DepED 36
4. Safety Color Scheme 36
M. Disaster Risk Reduction Measures 36
1. How to Make Schools Safe 37
a. Roles of Stakeholders 37
(1) Government 37
(2) UN and Other International/Local Organizations 37
(3) Educators and Professionals 37
(4) Communities and Schools 37
(5) Parents 37
(6) Children 38
b. Proper Location of School Sites 38
c. Environment 38
2. Green Schools 38
a. Benefits of Green Schools 38
(1) Healthy Places to Learn 38
(2) Healthy Places to Teach 39
(3) Save Money 39
b. Greening New Schools 39
(1) Hands-on Learning 39
(2) Lessen Environment Impact 39
c. Building for Ecologically Responsive Design Excellence (BERDE) 39
(1) Why BERDE Certify? 40
(2) School Building Greening Project Checklist 40
N. HAZARD SPECIFIC REDUCTION MEASURES 44
1. Fire Prevention and Safety Measures 44

2. Provision for Open Spaces as Temporary Evacuation Sites for Earthquake, Fire and Other Emergencies 44
3. Adherence to Building Design Standards and Structural Soundness 45
4. Provision of Water, Sanitation and Hygiene Facilities 45
    a. Water System and Waste Water Disposal System 45
    b. Ideal Water Supply System and Utilization Guidelines 45
5. Road Safety 45
6. Proper Use of Chemicals and Gases In the Science Laboratories 46
    a. Designing/Constructing A Science Laboratory 46
    b. Guides/Steps to Ensure that Learning in the Laboratory shall always be Safe 47
7. Proper Use of Computer/Laboratory Room 48
    a. Recommended Security and Safety Measures 48
    b. Public-Private Assistance 48
    c. Maintenance of Computers and Devices at Work 48
8. School Canteens 50
9. Proper Garbage Disposal 50
10. Pergolas 50
11. Use of Identification Cards 50
12. Waiting Sheds 50
13. Organizing School Disaster Risk Management Program 50
14. School Disaster Preparedness Plan 51
15. Earthquake Safety in Schools 51
    a. Major Elements of Effective School Seismic Safety Program 52
        (1) Seismic Safety Policy Element 52
        (2) Accountability Element 52
        (3) Building Codes and Code Enforcement Element 52
        (4) Training and Qualifications Element 53
        (5) Preparedness and Planning Element 53
        (6) Community Awareness and Participation Element 54
        (7) Risk Reduction Element for New Facilities 54
        (8) Risk Reduction Element for Existing Facilities 54
16. Flood Safety in Schools 55
    a. Roles of School Administrators 56
    b. How to Prevent/Mitigate Impacts of Flood 56
    c. Recovering From Damages Brought By Flood 56

Chapter II.

SCHOOL SITES 58

A. STANDARD REQUIREMENTS 59

1. Location/Environment 59
2. Design and Safety Standards 59
3. Accessibility 60
4. Topography 60
    a. Soil Condition 60
    b. Size 60
    c. Heat Island 60

B. MINIMUM STANDARD REQUIREMENTS FOR SCHOOL SITES 60

1. Elementary School 60
    a. For Rural Areas 60
    b. For Urban Areas 60
2. Secondary School 61
    a. For Rural Areas 61
    b. For Urban Areas 61
3. Integrated School 61
4. Miscellaneous Provisions 61

C. MODES OF ACQUISITION OF SCHOOL SITES 61

1. Purchase 61
    a. Procedure for the Purchase of School Sites 61
2. Donation 62
3. Contract of Usufruct 63
4. Expropriation 63
    a. Expropriation Proceedings 63
    b. Just Compensation/Payment 63
5. Barter or Exchange 63
6. Presidential Proclamation 63
7. Gratuitous Conveyance 64

D. PERFECTION OF TITLE 64

1. General Procedure of Acquiring the Original Certificate of Title 64
2. Step by Step Procedure in Acquiring the Original Certificate of Title 64
3. Miscellaneous Instructions 65

E. SCHOOL SITE CARD 65

F. SCHOOL SITE DEVELOPMENT 66

1. Principles 66
2. Layout 66
3. Arrangement 66

4. Site Limitations 66
5. Acoustic Barriers 66
6. Sun Path 66
7. Local Wind 66
8. Sun Screens, Vertical Louvers, and Green Walls 66
9. Distances between Buildings 66
10. Recommended Setback 67
11. Open Spaces 67

G. SITE DEVELOPMENT PLANNING 67
1. Procedure in Site Development Planning 67
2. Plotting the School Site 68
3. School Site Zoning 69
a. Visual Zone 69
(1) Lawns 69
(2) Flower Gardens 69
(3) Flower Beds 70
(4) Assembly Area 70
(5) Rain Gardens or Bio-Wales 70
(6) Physical Zone 70
(7) Functional Zone 70

H. EXTERNAL AREAS IN THE SCHOOL 70
1. Agricultural Area 70
2. Playground Area 70
3. Circulation Areas 70
4. Athletic Field 71

I. SCHOOL SITE BEAUTIFICATION 71
1. School Gate 71
2. School Fence 71
3. Flagpole 71
4. Signboard 71
5. Planting Plant 72

J. EVACUATION AREAS 72

K. SPECIAL PROJECTS 73

Chapter III.

SCHOOL BUILDINGS 74

A. TYPES OF SCHOOL BUILDINGS 75
1. Categories of School Buildings 75
a. According to Structure 75

b. According to Design 75
(1) Gabaldon Type 75
(2) Army Type 75
(3) Magsaysay Type 75
(4) Marcos Type 76
(5) Bagong Lipunan I, II, III 76
(6) RP-US Bayanihan 76
(7) ESF Building 76
(8) Imelda Type 76
(9) PAGCOR Building 76
(10) GOJ-TRSBP Building 76
(11) GOJ-EFIP Building 76
(12) SEDP Building (Carino Type) 76
(13) Multi-Purpose Workshop Building 76
(14) DECS 1 Room Building 76
(15) FVR 2000 76
(16) Fabricated Vigorous Room 2000 76
(17) SB Readily Assembled Multi-Optima Shelter (RAMOS) 76
(18) FFCCCII "Barrio School" 76
(19) Little Red School House 76
(20) DepED School Building Standard Modified 76
(21) DepED School Building 76
(22) DepED Multi-Storey School Building 76
(23) Spanish Grant School Building Package 76
(24) TEEP School Building 76
(25) SEDIP Building 76
(26) Learning and Public Use School Building (LAPUS) 76
c. According to Function 76
(1) Instructional Spaces 76
(2) Administrative and Service Spaces 77
(3) Non-Programmed Spaces 77
(4) Corridors 77
B. MINIMUM STANDARDS FOR INSTRUCTIONAL AND ADMINISTRATIVE SPACES FOR ELEMENTARY, SECONDARY, PRESCHOOLS, TECHNICAL VOCATIONAL SCHOOLS 77
1. Classrooms 77
2. Science Laboratory 77
3. School Shops 77
4. The Computer Room/Laboratory 78
5. Library/Learning Resource Centers 78

6. Library Hubs 78
7. Administrative/Service Spaces 79
8. Preschools 79
    a. Nursery (Pre-Kindergarten) 79
    b. School Site (For Kindergarten Only) 80
    c. Equipment 80
    d. Health Facilities and Provisions for Safety 80
    e. Activity Centers 80
    f. Motor and Creative Development Center 80
9. Strengthened Technical/Vocational Schools 80

C. THE DESIGNS OF SCHOOL BUILDINGS 82
1. Design Guidelines 82
2. Placement and Layout 82
3. School Building Orientation 82
4. Layout 83
5. Building Plans 84
    a. Standard Building Plan 84
    b. Special Building Plan 84
6. Building Plan Requirements 84
7. Design Requirements 84
    a. Windows 84
    b. Ceiling Height 85
    c. Floor Construction 85
    d. Roof Construction XXX
    e. Exit Doors 85
    f. Door Shutters 85
    g. Corridors 85
    h. Stairways 85

D. BUILDING RISK REDUCTION REQUIREMENTS 85
1. Risk Reduction Requirements for Parts of a School Building and Amenities 86
    a. Main Entrance 86
    b. Electric Fixtures 86
    c. Stairs/Handrails 86
    d. Windows 86
    e. Doors/Exits 86
    f. Walls 86
2. Hazard Resilient Approaches 86
    a. Earthquakes 87
    b. Tropical Cyclones / Tornados 88

c. Flooding 88
d. Rainfall and Wind-Driven Rain 88
e. Differential Settlement (Subsidence) 88
f. Landslides 88
g. Tsunami 88
3. Emerging Issues and Concerns 88
a. Hazard Mitigation and Sustainability 89
b. Cost of Mitigation Measures in Retrofits 89
c. Relevant Codes and Standards 89
d. Condemned/Unfinished Construction 89
e. Sanitary Facilities 89
4. Understanding Structural Issues 89
a. Main Structural Elements of Buildings 90
b. Common Structural Problems/Failures and Causes 90
(1) Concrete 90
• Concrete Preparation and Maintenance Problems of Structural Concrete 90
• Performance Problems of Structural Concrete 91
(2) Structural Steel 94
5. Immediate Remedial Measures 95
6. Building Failure Mitigation 95
7. Miscellaneous Requirements 95
E. ACQUISITION OF NEW SCHOOL BUILDINGS 96
1. Allocation Procedure of New School Building 96
a. Congress 96
b. Department of Budget and Management 96
c. DepED Central Office 96
d. DepED Regional Office 97
e. DepED Division Office and Ad Hoc Physical Facilities Unit 97
f. DepEd Division Office 97
g. DepED Physical Facilities and Schools Engineering Division (PFSED) 97
h. Department of Budget and Management 97
i. Department of Public Works and Highways (DPWH) and DepED 97
2. Pre-Construction Activity 97
3. The Building Permit 98
4. Mode of Procurement 98
5. Monitoring and Inspection 99
6. Acceptance/Non-Acceptance of School Buildings 100
7. School Building Card 100

8. Improvement and Maintenance of School Buildings 100
a. Repair 100
(1) Minor Repair 100
(2) Major Repair 100
b. Rehabilitation 100
c. Renovation/Restoration 100
d. Alteration or Remodelling 101
e. Modernization 101
9. Condemnation and Demolition of School Buildings 101
F. TYPES OF SCHOOL BUILDINGS FOR SPECIAL CASES 102
1. The Iso-Panel or Dura-Quick System 102
2. Modular Type School Buildings (PGMA School Building) 103
3. Modified Design of School Buildings By the Engineering Brigade 103
4. The Millennium School Building Design 104
5. NGO Constructed School Buildings 104

Chapter IV.
SCHOOL FURNITURE, EQUIPMENT AND OTHER FACILITIES 106
A. SCHOOL SEATS 107
B. SCHOOL TABLES 108
1. Table Height 108
2. Tabletop Area 108
C. STORAGE AND DISPLAY 109
D. SCHOOL EQUIPMENT 109
E. FITTINGS, FIXTURES AND FURNISHINGS 110
F. INSTRUCTIONAL DEVICES 110
1. Types of Instructional Devices 110
a. Audio Visual Equipment 111
b. Proper Utilization of Instructional Devices 111
(1) Planning 111
(2) Selection 111
(3) Utilization 112
c. Multi-Media Materials/Equipment 112
G. REGULAR CLASSROOM FACILITIES 112
1. Basic Concepts 112
2. Standard Facilities 112
3. Classroom Structuring 113
H. HOME ECONOMICS FACILITIES 113
I. INDUSTRIAL ARTS FACILITIES 114

J. AGRICULTURAL ARTS FACILITIES 115
K. LIBRARY FACILITIES 116
1. School Library 116
2. Basic Equipment Requirement for a School Library 117
3. Classroom Library 117
4. Teachers' Professional Library 117
5. Learning Resource Center (LRC) 117
L. SANITARY FACILITIES 118
1. Importance 118
2. Toilet Facilities 118
3. Toilet Fixtures and Materials 118
4. Hand Washing Facilities 118
5. Drinking Facilities 118
6. Water System and Wastewater Disposal System 118
M. PLAYGROUND FACILITIES 119
1. Playground Area 119
2. Space Component 120
3. Playground Equipment 120
N. ATHLETIC ACTIVITIES 120
1. Educational Aspect 120
2. Basic Requirements 120
O. ADMINISTRATIVE FACILITIES 121
P. FACILITIES FOR ANCILLARY SERVICES 122
1. School Health Clinic 122
2. Guidance and Counseling 122
Q. SPECIAL EDUCATION FACILITIES 122
R. SCHOOL LUNCH COUNTER (SCHOOL CANTEENS) 124
1. Basic Components 124
a. Dining Space 124
b. Service Counter 125
c. Kitchen 125
S. MEETING STANDARDS FOR SCHOOL FACILITIES 125

Chapter V.
EDUCATIONAL FACILITIES MANAGEMENT 126
A. MANAGEMENT AND ADMINISTRATIVE CONTROL 127
1. Functions of Stakeholders 127
a. Physical Facilities and Schools Engineering Division (PFSED) 127
b. Regional Director 127

c. Schools Division/City Superintendents 128
d. District Supervisor 128
e. Principal/School Head 128
f. Regional/Division Physical Facilities Coordinators 129
g. Other Groups 129
B. GUIDELINES ON THE ESTABLISHMENT, SEPARATION OF ANNEXES, INTEGRATION, CONVERSION AND NAMING/RENAMING OF PUBLIC ELEMENTARY AND SECONDARY SCHOOL 129
1. Requirements in Establishing New Schools 129
2. General Procedures in Establishing New Schools 129
3. Specific Procedures 130
a. Establishment of New Schools 130
b. Separation of Annexes 131
c. Integration of Schools 131
d. Naming/Renaming of Schools 131
C. PROPER UTILIZATION OF EDUCATIONAL FACILITIES IN SCHOOLS 132
1. Civil Service Examination 132
2. Literacy Classes 132
3. Polling Places 132
4. Religious Services/Instructions 132
5. Community Programs 132
6. Evacuation Centers 132
D. ILLEGAL UTILIZATION OF SCHOOL FACILITIES 132
1. Personal Use of Educational Facilities 132
2. Squatters 132
E. PROPERTY RESPONSIBILITY 133
1. Care/Preservation and Safeguarding of Educational Facilities 133
2. Maintaining School Records and Facilities 133
F. BASIC EDUCATION INFORMATION SYSTEM 133
1. Instructional Room Analysis in BEIS Quick Count Modules 133
2. School Furniture Analysis in BEIS Quick Count Modules 134
G. FINANCING EDUCATIONAL FACILITIES 134
1. National Funds 135
a. Department of Education (DepED) 135
b. Department of Public Works and Highways (DPWH) 135
2. Request for National Fund 136
3. Financing School Sites 136
4. Special Education Fund (SEF) 137
a. Sharing of Funds 137
b. Fund Administration 137

5. Voluntary Contributions 138
6. Foreign-Assisted School Building Program 139
7. Adopt-A-School 139
8. Brigada Eskwela (National School Maintenance Week) 139

H. PROCUREMENT OF INFRASTRUCTURE PROJECT, GOODS, AND SERVICES 139

1. Emergency Procurement System for Rehabilitation/Replacement of School Building, Equipment and Fixtures 140
2. Negotiated Procurement 140
3. Bidding Process for Projects 140
4. Flowchart for Procurement of Goods 141

I. ACCOUNTING AND RECORDING OF SCHOOL PROPERTY 141

1. Booking-up of Completed School Buildings 141
    a. Procedures in Booking-up of School Buildings 141
    b. Purchase, Procurement of Property, Plant and Equipment 142
    c. Property and Inventory System 142
        a. Perpetual Inventory Method 142
        b. Moving Average Method 142
4. Accounting for Loss of Cash and Property 142
5. Grant of Relief from Accountability 143

J. DISPOSAL OF EDUCATIONAL FACILITIES 143

1. Membership of Disposal Committee 143
2. Modes of Disposal Divestment 143
    a. Condemnation/Destruction of Property 143
    b. Transfer of Property 143
    c. Barter 144
    d. Donation of Property 144
    e. Sale of Unserviceable Property 144
3. Property Assets Subject to Disposal 144
4. Determining Factors in the Disposal of Unserviceable Property 144
5. Inspection and Appraisal of Property for Disposal 144
6. General Procedures in Appraisal 144
7. Submission of Documents Pertinent to the Disposal of Unserviceable Property 144
8. Guidelines on Disposal 145

Chapter VI.

MONITORING AND EVALUATION OF EDUCATIONAL FACILITIES 146

A. TYPES OF EVALUATION 147

1. PRELIMINARY EVALUATION 147
2. PROGRESSIVE EVALUATION 147

3. CULMINATIVE EVALUATION 147
B. EVALUATIVE INSTRUMENTS 148
C. EVALUATION OF EDUCATIONAL FACILITIES 148
1. On Location 148
2. Environment 149
a. Thermal Environment 149
b. Acoustic Environment 149
c. Visual Environment 149
d. Aesthetic Environment 149
3. Program Adequacy 149
4. Numerical Adequacy 149
D. WHAT IS TO BE EVALUATED? 149
E. USING THE EVALUATION DATA 149
1. Health and Disaster Risk Reduction Measures 150
2. Fire Safety 150
3. Earthquake Safety 150
4. Flood and Flash Flood Safety 150
5. Structural Soundness 150
6. Sanitation Adequacy 150
7. Housekeeping Quality 150
8. Accessibility and Use by the Handicapped 150
9. Miscellaneous Concerns 150
G. CONSTRUCTORS' PERFORMANCE EVALUATION SYSTEM 150

Annexes 152
Glossary of Terms 202
Selected Bibliography 210
Writers and Contributors 214
Physical Facilities Coordinators 216

Chapter 1 | Educational Facilities for Basic Education

Educational Facilities are valuable assets of the school that have to be given priority attention in terms of its establishment, procurement, development, improvement, maintenance, records keeping and accountabilities. These consist of sites, buildings and various educational facilities which are the major support system of the school to enhance the learning capabilities of the pupils/students for the maximum development of their potentials, skills, talents and to become God-loving, law-abiding, value-laden and responsible citizens of this country.

A. EDUCATIONAL FACILITIES DEFINED

The term "educational facilities" refers to all the physical properties of a school, consisting of the grounds, buildings, and the various facilities within the school grounds and inside the school buildings.

Also known as the school plant or the physical facilities of a school; thus, the terms educational school facilities, school plant, and physical facilities may be used interchangeably.

For the purpose of this book, the different components that constitute educational facilities are categorized as follows: school sites, school buildings, school furniture and equipment.

B. IMPORTANCE OF EDUCATIONAL FACILITIES

Educational facilities are considered indispensable to a school; they do not only provide housing for the school but also serve as facilitating agents for all the educational activities that take place in a school.

The availability of safe, secured and satisfactory educational facilities (i.e., site, building, furniture, and equipment) is one of the prerequisites for the opening of a new school. Sites should be assessed in terms of its vulnerability to various geological and hydro meteorological hazards. Hazard-specific resilient features that have undergone thorough feasibility and viability studies must be incorporated in the design of the buildings or structures (Niño Relox, PAGASA).

Conversely, one of the grounds for the closure of a school is substandard facilities (i.e., lack safe, sanitary, and adequate buildings and site).

The availability of safe, secured, adequate and satisfactory educational facilities will support the teaching and learning processes and ultimately improve the quality of basic education.

C. BASIC PRINCIPLES ON EDUCATIONAL FACILITIES

The primary function of educational facilities is to provide the proper school environment that is most conducive to effective teaching and learning. It shall be responsive to changes in teaching methods and school organization taking into consideration the changes in educational process which has become more active, interrelated, and has become an integral part of the wider community.

Functional and effective educational facilities are developed, operated and managed on the basis of a comprehensive plan of action of the school, prepared by all stakeholders in education in the community. It shall include sound educational facility planning and design process principles to:

a. Maximize collaboration in school planning design through consultative planning, design and project implementation, involving a wide spectrum of representatives from the community, e.g., administrative decision-makers, parents, business and community leaders, technical people, teachers, school administrators, and pupils/students;

b. Build a proactive facility management program which anticipates facility problems during the planning phase like maintenance and operations of the educational facilities.

c. Plan schools as neighborhood-scaled community learning centers considering the following steps:

c.1 Locate the school in a well-defined neighborhood as this will provide opportunities for children and parents to walk to the school and provide an identity for that community;

c.2 Provide a variety of services at flexible schedules and make the same accessible to end-users of different backgrounds especially during calamities/disasters wherein the school buildings are being used as evacuation centers and temporary shelters to affected community members;

c.3 Create an environment that draws the community to the school and that increases interaction in compliance

with the principles of the Schools First Initiative (SFI) and the School-Based Management (SBM);
c.4 The school shall provide facilities accessible to the entire community, creating an increased involvement and awareness of the educational process; and
c.5 School facilities that act as true community centers to serve the broader society goals of providing the setting for meaningful civic participation and engagement at the local level.

Plan for learning to take place directly in the community which affirms that learning happens all the time and in many different places. A variety of social and economic factors have created an environment which educators can tap as a learning resource be these in urban, suburban or rural settings. This will establish partnership with museums, zoos, other public institutions as well as local business or industrial workplace settings in compliance with Republic Act No. 8525 otherwise known as the "Adopt-A-School Program", involving external stakeholders in education.

Constant evaluation of educational facilities shall be made in terms of efficiency of operation and maintenance of standards in relation to the efficiency and effectiveness of instruction.

D. THE EDUCATIONAL FACILITIES PROGRAM

An educational facilities program is basically a comprehensively planned set of decisions for action which are directed at the achievement of specific goals within specified time frames. It shall be an integral part of the total educational program of the school.

The program shall be planned within the framework of well-defined educational objectives. Teachers, supervisors, architects, engineers, etc., under the leadership and coordination of the school administrator, shall cooperatively undertake it. This is to draw out the best knowledge and thinking of many groups and individuals who can contribute valuably the formulation of a comprehensive and sound educational facilities program.

A comprehensive educational facilities program shall cover within its scope of action such aspects as establishing, organizing, developing, improving, maintaining, financing, evaluating, etc., the school furniture, equipment, school buildings and school sites.

The formulation of decisions for action shall take into account the total educational program for the community as well as new trends and developments in education, which influence the nature of the school program, and the corresponding requirements in physical facilities. It shall also be founded on data derived from a survey of existing facilities and results of the school mapping process.

For optimal effectiveness, decisions for action incorporated in the educational facilities program shall be categorized as to short-range, medium-range, and long-range time frames. It shall be borne in mind that once a school is established, it is expected to continue operating for generations; if not permanently; such that its educational facilities shall be programmed accordingly in terms of such time dimensions.

E. SCHOOL MAPPING

School Mapping is a dynamic process of planning the distribution, size and spacing of schools and physical facilities requirements for optimum utilization and benefit. It is a process of identifying current inadequacies in distribution and of providing appropriate types and patterns of school plant. It is a continuous process involving the uninterrupted recording of basic information required for analysis of the school map at any given point in time.

1. School Mapping Process

a. Specific Areas for Expansion

The process of school mapping covers the following specific areas for expansion and improvement of facilities

(1) rationalization of existing facilities by:

- locating existing schools and determining its vulnerability to various geological and hydro meteorological hazards;
- new schools must be located outside areas already identified to be within hazard zones (Niño Relox, PAGASA);
- shifting, closure, or amalgamation/ integration of institutions; and

- optimum utilization of buildings, equipments, furniture, etc.

(2) provision of new or additional facilities by:

- opening of new schools or upgrading existing ones;
- providing additional teaching and non-teaching staff; and
- providing new or additional buildings, furniture and equipment in institutions, etc.

Before starting the exercise of school mapping, it is essential that the norms and standards for provision and maintenance of educational services are clearly laid down by the higher authorities.

b. Initial Steps in School Mapping

(1) Diagnosis of the Existing Situation

The initial step in school mapping is to make a survey of the existing situation in order to obtain all information about the network of schools and their physical resources and means considering the following factors:

- Environmental/geographic factors include both natural (rivers, mountains, etc.) and man-made (source of electricity, roads, railways, communication network, etc.) features
- Demographic factors pertain to such characteristics of population as size, growth, density, social structure, migratory trends, school drop-outs and retention rates, etc.
- Economic factors refer to per capita income, commercial establishments, mass media, size of schools/ classes, etc.
- Educational factors include the number of study hours per week and their distribution by subjects, the number of pupils/students per class, normal length of time for which premises shall be used and the possibility of introducing double shift, teachers' working hours, etc.
- Political factors cover those political and policy priorities and constraints, which usually, dictate the creation or expansion of specific types of educational institutions.
- Manpower factors refer to the present and future structures of employment which generally affect the relative weights in educational contents and diversification.

(2) Projection of future requirements

After a comprehensive diagnosis, it is necessary to make projections to identify the potential demands. Simultaneously, it is necessary to draw up perspective school maps involving the following steps:

- Estimating the number of children to be enrolled; and
- Determining the capacity of existing schools and defining their catchment areas. Catchment area refers to a specific territory, which is served by a school based on the environmental, demographic and economic factors. These areas together with their respective schools are plotted on a map.

(3) Drawing up of perspective school map

The school map produced shall not be regarded as final unless it has been considered and discussed by central administrators, local authorities, teachers, parents, etc. On the basis of feedback from such discussions, all school mapping results/outputs shall be encoded and shall form part of the Management Information System, a repository of all data on educational facilities.

Continuous monitoring and evaluation of these school mapping data/results/outputs are very important. These shall be in-built and based upon a sound system of information. Corrective measures and updating whenever and wherever found necessary shall be taken so as to improve the effectiveness of the school mapping exercise. The school map becomes an integral part of the general map of public services for the community.

Geological and hydro-meteorological hazard maps generated by mandated national government agencies are available and should be referred to by each school and used in site location, planning, and implementation. The hazard maps will help identify areas or zones prone to specific hazards such as those related to earthquakes (ground rupture, ground shaking, liquifaction, earthquake-induced landslides and tsunami), volcanic eruptions (pyroclastic flows, lava flows and ash fall) as well as hydro-meteorological hazards brought about by tropical

cyclones and heavy monsoon rains such as rain-induced landslides, floods and flash floods, and storm surges (Niño Relox, PAGASA).

Geological and hazard maps shall be provided to each school. This will identify areas prone to hazards like landslides, soil erosion, floods and earthquakes.

2. Basic Data Needed for the Conduct of School Mapping

a. Education Data

(1) Annual Statistical Report

(2) Geographical distribution of schools

(3) Site and catchment area conditions

(4) Size of the existing school plant

For individual schools

(1) exact location or verbal description of location

(2) nature of catchment area (relief/land elevation, barriers to movement, predominant economic activity, area of immigration or population decline)

(3) number of student spaces available in each year, indication of the state of buildings

b. Population Data (analysis of the census)

c. Other Planning Data

(1) general rural and urban development policies

(2) social facilities (school health, recreational centers, etc.) to encourage nucleation of population at the central points.

3. Expected Results of School Mapping

(1) School buildings requiring repairs

(2) Schools requiring additional classrooms

(3) Opening of New Schools

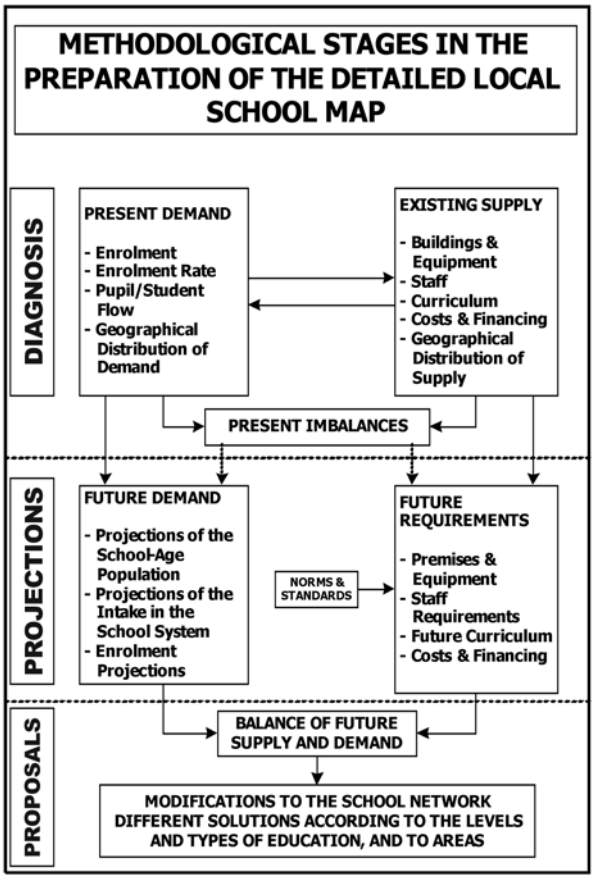
(4) Phasing out of existing schools

(5) Resource allocation

(6) Environmental Mapping

4. Methodological Stages in the Preparation of the Detailed Local School Map

DIAGRAM I



5. Specific Outputs of School Mapping

a. Prioritization of schools based on defined set of criteria, e.g. selection of place to open a school taking note of available resources, as well as vulnerability of location to both natural and man-made hazards (PAGASA).

b. Identifying the location of new schools based on a defined radial distance from existing schools or barangays (attention in range, i.e. walking distance from nearest schooling facilities)

c. Grouping of entries based on a defined set of attributes. (e.g. availability of land, local contributions)

6. The School Mapping Exercise (SME) of DepED

The SME is a tool which marked the departure from the normal way of doing things at the DepED. SME is a demand-driven approach for educational planning as well as the tool for decision-making of school development in a rational and efficient manner.

a. **The components of SME are:**

- Database planning
- Geographic Information System-Based School Profiling System
- Capacity building of regional/division offices, and local government units (LGUs)

The SME shall be able to describe the community situation (identify the population centers, and point out the demands for the schools based on population trend).

SME has evolved as an information system building through Geographic Information System Technology (GIST) and has become part of the Management Information System (MIS) which contains the Basic Education Information System (BEIS) of the Department of Education (DepED). It is now considered as a tool for supporting decision-making in the formulation of policies, standards and guidelines.

To cite a specific case, once the specific outputs were made available, we can plot in an existing hazard map, which schools located along coastal areas need to have sustainable preparedness plans specific to tsunami.

b. **Questions addressed by SME**

- Where is the nearest area with more than 10 meter-elevation to be designated as possible evacuation site?
- What is the shortest route to the site?
- For existing schools along the coastline, when will tsunami drills be conducted?
- Is the chosen site vulnerable to landslides? Mudslides?

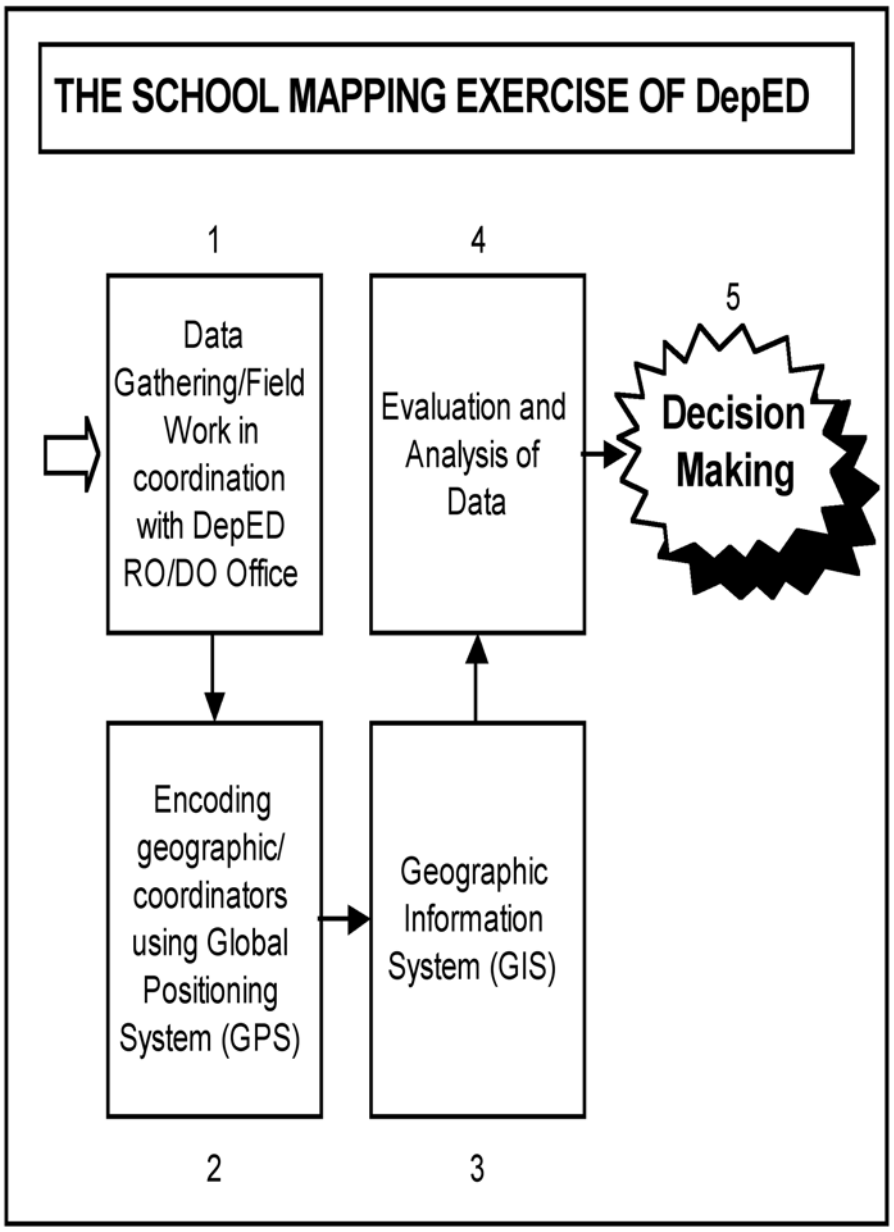
A specific discussion for this specific hazard scenario is very necessary. Site location must consider all possible hazards and must be readily considered using a multi-hazard approach.

In the institutionalization of SME, there are five levels that will sustain the exercise: national level, regional, division, school and local government units' levels.

c. **Levels of Responsibility**

ACTIVITY	RESPONSIBLE ENTITY
• Research and Development o Developing technology of SME o Providing guidelines and manuals for the operation o Formulating national education policies and plans	National – DepED Central Office
• Planning and Evaluation o Consolidation of GIS maps and database o Manage and maintain GIS database management system	DepED Regional Offices
• Data Collection and Compilation o Division-based Management Information System (MIS) * Collecting and validating data from schools * Use database and GIS maps in decision-making of school developments	DepED Division Offices
• School-based data collection o Enrolments, class size o Academic performance o Teacher and personnel details o Budget and finance o Textbook and teaching aids o Office equipments o School development plan	Public Elementary and Secondary Schools
• Implementation of School Building Program and Monitoring	All levels with assistance of Local Government Units (LGUs)

Diagram II



F. SCHOOL-COMMUNITY RELATIONS

In the light of the community school concept and the Alternative Learning System of the Department, public schools have broadened the scope of their educational activities and services to include the out-of-school youths and adults in the community where the school is situated. These educational developments point out the following implications for the school facilities program:

1. The educational facilities program shall be planned to provide equipment, furniture and other physical resources required for both school and community educational programs.

2. School facilities shall be designed satisfactorily for joint school and community use by considering both child and adult needs.

G. ERGONOMICS

Ergonomics pertains to the laws or theories of energy expenditure. It involves the study of the efficiency of persons in their working environment, which is most conducive to the efficient performance of teaching-learning tasks.

The ergonomics of the educational facilities involves such factors as anthropometry, thermal comfort, visual comfort, acoustical comfort, color, and safety.

H. ANTHROPOMETRY

Anthropometry is a science of measuring the human body, its parts and functional capabilities. An important principle in the ergonomics of the educational facilities is that it shall be designed and scaled to fit the sizes of their users on the basis of their part-body measurements. The basic body measurement is the standing height of the individual.

For the purpose of designing and sizing school facilities, two types of part-body measurements are required:

1. Types of Part-Body Measurements

a. **Static Measurements**

These are measurements based purely on the dimensions of body parts, namely:

(1) Lower leg (from heel to the popliteus)

(2) Upper leg (from popliteus to back of buttock)

(3) Hip-width

(4) Shoulder-width

(5) Height of elbow (standing and seated)

(6) Thickness of thigh (seated)

(7) Eye-height (seated and standing)

b. **Dynamic Measurements**

These are measurements based on what can be performed, namely:

(1) Forward reach of the arms

(2) Upper reach of the arms

(3) Lower reach of the arms

(4) Height of hand

2. Methods in Taking Part-Body Measurements

Basically, two methods are used in taking part-body measurements:

a. Measuring actually each of the whole range of part-body dimensions.

b. Measuring only the standing height and then deducing the part-body measurements from it by using a system of proportion which relates part-body measurements to standing height.

3. Procedure in Taking Part-Body Measurements

For both methods use the following procedure:

a. Select a sample of children

b. For method 1 (Static Measurements), use a sample for each part-body measurement.
For method 2 (Dynamic Measurements), use a sample or standing height from which the part-body measurements are to be deduced.

c. Determine the number of children to be measured by category, each category being usually an age-group.

d. Take the part-body measurements or compute according to the method used.

e. Classify and tabulate the data then the average by age-group and/or sex-group.

I. THERMAL COMFORT

To be thermally comfortable, the internal climate in the school shall be cool, pleasant, and satisfying. Thermal comfort in the school is obtained either by artificial means (electric fan, air conditioner, etc.) or by natural ventilation. Thermal comfort by natural ventilation maybe obtained in the following ways:

1. Proper orientation of school buildings to minimize solar heat loads, that is, building ends shall face approximately the east-west direction and its long sides along the north-south direction to avoid direct sunlight.

2. Designing school buildings with wide overhanging eaves to provide shade and promote air motion inside the buildings.

3. Keeping buildings as narrow as possible so that breezes can blow through the rooms easily from one side of the building to the other.

4. Providing adequate fenestration to allow the maximum amount of wind to blow through the building.

5. Planting trees with a large foliage mass along the sides of the building to promote air motion inside the building. Distance of the trees from the building shall be specified, not too close to affect air circulation, nor later on to destroy the building foundation by their roots.

Natural ventilation should be preferred as recommended by the Philippine Green Building Council (PhilGBC). Active solutions such as electric fans or air-conditioning units should only be back-up solutions. Minimum and maximum indoor temperature range as well as humidity range needs to be specified, to include:

1. Maximum allowed degrees deviation of building from the east-west direction

2. Length of overhang in relation to bottom of window sill when the sun is at its lowest angle to the south on June 21 and when the sun is at its lowest angle to the north on December 21. This will vary depending on the site's latitude bearing.

3. Maximum width space of buildings. Define minimum distance requirement between buildings.

4. Minimum and maximum percent ratio of fenestration to wall area. Specify minimum distance of trees from the building.

J. VISUAL COMFORT

Visual comfort in school is indicated when pupils/students and teachers can carry on classroom work without unnecessarily straining their eyes or experiencing visual discomfort. Good lighting, whether by natural daylight or artificial light, is characterized by the quantity and quality of illumination.

1. Quantity of Light. The recommended illumination levels for classrooms are as follows:

a. For a standard classroom in general, a minimum illumination level of 10 foot candles is considered normally sufficient. Research has shown no significant increase in visual acuity with the increase of foot candles above the 10-footcandle standard.

b. For most tasks common to schoolrooms, intensities of from 20 to 40 foot candles are considered practical and satisfactory.

c. For finer classroom tasks which need brighter light, the following illumination levels on the surface of the tasks are recommended:

Reading printed materials	30 foot candles
Reading pencil writing	70 foot candles
Reading good duplicated materials	30 foot candles
Reading poor duplicated materials	100 foot candles
Lip reading, sewing	150 foot candles

d. In terms of watt, four (4) 40-watt/six (6) 40-watt, or eight (8) 40-watt fluorescent lamps are sufficient standard requirement to achieve visual acuity.

Generally, however, the quantity of light in a classroom depends on the following conditions:

(1) natural illumination (design and size of windows)

(2) condition of the classroom (as to the paint and size)

(3) types of building (one storey or two-storey)

(4) climatic conditions

(5) ceiling height

2. How to Achieve Visual Comfort in School by Natural Daylight:

a. Following proper orientation of school buildings to provide adequate indirect daylight for the classrooms;

b. Using bilateral fenestration (or providing windows on both sides of each classroom) to secure daylight from both left and right sides of the classroom;

c. Making classroom windows wide, low-silled, and high-topped to insure maximum daylight illumination;

d. Using proper combination and intensity of colors in classrooms and on facilities to provide proper brightness-contrast;

e. Providing proper shading to avoid glare inside the classrooms; and

f. Size of classroom (as to distance of blackboard up to the low row seat).

Natural day lighting shall be preferred as recommended by the Philippine Green Building Council (PhilGBC). Artificial day lighting is only a back-up for cloudy or overcast sky conditions. Visual comfort by natural daylight may be achieved by specifying minimum and maximum height ratio to floor area depth.

K. ACOUSTICAL COMFORT

A good environment for acoustical comfort in school requires that noise be controlled to proper levels so that every child in a class can hear clearly what is being spoken by the teacher above all other sounds inside and outside a classroom.

1. Sources of Sounds

The sounds that a pupil hears simultaneously inside a classroom usually come from four (4) sources:

a. The voice of his own teacher;

b. Background sounds in his own classroom, such as chairs scrapping, sounds of movement from nearby children, etc.;

c. Intrusive sounds from adjoining classrooms, such as voices of other teachers and pupils/students, sounds of activities of children, etc.; and

d. External sounds from outside the building, such as vehicles, airplanes, birds chirping, dogs barking, etc.

2. Ways of Achieving Acoustic Comfort

Acoustic comfort in school may be achieved by:

a. Locating the school in a quiet neighborhood;

b. Locating the school building at a reasonable distance from the street;

c. Proper zoning of the school site to separate noisy areas from those where silence is required; and

d. Grouping buildings according to function so that academic buildings, where silence is required, are located at a reasonable distance from shop, home economics, and other buildings where noisy activities take place normally.

3. Desirable Aural Environment

Inside the classroom, the desirable aural environment maybe provided as follows:

a. Arranging the seats in such a way that no pupil is more than seven meters away from the teacher standing in front of the room; and

b. Where classrooms both face a common partition/back to back on either side, partition shall be up to the ceiling, if possible, double walled to avoid the noise from disturbing any of the classrooms.

L. COLOR

1. Importance of Color

The application of color or paint on educational facilities is designed:

a. To contribute to visual comfort (as a partner of light, color, and raise the illumination levels, effect proper contrast, and eliminate glare)

b. For aesthetic effect

c. To preserve and protect materials (as to maintenance)

d. For safety precautions

2. Guidelines on the Use of Color

The following guidelines on the use of color are suggested:

a. The color scheme shall be practical and in good taste; garish colors or a riot of colors shall be avoided.

b. In classrooms where pupils' concentration is desired, the use of varied, strong colors, especially within eye-level of the children, shall be avoided because of their distracting effect.

c. Ceilings shall be painted in off-white, flat paint, with a reflectorant factor of 85%.

d. Walls shall be painted in light colors, with the upper portion in lighter color (with a reflection factor of 60%) than the lower portion which shall have a reflection factor of 40%.

e. Floors shall be gray or blue-gray since these colors give cooler effect and show marks less than dark colors; the reflectorant factor of floors shall be from 30% to 40%.

f. There shall be a slight contrast in color between the chalkboard and the wall on which it is installed; areas of bright, distracting colors near the chalkboard shall be avoided.

g. The color of the chalkboard shall provide a much stronger contrast with chalk used on it, and give a reflectance factor from 20% to 25%.

h. Trims or frames may be painted in light color, such as white or off-white to contrast with the wall and shall have a reflectorant factor of 40% to 60%.

i. Proper combination of colors shall be used to highlight or emphasize elevation changes, obstructions, stairways, etc.

3. Color Scheme Adopted by DepED

Hereunder is the standard color scheme being adopted by DepED in its school buildings:

Part of School Building	Color
• Roofing and accessories	- DepED Green
• Door	- DepED QDE Palmyra Green
• Columns	- DepED Latex S/G Beige - DepED S/G Enamel Beige
• Exterior Wall	- DepED Latex S/G Beige - DepED S/G Enamel Beige
• Interior Wall	- DepED Latex S/G Beige - DepED S/G Enamel Beige
• Ceiling	- DepED Latex Flat White - DepED Flatwall Enamel

Note: Latex = for concrete walls; enamel = for wood
S/G = semi-gloss QDE = Quick Dry Enamel

4. Safety Color Scheme

The following safety color scheme is universally recognized:

Red denotes fire hazards or fire-fighting equipment, such as fire alarm boxes, fire pails, fire extinguishers, etc.

Green signifies safety or a go-ahead signal.

Orange is used to indicate alert or danger from equipment.

White serves as a traffic line or guide.

Yellow with its high visibility, is used to warn danger from stumbling, falling or striking, and is usually with alternate bands of a dark color.

Blue indicates precaution and is used on switchboxes, levers, etc.

M. DISASTER/RISK REDUCTION MEASURES

Every teacher or school official should recognize that the welfare of the pupils/students in school is his first and foremost concern and responsibility. Hence the educational facilities program should include adequate provisions for ensuring safety in school against natural and man-made hazards.

Children are taught disaster risk reduction measures in school as part of the elementary and secondary school curricula. The objective is to foster awareness and better understanding about the immediate environment in which children and their families live. The Basic Education Curriculum (BEC) used in formal education prescribed disaster risk reduction learning competencies required of every child to learn before passing basic education. These have become the bases for the preparation of learning exemplars/lesson plans to be used by teachers in teaching disaster risk reduction concepts to schoolchildren. Since school buildings are used as venues where teaching-learning activities take place, then school buildings need to be safe.

1. How To Make Schools Safe

a. Roles of Stakeholders

(1) Government

The national government should commit the training of teachers and the development of curriculum to support large-scale teaching of disaster risk reduction. Experiences from other countries proved that a review of existing construction guidelines and development of a comprehensive policy toward school safety are important measures to achieve safety in schools. Multi-hazards assessment of all locally relevant hazards, maintenance of school buildings, design and construction methods are also recommended for risk reduction measures. Low cost, effective technology in making new and safe school buildings are integrated in the designs developed by the Department of Public Works and Highways (DPWH), Local Government Units (LGUs), and the Department of Education (DepED). These concepts may be adopted in future school building construction to ensure that best technologies are used to mitigate geological and meteorological hazards in various areas of the country.

(2) UN and Other International/Local Organizations

The United Nations and other international organizations have vital roles to make schools safe for the school children.Through the Education in Emergencies, the education cluster proved to be "quick win" solution for the government to improve humanitarian assistance to affected populations during emergencies. These are done through coalitions and partnerships with member organizations which facilitated the creation of knowledge networks, exchange of data, experiences and resources, building capacities and guiding the Department of Education on tapping and mobilizing resources where these are most needed. With the institutionalization of the "Cluster Approach" in the Philippine Disaster Management System and in the Education Sector, transparency, accountability and equitable distribution of resources are ensured. Significant contributions of member organizations are also recognized and the provision of security and safety to cluster members providing assistance to the internally displaced population are also undertaken. Along with other clusters, (e.g., Food and Non Food Items (NFI), Shelter, Health, Water Sanitation and Hygiene (WASH), Transportation and Communication, Agriculture, and Early Recovery), disaster risk management activities became easier, efficient and effective.

(3) Educators and Professionals

The loss of life, injury, and disruption of education and normal child and adolescent development caused by both natural and human-induced hazards, are indications that more professionals and educators should seek out more direct and rapid ways to assist in raising the level of awareness of parents, policy makers, community leaders, and the children and youth on how to respond properly to hazards (natural and human-induced), impart knowledge which are important to sustainable human development, peace, justice and safety.

(4) Communities and Schools

Communities and schools have the most important roles in ensuring safety of every individual. Each entity can influence to a certain extent even beyond traditional forms of regional development from cultural to economical, informational and environmental. Recognizing these roles, each entity needs to strive to improve the quality of educational facilities. Capacity building of human resources and securing financial basis to provide adequate education and facilities must be considered in the process of formulating education policy.

Experiences in developing countries like the Philippines indicated that the basic problems related to disaster mitigation and preparedness can be attributed to lack of capacity, awareness, education, and self-reliance within the communities. Educated and self-trained communities are much more capable of coping successfully and reducing impacts of natural disasters. In view of this reality, disaster risk reduction measures shall promote culture of resilience through community participation and the empowerment process of residents in high risk areas in order to complement, enlarge, and sustain these efforts. Other important support to these efforts would be the prioritization of mainstreaming disaster risk reduction in the school system and implementation of related programs and projects.

(5) Parents

Parents can influence decision making of school administrators in keeping schools safe through the Parent-Teachers and Community Association (PTCA). Parents are very active in providing their time, resources and efforts to make schools ready for the opening of classes on a voluntary basis. During PTCA meetings, youth learn about safety and hazards. Discussions focus on awareness of hazards and how the children and schools may be protected.

(6) **Children**

Child participation is a very significant factor in disaster risk reduction. First, the activities being undertaken will directly benefit them through the realization of their basic rights. This is also based on the premise that today's children are tomorrow's adult citizens. What they learn about safety today significantly contributes towards development of "disaster risk resilient" communities.

b. Proper Location of School Site

Chapter 1, Section 105 of the **National Building Code of the Philippines** (2005 edition) requires that the land or site upon which will be constructed any building or structure, or any ancillary or auxiliary facility thereto, shall be sanitary, hygienic or safe. For school sites which are intended for formal education where children spend most of their time, the same shall be at a safe distance, as determined by competent authorities, free from streams or bodies of water and/or sources of air considered to be polluted; far from a volcano or volcanic site and/or any other building considered to be a potential source of fire or explosion. Chapter II of the Manual stipulates more details and requirements on school sites.

Locating the school in a place where it is not necessarily exposed to man-made or natural hazards, and other perils may be done through the conduct of hazards assessment and utilizing the results of school mapping exercise, and site specific hazards assessment.

For natural hazards, this can be done through reference to existing hazard maps prepared by mandated national government agencies and conduct of hazards assessment. Sites shall be assessed in terms of their vulnerability to various geological and hydro meteorological hazards. Based on existing technical information, determine what hazards are present in the area and plan and prepare accordingly. For new sites, the area shall not be transected by a known active fault. If site is near a known active fault, school buildings must strictly follow standard engineering technical specifications (i.e. National Building Code of the Philippines, 2005; National Structural Code of the Philippines, 2001) to withstand extreme ground shaking. Areas on steep slopes identified to be potential to landslides should obviously be avoided. As mentioned, site location shall also consider all possible hazards and a multi-hazard approach in decision making shall be used.

c. Environment

To cope with constant climate change and the intensity of its effects to the occupants of any school structure, the Philippine Green Building Council (PhilGBC) recommends the establishment of a green school. Green School is defined as a school building or facility that creates a healthy environment that is conducive to teaching-learning while saving energy, resources and money (Nestor Arabejo, PhilGBC).

2. Green Schools

A large percentage of Filipinos go to school every day. Too many of these students and teachers attend schools that are not structurally sound miss important opportunities to reduce operational costs, foster learning and protect students' health. Public and private schools both here and abroad, are now realizing that going green is cost effective. If a green school in the U.S. saved $100,000 per year in operational costs, that's roughly enough to hire two new teachers, buy 200 new computers or purchase 5,000 new textbooks. By promoting the greening of all schools in the Philippines – new or existing, this can make a tremendous impact on students' health, test scores, teacher performance, retention and cohort survival rates, school operational costs and the environment.

a. **Benefits of Green Schools**

(1) **Healthy Places to Learn**

Far too often schools in the Philippines are built following the National Building Code and we send children go to school and spend many hours a day in facilities that just barely meet health and safety standards. This situation must change. Every child deserves to go to a school with healthy air to breathe and conditions that encourage learning. Green schools are healthy for children and conducive to their education since these encourage:

- daylight and views to improve performance;
- high indoor air quality to improve health;
- excellent acoustics to increase learning potential; and
- thermal comfort to increase occupant satisfaction.

(2) **Healthy Places to Teach**

Green schools are not just good for children. Excellent indoor air quality means improved health for everyone. Teachers deserve healthy spaces for teaching school children. Good acoustics in classrooms ensure that teachers can be heard without straining their voices. Studies also show that all building occupants benefit from daylight and access to views, and research indicates that teachers are happier when they have the ability to control their environment. And healthy, happy teachers save our schools' money. Green schools commonly report reduction in teacher absenteeism and teacher turnover, resulting to a huge savings of the school.

(3) **Save Money**

Greening existing schools will not only save money but can potentially pay for itself. One of the requirements for achieving the physical attributes of a green building deals with building renewal such as repairing, upgrading and replacing systems. Such activities generally result in lower utility costs. Any project that can generate savings possesses a unique opportunity to include and pay for a broad range of sustainability initiatives. Moreover, the reduction in utility costs (from renewal efforts) may be able to pay for the entire greening project.

b. **Greening New Schools**

Green schools do not cost more to build than a conventional school. Green schools cost significantly less money to operate and use less water and energy, freeing up resources to focus on improving student education. If all new school construction and school renovations in the Philippines went green starting today, energy savings alone would total billions of pesos over the next 10 years.

(1) **Hands-on Learning**

Students learn best when they are engaged and inspired. Imagine the learning potential when the school building itself becomes an interactive teaching tool, educating the next generation of sustainable leaders through hands-on learning.

Picture it:

- High school students learning about renewable energy from the solar panels on their roof.
- Intermediate pupils studying ecosystems in their constructed wetland.
- Primary pupils growing the organic vegetables they eat for lunch.

This is the green school experience. The school building is no longer a vessel filled with students, teachers and books, but itself an opportunity for experiential learning and discovery.

(2) **Lessens Environment Impact**

Green schools do more good by doing less bad; they save more energy and use less water than traditional school buildings.

Additionally, green schools lessen environmental impacts through responsible approaches to site, reduced demand on municipal infrastructure and recycling during and after construction. Like other green buildings, green schools decrease our reliance on fossil fuels, thus decreasing carbon dioxide emissions and other forms of harmful pollution.

Green schools can help turn back the clock on climate change, improving the environmental outlook for the children who will one day be faced with the challenge of finding resolutions to this problem. On average, green schools use 30 to 50% less energy and 30% less water.

c. **Building for Ecologically Responsive Design Excellence (BERDE)**

Buildings fundamentally impact people's lives and the health of the planet. In the Philippines, buildings approximately use one-third of our total energy, two-thirds of our electricity, one-eighth of our water, and transform land that provides valuable ecological resources.

BERDE Green Building Rating System, launched in January 2010, will help professionals across the country to improve the quality of our buildings and their impact on the environment.

As the green building sector grows exponentially, more and more building professionals, owners, and operators will see the benefits of green building and BERDE certification. Green design not only makes a positive impact on public health and the environment, it also reduces operating costs, enhances building and organizational marketability, potentially increases occupant productivity, and helps create a sustainable community. BERDE fits into this market by providing a rating system that is voluntary, consensus-based, market-driven, based on accepted energy and environmental principles, which strike a balance between established practices and emerging concepts.

The BERDE rating system aims to promote and serve as a guide towards the implementation of green building practices in the Philippines. By creating a framework which incorporates procedures, methods and standards, specifically adapted to the Philippine setting, the BERDE rating system will serve as an important tool to be utilized in line with development of the local sustainable built-environment industry, which will in turn aid in the advancement of the social, environmental and economic welfare of Philippine Society.

The BERDE rating system is developed by the Philippine Green Building Council (PhilGBC) committees, in adherence with PhilGBC policies and procedures guiding the development and maintenance of the rating system. BERDE is only possible due to the generous volunteer efforts of many individuals. Schools are one of the market sectors that will benefit from the use of BERDE.

(1) **Why BERDE Certify?**

While the BERDE Rating System can be useful just as a tool for building professionals, there are many reasons why the BERDE project certification can be an asset:

• Be recognized for your commitment to environmental issues in your community, your organization (including stockholders), and your industry;
• Receive third party validation of achievement;
• Qualify for a growing array of national & local government initiatives;
• Receive marketing exposure through PhilGBC Web site, Building Green conference, case studies, and media announcements.

(2) **School Building Greening Project Checklist**

This Checklist recognizes the unique nature of the design and construction of elementary thru secondary level schools. It addresses issues such as classroom acoustics, master planning, mold prevention, and environmental site assessment. By addressing the uniqueness of school spaces and children's health issues, this checklist provides a unique, comprehensive tool for schools that wish to build green, with measurable results. This checklist will be part of BERDE that will be a recognized third-party standard for high performance schools that is healthy for students, comfortable for teachers, and cost-effective.

This checklist is most applicable to new construction and major renovation projects in elementary and secondary educational spaces. A more detailed reference guide will be released as soon as the BERDE rating system is officially released on November 2010.

Sustainable Sites

• Construction Activity Pollution Prevention
Reduce pollution from construction activities by controlling soil erosion, waterway sedimentation and airborne dust generation
• Environmental Site Assessment
Ensure that the site is assessed for environmental contamination and if contaminated, that the environmental contamination has been remediated to protect children's health.
• Site Selection
Avoid development of inappropriate sites and reduce the environmental impact from the location of a building on a site.
• Development Density & Community Connectivity
Channel development to urban areas with existing infrastructure, protect green fields and preserve habitat and natural resources.
• Brownfield Redevelopment
Rehabilitate damaged sites where development is complicated by environmental contamination, reducing pressure on undeveloped land

• Alternative Transportation
Reduce pollution and/or land development impacts from individual automobile use.
Public Transportation Access
Bicycle Use
Low Emitting and Fuel Efficient Vehicles
Parking Capacity

Site Development

Conserve existing natural areas and restore damaged areas to provide habitat and promote biodiversity.

• Stormwater Design
Limit disruption of natural hydrology by reducing impervious cover, increasing on-site infiltration, and managing storm water runoff.
Quantity Control
Quality Control
• Heat Island Effect
Reduce heat islands (thermal gradient differences between developed and undeveloped areas) to minimize impact on microclimate and human and wildlife habitat.
Non-Roof
Roof
• Light Pollution Reduction
Minimize light trespass from the building and site, reduce sky-glow to increase night sky access, improve nighttime visibility through glare reduction and reduce development impact on nocturnal environments.
• Site Master Plan
Ensure the environmental site issues included in the initial development of the site and project are continued throughout future development due to changes in programs or demography.

Joint Use of Facilities

Make the school a more integrated part of the community by enabling the building and its playing fields to be used for non-school events and functions.

• Water Efficiency
• Water Efficient Landscaping
Limit or eliminate the use of potable water or other natural surface or subsurface water resources available on or near the project site for landscape irrigation.
• Innovative Wastewater Technologies
Reduce generation of wastewater and potable water demand, while increasing the local aquifer recharge.
• Water Use Reduction
Maximize water efficiency within buildings to reduce the burden on municipal water supply and wastewater systems.
• Process Water Use Reduction
Maximize water efficiency within buildings to reduce the burden on municipal water supply and wastewater systems.

Energy and Atmosphere

• Fundamental Commissioning of the Building Energy Systems
Verify that the building's energy-related systems are installed, calibrated and perform according to the Owner's Project Requirements, Basis of Design and Construction Documents.
• Minimum Energy Performance
Establish the minimum level of energy efficiency for the proposed building and systems.
• Fundamental Refrigerant Management
Reduce ozone depletion.
• Optimize Energy Performance
Achieve increasing levels of energy performance above the baseline in the prerequisite standard to reduce environmental and economic impacts associated with excessive energy use.
• On-Site Renewable Energy
Encourage and recognize increasing levels of on-site renewable energy self-supply in order to reduce environmental and economic impacts associated with fossil fuel energy use.

• Enhanced Commissioning

Begin the commissioning process early during the design process and execute additional activities after systems performance verification is completed.

• Enhanced Refrigerant Management

Reduce ozone depletion and support early compliance with the Montreal Protocol while minimizing direct contributions to global warming.

• Measurement & Verification

Provide for the ongoing accountability of building energy consumption over time.

Green Power

Encourage the development and use of grid-source, renewable energy technologies on a net zero pollution basis.

• Materials & Resources

• Storage & Collection of Recyclables

Facilitate the reduction of waste generated by building occupants that is hauled to and disposed of in landfills.

• Requirements: Provide an easily accessible area that serves the entire building and is dedicated to the collection and storage of non-hazardous materials for recycling, including (at a minimum) paper, corrugated cardboard, glass, plastics and metals. An area should also be dedicated to collection and storage of plant-based landscaping debris (trimmings), unless the site has no landscaping.

• Potential Strategies: Coordinate the size and functionality of the recycling areas with the anticipated collection services for glass, plastic, office paper, newspaper, cardboard and organic wastes to maximize the effectiveness of the dedicated areas. Consider employing cardboard balers, aluminum can crushers, recycling chutes and collection bins at individual workstations to further enhance the recycling program.

• Building Reuse

Extend the life cycle of existing building stock, conserve resources, retain cultural resources, reduce waste and reduce environmental impacts of new buildings as they relate to materials manufacturing and transport.

• Construction Waste Management

Divert construction, demolition and land-clearing debris from disposal in landfills and incinerators. Redirect recyclable recovered resources back to the manufacturing process. Redirect reusable materials to appropriate sites.

• Materials Reuse

Reuse building materials and products in order to reduce demand for virgin materials and to reduce waste, thereby reducing impacts associated with the extraction and processing of virgin resources.

• Recycled Content

Increase demand for building products that incorporate recycled content materials, thereby reducing impacts resulting from extraction and processing of virgin materials.

Regional Materials

Increase demand for building materials and products that are extracted and manufactured within the region, thereby supporting the use of indigenous resources and reducing the environmental impacts resulting from transportation.

• Requirements: Use building materials or products that have been extracted, harvested or recovered as well as manufactured within 500 kilometers of the project site for a minimum of 10% (based on cost) of the total materials value. If only a fraction of a product or material is extracted/harvested/recovered and manufactured locally, then only that percentage (by weight) shall contribute to the regional value. Mechanical, electrical and plumbing components and specialty items such as elevators and equipment shall not be included in this calculation. Only include materials permanently installed in the project. Furniture may be included.

• Potential Strategies: Establish a project goal for locally sourced materials and identify materials and material suppliers that can achieve this goal. During construction, ensure that the specified local materials are installed and quantify the total percentage of local materials installed. Consider a range of environmental, economic and performance attributes when selecting products and materials.

• Rapidly Renewable Materials

Reduce the use and depletion of finite raw materials and long-cycle renewable materials by replacing them with rapidly renewable materials.

• Certified Wood

Encourage environmentally responsible forest management.

Indoor Environmental Quality

• Minimum IAQ Performance
Establish minimum indoor air quality (IAQ) performance to enhance indoor air quality in buildings, thus contributing to the comfort and well-being of the occupants.
• Environmental Tobacco Smoke (ETS) Control
Eliminate exposure of building occupants, indoor surfaces and ventilation air distribution systems to Environmental Tobacco Smoke (ETS).
• Minimum Acoustical Performance
Provide classrooms that are quiet and in which teachers can speak to the class without straining their voices and students can effectively communicate with each other and the teacher.
• Outdoor Air Delivery Monitoring
Provide capacity for ventilation system monitoring to help sustain occupant comfort and well-being.
• Increased Ventilation
Provide additional outdoor air ventilation to improve indoor air quality for improved occupant comfort, well-being and productivity.
• Construction IAQ Management Plan
Reduce indoor air quality problems resulting from the construction/renovation process in order to help sustain the comfort and well-being of construction workers and building occupants.
    o During Construction
    o Before Occupancy

Low-Emitting Materials

Reduce the quantity of indoor air contaminants that are odorous, irritating and/or harmful to the comfort and well-being of installers and occupants.

Indoor Chemical & Pollutant Source Control

Minimize exposure of building occupants to potentially hazardous particulates and chemical pollutants.

• Controllability
    o Lighting System Design & Controllability
    Provide a high level of lighting system control by individual occupants or by specific groups in multi-occupant spaces (i.e., classrooms or conference areas) to promote the productivity, comfort and well-being of building occupants.
    o Thermal Comfort Controllability
    Provide a high level of thermal comfort system control by individual occupants or by specific groups in multi-occupant spaces (i.e., classrooms or conference areas) to promote the productivity, comfort and well-being of building occupants.
• Thermal Comfort
    o Thermal Comfort Design
    Provide a comfortable thermal environment that supports the productivity and well-being of building occupants.
    o Thermal Comfort Verification
    Provide for the assessment of building thermal comfort over time.
    o Daylight & Views
    Provide for the building occupants a connection between indoor spaces and the outdoors through the introduction of daylight and views into the regularly occupied areas of the building.
• Enhanced Acoustical Performance
Provide classrooms that facilitate better teacher-to-student and student-to-student communications.
• Mold Prevention
Reduce the potential presence of mold in schools through preventive design and construction measures.
• Innovation & Design Process
• Regional Cultural Sustainability

DepEd should work closely with individuals and communities to identify, protect, and enhance their important traditions, their ways of life, their cherished spaces, and their vital relationships to each other, their region, the country and the world. In this era of increasing homogeneity and globalization, local history, traditions, and ways of life are among our most endangered resources and precious assets. By strengthening and building on the foundations of these resources—whether artistic, linguistic, musical, economic, or environmental—we can begin to counter the powerful forces that endanger communities in the Philippines.

Disaster Risk Reduction

• Low Impact Cleaning and Maintenance: Equipment Policy
Reduce exposure of building occupants and maintenance personnel to potentially hazardous chemical, biological and particle contaminants.
• Regional Environmental Adaptation
To enhance the flexibility of this guideline and provide a more effective method of addressing the need for regional adaptation, the introduction of Regional Credits to increase the value of its design strategies that address environmental areas of concern in a project's region. DepEd Regional Offices will play a crucial role in this effort, based on their knowledge of issues of concern in their locales. These Regional Credits will be identified by the DepEd Regional Offices for each "environmental zone".

The School as a Teaching Tool

Integrate the sustainable features of a school facility with the school's educational mission.

• Requirements: Design curriculum based on the high performance features of the building, and commit to implementing the curriculum within 10 months after school building occupancy. The curriculum should not just describe the features themselves, but explore the relationship between human ecology, natural ecology and the building. Curriculum must meet local or national curriculum standards, be approved by school administrators and provide 10 or more hours of classroom instruction per year, per full-time student.
• Potential Strategies: It is highly recommended that project teams coordinate closely with school administration and faculty where possible, to encourage ongoing relationships between high-performance features of the school and the students. For curriculum development, engage the school in a program that integrates the school building with the curriculum in the school.

N. HAZARD SPECIFIC REDUCTION MEASURES

1. Fire Prevention and Safety Measures

Section 601- 604 of the National Building Code of the Philippines (2005 Edition) – Resistive Rating of materials to be used in constructing school buildings shall be classified according to fire resistive standards. All materials of construction, and assemblies or combinations thereof shall be classified to their fire-retardant or flame-spread ratings as determined by general accepted testing methods. Testing methods shall comply with rules and regulations on the testing of construction materials for flame-spread characteristics, tests on fire damages, fire tests of building construction and materials, door assemblies and tinclad fire doors and windows and smoke and fire detectors for fire protective signaling system, application and use of controlled interior finish, fire resistive protection, for structural members, fire-resistive walls and partitions, fire-resistive floor or roof ceiling, fire-resistive assemblies for protection of openings and fire-retardant roof coverings.

Incidence of fire can be prevented by seeing to it that the design and construction of school buildings basically conform to the standards of safe construction, as prescribed by the National Building Code of the Philippines. School buildings identified with OFF LIMITS sign by authorized building inspectors shall not be used until temporary support, repair, or demolition is carried, or until the structure threat from hazardous adjoining structures is mitigated. Only authorized parties shall be allowed brief entry to structures or areas with RESTRICTED USE sign. School buildings issued with Certificates of Occupancy and identified as safe and with INSPECTED sign shall be used by the school children and school authorities.

To prevent risk of electrical fire, periodic inspection and maintenance of electrical equipment and installation is necessary. In a public school setting, the inspection shall be more stringent since public schools usually have no in-house electrician to do the periodic maintenance. Specific risk reduction and fire control measures are found in A Guide in Inspecting and Assessing Electrical Wiring Installations in Public Schools formulated through the Schools Water and Electrical Facilities Assessment Project (SWEFAP) of PFSED-OPS, in cooperation with Meralco is recommended for use.

2. Provision for Open Spaces as Temporary Evacuation Sites for Earthquake, Fire and Other Emergencies.

In case of emergencies that will require students to immediately evacuate from their classrooms (such as in case of fire or earthquake), there should be a provision for an open space within the school compound which will be designated as temporary evacuation area. The open space should be big enough to hold the total population of the school. The available open space must be at a safe distance from buildings, electric poles, and hanging objects that might fall and injure people.

3. Adherence to Building Design Standards and Structural Soundness.

School buildings and other structures must strictly follow standard engineering technical specifications (e.i. Building Code of the Philippines, 2005, National Structural Code of the Philippines, 2001). The National Structural Code of the Philippines, 2001 has specific sections for wind load/ wind effects and earthquake design.

4. Provision of Water, Sanitation and Hygiene Facilities.

Next to air, water is the most important of the basic needs. While not all diseases can be attributed to the absence or lack of potable water, still a large percentage of diseases afflicting schoolchildren could be attributed to poor water supply and sanitation. Every school shall have a standard water system and its regular inspection and maintenance important and necessary. Regular and continuous checking of the water system for possible wear and tear will ensure the optimum and continued services of the water system. A Guide in Inspecting and Assessing Water and Sanitation Systems in Public Schools developed through the Schools Water and Electrical Facilities Assessment Project (SWEFAP) of PFSED-OPS in cooperation with Manila Water is recommended.

a. **Water System and Wastewater Disposal System**

Schools shall be provided with reserve water in water tank reserve to be used in case of fire. The design, construction and operation of a school waterworks system shall be governed by existing laws relating to local waterworks system. Section 902-904 of the National Building Code states that water piping installations inside buildings and premises shall conform to the provisions of the National Plumbing Code of the Philippines.

For sanitation purposes, Section 901 states that all buildings shall be provided with adequate and potable water supply, plumbing installation and suitable wastewater treatment or disposal system, storm water drainage, pest and vermin control, noise abatement device, and such other measures for the protection and promotion of health of persons occupying the premises.

b. **Ideal Water Supply System**

Section 902 of the Code prescribes an ideal water supply system with the following guidelines:

(1) Whenever available, the potable water requirements for school buildings shall be supplied from existing municipal or city waterworks system.

(2) The quality of drinking water from meteoric, surface or underground sources shall conform to the criteria set in the latest approved National Standards for Drinking Water Standards.

(3) The design, construction and operation of deep wells for the abstraction of groundwater shall be subject to the provisions of the Water Code of the Philippines (PD 1067).

(4) The water piping installations for water supply and distribution to each fixture including the wastewater drainage with proper venting inside school building and premises, shall conform to the provision of the Revised National Plumbing Code of the Philippines.

(5) Sanitary sewage from buildings shall be discharged directly into the nearest street sanitary sewer main of existing municipal or city sanitary sewerage system in accordance with the criteria set by the Code on Sanitation of the Philippines and the Department of Environment and Natural Resources (DENR).

(6) All school buildings located in areas where there is no available sanitary sewerage system shall dispose their sewage to septic tank and subsurface absorption field or to a suitable disposal system in accordance with the Code of Sanitation of the Philippines and the Revised National Plumbing Code of the Philippines.

5. Road Safety.

Segregate vehicular routes from pedestrian routes. If vehicles and pedestrian routes cannot be separated, then either raise the foot paths or distinguish them from vehicular areas by changing the color and or textures of the surfaces. Make routes as direct as possible and use clear, obvious signs. Multilingual signs may be an advantage in some schools, thus descriptive signs are more effective than words. Pedestrian crossing (white lines across streets) for safety of the schoolchildren shall be established in front of school gates. Traffic aide/enforcer shall assist the children in crossing the streets to avoid accidents.

Chapter IV, Article I of R.A. No. 4136 (An Act To Complete the Laws Relative To Land Transportation and Traffic Rules to Create a Land Transportation Commission and For Other Purposes) states that drivers shall observe a careful and prudent speed of 20km per hour (20 kph)when passing through a school zone area. The speed shall not be greater nor less than what is reasonable and proper, having due regard to the traffic, the width of the highway, and of any other condition then and there existing. No person shall drive any motor vehicle upon a school zone at such a speed as to endanger the life, limb of any person, nor at a speed greater than will permit him to bring to a stop within the assured clear distance ahead. The use of traffic calming facilities such as humps to reduce speed shall be provided in school zone areas before pedestrian facilities.

6. Proper Use of Chemicals and Gases in the Science Laboratories. (DepED Order No. 48, s. 2006)

Science laboratories are facilities used by students where activities require the use of gases and chemicals. For safety of students, science laboratories shall be provided with sufficient hood or devices for the irritating or poisonous gases and chemicals. Combustible or inflammable materials stored in the laboratory or in its immediate vicinity shall be used during experiments in science with close supervision of the teacher. Dangerous chemicals shall be labeled appropriately and shall always be visible for students/pupils to ensure proper use and storage. Warning signs shall be legible and written in bold/big letters as precautionary measures in using chemicals and gases. Suggested design guidelines and safety considerations for science laboratories are:

a. **Designing/Constructing a Science Laboratory**

In designing/constructing a Science Laboratory, the building must have the following features:

(1) The science laboratory should be designed as a wide space (7 x 18m) to allow mobility inside the room.

(2) There should be at least two (2) entry/exit doors for easy access and egress. The doors should be swing out to facilitate exit of students in case of emergency.

(3) The science laboratory should have provisions for laboratory counter, control room and storage room.

(4) Chemical solutions should be located or kept on the base cabinets of the storage/stockroom. The storage room and control room should be equipped with built-in cabinets not higher than 1.90 meters. Bolt storage cabinets to the wall and install strong latches so that doors will remain closed as contents of cabinets can shift during an earthquake.

(5) Stock/storage room should be provided with security grills on the windows to ensure the safekeeping of chemicals and other apparatus of the science laboratory.

(6) Science laboratory buildings should provide with neutralization tank/drain pit for proper disposal of chemical waste.

(7) The working tables inside the science laboratory should be fixed on the floor. It should be made of reinforced concrete with mosaic tiles topping and should be acid resistant. Each working table should be provided with a laboratory sink and faucet.

(8) Waste pipes should be also acid resistant.

(9) Laboratory working areas should be well lighted and have a bilateral fenestration for ventilation and fume extraction.

(10) The Science Laboratory should have a 24-hour clean water supply.

(11) Every Science Laboratory room should have a notice/reminder posted on conspicuous side of the room for students' awareness and shall be provided with a First Aid Kit.

(12) Single storey, science laboratory building should be located far from academic classrooms.

(13) In case of multi-storey building, the science laboratory should be located on the highest floor possible for proper ventilation.

b. **Guides/Steps to ensure that learning in the laboratory will always be safe.**

(1) Plan your work.

(2) Before conducting the experiment, familiarize students with the rules and regulations when using the laboratory.

(3) Orient the students with the properties of the chemicals to be used, particularly their hazards. Once you know what experiments to perform and the chemicals involved, check equipment.

(4) In using chemicals, acids, etc. for experiments, only authorized person should have the access in getting the chemicals/apparatus in the stock/storage room.

(5) Know emergency procedures and the location of the first aid kit, wash area, and exit points.

(6) In case of emergency, notify immediately the proper authority to deal with such incidence.

(7) In case of chemical accidents, wash immediately with clean water to lessen the intensity of the solutions.

(8) In performing experiments, always make sure of the presence of a science teacher before and during experimentations.

(9) Good housekeeping is important when it comes to laboratory safety. Make sure that the science laboratory rooms and tables after experimental activities are cleaned to reduce accidents.

The Handbook on Safety, Policies and Procedures in Science (School Board of Broward County) states that the ultimate responsibility from a laboratory accident is within the purview of the school administrator. The following considerations will help to eliminate liability:

(1) Ensure that class sizes in science laboratories do not exceed the allowable safe maximums for space and facilities.

(2) Ensure that safety equipment is present and functioning properly.

(3) Inform all pupils/students where to get help in case of accidents or injury.

(4) Design and implement a contingency plan for laboratory emergency situations.

(5) Ensure that adequate lighting for experimentation is available. Impaired vision is an invitation to accidents.

(6) Ensure that master shut-offs are present in every laboratory for gas, electricity, or any other service that might involve danger should an accident occur.

(7) Ensure that all electrical outlets are grounded and facilities are available for grounding all electrical apparatus.

(8) Make sure fire extinguishers are available in each science class. Fire extinguishers should be checked at least twice a year to insure proper functioning and are free of ozone-depleting substances.

(9) Make sure that each science lab is equipped with a safety shower and eyewash that are periodically checked for proper operation.

(10) Make sure that there is adequate ventilation to the outside for each laboratory in which noxious fumes might be generated.

Teachers are also responsible in ensuring the safety of each pupil/student while performing experiments in the laboratory room. The following steps shall be taken by the teacher to fulfill safety objectives:

(1) Make the safety program a major emphasis in the science curriculum.

(2) Provide a list of safety rules which must be read and signed by the student and parent or guardian.

(3) Show the students where the safety equipment is located, and how it works. Explain under what conditions it is to be used.

(4) Explain the consequences for violating safety regulations in detail.

(5) Instruct students on how to evacuate the lab in the proper fashion in case of emergency.

(6) Point out specific safety considerations in a particular experiment.

(7) Explain possible hazards in handling and disposing of chemicals used in an experiment.

(8) Never leave students alone and/or unsupervised in the lab.

(9) Frequently remind the students often that they are not allowed in chemical storerooms or lab preparation areas.

(10) Prohibit students from bringing any food or drink into the lab.

(11) Instruct students to never put any chemicals in their lab drawers unless told specifically to do so.

(12) Discuss the lab with students the day before the experiment is to be done so that safety situations and possible hazards can be clarified.

(13) Notify the administration, in writing, of any possible safety hazard that exists in the laboratory, especially the overcrowding of the science lab room.

(14) Provide only immediate care in case of an accident to prevent additional complications from arising. Contact your administration and call emergency number immediately.

(15) Science fair projects should be scrutinized for safety hazards and corrected before teacher approval is given. Remember, the science teacher is ultimately responsible for all assigned science activities.

7. Proper Use of Computer/Laboratory Room.

Computer/Laboratory rooms are special instructional spaces designed to meet the current and future demands of modern technology.

a. **Recommended Security and Safety Measures**

(1) Hiring of security guard
(2) Engaging the assistance of barangay tanods
(3) Fastening of each PC unit to the computer table (optional)
(4) Installing fire alarms/fire extinguishers

b. **Public-Private Assistance**

To sustain the package and services of the PCs, public-private assistance is encouraged, such as:

(1) Local Adopt-A-School Program through the Local School Board, PTCA Alumni Association,
(2) Teachers Coop Store/School Canteen
(3) Community e-center
(4) Internet Café inside the School, etc.

Funds provided will cover internet connection, electricity, supplies, and repair and maintenance. (See DepED Memorandum Nos. 247, s. 2006 and 473, s.2009).

c. **Maintenance of Computers and Devices at Work**

With the emergence of Information and Communications Technology (ICT), computers and mobile devices are now the most widely used devices at work. Every day, these are being used to work on files, connect with people, and access resources. Keeping them running smoothly is important to working efficiently and effectively.

(1) How to Start

Computers and devices are part of a larger network. Keeping them running means you have to work closely with your corporate Information and Communications Technology (ICT) Office. Working with them will save you time, save your company/agency money, and help keep the network secure. The manual includes tips and best practices for working with your corporate ICT office to keep your computer and devices up-to-date and functioning properly.

(2) Who Owns the Computer?

We are using computers at work, sometimes we take them home and even have a picture of our children on the computer desktop. The computer, though is not our personal property. It is important to realize that the Department of Education owns the computer and has all the rights to install patches and updates on a regular basis. By doing so, the DepED can make sure that computers and the network run smoothly. To further protect the computers, many companies even prevent users from making changes to the settings or software installed on the computer.

(3) Best Practices for Maintaining Computers

Following are recommended best practices to help maintain and protect computers used at work. Contact the ICT Office to determine their specific policies.

Install all updates required by the ICT Office. Not installing updates as required by the ICT Office can expose the Department to viruses and other security risks. Some agencies/companies even prevent computers from accessing the network if patches are not installed after a set date. Also find out whether the ICT Office wants to install updates on Microsoft Update. If they do, make it a habit of checking Microsoft Update regularly. You'll save yourself the hassle of the ICT Office forcing you to install updates when it is not convenient for you.

Install only licensed programs. Make sure that you or the Agency have a license for any software you install on your work computer. Your agency can get sued for having software without a license installed on its computers. For example, installing a program your friend bought could present some problems. Software that you have bought a license for is probably fine, but double-check the license to make sure. Sometimes software bought for home use cannot be installed at work as well.

Do not install different versions of software. Even if you prefer the version of software you use at home rather than at work, do not install it on your work computer. You could have incompatibility problems with the software your co-workers are using and with your specific line of business applications. Your ICT Office may also not be able to make any required updates or provide technical support.

Let ICT know when hardware is not working. Fixing a broken computer yourself could just cause more problems. Your fixes, for example, could make the computer incompatible with the corporate network. Most ICT Office has a help desk or technical assistance program designed for this type of work. The ICT Office may have already seen the same problem and have a known fix. Helping your ICT Office track common computer problems can also help them decide which brand and make of computer to order in the future.

Let ICT know when you need something. Giving the ICT Office reasonable requests and adequate time for planning can help them respond to your needs. Otherwise, you may end up with computer software or hardware you did not want, which can hinder how effective and efficient you are at work.

Do not download programs from internet sites you do not trust. By downloading programs that may not be secured, you put all the computers on the network at risk.

Be aware of suspicious e-mails. A virus introduced through e-mail may be disguised as a downloadable file. If an e-mail you receive is from someone you don't know, contains strange text, or otherwise looks suspicious, contact your ICT Office. If you open it, you could potentially cause problems for you and your co-workers. If it does contain a virus, the IT department can ask other employees in the department to look for similar e-mails.

Use online support resources. Many ICT Office have created online internet help sites that could provide an answer to your computer problem. Each day, help desks typically receive many questions that are already answered at these sites. For help effectively using Microsoft products, you can also use the following resources:

- Microsoft Office Online Assistance Center
- Microsoft Knowledge Base
- Windows 7 Solution Center
- Windows Vista Solution Center
- Windows XP Solution Center
- Windows Help and How-to

8. School Canteens. Only nutritious foods/drinks of known origin shall be sold in the school canteen. Junk foods, intoxicating beverages are strictly prohibited.

9. Proper Garbage Disposal. Proper garbage disposal shall be practiced. Waste segregation policy stipulated in R.A. No. 9003 (Clean Air Act) shall be followed by providing separate garbage cans for dry waste, wet waste, and hazardous, toxic wastes. Burning of garbage shall be discouraged in compliance to the provisions of said Act.

10. Pergolas shall be constructed in such a way that these shall allow the passage of big vehicles like fire trucks, dump trucks and ambulance.

11. Compulsory use of Identification Cards must be imposed within the school premises.

12. Whenever possible, **waiting sheds shall be constructed** to protect school children from heavy rains and the heat of the sun while waiting for their parents and vehicles in going home.

13. Organizing a School Disaster/Risk Disaster Management Program. The organization of a school safety program shall be established in an environment where the tools and machines are safe and manned by safety-conscious individuals who will perform safe operations and processes. Machines, equipment used in trade and vocational schools shall be with signage using yellow lines to caution bystanders. The safety measures shall be a cooperative activity among the school administrators, teachers, students and pupils. The school administrator in coordination with the Local Disaster Coordinating Council shall:

a. Initiate/formulate sound policies and procedures;

b. Assign safety conscious staff members to implement said policies effectively;

c. Conduct effective-in-service training activities for teachers and community assemblies for parents;

d. Provide safety training/drill exercises for staff and pupils/students;

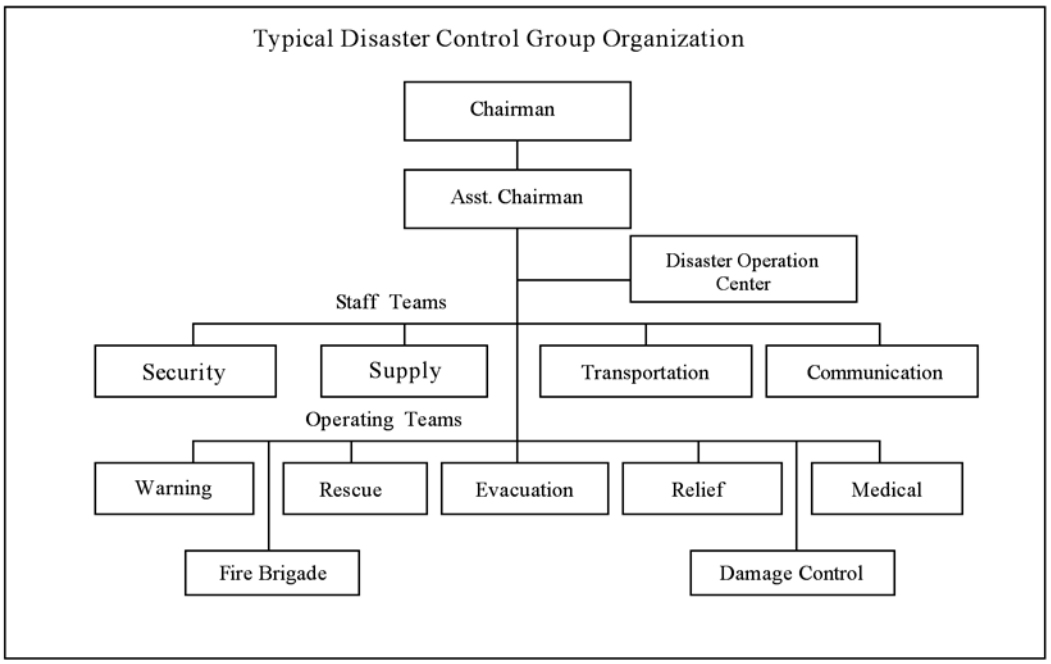
e. Involve parents and adult volunteers in safety campaigns;

f. Keep a record of pupil/student accidents, dates, causes and preventive measures;

g. Organize safety committee/team in different levels such as Calamity/Disaster and Fire Control Group, Safety Committee, Junior Police, MKB Tanod, Kiddie/Junior Fire Marshalls, etc.

h. Provide responsible security guards through the Local Government (if possible).

Every school shall have an organized Disaster/Risk Control Group which shall take charge of the overall risk/ disaster reduction program. Following is a suggested organizational structure of a Disaster/Risk Control Group.



14. School Disaster Preparedness Plan – must have a plan for each specific hazard; identified safe areas within the school campus; evacuation plan and maps

15. Earthquake Safety in Schools

The Department of Education recognizes that earthquake strikes without any visible indicator and early warning, thus when it occurs, school buildings collapse causing injury or death of personnel and students. Based on earthquake damages to lives and property, the Department is giving priority concern to significantly lower the seismic risk of schools and help prevent further injury and death to school occupants during earthquakes. The Organization for Economic Cooperation and Development (OECD) identified various reasons why school buildings easily collapse. These are:

a. errors in design and construction
b. non-application of appropriate technology
c. non-compliance to existing laws and regulations

Thus, the Program on Educational Building (PEB) Governing Board of OECD recommends establishing and implementing programs on school seismic safety, based on the following principles:

a. Establish clear and measurable objectives for school seismic safety, based on the level of risk that can be implemented and supported by the Department and the Local Government Units.

b. Define the level of the earthquake hazard to facilitate the development and application of construction codes and standards under the responsibility of the concerned agencies. At a minimum, natural hazard zones shall be established, and where possible, seismic hazard maps shall be based on probabilistic analysis.

c. Set forth expectations or objectives that defines the desired ability of school buildings to resist earthquakes. School buildings should be designed and constructed, or retrofitted, to prevent collapse, partial collapse or other failure that would endanger human life when subjected to specified levels of ground shaking and/or collateral seismic hazards such as surface fault rupture, landslide or inundation from tsunami waves or dam failure. However, the Department may desire that school buildings have additional seismic resistance to the extent that damage is limited and the buildings can be occupied immediately after earthquakes and used for shelter or emergency operations.

d. Give priority to making new schools safe. Efforts to identify vulnerable existing schools; to establish standards for retrofitting or replacing dangerous buildings; and to develop a list of priority actions can be made over a short period of time. A longer timeframe will likely be needed to correct seismic weaknesses of existing school buildings.

e. Be established to long-term undertakings with a strong commitment to sustained effort rather than one-time action.

f. Adopt a multi-hazard approach to school safety, with earthquake mitigation strategies that complement disaster countermeasures for other hazards.

g. Employ advisory committees as needed to assure that policy and technical decisions are consistent, and to provide long-term independent support and evaluation for the seismic safety effort.

a. **Major Elements of Effective School Seismic Safety Program**

An effective school seismic safety program includes the following major elements:

(1) **Seismic Safety Policy Element**

Policies shall be established by the competent authorities and shall state well-defined and measurable objectives. Priorities and strategies for satisfying the objectives shall also be established by the Department through the Physical Facilities and Schools Engineering Division (PFSED), Office of Planning Service (OPS). The policy must be clear and shall have adequate support and authority to enforce its scope and objectives and to carry out the plan over a specified number of years. The policy shall:

- Recognize the need to ensure the safety of schoolchildren.
- Recognize the consequential need for the safety of school buildings.
- Establish minimum standards for protection of human life.
- Adopt sustainable standards to guide design for new and existing school infrastructure based on prescribed performance objectives, knowledge of the ground shaking severity in different regions, quantification of site specific hazards, and the ability of the agency to educate, train and license its members to effectively achieve established objectives.
- Establish programs for seismic risk reduction of school buildings and their components.
- Provide adequate funding and human resources for the protracted duration of the program.
- Be supported by committed and competent leaders with sufficient legal and moral authority to ensure the effectiveness, sustainability and continuity of the programmes that were derived from the policy.

(2) **Accountability Element**

There shall be a basis for action with clear lines of accountability of the different members of society who are given responsibility for implementing earthquake safety programs. To achieve the objectives of these programs, there shall be:

- A clear definition of the roles and responsibilities of the various individuals, agencies and organizations involved in the school seismic safety.
- A process for making all planning, design, regulation and enforcement of decisions transparent.
- Qualification requirements for professionals engaged in the design of school facilities.
- An independent assessment of the proper design, construction and maintenance of school facilities, including:
  - o conducting assessment of existing school facilities through the ASSIST Project;
  - o reviewing and approving construction documents prepared for new structures and the retrofit of existing structures;
  - o inspecting and approving construction.
  - o qualifying personnel for design, plan review
  - o inspection, materials testing and support functions.
  - o a clearly identified jurisdiction in terms of the area and the type of school system and buildings affected.

(3) **Building Codes and Code Enforcement Element**

The primary objective of school building codes and regulations shall be to protect the life of occupants of a school building. Other objectives shall include minimizing damage to allow rapid occupancy of buildings after earthquakes. Building codes shall govern the design of new and retrofitted school buildings. Design earthquake ground motions may be based on a probabilistic approach, a deterministic approach, or on a map of seismic zones. The competent authorities shall determine the most appropriate design criteria, based on a review of the country's seismic hazard and other pertinent factors.

An effective school building code and enforcement element shall establish:

- Clear building performance objectives based on:
- Ground motion characteristics and geology of the area.
- Collapse prevention and structural damage control criteria.
- Secondary effects such as tsunamis, landslides and surface rupture.
- Socio-economic impacts to the education sector and the school communities.

A process for periodic review and revision of codes and guidelines by knowledgeable individuals to reflect current understanding of good earthquake engineering practice.

Enforcement procedures for school buildings, code and construction regulations that take into account community needs that provide clear provision for:

- Checking of design plans for school buildings by qualified reviewers.
- Review and certification of constructed school facilities.

A mechanism for ensuring that enforcement activities are not compromised by overt or subtle pressures due to project-specific cost, deadlines or other financial considerations.

The mere existence of a building code in a community can give the false impression that buildings are being constructed safely and that their seismic performance will be satisfactory. An extremely important factor shall be the writing and adoption of building codes and regulations which can be an incomplete strategy if they are not enforced at every step of the design and construction process. Steps shall be taken to ensure that proper implementation and enforcement of code regulations is done in a consistent manner and has equal priority to code development.

(4) **Training and Qualification Element**

Building safety relies on regulations and laws that require proper training and qualifications of professionals, builders and technicians involved in the different aspects of the design and construction process. Building safety training programs shall be carried out within the context of Philippine setting. Training programs must accommodate governmental structure and division of responsibilities, perception of risk to the institution and its stakeholder's community values and economic conditions. Training and licensing shall be required for design professionals, code enforcement officials, plan checkers, inspectors and contractors.

Engineers and Architects shall be properly trained and licensed by the competent authorities and their training shall include seismic design as well as elements specific to school design and construction.

Qualifications of Constructors shall be considered in awarding construction projects. This shall involve the establishment of training programs on best construction practices for contractors and trades through the Constructors Performance Evaluation System (CPES).

Building Officials, Plan-Check Professionals and Inspectors shall be certified through a process or adequate training and experience.

(5) **Preparedness and Planning Element**

Effective programs shall include the following measures at the education sector and school level to reduce risks and to prepare employees and students to react in safe ways during emergencies.

Education: Develop and implement educational programs or curricula in schools to make citizens aware of earthquake hazards and preparedness actions.

Risk Reduction Measures: Undertake measures to improve the safety of the physical environment by bracing and anchoring furnishings, bookcases, and equipment and building components such as lights, shelves, cabinets, etc.

Emergency Plan: Prepare and maintain plans that identify the actions, decisions and responsibilities needed before, during, and following an earthquake; the organization and responsibilities to carry out these plans,

including determining whether to shelter or release students or to use school facilities as evacuation centers; and the equipment and supplies needed to carry out these decisions.

Safety Assessments: Establish standards, line of responsibility and procedures to assess the safety of buildings after an earthquake, and decide on evacuation, repair and re-occupancy procedures.

Training: Provide training and materials for employees and students on earthquake hazards and actions to take, to improve personal safety.

Drills: Hold quarterly drills simulating realistic conditions of earthquake events to reinforce training, and to test the adequacy of plans and safety assessments. The Quarterly Earthquake Drill in schools is a Presidential directive to raise the level of awareness of pupils/students on what to do before, during and after an earthquake. Guidelines on how to conduct earthquake drills in schools were formulated and prepared by the Philippine Institute of Volcanology and Seismology (PHIVOLCS). Guidelines on how to conduct earthquake drills in schools, evaluation tools and DepED issuances which contain policies on the conduct of earthquake drills in schools are included in the Appendices.

(6) **Community Awareness and Participation Element**

Paramount to the success of a program to improve the seismic safety of schools is the understanding and involvement of the community. All members of the community shall understand the seismic hazard of the region/area, the vulnerability of existing school buildings, the consequences of not properly constructing new school buildings or improving the resistance of existing buildings, and the feasibility of improving seismic safety. In particular, those members of the community who are involved in the construction of school buildings need to understand why they are required to follow prescribed practices, and the consequences of their failing to do so. An effective community effort shall include:

- Programs to raise public awareness and knowledge of the risk from earthquakes and other natural hazards;
- Educational programs to transfer and disseminate technical knowledge and to explain risk in terms understandable to community stakeholders.
- Activities to empower the community to be part of and contribute to the reduction of seismic risk of schools through the Parent-Teachers and Community Association (PTCA).
- Use of school curricula to increase awareness of earthquake hazards and preparedness actions.

(7) **Risk Reduction Element for New Facilities**

Verified procedures currently exist to ensure good seismic performance of school buildings and their contents, and the implementation of such procedures is feasible. The following components are needed in a risk reduction element for new facilities.

- Determination of seismic hazard in schools and development of seismic hazards maps.
- Development of performance criteria and codes suitable to the culture and economic conditions of the area with recognition of the fundamental societal importance of schools and the shelter function of school structures in post-disaster emergencies.
- Development of simple regulations, or best construction practices, for areas where such an approach may have an immediate impact on seismic safety (e.g. simple, low-cost education facilities in rural regions of the Philippines).
- Training and education of professionals, technicians and the construction workforce.
- Target dates for implementation of construction standards recognizing the different levels of current practice in different countries.
- Effective building codes and regulations, and rigorous enforcement of these regulations.

(8) **Risk Reduction Element for Existing Facilities**

To reduce the seismic risk of existing school buildings, it is important to understand why this risk exists and what actions can be taken by the school to eventually reduce the risk. Community values, economic conditions, financial possibilities and the type of building materials available in the area shall be considered when developing and implementing a risk reduction plan.

Key ingredients for an effective risk reduction for existing facilities include:

- Determination of the seismic hazard and preparation of hazard maps.
- Assessment of risk to existing schools and their contents.
- Evaluation of the consequences of not taking corrective action.
- Development and implementation of technical guidelines to improve performance of existing facilities during earthquakes (e.g., methods and procedures to estimate forces and displacements of the structure and predict damage acceptable margins of safety or confidence, proper use of building materials, and monitoring of the construction processes.
- Formulation of an action program based on availability of funding, human resources and their qualifications, existing infrastructure and the operational structure of the school.
- Prioritization and risk reduction plan implementation, considering financial and human resources and the role of school buildings in post-disaster emergency management.
- Monitoring of effectiveness of plan implementation.

Given the magnitude of the retrofitting task in schools, responsible officials shall establish time schedules and priorities to retrofit at least those facilities deemed to be at the highest risk. While several decades may be needed to complete implementation of a school seismic retrofit program, work on the facilities at greatest risk can be undertaken on a priority basis over a much shorter period.

16. Flood Safety in Schools

Flooding is the nation's most common natural disaster. Some floods develop slowly during an extended period of rain or in a warming trend followed by a heavy downpour. Flash floods can occur quickly, without any visible sign of rain. Catastrophic floods are associated with burst dams and levees, hurricanes, storm surges, tsunamis, and earthquakes. Be prepared for flooding no matter where your school is located, but particularly if it is in a low-lying or coastal area, near water, or downstream from a dam. Following are potential damages brought by flood in schools:

a. site erosion,
b. structural and nonstructural building damage,
c. the destruction or impairment of utilities and mechanical equipment,
d. damage to or loss of contents,
e. health threats from contaminated floodwater, and
f. temporary or permanent closure.

Site damage. School grounds may be subject to erosion and scour, with the possible loss of soil and damage to paved areas, including access roads. Large amounts of debris and sediment can accumulate on the site, especially against fences.

Structural damage. Foundations can be eroded, destabilizing or collapsing walls and heaving floors.

Saturation damage. Saturated walls and floors can lead to plaster, drywall, insulation, and tile damage, mold and moisture problems, wood decay, and metal corrosion.

Utility system damage. Electrical wiring and equipment can be shorted and their metal components corroded. Ductwork can be fouled and expensive heating and cooling equipment ruined. Oil storage tanks can be displaced and leak, polluting the areas around them. Sewers can back up and contaminate the water supply and building components.

Contents damage. School furniture, computers, files, books, lab materials and equipment, and kitchen goods and equipment can be damaged or contaminated.

Health threats. Mold growth and contaminants in flooded schools can pose significant health threats to students and staff.

School closure. Flooded schools must be closed during cleanup and repair. The length of closure and the ability of the school district to return to teaching depends on the severity of the damage and lingering health hazards. It may also depend on whether the school is fully insured or how quickly disaster assistance is made available for cleaning and repair. If the school is located in a flood plain, it may be permanently closed.

Water-induced disasters can be mitigated through improved effectiveness of disaster prevention structures and facilities. School buildings located along river banks can be protected from flood by two measures: (1) through channel improvement such as the river wall on both banks and the dredging of the river banks, and (2) through drainage improvement by construction of pumping stations.

There are problems in the implementation of flood control projects, one of which is due to budget constraint and consequently, the engineers do not acquire adequate experiences for planning and designing of flood control structures. These aspects are very critical considering the lives that may be lost especially our school children and the school houses due to absence or insufficient flood control facilities.

a. **Roles of School Administrators**

The following are practical ways of reducing or eliminating damage in schools:

(1) Improve site drainage by re-grading, adding or enlarging storm drains or culverts, and, where the site permits, adding a storm water retention area.

(2) Provide fail-safe backup power for pumps to keep them functioning during electrical outages.

(3) Add, clean, or repair check valves in sewer lines to prevent sewage from backing up into the school.

(4) Provide off-site computer backup storage for electronic school records.

(5) When replacing mechanical and electrical equipment, devise ways of elevating or otherwise flood-proofing it.

(6) If the school is multi-storey, consider relocating the library/media center to a higher floor.

b. **How to Prevent/Mitigate Impacts of Flood?**

To prevent inland flooding, there is a need for lateral improvement such as storm drain, drainage main, open canals, ditches, etc. and tributary improvement of the branches of main river. There is also a need to construct revetment, spur dike, change of waterways/cut-off channels and groundsill to prevent riverbed erosion. In order to prevent obstruction against river flow which may also cause flooding, there is a need to provide sabo works and regular maintenance of the river through channel excavation and dredging.

Flood damage potential can be reduced by flood proofing of school buildings. We can construct high floor school houses, construct wall of our buildings using impervious materials and closure of low level windows and other openings.

(1) Other ways of mitigating measures are:

• Flood forecasting/warning - Flood warning services is undertaken to give timely warnings to school authorities so that prevention of further damage to school children can be undertaken.
• Flood fighting and control organizations can likewise warn the public for possible evacuation of high risk areas when flood worsens. Flood fighting activities can be undertaken like the operation of existing flood control/drainage facilities during the incidence of flood, clearing and declogging of drainage facilities, repair and strengthening of flood control/drainage facilities and building of emergency works such as levees/embankment against river floods and dikes.
• Evacuation/Rescue – with early flood warning, people, school children and school personnel can evacuate and move their properties and mobile equipment from the danger area to a safe place. There are prevalent non-structural measures like Tropical Cyclone Warning Service undertaken by the Philippine Atmospheric, Geophysical and Astronomical Services (PAGASA).

c. **Recovering from Damages Brought by Flood**

School Administrators can do many things to recover from damages brought by flood. These are:

(1) Natural gas. If possible, turn off the main gas valve from outside. Do not smoke or use oil, gas lanterns, candles, or torches for lighting inside a flooded or damaged school until you are sure there is no leaking gas or other flammable material present. When in doubt, call the gas company.

(2) Electrical system. If there is standing water in the building or any sign of electrical damage, call the power company. Do not enter the building until it has been declared safe.

(3) Structural damage. If there are signs of masonry cracking, wall or roof sagging, or other structural distress, have a building professional assess the situation.(Refer also to page Understanding Structural Issues).

(4) Flooded basements. Flooded basements should be pumped out gradually; walls may collapse and floors may buckle if basements are pumped out while the surrounding ground is still waterlogged.

(5) Office equipment. If office equipment is damp or wet, turn off the power at the electrical panel, unplug the equipment, and have it checked by a technician.

(6) Water and sewage systems. Listen for news reports to determine if the community water supply is safe to drink. If water or sewer pipes are damaged, turn off the main water valve and do not use the toilets. Damaged sewage systems are serious health hazards.

(7) Cleaning up. Clean and disinfect everything that got wet. Mud left from floodwater can contain sewage and chemicals. Discard all food and supplies that may have come in contact with floodwater.

Land, be it urban or rural is nature's greatest gift to man and to the community. It is the most valuable of all material things in this world. A School which owns a piece of land realizes the feeling of security and contentment that comes when you own a "home" and the piece of land you cultivate and landscape. A school could make several houses in a community look different because it reflects the needs and personality of its owners/occupants. To make it particularly inviting, the community must have a simple knowledge of planning and management to make the most out of its lot. The school can be made the source of contemplative as well as practical delights.

A suitable school site is one that best serves educational activities, enables the optimum utilization of resources, hence shall meet the requirements on location, accessibility, topography, soil condition, size and disaster/risk reduction measures. These considerations are vital so that the incidents in soil subsidence (sinking) in Benguet, the Guinsaugon landslide in Southern Leyte, the Ormoc City flashfloods will not be repeated in Philippine schools.

A. STANDARD REQUIREMENTS

School Mapping Exercises shall be a pre-requisite in the selection of a suitable school site.

1. Location/Environment. The location of the school affects its development of operation. In determining the location of the school site, accessibility and suitable surrounding environment are important considerations. Identification of specific hazards that may affect the site is deemed necessary based on various geological and hydro meteorogical hazard maps prepared by national government agencies concerned for each site. Proper detailed and thorough hazards assessment must be undertaken prior to any development. Location and final design of school building must take into consideration various hazards information.

The Philippine Green Building Council (PhilGBC) recommends that in order to ensure a natural habitat in a school location/environment, school officials and administrators must protect and restore existing ecosystem in the school site. Do not build on sites where it is an established habitat for endangered species.

Prior to the construction of school buildings or even prior to the acquisition or identification of a prospective site, it is highly recommended that site suitability studies be initially conducted. A geological scoping survey should be undertaken to identify the most likely natural/geologic hazards that could affect the school site. The DepED or Local Government Unit (LGU) concerned may request for assistance from the Mines and Geosciences Bureau (MGB), Central Office and 14 Regional Offices of the Department of Environment and Natural Resources (DENR) regarding the conduct of site suitability/geological site scoping survey.

For major DepED projects, particularly those requiring an Environmental Clearance Certificate (ECC),the conduct of an Engineering Geological and Geohazard Assessment (EGGA) shall be undertaken. Administrative Order 2000-28 of the DENR implemented in March 2000 required subdivisions, housing and all other land development and infrastructure projects to conduct an EGGA to address the possible negative impacts of geological hazards. The Order aims to comprehensively address and mitigate the effects of geologic hazards on project sites proposed for development. The DepED and MGB-DENR shall enter into a Memorandum of Agreement (MOA) for the conduct of the EGGA. The MOA shall stipulate the various undertakings that shall be done by the agreeing parties.

2. Design and Safety Standards. School buildings and other structures must strictly follow standard technical specifications (i.e. Building Code of the Philippines, 2005, National Structural Code of the Philippines, 2005). The National Structural Code of the Philippines, 2001 has specific provisions for wind load and earthquake design.

The school site shall be well-located near the center of the present and probable population to be served. It shall be some distance from the town or city in order to provide equal accommodations for outlying settlements. It must have a suitable frontage on a public road, preferably on a quiet street and not shut in from the main highway by private property nor from dense groves of tall trees. There shall be no swamps and irrigation ditches around it.

The school site and its immediate vicinity shall be free from any condition endangering the health, safety and moral growth of the pupils/students. It shall be located beyond 200 meters of places of ill-repute such as but not limited to beer and videoke joints; recreational establishment of questionable character such as but not limited to cockpits and gambling dens; malls, cinema houses, video games establishments, jails, military quarters, shipyards, railroad yards, busy highways, electrical and communication lines and towers, manufacturing and industrial establishments, public markets,

slaughterhouses, or garbage dumps. Other structures, such as barangay hall, social centers, etc., are not allowed to be constructed within the school site.

3. Accessibility. A school site must be easily accessible to the greatest number of pupils/students it intends to serve. The maximum distance for a pupil/student to walk from residence to school is 2 to 3 kilometers, while the maximum time from residence to school on board a public conveyance is thirty (30) minutes. Likewise, the maximum distance of the drop-off point from public transportation must be specified, to aid in planning/design of the structure.

4. Topography. The contour of the land shall be preferably level and have no irregular boundaries. Build and locate buildings on higher elevations of the site and consider the following:

(1) **Soil Condition.** Generally, an agricultural land with sandy loam soil is the best for school sites, as the topsoil is properly balanced to support vegetation and permit surface drainage without erosion. The subsoil provides a proper base for economical and substantial foundation of the buildings to be constructed on the site. Excavated top soil may be reused on the site.

(2) **Size.** The size of school site is determined by the level of education, the size of enrolment, the type of curriculum offered and the location of the school, i.e., whether urban or rural. The ground area occupied by school buildings and other structures shall not exceed 40% of the school site in order to provide adequate open space for assembly and co-curricular activities (athletic fields, playground, lawns, agricultural activities and future building expansions) as well as to conform with national and local regulations and standards pertaining to setbacks and distances between buildings.

(3) **Heat Island.** Impervious surfaces (such as concrete pavement, asphalted surfaces, etc.) must be minimized. Instead, a larger area must be assigned and established to green areas (including landscaping for trees and shrubs). Native or indigenous landscaping that is drought- tolerant is recommended.

B. MINIMUM STANDARD REQUIREMENTS FOR SCHOOL SITES

1. Elementary School

j. Non-central school with one (1) or two (2) classes only and no grade above Grade IV	0.5 hectare (5,000 sq. m.)
k. central school with six (6) classes and non-central school with three to four (3-4) classes	1.0 hectare (10,000 sq. m.)
l. schools with seven to nine (7-9) classes	2.0 hectares (20,000 sq. m.)
m. schools with ten to twelve (10-12) classes	3.0 hectares (30,000 sq. m.)
n. schools with more than twelve (12) classes	4.0 hectares (40,000 sq. m.)

In cases where there is difficulty in meeting the above standards, the following alternatives may be followed:

a. For Rural Areas

a. central school with six (6) classes and non-central school with three to four (3-4) classes	0.5 hectare (5,000 sq. m.)
b. schools with seven to ten (7-10) classes	1.5 hectare (15,000 sq. m.)
c. schools with more than ten (10) classes	2.0 hectares (20,000 sq. m.)

b. For Urban Areas

a. central school with six (6) classes and non-central school with six to ten (6-10) classes	0.5 hectare (5,000 sq. m.)
b. schools with eleven to twenty (11-20) classes	schools with more than twenty (20) classes
c. schools with more than twenty (20) classes	1.0 hectare (10,000 sq. m.)

2. Secondary School

a. For Rural Areas

a. General/Vocational	4.0 hectares (40,000 sq. m.)
b. Agricultural	5 hectares (50,000 sq. m.)
c. Fishery, add for projects * fresh water fishponds * brackish water fishponds	4.0 hectares (40,000 sq. m.) 2.0 hectares (20,000 sq. m.) 4.0 hectares (40,000 sq. m.)

b. For Urban Areas

d. 500 students or less	0.5 hectare (5,000 sq. m.)
e. 501 to 1,000 students	1.0 hectare (10,000 sq. m.)
f. 1,001 to 2,000 students	2.0 hectares (20,000 sq. m.)
g. 2,001 to 3,000 students	3.0 hectares (30,000 sq. m.)

3. Integrated Schools

As provided in DepED Order No. 71, s. 2003, the provisions of DECS Order No. 91, s.1999 (Guidelines on the Establishment and Operation of Integrated Schools) shall govern the integration of public elementary and secondary schools.

Said Department Order states that for both partial and fully integrated schools, the elementary and secondary levels share a common site. The school site in the rural areas shall at least be one (1) hectare (10,000 square meters) in size, and may be less in urban areas.

4. Miscellaneous Provisions

Due to the high cost and increasing value of real property of prime lots in both rural and urban areas, contingency arrangements shall be made to comply with the minimum requirements for location and size of school site.

C. MODES OF ACQUISITION OF SCHOOL SITES

A school site may be acquired through any of the following methods (purchase, donation, contract of usufruct, expropriation, barter, etc.).

1. Purchase. This is the most reliable, stable and non- controversial mode of acquisition. A school site may be acquired by direct purchase from the legal owner who voluntarily sells it on an agreed price. The fund may be taken from Capital Outlays of the Department of Education, from the funds of the Local School Board, or from appropriations set aside by the local government unit. The purchase must be evidenced by a Deed of Sale duly executed, notarized and registered with the Register of Deeds.

If a school site is purchased using the Capital Outlays of the Department of Education, the Deed of Sale shall be executed in favor of the Republic of the Philippines, Department of Education. Authority to purchase shall be sought from the President of the Philippines, except when the funds are appropriated components of the school budget, in which case the Department of Education grants the authority.

a. **The procedure for the purchase of a school site** is as follows:

(1) Preparation of a resolution by an appraisal committee composed of the Municipal/Provincial/City Assessor as Chairman, and Municipal/Provincial/City Auditor as Members, stating the fair market value of the site to be acquired.

(2) Passage of a resolution by the Local School Board of the Sangguniang Panlalawigan/Panlungsod/Bayan, as the case maybe, authorizing the purchase of the lot.

(3) Consultation with the Provincial/City Fiscal as to the legality and validity of the purchase.

(4) Negotiating and perfecting the purchase.

(5) Certification of the Municipal/Provincial/City Treasurer or Department of Education, Accountant, as the case maybe, as to the availability of funds to be used for the purchase.

(6) Execution of the Deed of Sale.

(7) Filing of an indemnity bond by the seller, if the land is not registered.

(8) Registration with the Register of Deeds. A new Torrens Title and registry with the Register of Deeds is turned over to the school administrator.

(9) The expenses for the execution and registration of the sale are borne by the seller, unless there is a stipulation to the contrary.

(10) In case several parcels of land are covered by one (1) deed, each parcel shall be described separately and the technical description of each parcel shall include the total area in the assessed value.

(11) In case of unregistered land, the indemnity bond shall be executed in accordance with the proper forms. It shall cover the assessed value of the land to be purchased, contain the same description of the land as given in the Deed of Sale, and bear the signature of at least two (2) witnesses.

2. Donation. May either be simple, conditional, inter vivos or mortis causa.

A simple donation is one whereby a person disposes gratuitously of a piece of land in favor of the municipality, city, province or the Republic of the Philippines.

The donation is absolute in character, that is, the donation does not impose any onerous condition or burden on the Department (donee), and must be duly registered with the Register of Deeds, and the appropriate memorandum of transfer is annotated on the back of the certificate of title.

A conditional donation is one which imposes a condition such as "that the land shall be used only for education". In such case, the property is reverted to the owner when its use as stipulated in the donation is changed.

In both cases, the donation must be accepted during the lifetime of the donor, otherwise it is considered perfected.

a. An inter vivos donation takes effect during the lifetime of the donor. When the donation took effect only after the donor's death, it is referred to as mortis causa. Donations by mortis causa shall conform to the formalities required of the last will.

b. The donation of a piece of land, regardless of its value, is made through a public document, the acceptance may be made in the same Deed of Donation or in a separate public document.

c. The Department of Education shall be made as the donee of the donation represented by the Regional Director or the Schools Division Superintendent concerned who shall accept the donation for and in behalf of the Department.

d. The procedure for acquiring a school site through donation is as follows:

(1) Execution by the donor of a Deed of Donation in accordance with the legal form containing relevant information as to whether the land to be donated is a conjugal or separate property of the donor.

(2) Acceptance of the donation by the donee represented by the Regional Director or the Schools Division Superintendent as the case may be.

(3) Acknowledgement in writing by the donor that he has been notified and has full knowledge of the acceptance of the donation.

(4) Issuance of the opinion of the provincial/city fiscal as to the validity of the Deed of Donation.

(5) Registration of the Deed of Donation with the Registry of Deeds in accordance with the provisions of Act 3344.

3. Contract of Usufruct

In case the property is registered in the name of an individual, province, city, municipality or barangay, but is not allowed to be donated, but DepED/school is allowed full use or perpetual right of use through gratuitous act (without consideration), a Contract of Usufruct with the registered owner for as long as the property is to be solely and exclusively used for educational purposes is executed. The contract must be registered with the Register of Deeds and duly annotated on the certificate of title. The contract shall define in clear terms the conditions relative to the use of the land, the control and supervision of the school site, particularly the ownership of the building or facility constructed as well as the party responsible, for all real property taxes that may be due and payable on the subject parcel of land.

(Refer to DECS Order No. 57, s. 1995 dated Sept. 14, 1995 School Site Acquisition and Documentation For All Public Elementary and Secondary School)

4. Expropriation

Private land desired for school purposes may be acquired through expropriation proceedings.

a. **Expropriation Proceedings.** If the DepED or the LGU, as the case may be, fails to acquire a private property for educational purpose through purchase, expropriation proceedings may be started for the acquisition of the property. In case just compensation will be shouldered by the DepED, the Schools Division Superintendent through the Regional Director shall recommend to the Secretary to start expropriation proceedings. The Secretary shall make the necessary recommendations to the Office of the President for the filing of expropriation proceedings by the Office of the Solicitor General. Where the funding or payment will be provided by the LGU, through the Local School Board Fund or local government appropriation, the LGU may expropriate said property through a resolution of the Sanggunian authorizing the chief executive to initiate expropriation proceedings. The local chief executive shall cause the provincial, city or municipal attorney concerned or, in his absence, the provincial or city prosecutor, to file expropriation proceedings in the proper court in accordance with the Rules of Court and other pertinent laws.

b. **Just Compensation/Payment.** The amount to be paid for the expropriated property shall be determined by the proper court, based on the fair market value at the time of the taking of the property.

5. Barter or Exchange.

An existing school site may be exchanged for a new site for justifiable reasons. This may be resorted to with the school administrators exercising care and caution that in the exchange process, the government (DepED/school) will stand to gain and not to lose in the transaction since the lots being exchanged may not be of the same size and/or value. The requirements for this arrangement are as follows:

a. A resolution by the Sangguniang Panlalawigan/ Panlungsod/ Bayan authorizing the exchange or barter.

b. A statement of agreement from the owner of the lot proposed for exchange which shall accompany the resolution.

c. Sketches of the school site and the site proposed to be exchanged showing their respective areas, locations, boundaries, improvements therein, if any.

d. Information as to how the lots were acquired.

e. Deed of Exchange executed by both parties.

f. Written opinion of the Provincial/City Fiscal as to the legality and validity of the Deed of Exchange.

g. Approval of the Regional Director or Schools Division Superintendent as the case maybe.

h. Registration of the Deed of Exchange with the Register of Deeds of the province or city.

6. Presidential Proclamation

Public lands declared as reservation areas (including ancestral lands) through Presidential Proclamation are sometimes targeted as sites for educational purposes. In some instances, DepED may be able to acquire a parcel thereof as school site with the least cost using the following procedure:

a. A resolution by the Sangguniang Panlalawigan/ Panlungsod/Bayan requesting the President of the Philippines to set aside the public land for the school, and authority for its survey by the Bureau of Lands or by a duly licensed private surveyor.

b. A certification by the municipal/provincial treasurer or by the DepED Accountant as to the availability of funds for the survey and mapping of the portion of the land intended for a school site.

c. A certification by the Schools Division Superintendent or the Vocational Schools Superintendent or Administrator, in the case of vocational schools, as to suitability of the land for school purposes.

d. A report showing the average attendance in the school during the previous school year, the area of the land sought to be reserved, and a school site development plan.

The abovementioned documents shall be forwarded to the President of the Philippines through the DepED Regional Director and the DepED Secretary for approval.

7. Gratuitous Conveyance

Real property belonging to the government, when needed for school purposes, may be conveyed by way of gift, sale, lease, exchange, or as follows:

a. In the case of real property belonging to the national government, the President of the Philippines is the competent authority to execute the proper conveyance.

b. Concerning real property belonging to any province which is needed for school purposes, the Sangguniang Panlalawigan may authorize by resolution the Provincial Governor to execute the conveyance. Such conveyance may be without consideration if the board so determines.

c. Real property belonging to any city or municipality may be conveyed through a resolution of the Sangguniang Panlungsod/Bayan for school purposes to the national or local government, without any consideration if the Sanggunian so determines.

D. PERFECTION OF TITLE

1. General Procedure in Acquiring The Original Certificate of Title

a. A voluntary deed, except a will purporting to convey a registered land, operates only as a contract between the parties and does not take effect as a conveyance unless such deed is registered with the Register of Deeds. Except in cases provided by law such as expropriation, the owner's duplicate certificate of title shall be presented to the Register of Deeds together with the deed conveying the title of the land.

b. No new certificate of title will be entered in pursuance of any voluntary deed unless the owner's duplicate Certificate of Title shall be presented to the Register of Deeds together with the deed conveying the title of the land. Cancellation of the old title and issuance of a new one in favor of the entity to which the land was conveyed shall be the concern of the school head.

c. If the land acquired is not registered under Republic Act 496, otherwise known as "The Land Registration Act" the deed shall be registered in accordance with Section 113 of P.D. No. 1529 otherwise known as the "Property Registration Decree". Later, efforts shall be exerted to have said land titled under the Torrens system.

2. Step By Step Procedure in Acquiring The Original Certificate of Title

STEP 1 - Survey of land and approval of plan
STEP 2 - Filing of application for land registration at the Regional Trial Court (RTC) of the province or city where the land is located
STEP 3 - Setting of date by the RTC of Initial Hearing
STEP 4 - Publication of Notice of Initial Hearing (Official Gazette/Newspapers)
STEP 5 - Service notice to all interested parties
STEP 6 - Filing of opposition/evidence of proof of ownership
STEP 7 - Hearing of case in court

STEP 8 - Promulgation of judgment/decision by the court
STEP 9 - Issuance of decree of registration
STEP 10 - Furnishing the Register of Deeds the original and duplicate copies of the decree of registration
STEP 11 - Transcription of the decree of registration in the Book of Registry/issuance of duplicate copy of original certificate of title to owner of land

3. Miscellaneous Instructions

A registered school site shall not be reported as acquired until the certificate of title has been obtained.

a. An unregistered school site shall not be reported as acquired until authority to purchase and pay for the same has been obtained from the President of the Philippines.

b. In the case of public land, it shall be reported as acquired when it has been reserved for school purposes by presidential proclamation or executive order.

c. Excluded and exempted from coverage of R.A. No. 6657 (Comprehensive Agrarian Reform Program) effective June 10, 1988 are school sites and campuses including experimental farm stations operated by public or private schools for educational purposes, and seeds and seedlings research and pilot production centers.

d. In case a parcel of land has ceased to be economically feasible and sound for agricultural purposes and the Department of Agrarian Reform (DAR) has authorized its reclassification or conversion as non-CARP property upon the application of the landowner with due notice to the affected parties, a parcel of the reclassified land may be opted for school site purposes and the owner may either donate or enter into a Contract of Usufruct with DepED for this matter.

e. For sites still under the jurisdiction/administration of the Department of Environment and Natural Resources (DENR), National Housing Authority (NHA) and/or other government agencies/entities, arrangements may be made to acquire parcels of land for school site purpose, through the Contract of Usufruct, cited earlier.

f. If a parcel of land is presently used for school site purposes without any adverse party-claimant, appropriate steps to ascertain the probable basis for DepED to acquire a title shall first be taken before any further construction of a facility is undertaken. The results of the verification together with the available and/or complete records shall be forwarded to the DepED Central Office for appropriate legal attention and action.

g. In cases where transfer cannot be effected due to lack of the subdivision plan segregating the conveyed area from the main portion of the property, steps to have a subdivision survey shall be taken. Expenses for survey are authorized to be disbursed from the funds of the Region applying the Implementing Rules and Regulations (IRR) of Republic Act No. 7880 otherwise known as "Fair and Equitable Allocation of the DECS' Budget for Capital Outlay". Thereafter, the land shall be registered with the Register of Deeds of the province or city where the land is located, and appropriate memorandum thereof annotated at the back of the certificate of title.

h. In the case of school sites not yet surveyed, steps shall be taken to have them surveyed and registered. As soon as the registration of a school site is effected containing all necessary data on its acquisition, survey and registration, it shall be submitted to the DepED Central Office.

i. In view of the loss and/or destruction of many school site records, particularly as a result of other calamities, school authorities concerned shall take steps toward the reconstruction of such records in accordance with Republic Act No. 26 and Circular No. 17 of the General Land Registration Office (now Land Registration Authority).

E. SCHOOL SITE CARD

The School Site Card shall be accomplished for each school site as soon as the acquisition of the site has been perfected.

Entries in the School Site Card shall be typewritten. If the site is composed of more than one lot and registered under separate titles, the area of each lot and the number of the corresponding certificate of title shall be given. The sketch of the site required on the reverse side of the card shall be drawn to a convenient scale, such as 1:2000. The sketch shall be copied from the blue print of the survey plan. The following shall be indicated on the sketch:

1. The length of each scale and all boundaries of the site as they appear in the survey plan.

2. The location of streets, rivers, lake, etc. near the site and also the walk from the building to the street or alley.

3. The location of all permanent buildings, including improvements such as hedges, temporary toilets, gardens, and playgrounds, only those buildings reported should be indicated on the sketch.

4. Numbering and distribution. Cards for standard sites should be numbered consecutively beginning with No. 1. For identification purposes, letter symbols may be used. Example: For the town of Alaminos, Laguna, the symbol "AL-1" may be used to identify the central school site; "AL-2" a barangay school site in the same municipality. The School Site Card should be accomplished in two to three copies for each site and distributed as follows:

a. Original copy to the Division Office
b. One copy to the District Office (in the case of elementary schools)
c. One copy to be retained in the school

F. SCHOOL SITE DEVELOPMENT

A graphic presentation of the Site Development Program is referred to as Site Development Plan. Its main function is to show the school site in its present status and the current program period. Preparing the site development plan is thus an exercise in the layout of infrastructure based on the physical requirements established in the Site Development Program.

1. Principles in the Preparation of the Site Development Plan. The principle in the preparation of the Site Development Plan is that all physical structures with similar functions shall be grouped together. The grouping of these structures is in accordance with the most favorable options for grounds utilization which creates functional zones and sets the basic pattern for physical development. In effect, the school site is subdivided, allocating well-defined portions for specific purposes.

2. Layout of Buildings and Other Structures. The layout of the buildings and other structures, which are the most expensive physical facilities in the school, is critical in preparing the Site Development Plan. School buildings shall be oriented in accordance with the sun path or the east-west course of the sun during the day. Variations in the sun path on certain season of the year are negligible. To prevent the direct entry of sunlight into the instructional spaces, buildings shall be laid out along the east-west axis so that the windows have a north-south exposure.

3. Arrangement of Buildings. Buildings shall be arranged to facilitate cross ventilation by exposing the window sides to the direction of prevailing breezes which is generally northeast-southeast. However, the east-west orientation is sufficient inasmuch as it allows adequate cross-ventilation.

4. Site Limitations. When there are site limitations, such as the unfavorable area and/or shape of the site, prevent the proper solar orientation of buildings, economical alternatives shall be resorted to. For example, trees near the building are effective for minimizing the direct entry of sunlight into instructional spaces.

5. Acoustic Barriers. Plant tree and shrub barriers between building and street, if feasible. Trees and shrubs between the buildings and street will serve as acoustic barriers.

6. Sun Path. Study variations in the sun path between June 21 and December 21, especially at 12:00 o'clock noon must be noted as lower latitude sites get more sun on the north side on June 21.

7. Local Wind Patterns. Cross Ventilation. If available, request from Pagasa, or any agency, specific monthly rose wind diagram or monthly wind patterns for a particular site or region. Study existing structures and natural elements (i.e. hills, body of water, vegetation, etc.) that might affect the site's wind patterns.

8. Sun screens, Vertical Louvers and Green Walls (vertical gardens). It may be necessary to design temporary or permanent sun shade elements (such as planted trees, sun screens, vertical louvers, green walls/vertical gardens) to prevent solar heat gain.

9. The distances between buildings shall be such that ventilation is not obstructed, natural illumination is not impeded and sound does not carry into nearby buildings. The minimum distance between buildings laid outside is eight (8) meters.

10. **The recommended setback** of the school from the street line is five (5) meters to sufficiently reduce intrusive sound.

11. There should be provision for open space in each school with an area big enough to hold the total population of the school. This shall serve as temporary evacuation site in cases of emergencies that would require the students to evacuate their classrooms (such as fires and earthquake events). (See page 72 - the athletic fields can be used for this purpose.)

G. SITE DEVELOPMENT PLANNING

The purpose of site development planning is to anticipate the future needs and development of a school in terms of physical facilities and to contribute towards conducive teaching-learning environment.

Site development planning is viewed essentially as an exercise in the layout of infrastructure. The aim of site development planning for any school is to contribute toward the creation of a proper teaching- learning environment.

The outcome of such a planning exercise is usually a graphic presentation referred to as a Site Development Plan. It shows improvements in the school site including the position of existing and proposed buildings, the arrangement of circulation elements, and the utilization of open areas. The site development plan shall be regarded as a flexible framework which allows modifications dictated by changing situations. However, modifications shall adhere as much as possible to the basic pattern of development.

1. Procedure in Site Development Planning

Before any permanent improvement is undertaken in a school site, a site development plan shall be prepared as follows:

a. The plan shall be drawn on a tracing paper measuring 500 mm x 750 mm. Any white sheet of paper may temporarily be used.

b. It shall be drawn to a scale as follows: 1:500 for sites of two (2) hectares or less, and 1:1,000 sites of more than one hectare.

c. The following technical description shall be indicated on the plan:

(1) Bearings of the property line

(2) Distances between corners

(3) Boundaries of the lot

d. The plan shall show:

(1) The direction of the North

(2) Relative position of existing features in the site such as creeks, large trees, etc. which shall be allowed to remain

(3) The relative positions and description of existing buildings and structures

(4) Relative position of existing circulation elements and hazardous areas. Open spaces as temporary evacuation sites.

(5) Contour lines if possible

(6) The present and future needs of the school in terms of school buildings/classrooms

e. Existing structures such as buildings, walk, playground, etc. shall be clearly shown in solid lines and the proposed structures drawn in broken lines.

f. At the bottom of the plan is a title block bearing the following information:

(1) Name and address of the school

(2) The official who prepared the plan

(3) Names and signatures of recommending and approving official

(4) Date of preparation

The plan shall be prepared in two to three copies, one copy to be retained in the school, one copy to be filed in the district office (in the case of elementary schools), and one copy to be filed in the division office.

No changes in, or deviation from the plan as originally approved shall be made without the approval of the schools division superintendent.

In the event of change of school administrators, the approved plan on file in the school shall be included in the turnover of school property between the outgoing and the incoming school administrators.

2. Plotting the School Site. In plotting the school site for its development plan, the following are required:

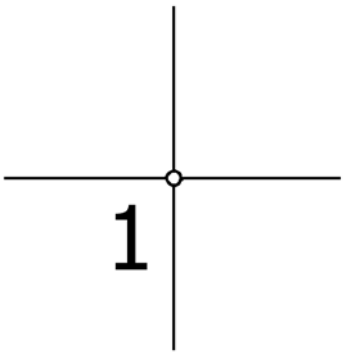
a. Technical descriptions of the lot per survey/title

b. Protractor and ruler

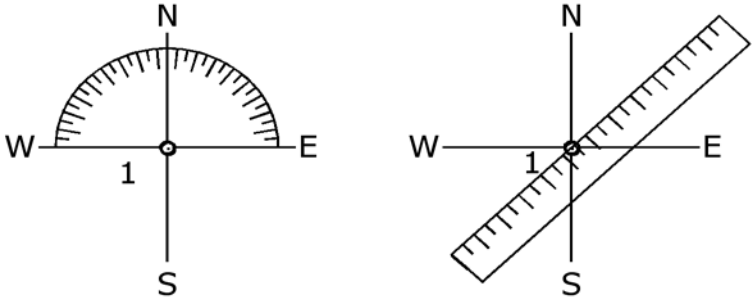
c. Tracing paper

Plot the approximate location of the bearing/technical descriptions of the lot using the protractor and ruler as identified correspondingly per corner, to wit:

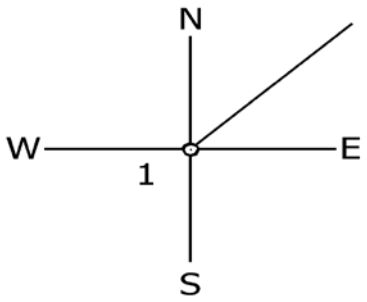
Step 1 – Start with property line 1-2. Draw a horizontal and vertical axis with its center being marked corner 1.



Step 2 – Taking into consideration the position of the North and the South, position the midpoint of the protractor on the point of intersection of North-South axis and West-East axis then plot the angle and direction of the bearing from corner 1 to corner 2.



Step 3 – Somewhere along the drawn line lies corner 2. To plot corner 2, use an appropriate scale to mark the distance of corner 1-2.



Step 4 – To plot property line 2-3 the same procedure is followed in plotting corners 2-3 and the rest of the corners until plotting closes.

Step 5 – Plot as scaled existing structures and important amenities using solid lines and proposed structures using broken lines. (See Annex AI on page 162.)

3. School Site Zoning. A basic step in school site development is to apportion its external spaces into different areas or zones each of which is designed for a specific purpose or utilization, in accordance with the educational needs of the school. An important principle in school site zoning is to create the proper visual, physical and functional zones, as follows:

a. **Visual zone** – by defining the areas which best project the aesthetic appearance of the school

(1) **Lawns** – The front area in a school site is usually developed and improved to constitute the school lawns. Lawns shall be graded, landscaped, and drained. They shall be sodded and planted with low-growing border plants and ornamental shrubs to give maximum visual effect. Fruit bearing trees are discouraged to grow in the front/side areas of the school building as this may cause distractions and accidents to the school populace.

(2) **Flower gardens** – The intervening spaces between the main building and the home economics building on one side and the shop building on the other side may be developed into flower gardens. A decorative mini fence of wood or bamboo, or a low hedge, may be put up around the flower gardens for protection as well as for better visual effect. Flower gardens shall not be merely decorative; they shall be utilized in connection with lessons in science, home economics, and other school subjects.

(3) **Flowerbeds** – The space around buildings may be made into flowerbeds for further visual effect. It may be bordered by a very low, decorative mini-pocket of wood or bamboo. Only low-growing ornamental plants shall be planted in the flowerbeds.

(4) **Assembly area** – Adequate space immediately in front of the main building shall be allocated as an assembly area for the entire school population. The assembly area is the place where the whole school population assembles in formation for flag ceremonies, school convocations or programs, etc. The ground shall be leveled, drained, and tamped hard or cemented.

(5) **Rain Gardens or Bio-Wales.** Incorporate in design to allow rainwater runoff catchment.

(6) **Physical zone** – by determining the sizes of the different areas or zones according to standard requirements.

(7) **Functional zone** – by grouping together areas and buildings with similar or related use or function.

School site zoning ensures proper rationalization of the relationship and utilization of external spaces, so that no aspect of the school program may be sacrificed for another. It establishes the parameters for both immediate and future development of the school site so as to provide continuity of course of action.

H. EXTERNAL AREAS IN THE SCHOOL

1. Agriculture Area. The laboratory for elementary agriculture, or what is traditionally known as the school garden, shall be allocated an area based on a minimum standard of forty (40) square meters of space per pupil, the total area to include individual and communal plots, footpaths between plots, and spaces for a garden house and a plant nursery.

The school garden shall be located in an area of the school site, which has sandy loam soil and is well drained. The area shall be plowed, harrowed, leveled, and cleared of weeds, rocks or stones, tree-stumps, etc. There shall be an adequate water supply inside the school garden. The school garden shall be fenced off from the other areas in the school site, for obvious reason.

2. Playground Area. The allocation of external space for playgrounds which are needed for physical education activities may be determined on the basis of a minimum standard of six (6) square meters of space per pupil/student. The playground shall be located in safe and sanitary area of the school site. It shall be plowed, harrowed, level, and cleared of broken glass, nails, wires, stones, and other objects which may hurt the children while they are playing. Cemented areas must not be slippery.

Proper drainage shall be provided by making the ground slope slightly from the center toward the sides or boundaries of the school site. The playground shall be sodded with low-creeping grass and furnished with standard playground facilities. There shall be separate areas for the younger and the older pupils/students.

3. Circulation Areas. The circulation areas consist of the main walk, the footpaths, and the driveway which are intended to facilitate movement within the school site.

a. Proper drainage shall be provided by slightly elevating walks, footpaths, and driveways from the surrounding areas and, if necessary, providing shallow canals along their sides. Walks, footpaths, and driveways shall be surfaced with sand or gravel, or cemented, if possible. They shall be laid out at some distance from the sides of buildings to allow space for flowerbeds and ornamental shrubbery around the buildings.

b. The main walk, which is the primary access from the front gate to the main building, shall be at least three (3) meters wide, cemented, if possible.

b.1 The footpaths, which are the secondary accesses between the different zones and buildings within the school site, maybe one (1) or two (2) meters wide.

b.2 The standard driveway, which is intended to serve vehicular traffic inside the school site, shall be at least three (3) meters wide.

c. As a general rule, walks, footpaths, and driveways shall be laid out in the most direct manner; that is; they shall follow the shortest distance to destinations.

4. Athletic Field. The allocation of external space for the athletic field shall allow adequate provision for the laying out of the following basic components, among others:

a. A standard oval tract with a distance of 400 meters.

b. A baseball diamond with sides measuring 27.4 meters (90 ft.) long.

c. A softball diamond with sides measuring 18.2 meters (60 ft.) long.

d. A soccer football field measuring 90-120 meters (100-130 yards) long and 45-90 meters (50-100 yards) wide.

e. A basketball court which shall be a flat, hard, (not grass) surface measuring 26 x 14 meters (85 x 46 ft.).

f. A volleyball court measuring 18 meters long and 9 meters wide (60 x 30 ft).

g. A lawn tennis courts measuring 23.77 meters long and 8.23 meters wide (73 x 27 feet), which is the standard for singles. For doubles, a wider court is used, 10.97 meters (36 feet) wide.

h. Perimeter space shall also be provided for the construction of a grandstand or grandstands and bleachers.

The area shall be plowed, harrowed, leveled, cleaned, and drained. It shall be fenced off from other areas of the school site as a safety precaution.

I. SCHOOL SITE BEAUTIFICATION

It is conceded that the aesthetic effect of improved grounds adds much to the socializing value of school premises, exerts influence upon the community, and is the first feature noted by visitors.

1. School Gate. A school shall have a main entrance gate and a service gate. Both shall swing inside the direction of the school property. The service gate shall be for entrance and exit for pupils/students, and school personnel use. The gate shall be functional. A functional gate is sturdy, in good condition, and can be locked effectively. It shall be designed not only for visual effect but also to insure safety. The service gate shall swing outside the direction of the school property for fire and emergency safety as recommended by the PhilGBC. Pointed, sharp, or spiked tops, which could be dangerous to pupils/students, shall be avoided. The driveways which have its own gate with a marked route direct to the parking area is recommended. The vehicular path surface may be of a different texture from the footpath for pupils/students and school personnel. Clear/Graphic signs (pictures with words) will be advantageous to all users.

2. School Fence. A good strong fence shall be built around a school site to secure the school against stray animals and against squatters. If a permanent or semi-permanent fence cannot be constructed around the whole site, madre de cacao (Kakawati), ipil-ipil trees and the like, may be planted on all sides, except the front, to serve as a temporary fence. The madre de cacao cuttings shall be allowed to spread out their branches to the fullest extent, but they shall be trimmed after the flowering season.

3. Flagpole. The display of the Philippine National Flag is a requirement for all schools. It shall occupy a prominent place in front of the main building in the assembly area. As a general rule, the top of the pole shall be higher than the building to give the national flag due prominence. A flagpole shall be designed and constructed in such a way that it is straight and slightly tapering at the top, easy to use, maintain, and repair as well as contribute to the effectiveness of the school's visual zone.

4. Signboard in Filipino/English to identify the name and location of the school shall be displayed prominently on the façade or in front of the main building.

Example: Paaralang Elementarya ng Sta. Ines
Sta. Ines, Sta. Ignacia, Tarlac

Sorsogon National High School
Sorsogon City

In size, the signboard shall be of appropriate length and width to accommodate the name and location of the school. The lettering, in simple, block or Roman style, shall be big enough to be easily readable from the street. It may be done in black or dark-blue against off-white background visible at a distance from ten to twenty meters (10m – 20m). Signboards for each of the building in the school site as home economics, shops, etc., shall be relatively smaller in scale.

5. Planting Plan. Beautifying the school site with ornamental plants requires the prior preparation of a planting plan. The plan shall provide a master guide or pattern for the planting to be done. It shall make it possible to carry out the planting work progressively over a period of time, as all the planting cannot possibly be done at one time.

The following guidelines shall be observed:

a. As a general principle, school sites in rural areas may be beautified in an informal manner with plants indigenous to the locality, while school sites in urban areas may have a more formal scheme of planting, using a wider assortment of refined varieties of ornamental plants.

b. A proper setting for the main building at the front part of the school sites may be created by landscaping the front lawn and planting a variety of flowering plant and shrubs, as well as clumps of trees at appropriate locations, to frame the building and for shade.

c. Plants shall be grouped with respect to height, color, and plant-culture requirements.

d. As many of the existing natural trees, if any, shall be retained except when a tree is an obstruction, then it must be removed, subject to the approval of the DENR.

e. Trees may be planted along the border of the school site and where shade is desired, as well as along the approach road to the school site.

f. Trees shall not be planted too close to the school buildings so as not to obstruct classroom lighting and destroy gutters and downspouts.

g. Shade trees are desirable around the borders of play areas.

h. Shrubs, especially of the flowering varieties, shall be selected carefully according to climate, soil, and shade conditions.

i. Tall-growing shrubs are not appropriate for planting under the windows of buildings because they may obstruct classroom lighting, if their pruning is neglected.

j. Perennial vines may be planted to beautify pergolas, fence rows, blank walls, and unattractive objects or spots.

k. Low-creeping grass suitable for the soil and climate shall be grown on all areas of the school site which are not to be used for agricultural plots or parts of playgrounds or athletic field where it would be undesirable.

l. Shrubs may be planted so as to make playground areas attractive but not to interfere with the children's activities.

m. Low-grading plants may be planted along the sides of walks, paths, and driveways as ornamental borders or edging, but never tall shrubbery and hedges.

n. Use only indigenous or native plants that are drought tolerant in both rural and urban sites.

I. EVACUATION AREAS

Open spaces can be utilized for constructing temporary shelters; putting up water, sanitation, and hygiene facilities and temporary classrooms (tents) during longer-term (days to weeks in duration) evacuation of residents from the community during major calamities/disasters. The school should have provision for open space big enough to accommodate the total population of the school. The open space can be used as short-term (hours in duration) temporary evacuation area of students, teachers and school staff in case of emergencies such as after a strong earthquake and occurrence of fire. The open space should be at a safe distance from buildings, electrical wires, etc which can become source of falling debris that can injure people. Students can stay in this open space until parents are able to pick them up. PhilGBC recommends that evacuation areas should have direct access to an existing road for emergency exit .

J. SPECIAL PROJECTS

From time to time, special projects are undertaken by the schools in line with socio-economic programs of the government, such as Kilusang Sariling Sikap (KSS), Food Production, Clean and Green, School Orchard, Mini-forest, Herbal Garden, SHGP, ALS activities, etc. Provisions of space for such special projects shall be considered in the allocation of external spaces in the school site. It may be noted that the use of public property for public use other than that for which they are intended by law or ordinance is illegal. Article 20 of the Revised Penal Code prohibits and penalizes the illegal use of public funds and property.

The availability of an acceptable building is an important requirement for the operation of a school. To be acceptable, a building shall be safe, sanitary, and adequate. A safe school building is structurally stable to resist lateral forces, such as strong winds, earthquakes, etc. It is free from structural defects and deficiencies so as to resist distortion and rapid deterioration. Its design and construction shall include provisions for fire resistance, fire prevention, as well as against accidents; provisions for persons with disability, and other necessary facilities to secure it against thieves, stray animals, an intruders.

A school building must be in hygienic and sanitary condition at all times to protect the health of the pupils/students and the teachers. It shall be situated in the school site where the ground is slightly elevated and can be kept dry and drained easily. The color of the paint to be used shall comply with the hygienic and aesthetic requirements.

Finally, there shall be a sufficient number of standard classrooms to accommodate the school enrolment as well as enough internal spaces for other basic curricular and administrative needs.

A. TYPES OF SCHOOL BUILDINGS

School buildings are classified according to structure, function and design. As to structure, it may be classified as permanent, semi-permanent and temporary. As to function it is classified as instructional, administrative and non-programmed. As to design, it is classified as Gabaldon type, RP-US Bayanihan, DepED standard/modified, for Learning And Public Use Schoolbuilding (LAPUS) building, and others. In line with the classification enunciated in the National Building Code of the Philippines, school buildings are categorized as follows:

1. CATEGORIES OF SCHOOL BUILDINGS

a. **According to structure:**

Type	Description	Traditionally referred to as
I	Wood construction	"Semi-Permanent" - made of a combination of materials such as concrete and 80% lumber
II	Wood construction with protective fire-resistant materials one-hour fire-resistive throughout	
III	Masonry and wood construction with exterior walls of incombustible (fire- resistive) construction: one-hour fire resistive throughout	Permanent" - made of strong and durable materials, 80% of which is concrete
IV	Steel, iron, concrete or masonry construction with walls, ceilings and permanent partitions of incombustible (fire-resistive) construction except permanent non-bearing partitions which shall be one-hour fire-resistive.	
Note: The term "fire-resistive" refers to the rating of a material relative to the degree to which it can withstand fire. The "fire-resistive time rating of a material" means the length of time, that can withstand being burned according to generally recognized and accepted testing methods and in conformity with the standards, rules and regulations of the Department of Public Works and Highways (DPWH).		

Makeshift Structures. Basically made of bamboo, nipa, cogon, lumber and other lightweight materials. These are considered as temporary structures as a means of easing up classroom shortage and temporary shelters during emergencies.

b. **According to Design:**

Type of Building	Floor Dimensions (m)	Floor Area (sq. m.)	Gross Area per place @ 45 pupils/ students per room (sq. m.)
Gabaldon Type	7 x 9 minimum	63	1.40
Army Type	6 x 7	42	0.93
Magsaysay Type	6 x 7	42	0.93

Marcos Type	6 x 7	42	0.93
Bagong Lipunan I, II, III	6 x 8	48	1.06
RP-US Bayanihan	7.35 x 6	44.1	0.98
ESF Bldg.	6 x 8	48	1.06
Imelda Type	6 x 8	48	1.06
Pagcor Bldg.	6 x 8	48	1.06
GOJ-TRSBP Bldg.	8 x 6.25	52	1.15
GOJ-EFIP Bldg.	8 x 7	56	1.14
SEDP Bldg. (Carino Type)	8 x 7	56	1.24
Multi-Purpose Workshop Bldg.	7 x 18	126	1.4
DECS 1 room Bldg.	7 x 8	56	1.24
FVR 2000 (Fabricated Vigorous Room 2000)	7 x 8	56	1.24
SB Readily Assembled Multi- Optima Shelter (Ramos)	7 x 8	56	1.24
Federation of Filipino Chinese Chamber of Commerce and Industry, Inc. (FFCCCII)	7 x 7	49	1.08
Little Red School House	7 x 8	56	1.24
DepED School Bldg. (Standard/Modified)	7 x 9 7 x 7	63 49	1.04 1.08
DepED School Bldg. (All Wood)	7 x 9 7 x 7	63 49	1.04 1.08
DepED Multi-storey School Bldg.	7 x 9	63	1.04
Spanish Grant School Building package	7 x 9	63	1.04
TEEP SB	7 x 8	56	1.24
SEDIP Bldg.	7 x 9	63	1.04
Learning And Public Use Schoolbuilding (LAPUS)	7 x 9	63	1.04

Refer to Glossary for School building features.

c. **According to Function:**

1. Instructional Spaces

These spaces are designed to directly accommodate the educational program. The basic instructional spaces for elementary schools are classrooms and work education shops or multi-purpose buildings for Home Economics and Industrial Arts Classes. However, for secondary schools offering general curriculum, the basic instructional spaces are classrooms, computer rooms, science laboratories, and Technology and Livelihood Education (TLE) shops. In secondary vocational schools, basic instructional spaces also include specialized shops. Other spaces such as libraries, learning centers, gymnasiums, and similar spaces are classified as instructional spaces when they are used directly in conjunction with the curriculum. In line with the changing curriculum, a modular type of school building has been designed to include components for home economics, industrial arts, agricultural arts, etc. in one building unit known as multipurpose workshop building.

The size of instructional space depends upon the number of places to be provided. However, the minimum size of any basic instructional space shall be planned to accommodate the ideal class size.

For secondary schools, the number of basic instructional spaces required is derived by the following formula:

$$R = \frac{T \times P}{S \times U}$$

Where:

R is the required number of a type of basic instructional space.
T is the total weekly periods for all subjects in all classes or sections and year levels requiring a type of basic instructional space.
P is the use percentage which is 100% except in agricultural and fishery shops which is 80%.
S is the weekly class periods that type of basic instructional space is available per week which is normally 40, but varies in schools with extended school days.
U is the utilization factor which is 90% for classrooms, and 85% for science laboratories and shops.

The formula is applied separately for each basic instructional space type. In a school with more than one shift, the basis for determining the number of basic instructional spaces required is the shift with the greatest number of classes or sections provided that there are no overlaps, the overlaps' greatest number of classes or sections shall be the basis for determining the required number of basic instructional spaces.

2. Administrative and Service Spaces

The administrative and services spaces are those which serve to facilitate administrative and administration – related functions and services such as administrative offices, canteens, or lunch counters, medical-dental clinics, guidance room, dormitories, etc.

3. Non-Programmed Spaces

Non-programmed spaces are those which are not directly related to the implementation of the educational program and administrative functions or services such as lobbies, corridors, stairs, etc.

The regulating space in a school building is expressed by allocating area per place or station. In instructional spaces the area per place is the average area allocated to a pupil or student including the furniture and equipment assigned to him/her, adequate circulation space, the space for the teacher and integrated preparation stock or storage spaces. Likewise, the area per place in administrative and faculty offices is the average area allotted to a member of office staff or faculty but does not include ancillary or service spaces such as lobbies, conference room, mimeographing rooms, toilets, etc. If resources permit, it is desirable to provide the spaces larger than the minimum.

4. Corridors

Corridors are required at ground level if appropriate direct access to enclosed spaces is provided. Every corridor shall not be less than 1.10 meters wide and shall be unobstructed. Above ground level, the minimum clear width is 2.00 meters provided that the provisions of the National Building and Fire Codes of the Philippines and other relevant rules and regulations are observed.

B. MINIMUM STANDARDS FOR INSTRUCTIONAL AND ADMINISTRATIVE SPACES FOR PRESCHOOLS, ELEMENTARY AND SECONDARY SCHOOLS, AND TECHNICAL-VOCATIONAL SCHOOLS

1. Classroom - 1. 40 sq. m. per place

2. Science Laboratory - 2.10 sq. m. per place

3. School Shops

Practical Arts/Technology/Industrial Arts and Home Economics

(EPP-TLE)	- 2.50 sq. m. per place
Girls Trades/Homemaking	- 2.50 sq. m. per place
Wood Trades	- 5.00 sq. m. per place
Metal Trade	- 5.00 sq. m. per place
Mechanical Trades	- 7.00 sq. m. per place
Electrical Trades	- 4.00 sq. m. per place
Drafting/Drawing	- 2.50 sq. m. per place
Farm Mechanics	- 5.00 sq. m. per place

Fish Capture/Culture/ Preservation - 2.50 sq. m. per place

4. The Computer Room/ Laboratory – 1.40 sq. m. per place

The Computer Room/Laboratory is a special instructional space necessary to meet the current and future demand of modern technology. The room shall provide at least a minimum space of 1.40 square meter per place and shall accommodate at least ten (10) networked Personal Computers (PCs) with other necessities and accessories, such as:

- Computer tables and chairs
- Proper electrical wirings and outlets
- Air conditioning units – 2 window type, preferably 1.5 hp each
- Windows and doors with iron grills and locks

5. Library/Learning Resource Center (LRC) – 2.40 sq. m. per place

The library/LRC shall have a capacity of 10% of the enrolment at 2.40 sq. m. per place, provided that the total area is not less than that of a standard classroom. In schools with more than one shift, the basis for computing the area is the shift with the largest enrolment.

6. The Library Hub

An innovative project aimed at developing love and habit of reading among pupils and students in public elementary and secondary schools through building warehouse libraries provided with DepED approved Supplementary Reading Materials (SRM).

Under the project, all school divisions are encouraged to have at least one Library hub; medium divisions are entitled to have two Hubs; and three to four Hubs in large divisions, and four to six Hubs in extra-large divisions.

Possible Hub sites (preferably a government infrastructure near the Division Office or any secured building located in strategic and accessible area.) The infrastructure must have at least 300 square meters floor area and the place is an ideal venue for educational activities.

As part of its cost-sharing scheme, the DepED Central Office will provide financing subsidy for renovation/ rehabilitation of the infrastructure. The Supplementary Reading Materials will also be provided, as follows:

HUB SIZES	NO. OF BOOKS	NO. OF COPIES	NO. OF TITLES	NO. OF PLASTIC BINS
Small Divisions	14,175	105	135	135
Medium Divisions	21,870	162	135	135
Large Divisions	30,780	228	135	135

Additional expenses for major renovation and/ore construction and other requirements of the Hub will be funded by a sponsor of the school division. Sponsors are either local government units (LGUs), non-government organizations (NGOs), or private companies and individuals. The cost-sharing agreement will be covered by a Memorandum of Agreement (MOA).

To attain the objectives of the Project, funding for the operation and maintenance of the Hubs was institutionalized through the use of the Division/School Maintenance and Other Operating Expenses (MOOE), to include the following items:

- Library Hub-related in-service trainings and activities;
- Electric and water bills; and
- Office supplies and other materials and basic equipment necessary for the operation of the Hub.

Site requirements for a Library Hub are:

- For existing building
  - preferably located near the Division Office
  - building area is 300 square meters (minimum)
  - minor repair/renovation

– no structural defects
– road access

*New Construction
– preferably located near the Division Office
– lot area is at least 400 square meters
– road access

The basic features of the Library Hub are as follows:

- a main area with steel shelves to hold book bundles
- a conference/training room
- book repair and bindery section
- check-out counters
- print shop
- loading and sorting bay with steel curtain
- reference filing system

Among the basic equipment are:
- shelving
- furniture
- plastic bins and roll-away carts
- at least 2 computers
- bar code scanners
- bindery equipment
- photo copier
- multi-media equipment

(The Library Hub Project Team is available for other queries at the DepED Central Office, Meralco Avenue, Pasig City).

7. Administrative and Service Spaces

Administrative Office	- 5.00 sq. m. per place
Medical/Dental Clinic	- 28.00 sq. m. gross
Guidance Room	- 28.00 sq. m. gross

8. Preschools

Preschool education is recognized as a stage where early childhood development has long been felt. The present standards for preschool education consider the child, the teacher and the school with the support of the family in maximizing the child's potentials and his capacity for learning. The stimulating and meaningful experiences provided in all aspects that will make him a socially sensitive, independent, spiritual and rational individual. The teacher is therefore expected to come up with a class program suited to the needs of the children in a particular school.

Hereunder are the standards for the physical environment (minimum requirements for the school site, the physical facilities and the learning equipment for a preschool).

a. **Nursery (Pre Kindergarten)**

Nursery is the level of education below kindergarten, the admission age for which is at least three (3) years but not more than four (4) years old. As stated in MEC Order No. 24, s. 1978 dated July 26, 1978 the following standards for the organization and operation of Nursery classes are required:

Class Size – maximum of 15 children to a class

Class hours – 2 hours daily

Physical Structure – floor area of at least 7m x 9m in a 500 to 1,000 square meters lot

a. Toilet and washing facilities must be adequate enough to serve the number of enrollees.

b. Hazards to safety of small children must be looked into such as wells, diggings, stairways, pools, electric installations, etc. to minimize or eliminate accidents

c. Activity Centers
- o Listening/Speaking and Acting area
- o Reading corner
- o Housekeeping area
- o Aesthetic Center
- o Work area
- o Health/Clealiness area
- o Playground

b. **School Site (for Kindergarten only)**

DECS Order No. 107 s., 1989 dated November 10, 1989 stated the Standards for the Organization and Operation of Preschools (Kindergarten Level). These are:

1. Minimum lot area	500 square meters (sq. m.)
(for not more than 4 classes)	
classroom	140 sq. m. (minimum)
playground	360 sq. m.

1. Alternative space for playground – nearest park or open space not more than 200 meters from walking distance from the school. This arrangement must be approved in writing by the authorized representative of the park or open space.

2. School site must be used for educational purposes only, must not serve as residence of the owner and should not be a "convertible school" (during day time is used as school and after class hours is a residence or used for commercial purposes)

3. Provision for office, teachers' room, music and library room or rooms combining any two of these must be considered.

Classroom size should be 1.5 square meters per child

c. **Equipment**

a. Playground and Garden

Playground apparatuses must be installed in the school ground (jungle gym, sandbox, slide, balance beams, simple obstacles – tires and tunnels)

b. Classroom Equipment and Fixtures

- Furniture (tables,chairs, shelves, lockers and cabinets must conform to the standards based on an anthropometric measurement of preschool age children, both in standing and sitting positions.
- Beds and/or mats may be provided for rest periods.

d. **Health Facilities and Provisions for Safety**

- At least one (1) toilet seat for every 25 children at one time, preferably with separate bath room for boys and girls
- First aid kits must be available
- A rest area may be provided for children. (free from hazards such as diggings, stairways, pools, open electric wires and unsafe outlets)
- Proper and adequate lighting and ventilation
  - there should be natural and electric lighting
  - for a 7 x 9 classroom, at least two (2) 40 watt fluorescent lamps and one (1)wide window
    - * Electric fans to allow cross ventilation.

e. **Activity Centers** or areas which may contain the following or their equivalent:

* Personal Care and Grooming
  – mirror, comb, towel, toothbrush, soap, toiletries, etc.
* House and Garden Care
  – garden tools (shovel, spade, pails, sprinklers, sandtable, cleaning tools, etc.)
* Communication Skills Corner
  – books (two books per child) – story books, science/nature books, Filipiniana, etc.
* Sensory-Perceptual and Numeracy Skills Corner
  – Science and Mathematics Corner
    (counters, beads, number cards, nature tables, etc.)

f. **Motor and Creative Development Corner**

– percussion instruments (bamboo castanets, coconut maracas), tambourine, tape recorder or phonograph
– DepED Order No. 93, S. 2009 (September 10, 2009) – PreSchool Building Program, prescribes the Classroom and Furniture Design for Pre-school (including floor plan and furniture designs).

9. Strengthened Technical-Vocational Schools

One of the Department's goals is to equip the high school students with relevant skills through the Strengthened Technical-Vocational Education Program (STVEP) in order to prepare them for higher education, world of work and for entrepreneurships. The Tech-Voc High Schools (TVHSs) shall be strengthened by providing a competency-based curriculum and training, physical facilities, instructional materials, manpower requirement and other logistic support.

The DepED developed a competency-based high school curricula for the 18 priority subject areas for tech-voc high schools. In arts and trades, priority areas cover electrical technology, electronics, machine shop technology, automotive mechanics, civil technology, welding, computer technology, ICT and software skills and technical drawing. In agricultural schools, focus is on vegetable production, food processing, animal production and crop production. Fishery schools teach fish capture, fish culture and fish processing. (DepED Order No. 48,. S. 2007)

Among the nine (9) program components of STVEP is infrastructure support. The Department prioritized the possible infrastructure reuirements of tech-voc schools, starting SY 2008-2009, to wit:

Priority I – repair and rehabilitation works of existing laboratory, workshop building of all 140 tech-voc schools most ready to implement STVEP in SY 2008-2009;
Priority 2 – Construction of workshop buildings; and
Priority 3 – repair of workshop buildings in 129 tech-voc schools ready to implement the

Program in SY 2008-2009

Class sizes in tech-voc schools are 40 students for the academic subjects and 30 students for the specialized STVEP. The minimum standard spaces are as follows:

SHOPS/WORKSHOP/LABORATORY	AREA PER PLACE
Industrial Arts/Home Economics	1.5 sq. m.
Wood Trades	5.00 sq. m.
Metal Trades	5.00 sq. m.
Mechanical Trades	7.00 sq. m
Electrical Trades	4.00 sq. m.
Drafting/Drawing	2.50 sq. m.
Farm Mechanics	5.00 sq. m.
Fish Capture, Culture, Preservation	2.50 sq. m.
Computer Room, Laboratory	1.40 sq. m.
Science Laboratory	2.10 sq. m.

Construction projects included the Workshop Building for the Arts and Trades Schools and for the Agriculture and Fisheries Schools; and the Multipurpose Workshop Building undertaken by the DepED Central Office.

C. THE DESIGN OF SCHOOL BUILDINGS

Everyone wants safe and affordable schools that function well, that is, they must respond to three (3) basic needs: security, identity, and opportunity.

Most school buildings answer students' identity needs. A well-designed school encourages better student performance and makes a lasting impression to the community about the importance of education.

In the Philippines, in view of budgetary limitations, these basic needs are taken into account in any renovation or new building plans, thus design guidelines have to be considered.

1. Design Guidelines

The following general guidelines shall be observed in the design of school buildings:

a. A school building shall be designed in accordance with its functions, needs of its user, and the nature of the environment.

b. In view of scarce resources, a school building shall be conceived for economy in construction, utilization and maintenance.

c. The design approach shall be straight forward, relying upon simplicity of concept in the context of innovation to reflect order and dignity, ensure flexibility in anticipation of educational change, and achieve structural stability.

d. Human dimensions, static and dynamic, specifically with reference to Filipino children and youth, shall be the basis for establishing scale.

e. Aesthetic elements shall be integral to the overall design and even given contemporary treatment, shall derive from historical, traditional or native themes.

f. The use of indigenous or locally produced materials shall be maximized in conjunction with the application of appropriate construction technology.

g. Provision for mobility of handicapped/disabled persons shall be given due consideration in the design and construction of school buildings and other facilities in accordance with Batas Pambansa Bilang 344. (Accessibility Law).

The foregoing guidelines are intended to complement accepted architectural and engineering principles, and the provisions of the National Building Code of the Philippines, and other relevant rules, regulations and ordinance promulgated by the national and local agencies.

In designing schoolbuildings, consideration of ergonomics, anthropometrics, thermal comfort, illumination, acoustics and colors, as mentioned in Chapter I is very significant.

2. Placement and Layout

A school building shall be properly oriented, i.e. properly placed with regard to air currents, natural light and heat from the sun, utility of the plant and grounds and most advantageous display. It is directly related to the health and comfort of the pupils/students and teachers; hence, the efficiency of the school plant.

3. School Building Orientation

Orientation of school buildings located in coastal areas should consider the direction of possible storm surge. Impact of storm surge will be less if the shorter side of the building faces the coast instead than its front. (Engr. Rodel Veneracion, Plan Philippines)

The proper orientation of school buildings aims primarily to minimize direct sunlight inside the classroom and to maximize the entrance of breeze or air currents into them. The solar path and the prevailing winds are the two major factors to be considered in the orientation of a school building.

The Solar/Sun Path refers to the direction of the sunlight as the earth rotates on its axis which is usually from east to west, with some slight variation during certain seasons of the year, which may be regarded as negligible.

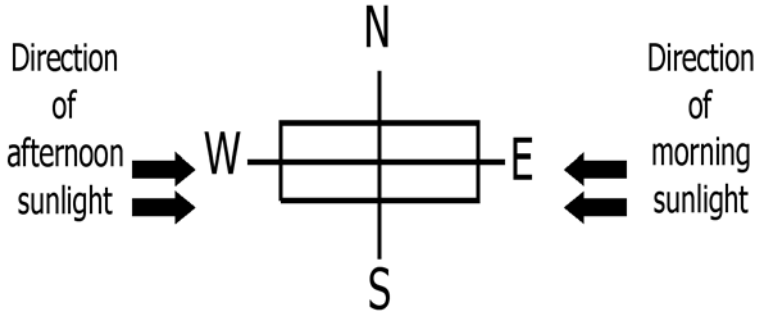


Fig. 1. Building Properly Oriented Along Solar Path

The Prevailing Winds/Breezes refer to the direction in which the cooling breezes blow. In the Philippines, especially during the hot season, prevailing breezes generally have a northeast to southwest direction.

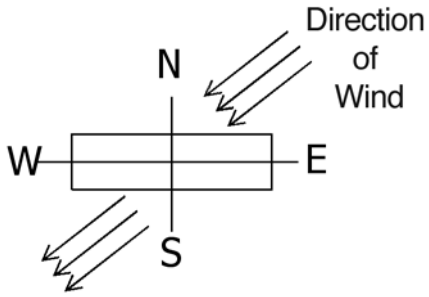


Fig. 2. Direction of Prevailing Winds

Taking into consideration the two factors, the recommendable orientation of a school building in the Philippines is a northwest-west to southeast-east axial direction.

In special instances where the path of typhoons occur (East to West direction), the onset of the southeast/ northeast monsoon (amihan-habagat) winds shall also be considered.

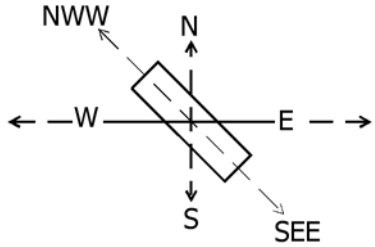


Fig. 3. Recommended School Building Orientation

4. Layout. The layout of school building on the school site refers to the location and arrangement of school buildings to achieve maximum functional efficiency and aesthetic effect. As a general rule, the different school buildings shall be laid out according to functional grouping. The distances between school buildings shall be such that:

a. Ventilation is not obstructed;

b. Natural illumination is not impeded; and

c. Sounds in one building do not carry into the next building.

d. The suggested minimum distances between buildings are:

d.1 Eight (8) meters between one-storey buildings positioned side by side;

d.2 Ten (10) meters between two-storey academic buildings positioned side by side;

d.3 Ten (10) meters between non-academic buildings;

d.4 For a main building facing the front gate, at least ten (10) meters distance is suggested.

d.5 Greater distance than the minimum between school buildings is desirable. Wider distance between buildings allows for adequate free space to be utilized for many school-related activities.

e. The recommended minimum setback of a school from the street is five (5) meters to minimize intrusive sounds.

f. The School Site Development Plan must be considered in the laying-out of school buildings.

5. Building Plans: There are two types of plans for the design and specifications of public elementary and secondary school buildings.

a. **Standard Building Plan.** This is usually prepared by the architects and engineers of the DepED and the DPWH and approved for general use in all schools throughout the country.

b. **Special Building Plan.** This is a plan designed specifically for a particular school for a special purpose or because of certain unique or peculiar features of the school site. A special building plan may originate from the field.

6. Building Plan Requirements: A school building plan originating from the field, local government units and private entities shall be submitted to the PFSED-OPS, DepED for review and approval.

a. The plan shall be drawn on tracing paper measuring 0.50 x 0.75 meters, according to an appropriate scale, and shall show the following:

a.1 Perspective and Site Plan

a.2 Floor Plan

a.3 Front, rear, right, and left elevation

a.4 Two Sections

a.5 Foundation Plan

a.6 Floor framing (if elevated)

a.7 Roof framing plan

a.8 Ceiling plan and Electrical layout

a.9 Plumbing layout

a.10 Details

b. The original copy of the plan on tracing paper together with two sets of whiteprint or blueprint shall be submitted.

c. The architectural and structural plans shall be signed by an architect and civil engineer respectively, duly stamped with their dry seals along with their registry numbers, professional tax receipts, and tax identification numbers (TIN).

d. The structural computations signed by a registered civil engineer and stamped with his dry seal shall be submitted together with the plan for checking. The registry number, professional tax number, and tax identification number of the civil engineer shall be also indicated.

e. The plan shall be signed also by the school administrator concerned and recommended by the schools division superintendent and the DepED regional director (in the case of locally designed school building).

7. Design Requirements. The following pertinent requirements prescribed in the National Building Code of the Philippines shall be considered in the design of school buildings:

a. **Windows.** Window openings shall be equal to or at least ten (10) percent of the floor area of the room, provided that such opening shall be not less than one square meter, except those in toilets and baths which shall be not less than one-twentieth of the floor area of such rooms, or not less than 240 square millimeters. Steel casement for windows using plain GI sheets can be used to resist strong wind from entering inside the building that creates an uplift force that blow up roofs. GI sheets are connected by rivets and non-sag marine epoxy over

steel window frames. All glass windows easily breaks and can cause injury to occupants inside when broken by strong winds. (Engr. Rodel Veneracion, Plan Philippines)

b. **Ceiling Height.** The ceiling height of rooms with natural ventilation shall be not less than 2.70 meters measured from the floor to the ceiling; rooms provided with artificial ventilation shall have ceiling heights not less than 2.40 meters.

c. **Floor Construction.** All floors shall be so framed and secured into the framework and supporting walls so as to form an integral part of the whole building; the type of floor construction used shall provide means to keep the beam and girders from lateral buckling.

d. **Roof Construction.** All roofs shall be so framed and tied into the framework and supporting walls so as to form an integral part of the whole building; dark stops, roof drains, flushing, etc., shall be provided. Purlins can be made up of angle bars instead of the conventional C-purlins where text screws easily loosened resulting in detachment of roofs. The thickness of the angle bar serves as a knot, holding text screws firmly. Purlins are securely welded to steel trusses creating a sturdy roof framework. (Engr. Rodel Veneracion, Plan Philippines)

e. **Exit Doors.** At least two (2) exit doors are required where the number of room occupants is over 50 in the case of classrooms, conference rooms, exhibit rooms, gymnasia, school shops, vocational institutions, laboratories, and auditorium; a door shall not be less than 2.10 meters high and 900 millimeters wide.

f. **Door Shutters.** Door shutters shall be swing out and be capable of opening at least 90 degrees so that the clear width of the exit way is not less than 700 millimeters. No door shutter shall exceed 1.20 meters in width.

g. **Corridors.** Every corridor shall not be less than 1.10 meters wide and shall be unobstructed.

h. **Stairways.** Stairways serving an occupant load of 50 or less must be 1.10 meters wide; those serving more than 50 shall not be less than 1.50 meters. The rise of every step shall not exceed 200 millimeters and the tread shall not be less than 250 millimeters. Handrails shall be provided on each side of every stairway having more than four steps.

D. BUILDING RISK REDUCTION REQUIREMENTS

In designing and constructing schoolbuildings, safety and risk reduction measures shall always be considered. Detailed engineering shall proceed only on the basis of the feasibility or preliminary engineering study made which establishes the technical viability of the project and conformity to land use and zoning guidelines prescribed by existing laws. The findings contained in the feasibility study, if undertaken for the project, shall be examined. If, in the course of the exercise, as proposed, specific recommendations for such changes shall be supported by detailed justifications, including their effects on the cost, and if (necessary) the economic justification.

A schedule of detailed engineering activities shall include the following:

a. Survey

b. Site investigation

c. Foundation Investigation

d. Soils and Materials Investigation

e. Preparation of Design

f. Preparation of Specifications

g. Preparation of Quantity and Cost Estimates

h. Preparation of Program of Work

i. Preparation of Proposed Constructin Schedule (and estimated Cash Flow for projects with schedule over six (6) months

j. Preparation of Site or Right-Of-Way Plans Including Schedule of Acquisition

k. Preparation of Utility Relocation Plan

l. Preparation and Submission of Design Report

m. Environmental Impact Statement For Major Project

n. Preparation of Bid/Tender Documents

1. RISK REDUCTION REQUIREMENTS FOR PARTS OF A SCHOOL BUILDING AND AMENITIES

1. **Main Entrance/Gate**

a. Main entrance shall be located preferably on a secondary road and must be designed swing-in to the school property.

b. Provide separate service entrance for the pupils/students and guests.

c. Main entrance shall provide enough clearance for fire trucks and medical vehicles.

2. **Electrical Fixtures**

a. Require protective covering for all wirings and fixtures.

b. Install a fire alarm system that is affordable.

c. Provide environment friendly fire extinguishers;

c. Report any defective electrical wiring and fixtures to experts ;

d. Hang curtains in the classrooms away from wall-mounted fans.

3. **Stairs/Handrails**

a. Distance between railings shall not be more than 100 mm (4 inches) so that pupils/students cannot squeeze through;

b. For abrupt change in floor elevation, provide ramp to avoid freak accidents.

c. To minimize the chance of slipping, avoid smooth or polished steps surfaces and provide non-slip nosing.

d. Always provide a landing with railings between a doorway and a stairway.

4. **Windows**

Windows shall be provided with security grills with emergency exit.

5. **Doors/Exits**

Classrooms shall always be provided with two swing-out Doors at the opposite sides of the classroom.

6. **Walls**

Walls shall be smooth finished to prevent injury to highly active, playful and mobile primary grades pupils.

2. HAZARD RESILIENT APPROACHES

The geographic location of the Philippines makes it vulnerable to a wide variety of natural phenomena such as typhoons/cyclones, floods, earthquakes, and other hazards. The occurrences of these hazards are the main causes of

school building deterioration and damages which is taking part of the Department's budget. Budget allocation for the repair and rehabilitation of damaged structures and educational facilities could have been used in the construction of new school buildings. In view of this, initiatives that will reduce the impact of these hazards which will eventually become disasters when not properly addressed, are being undertaken through a hazard mitigation planning and comprehensive disaster risk reduction program.

As defined in an Inter Agency Network for Education in Emergencies,guidelines (INEE), mitigation refers to measures that can reduce or eliminate the vulnerability of the built environment to hazards, whether natural or (man-made. The fundamental goal of mitigation is to minimize loss of life, property, and function due to disasters. Designing to resist any hazard(s) should always begin with a comprehensive risk assessment. This process includes identification of the hazards present in the location and an assessment of their potential impacts and effects on the built environment based on existing or anticipated vulnerabilities and potential losses.

There are many terms referring to the components of risk assessment. One of which is on terrorism which are referred to as "threats" by the Armed Forces of the Philippines, while floods, earthquakes, typhoons and volcanic eruptions are being referred to as "hazards" by emergency managers. In simple terms, both of these are forces that have the potential to cause damage, death, and injury, and loss of function in the education sector. Therefore, the fundamental process of identifying what can happen at a given school location, how can it affect the teaching-learning activities, and what the potential losses could be, is called risk assessment.

Understanding fully what risks are could lead to the identification of mitigation measures, prioritization and implementation according to the urgency and importance of the need to return to normal situation. The principles involving this process include:

a. The impacts of natural hazards and the costs of the disasters they cause will be reduced whether mitigation measures are implemented during pre-disaster (preventively) or post-disaster (correctively). Proactively integrating mitigation measures into new construction is always more economically feasible than retrofitting existing structures.

b. Risk reduction techniques must address as many applicable hazards as possible. This approach, known as multi-hazard mitigation, is the most Cost-Effective approach, maximizes the protective effect of the mitigation measures implemented, and optimizes multi-hazard design techniques with other building technologies.

c. Mitigation of existing facilities. Mitigation is based on localized design criteria and established facility renovation. Mitigation for multiple requirements, for example seismic and force protection, are most effective when addressed simultaneously.

Professionals and experts agree that the most successful way to mitigate losses of life, property, and function is to design buildings that are disaster resistant. The INEE guidelines proposed that this approach should be incorporated into the project planning, design, and development at the earliest possible stage so that design and material decisions can be based on an integrated "whole building approach."

INEE guidelines also identified a variety of techniques are available to mitigate the effects of natural hazards on the built environment. Depending on the hazards identified, the location and construction type of a proposed building or facility, and the specific performance requirements for the building, the structure can be designed to resist hazard effects such as induced loads. Later in the building's life cycle, additional opportunities to further reduce the risk from natural hazards may exist when renovation projects and repairs of the existing structure is undertaken. In incorporating disaster risk reduction measures into the school building designs in the Philippines, the multi-hazard guidelines below shall be taken into consideration in order to protect lives, properties, and operations from damages caused by natural hazards.

a. **Earthquakes**

Building design will be influenced by the level of seismic resistance desired. This can range from prevention of nonstructural damage in frequent minor ground shaking to prevention of structural damage and minimization of nonstructural damage in occasional moderate ground shaking, and even avoidance of collapse or serious damage in rare major ground shaking. These performance objectives can be accomplished through a variety of measures such as structural components like shear walls, braced frames, moment resisting frames, and diaphragms, base isolation, energy dissipating devices such as visco-elastic dampers, elastomeric dampers, and hysteretic-loop dampers, and bracing of nonstructural components.

b. **Tropical Cyclones and Tornados**

The key strategy to protecting a building from high winds caused by tornados, hurricanes, and gust fronts is to maintain the integrity of the building envelope, including roofs and windows, and to design the structure to withstand the expected lateral and uplift forces. For example, roof trusses and gables must be braced; hurricane straps must be used to strengthen the connection between the roof and walls; and doors and windows must be protected by covering and/or bracing. When planning renovation projects, designers should consider opportunities to upgrade the roof structure and covering and enhance the protection of fenestration. School buildings in the Philippines are highly susceptible to typhoon-induced damage due to the use of light materials. Non-structural elements should be properly and adequately anchored/connected to the structural members to avoid uplift or toppling-down during strong winds. Design of school buildings should consider topography of the site, exposure of the building, and wind velocity (wind zone map). School building foundations should rest on stable grounds to provide adequate resistance against over-turning.

c. **Flooding**

Flood mitigation is best achieved by hazard avoidance—that is, proper site selection away from floodplains. Should buildings be sited in flood-prone locations, they should be elevated above expected flood levels to reduce the chances of flooding and to limit the potential damage to the building and its contents when it is flooded. Flood mitigation techniques include elevating the building so that the lowest floor is above the flood level; dry flood-proofing, or making the building watertight to prevent water entry; wet flood-proofing, or making uninhabited or non-critical parts of the building resistant to water damage; relocation of the building; and the incorporation of levees and floodwalls into site design to keep water away from the building.

d. **Rainfall and Wind-Driven Rain**

One of the primary performance requirements for any building is that it should keep the interior space dry. All roofs and walls must therefore shed rainwater, and design requirements are the same everywhere in this respect. For example, roof drainage design must minimize the possibility of ponding water, and existing buildings with flat roofs must be inspected to determine compliance with this requirement..

e. **Differential Settlement (Subsidence)**

Ground subsidence can result from mining, sinkholes, underground fluid withdrawal, hydrocompaction, and organic soil drainage and oxidation. Subsidence mitigation can best be achieved through careful site selection, including geotechnical study of the site. In subsidence-prone areas, foundations must be appropriately constructed, basements and other below-ground projections must be minimized, and utility lines and connections must be stress-resistant. When retrofitting structures to be more subsidence-resistant, shear walls, geo-fabrics, and earth reinforcement techniques such as dynamic compaction can be used to increase resistance to subsidence damage and to stabilize collapsible soils.

f. **Landslides**

Gravity-driven movement of earth material can result from water saturation, slope modifications, and earthquakes. Techniques for reducing landslide and mudslide risks to structures include selecting non-hillside or stable slope sites; constructing channels, drainage systems, retention structures, and deflection walls; planting groundcover; and soil reinforcement using geo-synthetic materials, and avoiding cut and fill building sites.

g. **Tsunami**

A tsunami is a series of ocean waves generated by sudden displacements in the sea floor, landslides, or volcanic activity. In the deep ocean, the tsunami wave may only be a few inches high. The tsunami wave may come gently ashore or may increase in height to become a fast moving wall of turbulent water several meters high. Although a tsunami cannot be prevented, the impact of a tsunami can be mitigated through urban/land planning, community preparedness, timely warnings, and effective response.

3. Emerging Issues and Concerns

In implementing risk reduction measures to make school buildings safe, secured and most conducive to teaching learning activities, there are emerging issues and concerns. These are:

a. **Hazard Mitigation and Sustainability**

Unsustainable development is one of the major factors in the rising costs of natural disasters. Given that hazard mitigation is at the core of disaster resistance, then, many design strategies and technologies serve double duty, by not only preventing losses but serving the higher goal of long-term community sustainability. For example, erosion control measures designed to mitigate flood, mudslide, rainstorm, and other damage to a building's foundation may also improve the quality of runoff water entering streams and lakes.

b. **Cost of Mitigation Measures in Retrofits**

The cost of incorporating multi-hazard mitigation measures in existing buildings is an issue of increased importance (for designers, insurers and the public) because a critical mass of facilities were built before multi-hazard construction measures were incorporated in modern building codes. Initially, building codes were developed solely to prevent or reduce the loss of life and property due to fire in buildings.

c. **Relevant Codes and Standards**

Regulations, codes, standards, and best practices will guide the design of buildings to resist natural hazards. For new buildings, code requirements serve to define the minimum mitigation requirements, but compliance with regulations in building design is not sufficient to guarantee that a facility will perform adequately when impacted by the forces for which it was designed. Indeed, individual evaluation of the costs and benefits of specific hazard mitigation alternatives can lead to effective strategies that will exceed the minimum requirements. Additionally, special mitigation requirements may be imposed on projects in response to locale-specific hazards. When a change in use or occupancy occurs, the designer must determine whether this change triggers other mitigation requirements and must understand how to evaluate alternatives for meeting those requirements.
The importance of nonstructural elements, assets, and mission of the school building, i.e., windows, hoods, parapets and balcony railings, and electrical and mechanical systems consist of more than 70% of the value of the school building. In this regard, designers should augment the codes and standards to prolong the serviceability of these elements.

d. **Condemned/Unfinished Construction**

Condemned/Unfinished building structures, on-going constructions, must be cordoned with an "Off Limits" sign.

e. **Sanitary Facilities**

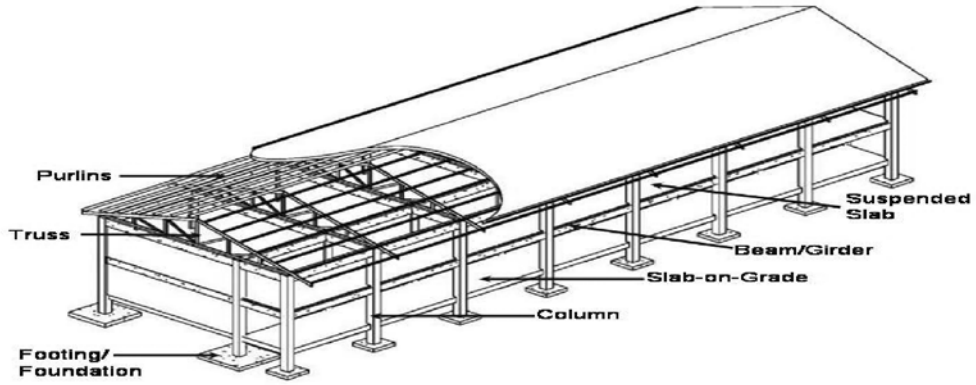
* Drainage canal shall be wide enough, covered, and provided with manhole for safety and sanitation purposes.
* Location of the septic tank must be at least two (2) meters away from the building it serves. It shall be properly vented for proper release of gases. It must be at least 25 meters away from any source of water supply to avoid contamination.

4. UNDERSTANDING STRUCTURAL ISSUES

Structural failures are common and considered costly to rectify. Most structural problems may be avoided by proper design and planning. Structural issues focus more on the concrete structure failures since concrete is the most commonly used in building construction due to its durability and ease in construction. Moreover, concrete is the most economical choice in building construction. Steel failure is also considered among structural failures mainly because it is normally used for trusses. The objectives of understanding structural issues and problems are:

- To recognize common structural problems and their causes;
- To know the immediate solution on structural problems before the recommendation of the structural engineer has been given is considered; and
- To know how to mitigate or eliminate structural problems.

a. **MAIN STRUCTURAL ELEMENTS OF BUILDINGS**



The main elements of a structure are the load-bearing members. These support and transfer the loads on the structure while remaining equivalent to each other. The places where members are connected to other members are called joints.

Dead loads are the weights of the permanent elements of the building. Live loads are the weights of the temporary elements such as humans, chairs, tables and other movable elements.

The sum total of the load supported by the structural members at a particular instant is the total dead load plus the total live load.

The live loads in a structure are transmitted through the various load-bearing structural members to the ultimate support of the earth. Immediate or direct support for the live loads is first provided by horizontal members (slabs, beams, purlins and trusses). The horizontal members are, in turn, supported by vertical members (columns and load bearing walls). Finally, the vertical members are supported by foundations or footings, which rest on soil.

The ability of the earth to support a load is called its soil-bearing capacity. This varies considerably with different types of soil. A soil of a given bearing capacity bears a heavier load on a wide foundation or footing than on a narrow one.

b. **COMMON STRUCTURAL PROBLEMS/FAILURES AND CAUSES**

Recognizing the symptoms of structural movement and displacement is the key to understanding the extent of the concern. This section will give some of the common indicators of structural concern. In these cases, a structural engineer should be called out to investigate further and provide professional opinion. Understanding and recognizing failure mechanisms in concrete is a fundamental pre-requisite to determining the type of repair, or whether repair is feasible.

(1) **CONCRETE**

Concrete preparation and maintenance problems:

- Crazing is a pattern of fine cracks that do not penetrate much below the surface and are usually a cosmetic problem only. They are barely visible, except when the concrete is drying after the surface has been wet.
- Plastic Shrinkage Cracking: When water evaporates much faster from the surface of freshly placed concrete than it is replaced by bleed water, since the concrete surface shrinks.
- Drying Shrinkage: Because almost all concrete is mixed with more water than is needed to hydrate the cement, much of the remaining water evaporates, causing the concrete to shrink.
- Thermal cracks: Temperature rise (especially significant in mass concrete) results from the heat of hydration of cementations materials. As the interior concrete increases in temperature and expands, the surface concrete may be cooling and contracting.

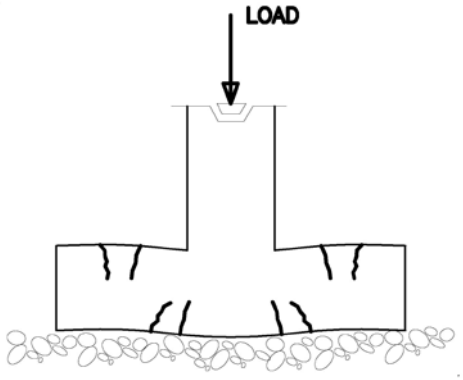
As temperature rises, the concrete interior expands, while the concrete surface may cool off and contract.

• Corrosion: Corrosion of reinforcing steel and other embedded metals is one of the leading causes of deterioration of concrete. When steel corrodes, the resulting rust occupies a greater volume than steel. The expansion creates tensile stresses in the concrete, which can eventually cause cracking and spalling.

Performance problems of structural concrete:

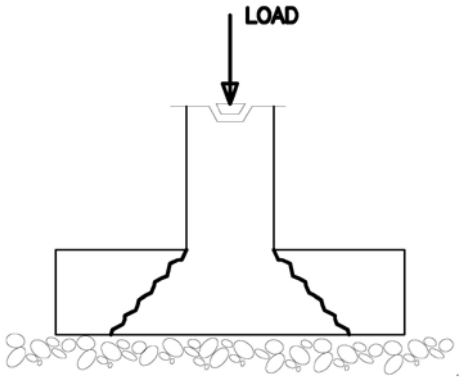
Concrete foundation:

• Foundation settlement cracking may be caused by differential settlement of the footings, poor original construction, water, nearby blasting operations or improper soil preparation (excessive backfill height, premature backfill, improper compaction)



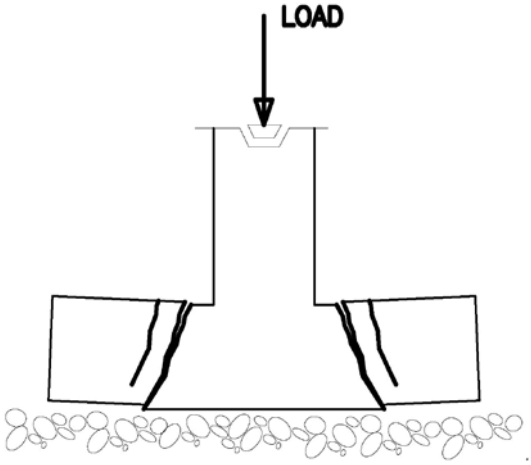
Foundation settlement

• Punching failure are failures caused by excessive concentrated loads or point loads, improper use of material and/or in-adequate foundation thickness



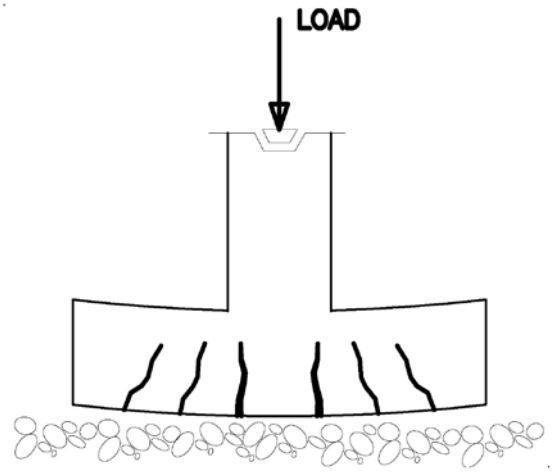
Punching failure

• Wide beam shear failure may be due to improper use of material and/or inadequate foundation thickness



Wide beam shear failure

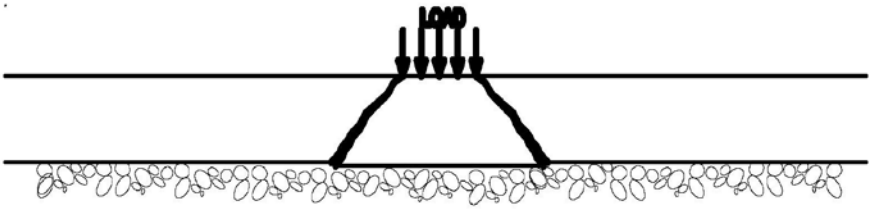
• Bending failure due to improper use of material, inadequate foundation thickness and/or inadequate reinforcing bars



Bending failure

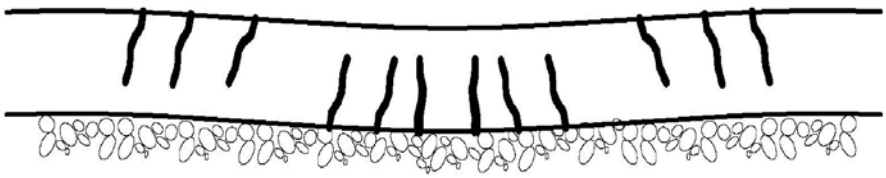
Concrete slab on base:

• Punching failure are failures due to excessive concentrated loads or point loads, improper use of material and/ or inadequate slab thickness



Punching failure

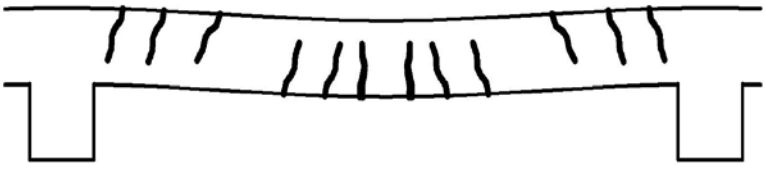
• Settlement cracks in a slab indicate inadequate site preparation (such as failure to compact fill on which a slab was poured).



Settlement failure

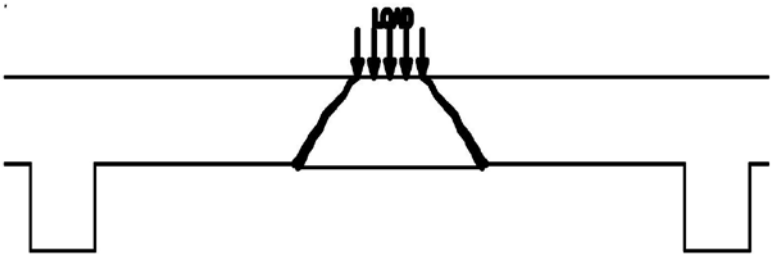
Suspended slab:

• Bending failure due to improper use of material, in-adequate slab thickness and/or in-adequate reinforcing bars



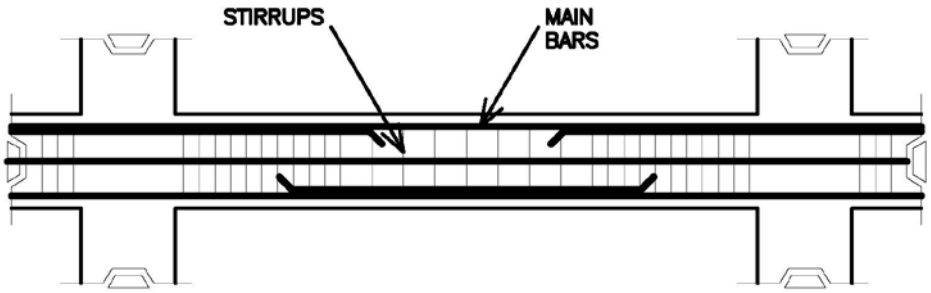
Bending failure

• Punching failures are due to excessive concentrated loads or point loads, improper use of material and/or inadequate slab thickness

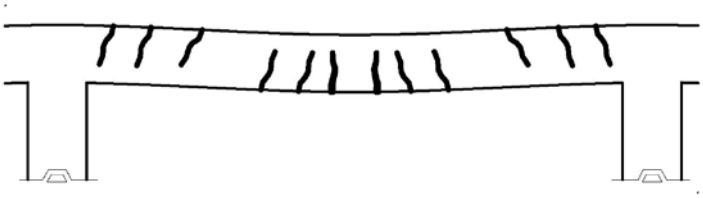


Punching failure

Beams

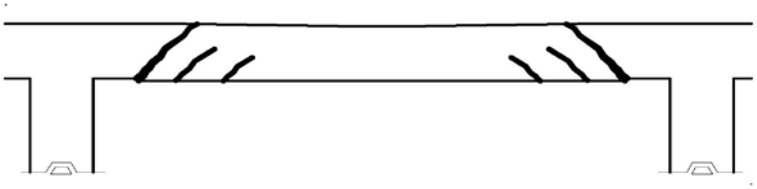


• Bending failure due to improper use of material, in-adequate beam size and/or in-adequate main reinforcing bars



Bending failure

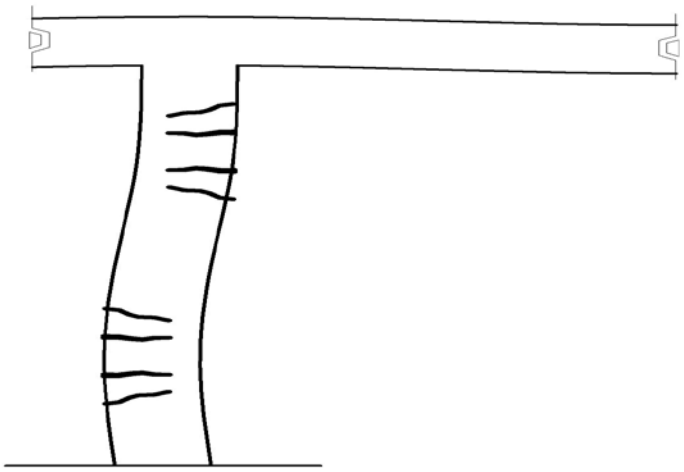
• Shear failure due to improper use of material or in-adequate beam size and/or stirrups



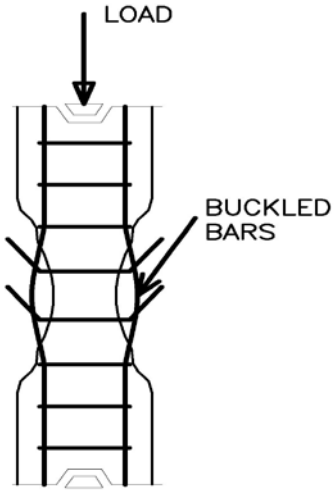
Shear failure

Columns

• Bending failure due to improper use of material or inadequate column size and/or main reinforcing bars
• Axial failure due to improper use of material or in-adequate beam size and/or main reinforcing bars



Bending failure



Shear failure

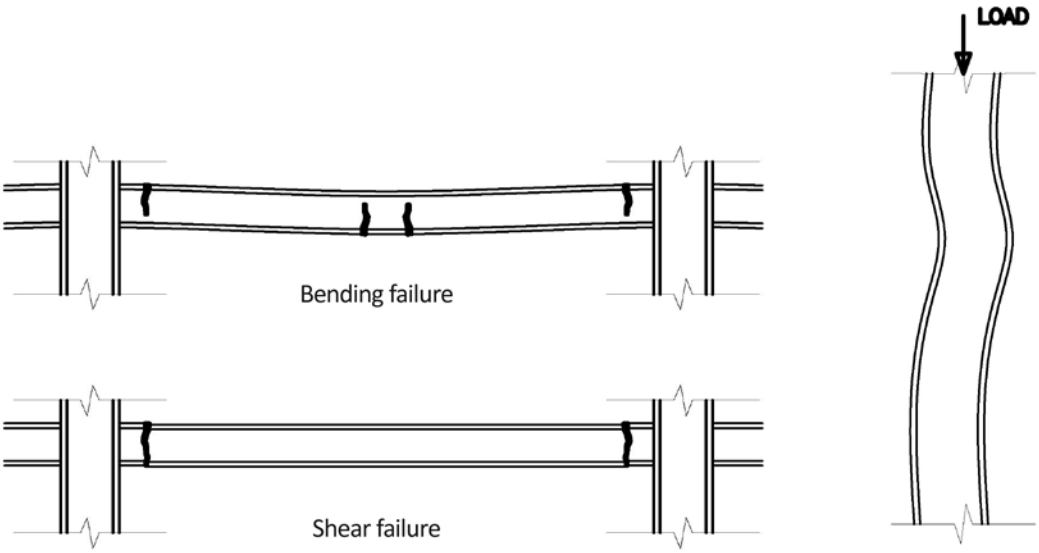
(2) **STRUCTURAL STEEL**

Failure due to environment exposure:

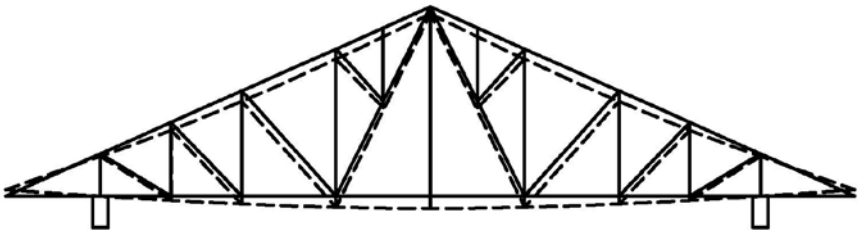
- Failure due to heat: Heat changes the steel characteristic which leads to deterioration of strength.
- Corrosion: steel corrodes on contact with water (and moisture in the air), acids, bases, salts, oils, aggressive metal polishes, and other solid and liquid chemicals

Performance problems of structural steel (failures due to inadequate strength and size) are:

- Bending failure
- Shear failure
- Buckling failure



- Excessive deflection/sagging



Excessive deflection/sagging failure

5. IMMEDIATE REMEDIAL MEASURES

If the building shows signs of structural failure, the following should be undertaken until further instruction from the structural engineer has been given:

- Do not occupy the building
- Project Engineers should initiate material testing on
  - Compressive strength of concrete
  - Yield strength of steel
- Immediately, the structural engineer should be called on to investigate further, and the Project Engineer has to submit a report to the structural engineer that includes the following:
  - Background information of the building – location, description, what it is composed of (concrete, steel), year constructed, project implementer
  - Plan dimension of building showing the members, member sizes and dimensions and location of failures of the members (cracks, sagging, crash, buckling, settlement etc.).
  - Pictures of failures
  - Geotechnical report where the soil bearing capacity is shown
  - Result of material tests
- Provide shoring on the horizontal members
- Inject structural epoxy on concrete cracks (to be applied by professionals)

6. BUILDING FAILURE MITIGATION

Most structural failures are due to failure to comply to the requirements shown in the structural plans and specifications – member sizes, reinforcements, material specifications, soil preparation and construction methodology. Having good quality construction is the best way to prevent any structural failure.

The following shall be the bases in implementing construction to mitigate structural failures. These must also be the basis in accepting and rejecting works:

- The most updated and official plans and specifications must be used. Make sure that these documents have structural engineer's signature and seal.
- Conform with the specification and required structural standards and construction notes
- Ensure that the required members sizes and material strength will be used
- Only the accepted standard methodology will be implemented

Should there be any failure on the material strength test or any structural problems encountered during construction, immediate remedial measure must be carried out.

In conclusion, various types of problems with regards to structure can create dangerous or costly situations. To immediately discover and evaluate structural defects, we should know the major impact of these on safety. One does not have to be a structural engineer to be able to identify where structural problems are likely to occur and how to recognize them.

Building quality depends on the proper design and planning (care of architects and engineers), proper implementation (care of project engineers and contractors), maintenance and monitoring of the building condition (care of end-users and occupants' participation). So that:

7. MISCELLANEOUS REQUIREMENTS

In the construction of buildings, under plans and specifications prepared by the Department of Public Works and Highways and approved by the consulting architect, no change affecting neither architectural features nor substitution of materials shall be made without the approval of the consulting architect.

Under no circumstances shall any plan, whether prepared by the Department of Public Works and Highways or not, be used for any project other than the one originally intended, without first securing a written approval of the consulting architect.

In case approved standard plans of the Department of Education are used and no change in the approved plans and specifications is made, the prior approval of the Department of Public Works and Highways is not necessary.

E. ACQUISITION OF NEW SCHOOL BUILDINGS

New school buildings are usually acquired through allocation from the national government, by donations, and from voluntary contributions. Under the national government school building program, funds are provided in the national budget every year for the construction of new school buildings. The school buildings are allocated according to a prioritized list prepared based on the following criteria:

a. To replace school buildings destroyed by natural calamities and fortuitous events;

b. To replace old and dilapidated school buildings which have been condemned;

c. To provide new school buildings to school with high shortages (Red and Black Schools) to accommodate the increase in school population or to decongest existing ones;

d. To replace makeshift and temporary school buildings; and,

e. To provide school buildings to accommodate classes currently housed in rented buildings, school stage, gymnasiums, etc.

1. Allocation Procedure of New School Buildings

a. **Congress** in conjunction with the Department of Budget and Management (DBM) set the budgetary ceiling for school building projects.

b. **Department of Budget and Management (DBM)** advises DepED and DPWH Central Offices of the approval of the Annual School Building Program.

c. **DepED Central Office** issues a Department Order to all Regional Directors and Schools Division Superintendents containing the guidelines in preparing the priority lists of recipient schools based on the prepared allocation per legislative district.

d. **DepED Regional Offices** advise Division Offices to prepare priority lists using the Department Order.

e. **DepED Division Office Ad Hoc Physical Facilities Unit** (headed by the Physical Facilities Coordinators) prepares priority list in coordination with the Planning Unit. PFC seeks concurrence of Congressional Representative concerned of prepared list.

f. **DepED Division Office** submits list to DepED Central Office – Physical Facilities and School Engineering Division (PFSED), copy furnished the Regional Office.

g. **DepED-PFSED** consolidates division lists and forwards list to DBM through DPWH Central Office in the case of the Regular School Building Program (RSBP).

h. **DBM** evaluates list and issues Special Allotment Release Order (SARO) and the corresponding Notice of Cash Allocation (NCA) of the approved projects.

i. **DPWH and DepED** implement project listings in the Annual School Building Program.

2. Pre-Construction Activity

Before actual work on the construction of a school building is commenced or authorized, the following conditions must be met.

1. The school site on which the building is to be erected is titled and registered in the name of DepED.

   a. In case the property is registered in the name of a municipality/city, DepED shall acquire a perpetual right of use through a gratuitous (without consideration) Contract of Lease with the municipality or Memorandum of Agreement (MOA) defining in clear terms the conditions relative to its use, the control and supervision of the school site, particularly the ownership of the building or facility so constructed. The contract of lease must be registered with the Registry of Deeds and duly annotated as a memorandum on the certificate of title.

   b. If the proposed school site is presently used for school site purposes without any adverse party-claimant, appropriate steps to ascertain the probable basis of DepED's title or right to possess shall first be taken before any further construction is undertaken. The results of the verification together with the complete records regarding the site shall be forwarded to the Office of the Undersecretary for Legal Affairs in the Central Office, for appropriate legal attention and action.

   c. If the proposed site is privately owned, the appropriate documentation attesting to any inchoate right of DepED on the proposed site shall be firmly established, and until the available transfer documents are available, no construction shall be initiated until clearance is first secured from the Office of the Undersecretary of Legal Affairs. For this purpose, the pertinent transfer documents, if any, including proofs of ownership shall be forwarded together with the request for clearance. Any transfer document shall at least bear proof of registration and appropriate memorandum thereof which is annotated on the back of the certificate of title.

   d. In the case where the proposed site has been acquired by DepED through sale but the transfer title in favor of DepED has not been issued, the Deed of Absolute Sale, evidencing/proving the sale shall be registered and the appropriate memorandum thereof is annotated on the back of the certificate of title. If the reason for non-transfer is due to lack of the subdivision plan segregating the conveyed area from the

main portion of the property, steps to have a subdivision-survey shall be taken. Expenses for this purpose are hereby authorized to be disbursed from the funds of the Region.

e. As regards transfer by reason of a Deed of Donation, this must be duly accepted either on the donation paper or in a separate document by the Department Secretary or his representative, the Regional Director or the Schools Division Superintendent, as the case may be, provided the same does not impose any onerous condition or burden on the Department, and must be duly registered and the appropriate memorandum thereof is annotated on the back of the certificate of title.

2. The plans and specifications for the building to be constructed, as well as the program of work, have been duly approved by the PFSED and DPWH District Engineering Office, as the case may be, copies of which have been furnished to the principal or school administrator.

3. The mode of procurement for the Regular Infrastructure Projects shall follow R.A. 9184 otherwise known as the "Government Procurement Reform Act" (whether by contract, negotiated contract, or local administration). For foreign- assisted projects, the mode of procurement shall follow the guidelines of the loan/grant agreement.

4. The location plan for the building to be constructed shall be in accordance with the site development plan, approved by the schools division superintendent.

5. The fund for the construction of the building has been appropriated and certified available.

6. The site has been officially assigned as a public place.

3. The Building Permit

A building permit shall be obtained by the owner or school to be facilitated by the Contractor for any proposed work to be erected/executed, constructed, altered, repaired, converted or demolish a building or structure. The application for a building permit shall be filed in writing on the prescribed form with the Office of the Building Official in the Municipality/City. It shall provide at least the following information:

a. A description of the work covered by the permit;

b. Description and ownership of the lot as evidenced by a certified true copy of the Transfer Certificate of Title (TCT);

c. The use or occupancy of the proposed work;

d. Estimated cost of the proposed work.

e. Environmental Clearance Certificate (ECC), if applicable.

To be submitted along with the application are the five (5) sets of plans and specifications prepared, signed and sealed by a duly licensed architect and civil engineer for architectural and structural plans; a duly licensed sanitary engineer or master plumber for plumbing or sanitary installation plans; a duly licensed electrical engineer or professional electrician for electrical plans; and a duly licensed mechanical engineer for mechanical plans. However, duly approved plans and specifications prepared for the public schools by the Department of Education, Department of Public Works and Highways may not be sealed. Required engineering documents include structural design and seismic analysis, as well as boring and plate load tests in the case of buildings or structures of four storeys or higher.

The work described in the application of building permit and the accompanying plans and specifications shall satisfy and conform with approved standard requirements on zoning and land use, lines and grades, structural design, sanitation and sewerage, environmental health, electrical and mechanical safety as well as with other rules and regulations promulgated in accordance with the provision of the National Building Code of the Philippines.

No payment of fees is required in the application of the building permits for public school buildings. The Building Official normally issues the permit within fifteen days of filing.

The work shall be done strictly in accordance with the approved plans and specifications. Any change, modification or alteration may be done only upon the approval of the Building Official. The building permit expires and becomes null

and void if the work so authorized is not commenced within one year of the approval of the permit, or if the work is suspended or abandoned at any time after it has been commenced, for a period of 120 days.

Upon completion of the construction, a Certificate of Completion shall be prepared and submitted to the Building Official. The building or structures shall not be used or occupied and no change in its existing use be made until the building official has issued a corresponding Certificate of Occupancy.

4. MODES OF PROCUREMENT

Construction of school buildings is a form of procurement of infrastructure projects and shall be governed by Republic Act 9184 otherwise known as the "Government Procurement Reform Act", its implementing rules and regulations and applicable guidelines and other issuances of the Government Procurement Policy Board(GPPB). As a general rule, procurement of school buildings shall be done through competitive bidding. The only exception is negotiated procurement. The GPPB has issued a "Manual of Procedures for the Procurement of Infrastructure Projects" as reference guide for procuring entities in their procurement operations effective January 2007.

However, in case of construction of school buildings under projects funded by International Financing Institutions (IFI) such as the International Bank for Reconstruction and Development (IBRD)- funded Principal-Led School Building Program(PL-SBP) the procurement methods and guidelines of the concerned IFI shall primarily govern.

For other modes of procurement, refer to Chapter V.

5. MONITORING AND INSPECTION

The DPWH/DepED shall only construct "COMPLETE" school buildings except for multi-storey constructions which can be programmed as partial construction if there is limited budget. Ocular inspections of the proposed recipient schools; shall be undertaken to assess present site, electrical and water facilities conditions and to determine actual classroom needs as well as the estimated cost/financial requirement; thereof. The features of a "COMPLETE" school building are as follows:

a. cemented floor;

b. smooth finished (plastered) walls;

c. painted walls, ceiling and roofing;

d. full cathedral-type ceiling;

e. complete set of windows;

f. two entrances with doors;

g. complete electrical wires and fixtures (for areas with electrical facility);

h. roofing or weather protection;

i. blackboard; and

j. toilet (optional)

Both the DPWH and DepED shall adopt the DepED standard classroom designs as follows:

1. 7m x 7m classroom design – this is patterned after the Federation of Filipino Chinese Chamber of Commerce and Industries, Inc. (FFCCCII) design to be adopted for schools located in provinces where the classroom-pupil/student ratio is not more than 1:45.

2. 7m x 9m classroom design – this will be used in schools located in semi-urban areas or in urbanizing portions of municipalities such as the poblacion where the classroom-pupil/student ratio is more than 1:45. ALL PUBLIC SECONDARY SCHOOLS WILL ADOPT the 7m x 9m dimension regardless of its class size.

3. 7m x 9m medium-rise school building design – this will be adopted for schools in the National Capital Region (NCR) and in urban or high growth areas or where the school is with limited space/site. At least a 2-storey structure should be planned to be erected.

The evaluation checklist shall be used as guide in monitoring SB projects. (Refer to the Principal-Led SBP Manual).

After rectification/punch listing is completed by the contractor, the Inspectorate Team will recommend proper turnover of the project to the end user.

6. ACCEPTANCE/NON-ACCEPTANCE OF SCHOOL BUILDING

After the warranty period, a post-technical inspection shall be done by the Inspectorate Team composed of the Division PFC, representative from the implementing unit, School Principal/School Head or Shop Teacher and PTCA representative as observer. A Certificate of Acceptance/Non-acceptance shall be used for this purpose.

7. THE SCHOOL BUILDING CARD

The individual school building/structure whether permanent or semi-permanent shall have a School Building Card. This form will be used to fast track the effective recording and ready reference of the School Building Card. All school heads through the assistance of the school property custodian and or the school physical facilities coordinator shall ensure that all buildings, pavilions, stage and similar structures existing and future construction in schools shall be provided each with the individual School Building Card. A school personnel shall prepare three copies for each school building/structure and shall keep updating the entries from time to time. The distribution of the three (3) cards shall be as follows: the first copy shall be retained with the Principal; the second copy for the Division Physical Facilities Coordinator; and the third copy by the Division Supply Officer.

8. IMPROVEMENT AND MAINTENANCE OF SCHOOL BUILDINGS

School building improvement and maintenance are essential aspects of school plant management and require constant attention and careful planning by administrators. The school head shall undertake the maintenance and minor repair of the school buildings using available funds sub-allotted by the Department of Public Works and Highways based on programs of work prepared and approved by the district/city engineer and concurred by the school head.

a. Repair. Repair involves remedial work done on any damaged and deteriorated portion or portions of a building to restore its original condition. Repair jobs are generally common problems. Prompt attention on repair jobs will cut down maintenance cost.

They are classified either as minor or major, as determined by the appraisal team, district/city engineer.

a.1 **Minor repair** is the replacement of the school building components which are not subjected to critical structural loads and stresses and which are estimated to cost less than 10% of the cost of the standard unit, such as repair of windows, doors, partitions and the like. Minor repair keeps a building in fit condition for use without increasing its capacity or otherwise adding to its normal value as an asset.

a.2 **Major repair** is the replacement of school building components which are subjected to critical structural loads and stresses and are estimated to cost 10% or more of the cost of a standard building unit such as repair of roof, frames, posts, exterior walls, etc. Major repair materially increases the value or extend the useful life of the building.

For minor repair work, the school head shall maximize the use of Industrial Arts classes and/or local community labor. Government funded major and minor repair jobs shall be technically supervised by the district/city engineer. Upon the completion of the repair work, the school head shall submit to the district/city engineer a project accomplishment and expenditure report with pictures.

The district/city engineer undertakes by contract or by administration major repair work on the school buildings in accordance with priorities established by the Secretary of Education as translated into funding programs and schedules approved by the President of the Philippines and/or appropriate authorities. For this job, he shall secure the concurrence of the school head concerned on the program of work prior to project implementation, and submit a project completion report once the work is completed.

b. Rehabilitation: The rehabilitation of a school building is intended to put back its original or previous condition and involves a general overhauling or a comprehensive repair of the whole building or a major section of it. A school building which has been blown down by a typhoon or destroyed by an earthquake or a flood may be rehabilitated if the estimated cost of rehabilitation is considered economically practical by the Appraisal Team.

c. Renovation/Restoration: To renovate a school building is to make it appear new again. It involves any physical change made on a building to ensure its value, utility and/or to improve its aesthetic quality. Renovation is applied to old buildings which have weathered the years and remained sturdy, but need some face lifting to restore their original conditions.

Old Spanish school buildings, which can be preserved for historical heritage, shall be repaired/ maintained. They are symbolic of the past and shall be kept for prosperity. Old posts, floors etc., may be replaced, keeping them close to their original architectural design. Gabaldon buildings may be remodeled with the health and safety of pupils/students and teachers in mind.

d. Alteration or Remodelling: The alteration or remodeling of a school building involves major changes in its architectural design and structure. A building maybe remodeled by changing its roof structure or modifying its exterior walls, or re-orienting its interior partitions, or such other alterations.

e. Modernization. The modernization of a school building is intended to update or adapt its existing spaces and facilities such as audio-visual aids (slides, strips, motion films, radio recordings and television). A second generation of mechanical devices used for teaching called "educational technology" is spreading too fast in relation to the life of school buildings being constructed now. The Department has to lend itself to the eventual installation of adaptive teaching machines – computer based, closed circuit TV, language laboratories, etc.

An excess of space and internal provision for flexibility will make changes of the school buildings in use resulting from the introduction of educational technology somewhat easier.

To meet the new trends and developments, it may involve some remodeling such as modifying or converting a Bagong Lipunan School building unit into a Learning Resource Center.

Planning the alterations and/or the expansion of the school building shall be the cooperative endeavor of school administrators, teachers, architects, engineers and parents. Proposed expansion of buildings shall be indicated in the school site development plan. Renovations and expansions of school buildings shall consider the probable increase in population over a certain period of time.

In the case of the multi-purpose workshop building, its utilization and maintenance are prescribed in DECS Order No. 47, s. 1993.

The Bureau of Elementary Education and the Bureau of Secondary Education of the Department have developed and published the Maintenance of School Facilities (1990) as guide for school administrators. The handbook discussed details on maintenance of school facilities such as: (1) General principles of maintenance, (2) Organizing the School Management Maintenance Committee, (3) Preparing the Maintenance Program and the Annual Plan, (4) Performing Maintenance Activities, and (5) Evaluating the School Facilities Maintenance Program. This material can be acquired from the Physical Facilities and Schools Engineering Division (PFSED), Office of Planning Service (OPS).

9. CONDEMNATION AND DEMOLITION OF SCHOOL BUILDINGS

In order to clarify procedures on the condemnation and demolition of school buildings which are perceived to be hazardous, DepED Order No. 48, s. 2000 was issued to contain supplemental guidelines.

As a matter of policy, demolition shall be resorted to only when:

a. the physical structure is beyond reasonable repair;

b. it poses danger to the safety of school children; and

c. the school administration can assure continuity of school operations even when the structure is demolished.

The following constitute the revised guidelines:

a. The school head, through the schools division superintendent, requests for an ocular inspection/ assessment of the school building/ structure to be condemned/demolished from the building official (Municipality/City Engineer's Office or the District Engineer's Office, whoever is available);

b. The building official conducts an inspection/assessment of the building and submits a report/ recommendation thereof to the school officials concerned;

c. The school head requests from the schools division superintendent for authority to demolish the condemned building based on the reports, findings and recommendation of the building official. If the building is insured, the school head shall inform the insurance firm of the plan to demolish the structure;

d. Upon approval, the schools division superintendent, through the regional director, forwards the request to the Central Office for further evaluation. The document shall include, among others, the following:

1. report/recommendation of the building official;
2. photographs of the building to be demolished showing damaged sections;
3. certification issued by the school head that, if the building is demolished, classes need not be disrupted due to lack of classrooms;
4. PTCA or Alumni Association's clearance in case of school buildings with historical value e.g. Gabaldon type school buildings, those which are at least 50 years old, etc., indication of probable funding for replacement.

e. The Regional Office evaluates requests, conducts inspections, if necessary, makes recommendations and issues clearance for demolition;

f. The school head applies for a Demolition Permit from the building official;

g. The school head informs the Office of the Commission on Audit/Resident Auditor and requests clearance/ relief from responsibility so that the structure will be dropped from the account of the school once demolished;

h. As the building official issues the necessary permit, demolition work is conducted;

i. Upon the completion of the demolition, the building official issues a certification that the building has been dropped from the account of the school.

j. Priority shall be given to structures already provided with funds for replacement from various sources and shall be ready for immediate occupancy during the school year.

Finally, as agreed during the Mancom Meeting on December 20, 2000, requests for inspection and demolition of school buildings shall be submitted to the Regional Office for final approval. Only in cases when the Regional Director believes that highly technical evaluation of the proposed demolition is warranted shall the request be endorsed by the Regional Office to the DepED Central Office for final evaluation and approval.

F. TYPES OF SCHOOL BUILDINGS FOR SPECIAL CASES

The Department of Public Works and Highways (DPWH) through the Bureau of Design made a study on developing new methods, materials and designs for modern structures that will incorporate features of strength, flexibility and lower costs. The following new technology in school building construction for special uses are:

1. Iso-Panel or Dura-Quick System

The Iso-Panel or Dura Quick System is a metal cladding with Expanded Polysterene as insulation. The technology can be used for mobile classrooms needed during emergency situation. It can serve as an alternate to the conventional design at lower cost. The favorable acceptance of this new technology is a testament to its efficiency, aesthetic value and reasonable cost, factors which are critical in any major investment such as buildings and facilities.

Materials used in this technology meet the following requirements:

a. The structure shall be all weather type and can withstand gale force wind of up to 220km/'hr (Signal No. 4 Typhoon) and an earthquake magnitude up to 8.5 on the Richter Scale.

b. The structure can be built completely in 10-12 days including foundation and painting finish.

c. The structure shall be fully insulated against heat and sound. Utmost sound protection against noise from heavy rains shall be provided. An insulation of 50 mm styrofoam shall be provided on all walls and ceilings.

d. The structure shall be fully scaled against rainwater intrusion during typhoons. This is to protect sensitive materials or equipments against water damage during heavy rains or typhoons. Doors and windows shall be tight and capable of blocking heavy rains carried by strong lateral wind.

e. All building components shall be lightweight and can be carried and installed manually without the use of cranes.

f. Steel sheet materials for built-up panels shall be 0.45 mm thick. All surfaces (inner and outer surface of built-up panels) shall be factory galvanized (2 coats) and painted (2 coats) prior to building-up.

g. The structural frame shall be made of structural steel I-Beam for beams and columns.

h. All panels are warranted against defects and corrosion for 10 years. Certificate of warranty shall be issued for each structure.
i. Prototypes have been tested in the Philippines for at least 5 years and certified by the school principal where it is located.
j. Plans have been reviewed and approved by DPWH and DepED.

2. Modular Type School Buildings (PGMA School Building)

The modular or PGMA type of school building is fast and easy to construct, with well-ventilated and properly insulated classrooms, lower building cost and with classroom dimension of 8m x 8m. It is advantageous to adopt this building over the 7 x 9 meter classrooms in terms of basic engineering and architectural principles of functionality, stability, aesthetics and economy.

The building having 8 x 8 dimension of classroom is easy to set in any given school site. It is a modular type of school building having one storey to multiple stories and one classroom to multiple classrooms. New/modern technology materials that are easy to transport, less in cost, easy and fast to construct in comparison to the conventional type is being used.

The structural stability of the school building was enhanced by the increase of one (1) meter on the shorter side. For a one classroom school building, the structure resistance against seismic and wind pressure are equal in both direction attributed by the square floor dimension that makes the building more rigid than in a one classroom 7 x 9 building.

For building with multiple storeys and classrooms, the structural design analysis was prepared/reviewed by structural engineers of DPWH employing the latest design technique/procedures on structural stability. The application of this procedure resulted to reduction of the building cost due to modification of sizes of structural components without affecting the structural stability of the building.

The PGMA school building is a product of thorough research and studies by experienced architects with respect to aesthetics. However, aesthetics on building cannot be considered complete by having beautiful shape, comfortable size, and harmonious color combinations, without a favorable temperature conducive to learning. Because of these, the designers provided insulations to protect the occupants from dreadful heat during sunny days. The PGMA school building aims to promote a school building design that is resistant to major earthquakes and strong winds. Under the modular and flexible design using locally produced prefabricated materials, school buildings can be built quickly and is adequate for different climate.

3. Modified Design of School Buildings by the Engineering Brigade

School children are also vulnerable to acts of terrorism (an example of which is the case of pupils taken hostage in the Netherlands several years ago) . Terroristic incidents and their nature of occurrence are so unpredictable that no general precautions on the part of the Department and other government authorities can be recommended.

In areas with insurgency/or peace and order problem, construction of school buildings are undertaken by the Engineering Brigade of the Armed Forces of the Philippines. This is to ensure safety of the engineers, architects, contractors, and specialized materials that this type of work shall be handled by the military.

In the construction of school buildings in schoolless barangays, the Engineering Brigade has designed seven types of school buildings, ranging from the use of wooden materials for areas with abundance of woods, elevated structures for flooded areas, and a combination of steel, iron, concrete or masonry works.

4. The Millennium School Building Design

The Office of Civil Defense in cooperation with the Department of Education, My Shelter Foundation, Department of Public Works and Highways, Habitat for Humanity, and the United Architects of the Philippines came up with a Millennium School Design as a result of the school building design competition all over the world. The winning design is made of bamboo, while the second prize is made of used plastic bags, and the third prize is made of concrete conventional type.

The design competition served as a means of exchange and ensured the widest dissemination of new technologies in the area of learning environment, sustainable, disaster resilient and cost effective school building design.

The Department of Education, through the ABS-CBN Foundation, will construct a prototype of the winning entries and at the same time make a study of the three technologies used in each design and adopt the best design that will be hazard resilient.

5. NGO Constructed School Buildings

The construction of school buildings was also opened/made available to Non-Government Organizations (NGOs) which have the capability and proven track record in the construction of school buildings. One of these is the Federation of Filipino Chinese Chamber of Commerce and Industry, Inc. (FFCCCII) under the “Operation Barrio School Program”. FFCCCII constructs a 7m x 7m classroom design at a much lower cost per classroom through the “Bayanihan System”. Materials such as sand and gravel are obtained through donations from members, and from the LGU counterpart. FFCCCII builds classrooms in lowland or accessible sites and in areas where there are local chapters of FFCCCII.

Chapter 4 | School Furniture, Equipment, and Other Facilities

Furniture and equipment in the schools are objects designed to increase the comfort, convenience, utility and beauty for our pupils/students and students.

Much of these were made by hand, but many machines have been developed to facilitate the learning experience and performance, thereby achieving success in the implementation of the curriculum.

School equipment and furniture shall be planned in relation to the instructional program. The plan shall be flexible to anticipate educational as well as social and technological changes and innovations.

Since comfort is an essential factor in facilitating learning and teaching performance, school furniture shall be designed in accordance with body measurement of the users. Accordingly, it would seem ideal to provide school furniture in a wide variety of sizes to fit body measurement among and between the different age groups of the school population. For example, seat dimensions for pupils/students are determined for age groups corresponding to Grades I to III, and Grades IV to VI. On the other hand, seat dimensions for students are based on the average body measurements of the secondary age groups. Other items of furniture, such as tables, as well as items for storage and display shall be similarly designed, but with particular attention to comfortable limits or reach and convenience.

Equipment is fixed or movable non-consumable property, which has a normal life span of more than two years and, in terms of procurement regulations, exceeds a specified cost level. In the school plant, equipment includes tools, utensils, apparatus, teaching aids and materials, furnishings, instruments, machines and similar property needed for the successful implementation of curricular, co-curricular and administrative functions and processes.

A. SCHOOL SEATS

The importance of good seating cannot be overlooked since the school children usually spend a significant part of their time in school in a sitting position. Good seating is necessary for comfort and good posture and is crucial to the proper physical development of the child.

For this purpose, an anthropometric study was undertaken by the Bureau of Elementary Education and the following are some of its findings, which today are still applicable/acceptable:

a. The children of today are generally taller than their counterpart 30 years ago. A comparison between the 1975 anthropometric study conducted by the then Child and Youth Research Center (CYRC), and the 1990 Anthropometric Study shows that at each age level there is a difference of 32 mm to 50 mm for boys and 8mm to 49 mm for girls.

b. The national mean generally for most body measurements shows an increase in the mean as age increases. The boys at the age of 7 years old are slightly taller than the girls but between the ages of 8 to 12, the girls slowly increase in height. The difference, however, between the mean standing height of boys and girls at certain age level never exceeded 30 mm.

c. The mean standing height of boys and girls almost remain constant. The difference by age level between the regional mean and national norm does not exceed by 35mm.

d. Pupils/students assume varied positions to get the right focal point when doing classroom activities like writing, reading, listening and writing on the board.

In the sitting position, the inner knee height is very important because the height of the seat shall allow the feet of the sitting child to lie flat on the floor. When reading board work or listening to the teacher, the pupil's/student's eyes are focused on the object/person. He holds his head erect and usually rest on the backrest. This makes the height of the chalkboard and the height of the backrest very important in designing school desks/tables and tablet armchairs.

Other body parts that facilitate learning and contribute to proper posture of pupils/students are:

1) standing height

2) sitting height

3) elbow height, and

4) inner knee height

It must be emphasized further that provision for left-handed pupils/students shall be considered, such that at least two (2) armchairs for them are available in each classroom/instructional area.

Good seating is characterized as follows:

a. Seat height shall be constructed that the child's feet are flat on the floor.

b. The backrest provides support to the lumbar region of the child's back.

c. There is a clearance of from three to four inches between the front edge of the seat and the inside angle of the knee.

d. The seat slopes slightly backward.

e. The surface of the desk or table overlaps the seat by three to four inches.

f. There is sufficient leg space between the seat and the underside of the desk or table.

Seat dimensions for good fit are usually determined according to the following specifications:

a. Seat height is equal, more or less, to the lower leg height.

b. Seat depth shall be 50mm short of the upper leg measurement.

c. Seat width shall be reasonably wider than hip width.

d. Backrest height shall be as high as the last lumbar vertebra.

e. Seat inclination may be from three to five degrees.

f. Backrest to seat angle may be from 95 to 115 degrees.

B. SCHOOL TABLES

School tables, such as pupils/students'/students' table, teacher's table, library table, demonstration table, dining table, and conference table are designed according to their use or function.

1. Table height. This is determined in relation to the following requirements:

a. There shall be sufficient clearance between the underside of the tabletop and the seat of the chair to allow comfortable space for the thighs of the seated person.

b. The tabletop shall be level with the elbows of the seated person.

c. For visual comfort, it shall be possible for the seated person to work with his eyes at the near point, that is, the nearest distance at which the eye can be focused without strain.

d. The part-body measurements that are considered in determining table height are elbow height, thigh thickness, and eye height.

2. Tabletop area is determined according to its purpose (Teacher's tables, library tables and others) and the part-body measurements of the person working on it.

a. Comfortable reach forward may be taken sweeping sideways both hands as far forward as possible without touching the near end of the table.

b. Maximum reach forward may be determined by sweeping sideways both hands as far forward as possible while leaning against the table edge.

C. STORAGE and DISPLAY

Furniture for storing and displaying materials, supplies and equipment is as essential as seats and tables in any school. Commonly used in public schools for storage and display purposes are bookcases, cupboards, cabinets, shelves, and divans.

The design and standard measurements of storage and display furniture may be determined according to the following guidelines:

a. The "zone of convenience" shall be considered. According to energy conservation studies, this refers to the area between the lower and upper limits for shelves within which it is convenient to place things on them and beyond which there will be a need to exert greater effort.

b. Total furniture height may be calculated according to the highest point which a child can reach with stretched arm in relation to what he can see from a standing position.

c. The highest shelf shall be not more than 1.2 times higher than the mean height of users.

d. Ordinarily, shelving may be spaced at intervals of 30 centimeters.

D. SCHOOL EQUIPMENT

Educational facilities, which have a normal life span of two to five years, are classified as equipment. The different kinds of school equipment commonly used as prescribed by the Commission on Audit (COA) needed in elementary and secondary schools may be categorized as follows:

EPP/TLE Equipment
(Edukasyon Pangkabuhayan at Pantahanan/Technology Livelihood Education)

- Shop/Industrial Arts Tools
- Home Economics Utensils
- Garden tools

Instructional Tools and Devices

- Science apparatuses
- Playground equipment
- Office equipment
- Mathematics gadgets

Health Equipment

- Medical equipment
- Dental equipment
- Clinic equipment

Emergency/Survival Kit

Every school/office shall be equipped with a Survival Kit consisting of a lightweight bag in red color marked "Safe Ka Ba?" to contain the following:

- Water in soft, plastic container (½ gallon for drinking and ½ gallon for food preparation and cleaning per person, per day). Stock water for at least 3 days' supply.
- Food-lightweight, compact, easy to cook and prepare
  - canned goods (meat, fruit or vegetables)
  - canned/powdered/crystallized juice

- rice/noodles
- canned/powdered milk
- food for those with special diet
- vitamins

- First Aid Kit
  - triangular bandages
  - scissors/blade/needle and thread
  - antiseptic/alcohol/cotton
  - safety pins/tweezors/medicine droppers
  - soap, gloves
  - medicines
    * for fever, headache, body pains
    * for diarrhea/stomach ache
    * for cough
    * eye wash
- Other items
  - garbage cans, plastic sheeting, plastic food containers
  - radio (transistor), batteries/flashlight
  - can opener, knife
  - matches (wrapped in water-proofed material)/lighter
  - toilet paper, small towels (towelletes)
  - sanitary napkins (for ladies)
  - shovel (pala)/plastic pail
  - disinfectant
  - whistle

E. FITTINGS, FIXTURES and FURNISHINGS

Fittings are small accessory parts, often standardized used in a school building such as electrical switches and convenience outlets, doorknobs and the like.

Fixtures are facilities that are fixed or attached to a building as permanent appendages or as a structural part of it, such as plumbing facilities, toilet bowls, lighting fixtures, etc.

Furnishings are articles of furniture or decorations for the interior of a building.

The location of the doorknobs, switches, sockets, convenience outlets, locks and other fixtures and fittings shall be within the reach of the school children. Height of the sinks, lavatories, toilet bowls, urinals and faucets shall be adjusted for children's use. Generally, the proper height of most fittings and fixtures shall be about half of the mean standing height of the children.

F. INSTRUCTIONAL DEVICES

Instructional devices comprise the wide range and variety of educational media and technology such as visual aids, audiovisual aids, teaching aids and devices, and the like, which are indispensable tools for effective teaching and learning. These instructional devices provide the child with various experiences, which make learning more stimulating, meaningful and permanent.

Modern teaching requires the use of varied instructional materials, which are important for clear and vivid presentation of subject matter. Schools shall undertake a systematic collection of these instructional aids in abundance.

The value of audiovisual aids in the improvement of instruction is now widely recognized. Many of these materials can be made in the school or acquired at little or no cost at all, while others can be purchased from allotments for supplies and equipment. The collection of such aids shall be properly classified, indexed and stored to facilitate their use.

Researches also show that the modern educational media especially movies, television shows, video programs, etc. are instrumental in shaping desirable attitudes, beliefs, and values of learners.

1. Types of Instructional Devices. The common types of instructional devices, traditionally known as teaching aids and devices, are: objects and specimens (or realia), models and mock-ups, (globes, dolls, etc.) dioramas, pictures (drawings,

sketches, illustrations, photographs, paintings), posters, graphs, charts and diagrams (maps), flashcards, cartoons, comic strips, chalkboard, bulletin board, sandtable, tackboard, flannel board, magnetic board, electric board, aquarium, terrarium, etc.

a. **Audio Visual Equipment**

The latest types of instructional materials are creations of modern technology, which are utilized as audio visual aids in teaching. Audiovisual aids consist of the machines (or hardware) and their corresponding materials (or software) as follows:

Hardware	Software
Slide projector	Slides
Filmstrip projector	Filmstrips
Slide/Filmstrip projector	Movie camera
	Mini disk
	Memory Stick
Movie projector	Movie films
Overhead projector	Transparencies
Tape recorder	Tape recordings
Radio	Broadcasts
Television	Telecasts/telecine
Video machine, CD, VCD, DVD Player	Videotapes/CD/VCD/ DVD
Computer set	Computer programs
LCD Projector	

MECS Memorandum No. 315, s. 1982 recommends the following audiovisual equipment among the maximum requirements which can relatively be basic for public schools:

Overhead Projector, with wall-type screen	1 set
Slide/filmstrip projector, with built-in Synchronizer, carousel	1 unit
Cassette tape recorder	1 unit
Stereo compact amplifier	1 unit
Digital FM tuner	1 unit
Speaker system	4 units
Microphones	4 units
Blank cassette tapes	1 dozen
Movie projector, 16 mm	1 unit
Tape recorder	1 unit
Projection screen	1 unit

b. **Proper Utilization of Instructional Devices.** Instructional devices are effective when they are properly planned, selected and utilized.

(1) **Planning**
- 1.1 Consider the objectives
- 1.2 Identify the instructional materials needed to supplement existing materials
- 1.3 Produce the needed materials

(2) **Selection** shall be done on the basis of the following:
- 2.1 They shall contribute meaningful content to the topic under study
- 2.2 They shall influence the learner to develop critical thinking.
- 2.3 They shall contribute to the development of good human relations through the inculcation of sound moral and ethical values.
- 2.4 They shall give a true picture of the idea they present.
- 2.5 They shall be attractive.
- 2.6 They shall be appropriate for the age, intelligence and experience of the learner.

2.7 They shall be durable to withstand the test of time.

(3) **Utilization**

3.1 The teacher must be familiar with the different types of instructional devices available in the school and must know the proper techniques of using them.

3.2 The class must be prepared for the use of the instructional devices through proper motivation, clearing up of difficulties, etc.

3.3 The classroom must be set up properly for the use of the instructional devices.

3.4 The instructional devices must be an integral part of the teaching procedures. They are most effective when used in combination.

3.5 The use of instructional devices shall be properly evaluated.

c. **Multi-Media Materials/Equipment**

The following guidelines shall be observed when showing projected materials using multi-media equipment or devices.

a. The screen shall be so placed that its bottom edge is approximately at the eye-level of the seated pupils/students to provide the best vision.

b. The seats shall be arranged within the recommended viewing area, which is a 60-degree angle from the center of the screen.

c. The distance of the front seats from the screen shall be less than twice the width of the screen; that of the last or back row of seats shall not exceed a maximum distance equivalent to six times the width of the screen.

d. Light control, or room darkening, is necessary in the projection of movie films, slides, and filmstrips.

e. The projector shall be placed at such a level that it would project over the heads of the class.

f. The speaker shall be placed near the screen at ear-level of the seated pupils/students and directed at the center of the class.

G. REGULAR CLASSROOM FACILITIES

1. Basic Concepts. The classroom is a contained unit of learning space. To be effective, it must be designed such that spaces and facilities reflect the educational processes and activities that take place in them.

Every classroom shall be suitably structured and decorated to make the surroundings of pupils/students conducive to learning. The materials for structuring and decorating shall be selected on the basis of their educational value providing opportunities for class discussions. Likewise, its cleanliness and orderliness must be maintained, the fact that this is vital aspect contributing to the educational growth of the pupils/students.

2. Standard Facilities. The minimum furniture and equipment requirements for a regular classroom are:

Furniture	Quantity
Tables with 2 chairs with all wood/or non-wood based materials for grades I-IV	25 sets
Tables with 2 chairs with all wood/or non-wood based materials for grades V-VI	25 sets
or Tablet armchairs with all wood/or non-wood based materials for grades V-VI	50 units
Tablet Armchairs with all wood/or non-wood based materials for First to Fourth Year	50 units
Teacher's Table with chair	1 set

Chalkboard, framed, wall type with ledge 4 ft. x 8 feet)	3 units
Teacher's cabinet	1 unit
Hand washing facility	1 unit
Drinking jar/container, with faucet	1 unit
Water pail	1 unit
Divan (with storage space for cleaning materials)	1 unit
Trash can	1 unit
Bulletin board	2 units
Filing/Storage cabinet	1 unit
DepED Forms Rack	1 unit
Utility box	1 unit
Chart stand	1 unit
First Aid Cabinet	1 unit

3. Classroom Structuring. The regular classroom may be ideally structured in the following manner:

a. At the entrance to the room, a signboard is posted, showing the following identification:
(Grade/Year and Section occupying the room)
(Name of teacher handling the class)

b. A framed copy of the class program is displayed on the door to the classroom at adult eye-level.

c. On the front wall (that is, the wall facing the class), the classroom chalkboards, properly framed and provided with chalk ledge and curtains, are installed at a height which is in accordance with the maximum comfortable reach of the children to the top of the board. (The proper height of the chalkboard from the floor to its top-edge is determined by multiplying the mean standing height of the class by the constant 1.2.) This constant is the result of studies conducted on the portion of the standing height to the normal reach of the hand over the head of the individual.)

d. Above the chalkboard, a framed portrait of the President of the Philippines shall be displayed prominently at the center, flanked on one side at a lower level by a framed motto (for the month or week) and on the other side by a framed picture preferably relevant to the motto. In Grades I and II, framed perception strips are displayed along the top edge (or frame) of the chalkboard, while framed conceptualizing strips are displayed along the bottom-edge of the chalk ledge. The bulletin boards and tack boards, as well as charts, may be placed on the walls at the sides or at the back of the room. They shall be placed at the same height as the chalkboards.

e. The attendance chart and the DepED forms rack are placed near the door.

f. The teacher's table, chair and cabinet are located at the rear of the room.

g. One corner of the room is set up as a reading corner. Another corner of the room is set up as a health corner and provided with a first aid or medicine cabinet with mirror, soap dish, towel rack, and hand washing and drinking facilities.

h. The seating arrangement of the pupils/students shall be flexible, depending upon the needs or activities of the class.

DepED Order 118, S. 2009 (dated December 15, 2009) contains the Prescribed List of Science and Mathematics Equipment, Laboratory Glassware and Consumables for All Year Levels of Elementary and Secondary Subjects.

H. HOME ECONOMICS FACILITIES

As the laboratory for Home Economics classes, the Home Economics building is designed as a self-contained Filipino home consisting of the following sections or components:

a. Front porch leading to the entry

b. Sala or living room, furnished with standard sala set, curtains, drapes, appropriate decors, etc.

c. Bedroom, furnished with standard bedroom furniture, beddings, curtains, lamps, etc.

d. Dining room, furnished with standard dining room furniture set, cabinet, etc.

e. Kitchen, furnished with stove, sink, working table(s), shelves, cabinets, etc.

f. Toilet and bath, provided with standard fixtures and furnishings.

g. Storeroom/Pantry, provided with shelves, cabinets, etc.

h. Classroom area, provided with standard classroom facilities.

i. Back porch, serving as exit from the kitchen.

The minimum furniture and equipment requirements for a Home Economics laboratory are as follows:

Dining table with 6 chairs	1 set
Bed, single	1 unit
Teacher's Desk with chair	2 sets
Sala set	1 set
Chalkboard with ledge, portable with stand	1 unit
Pupils/Student Chairs	20 pieces
Work table with bench	1 set
3-Burner Stove	1 unit
Kitchen sink	1 unit
Wash basin (medium size)	1 piece
Kitchen pail (medium)	1 piece
Frying pan (medium)	1 piece
Rice pot (medium, iron)	1 piece
Kitchen knife (medium)	1 piece
Bolo	1 piece
Silverware for 6	1 set
Luncheon set for 4	1 set
Dinner set for 6	1 set
Cup and saucer set for 6	1 set
Drinking glasses for 6 with pitcher	1 set
Can/bottle opener	1 piece
Table cloth with 6 napkins	1 set
Serving tray for 6	1 piece

I. INDUSTRIAL ARTS FACILITIES

As the laboratory for Industrial Arts classes, the Industrial Arts building is designed as a self-contained shop with the following components:

a. Classroom area, provided with standard classroom facilities

b. Work area, provided with workbenches, stools, fixtures, etc.

c. Tool room, provided with cabinets, shelves, rack, etc. for systematic safekeeping of shop tools.

d. Storeroom, for supplies, materials, finished projects, etc.

e. Display area, for exhibiting selected finished projects, announcements, etc.

f. Toilet and Bath provided with standard fixtures and facilities including lavatory.

g. Office, for shop teacher.

The minimum furniture and equipment requirements for a Industrial Arts class are as follows:

Teacher's Desk with chair	2 sets
Pupils/Students Chairs	20 pieces
Work Table with benches	1 unit
Display cabinet (wood)	1 unit
Chalkboard	1 unit
Chisel, wood ¼"	2 pieces
Chisel, wood ½"	2 pieces
Hammer, claw	2 pieces
Pliers, side cutting	1 unit
Plane, Jack	2 pieces
Saw, Cross Cut	2 pieces
Screwdrivers	1 set
Vise, woodworking, rapid acting, 7" jaw	1 unit
Whetstones	2 units
Wrench, adjustable	1 unit

The maximum furniture and equipment requirements for Industrial Arts classes are prescribed in MECS Memorandum No. 179, s. 1992.

J. AGRICULTURAL ARTS FACILITIES

The school garden shall be provided with a garden house and adequate water supply. The garden house shall be designed to include the following components:

a. Classroom area, furnished with standard classroom facilities

b. Tool room, provided with cabinets, shelves, racks, etc. for safekeeping of garden tools.

c. Storeroom for supplies, materials, seeds, products, etc.

d. Display area, for exhibits, announcements, etc.

e. Toilet and Bath provided with standard fixtures and facilities including lavatory.

f. Office, for garden teacher

g. Plant nursery, provided with seed boxes, pots, cans, etc.

The minimum furniture and equipment requirements for Agricultural Arts facilities class are as follows:

Teacher's Table and Chair	2 sets
Demonstration Table	1 unit
Chairs (wood); tablet wood/metal	20 pieces
Chalkboard, framed, with stand	2 units
Teacher's aparador	1 unit
Storage cabinets	2 units
Bulletin Board wall-type	1 unit
Drinking and Washing Facilities	1 unit
Folding Shovel	1 unit
Hay Fork	1 unit
Post Hole Digger	1 unit
Wrecking Bar	1 unit
Knapsack Sprayer	1 unit
Budding Knife	1 unit
Pull-push rule	1 unit
Axe (secondary only)	1 unit

The minimum and maximum furniture and equipment requirements for Elementary Agriculture classes are prescribed in MECS Memorandum No. 315, s. 1982 and DECS Memorandum No. 179, s. 1992.

For the minimum tools and equipment standards for technical-vocational public high schools, refer to DepED Order No. 73, s. 2009 dated July 14, 2009 .

K. LIBRARY FACILITIES

1. School Library. Every elementary/secondary school with enrolment of 500 pupils/students and above shall have a school library, primarily for the use of pupils/students and teachers, and possibly by the community. It shall be situated in a quiet and pleasant surrounding and shall be more accessible to intermediate and secondary classes, which are expected to make greater use of it. It must be manned by a teacher trained in modern school library methods.

A well-equipped and well-furnished library is an essential component of school learning facilities.

The space requirement for a school library shall be determined on the basis of a minimum standard of 2.40 square meters per place. The total number of books required is recommended at a minimum of five (5) books per pupil/student.

The school library shall contain the following:

a. An adequate number of library books per pupil/student, 85% of which shall be in the media of instruction (either English or Filipino)

b. An adequate number or sets of supplementary readers in Filipino and English for each grade/year, and in the vernacular for Grade II and above, if available.

c. An adequate number of general reference books including:
   - c.1 Standard dictionary
   - c.2 Collegiate dictionary
   - c.3 Standard Atlas and Almanac
   - c.4 Encyclopedia or cyclopedia

d. Subscription for:
   - d.1 Any current news periodical
   - d.2 Magazines in Filipino, English and in the vernacular

e. For teachers' references, adequate subscriptions for professional magazines or journals, and professional books of recent edition in the different areas.

A reading area is an essential component of the school library. The space requirement for a reading area shall be determined on the basis of a minimum standard of 1.20 square meters per place, the total area to accommodate at least 40 pupils/students at a time. The characteristics of a good reading area are as follows:

a. It is an attractive place with an informal atmosphere.

b. It is cozy and comfortable place for work and study.

c. Chairs and tables are comfortably adjusted to the pupils'/students' sizes.

d. The color schemes of the area fit the children's concepts.

e. Natural and artificial lighting meets the reader's needs.

f. Murals and works of art contribute to the pleasure of the occupants.

g. Books and other reading materials are easily accessible.

h. Newspapers and periodicals are displayed in racks or holders to invite their use.

i. Displays are adjusted to the heights of children and museum cases are located where their contents are readily visible.

j. Ventilation and thermal control contribute to the comfort of the readers.

The library shelves shall be scaled in height and depth to the children's part-body measurements. Total height of shelves shall not exceed 5-1/2 feet in elementary school libraries; in the primary grades classroom library, the shelves shall not be more than 3 to 4 feet high, the usual dimensions of a shelf are 7/8 inch thick, 8 inches deep, and 3 feet long; however, some shelves 10 to 12 inches wide are needed for large illustrated books. Shelves shall be built-in or free standing. If free standing, shelves should be strapped to the wall as these may topple down during an earthquake (Mylene Villegas, PHIVOLCS).

The following allocation of shelves sizes is suggested:

80%	8-inch shelves
10%	10-inch shelves
10%	12-inch shelves

Shelves shall be built-in or free standing. They shall be designed so as to prevent tipping. They shall be adjustable. Bottom shelf shall be tilted back to allow easier reading of book titles.

2. The basic equipment requirements for a school library are: library tables, library chairs, bookshelves, book cases, newspaper racks, magazine racks, librarian's table and chair. It shall also be furnished with the following special equipment: librarian's charging desk, card catalog cabinets, and large cabinets for charts, diagrams, photographs, and pictures, storage cabinets for rolled maps, curriculum files and picture files.

3. Classroom Library. The classroom library, as an extension of the school library, shall supplement and stimulate further use of the latter, but never to replace it. The number of books in the classroom library collection may be a minimum of 50 books and a maximum of 100 books, to be replenished from the school library from time to time. It shall include a collection of picture books, magazines, newspapers, and picture files in keeping with the needs of the class.

4. Teacher's ProfessionaL Library. A teacher's professional library may be set up as a part of the school library with a space of its own. The main bulk of the library collection shall be funded by the school and further enriched through donations from among the teachers themselves on a cooperative basis, as well as from outside sources.

5. Learning Resource Center (LRC). The Learning Resource Center represents a current trend in the management of instructional facilities, which involves the integration of audio-visual center, science room, social studies room, the planetarium and all instructional materials both print and non-print.

The integration of all instructional facilities of a school under the LRC is aimed at systematizing, facilitating, and optimizing their utilization. The LRC, with all the instructional resources of a school integrated under a single management, is expected to help meet more efficiently the increasing need for the further enrichment of the school program. Through it, the school may be able to extend the range of its educational services to the community more effectively for both formal and non-formal education activities. Where both library and LRC exist separately in one school, both shall be developed and utilized since the services of each do not conflict with the other.

The components of a Learning Resource Center are as follows:

a. Library area (including room). Usually this area is provided with individual cubicles for effective desk research, creative writing, etc.

b. Audiovisual room (provided with facilities for viewing slides, filmstrips, movie films; for recording or listening to recordings, broadcasts, and telecasts videotapes; for a central sound system, etc.)

c. Science area (including a mini-laboratory furnished with basic science laboratory kits, collections of specimens, models, charts, etc.)

d. Social studies/Makabayan area (including a mini-museum and collections of maps, globes and atlases, etc.)
e. Display area (for exhibits and announcements, etc.)

f. Instructional Material Development Area (provided with facilities for working on projects, teaching aids, etc.)
g. Study area (provided with facilities for individual study and group or committee meetings, etc.)

h. Play area (furnished with facilities for intellectual or educational games and recreation, such as solving puzzles, playing chess, building toy blocks, etc.)

i. Planetarium, this may occupy a portion of the ceiling. It shows the various constellations, their positions, etc.

j. Terrarium – an enclosed planting apparatus with glass sides and glass top planted to tropical plants such as begonias, aglonaema, ferns, etc. used as decoration, scientific observation or plant propagation.

k. Dish Garden, is a small type of garden planted in a dish/flat pot. It can be part of the income-generating project of the school.

l. Plant site area. The school garden, the herbarium are very much part and parcel of the Learning Resource Center.

m. Multi-purpose area, this may serve as a venue for group meetings.

The ideal internal space requirement for the LRC may be determined on the basis of a minimum standard of 2.4 square meters per place. A school building, may be utilized for the purpose of the LRC: One or two standard classrooms for a school with 6 to 12 classes. One building unit of 3 classrooms for a school with 12 to 20 classes or more.

L. SANITARY FACILITIES

1. Importance. As the teaching of sanitation and good health habits is an integral part of the school program, it is important that public schools shall be provided with sanitary facilities that satisfy sanitary requirements as well as meet educational needs.

2. Toilet Facilities. Every school is required to have toilet facilities within the school premises preferably with the toilet for boys and that for girls located far apart.

The following standards as to number of toilet seats, urinals, and lavatories are suggested:

Boys' urinal
1 detached urinal per 50 pupils/students, or 1.00m urinal trough per 100 pupils/students

Boys' toilet seat (water closet)
1 seat per 100 pupils/students
1 seat designed for disabled pupils/students (BP 344)

Girl's toilet seat (water closet)
1 seat per 50 pupils/students
1 seat designed for disabled pupils/students (BP 344)

Lavatory – 1 lavatory to 1 toilet seat

3. Toilet fixtures and materials shall be carefully selected and properly installed to ensure minimum maintenance and maximum utilization and durability. Toilet facilities for the Home Economics building, shop, garden house, office, etc., are to be provided on a smaller scale than those prescribed above, usually a single bath and toilet room in each case. Where practicable and feasible, it would be desirable to have a toilet room for each classroom, if water supply is sufficient.

4. Hand Washing Facilities. Group hand washing facility shall, if possible be provided proximate to the playground, gardens, school canteens and toilets. Minimum standard capacity of two faucets for every 100 pupils/students is recommended. Proper drainage shall be provided.

Please refer to DepED Order Nos. 56 and 66, s. 2009 on the construction of handwashing facilities in all schools.

5. Drinking Facilities. A potable water supply shall be available in the school premises. Drinking facilities shall be provided on the basis of one faucet or fountain for every 75 pupils/students. Height of faucet or nozzle shall be adjusted to the mean heights of the pupils/students.

6. Water System and Wastewater Disposal Stystem. Pursuant to Section 902-904 of the National Building Code the following is quoted in Section 4.1 Water System and Wastewater Disposal System (p. 29 Chapter I). The provisions however do not explicitly mention the following, which directly contribute to disaster risk reduction and therefore can follow as:

a. The school shall provide rainwater catchment systems wherever and whenever applicable to supply water for drinking, hygiene and sanitation practices during emergencies. The system tank can also serve as water storage reservoir during normal times (Edgar Viterbo, Plan Philippines).

b. Standby sewer line and water supply line shall be accessible in the designated evacuation center area of the school premise (Edgar Viterbo, Plan Philippines).

M. PLAYGROUND FACILITIES

1. Playground areas shall be considered together with classrooms as learning environment for educational growth. They shall be developed and planned extensively not only for the sole purpose of an improved physical education program but also for the use of pupils/students and teachers in all other educational activities.

Basic Sports/Playground Facilities

1. Volleyball Court
2. Softball Diamond
3. Baseball Diamond
4. Jumping Pit
5. A standard track oval with a distance of 400 meters or less
6. Basketball Court
7. Gymnastics Floor Area
8. Football Field
9. Swimming Pool
10. Taekwondo
11. Archery
12. Boxing
13. Dart
14. Arnis
15. Sipa
16. Sepak Takraw
17. Badminton
18. Table tennis

Basic Equipment for Locomotor Skills Development and Introductory Sports Skill Acquisition

1. Drawing Stick (Wand)
2. Rattan Hoop
3. Bean Bag
4. Bench
5. Rope
6. Whistles
7. Colored Chalk
8. Tape Measure
9. Hurdles
10. Dama Set
11. Jigsaw Puzzle
12. Chess Set
13. Tape recorder set and set of tapes of music of different time signature
14. Scrabble Set
15. Balance Beam
16. Sungkaan
17. Chinese Checker Set
18. Stop Watch
19. Horizontal Ladder

In planning and developing playground areas, provisions shall be considered for their use by the community as well as for recreation purposes during off-school hours. Trends in physical education programs require more space as well as greater variety of space designs for playground areas. Spontaneous play shall be emphasized to a greater degree than the more formal exercise, such as calisthenics, marching and other drills.

2. Space Components. Playground areas shall include any or all of the following space components:

a. Open grass areas for group games and other group activities.

b. Paved areas for court games, circle games, hopscotch "piko", dancing and other games as well as simple activities requiring marching.

c. Equipment areas where the different types of playground apparatuses are provided for developing or improving muscular coordination.

Generally, it is desirable to provide separate areas and facilities for the younger children to minimize conflict between their simple activities and those of the upper grade levels. Suitable buffer zones shall be provided between the different space components.

3. Playground Equipments. The equipment area shall be provided with the following playground apparatuses, among others;

Slides (8 ft. high)
Swings (10 ft. frame)
Seesaws (20 inch fulcrum)
Chinning bars
Climbing Structures
Horizontal Ladder (7 ft. high)
Others

Portable types of playground apparatuses may also be provided, such as outdoor blocks, wheel toys, barrels and board, outdoor game materials, etc.

N. ATHLETIC FACILITIES

1. Educational Aspect. Physical training must be given a regular place in the school program. School children in all levels shall be required to participate in organized games and athletics.

2. Basic Requirements. The following athletic equipment/supplies are recommended as basic requirements for the school athletic program:

Baseball set (consisting of balls, bats, catcher's mitt, catcher's mask, catcher's body protector, basement's mitts, fielders' gloves, base plates, etc.)
Softball set (consisting of balls, bats, mitts, masks, protectors, base plates, etc.)
Basketball set (consisting of balls, goal rings with nets, etc.)
Volleyball set (consisting of balls, nets, etc.)
Soccer football set (consisting of balls, nets, etc.)
Table tennis set (consisting of table, net, balls, rackets, etc.)
Lawn tennis set (consisting of table, net, balls, rackets, etc.)
Javelin (for boys and girls)
Discus (for boys and girls)
Shot Put (for boys and girls)
Vaulting pole
Vaulting Box
Hurdles (10 units per lane)
Stop watches
Tape measure
Spiked Shoes
Badminton set (consisting of rackets, shuttlecocks, nets)
Sepak Takraw (Sipa balls)
Rings
Sack
Coco Stilts
Bamboo Stilts
Baton

Arnis
Clapper
Parallel Bars
Gymnastics Mats

For athletic field requirements, the allocations for external space shall allow adequate provision for the laying out of the following basic components, among others:

a. A standard oval track with a distance of 400 meters

b. A baseball diamond with sides measuring 27.4 meters (90 feet long)

c. A softball diamond with sides measuring 18.2 meters (60 feet long)

d. A soccer football field measuring 90-120 meters (100-130 yards) long and 45-90 meters (50-120 meters (100-130 yards) long and 45-90 meters (50-100 yards) wide.

e. A basketball court, which shall be a flat, hard (not grass) surface measuring 26 x 14 meters (85 x 46 feet).

f. A volleyball court measuring 23.77 meters long and 8.23 meters wide (73 x 27 feet), which is standard for singles. For doubles, a wider court is used, 10.97 meters (36 feet) wide.

g. Perimeter space shall also be provided for the construction of a grandstand and bleachers.

O. ADMINISTRATIVE FACILITIES

The fundamental function of the administrative office is to serve. It shall be planned to feature openness and ease of access for teachers, school children and the public. The administrative office shall be pleasant and attractive in design reflecting the spirit of a friendly and helpful atmosphere. The operation of the administrative office shall provide school children, teachers, and parents opportunities for active participation in the democratic processes.

The size and dimension of administrative space requirements may be determined on the basis of a minimum standard of 5 square meters per person and an air space requirement of 12.00 cubic meters per occupant person.

The allocation of administrative space shall include the following components:

School administrator's office
Receiving area
Working area for the office staff
Supply storeroom
Conference room
Teacher's room
Production room (mimeographing, graphics, etc.)
Toilet and bath

The different spaces or components of the administrative area shall be laid out in proper operational relationship with each other. Arrangement and placement of office furniture and equipment such as tables, chairs, cabinets, shelves, typewriters/computers, photocopying machines, bulletin boards, etc. shall be carefully and systematically planned to achieve maximum efficiency. The following information/EMIS records and materials shall constitute part of structuring the office.

Hazard Map of the Philippines
Map of the Locality (where the school is situated)
School Site Development Plan
Consolidated Calendar of Activities
Master Program (all classes, all teachers)
Organizational Chart
Graphs regarding performance indicators
Files of circulars, memoranda, bulletins, etc.
Pictorials of activities
Locator Board

P. FACILITIES FOR ANCILLARY SERVICES

1. School Health Clinic. A school health clinic is one of the essential facilities of every school. It shall be located adjacent to the administrative area, if possible. Depending upon the size of the school and the availability of internal space, the school health clinic shall include spaces for first aid treatment, dental services, waiting room, dressing room, and rest room for students who may not be feeling well.

A duly trained first aid teacher shall be assigned to take charge of the school clinic in addition to her regular class work. Usually, the school health clinic is the place where the visiting school physician, school dentist and school nurse conduct their annual health examination and treatment of the school children/students.

The school health clinic shall be furnished with the following basic facilities:

Bed/cot (preferably the reclining type)
Weighing scale
Apparatus for measuring height
Thermometer
Medical supplies
Cabinet
Eye-testing apparatus
Mirror
Sink or lavatory
First aid equipment and supplies
Standard office equipment (table, chairs, stools, trash can, etc.)
Nebulizer
Sphygmomanometer/stethoscope

2. Guidance and Counselling. The organization of pupil/student guidance and counselling services is an administrative function that cannot be dispensed with, especially in the modern community school. For the purpose of the school guidance and counselling program, a guidance room shall be set aside and located, if possible, adjacent to the administrative area. The guidance center shall include separate enclosed spaces for conducting individual counselling, testing, storage of school children's records, etc.

Among the basic facilities that shall be provided in the school guidance center, the following are suggested:

Instruments and devices for testing, diagnosing, measuring aptitudes, intelligence, etc.
Various literature, reference materials, instructions, etc., about guidance and counselling.
Standard office equipment (tables, chairs, cabinets, etc.)

Q. SPECIAL EDUCATION FACILITIES

The special education program of the Department of Education aims to meet the special needs of exceptional/ differently abled students in connection with their education and training.

Special education is carried out by special education teachers who are especially trained to teach children with exceptional needs. Special education classes require special facilities.

Minimum Furniture/Equipment/Material Requirement for Special Education

For a class of 7 to 10 pupils/students with visual impairment:

Facilities	Quantity
Braille slates and stylus	10 sets
Braillewriter	1 unit
Tape recorder and tapes	2 units
Cubarithmic, Arithmetic slate with types	10 sets
Abacus	10 units
Geometric figures	4 sets
Aluminum rule	10 pcs.

Raised line drawing kit	10 sets
Compass	10 pcs.
Braille Protractors	10 pcs.
Algebra frame	10 pcs.
Graphic board	10 pcs.
Braille clock	1 unit
Embossed maps	1 set
Embossed globe	1 unit
Geometric Surface of solids	3 sets
Sense-training materials (sound, tactile, olfactory, kinetic)	1 set
Radio	1 set
Science Modules	1 set
Hand Tools	2 sets
Garden Tools	2 sets
Spur Wheel/Tracer	10 units
Bookcase/Shelves	1 unit
Braille Paper	as many as needed
Teacher's desk and chair	1 set
Tablet-chairs	10 units
Braille Textbooks	10 copies
Puzzles	several
White Cane	10 units
Adapted P.E. Apparatus	1 set

For one pupil/student with Low Vision who is into a class:

Facilities	Quantity
Large Print Typewriter	1 unit
Magnifier	1 unit
Bookstand	1 unit
Special Map	1 copy
Large Print Textbook	1 copy
Grade I pad paper	1 pad

For a class of 7 to 15 pupils/students with Hearing Impairment:

Facilities	Quantity
Pupils/students'/Students' semicircular tables	3 pcs.
Pupils/students'/Students' Chairs	15 pcs.
Teacher's Table and Chairs	1 set
Aparador	4 pcs.
Chalkboards	4 pcs.
Bulletin Board	1 pc.
Flannel Board	1 pc.
Wall Mirror (life size)	1 pc.
Steel Cabinet	2 units
Charts/pictures/puppets	several
Chart Stand	1 unit
Demonstration Table (for visual aids)	1 unit
Speech Trainer	1 set
Group Hearing Aid	1 set
Tape recorder/cassette, with tapes	1 unit
Auditory Training Equipment	1 set
Special Kit containing feathers, balloons, small spatula, teaspoon, drinking glass, small mirror and cotton pledgets	1 kit
Textbooks	15 copies
Workbooks	1 copy

Teacher's Guide	1 copy
Adapted P.E. Apparatuses especially for balancing. Materials for developing vocational skills (sewing, craft, workshop, globe/maps, basic science kits)	1 set

For a class of 8 to 15 pupils/students with Mental Retardation:

Facilities	Quantity
Students' Desk and Chairs	15 sets
Teacher's Table and Chair	1 set
Aparador	1 unit
chalkboard	4 pcs.
Wooden Hollow Blocks	6 sets
Miniature Household Appliances (such as stove, refrigerator, sink, cupboard, ironing board)	4 sets
Stuffed Toy Animals (local)	8 pcs.
Open Shelves (for toys & books)	1 unit
Cabinet with lockers	1 unit
Aquarium	1 unit
Sandtable	1 unit
Radio/Cassette, with tapes	1 unit
Adapted physical education apparatuses	1 set
Textbooks	15 copies
Workbooks	15 copies
Teacher's Guide	1 copy
Materials for developing vocational skills (sewing, craft, workshop, basic science kits)	1 set

For a Class of 10 to 15 pupils/students with Orthopedic Handicaps:

Facilities	Quantity
Adjustable Desks	15 units
Teacher's table and chair	1 set
Aparador	1 unit
Chalkboard	4 pcs.
Felt Board	1 pc.
Cassette Tape Recorder, with tapes	2 units
Typewriter (ordinary)	1 unit
Adapted physical education apparatuses	1 unit
Number Board/Chart	1 unit
Mirror	2 pcs.
Materials for developing vocational skills (sewing, craft, workshop, globe/maps, basic science skills)	1 set

R. SCHOOL LUNCH COUNTER (SCHOOL CANTEEN)

One of the important facilities that shall be available in school is a very decent school lunch counter, also known as the school lunchroom, school canteen or nutrition center. This serves as the center for feeding. For details on the management and maintenance of school canteen, refer to DepED Order Nos. 8, s.2007.

1. The basic components of a school canteen may be as follows:

a. **Dining space** – The dining space shall be a clean, quiet and an attractive space with an inviting color scheme and decors, and with adequate lighting and proper ventilation. The size of the dining space is determined by the maximum number of pupils/students to be served at one sitting on the basis on the minimum standard of

1.4 square meters per person. It shall be furnished with the necessary tables and chairs. Hand washing facilities shall be provided at the entrance of the dining space.

b. **Service counter** – The service counter shall be properly located to facilitate the systematic serving of food. It shall not be over 30 inches high. The counter shall have ventilation to assure rapid dissipation of odors. Health regulations require that a glass plate shall be installed in front of each serving counter to protect food from the breaths of those lining up for food serving. The glass plate may be placed several inches above the top of the counter so that there will be space under the glass for passing plates of food. The design of the service counter shall provide space for storage of dishes under the counter.

c. **Kitchen** – The kitchen space shall include the following areas: food preparation area, cooking area, cleaning area, and storage area.

S. MEETING STANDARDS FOR SCHOOL FACILITIES

The Bureau of Elementary Education, in order to effect a more rational program of equipping schools, issued MECS Memorandum No. 315, s. 1982, 144, s. 1984 and No. 179, s. 1992. The former contains a list of basic furniture and equipment required in every classroom of public elementary schools. The list serves as a basis for determining future procurement programs, specifically items which have to be purchased to meet the minimum standards. Memorandum No. 144 specifies measures and procedures to be followed by school administrators and teachers to carry out a rationalized and phased acquisition program until the standards are met.

Moreover, in the light of recent developments the PFSED considered R.A. 7880 otherwise known as “Fair and Equitable Allocation of DECS’ Budget for Capital Outlay”, R. A. 9184 also known as “Government Procurement Reform Act”, R.A. 9155, otherwise known as “Governance of Basic Education Act”, as well as the Basic Education Information System (BEIS) in the preparation of this manual.

The management of educational facilities is an essential aspect of school administration. It shall assume both leadership and service functions. Proper management develops leadership, stimulates and appreciates creative or innovative efforts and facilitates service for its clientele.

To be effective, educational facilities management shall be democratic in terms of relationship with the teachers, the pupils/students and the communities since these educational facilities are also venues for neighborhood-scaled community activities, meaningful civic participation and engagement at the local level.

Educational facilities which include school grounds/site, classrooms/school buildings, furniture, instructional tools and equipment are under the management of school authorities per Republic Act 9155, otherwise known as the "Governance of Basic Education Act".

A. MANAGEMENT AND ADMINISTRATIVE CONTROLS

1. Function of Stakeholders

a. **Physical Facilities and Schools Engineering Division (PFSED)**

The management and administrative control of educational facilities in the Department of Education are incumbent upon the Secretary of Education, through the Physical Facilities and Schools Engineering Division (PFSED). PFSED is concerned primarily with such staff functions as the formulation of policies, the setting up of standards, and the issuance of regulations and guidelines governing school facilities all over the country.

The PFSED carries out the following specific functions:

1. Formulate policies, plans, guidelines and standards relative to the school building program (SBP), school building repair and maintenance (SBRM), school furniture, and school mapping exercise (SME);

2. Prepare designs, plans and cost estimates for all facilities, including school furniture;

3. Conduct researches and studies on new technologies for school building construction and furniture;

4. Monitor the implementation of infrastructure projects as well as the repair, rehabilitation or maintenance of educational facilities, evaluate progress of work, and ensure that all specifications are followed;

5. Evaluate requests for repair, rehabilitation and maintenance of educational facilities and submit appropriate recommendations;

6. Give technical specifications of materials to be used in the construction, repair, maintenance of educational facilities to the Procurement Service;

7. Provide assistance in the conduct of technical evaluation of bids for infrastructure projects and school furniture;

8. Inspect delivered infrastructure projects and school furniture;

9. Develop and maintain an information system which will include data about physical facilities and structures and geographical information concerning the location of the school and its access to services;

10. Provide information to government and private sectors on matters pertaining to educational facilities; and

11. Perform other related functions.

b. **Regional Director.** Consistent with the national educational policies, plans and standards pursuant to RA 9155, the administrative functions of the Regional Director with regards to educational facilities are as follows:

1. Plans and manages the effective and efficient use of all physical and fiscal resources of the regional office, development and establishment of procedures in monitoring and supervision of divisions/schools;

2. Exercises overall administrative control over all public elementary and secondary schools facilities throughout the region;

3. Provides guidelines to the administrator of each school with regards to the care and maintenance of the educational facilities and all school property in it; and

4. Prescribes rules of hygiene and orderliness to be observed in all public elementary and secondary school facilities in the region.

c. **Schools Division/City Schools Superintendent.** The Schools Division/City Schools Superintendent exercises the following management and administrative control over the educational facilities in the Division:

1. Plans and manages the effective and efficient performance of all physical and fiscal resources of the division including professional staff development;

2. Exercises general superintendence over all public elementary and secondary school facilities within the division;

3. Examines the school buildings occupied for public instruction within the division with a view to determining their suitability and hygiene condition; and

4. Exercises control over the use of all provincial and municipal school buildings and grounds in the division.

d. **District Supervisor.** Under RA 9155, the School District Supervisor shall be responsible for:

1. Providing professional and instructional advice and support to the School Heads and Teachers/Facilitators of schools and learning centers in the district or cluster thereof;

2. Curricular supervision; and

3. Performing such other functions as may be assigned by proper authorities.

e. **Principal/School Head.** Administrative control over elementary and secondary school plants exercised by the school principals/school heads are as follows:

1. Defines the educational objectives and physical resources;

2. Plans and supervises over the construction of school buildings;

3. Works out the acquisition, survey and registration/titling of school sites;

4. Inspects the public elementary and secondary schools under his charge, evaluates/assesses their condition, and makes appropriate reports and recommendations to the schools division superintendent;

5. Plans and carries out a rationalized acquisition program to meet standard requirements;

6. Oversees the maintenance, beautification and sanitation of the educational facilities of the school plant;

7. Recommends opening of new schools and annexes, renaming of schools, as well as closure of schools, in accordance with respective guidelines set for the purpose;

8. Creates an environment within the school that is conducive to teaching and learning;

9. Develops the school education program and school improvement plan; and

10. Administers physical and fiscal resources of the school.

f. The Role of **Regional/Division Physical Facilities Coordinators** as embodied in DECS Order No. 41, s. 1997 (Creating an ADHOC Physical Facilities Unit in the DECS Regional and Division Offices) are as follows:

1. Prepares an integral plan relative to physical facilities;

2. Monitors the implementation of school facilities programs and projects;

3. Prepares periodic reports relative to the status of implementation of programs and projects on physical facilities;

4. Provides technical assistance to regional/division and school levels and liaising with other offices and other agencies at the sub-regional level;

5. Programs and conducts training programs as may be necessary on the management of physical facilities; and

6. Maintains an updated and workable Management Information System (MIS) in the formulation of programs and projects in decision making.

g. **Other groups** involved in management and administrative control of educational facilities are as follows:

1. School Governing Council

2. Parent-Teachers Community Association

3. Local School Board

4. Other stakeholders

B. GUIDELINES ON THE ESTABLISHMENT, SEPARATION OF ANNEXES, INTEGRATION, CONVERSION AND NAMING/RENAMING OF PUBLIC ELEMENTARY AND SECONDARY SCHOOLS

(See DepED Order No. 71, s. 2003)

New elementary and secondary schools may be established in the community based on existing school mapping and on the needs of the locality.

1. Requirements in Establishing New Schools

The following are the requirements for the establishment of a new elementary/secondary school.

1. Data on possible enrolment;

2. Suitable school site with proof of ownership; and

3. Temporary school buildings and furniture.

2. General Procedures in Establishing New Schools

The procedure involved in establishing new schools as follows:

1. Submission of resolution from the community (e.g. PTCA, LGU, School Board, etc.);

2. Submission of Feasibility Study/Data of proposed school; and

3. Endorsement from the school heads through channels.

General Procedures

1. All requests and applications for establishment of new schools, separation of annexes, integration and

conversion and renaming of schools shall be submitted to the Schools Division Superintendent/City Schools Superintendent (SDS/CSS), for evaluation.

2. The application and its supporting documents shall be reviewed and evaluated by the Division Review and Evaluation Committee (DREC) of the Schools Division concerned, in accordance with the provisions of this Order. The SDS/CSS shall head the DREC, co-chaired by the ASDS, and one (1) Education Supervisor I and the Division Administrative Officer, as members.

3. If the requirements have been satisfied, the SDS/CSS shall indorse the application for approval to the Office of the Regional Director (Attn: Assistant Regional Director).

4. The documents shall be reviewed and validated by the Inspectorate Team (I-Team), created by the Regional Director. The I-Team shall conduct ocular inspection and/or interview local stakeholders to establish the real and urgent need of the school and validate the inspection report of the team.

5. The Assistant Regional Director shall chair the I-Team with the Chief of the Elementary/Secondary Education Division as co-chair, and two (2) Education Supervisor II, as members.

6. When required standards have been met, the Regional Director shall issue the approval, copy furnished the Office of the Secretary, Office of Planning Service – Research and Statistics Division, Financial Management Service, and the Bureau of Elementary Education, (in the case of public elementary schools); or the Bureau of Secondary Education, (in the case of public secondary schools).

7. If action on the application is withheld pending compliance with certain requirements, the I-Team shall return the request to the Division Office, for appropriate action.

3. Specific Procedures

1. **Establishment of New Schools**

a. The school head shall conduct a feasibility study to justify the establishment of the school. The study shall (i) show on the map the elementary schools within the service area of the proposed secondary school; (ii) list the names, addresses and enrolment of public and private schools in the municipality; (iii) list the names of the 100 prospective enrolees for the first curriculum grade/year, except in the school-less barangays where a minimum enrolment of 60 pupils/students will suffice, in multi-grade schools where a minimum of 15 shall be allowed, and special education centers where a minimum of three (3) types of children shall warrant, as justified by the Schools Division Superintendent, otherwise the pupils/students shall be encouraged to enrol in the nearest school; (iv) show the school site plan with technical specifications; and (v) certification that the school to be established is not within the 2 km radius of any existing public/private school. However this may be waived when the nearby existing private and public school cannot accommodate students seeking admission or which charge fees parents cannot afford.

b. The feasibility study shall also include the availability of student places in the private schools participating in the Government Assistance to Students and Teachers in Private Education (GASTPE). Enrolment in such schools shall be encouraged rather than the establishment of new schools, except if there is no existing public secondary school in the said place.

c. The application must be supported by a certification on the existence and availability of a school site of at least one (1) hectare duly documented as DepED property through a title of Deed of Donation or a Contract of Usufruct in favor of DepED. The required one (1) hectare school site may be lessened, with strong justification, to one half (1/2) hectare in urban or city divisions.

d. In addition to the other requirements of DECS Order No. 5, s. 1989, there shall be a Memorandum of Agreement (MOA) by and between the Department of Education, represented by the Schools Division/City Schools Superintendent (SDS/CSS) and the Local Government Unit (LGU) represented by the Municipal Mayor or the Provincial Governor, as the case may be, that will include, among others, the following provisions:

d.1 The LGU shall provide funds for the operation and maintenance of the new school for at least five (5) years or until such time when funds for the said purpose are incorporated in the national budget. The LGU shall also fund the construction of the new school building(s) and facilities, and provide the new classrooms with furniture, equipment, and textbooks.

d.2 The teachers to be funded by the LGU shall be paid at rates equal to those of nationally paid teachers or at rates approved by the Local School Board.
d.3 A status report by the school head shall be submitted to the Regional Office through the Schools Division/City Superintendent at the end of each year.

e. The MOA shall form part of the supporting documents to be submitted to the Regional Director.

f. In the fourth year of implementation, the budget of the school shall be processed for integration into the regional/national budget and then to the General Appropriations Act (GAA).

g. A status report and the legal basis of the establishment of the school shall be submitted to the Financial Management Service of the Central Office as supporting documents to the application of the school for integration into the GAA.

2. **Separation of Annexes**

a. The mother/main school, represented by the School Principal and the Annex represented by the Teacher-In-Charge (TIC) shall enter into a Memorandum of Agreement (MOA) transferring responsibility and accountability for all existing resources, e.g. budget, teachers and facilities, from the mother/main school to the annex and providing continued support from the mother school until such time when the school's funding is integrated in the GAA.

b. A copy of the MOA shall be submitted to the Regional Office of the Department of Budget and Management for information and appropriate action.

c. The application of the annex for separation shall be supported by the following documents:
c.1 The Secretary's approval of its establishment as an annex;
c.2 MOA between the mother school and the annex;
c.3 Title of school site or Deed of Donation in favor of DepED;
c.4 Copy of budget of the Annex from the mother school;
c.5 Inventory of facilities, furniture, equipment, textbooks in all the subject areas; and
c.6 Plantilla of personnel including proposal for the item of Principal I and additional teachers and support personnel.

d. Other documentary requirements, as stipulated in DECS Order No. 84, s. 1996 (Guidelines for the Separation of Public Secondary Annexes), shall be complied with.

3. **Integration of Schools**

a. The provisions of DECS Order No. 91, s. 1999 (Guidelines on the Establishment and Operation of Integrated Schools) shall govern the integration of public elementary and secondary schools).

b. In addition, items 1.2 to 1.4 of DepED Order No. 71, s. 2003 shall be enforced in the application for the integration of schools

4. **Naming/Renaming of Schools.** Public elementary and secondary schools may be named after their location or donor of the school, if (apart for donating the lot) he had also reached a level of public achievement and recognition. Naming of schools after a living person is prohibited by Republic Act No. 1059, except when there is a provision to name it so, as when so provided in the deed of donation. Proposal for renaming or change of name of existing public school shall be in accordance with the provision of DECS Memorandum No. 386, s. 1999 entitled "Renaming of Schools", which emphasizes the following:

a. RA 7160, otherwise known as the Local Government Code, supersedes DECS Order No. 5, s. 1989 on the requirements of renaming a school.

b. The Local School Board can recommend to the Local Sanggunian the change of name of the school. The Local Sanggunian then enacts an ordinance.

c. The Local Sanggunian has the power to change the name of the school through an ordinance, while the Local School Board is the recommending body. Approval of the Secretary is no longer necessary on the matter. (See DECS Memorandum No. 386, s. 1999 – Renaming of Schools).

d. The National Historical Institute requires the issuance of a Certification from the Department relative to the renaming of schools.

C. PROPER UTILIZATION OF EDUCATIONAL FACILITIES IN SCHOOLS

Educational facilities in the school shall be utilized properly. The use of the ground and facilities of the school other than for the school activities must be subject to the approval of the Schools Division/City Schools Superintendent. Among other public activities and utilization of the school grounds and facilities which may be permitted by the Schools Division Superintendent thru the principal/head teacher are as follows:

1. **Civil Service Examinations.** Holding of civil service examinations is allowed in the classroom including the use of its furnishings and lighting facilities.

2. **Literacy Classes.** Instruction of illiterates and other literacy activities may be held in the school.

3. **Polling Places.** The use of school buildings for the meetings of election inspectors and as polling places for the election of national, provincial, city, municipal and barangay officials may be authorized.

4. **Religious Services/Instruction.** Holding of religious activities for the benefit of pupils/students and barangay council and other sectoral groups and conduct of religious instructions maybe allowed provided such does not interfere with regular school activities.

5. **Community Program.** Sectoral groups and Barangay Council may be allowed to use the school buildings, grounds and facilities for civic and educational activities.

6. **Evacuation Center.** The use of school buildings/classrooms as evacuation centers is allowable in case of natural calamities. The utilization of school property and facilities shall always be under the strict authority and responsibility of the school administrator. In case there is a need to evacuate school personnel and students, the following are specific policies:

a. DepED Officials and personnel shall be responsible for the evacuation of students/pupils, in case the school is threatened or in the hazard-stricken area, into safer place(s), and they continue to be responsible for the safety of the students/pupils until their custody has been taken over by the parents.

b. DepED Officials may allow the use of the school as an evacuation center when there is no other safer place where the people from the community can take refuge and as a temporary holding center since there is no intent to permanently utilize the same as residence for the calamity victims.

c. In case the school is used as an evacuation center, DepED Officials and personnel shall be responsible for the preservation of the school facilities and properties for the duration the school is being occupied by evacuees, so that after the emergency period the school can resume operation as soon as possible.

D. ILLEGAL UTILIZATION OF SCHOOL FACILITIES

Any illegal act or activity resulting from or related to, the utilization of the school property or facilities shall be the accountability of the school head. Article 20 of the Revised Penal Code prohibits and penalizes the illegal use of public funds and property.

1. **Personal Use of Educational Facilities.** The use of school property for the personal convenience of an employee as his residence and not in connection with his official duties is illegal. Likewise, the use of school property for the furtherance of private interest is considered illegal.

2. **Squatters.** No squatters shall be allowed on the school site. In cases where there are squatters within the school site, their ejection shall be done in a proper and legal manner.

E. PROPERTY RESPONSIBILITY

All educational facilities procured/purchased by the Department or donated by LGUs/NGOs and private individuals shall be considered property of the recipient school. School Heads/Principals are responsible to the Schools Division/City Schools Superintendent for the educational facilities issued to them. In same manner, the Schools Division/City Schools Superintendents are likewise responsible to the Regional Director.

1. **Care/Preservation and Safeguarding of Educational Facilities**

It is the duty of the school head/principal to enforce the rules on proper care of educational facilities such as:

1. Provision of perimeter fence along boundaries of the school site with secured entrance and exit gates.

2. Proper utilization of school buildings, including undertaking of minor repair and maintenance work.

3. Cleanliness and orderliness of classrooms shall be maintained at all times.

4. Proper use of desks/armchairs and other classroom furniture shall be strictly enforced by the teacher. Instructional tools/equipment and supplies such as computers, books, magazines, periodicals, journals, bulletins and other publications issued by the Department or procured from various sources shall be displayed and kept in safe shelves/storage areas.

2. Maintaining School Records on Facilities

The school shall have a file on facilities for ready reference. This is beneficial on the part of the school principal/ head for monitoring purposes. The following documents shall be placed in separate folder under the Physical Facilities MIS:

1. School Site Ownership Documents
2. School Site Development Plan
3. School Site/Building Cards
4. Inventory of all Facilities (General Form No. 13, s. 1992)
5. School Furniture Record
6. Textbooks
7. Instructional Tools, Apparatuses and Equipment
8. Record of School Building Repair – Program of Works (POW)
9. Record of School Building Construction – POW
10. Receipts of Payments – Electrical, Water, Telephone
11. Records of Fire Damage Reports (if any)
12. Records of the Change of Name of the School
13. Records of the Establishment of the School
14. Records of Donated Properties
15. File copy of DepED Orders, Memoranda regarding facilities

F. BASIC EDUCATION INFORMATION SYSTEM (BEIS)

BEIS was developed to process and generate data needed for planning, budget preparation, resources allocation and performance indicators. BEIS includes only counts of classrooms and school furniture and does not include inventory of school sites, books and instructional materials. Moreover, it identifies the actual requirements for educational facilities of every school through a color coding system based on the rainbow spectrum described hereunder.

1. Instructional Room Analysis in BEIS Quick Counts Module

A color coding system based on the rainbow spectrum is likewise incorporated in the instructional room analysis to represent different levels of instructional rooms availability.

Pupil-Instructional Room Ratio

Pupil/Student Room Ratio	Color Code		Remarks	
Less than 45	Blue	C O O L	Represents relatively generous room provision in comparison to the national mean	Meets "Roxas Law" with single shifting
46 - 50.00	Yellow		Provision close to the national mean	Fails to meet "Roxas Law" with one shift
51 - 55.99	Gold	H O T	With moderate classroom shortage	Does not meet "Roxas Law" even with double shifting.
56 and above	Red		Severe classroom shortage	
	Black		Most deprived	No existing instructional rooms
Note: The Roxas Law (RA No. 7880), mandates fair and equitable allocation of the Department's budget for capital outlay and provides for a classroom-pupil ratio of 1:45 (IRR, Rule III, Sec. B)				

2. School Furniture Analysis in BEIS Quick Counts Module

This analysis represents seating provision in both levels of education.

Pupil-Seats Ratio

Pupil/Student Seat Ratio	Color Code		Remarks	
Less than 0.49	Blue	C O O L	Two seats per pupil even in one-shift school	Most favored
0.50 – 0.69	Sky Blue		Surplus seat provision	Relatively generous seat provisions in comparison to the national mean
0.70 – 0.89	Green		Generous seat provision	
0.90 – 1.00	Yellow		Adequate in one-shift schools	
1.01 – 1.99	Gold		Adequate in two-shift schools	Moderate shortage in seat
2.00 – 2.99	Orange	H O T	More than two pupils per seat, inadequate in two-shift schools	
3.00 – and above	Red		More than three pupils per seat; severe shortage in two-shift schools	Severe shortage in seats
	Black		No existing seats	Most deprived no. of seats available

G. FINANCING EDUCATIONAL FACILITIES

The legal basis for the financial support of public elementary and secondary schools, including their educational facilities, is a constitutional mandate which provides that the Government shall establish and maintain a complete and adequate system of public education.

The principal sources of the funds for educational facilities in public schools are the national, provincial, city, and municipal governments. Other sources of funds which serve to help finance public elementary and secondary educational facilities are the Special Education Funds, voluntary contributions and donations, loan grant proceeds from foreign-assisted projects, etc.

As an essential aspect of their administrative functions, school authorities, both in the Central Office and in the field offices, necessarily come into close contact with the national, provincial, city and municipal officials who control the appropriations for the public schools.

In order that cooperation between the schools and the public can be maintained, a sound and effective public relations program shall be organized and kept functioning by the schools. Through such program, the schools are "sold" and "impressed on" the public and its goodwill towards the schools is established.

1. National Funds

National funds needed to finance public elementary and secondary schools and educational facilities are provided in the General Appropriations Act, commonly known as the national budget, for each calendar year. Such budgetary provisions are included in the appropriations for the Department of Education, the Department of Public Works and Highways, and other special appropriations.

a. **Department of Education**

The annual appropriations in the national budget for the Department of Education include fund allocations for capital outlays, for maintenance and other operating expenses, and for sundries. Capital outlays are provided for the acquisition of school sites, construction and repair of school buildings, procurement of furniture as well as the acquisition of equipment for public elementary and secondary schools.

The amounts allocated for maintenance and other operating expenses (MOOE) include provisions for such expenditures as travel expenses, purchase of supplies and materials, and for equipment. The allotments for sundries include such miscellaneous expenses as repair of equipment, freight and shipping charges, rental of buildings for school use, etc.

Maintenance and repair include the following:

Cost of keeping buildings, plant, and equipment, and other fixed property in a fair state of preservation;

a. Shop charges and expendable parts;
b. Cleaning and overhauling of equipment;
c. Painting and varnishing of buildings;
d. All similar expenses which do not enhance the original value of the plant or equipment.

Alterations, additions, extensions, and other constructions which materially increase the value of a structure or equipment constitute permanent improvement, the cost of which may not be charged against the appropriations for repair, but shall be added to the value of the asset on which the improvements have been effected. It shall be understood that the necessary appropriations have been provided for such permanent improvements.

Freight and Express Charges/Forwarding expenses for the shipment of school supplies from the Regional Office to the different division offices are payable from the allotment for this purpose in the Central Office. Cost of shipment of supplies from the division office to the district and to the schools is charged against the funds allocated for the operation and maintenance of elementary schools released to the division.

b. **Department of Public Works and Highways**

The Department of Public Works and Highways (DPWH) being the State's engineering and construction arm, is tasked to implement the Regular School Building Program of the Department. The DPWH's participation in this program is defined under Rule VIII of the Rules and Regulations for the Effective Implementation of RA 7880 adopted on March 31, 1995, otherwise known as the Roxas Law. Executive Order No. 124 dated January 24, 1987 states that "The state shall maintain an engineering and construction arm and continuously develop its

technology for the purpose of ensuring the safety of all infrastructure facilities and securing for all public works and highways the highest efficiency and the most appropriate quality in construction.

Under the Joint DepED-DPWH Memorandum on the Amended Guidelines For the Coordination and Monitoring of DPWH-Constructed School Buildings signed on December, 2008, both agencies agreed to use standard classroom design of 7m x 7m for schools located in provinces where the classroom-pupil/student ratio is not more than 1:45; and 7m x 9m in semi-urban areas or in urbanizing portions of municipalities such as the poblacion where the classroom-pupil/student ratio is more that 1:45, and all secondary schools. Under this Joint DepED-DPWH Memorandum regarding the guidelines for coordination and monitoring of DPWH constructed projects, both agencies agreed to adopt a regionalized and harmonized costing of school buildings, construct complete or functional classrooms, and undertake intensive coordination with DepED for the efficient and effective completion of school building projects.

The budgetary appropriations in the national budget for the Department of Public Works and Highways include provisions for capital outlays and allotments for the construction, maintenance and repair of elementary and secondary school buildings.

The construction and repair of buildings supported by funds appropriated in the national budget shall be supervised by the district engineer of the Department of Public Works and Highways.

2. Request for National Aid

When aid from national funds is sought for the construction of a school building, the following facts shall be submitted:

a. Plan, number, and type of the building, permanent or semi-permanent.

b. Amount of national aid requested.

c. Certification of the provincial treasurer covering the local funds available and on deposit with him for the project in question.

d. Estimate of the district engineer of the cost of the construction proposed.

e. Area of the site where the building is to be constructed.

A statement shall be included to the effect that the municipality holds or has applied for registered title to the site where the building will be located. If the site is registered, this statement may be made by the schools division superintendent, giving the title number. If the site is not registered, a statement to that effect shall be made by the provincial fiscal and it shall be accompanied by a certification that registration has been applied for and that, in his opinion, unquestionable title rests with the municipality. Projects recommended for national aid shall be listed in the order of preference.

Local Government Funds

Although public school classes are supported by the national government, the local governments are allowed to set aside local funds for the support of existing or new elementary/secondary classes in their respective localities. Local funds for the support of elementary/secondary classes are provided through appropriate resolutions or ordinances of the municipal or city councils (Sangguniang Bayan/Panlungsod).

3. **Financing School Sites**

Municipalities and cities are responsible for the financing of the acquisition of school sites for the public schools in their territories. They are further responsible for providing local funds for the survey and registration of school sites.

Whenever possible, municipal and city councils (Sangguniang Bayan/Panlungsod) shall be requested to appropriate funds for school building repairs inasmuch as such appropriations are legal in accordance with the ruling of the General Auditing Office (now Commission on Audit). Expenditure in any necessary amount may be made for repairs required on to keep a school building or other permanent improvement located on an unregistered land in fit condition for use, without increasing its capacity or otherwise adding to its normal value.

Expenditures on school property located on unregistered municipal land or on leased or rented areas may be made only with the approval of the Secretary of Education if used for school building construction, or of the President of the Philippines if for any other purposes.

4. **Special Education Fund**

The Special Education Fund was created under Republic Act No. 5447 which was enacted by the Philippine Congress in 1969 for the purpose of providing additional financial support exclusively for the public schools. It is constituted from the proceeds of an additional tax of one percent (1%) on the assessed value of real property in addition to the real property tax levied thereon under existing laws. (Section 235 of R.A. 7160). An additional source of revenue for the Special Education Fund is derived from a portion equivalent to ten percent (10%) of the taxes on Virginia type cigarettes and the duties on imported tobacco, which is remitted to the Treasurer of the Philippines.

a. **Sharing of Funds.** The proceeds accruing to the Special Education Fund (SEF) shall be automatically released to the local school boards. In the case of provinces, the proceeds shall be divided equally between the provincial and municipal schoolboards. (R.A. 7160, Section 272).

b. **Fund Administration.** The Special Education Fund for each province, city and municipality shall be administered by the local school boards. The composition of local school boards shall be as follows:

a. The provincial school board shall be composed of the governor as chairman and the division superintendent of schools as co-chairman; the chairman of the education committee of the Sangguniang Panlalawigan, the provincial treasurer, the representative of the Pederasyon ng mga Sangguniang Kabataan in the Sangguniang Panlalawigan, the duly elected president of the provincial federation of parent-teachers associations, the duly elected representative of the teachers' organizations in the province, and the duly elected representative of the non-academic personnel of public schools in the province, as members.

b. The City School Board shall be composed of the city mayor as chairman and the city superintendent of schools as co-chairman; the chairman of the education committee of the sangguniang bayan, the municipal treasurer, the representative of the pederasyon ng mga sangguniang bayan, the duly elected president of the municipal federation of parent-teacher associations, the duly elected representative of the teachers' organizations in the municipality, and the duly elected representative of the non-academic personnel of public schools in the municipality as members. (R.A. 7160, Sec. 98, b-1 to b-3)

In the event that a province or city has two (2) or more schools superintendents, and in the event that a municipality has two (2) or more district supervisors, the co-chairman of the local school board shall be determined as follows:

a. The Department of Education shall designate the co-chairman for the provincial and city school boards;

b. The division superintendent of schools shall designate the district supervisor who shall serve as co-chairman of the municipal board.

The performance of the duties and responsibilities of the above mentioned officials in their respective local school boards shall not be delegated. (R.A. 7160, Sec. 99, d)

Joint Circular No. 1, s. 1998 issued by DECS (now DepED), DBM and DILG provides the priority expenditures of the SEF as follows:

Operation and maintenance of public schools, including organization of extension, non-formal, remedial and summer classes as well as payment of existing allowances of teachers granted by local government units chargeable against SEF as of 31 December 1997, provided that any additional allowances that may be granted to teachers by LGUs shall be charged to the general fund of LGUs, subject to existing budgeting rules and regulations;

- Construction and repair of school buildings, facilities and equipment including the acquisition, titling and improvement of school sites;

- Educational Research;

• Acquisition/procurement of books, instructional materials, periodicals, and equipment including information technology resources; and

• Expenses for school sports activities at the national, regional, division, district, municipal and barangay levels as well as for other DepED related activities, including co-curricular activities.

The appropriations of local special education funds for the construction of elementary and secondary school buildings, and workshops, and similar buildings and accessories, are considered for funding purposes as capital outlay and will depend on a building program of the local school boards.

All school building construction projects financed from the Special Education Fund shall be either permanent or semi-permanent buildings and constructed in accordance with standard plans as approved by the Secretary of Education. No school buildings shall be constructed except on a site owned or acquired by the government and transferred in the name of the Department of Education.

All applications for aid from the Special Education Stabilization Fund for building construction shall be accompanied by building plans, specifications, and such other pertinent data that will help facilitate the processing of the application for aid under such rules and regulations as prescribed by DepED.

The repair of school buildings, workshop and similar buildings is considered part of operation and maintenance. Funds for this purpose shall be appropriated in the regular annual budget of the local school boards.

In areas ravaged by typhoons and other natural disasters, the repair of buildings shall be given priority. Immediate financial assistance for this repair may be provided from the Special Education Fund.

The acquisition of school sites is considered for funding purposes as capital outlays. Local school boards may provide, in their annual budgets such sums as may be necessary for this purpose. The appropriations will constitute a reserve fund to be made available when needed, subject to the provisions of existing laws, rules and regulations.

5. **Voluntary Contributions**

To collect voluntary contributions for the construction, repair, or improvement of school buildings, permission shall be requested from the Department of Social Welfare and Development (DSWD), or its local office. This shall be made by the Parent-Teachers Association or other entities, but never by school authorities or teachers. The requests shall state the purpose of the collection, the amount desired to be collected and the period during which the collection is made. The schools division superintendent shall make a recommendation as to the desirability of the collection. Soon after the close of the fund drive, a report of the collection is made to the Department of Social Welfare and Development, or its local office. The auditor shall audit the receipts and expenditures.

If the Parent-Teachers Association (PTA) is registered under the Securities and Exchange Commission (SEC) and is treated as a private corporation, permission from the Department of Social Welfare and Development to collect voluntary contributions for a school building project is not obligatory. However, a financial statement of the collections and disbursements made in relation to the project shall be submitted to the Schools Division Superintendent and the school principal/head to provide for a check and balance mechanism at the end of the fund-raising campaign.

If contributions are for the construction of a permanent or semi-permanent building, the amount shall be deposited with the municipal or city treasurer and donated to the municipality or city for the purpose for which it was collected.

Contributions given to the municipality or city become government funds and shall be expended as such. If the work to be financed from contributions or donations is a minor or temporary one, it may be done by the entity doing the collection, with the school authorities making recommendations and suggestions as to the expenditures.

All school buildings erected purely from voluntary contributions not deposited in the municipal or city treasury must be donated and turned over to the Schools Division Superintendent and to the School Head, before they may be occupied and used by the school.

6. Foreign-Assisted School Building Program

Foreign governments, e.g., the Japanese government through the Japan International Cooperation Agency (JICA) has been donating school buildings and other school facilities to DepED through grants or aid. Sphere project covered under Grant Agreement between the government of Australia, through the Australian Agency for International Development (AusAID) and the Government of the Philippines has also constructed new designs of school buildings. The Sphere project aims to continue assisting the DepED in meeting the country's education objectives of enhancing access of more boys and girls to better quality education and enabling them to successfully complete basic education through the repair and rehabilitation of school buildings damaged by typhoons.

7. ADOPT-A-SCHOOL PROGRAM

The Adopt-A-School Program, an innovative pro-poor program for education was established through R.A. 8525 which aims to create multiple partnership with the business sector, foundations, non- government organizations (NGOs), private schools, civic organizations and individuals to team-up with DepED towards providing the much needed assistance and service to public schools.

This program is a pro-poor movement that will help ensure access to quality education for the Filipino youth.

This program gives opportunity to a private entity to extend assistance to a public school in particular aspects of its educational programs within an agreed period.

The Adopt-A-School Program addressed the needs of schools with severe classroom shortage; schools in low income municipalities; schools with insufficient number of textbooks and instructional materials; overcrowded schools; schools with undernourished children; schools with poor but high performing students; and schools with insufficient budget or funds.

The package of assistance a donor may give includes infrastructure, teaching and skills development, learning support, computer and science laboratory equipment plus library materials, food and nutrition, and donor's choice (any kind of support a donor wishes to give).

Benefits accruing to the adopting entity are Tax Credits, Additional Tax Deductions from the Gross Income equivalent to expenses incurred from the Program, Publicity through the DepED media brigade. The Donor's names on donated infrastructure, equipment or items are acknowledged and are emblazoned under the name of the adopted school along with the logo of the Program.

8. BRIGADA ESKWELA (NATIONAL SCHOOLS MAINTENANCE WEEK)

Brigada Eskwela is a purely voluntary effort whereby Principals and Teachers-In-Charge are encouraged but not required to organize a local school maintenance week. Parents and local volunteers at the local school level come together for one week (5 days) in May before the start of the school year in order to do minor repair and maintenance of school facilities to get the schools ready for the start for the school year. The PTCAs, LGUs, local school boards and the local private sector contribute resources in the form of cash, kind, or time for the maintenance and minor repair of their schools.

H. PROCUREMENT OF INFRASTRUCTURE PROJECTS, GOODS, and SERVICES

Republic Act No. 9184 otherwise known as the "Government Procurement Reform Act" requires that all procurement of the national government must adopt this law in the procurement of infrastructure projects, goods, and consulting services regardless of the source of funds whether local or foreign by all branches and instrumentalities of government, except to those provision of Commonwealth Act No. 138. To promote transparency in the procurement of the procuring entity, the Government Electronic Procurement System (GEPS) is imposed for the purpose. All procurement shall be done through competitive bidding except as provided in Rule XVI of the Implementing Rules and Regulations (IRR) of this Act, where alternative modes maybe allowed.

DepED undertakes procurement activities for the procurement of Construction/Repair of School Buildings, and Delivery of Desks/Armchairs and other furniture. The procurement activities may be done at the national, regional, division and school level, depending upon the authority provided in the project guidelines. The steps and timetable and

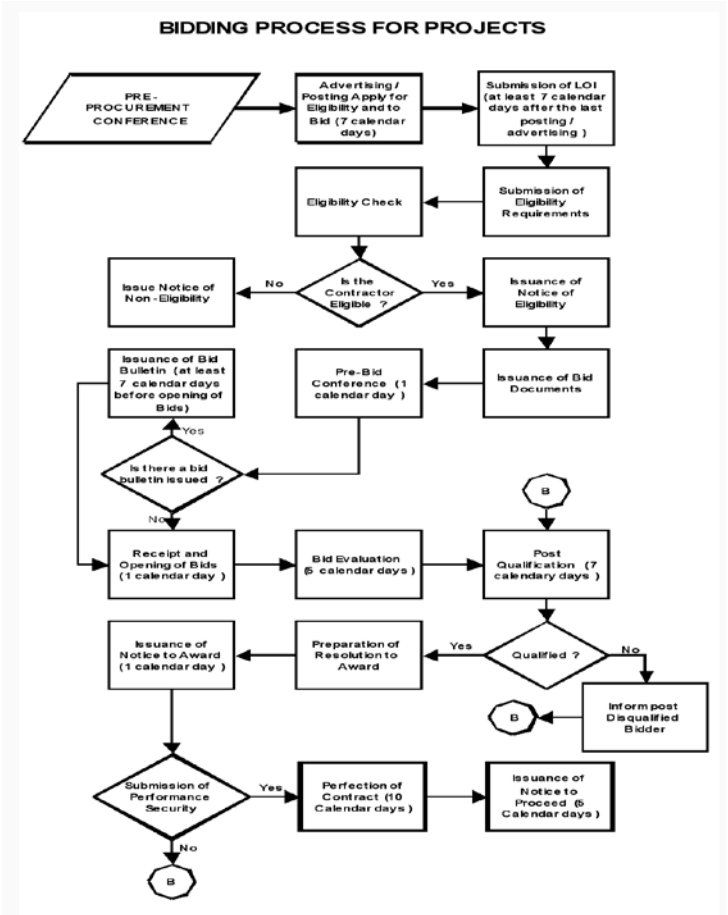
identification of the responsible person in the procurement process is shown in the hereunder flowchart on procurement of goods.

1. Emergency Procurement System for Rehabilitation/Replacement of School Buildings, Equipment and Fixtures

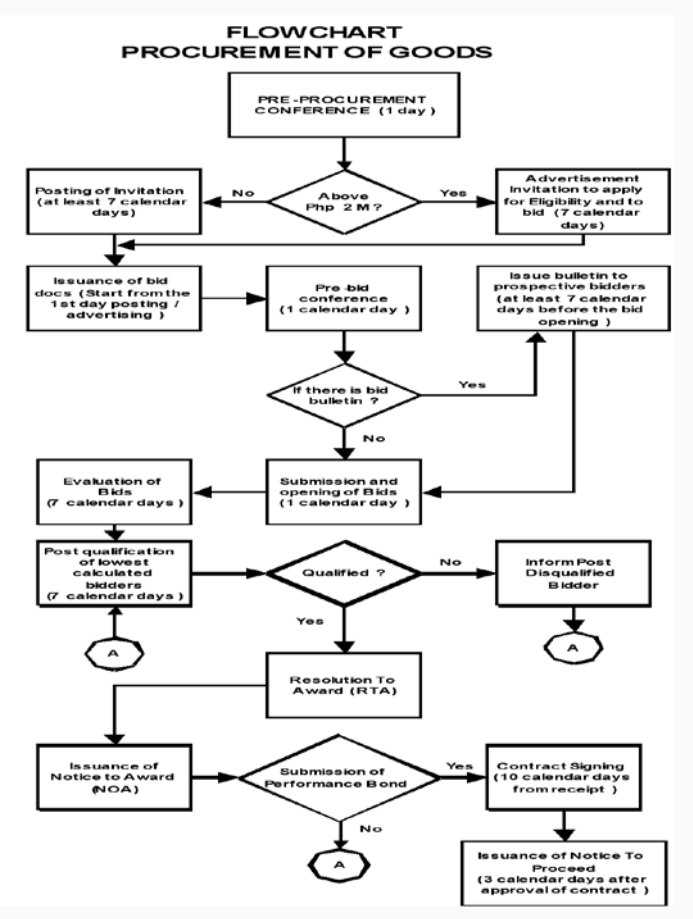
During emergency situations, school buildings, textbooks, instructional materials and other educational facilities are destroyed which result in the disruption of classes. In the past, rehabilitation efforts were slow due to bureaucratic procedures in the purchase of the needed supplies and materials for rehabilitation, which contributed to prolonged effects of the disastrous situation. In 2006, the Government Procurement Policy Board (GPPB) issued a circular to clarify the procurement process in cases of natural or man-made calamities. GPPB Circular No. 03-2009 dated 22 July 2009 (Approving the Revised Implementing Rules and Regulations of Republic Act No. 9184) states that: "In case of eminent danger to life or property during a state of calamity, or when time is of the essence arising from natural or man-made calamities or other causes where immediate action is necessary to prevent damage to or loss of life or property, or to restore vital public services, infrastructure facilities and other public utilities. In the case of infrastructure projectrs, the procuring entity has the option to undertake the project through negotiated procurement or by administration or, in high security risk areas, through the Armed Forces of the Philippines (AFP)."

2. Negotiated Procurement is a method of procurement of goods, infrastructure projects and consulting services, whereby the procuring entity directly negotiates a contract with a technically, legally and financially capable supplier, contractor or consultant in various cases, among them, emergency cases, as presented in the Implementing Rules and Regulations (IRR) of R.A. No. 9184 (Government Procurement Reform Act).

3. Bidding Process for Projects



4. Flowchart for Procurement of Goods



I. ACCOUNTING AND RECORDING OF SCHOOL PROPERTY

1. Booking-up of Completed School Buildings (SBs)

The School Building Program is being implemented by the Department of Public Works and Highways (DPWH) and the Department of Education (DepED). Under the national government school building program, two billion (2.0 B) funds are provided in the national budget every year for the construction of new school buildings. One billion (1.0 B) goes to the DPWH and one billion (1.0B) goes to the DepED for the implementation of the School Building Program. This is an investment of the government on infrastructure that will provide the schoolchildren with educational facilities that are most conducive to teaching-learning activities to complement inputs of the curriculum. Current school building account is grossly understated by Php1.28Billion due to unrecorded DepED owned SBs which include projects executed or implemented outside of DepED such as the Local Government Units (LGUs) and the DPWH. Since these structures are intended for use of the school children, booking-up and recording of completed school buildings from the Book of Account of the DPWH to the Book of Account of DepED shall be done through the accounting offices of both agencies for accountability and proper recording of DepED property (Mollyn Dionella, Accountant, DepED).

a. **Procedures in Booking-up of School Buildings**

- Reconcile list of SB submitted to DPWH against the actual construction/repair of SB
- Document if possible, all the constructed and turned over school building of DPWH in the books of accounts of DepED from CY 2000 onwards
- For the DPWH to drop in their books of accounts and correspondingly document the transfer of these completed infrastructure to DepED from CY 2000 onwards
- To improve the system of recording and transferring of these structure from implementing agency to recipient agency.
- Reconcile the records as to the transferred school building from DPWH
- Maintain corresponding subsidiary ledgers and the corresponding documents relative to SB.

All records pertaining to accounting and inventory of school properties shall be maintained and updated by the school heads/SDS/RD thru the accounting and property offices. The basic policies and procedures, accounting system, recording etc. of educational facilities shall be in accordance with the criteria prescribed

in the Manual on the New Government Accounting System (NGAS), Volumes I-III and the Training Handbook in Property and Supply Management System, COA, 2003.

b. **Purchase/Procurement of Property, Plant and Equipment.**

Property, plant and equipment acquired through purchase shall include all costs incurred to bring them to the location necessary for their intended use, like transportation costs, freight charges, installation costs, etc. These are recorded in the Books of Accounts as "assets" after inspection and acceptance of delivery. (Refer also to DepED Order No. 45, s.2006, Guidelines on Delivery, Implementation and Acceptance of all Properties by DepED Central Office and DBM Procurement Service.)

During construction period, property, plant and equipment shall be classified and recorded as "Construction in Progress" with the appropriate asset classification. As soon as these are completed, the "Construction in Progress" accounts shall be transferred to the appropriate asset accounts.

Accounts "Public Infrastructures" and "Reforestation Projects" are closed to "Government Equity" account and the asset is recorded in the Registry of Public Infrastructures/Reforestation Projects at the end of the year.

c. **Property and Inventory Accounting System.** The property and inventory accounting system consists of the system of monitoring, controlling and recording of acquisition and disposal of property and inventory.

The system starts with the receipt of the purchased inventory items and equipment. The requesting office in need of the inventory items and equipment after determining that the items are not available in stock shall prepare and cause the approval of the Purchase Request (PR). Based on the approved PR and after accomplishing all the required procedures adopting a particular mode of procurement, the agency shall issue a duly approved Purchase Order. (PO)

The sub-systems are as follows:

1. Receipt, Inspection, Acceptance and Recording Deliveries of Inventory Items and Equipment
2. Requisition and Issuance of Inventory Items
3. Requisition and Issuance of Equipment

a. **Perpetual Inventory Method.** Purchase of supplies and materials for stock, regardless of whether or not they are consumed within the accounting period, shall be recorded as Inventory account. Under the perpetual inventory method, an inventory control account is maintained in the General Ledger on a current basis.

Regular purchases shall be recorded under the Inventory account and issuance thereof shall be recorded based on the Report of Supplies and Materials Issued. Purchases out of the Petty Cash Fund shall be charged immediately to the appropriate expense accounts.

The Accounting Unit shall maintain perpetual inventory records, such as the Supplies Ledger Cards for each inventory stock, Property, Plant and Equipment Ledger Card for each category of plant, property and equipment including works and other animals, livestock, etc. The subsidiary ledger cards shall contain the details of the General Ledger accounts.

For check and balance, the Property and Supply Office/Unit shall maintain Property Cards (PC) for property, plant and equipment, and Stock Cards (SC) for inventories. The balance in quantity per PC and SC shall always reconcile with the ledger cards of the Accounting Unit.

b. **Moving Average Method.** The moving average method of costing shall be used for costing inventories. This is a method of calculating cost of inventory on the basis of weighted average on the date of issue. The Accounting Unit shall be responsible for computing the cost of inventory on a regular basis.

4. Accounting for Loss of Cash and Property. Loss of cash and property may be due to malversation, theft, robbery, fortuitous event or other causes.

In case of loss of property due to other causes like theft, force majeure, fire, etc., a report thereon shall be prepared by the Accountable Officer concerned for purposes of requesting relief from accountability. No accounting entry shall be made but the loss shall be disclosed in the notes to financial statements pending result of request for relief from accountability.

5. Grant of Relief from Accountability. When a request for relief from accountability for shortages or loss of funds is granted, a copy of the decision shall be forwarded to the Chief Accountant who shall draw a Journal Entry Voucher (JEV) to record the transaction. The loss shall be debited to the Loss of Assets account and credited to the appropriate receivable account. In case the request for relief is denied, immediate payment of the shortage shall be demanded from the Accountable Officer. Restitution shall be acknowledged by the issuance of an official receipt.

In case the request for relief from accountability for loss of property caused by fire, theft, force majeure or other causes is granted, a copy of the decision shall likewise be forwarded to the Chief Accountant for the preparation of the JEV. The loss shall be debited to the Loss of Assets account and credited to the appropriate asset account. If request for relief from accountability is denied, the loss shall be taken up as a receivable from the Accountable Officer or employee liable for the loss and shall be credited to the appropriate asset account.

J. DISPOSAL OF EDUCATIONAL FACILITIES

Despite the proliferation of various laws, rules and regulations governing disposal of property, a considerable quantity of unserviceable, no longer needed, obsolete, forfeited/seized, supplies, materials and equipment and valueless records which have grown into unmanageable and uneconomical proportions now exist in the various government agencies. To save on cost maintaining such property there is a need for their disposal.

Pursuant to EO No. 888, sec. 1 and COA Cir. No. 89-296 the full and sole authority and responsibility for the divestment or disposal of properties and other assets owned by the National Corporate and Local Government Units (LGU) including its subsidiaries shall be lodged in the heads of the departments, bureaus and offices or governing bodies or managing heads of the concerned entities.

1. Membership of Disposal Committee

EO No. 309, reconstituted the membership of the Committee on Disposal as provided for under EO No. 888.

Chairman – A senior official with function not lower than the level of an Assistant Secretary for a department and Assistant Director for a bureau/agency or department head for a GOCC.

Members – Head of Administrative Unit
– Head of the Property Unit

A secretariat and technical staff to be manned by existing personnel of the Agency concerned shall be formed to handle all the Committee's technical and administrative matters as well as the safekeeping and systematic filing of Committee documents and records.

The Disposal Committee at the regional and division levels are contained in DECS Order No. 56, s. 1997, to include:

Regional Office
Chairman – Regional Director

Members – Regional Administrative Officer
– Head, Property Unit

Division Office
Chairman – Schools Division Superintendent
Members – Division Administrative Officer
– Head, Property Unit

2. Modes of Disposal/Divestment

a. **Condemnation/Destruction of Property**
Unserviceable equipment may be destroyed through pounding, breaking, shredding, throwing or any other method by which the property is disposed beyond economic recovery. Destruction shall be made in the presence of the Disposal Committee.

b. **Transfer of Property**
Transfer of property may be done upon the initiative of the owning agency or submission of request to the owning agency. This may be done either with or without cost. "Cost" herein refers to payment based on the appraised value of the property.

c. **Barter**
An agency transfers property to another government agency in exchange for another piece of property. The value of the property transferred may not be equivalent to that being received.

d. **Donation of Property**
Donation of property may be done to charitable, scientific, educational or cultural institutions.

e. **Sale of Unserviceable Property**
• Sale thru Public Bidding as a general rule, is the mode of disposal. This is done thru sealed public bidding or when circumstances warrant, by viva voce.
• Sale thru Negotiated Sale is resorted to as a consequence of failed bidding.

3. Property/Assets Subject to Disposal

The following are subject to disposal:

1. Unserviceable property
2. Confiscated/Seized property
3. Property under distraint/levy/garnishment
4. Unclaimed Motor Vehicles
5. Real Property
6. Valueless Records/documents

4. **Determining Factors in the Disposal of Unserviceable Property**

1. Property which can no longer be repaired or reconditioned;
2. Property whose maintenance costs of repair more than outweighs the benefits and services that will be derived from its continued use;
3. Property that has become obsolete or outmoded because of changes in technology;
4. Serviceable property that has been rendered unnecessary due to change in the agency's function or mandate;
5. Unused supplies, materials and spare parts that were procured in excess of requirement; and
6. Unused supplies and materials that have become dangerous to use because of long storage or use of which is determined to be hazardous.

5. Inspection and Appraisal of Property for Disposal

Inspection is conducted to observe the physical condition of the property to be disposed. An ocular inspection is usually done to have a first-hand observation of the conditions of the property.

6. General Procedures in Appraisal

The objective in computing the appraised value of the property is to set the government's minimum selling price so that the government shall receive fair compensation for the items sold. The Disposal Committee members, including the owning agency, shall each prepare its appraisal report.

1. Conduct an ocular inspection of the property to be appraised to assess its physical condition.
2. Seek reference price information such as acquisition cost or current market price of similar property or replacement cost for a similar new property.
3. Compute the appraised value following the revised formula on appraisal of government properties except real estate, antique property and works of art, which takes into account the property's actual physical condition, the relevant reference price information, expected useful life of the property and the changes in the value of the property caused by depreciation, and those caused by the changes in the value of the exchange currency, the peso and also appreciation in the value of the property occasioned by the reconditioning, major repair or upgrade of property as well as favorable changes in the exchange value of the Philippine peso.

7. Submission of Documents Pertinent to the Disposal of Unserviceable Property

Accountable officials in possession of unserviceable property shall submit to the Disposal Committee through their respective heads of offices, the following accomplished forms, as appropriate:

1. Inventory and Inspection Report of Unserviceable Property for semi-expendable materials and equipment and non-expendable supplies, accompanied by any of the following, whichever is appropriate:

a. Individual survey report, duly certified by the Supply Officer and Head of Agency.
b. List of missing spare parts duly certified by the Supply Officer and Head of Agency.
c. Stencils of chassis and engine numbers of motor vehicles, and
d. Current photographs (in two positions) of items recommended for disposal

2. Waste Materials Report for expendable materials, supplies and consumables including spare parts, empty containers, and remnants from destroyed or damaged fixed assets.

8. Guidelines on Disposal

General Procedures

1. Once supplies/property become unserviceable from any cause or are no longer needed, the accountable officer immediately therefore shall return the same to the Property Officer/equivalent position concerned.

2. The Property Officer/equivalent position shall file an application for disposal with appropriate documents to the COA Auditor.

3. The COA Auditor shall inspect the items and determine whether the items are with or without value and forwards his/her recommendation to the Head of the Agency.

4. The Head of the Agency shall forward the documents to the Disposal Committee.

5. The Disposal Committee shall recommend to the Head of the Agency the mode of disposal as appropriate and deemed most advantageous to the government.

6. If found to be valuable, the unserviceable property may be sold at public auction to the highest bidder under the supervision of the proper Committee on Award or similar body.

7. The awardee shall pay, claim and withdraw the property upon the determination of the awardee, the bid bond shall be considered as partial payment and the difference between such payment and the offered bid price shall be paid in the form of cash, cashier's/manager's check of a reputable bank within the area where the bidding was held. Full payment shall be made within five (5) working days from the date of the notice of award.

In addition to the purchase price, any taxes, custom duties or charges in connection with the sale shall be borne by the awardee.

7.1 Claims shall be made only by the awardee, after the bid price is fully paid as evidenced by an official receipt. The Disposal Committee shall effect it in the presence of the reporting accountable officer or his duly authorized representative and witnesses of the reporting accountable officer or his duly authorized representative and witnesses.

7.2 The property officer of the owning agency shall accomplish a tally-out sheet as evidence of actual delivery. Authorized agency official and the buyer acknowledging receipt of the items shall sign the tally-out sheet.

7.3 Claims shall be made only during official government working hours.

7.4 Claims shall be made within the period fixed by the Disposal Committee but not more than thirty (30) days after awarding. Failure on the part of the awardee to claim the property within the stipulated period shall have the effect of cancellation of the award/contract. The awardee shall then be charged storage fees and other incidental fees/costs or damages, i.e. costs incurred in the conduct of another public bidding or negotiation. If the property remains unclaimed over a prolonged period of time, ownership of the contracted/awarded property shall automatically revert to the government. The government shall then have the right to dispose of the property thru whatever manner the Disposal Committee deems most advantageous to the government.

8. Upon disposal of property, the pertinent portions of the Inventory and Inspection Report, Report of Waste Materials or Invoice-Receipt for Property, whichever is applicable, shall be accomplished. These reports shall be the basis for dropping the property from the books of accounts and for taking up the proceeds from the sale of the property.

Chapter 6 | Monitoring and Evaluation of Educational Facilities

Monitoring and Evaluation (M & E) are important managerial tools for planning, decision-making, reviewing past actions, problem solving and improving future actions. Specifically, M & E facilitates organizational performance, measurement in terms of efficiency, effectiveness, economy and impact. M & E charts the progress of the organizations as they try to realize those performance measures. A good M & E must always respond to the stated goals and objectives of the institution. It must monitor how the organization moves towards those objectives and evaluate to what extent it has achieved those objectives.

The evaluation of the educational facilities involves the appraisal, assessment, or measurement of its condition, development, improvement, and maintenance. It shall be based on prescribed criteria, requirements, or standards which constitute the rules or tests upon which judgment or decision can be made.

Monitoring and Evaluation are essential aspects of the administration of educational facilities. They provide proper directions and guidance for the intelligent and efficient administration of the educational facilities. They serve as potent managerial tools for promoting and achieving quality and effectiveness in educational outcomes.

Monitoring consists basically of the development of data collection and reporting system that provides the necessary information to assess the progress in the delivery and attainment of program or project goals. Monitoring is a continuous task.

On the other hand, evaluation deals with the analysis of the quantitative and qualitative information collected in the monitoring activity and in the making of judgments and decisions based on the analysis.

A. TYPES OF EVALUATION

Three types of evaluation may be considered applicable to educational facilities. They are as follows:

1. **Preliminary evaluation** – An evaluation of the new educational facilities made for the purpose of a new school which is proposed for opening. It is primarily intended to determine whether or not the educational facilities being provided for the proposed school meets the standard requirements. It also provides the basis for the approval or disapproval of the opening of a new school as stated in DepED Order No. 71, s. 2003 (see Chapter 4).

A technical evaluation or hazards assessment of proposed site in terms of natural and man-made hazards must first be undertaken before decision to proceed with planning and development. It is only after thorough assessment of potential natural hazards is conducted that site development could proceed.

This shall be done by the schools division superintendent or the assistant schools division superintendent, or a division physical facilities coordinator, or a team composed of division supervisors that the schools division superintendent may assign to do the job.

2. **Progressive evaluation** – Also referred to as "monitoring" is an on-going evaluation of the school facilities that is carried on within segments of time frame during the course of the school year. It is essentially developmental in character and purpose, with the educational facilities program as its basic frame of reference. It may concentrate on one specific aspect, component, or segment of the school educational facilities at a time.

Progressive evaluation is conducted according to a schedule which will correlate with the timetable set in the developmental plan of the school facilities. It serves to assess the status of specific aspects or segments of the educational facilities at certain stages of its development.

This type of evaluation is the main concern of the school administrator. He/She shall be assisted by the teachers under him/her in conducting it or the division physical facilities coordinator.

3. **Culminative evaluation.** Also known as annual final evaluation of the entire educational facilities of the school usually conducted at or near the end of each school year. It is a comprehensive assessment of all components and aspects of the school physical resources.

It shall be used to gauge the comparative standing of the various school educational facilities within a district or a division or a region, in terms of their development, improvement, and maintenance. It may be the basis for updating the educational facilities program to be implemented during the ensuing school year.

To ensure objectivity, fairness, and validity as best as possible, it is advisable that the culminative evaluation of educational facilities be conducted by a committee or team or task force. Those on the division level may be composed of division physical facilities coordinator, supply officer and/or an educational supervisor. On the regional level, regional division chiefs and regional physical facilities coordinator may compose the culminative evaluation group to be designated by the regional director.

B. EVALUATIVE INSTRUMENTS

The evaluation of the school facilities requires the use of appropriate evaluative instruments. These are indispensable tools or devices for appraising, assessing, or measuring their condition or status.

Among the different forms of evaluative instruments which will be used in the evaluation of school plant are such devices as score cards, checklists, survey forms, questionnaires, and the like. As a general rule, evaluative instruments for use in the appraisal, assessment, or measurement of the school educational facilities shall be constructed to suit the particular type of evaluation to be conducted; that is , preliminary, progressive, or culminative.

Suggestive characteristics of a good and effective evaluative instrument for use in assessing the school physical resources are as follows:

a. It shall be simple and user friendly.

b. Its evaluative criteria shall each be stated in a specific, definite, and clear-cut way, leaving no room for vagueness or ambiguity which may cause possible misinterpretation.

c. It shall provide for objectivity, fairness, and accuracy of judgment.

d. It shall produce reliable and valid decisions.

C. EVALUATION OF EDUCATIONAL FACILITIES

Plant is used to include all aspects of physical facilities: sites, buildings (including furniture), and equipment. Evaluation shall encompass every physical facility owned or regularly used by the agency, not only instructional facilities and the sites on which they are located, but also all types of support facilities whether located in conjunction with the instructional facilities on different sites, or in separate buildings.

The evaluation shall seek building and site data concerning five (5) basic aspects of the total plant: location, health and safety, environment, program adequacy, and numerical adequacy.
Site evaluation must not be overlooked during the on-site evaluation and can be considered under each of the aspects mentioned above.

To make an on-site evaluation of a facility meaningful, the following will be needed:

- Building and/or site plans – small single line drawing (need not be developed to perfect scale), but fairly accurate in terms of relative size of spaces.
- Facility Description – for each facility, shall include data of construction, cost, dimension, listing of rooms, size of the site occupied, all maintenance needs (leaky roofs, deteriorated plumbing, etc.)
- Room listing – For each room, data as to the floor on which the room is located, dimensions, present use, room number, for each special room a description of the seating capacity, etc.
- Program-Needs Summary – for assessing program adequacy.

1. On Location

- A facility shall be located to provide safe access and egress but also within reasonable travel distances.
- Appearance, freedom from noise, smoke and odors

- Surrounding development vs. deterioration of the general environment
- A facility shall be located in areas already assessed in terms of man-made and natural hazards

The overriding concern must be personal rather than property safety. The facility must be adequate in terms of health and disaster risk reduction measures for all occupants including visitors.

2. Environment

a. **Thermal Environment** – concerned with temperature-related comfort. A temperature approximating 70 degrees seems ideal. In addition to air temperature, surface temperatures and humidity also contribute to comfort, with a relative humidity of 60 percent considered acceptable. Ventilation affects both temperature and humidity.

b. **Acoustic Environment** – hearing conditions are essential to learning. Consider the following: the separation of sounds to eliminate unwanted and distracting interference caused by the transfer of sound from one area to another or from the outside; and the need for appropriate sound reverberation (liveliness within a given space controls the clearness of communication). The result desired is (1) encourage useful sound; and (2) nonfunctional sound is controlled.

c. **Visual Environment** – the visual environment for educational facilities focuses on lighting. It is found that a 60-70 footcandles of illumination are necessary for accuracy and ease of reading low-quality – pencil handwriting, one of the most difficult seeing tasks in schools. Quality of light is now important as quantity of light. Energy crisis also have increased concern for the use of very high levels of illumination. Brightness, balance, and glare are additional minor concerns. For purposes of building evaluation, it is important to make sure that lighting is pleasant and apparently adequate.

d. **Aesthetic Environment** – emotions affect learning and are determined by perception of the facility's aesthetic quality which can range from extreme ugliness to exciting beauty. At a minimum, a facility shall be pleasant, ideally. It shall be inviting and exciting.

3. Program Adequacy

No aspect of plant evaluation is more important than program adequacy. A checklist of program needs – both instructional and supporting services – shall be prepared to facilitate evaluation. This list shall include not only building aspects but site aspects as well. Hence, the desired program shall be clearly established prior to on-site evaluation.

4. Numerical Adequacy

Capacity and utilization are essential elements of plant evaluation. A good measure of capacity is easily converted to utilization since utilization is simply the ratio of existing enrolment to capacity. Similarly, a good measure of utilization can be converted to capacity by dividing the current enrolment by the percentage of utilization. The real problem is to obtain a good functional measure of either capacity or utilization that is related to the operating program rather than to abstract standards.

Optimum use – capacity and utilization – shall be a function of the particular program housed rather than derived from questionable absolute standards that have not had, and never will have, general acceptance.

D. WHAT IS TO BE EVALUATED?

The initial evaluation often includes compilation of certain quantifiable information including learning area – to total area ratio, cost per square meter, cost per student, construction time, etc. which will have been evaluated during the planning stage. A final assessment and recording can serve as a kind of inventory for future district/division planning. Quantifiable data concerning operation and maintenance costs shall be a part of each evaluation.

E. USING THE EVALUATION DATA

The primary purpose of all evaluation is to improve decision making. Unless the information gathered is appropriate – as well as properly analyzed and interpreted, it will be of little value to the administrative and governing boards in future decision making. It is important that data collection be limited to data that are intended to be used, not just interesting to know. One of the most common errors in evaluation is the collection of data with no prior plan for how the data will be used. This is especially true of questionnaire data. If evaluation is properly implemented, it can be useful in correcting problems, improving the planning process, and obviating similar problems in the future. Evaluation can also point to the need for more adequate time and resources for better planning and can result in improved future educational facilities, thereby producing a greater return on the investment in new or remodeled facilities.

Important components of the evaluation shall be user satisfaction and bases for corrective measures. Results of evaluation shall be used for interventions as well as incentives and rewards.

1. Health and Disaster Risk Reduction Measures

The health and disaster risk reduction review shall center around six (6) areas: fire safety, structural soundness, sanitation adequacy, housekeeping quality, accessibility and use by the handicapped, and miscellaneous concerns.

Existence of scenario-based School Disaster Preparedness Plan that should be read, understood and practiced by all and annually/ regularly updated. Plan must reflect actions depending of type of hazard/ emergency (e.g. scenario-based-what is the plan in case of flood? What is the plan in case of earthquake?) ; alarm system- distinct sound per type of emergency (fire alarm sound is different from tsunami or floods, etc)

2. Fire safety – floor plan/ emergency evacuation plan posted in all rooms and corridors, fire alarm systems, visible directional signage to exit points adequacy of exits, type of construction with respect to combustion, safeguards in danger areas such as kitchens, shops and laboratories, condition of fire extinguishers; adequacy of storage of combustibles; general storage practices; and condition of electrical service.

3. Earthquake safety – floor plan/ emergency evacuation plan posted in all rooms and corridors, alarm system, visible directional signage to exit points, adequacy of exits, unblocked passageways, corridors and stairways, swing out doors; cabinets and shelves are strapped; door cabinets are latched; for schools in coastal areas, where is the identified and designated evacuation area in case of tsunami?

4. Flood and flash flood safety – Accessible upper floors where students can evacuate in case of floods and flash floods; alarm system; visible directional signage to identified elevated areas where students can take temporary shelter;

5. Structural Soundness – this is an engineering concern. School buildings and other facilities must strictly follow standard engineering technical specifications to withstand effects of winds during tropical cyclones and ground shaking during earthquake events. For regular / routine building inspection, note any visible deterioration (cracking, leaning or bulging of walls; rotting or damage to wood; weakening of mortar in masonry). Any areas of serious concern shall be further evaluated by a structural engineer;

6. Sanitation Adequacy – considerations include location, condition, number of toilets; adequacy of drinking fountains/ areas; and quality of water supply.

7. Housekeeping Quality – the general cleanliness of the building-freedom from unsightly storage, control of rodents and vermin (worms, insects, etc.)

8. Accessibility and use by the Handicapped – Can persons with physical handicaps of various kinds get into, and make use of the building and its facilities without undue barriers?

9. Miscellaneous Concerns – In addition to items already identified – inadequacy of stair tread, obstructions in traffic patterns, slippery floors, etc.

G. CONSTRUCTORS' PERFORMANCE EVALUATION SYSTEM (CPES)

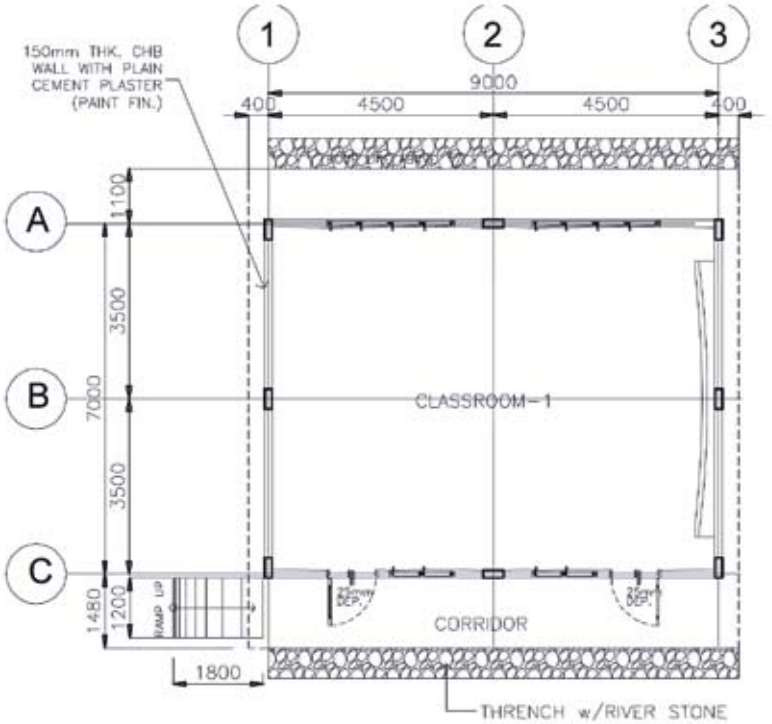
Created under DepED Order No. 56, s. 2007, the Constructors' Performance Evaluation System (CPES) took effect in January 2008 in compliance with Section 12, Annez Z of R.A. No. 9184 otherwise known as the "Government Procurement Reform Act." To carry on the objectives of CPES, twenty-seven (27) technical personnel were accredited as Constructors' Performance Evaluators. This Implementing Group is tasked to evaluate the performance of all constructors undertaking DepED infrastructure projects to ensure the efficient and effective implementation of various projects and provide corrective measures in case there are problems encountered to protect the interest of the government. Moreover, the group was tasked to establish a data base of constructors having contracts with the Department and maintain and update their track records and performances for easy reference. The accreditation was granted by the Construction Industry Authority of the Philippines – Philippine Domestic Construction Board (CIAP-PDCB). (Other details on the CPES [accreditation requirements, composition of CPES evaluators, documents required for evaluation, duties and responsibilities of the agency's CPES Implementing Unit (IU), criteria for evaluation and schedule of evaluation] are available at the DepED-CPES-IU).

annexes

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



Perspective View

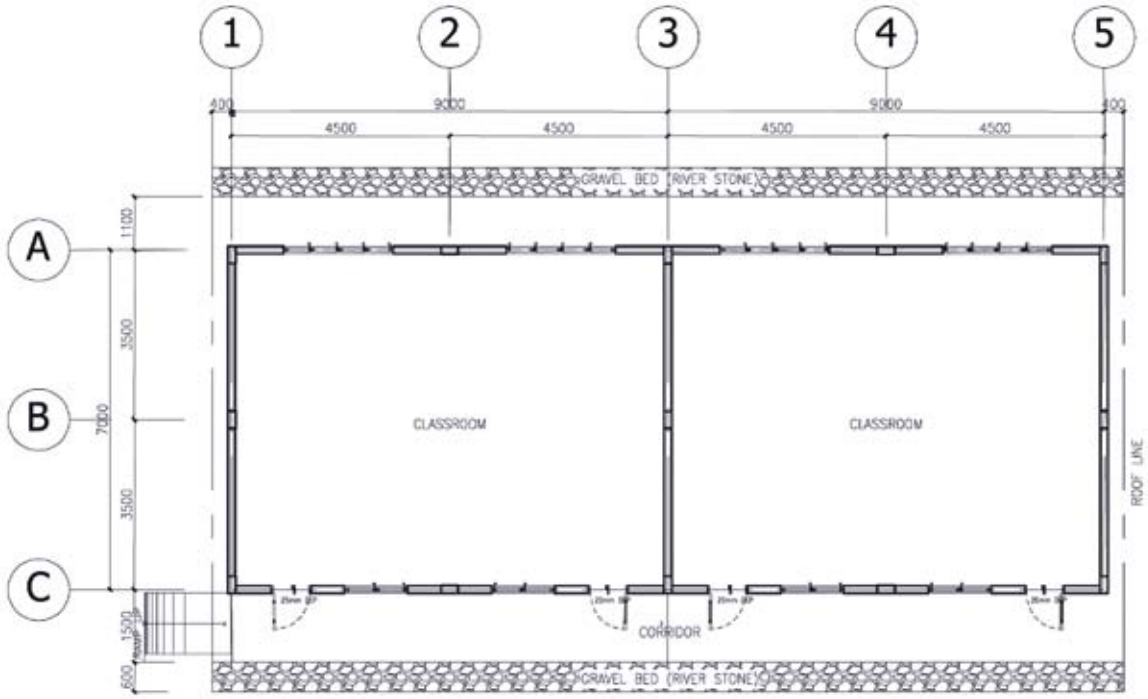


Floor Plan: One Storey One Classroom

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



Perspective View

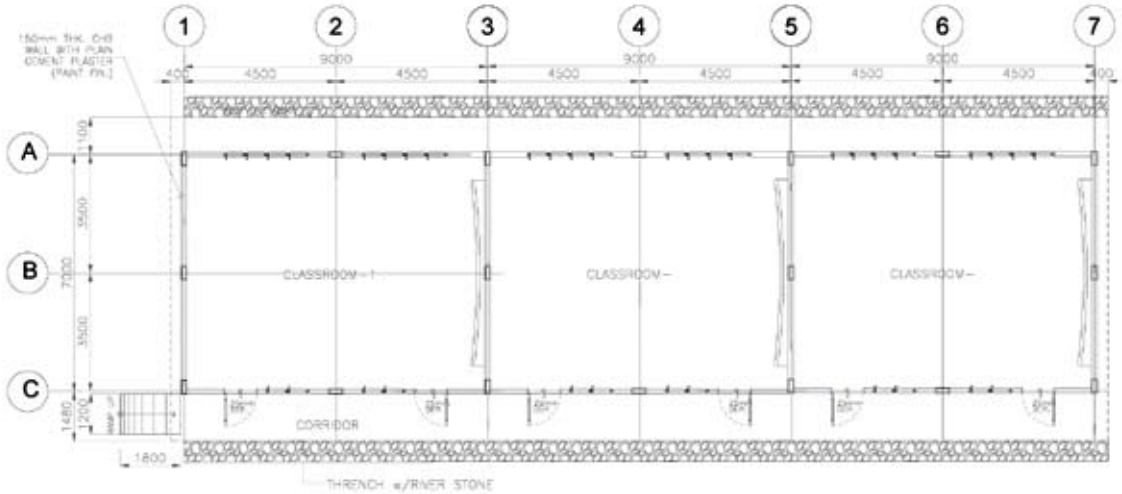


Floor Plan: One Storey Two Classroom

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



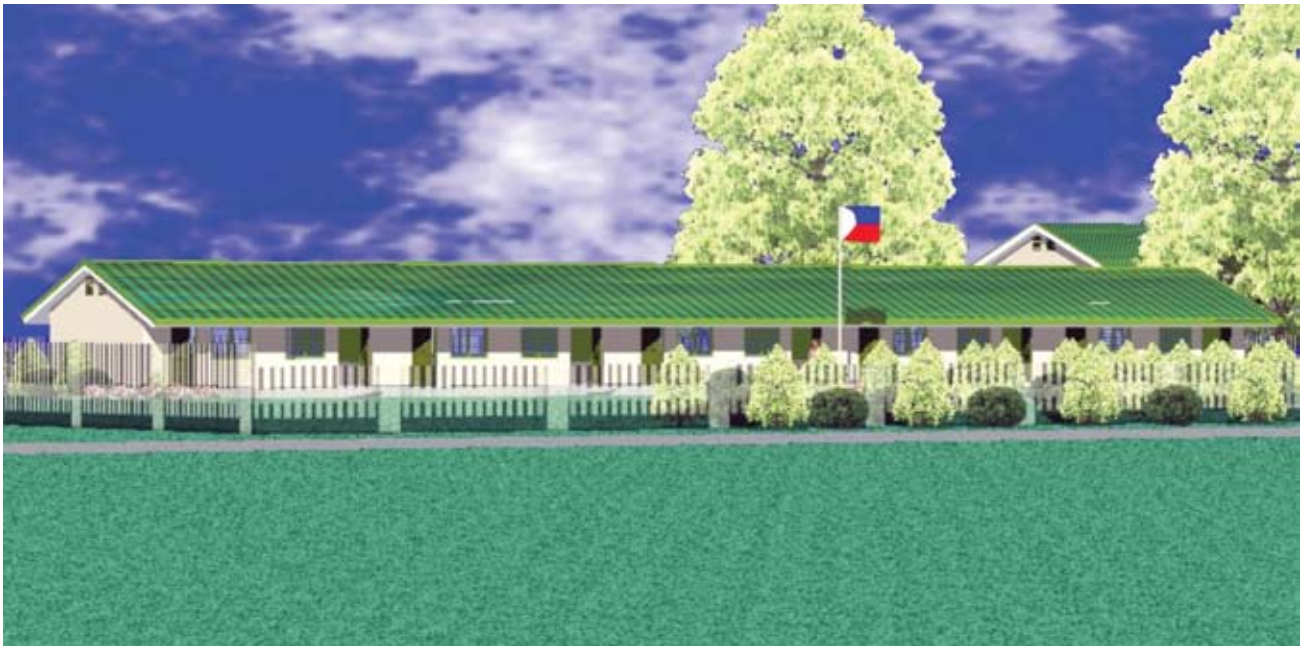
Perspective View



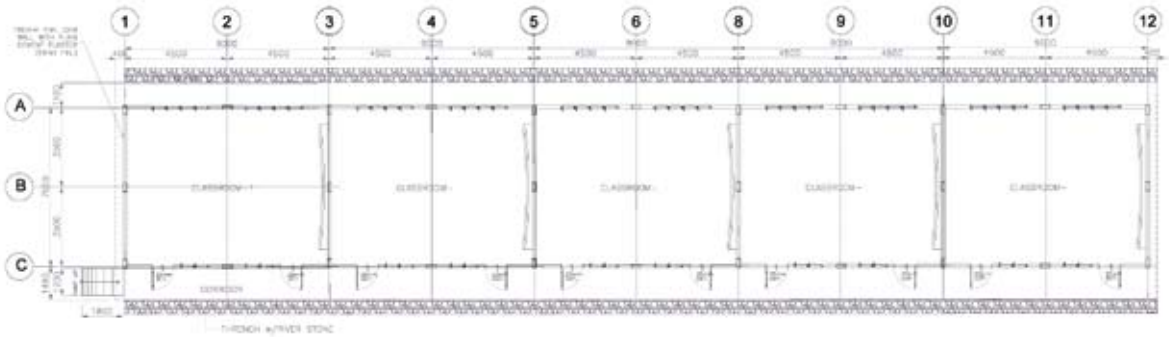
Floor Plan: One Storey Three Classroom

ANNEX AD

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



Perspective View

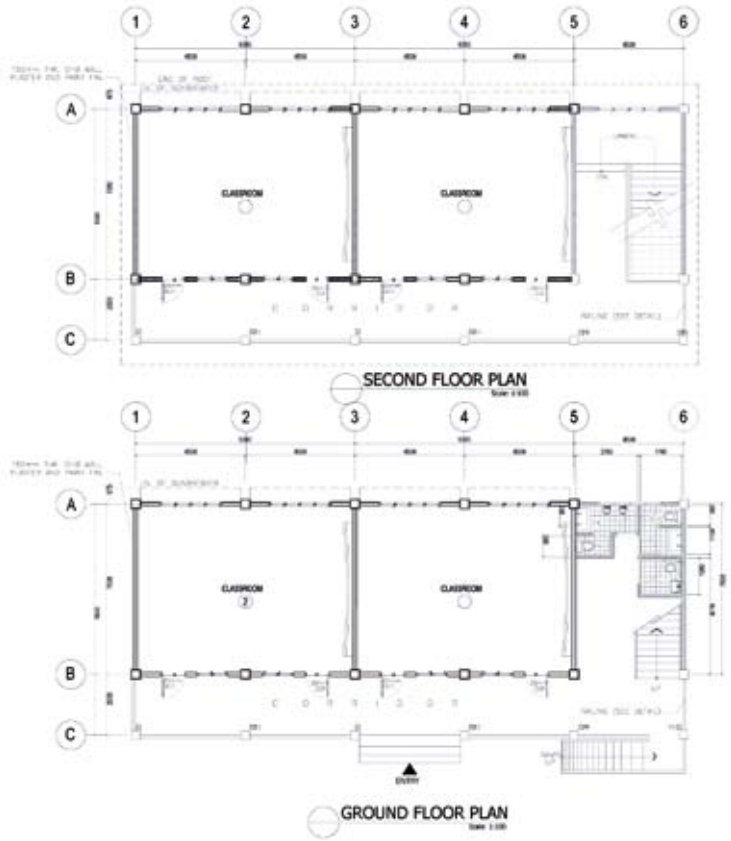


Floor Plan: One Storey Five Classroom

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



Perspective View



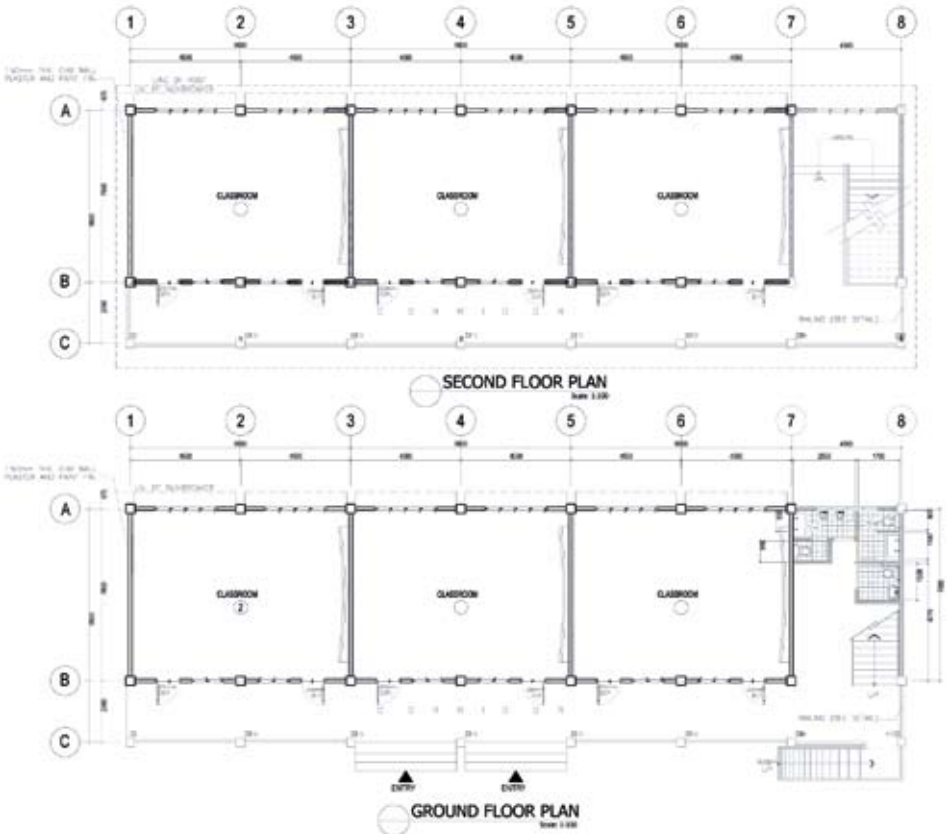
Floor Plan: Two Storey Four Classroom

ANNEX AF

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



Perspective View



Floor Plan: Two Storey Six Classroom

ANNEX AG

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



Perspective View





Floor Plan: Two Storey Eight Classroom

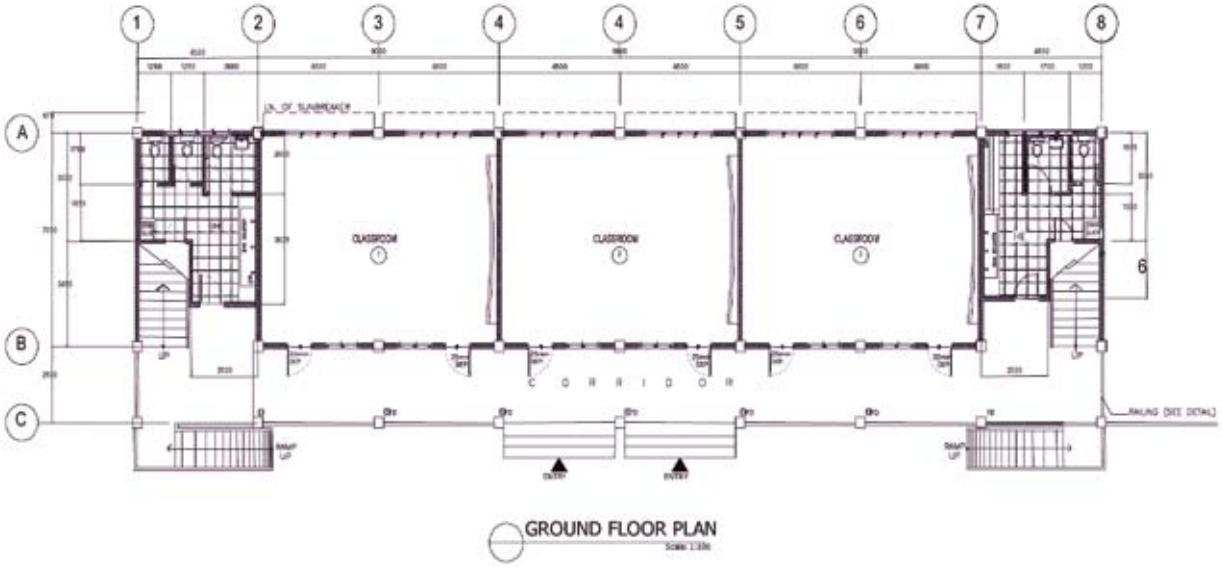
ANNEX AH

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



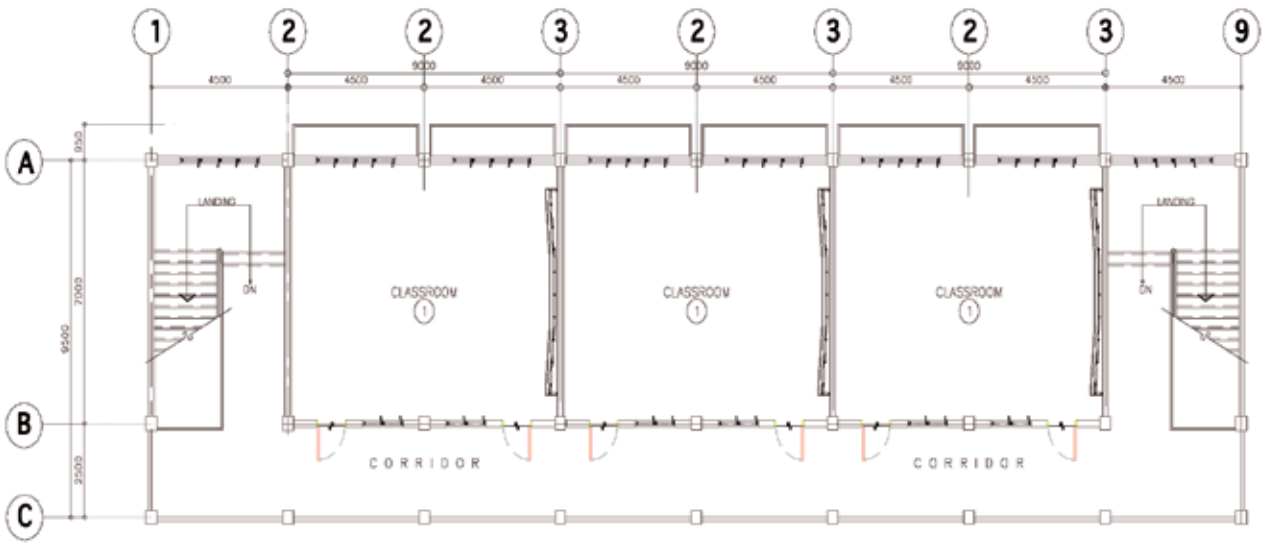
Perspective View

160

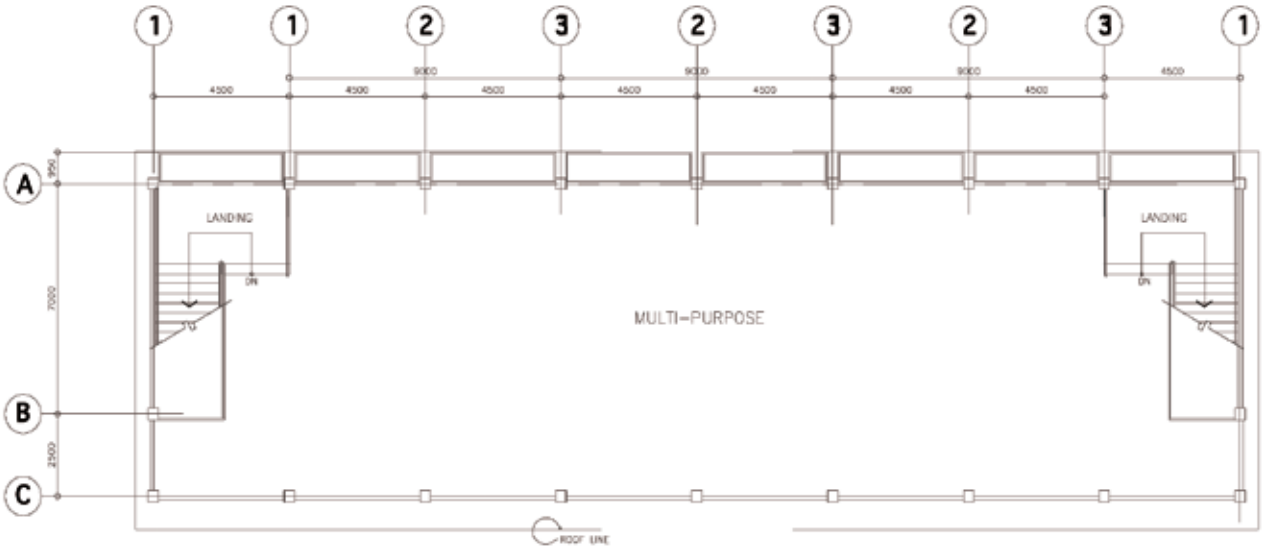


Floor Plan: Three Storey Six Classroom

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



SECOND FLOOR PLAN



THIRD FLOOR PLAN

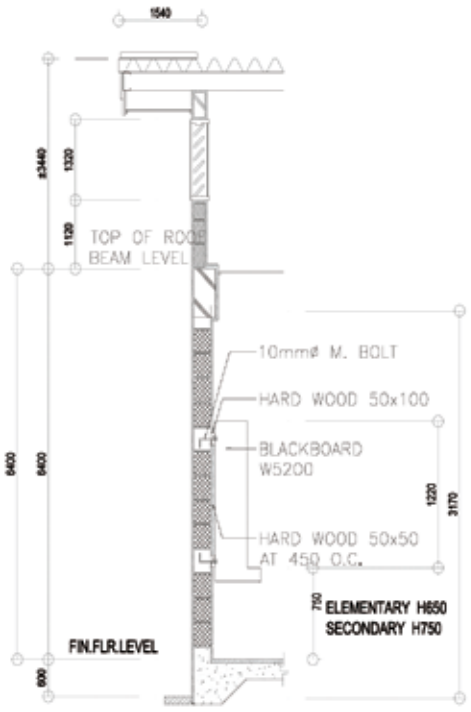
ANNEX AI

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



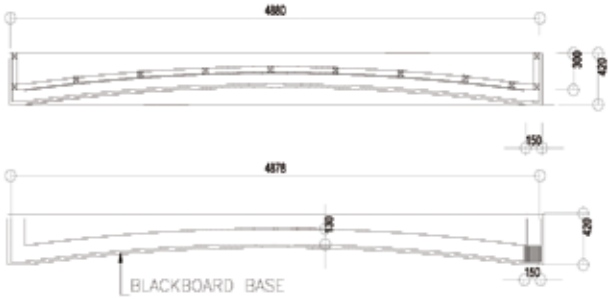
SITE DEVELOPMENT PLAN

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY

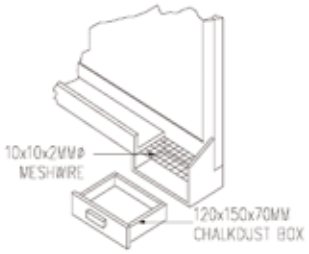




FRONT VIEW



TOP VIEW SIDE VIEW



DETAIL



SPECIFICATION:

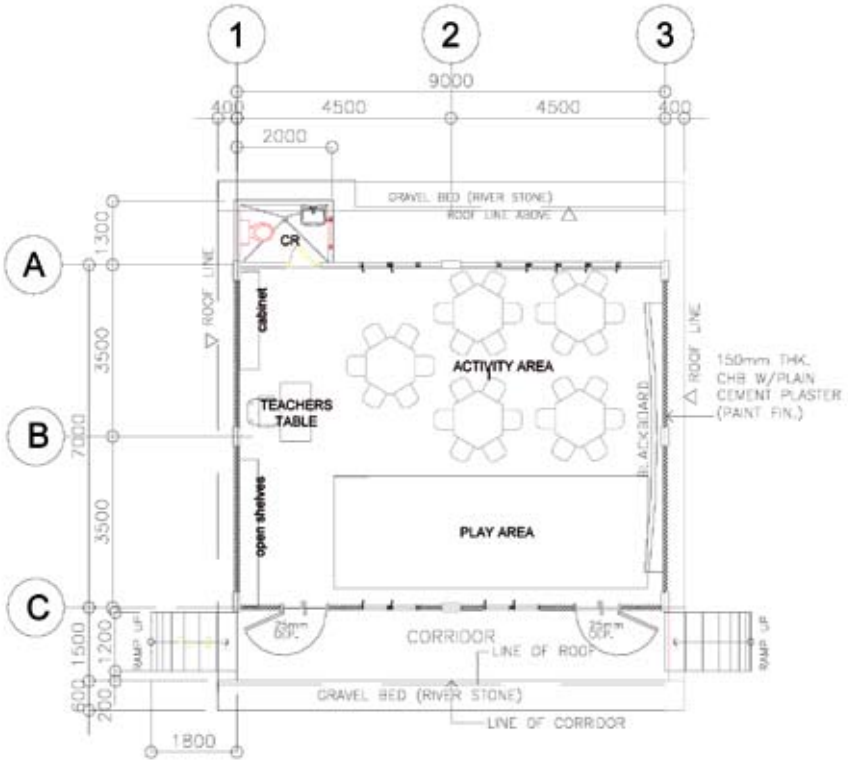
MATERIALS:	-25x300mm SOLID TANGUILE OR EQUIVALENT WOOD FRAMES. -6mm THK LAWANIT BOARD
PROVIDE:	-70x120x150mm CHALKDUST BOX -20ø x10x10mm MESHWIRE
FINISH:	-FRAMING AND CHALKBOX PAINT WITH QUICK DRYING ENAMEL PAINT (BROWN) -BOARD PAINT WITH BLACKBOARD PAINT (GREEN) OR BLACKBOARD SLATE

BLACKBOARD DETAIL

REPUBLIC OF THE PHILIPPINES
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PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



Perspective View

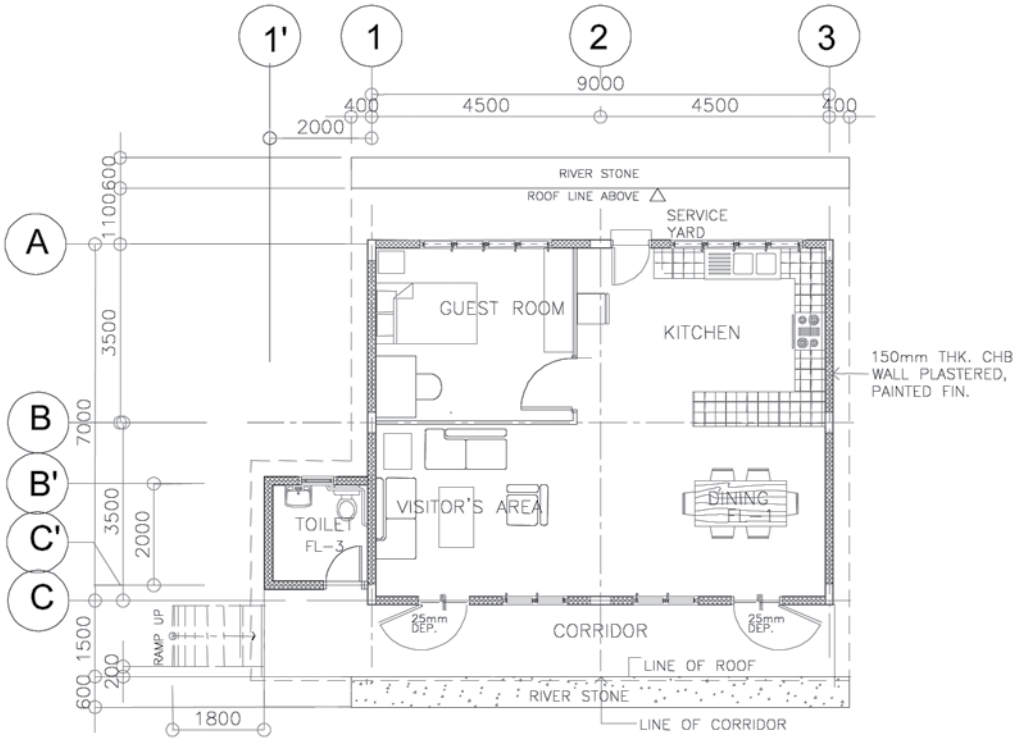


Floor Plan: One Storey Pre-School Building

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



Perspective View

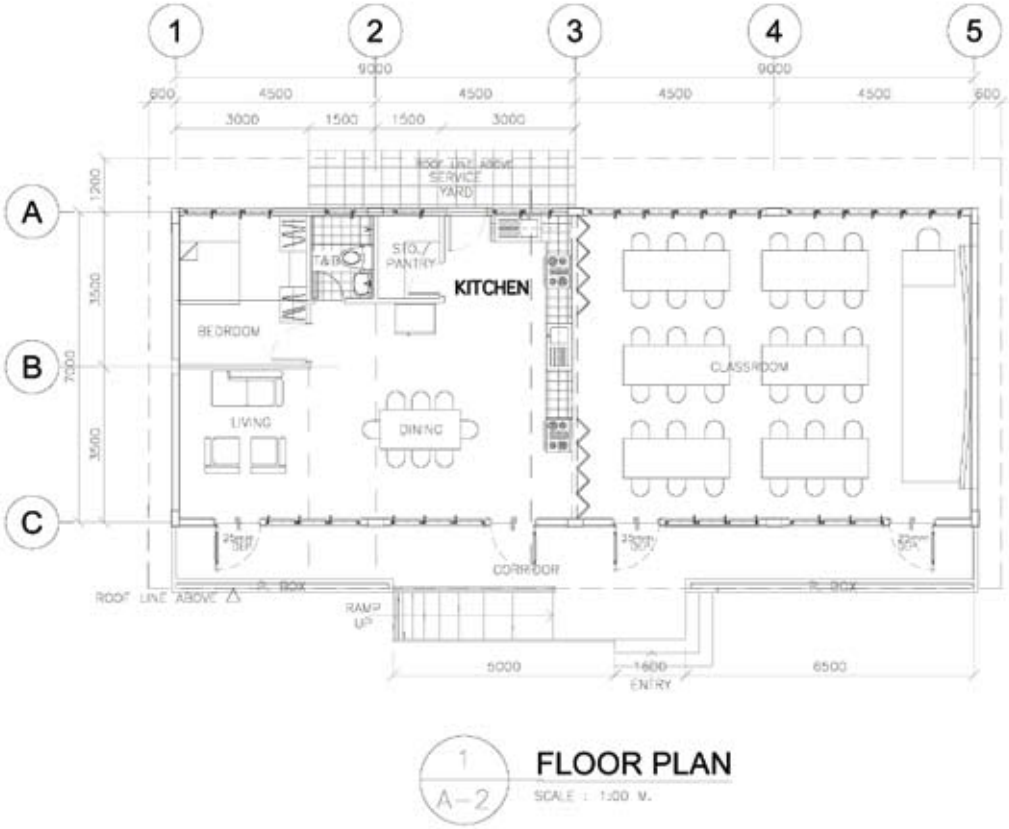


Floor Plan: One Storey Home Economics Building

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



Perspective View

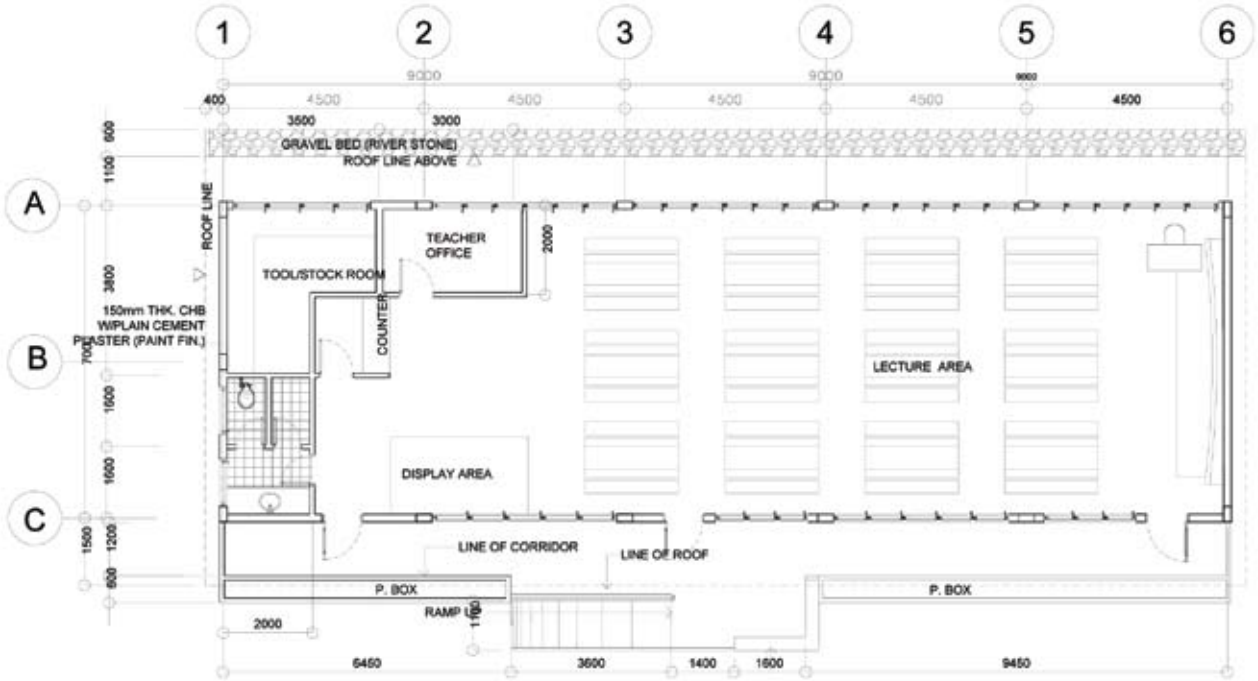


Floor Plan: One Storey Multi-Purpose School Building

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



Perspective View



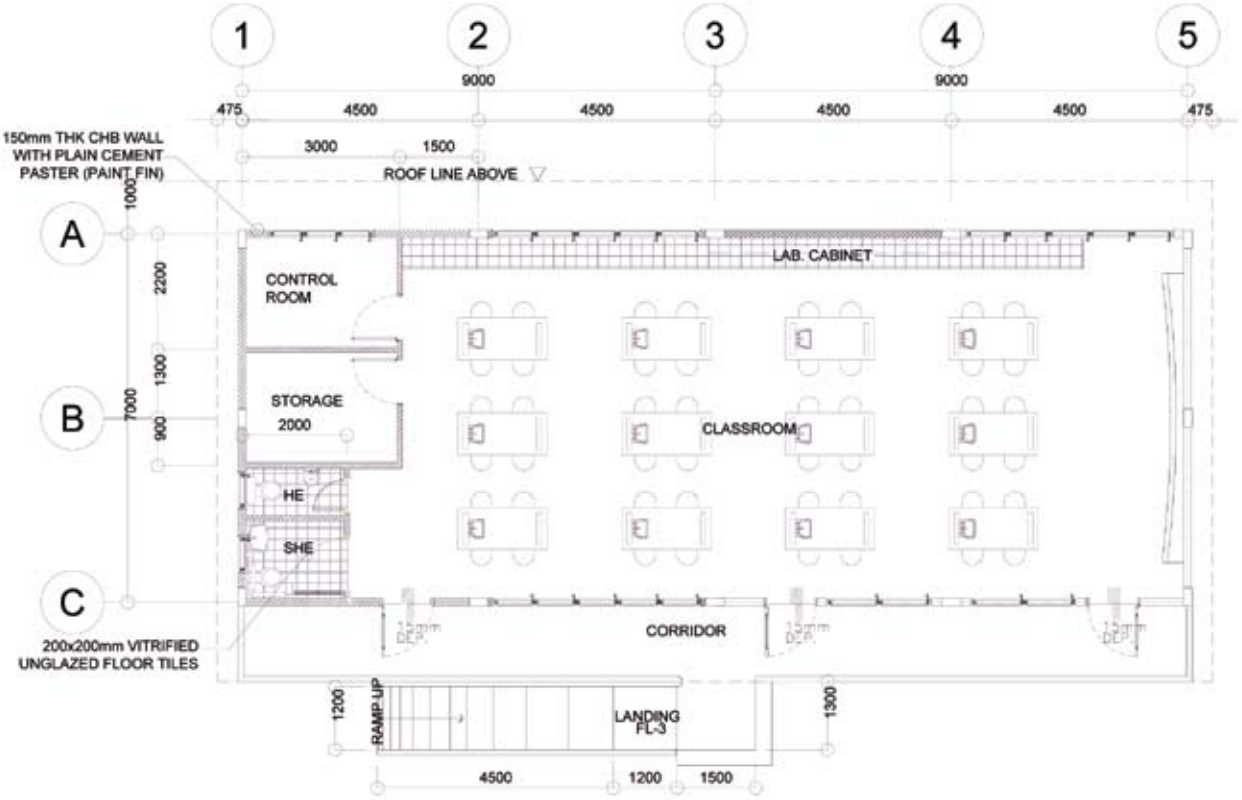
Floor Plan: One Storey Industrial Arts

ANNEX AK-1

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



Perspective View



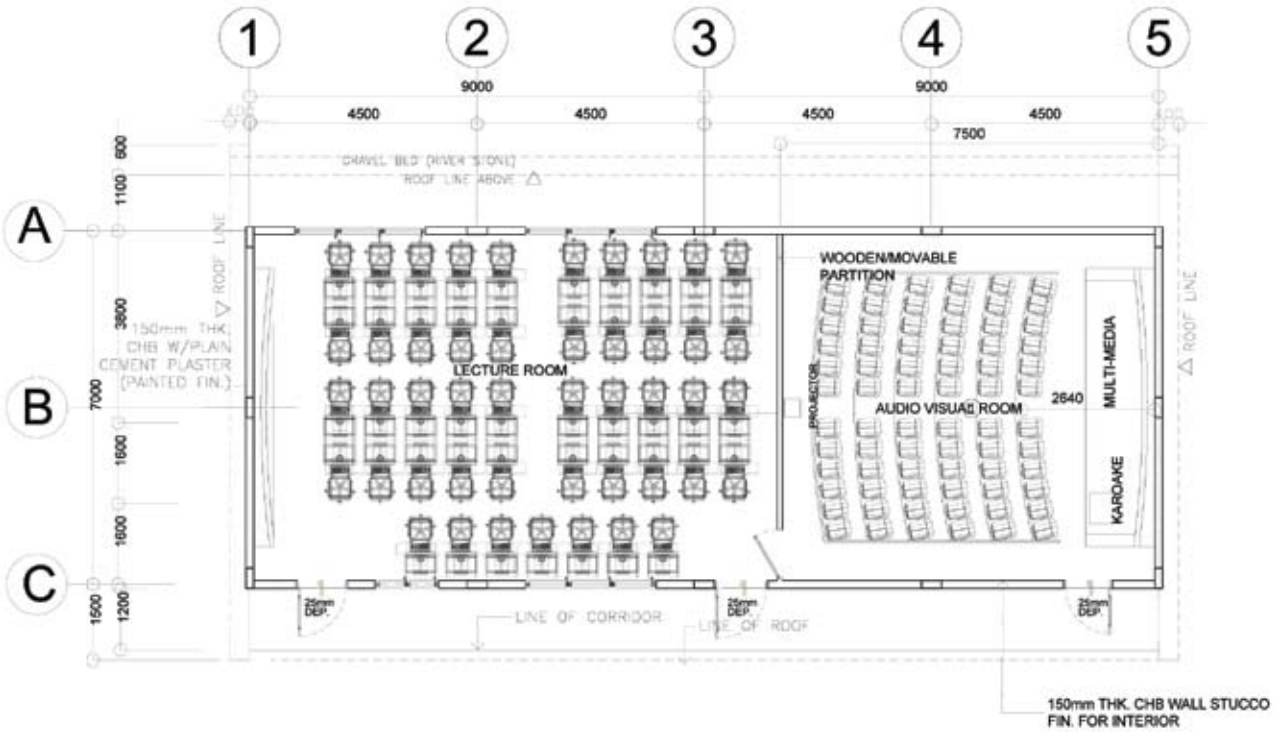
Floor Plan: One Storey Science Laboratory

ANNEX AL

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



Perspective View



Floor Plan: One Storey Computer Laboratory

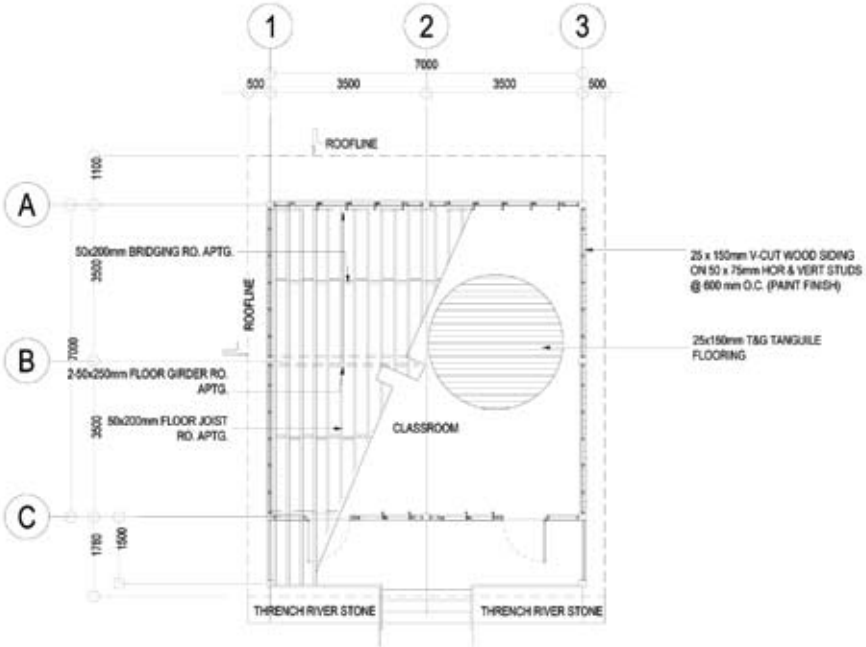
ANNEX AM-1

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



Perspective View

170

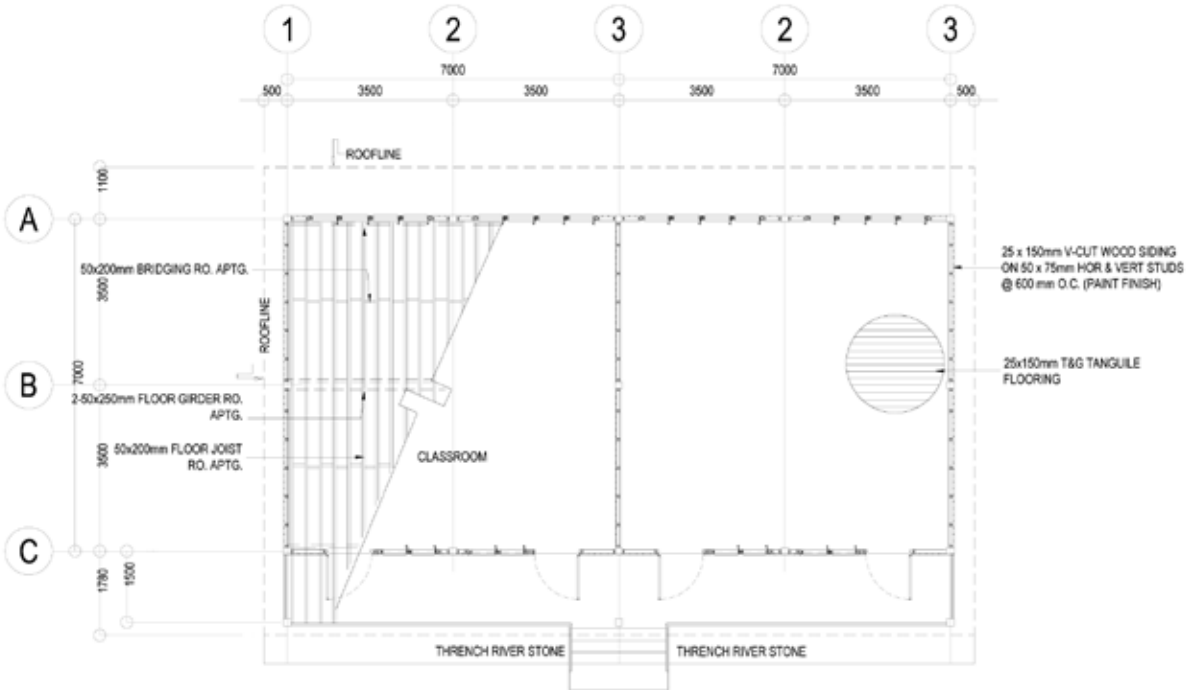


Floor Plan: One Storey Wooden Classroom

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



Perspective View

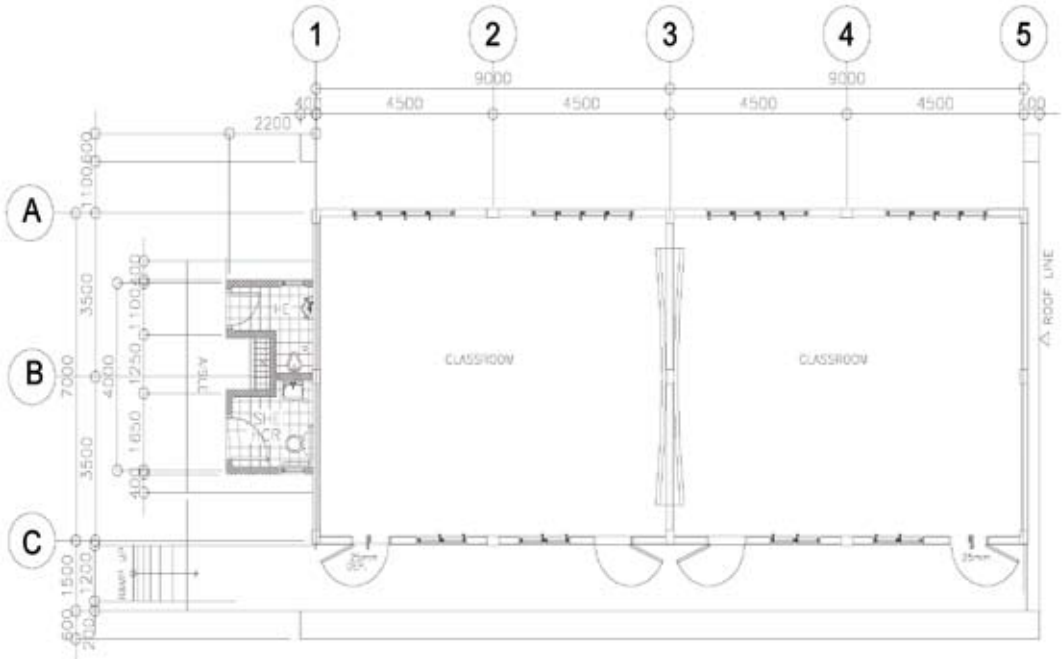


Floor Plan: One Storey Wooden Classroom 2Classroom

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



Perspective View

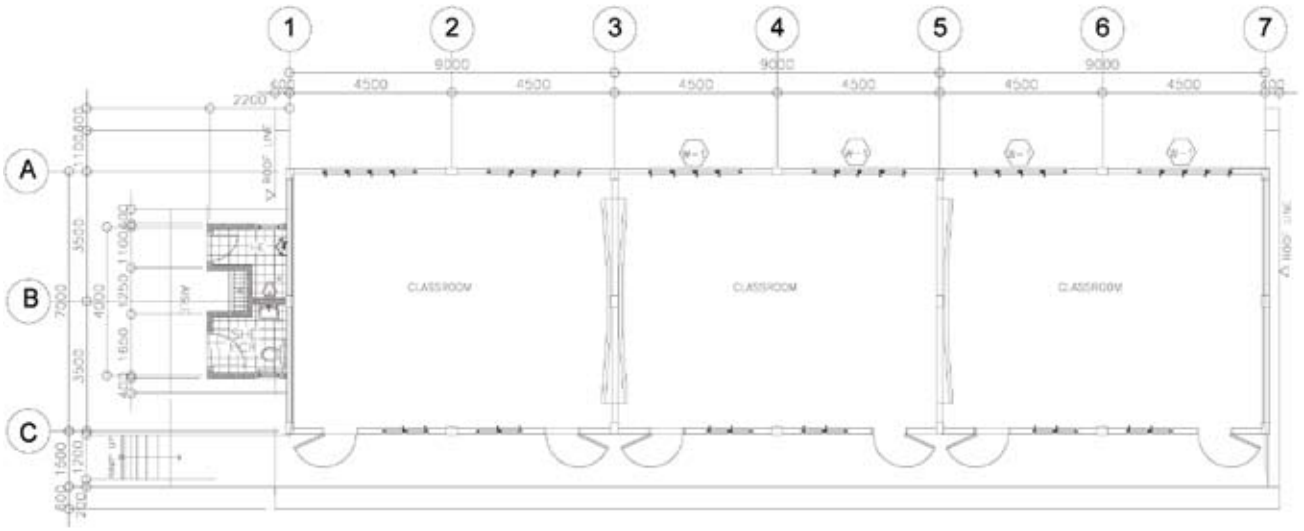


Floor Plan: One Storey-2 Classroom w/ Toilet (For Sphere Projects)

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



Perspective View



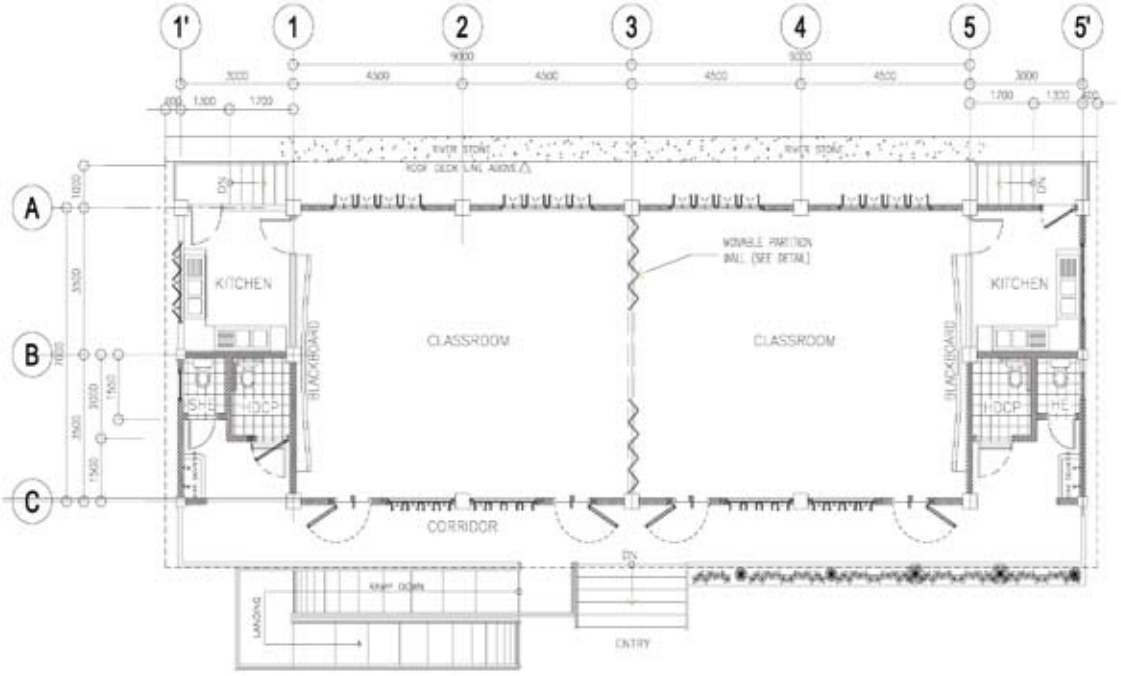
Floor Plan: One Storey-3 Classroom w/ Toilet (For Sphere Projects)

ANNEX AO

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY

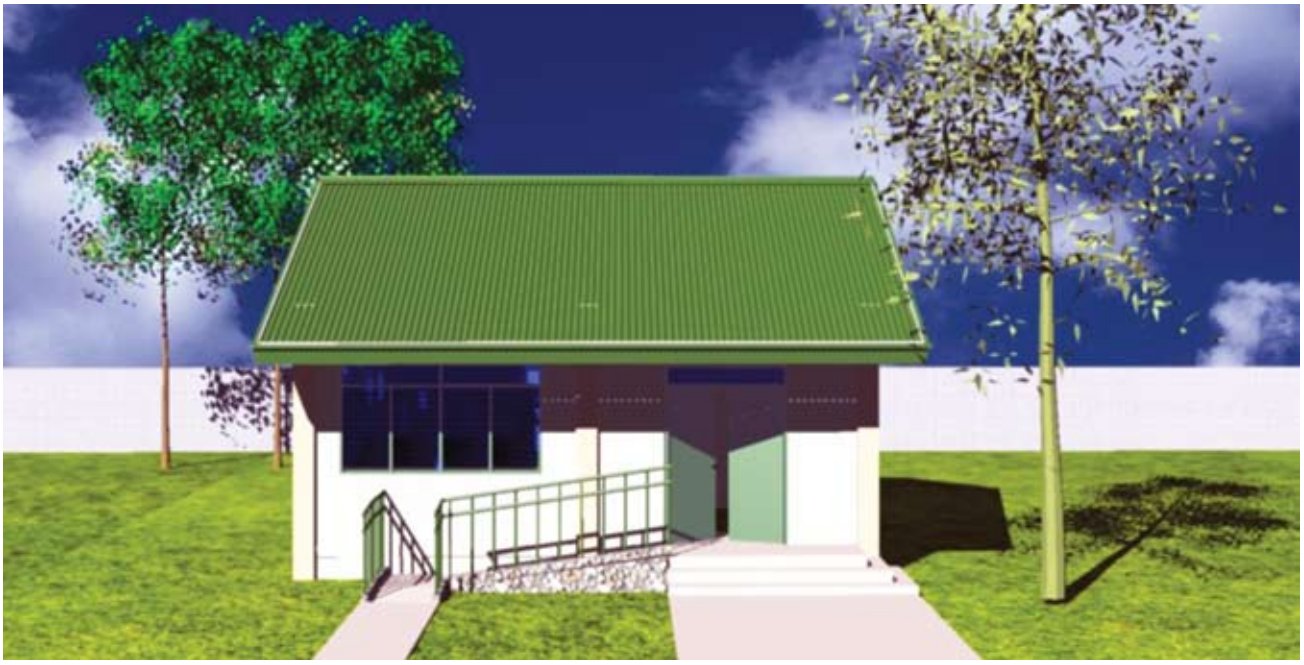


Perspective View

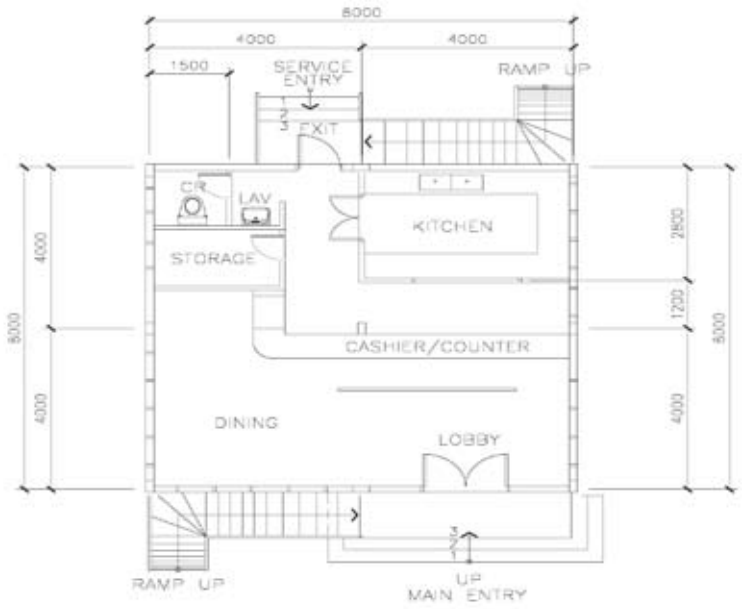


Floor Plan: One Storey-2 Classroom For Learning and Public School Building (For Calamity Stricken Area)

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



Perspective View

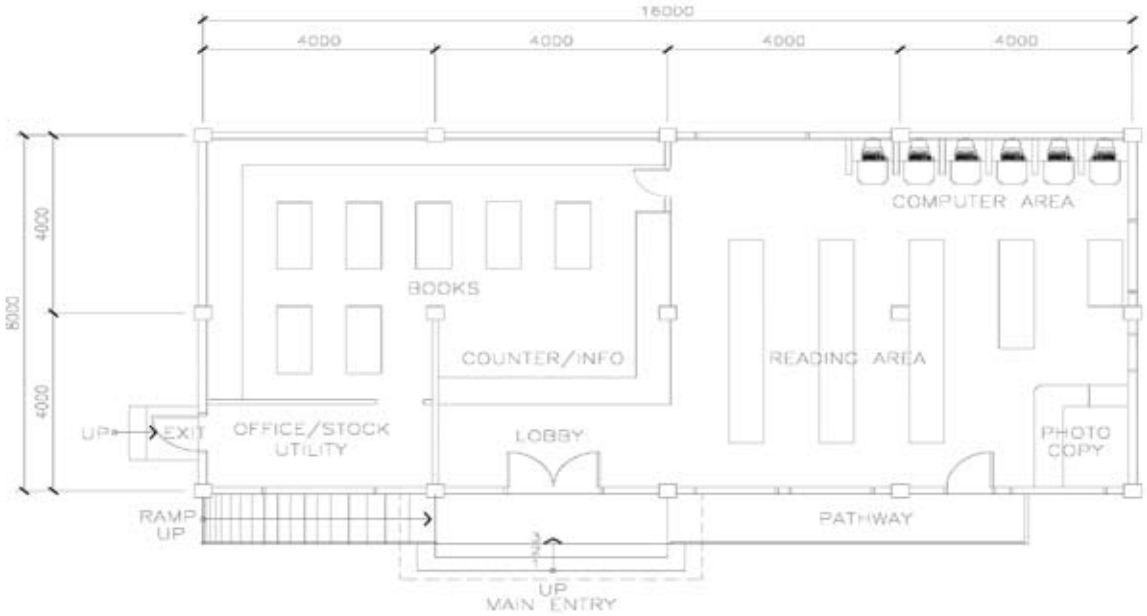


Floor Plan: One Storey School Canteen

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



Perspective View

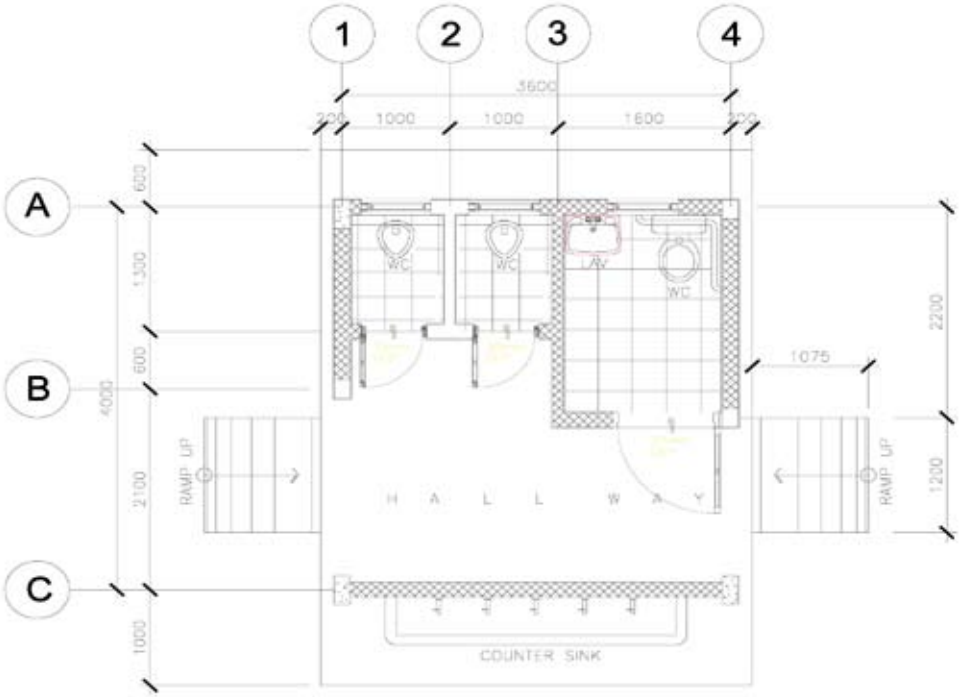


Floor Plan: One Storey School Library

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



Perspective View

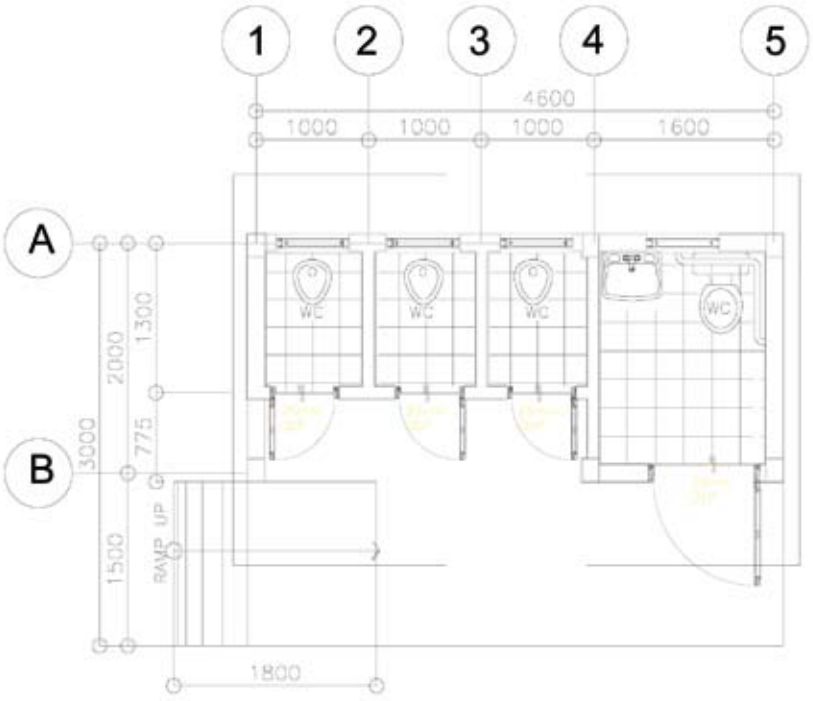


Floor Plan: Three Seater Toilet Detached (Type III)

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY

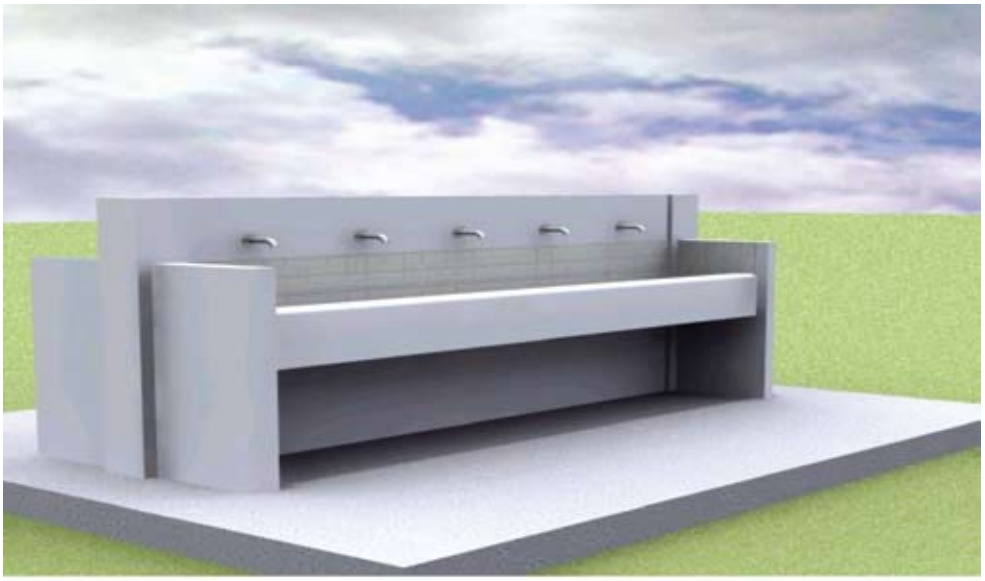


Perspective View

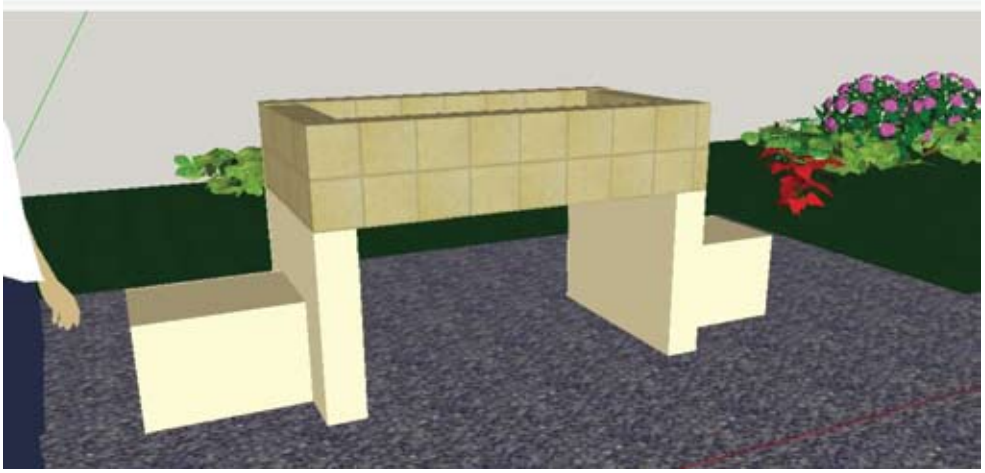


Floor Plan: Four Seater Toilet Detached

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY







Perspective View: Handwashing Counter Detached (Type I, II, III)

ANNEX B-1

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



REGIONAL EDUCATIONAL LEARNING CENTER (RELC),
PUERTO GALERA, REGION IV-A, MIMAROPA



REGIONAL EDUCATIONAL LEARNING CENTER (RELC),
WANGAL, BENGUET, CORDILLERA ADMINISTRATIVE REGOIN (CAR)

Perspective View

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



REGIONAL EDUCATIONAL LEARNING CENTER (RELC), PAGADIAN CITY, REGION IX



ONE STOREY DIVISION OFFICE BUILDING

Perspective View

ANNEX B-3

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



ONE STOREY DIVISION OFFICE BUILDING



TWO STOREY DIVISION OFFICE BUILDING

Perspective View

REPUBLIC OF THE PHILIPPINES
DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



TWO STOREY DIVISION OFFICE BUILDING

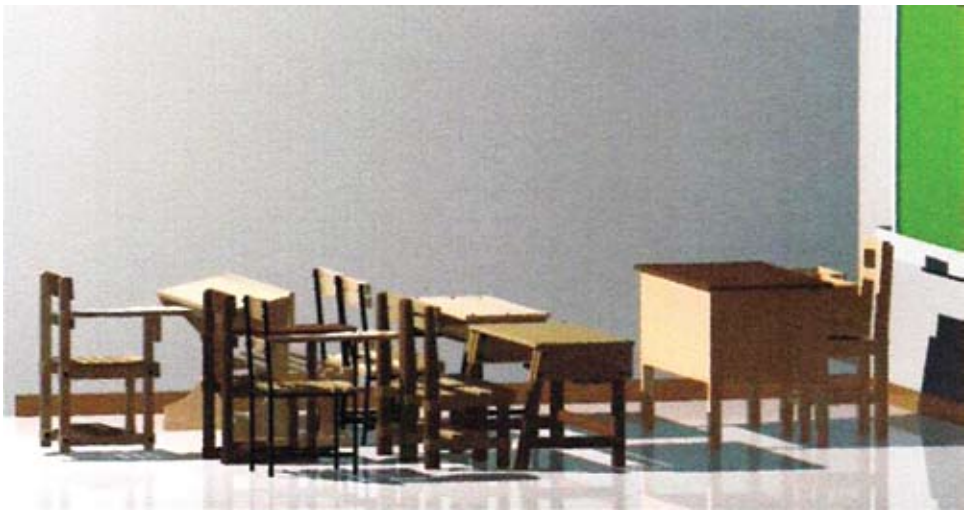


TWO STOREY REGIONAL ADMINISTRATIVE BUILDING

Perspective View

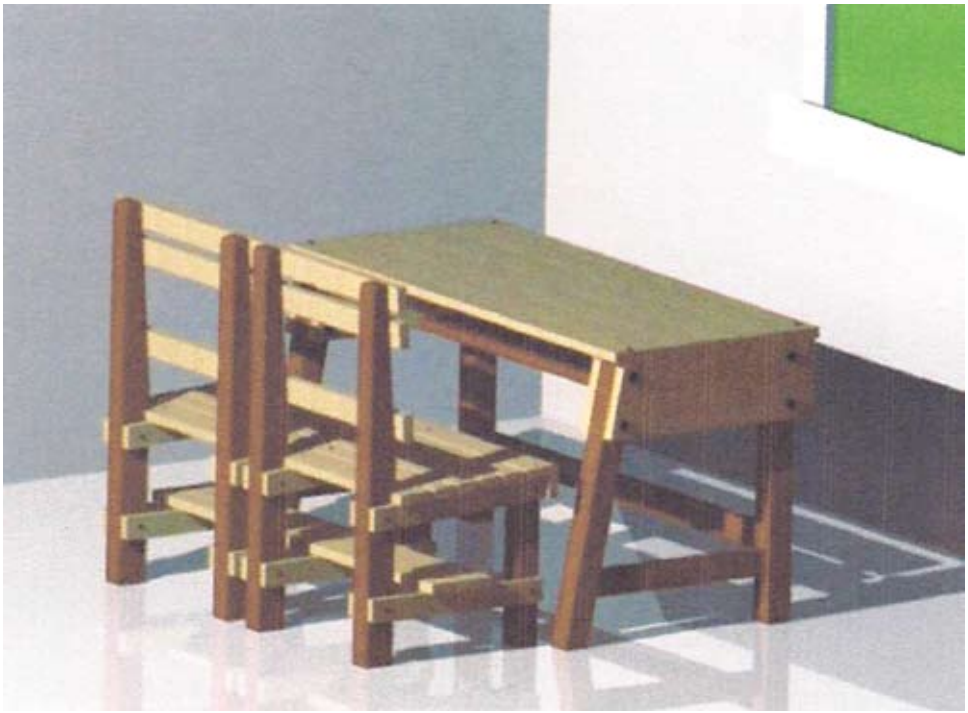
ANNEX E

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MERALCO AVENUE, PASIG CITY



DepED STANDARD SCHOOL FURNITURE

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TWO SEATER TABLE AND CHAIRS FOR ELEMENTARY GRADES
(ALL WOOD)

ANNEX EB

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PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



186

TWO SEATER TABLE FOR ELEMENTARY GRADES (ALL WOOD)

ITEM	DESCRIPTION	ELEMENTARY GRADES I-IV			ELEMENTARY GRADES V-VI			TECHNICAL SPECIFICATION
		WIDTH (mm)	LENGTH (mm)	HEIGHT (mm)	WIDTH (mm)	LENGTH (mm)	HEIGHT (mm)	
A	TOP BOARD	200	1000	525	400	1100	590	19mm THK. MARINE PLYWOOD w/19x19mm SOLID TRIMMING.
B	LEGS	50	50	525	50	50	590	SOLID WOOD
C	LEGS SUPPORT	50	50	±200	50	50	±400	SOLID WOOD
D	FASCIA	20	VAR.	150	20	VAR.	150	SOLID WOOD
E	BOOK SHELF	200	1000	375	200	1100	440	19mm THK. MARINE PLYWOOD w/19x19mm SOLID TRIMMING.
F	DIVIDER	150	±200	375	150	±400	440	SOLID WOOD

ANNEX EC

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MERALCO AVENUE, PASIG CITY



TWO SEATER TABLE FOR ELEMENTARY GRADES (WOOD & STEEL)

ITEM	DESCRIPTION	ELEMENTARY GRADES I-IV			ELEMENTARY GRADES V-VI			TECHNICAL SPECIFICATION
		WIDTH (mm)	LENGTH (mm)	HEIGHT (mm)	WIDTH (mm)	LENGTH (mm)	HEIGHT (mm)	
A	TOP BOARD	200	1000	525	400	1100	590	19mm THK. MARINE PLYWOOD w/19x19mm SOLID TRIMMING.
B	LEGS	ø20		525	ø20		590	B.I. TUBE (SCH.20)
C	LEGS SUPPORT	ø20		±200	ø20		±400	B.I. TUBE (SCH.20)
D	FASCIA	20	VAR.	150	20	VAR.	150	SOLID WOOD
E	BOOK SHELF	200	1000	375	200	1100	440	19mm THK. MARINE PLYWOOD w/19x19mm SOLID TRIMMING.
F	DIVIDER	150	±200	375	150	±400	440	19mm THK. MARINE PLYWOOD

ANNEX ED

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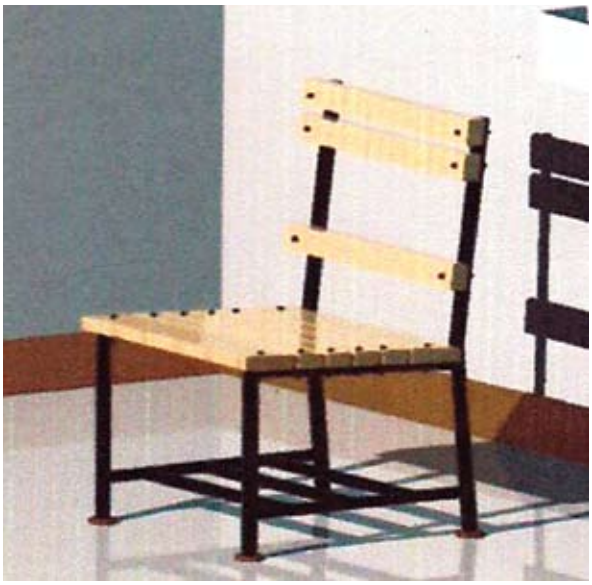


188

CHAIR FOR ELEMENTARY GRADES (ALL WOOD)

ITEM	DESCRIPTION	ELEMENTARY GRADES I-IV			ELEMENTARY GRADES V-VI			TECHNICAL SPECIFICATION
		WIDTH (mm)	LENGTH (mm)	HEIGHT (mm)	WIDTH (mm)	LENGTH (mm)	HEIGHT (mm)	
A	SEAT SLOT	370	330	320	390	370	360	2-pcs. 19x70mm SOLIDWOOD 4 –pcs. 19x50mm SOLIDWOOD
								2-pcs. 19x70mm SOLIDWOOD 5–pcs. 19x50mm SOLIDWOOD
B	FRONT LEG	45	45	320	45	45	360	SOLID WOOD
C	BACK LEG	45	70	645	45	70	710	SOLID WOOD
D	SEAT SLAT	390	370	360	430	400	385	4 – pcs. 19 x 45 SOLIDWOOD
								2-pcs. 19x70mm SOLIDWOOD
E	BOOK SHELF	20	45	370	20	45	430	3 – pcs. SOLIDWOOD
F	BACKREST	20	100	710	20	100	800	1-pc. SOLID WOOD
		20	50	570	20	50	630	1-pc. SOLID WOOD

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DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



CHAIR FOR ELEMENTARY GRADES (WOOD AND STEEL)

ITEM	DESCRIPTION	ELEMENTARY GRADES I-IV			ELEMENTARY GRADES V-VI			TECHNICAL SPECIFICATION
		WIDTH (mm)	LENGTH (mm)	HEIGHT (mm)	WIDTH (mm)	LENGTH (mm)	HEIGHT (mm)	
A	SEAT SLOT	370	330	320	390	370	360	2-pcs. 19x70mm SOLIDWOOD 4 –pcs. 19x50mm SOLIDWOOD
								2-pcs. 19x70mm SOLIDWOOD 5–pcs. 19x50mm SOLIDWOOD
B	FRONT LEG	ø20		320	ø20		360	B.I. TUBE (SCH.20)
C	BACK LEG	ø20		645	ø20		710	B.I. TUBE (SCH.20)
D	SEAT SLAT	390	370	360	430	400	385	4 –pcs. 19x45mm SOLIDWOOD
								2 –pcs. 19x70mm SOLIDWOOD
E	BOOK SHELF	20	45	370	20	45	430	3-pcs. SOLIDWOOD
F	BACK REST	20	100	710	20	100	800	1-pc. 19x100mmSOLIDWOOD
		20	50	570	20	50	630	2-pc. 19x50mm SOLIDWOOD

ANNEX EF

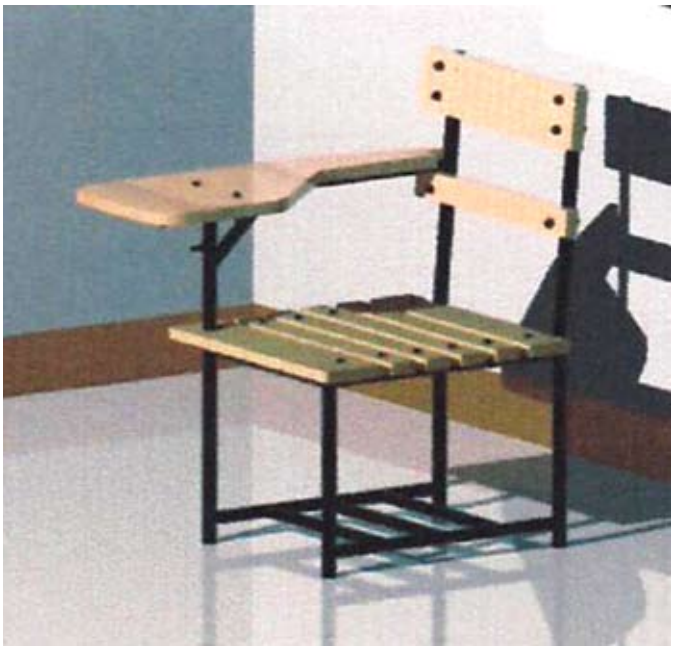
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MERALCO AVENUE, PASIG CITY



TABLET ARMCHAIR (ALL WOOD)

ITEM	DESCRIPTION	ELEMENTARY GRADES I-IV			ELEMENTARY GRADES V-VI			TECHNICAL SPECIFICATION
		WIDTH (mm)	LENGTH (mm)	HEIGHT (mm)	WIDTH (mm)	LENGTH (mm)	HEIGHT (mm)	
A	WRITING BOARD	250	625	590	255	625	640	19mm THK. MARINE PLYWOOD w/19x19mm SOLID TRIMMING.
B	FRONT LEG	45	45	360	45	45	400	SOLID WOOD
C	BACK LEG	45	70	710	45	70	800	SOLID WOOD
D	SEAT SLAT	390	370	360	430	400	385	4 –pcs. 19x45mm SOLIDWOOD
								2 –pcs. 19x70mm SOLIDWOOD
E	BOOKSHELF	20	45	370	20	45	430	3-pcs. SOLID WOOD
F	BACK REST	20	100	710	20	100	800	1-pc. SOLID WOOD
		20	50	570	20	50	630	1-pc. SOLID WOOD

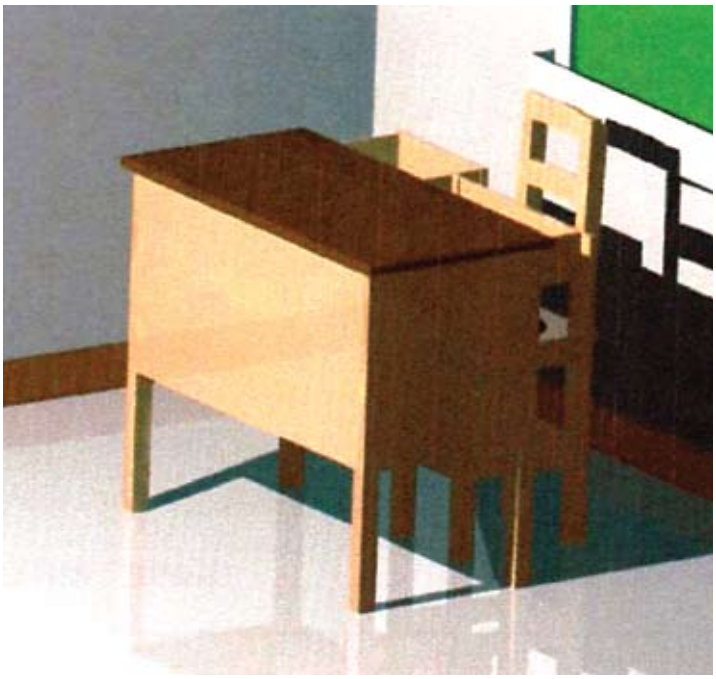
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MERALCO AVENUE, PASIG CITY



TABLET ARMCHAIR (WOOD AND STEEL)

ITEM	DESCRIPTION	ELEMENTARY GRADES I-IV			ELEMENTARY GRADES V-VI			TECHNICAL SPECIFICATION
		WIDTH (mm)	LENGTH (mm)	HEIGHT (mm)	WIDTH (mm)	LENGTH (mm)	HEIGHT (mm)	
A	WRITING BOARD	250	625	625	255	625	640	19mm THK. MARINE PLYWOOD w/19x19mm SOLID TRIMMING.
B	FRONT LEG	ø20		360	ø20		400	B.I. TUBE (SCH.20)
C	BACK LEG	ø20		710	ø20		800	B.I. TUBE (SCH.20)
D	SEAT SLAT	390	370	360	430	400	385	4 –pcs. 19x45mm SOLIDWOOD
								2 –pcs. 19x70mm SOLIDWOOD
E	BOOKSHELF	ø20		370	ø20		430	B.I. TUBE (SCH.20)
F	BACK REST	20	10	710	20	100	800	1-pc. SOLID WOOD
		20	50	570	20	50	630	1-pc. SOLID WOOD

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MERALCO AVENUE, PASIG CITY



TEACHER'S TABLE AND CHAIR

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MERALCO AVENUE, PASIG CITY



TEACHER'S TABLE (ALL WOOD)

ITEM	DESCRIPTION	ELEMENTARY GRADES I-IV			TECHNICAL SPECIFICATION
		WIDTH (mm)	LENGTH (mm)	HEIGHT (mm)	
A	TABLE TOP	400	1200	750	19mm THK. MARINE PLYWOOD w/19x19mm SOLID TRIMMING.
B	LEG	45	45	750	SOLID WOOD
C	SIDINGS	430	VAR	730	6mm THK. PLYWOOD
D	BUILT-IN DRAWER				3 SET FR. SOLID PLANK OR MARINE PLYWOOD

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PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



TEACHER'S CHAIR (ALL WOOD)

ITEM	DESCRIPTION	ELEMENTARY GRADES I-IV			TECHNICAL SPECIFICATION
		WIDTH (mm)	LENGTH (mm)	HEIGHT (mm)	
A	SEAT	432	381	457	19mm THK. MARINE PLYWOOD w/19x19mm SOLID TRIMMING.
B	FRONT LEG	45	45	437	SOLID WOOD
C	BACK LEG	45	45	889	SOLID WOOD
D	BACKREST	20	75	432	1-pc.SOLID WOOD
		20	50	689	1-pc.SOLID WOOD
E	SEAT SUPPORT	75	432	457	2 –pcs. 20mmSOLIDWOOD
		75	381	457	2 –pcs. 20mmSOLIDWOOD
F	LEG BRACE	50	432	168	2 –pcs. 20mmSOLIDWOOD
		50	381	168	2 –pcs. 20mmSOLIDWOOD

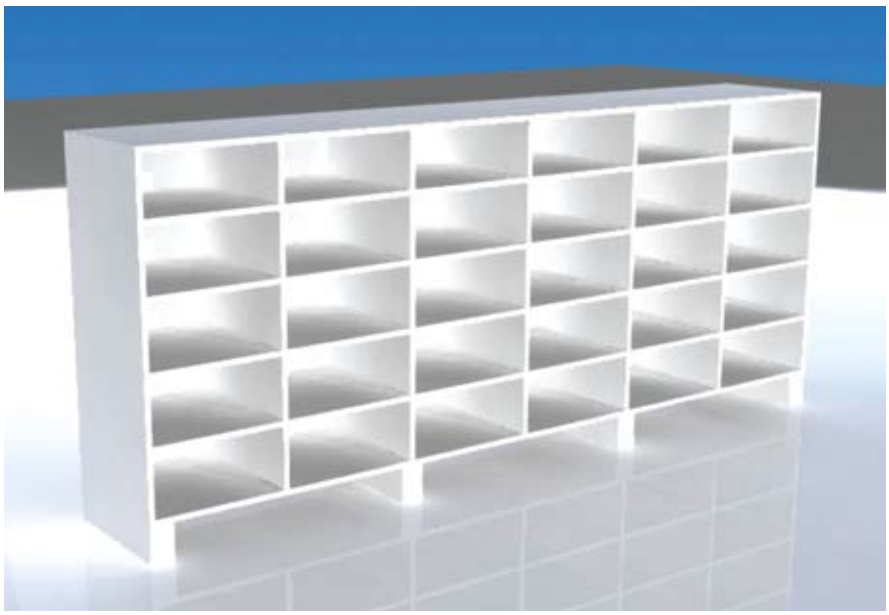
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MERALCO AVENUE, PASIG CITY



MONOBLOC CHAIR FOR PRE-SCHOOL

ITEM	DESCRIPTION	DIMENSIONS	TECHNICAL SPECIFICATION
A	SEAT HEIGHT	300 ±20mm	MONOBLOC TYPE POLYPROPELYNE (PP) PLASTIC THICKNESS LEGS - 4MM (MIN) SEAT - 4MM (MIN) BACKREST – 4MM (MIN) LIGHT COLORS (Approved by Procuring Entity) ARMREST – OPTIONAL
B	SEAT DEPTH	280 ±20mm	
D	SEAT WIDTH	280mm	
E	BACKREST HEIGHT	450mm	

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DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



CUDDY FOR PRE-SCHOOL

ITEM	DESCRIPTION	DIMENSIONS	TECHNICAL SPECIFICATION
A	TOP/ BOTTOM BOARD	281mm x1180mm x 19mm (3/4"), PLY WOOD	WOOD - smooth finish w/ at least 3 coats of flat wall enamel (white) ALL EDGES concealed w/ putty
B	SIDE BOARD	2 - 281mm x 660mm x 19mm(3/4"), PLY WOOD	
D	VERTICAL DIVIDER BOARD	5 - 281mm x 660mm x 19mm(3/4"), PLY WOOD	
E	WOOD EDGING	3/4" x 3/4"	

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DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



TABLE FOR PRE-SCHOOL

ITEM	DESCRIPTION	DIMENSIONS	TECHNICAL SPECIFICATION
A	TOP BOARD	520mm x1180mm x 19(3/4") mm, MARINEPLYWOOD	WOOD - smooth finish w/ at least 3 coats flat wall enamel (white) STEEL - smooth finish w/ at least 3 coats quick dry enamel (sky-blue) JOINTS - fully welded
B	STRUCTURAL FRAME	20mm B.I. TUBE (SCH. 20)	
D	RUBBER FOOTINGS	1pc.-YELLOW, 1pc.-GREEN,1pc.-RED, 1pc.-BLUE	

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DEPARTMENT OF EDUCATION (DepED)
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MERALCO AVENUE, PASIG CITY



SHELF FOR PRE-SCHOOL TEACHER

ITEM	DESCRIPTION	DIMENSIONS	TECHNICAL SPECIFICATION
A	SIDEBOARD	281mm x1180mm x 19mm (3/4"), PLY WOOD	WOOD - smooth finish w/ at least 3 coats of flat wall enamel (white) ALL EDGES - concealed w/ putty
B	HORIZONTAL DIVIDER BOARD	2 - 281mmx1370mmx19mm (3/4"), PLY WOOD	
D	VERTICAL DIVIDER BOARD	1 - 281mm x 1250mm x19mm(3/4"), PLY WOOD	
E	WOOD EDGING	3/4" x 3/4"	

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MERALCO AVENUE, PASIG CITY



LIBRARY TABLE (WOOD & STEEL)

ITEM	DESCRIPTION	DIMENSIONS	TECHNICAL SPECIFICATION
A	TABLE TOP	1pc - 800mm x 1500mm x 25mm	PLYWOOD - shall be applied with glazing putty prior to application of light yellow enamel paint
B	STRUCTURAL FRAME	25mmø B.I. PIPE (SCH. 25)	SMOOTH FINISH - with at least 3 coats epoxy or anti-acid paint for metal
D	LEGS	4 – 675mm x 25mmø (FOR ELEMENTARY) 4 – 725mm x 25mmø (FOR SECONDARY)	JOINTS -are fully welded

ANNEX EP

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MERALCO AVENUE, PASIG CITY

200



LIBRARY CHAIR (WOOD & STEEL)

ITEM	DESCRIPTION	DIMENSIONS	TECHNICAL SPECIFICATION
A	SEAT	410mmx 350mmx 12mm	PLY WOOD W/ AT LEAST 1" THICK FOAM/ CUSHION COVERED WITH FABRIC & PLASTIC
B	STRUCTURAL FRAME	20mm B.I. TUBE (SCH. 20)	STEEL - black enamel paint with primer
D	BACKREST	220mm x 320mmx12mm	PLYWOOD W/ AT LEAST 1/2" THICK FOAM/ CUSHION, COVERED W/ FABRIC & PLASTIC
RUBBER FOOTINGS 4PCS. - BLACK			

ANNEX EQ

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MERALCO AVENUE, PASIG CITY



201

WORKBENCH (ALL WOOD)

ITEM	DESCRIPTION	DIMENSIONS	TECHNICAL SPECIFICATION
A	TABLE TOP	4 - 2" (50mm) x 6" (150mm) x 1500mm 1 - 1" (25mm) x 12" (200mm) x 1500mm	ALL WOOD CONNECTION SHALL BE APPLIED WITH WOOD GLUE APPROPRIATE FASTENERS ALL WOOD SHALL BE TANGUILE , G MELINA OR EQUIVALENT
B	LEG	4pcs. - 3" (75mm) x 3" (75mm) x 750mm (FOR ELEMENTARY) 4pcs. - 3" (75mm) x 3" (75mm) x 850mm (FOR SECONDARY)	
D	UPPER BRACE	2pcs. - 2" (50mm) x 3" (75mm) x 400mm 2 pcs. - 2" (50mm) x 3" (75mm) x 700mm 3pcs. - 2" (50mm) x 3" (75mm) x 600mm	
E	LOWER BRACE	2pcs. - 2" (50mm) x 3" (75mm) x 400mm 5pcs. - 2" (50mm) x 3" (75mm) x 700mm	

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DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY

202



TEACHER'S CHAIR (WOOD & STEEL)

ITEM	DESCRIPTION	DIMENSIONS	TECHNICAL SPECIFICATION
A	SEAT	381mm x 432mm	19mm THK. PLYWOOD TANGUILE W/ 6MM WOOD EDGING
B	STRUCTURAL FRAME	20mm B.I. TUBE (SCH. 20)	STEEL - black enamel paint with primer
D	BACKREST HEIGHT	889mm	
E	BACKREST	381mm X 432mm	19mm THK. PLYWOOD TANGUILE W/ 6MM WOOD EDGING

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DEPARTMENT OF EDUCATION (DepED)
PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



TEACHER'S TABLE (WOOD & STEEL)

ITEM	DESCRIPTION	DIMENSIONS	TECHNICAL SPECIFICATION
A	TABLE TOP	600mm x 1200	19mm THK. TANGUILE PLYWOOD WITH 19x19mm SOLID TRIMMING / EDGING
B	LEGS	731mm x 25mmø	20mmB.I. TUBE (SCH. 20)
D	DRAWERS / FRONT & SIDE COVERS	19mm thick	TANGUILE PLYWOOD WITH 19x19mm SOLID TRIMMING / EDGING
E	BACKREST HEIGHT	450mm	

ANNEX ET

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MERALCO AVENUE, PASIG CITY

204



SCIENCE LAB TABLE (WOOD & STEEL)

ITEM	DESCRIPTION	DIMENSIONS	TECHNICAL SPECIFICATION
A	TABLE TOP	800mm x 1800mm x 19mm	MARINE PLYWOOD w/ 1.6mm thick FORMICA
B	FASCIA	2 - 19mm x 100mm x 760mm 2 - 19mm x 100mm x 760mm	SOLID WOOD JOINT 45° WITH WELD WOOD OR APPROVED ADHESIVE COMPOUND
D	LEGS	880mm x 25mmø	25mmø B.I. PIPE (SCH. 20)
E	SHELVE	400mm x 1600mm	20mm THK. MARINE PLYWOOD
STEEL FINISHES– 2 COATS BLACK EPOXY OR ANTI-ACID PAINT FOR FRAME WITH 1 COAT PRIMER JOINTS – FULLY WELDED BRACES – 20mm thick FLATBAR			

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PHYSICAL FACILITIES SCHOOL'S ENGINEERING DIVISION
MERALCO AVENUE, PASIG CITY



STOOL (WOOD & STEEL)

ITEM	DESCRIPTION	DIMENSIONS	TECHNICAL SPECIFICATION
A	SEAT HEIGHT	650mm x 25mmø	20mm B.I. TUBE (SCH. 20)
B	SEAT DEPTH	Ø300mm x 19mm	PLYWOOD COATED w/ FORMICA OR PAINT EPOXY OR ANTI ACID PAINT
D	STRUCTURAL FRAME (LEG & SUPPORT)	20mm B.I. TUBE (SCH. 20)	STEEL - black enamel paint with primer

Glossary of Terms

Academic Building – refers to a building utilized principally to house classrooms and laboratory.

Acoustics – The scientific study of sound, especially of its generation, propagation, perception and interaction with materials and other forms of radiation; the total effect of sound, especially as produced in an enclosed space.

Adaptation – refers to adjustments and responses to the inevitable and unavoidable effects of climate change (e.g., modifying infrastructure, changing cropping practices, strengthening responses to reduce impacts of natural disasters, etc.)

Administrative Building – building where offices of officials tasked with administration and management of the school are located.

Alternative Learning System (ALS) – formerly referred to as Non-Formal Education, is a parallel learning system to provide a viable alternative to the existing formal education instruction. It encompasses both the non-formal and informal sources of knowledge and skills.

Ancillary – One of a group of buildings having a secondary or dependent use, such as an annex.

Army type Building – Assembled at two (2) rooms per unit constructed by the Army in areas affected by typhoons in the 50's with G.I. sheets for roofing, wooden jalousies for windows on one side.

Bagong Lipunan Type Building – adapted from 1974 to 1981, the structure is similar to the RP-US Bayanihan Type but of modular design intended for prefabricated style. It has a floor area of 6.0 meters by 8.0 meters dimension per classroom, usually consisting of 3 rooms. It has 3 types:
Type I – 1-storey (3-classroom)
Type II – with post beams, timber roof frames, concrete hollow block (CHB) walls.
Type III – with diagonal bracket supporting the eaves, roof has steep slope, steel columns.

Basic Education – is the education intended to meet basic learning needs which lay the foundation on which subsequent learning can be based. It encompasses early childhood, elementary and high school education as well as alternative learning systems for out-of-school youth and adult learners and includes education for those with special needs.

Basic Education Information System (BEIS) – serves as the primary Management Information System (MIS) of the Department of Education. It processes and generates the data needed for planning, budget preparation, resource allocation and performance.

BERDE Green Building Rating System – is a system provided by BERDE that is voluntary, consensus-based, market-driven, based on accepted energy and environmental principles, which strike a balance between established practices and emerging concepts.

Boundary Survey – A mathematically closed diagram of the complete peripheral boundary of site, reflecting dimensions, compass bearings, and angles. It shall bear a licensed land surveyor's signed certification, and may include a meter and bounds or other written description.

Brightness-balance – The proportion of brightness-differences within the total visual field; an acceptable brightness-balance in a visual environment is a high brightness-difference within the central field and a low brightness-difference between the central field and the surrounding and peripheral fields.

Brightness-difference – The difference in brightness between any surface anywhere within the total visual field.

Building Permit – a document obtained for any work to erect, construct, alter, repair, convert or demolish a building or structure. The application is filed in writing and in the prescribed form with the Office of the Building Official.

Calamity – a state of extreme distress or misfortune, produced by some adverse circumstances or event, or any great misfortune, or cause, or loss, or misery by natural forces.

Candela – A unit of luminous intensity equal to 1/60 of the luminous intensity per square centimeter of a black body radiating at the temperature of solidification of platinum (2046 K). Also called CANDLE or STANDARD CANDLE.

Capacity – knowledge, skills, resources, abilities, strengths present in individuals, households and the community which enable them to prevent, prepare for, withstand, survive and recover from a disaster.

Capacity Assessment - stakeholders identify the resources they rely on in times of crisis to reduce the damaging effects of hazards and to secure the sustainability of their academic instructions

Catchment Area – is the relatively limited area within which the school is located and where its current and potential enrolment reside.

Central Field (of vision) – The area defined by the visual tasks. Examples: If the visual task is reading a book, the page of the book is the central field. If the visual task is writing on a sheet of paper, the sheet of paper is the central field.

Circulation Area – Portions of the school site used as walk, paths, and driveway which is intended to facilitate movement of people and vehicles within the school campus.

Classroom – refers to a structure or building intended for instructional purposes, including the chairs, desks and other similar fixtures; and shall exclude offices, libraries, laboratories, workshops and the like.

Climate Change is defined as an adjustment in natural or human system in response to actual or expected climate stimuli or their effects, which moderates harm or exploits benefit opportunities

Cluster of Schools – a group of schools which are geographically contiguous and brought together to improve the learning outcomes.

Comfortable Reach Forward – A dynamic measurement which is taken by stretching both arms forward and sweeping them sidewards as far as possible without the body touching the near-edge of the table top.

Computer Laboratory – also known as Computer Suite is typically a room which contains many networked computers for public use. Computer labs in schools often have classroom management software installed to manage and control student computer activity from the teacher's computer, to monitor or prevent web browsing and to remotely control student computers.

Condemned Building – any building or structure deemed to be dangerous to the extent that life, health, property or safety of the public or its occupants are endangered. This includes those buildings with twenty five percent (25%) of the total number of structural members as ruptured and whose rehabilitation cost is determined to be fifty percent (50%) or more of the cost of a similar new building to replace it.

Conveyance – The transfer of property from one person to another.

Critical Incident is an event caused by natural of human-induced hazards that has the potential of causing powerful reactions in the majority who are exposed to it. Strong reactions if not discussed and understood can interfere with work and home life during and after the event.

Critical Incident Stress Debriefing (CISD) is a preventive stress management designed to assist affected people in handling the resulting stress.

Demography – The study of the characteristics of human population, such as size, growth, density, distribution, and vital statistics.

Demolition (of building) – The systematic dismantling or destruction of a building or structure, in whole or in part.

Depreciation – state of property that starts on the second month after purchase of the property, plant and equipment, and a residual value equivalent to ten percent (10%) of the purchase cost shall be set-up. Public infrastructures/ reforestation projects as well as serviceable assets that are no longer being used shall not be charged any depreciation.

Design Guidelines – refers to the policies/criteria to apply when considering the construction of new buildings (remodeling, replacement, maintaining existing ones).

Design Standard – appropriate rules and accepted detailed engineering practice adopted by the agency concerned. Design standards for structures shall take into account, among other things, the seismicity of the area to determine the optimum safety of structures and to minimize possible earthquake damage.

Dilapidated Building – any building or structure which has fallen to partial ruin or decay due to neglect or misuse.

Disaster – a serious disruption of the functioning of a community, society causing widespread human, material, economic (assets, goods and ervices) or environmental losses which exceed the ability of the affected population/community to cope using its own resources

Disaster Risk – is the likelihood or probability of a hazard striking a vulnerable community, causing injury, damage and loss.

Disaster Risk Management – stress on proactive disaster management responses of prevention, mitigation and preparedness.

Disaster Risk Reduction – can be defined as "action taken to reduce the risk of disasters and the adverse impacts of natural hazards, through systematic efforts to analyze and manage the causes of disasters, including through avoidance of hazards, reduced social and economic vulnerability to hazards, and improved preparedness for adverse events.

Disposal – refers to the end of life cycle of a government property.

Dynamic Measurement – the measurement of the dimension of the human body based on the functional capability of its parts.

Educational Facilities – refers to all the physical properties (grounds, buildings, and various facilities within the school grounds and inside the school buildings) of a school. Also referred to as SCHOOL PLANT or PHYSICAL FACILITIES.

Educational Occupancy – The use of a building or buildings for the gathering of groups of persons for purposes of instruction.

Electric Service – include sources of electricity installed in the school such as: rural electric cooperative lines, generators, private lines/connections.

Equipment – refers to fixed or movable non- consumable property, with a normal life span of two to five years, and in terms of procurement regulations, exceeds a specified cost level. In the school plant, this includes tools, utensils, apparatus, teaching aids and materials, furnishings, instruments, machines and similar property needed for the successful implementation of curricular, co-curricular and administrative functions and processes.

ESF Building – Adapted under the Economic Support Fund Elementary School Building Project implemented in 1981, designed to be a typhoon-resistant structure which can withstand winds up to 140 mph (225 kph) constructed of durable long lasting materials requiring a minimum of maintenance. The standard building consists of 3 rooms with a floor area of 6.0 meters by 8.0 meters per classroom, has reinforced concrete columns and beams, concrete hollow block (CHB) walls, wooden roof trusses and rafters, and long span Gauge 26 corrugated G.I. roofing.

Evacuation – is the process of moving or transferring people from hazard threatened or stricken areas to a safe place or places.

External Spaces – The areas in the school site which are not covered by any roofing structure.

Fair Wear and Tear – condition of equipment worn out or otherwise rendered unserviceable through use without apparent fault.

FFCCCII Building – a school building donated by the Federation of Filipino-Chinese Chamber of Commerce and Industry (FFCCCII) under the "Schools In The Barrio Project" assembled at two (2) rooms per unit, usually with a floor area of 6.0 meters by 7.0 meters with glass jalousies for windows, concrete hollow blocks (CHB) walls and corrugated galvanized iron (G.I.) roofing sheets.

Fenestration – The design and placement of window openings in a room or building; may be unilateral (only on one side), bilateral (on two opposite sides) or multi-lateral (at different levels on the wall) of a room or building.

Field Surveys and Investigations – include aerial, hydrographic, topographic, hydrologic, sub-surface, monumenting and other surveys which shall be carried out in accordance with the design guidelines, criteria. Investigation works shall be prepared in a manner satisfactory to carry out accurate design and production of plans.

Fire Incidence Report – a report relative to the damaged building caused by fire prepared by the Local Fire Station under the Bureau of Fire Protection which has jurisdiction over the area affected.

Fittings – The small, often standardized, accessory parts used in a building, such as electrical switches and convenience outlets, doorknobs, and the like.

Fixtures – Facilities that are fixed or attached to a building as a permanent appendage or as a structural part of it, such as plumbing facilities, toilet bowls, lighting fixtures, etc.

Flux – a unit of illumination equivalent to one lumen per square meter; also termed Meter Candle.

Focal Field – The small one-degree area lying on the center of the optical axis in which critical seeing is done.

Food Service – refers to the dining hall, canteen, center where food is prepared/served.

Footcandle – A unit of light measurement equivalent to that produced by a standard candle at the distance of one foot; one lumen per square foot.

Footing (of structure) – That portion of the foundation of a structure which spreads and transmits loads directly to the soil or the pile.

Force Majeure – An event or effect that cannot be reasonably anticipated or controlled.

Formal Education – is the systematic and deliberate process of hierarchically structured and sequential learning corresponding to the general concept of elementary and secondary level of schooling. At the end of each level, the learner needs a certification in order to enter or advance to the next level.

Foundation (of building) – All the portions of the building or structure below the footing; the arch upon which the structure rests.

Functional Types/Buildings – Structures utilized principally to house workshops and similar spaces for Practical Arts (elementary) and vocational courses in general high schools.

Functional Zone – The area in the school site where buildings and other facilities with similar or related use of functions are grouped together.

Furnishings – The articles of furniture, decorations, and the like, for the interior of a building.

FVR 2000 Building – referred to as "Fabricated Vigorous Room 2000," it is a demountable type of school building made of structural members, fiber cement boards for walls, and PVC corrugated sheets for roofings. The prototype model is in Barangay Pungo, Calumpit, Bulacan and tested in various regions.

Gabaldon Type Building – a school building designed in the 1920's by virtue of Act No. 1914 (Gabaldon Act on School Buildings) authored by Congressman Isauro Gabaldon in 1909, categorized as either permanent or semi-permanent based on the availability of materials in the locality. It has a dimension of 9.0 meters by 7.0 meters per classroom with capiz shell inlay windows, usually elevated with a u-shaped tongue in groove wooden flooring and timber-framed.

GOJ-EFIP Building – implemented from 1994 to 2001 under the Japanese Government-funded Educational Facilities Improvement Program (EFIP), through JICA, the structure has a minimum of 3 classrooms, toilets and a science laboratory (in the case of secondary schools), with school furniture and equipment. Recipient schools were those along major roads with water and electricity and have safe ground conditions (not flood-prone, etc.)

GOJ-TRSBP Building – refers to the typhoon-resistant school building funded by the Japanese Government through the Japan International Cooperation Agency (JICA) implemented from 1988 to 1994 in areas affected by typhoons using the Japanese newly developed technology for constructing typhoon-resistant school buildings. The schools received a minimum of 3 classrooms, an office, and toilet. Secondary schools received a science laboratory and/or workshops with school furniture and science equipment. Priority considerations are classroom deficiencies and site availability.

Good Condition (of building) – a building or structure which does not need any repair.

Gratuitous Conveyance – Granted or given without cost or obligation. Maybe conveyed by way of a gift, sale, lease, exchange or otherwise.

Green School – a school building or facility that creates a healthy environment that is conducive to teaching-learning, while saving energy, resources and money,

Hazard - threatening phenomena, events or occurrences that have the potential for causing injury to life or damage to property and environment.

Hazard Assessment – Stakeholders identify and analyze the nature and behavior of hazards or threats that are likely to hit the school, the likelihood or probability of the occurrence and the magnitude, frequency, scope and duration of various hazards is determined.

Hazard Mapping is "the process of establishing geographically where and to what extent particular phenomena are likely to pose a threat to people, property, infrastructure, and economic activities. Hazard mapping represents the results of hazard assessment on a map, showing the frequency/probability of occurrences of various magnitudes or durations."

Hazard Resilience is the ability of a system, community or society exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the reservation and restoration of its essential basic structures and functions. This is often commonly termed disaster resilience.

Health Service – a station where medical and dental services are undertaken and problems of a school remedied.

Home Economics/Girls' Trade Room – refers to a room or building in which girls are trained in the skills, technical knowledge and related information in homemaking.

Imelda Type Building – Designed in 1983, the building consists of a 2-storey concrete structure adopted only in four (4) cities of Metro Manila (Manila, Quezon, Caloocan and Pasay cities) and other large cities in the country due to the non- availability or very limited sites for horizontal expansion and the high cost of land in these areas. It has a minimum of 18 classrooms, concrete hollow block (CHB) walls, capiz inlay windows and red bricks for roofing.

Industrial Arts Building/Shop Room – refers to a Boys' shop room or building used for instruction in wood and other industrial skills and procedures, e.g. auto mechanics, wood working, furniture and cabinet machinery.

Informal Education – is a lifelong process of learning by which every person acquires and accumulates knowledge, skills, attitudes, and insights from daily experiences at home, at work, at play and from life itself.

Integrated School – is a school that offers a complete basic education in one (1) school site and has unified instructional programs.

Internal Spaces – The areas inside the school buildings or in the school site which are enclosed or covered with a roof.

Journal Entry Voucher (JEV) – a document used for all transactions of the government, whether cash receipts, cash/check disbursements or non-cash transactions. Accounting journal entries shall be reflected therein and it shall serve as the basis for recording the transactions in the appropriate journals.

LAPUS Building – short for "Learning And Public Use School Building," it is a 1-storey (2-classroom) structure, designed for the typhoon-prone areas to serve various functions (classroom for up to 63 students, evacuation centers for at least 6 families, and venue for special school and community activities). Made of reinforced concrete, secured during flooding typhoon/earthquake resistant than one-storey buildings, with steel doors and windows, basic lighting fixtures and outlets, with an estimated life span of more than 50 years.

Lateral Load (of building) – That load caused by winds, earthquakes, or other dynamic forces.

Learner – is any individual seeking basic literacy skills and functional life skills or support services for the improvement of the quality of his/her life.

Learning Center – is a physical space to house learning resources and facilities of a learning program for out-of- school youths and adults. It is a venue for face-to-face learning activities for community development and improvement of the people's quality of life.

Learning Facilitator – is the key learning support person who is responsible for supervising/facilitating the learning process and activities of the learner.

Little Red Schoolhouse – a three-room school building in priority multigrade schools with one (1) toilet in each room and water system, classroom furnishings (tables and chairs) donated to fifty (50) schools by the Coca Cola Foundation Philippines, Incorporated.

Lumen – A unit of luminous intensity equal to the light which falls on an area of one square centimeter from one candle placed at a distance of one centimeter.

Lux – The illuminance produced by a luminous flux of one lumen uniformly distributed over a surface of one square meter.

Luminous Flux – The time rate of transmission of visible energy from a particular source; usually stated in lumens.

Magsaysay Type Building – the first prefabricated school building started in 1957 predominantly timber-framed with adobe walls and corrugated asbestos roof. Windows are of wooden jalousies on one side of the room with one (1) door for entrance and exit.

Maintenance (of equipment) – action taken to retain the equipment in serviceable condition or to restore it to serviceability when it is economically repairable.

Major/Extraordinary Repair – alteration, addition or installation, general reconditioning, overhauling and the like, which materially increase the value or extend the useful life of the equipment, motor vehicle or property.

Major Repair (of building) – repair or replacement of school building components which are subjected to critical structural loads and stresses, regardless of cost, and those which are not so subjected but are estimated to cost ten percent (10%) or more of the cost of a standard building unit such as roof frames, posts, exterior walls.

Marcos Type Building – a pre-fabricated 2 to 3 room school building in the late 60's with light steel frame, concrete hollow block (CHB) walls, concrete flooring, with an area of 6.0 meters by 7.35 meters per room, usually with galvanized iron (G.I.) sheets roof, steel rafters and steel doors. The per pupil place is 1:1.25 square meters.

Margin of Tolerance – The concept which pertains to the tolerable misfit that may be allowed in the design and sizing of furniture to fit or suit a group of children within an age-range.

Maximum Reach Forward – A dynamic measurement which is taken by stretching both arms forward and sweeping them sidewards as far as possible by leaning against the near-edge of the tabletop.

Minor/Ordinary Repair – repair that merely keeps a building/equipment/ property in fit condition for use without increasing its capacity or otherwise adding to its normal value as an asset.

Minor Repair (of building) – repair or replacement of school building components which (as determined by an engineer) are not subjected to critical structural loads and stresses and which are estimated to cost less than ten percent (10%) of the cost of a standard building/unit, such as the repair of windows, doors, partitions, and the like.

Mitigation – measures taken prior to the impact of a disaster to minimize its effect.

Multi-Purpose Workshop Building – a school building designed to accommodate the Home Economics and Industrial Arts classes with a dimension of 7.0 meters by 18 meters for 50 students with a kitchen, dining/living area, storage/ work area, bedroom, lavatory/ comfort room/ bathroom and a cabinet area, usually allocated to schools applying the standard that for every eight (8) classes, there should be one (1) Multi-Workshop building.

Natural Hazards are natural process or phenomenon that may cause loss of life, injury or other health impacts, property damage, and loss of livelihoods. These natural processes, such as landslides, cyclones, are considered "hazards" when they pose a threat to human life and interests. and services, social and economic disruption, or environmental damage.

Near Point – The nearest point or distance at which the eye can be focused without strain.

Non-Formal Education – is any organized, systematic educational activity carried outside the framework of the formal system to provide selected types of learning to a segment of the population. (See also Alternative Learning System)

Non-Programmed Space – space whose use does not follow any definite time scheduling and which does not come under the classification of instructional or administrative and service spaces (such as closets/storage, toilets, stairs/corridors).

Nursery – refers to that level of education below kindergarten, with a maximum of fifteen (15) children who are at least three (3) years but not more than four (4) years old to a class. The school environment includes a classroom area of at least 7mX9m situated in a 500 to 1000 square meters lot to include learning or activity centers or areas considering hazards to safety of small children and adequate toilet and washing facilities.

Occupancy (of building) – The purpose for which a building is used or intended to be used.

Occupant Load (of building) – The total number of persons that may occupy a building or portion thereof at any one time.

Optical Axis – A line or direction through a double-refracting crystal along which a ray of light undergoes no double refraction.

Orientation (of building) – The location, placement, or position of a building, in relation to the points of the compass.

Pergola – an arbor/shady retreat often covered by climbing plants (vines or roses) trained over trellis – work that shades a walk or passageway with an open framed roof.

Peripheral Field (of vision) – The area of vision which lies outside the surrounding field and includes an area approximately 120 degrees vertically and 160 degrees horizontally centering on the optical axis.

Permanent Building – a building constructed of eighty percent (80%) masonry, structural steel or combined reinforced concrete hollow blocks (CHB) usually with an economic life of 35 or more years. Roofs may be of either galvanized iron (G.I.) sheets or bricks, although trusses may be of wood.

Permanent Improvement – refers to alterations, extensions and other constructions which materially increase the value of a structure or equipment.

Per Pupil Place – the area allocated to a pupil or student inclusive of the furniture assigned to him, adequate circulation space and an element of space for the teacher.

Physical Zone – Refers to the allocation of sizes of the different areas in the school site according to standard requirements.

Planning Standards for the School Facilities – The minimum acceptable standards to accommodate the education program. Minimum standards are expressed by regulating space through a minimum per pupil place.

Popliteus – The point where the leg bends at the back of the knee.

Prescribed Limitation for Repair – when the repair cost is more than thirty percent (30%) of its fair market value, the property is no longer economically repairable.

Prevailing Winds – refers to the direction in which the cooling breezes blow. In the Philippines, especially during the hot season, prevailing breezes generally have a northeast to southwest direction.

Preparedness – measures taken in anticipation of a disaster to ensure that appropriate and effective actions are taken in the aftermath

Prevention – activities aimed at reducing the occurrence of disasters through measures to avoid negative impacts of hazards

Principle of Good Governance – Principle which recognizes that every unit in the education bureaucracy has a particular role, task and responsibility inherent in the office and for which it is principally accountable for outcomes.

Project Category – refers to the nature/type of project funded under the General Appropriations Act (e.g. buildings, roads and bridges, flood control, water supply, other public works).

Property Accountability – The obligation imposed by law or lawful order or regulation on the official or other person for keeping accurate record of property. The person having this obligation may or may not have actual possession of the property.

Property Plant and Equipment (PPE) – refers to tangible assets that are held for use, among others, for administrative purposes, which are expected to be used for more than one (1) period. Tangible assets classified as inventories upon acquisition and as expense upon issuance are not PPEs.

Property Responsibility – Is the obligation of an individual for the proper custody, care and safekeeping of property entrusted to his possession under his supervision.

Property Under Distraint/Levy/Garnishment – refers to the personal and/or real property of a delinquent taxpayer forfeited to the government for failure to pay taxes. Through the Bureau of Internal Revenue (BIR), the government may issue and execute a warrant of distraint, levy and/or garnishment of properties.

Prototype – refers to models of building for research purposes to answer for adopted norms in designing buildings.

Quality Education – refers to the appropriateness, relevance and excellence of the education given to meet the needs and aspirations of an individual and society.

RAMOS Building – also referred to as the "Readily Assembled Multi-Options Shelter" (Ramos) building, is a pre-fabricated detached type classroom building made of structural steel and heat-shield PVC sheets, a patented school building technology which meets the minimum specifications of DECS (now DepED) and other standard requirements of the DPWH. It is constructed at 2-rooms per unit adopting the 7m by 8m dimension in selected schools.

Realignment/Relocation of Capital Outlays and Public Works Projects – refers to variation or alteration of the original description of the project which may involve modification, change in the scope of work, location/site of the capital outlays project under the General Appropriations Act.

Recovery – Returning to an acceptable level of school operations, integrating disaster risk reduction into rehabilitation & reconstruction.

Reflection/Reflective Factor – The percentage of the total amount of light falling upon a surface which is reflected by that surface. Also termed Reflectance Factor.

Rehabilitation (of building) – The general overhauling or the comprehensive repair of the whole building or a major section of it to restore its original or previous condition.

Rehabilitation (of Gabaldon building) – refers to restoring the original architectural features while ensuring structural safety to adopt to current needs.

Remodeling (of building) – construction in a building or structure involving changes in the materials used, partitioning, location or size of openings, structural parts, existing utilities and equipment, but does not increase the overall area thereof. Also termed ALTERATION.

Renovation (of building) – Any physical changes made on a building or structure to increase its value utility, and/or to improve its aesthetic quality.

Repair (of building) – Remedial work done on any damaged or deteriorated portion or portions of a building or structure to restore its original condition.

Response – Provision of immediate assistance to maintain life, improve health and care for survivors of disasters

Retrofit – The process of modifying an existing structure to render it more resilient to the hazard effects.

RP-US Bayanihan Building – refers to a one-storey building funded jointly by the Republic of the Philippines and the United States in the early 70's made of reinforced concrete designed to resist winds up to 140 mph velocity, built entirely by hand labor with local materials. The area is about 135 square meters (7.95 m X 8.0 m) per room with a 2.50 meters floor to ceiling height, consisting of three (3) rooms with accordion-type concrete partitions, with the windows made of steel frame and wooden jalousies. The per pupil place is 1: 1.68 square meters.

Sanitary Facilities – refers to drinking fountain, lavatory, physical comfort facilities (toilet seats/urinals/water sealed/dry pit).

School – refers to an educational institution, whether private or public undertaking educational operation with a specific age-group of pupils/students or students pursuing defined studies at defined levels, receiving instruction from teachers, usually located in a building, or a group of building in a particular physical or cyber site.

School Canteen – refers to one of the ancillary services in the school system that sells food items to the pupils/students and serves as a support mechanism in the effort to eliminate malnutrition concerns of the school. It can be used as laboratory canteen on food planning, preparation, serving, storage and selling (see also DepED Order No. 8, s. 2007)

School Head – refers to a person responsible for the administrative and instructional supervision of the school or cluster of schools.

School Mapping – The process of planning the distribution and location of schools and determining their size and physical facilities requirements.

School Plant – All the physical property of a school which includes the school site, buildings, and the various school facilities. Also termed as Physical Plant or Physical Facilities or Educational Facilities.

School Sports – refers to any sporting school activity which involves the students and school teachers/personnel as part of the school curriculum, focusing on physical fitness and sports development programs such as the training of school athletes, teacher coaches and officiating officials, and are engaged in intramural and extramural activities.

Science Laboratory – refers to a special room in the school containing special apparatus and equipment devoted to experimental study or to the application of scientific principles in testing and analysis.

Secondary Education – refers to the stage of free formal education following the elementary level concerned primarily with continuing basic education usually corresponding to four (4) years of high school. Secondary education can likewise be attained through alternative learning system.

SEDIP Building – funded under the Secondary Education Development and Improvement Project (SEDIP), various school building packages adopting DepED designs (standard, modified, and special), are constructed in the SEDIP-covered schools. Building types include a minimum of 2 classrooms, with Home Economics and Industrial Arts buidings, a library, a science laboratory and toilets from one-storey to 2 to 3-storey structures with basic school furniture adopting the DepED classroom dimension of 7.0 m x 9.0 m.

The modified designs are standard designs with minor alterations or modifications to adopt to site conditions (high elevation, short lot, sloping/uneven terrain, etc). Special designs are wholly specific designs meant to meet specific or special needs (e.g. 2-storey, 2 classroom with science laboratory).

SEDP Building – (Secondary Education Development Program) funded from a loan with the Asian Development Bank (ADB), the building was constructed in 675 secondary schools nationwide from 1990 to 1995 in eight (8) batches:

The "Type B" design consist of a 3-building package (1 Learning Resource Center, a 2- storey academic building, and a Technology and H.E. Building)

The "C" Type design consists of a one-storey structure that includes 5-classrooms, 1 laboratory, 1 H.E., 1 Library and 2 toilets.

Semi-Permanent School Building – refers to a school building constructed of fifty percent (50%) masonry, steel or other heavy materials and 50% light materials with an economic life of twenty (20) or more years.

Septic Vault/Tank – refers to a sewage-disposal unit used for homes/schools not connected to sewer lines. It consists ordinarily of either a single-or double compartment of concrete buried in the ground, so designed that settled sludge (waste) is in contact with the waste water as it flows through the tank and then to a drain field. Solids are decomposed by the anaerobic bacterial action of the sludge.

Service Area – refers to the geographic area from which most of the enrolment of an individual school originate.

Site – An area or plot of ground with defined limits in which a building, project, park, etc. is located or proposed to be located.

Site Development Plan – A plan of a construction site showing the position and dimensions of the buildings to be erected and the dimensions and contour of the lot.

Size of Classroom – refers to the dimension (length and width) in square meters in the school building.

Sod – a surface layer of earth planted to grass.

Soil Subsidence – refers to ground/soil sinking.

Solar Path – The direction of the sun's travel over the earth.

Spaces other than Classroom – refers to corridors, store rooms, offices, toilets and other non-classroom spaces in the school building.

Spanish Grant School Building Package – Assistance from the Government of Spain provided to areas affected by Typhoons Unding, Winnie and Yoyong in December 2004 in Aurora, Quezon and Iloilo City, and those by armed conflict in Mindanao, specifically, to 36 elementary and 29 secondary schools. Classroom dimension is 7m x 9m (2 to 4 classrooms per school) with basic furniture (desk, armchairs, teacher's table and chairs, blackboards and cabinets).

Special Needs Education – refers to SPED, is the education of children and youth with special needs corresponding to elementary and secondary education that require modifications of school practices, curricula, programs, special services and facilities. These include children and youth who are gifted/talented, fast learners, and those with disabilities.

Static Measurement – The measurement of the dimensions of the human body based purely on the actual size of its part.

Structural Integrity – Refers to safety of would-be occupants with consideration on how to economize on the budget of the project.

Student Service – a place where student guidance problems are solved and where extra-curricular activities are discussed or held.

Subsoil – The layer or bed of earth beneath the surface/top soil.

Surrounding Field (of vision) – The area of vision which extends approximately 30 degrees on each side of the optical axis or line of sight, or the total area within approximately 60 degrees in the center of the total visual field.

TEEP Building – constructed at 2 rooms per unit under the civil works component of the Third Elementary Education Project (TEEP) of the Department, the structure was adopted in 23 provinces covered by the Project. The structure adopts the minimum standards of the Department of the 8mX7m dimension, considering such factors as climatic conditions, location, etc.

Temporary School Building – a school building constructed of eighty percent (80%) light materials such as wood, bamboo, nipa, etc. usually with an economic life of five (5) years.

Topography – The features of a place or region.

Topsoil – The surface layer of earth or soil.

Total Floor Area – refers to the gross area of a building used for educational and administration purposes including corridors, stairways, and areas for sanitary purposes.

Unserviceable Property – refers to a government property that is no longer needed, found to be valueless which may be disposed of through government-approved mode.

Utilities – refers to facilities pertaining to power (electricity), water, storage, closets, stairs/ corridors.

Visual Field – The area of the environment within the field of vision that includes central focal field, surrounding field, and peripheral filed.

Visual Zone – The area in the school site which best projects the aesthetic appearance of the school.

Vulnerability – weaknesses; physical, social, economic, cultural and environmental factors and conditions which increase the individual's, family's, schools' and community's susceptibility to disaster.

Vulnerability Assessment – stakeholders identify the "elements at risk" (i.e., teachers, number of pupils, students, structures, books, computers, etc…) per hazard type and analyze the reasons why these elements are at risk.

Water Service Facilities – refers to sources of water supply such as : open well, deep well, water main, communal well, spring, pumped water, piped water, dam, reservoir, concrete tower, steel tower, etc.

Zone of Convenience – Refers to the area between the lower and the upper limits for shelves within which it is convenient to place or remove things on the shelves and beyond which there will be a need to exert greater effort.

Zoning (of school site) – The apportioning of the external spaces in the school site into specific areas (e.g. agriculture area, playground, circulation, athletic field, etc.), each of which is designed for a specific purpose or use in accordance with the educational needs of the school.

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