



Ministry of Education, Guyana

Government of the Co-operative
Republic of Guyana

Policy Document

School's Facilities Policy

Design & Maintenance Policy and Standards for Secondary Education Facilities

B SECTION:

Technical Standards for Design and Maintenance of Education Facilities

- * Non-Academic Education Standards for Secondary Schools
- * Design Framework and Strategy
- * Technical Standards of Building Characteristics and Utilities

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Ministry of Education

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SCHOOLS' FACILITIES STRATEGY

Design & Maintenance Policy and Standards for Secondary Education Facilities

A SECTION National Policy for Schools' Infrastructure Development and Maintenance

B SECTION: Technical Standards for Design and Maintenance of Education Facilities

- Non-Academic Education Standards for Secondary Schools
- Design Framework and Strategy
- Technical Standards of Building Characteristics and Utilities

C SECTION Policy, Planning & Maintenance of Education Facilities

- Maintenance Policy for Education Facilities
- Criteria framework for identification of construction & Maintenance
- Maintenance Standards & Guidelines for Education Facilities

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SECTION B

2.1 Non-Academic Education Standards for Secondary Schools

TABLE OF CONTENTS

PREFACE	5
ABBREVIATIONS	6
STRUCTURE OF DOCUMENT	7
NON-ACADEMIC EDUCATION STANDARDS FOR SECONDARY SCHOOLS	8
1.0 SCOPE, APPLICATION AND ENFORCEMENT	8
1.1 Objective and Scope	8
1.2 General	8
1.3 Implementation	8
1.4 Application of use:	9
1.5 Administration & Compliance	9
2.0 GENERAL FEATURES OF A SECONDARY SCHOOL	10
2.1 General	10
2.2 Grade Category of Secondary Schools	10
2.3 General List of Physical Facilities in A Secondary School	10
2.4 ENVIRONMENTAL STANDARDS	14
2.4.1 Introduction & Context	14
2.4.2 Micro Climate of Education Facilities	14
2.4.3 Light / Illumination in School Buildings	16
2.4.4 Noise Control (Acoustics) In Schools	17
3.0 FUNCTIONAL SPACE REQUIREMENTS FOR A SECONDARY SCHOOL	19
3.1 ADMINISTRATION SPACES	19
3.1.1 HEAD TEACHER / PRINCIPAL'S OFFICE	19
3.1.2 DEPTUY HEAD TEACHER	20
3.1.3 PRINCIPAL SECRETARY & WAITING AREA	21
3.1.4 RECEPTIONIST CUBICLE / SPACE	22
3.1.5 STAFF ROOM WITH KITCHENETTE	23
3.1.6 STORE ROOM / STRONG ROOM	24
3.1.7 MEETING ROOM / BOARDROOM / CONFERENCE ROOM	25
3.1.8 OFFICE – Multi Use	26
3.2 TEACHING / INSTRUCTION SPACES	27
3.2.1 CLASSROOM	27
3.2.2 SMART CLASSROOM	28

3.2.3	SCIENCE LABORATORIES	29
3.2.4	PERFORMANCE ARTS DEPARTMENT	32
3.2.5	MATHS & TECHNOLOGY DEPARTMENT	35
3.2.6	INDUSTRIAL TECHNOLOGY DEPARTMENT	39
3.2.7	HOME ECONOMICS DEPARTMENT	44
3.3	RESOURCES SPACES	48
3.3.1	LIBRARY	48
3.4	SUPPORT SPACES	51
	TOILET FACILITIES	52
	GENERAL GUIDELINES – SANIATRY FACILITIES	54

PREFACE

ABBREVIATIONS

ADA	American Disability Standards for Accessible design 2010. Internationally recognized standards for design for persons with disabilities.
AC	Air Condition [Split or Wall Unit]
BS	British Standards
CARICOM	Caribbean Community
CC	Climate change.
CDC	Civil Defense Commission [Guyana].
CDEMA	Caribbean Disaster Emergency Management Agency.
CH	Ceiling Height
Dorms	Dormitory
DEO	District Education Officer
DCEO	Deputy Chief Education Office [Secondary]
DWG.	Drawing
DRM	Disaster risk management
GEA	Guyana Energy Agency
GFS	Guyana Fire Service
GoG	Government of Guyana
GL&SC	Guyana Lands and Surveys Commission.
GYD	Guyanese Dollar.
GIS	Geographic Information System
IBC	International Building Code
MOH	Ministry of Health
MOPW	Ministry of Public Works
MoE	Ministry of Education
MoE-HFLE	Ministry of Education – Health, Family life Education Department
NCRED	National Centre of Educational Resources Development
NDCs	Neighbourhood Democratic Councils
NPTAB	National Procurement and Tender Administration Board
OHS	Occupational Health & Safety
QA/QC	Quality Assurance / Quality Control management system.
RDC	Regional Democratic Council
REDO	Regional Education Officer
SDMP	School Disaster Management Plan
sf. or sq.ft	Square Foot
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNICEF	United Nations International Children's Emergency Fund

STRUCTURE OF DOCUMENT

The document is structured in the following section and sub-section for reference

- 1.0 Scope, Application and Enforcement of Non-Academic Education Standards for Secondary Schools

- 2.0 General Features of a Secondary School
 - General
 - Grade Category of Secondary Schools
 - General List of Physical Facilities for a Secondary School
 - Environmental Standards
 - Site and Context

- 3.0 Functional Space requirement for a Secondary School
 - Administration Spaces
 - Teaching Spaces
 - Resources Spaces
 - Support Spaces
 - Services and Utilities
 - Accommodation

NON-ACADEMIC EDUCATION STANDARDS FOR SECONDARY SCHOOLS

1.0 SCOPE, APPLICATION AND ENFORCEMENT

1.1 Objective and Scope

There are 185 secondary schools in Guyana, serving 57,863 students across the ten Geographical regions. By 2025, this number is expected to increase by 10%. A dated study indicated that there are 278 buildings comprising of 185 secondary schools and related facilities that include teachers' quarters, practical instruction centers and dormitory facilities.

General condition assessment indicates varying disparities in the physical functional spaces, utilities, resources allocation, management systems, physical infrastructure and maintenance condition among the secondary schools.

In an effort to standardize the facilities design of Secondary school, a technical standard document is developed for Non-Academic Education Facilities' Standards for Secondary Schools. This to ensure adequate spatial standards in teaching and operation spaces, creation of comfortable, safe and resilient learning spaces with focus on the use of sustainable technologies.

The Non-Academic Education Facilities' Standards for Secondary Schools has been developed to assist architects, engineers, builders, contractors, Regional Administrative, Dorms Staff and Education officials in the planning, design, review, construction, retrofitting, maintenance and management of school facilities, operated by the Ministry of Education in Guyana.

1.2 General

This document contains general technical requirements for accessibility to sites, facilities, buildings or sections of buildings identified as SECONDARY SCHOOLS FACILITIES for individuals with disabilities.

The requirements are to be applied during the design, construction, additions to, and alteration of sites, facilities, buildings or sections of buildings to the extent acceptable to the Ministry of Education.

1.3 Implementation

The Standards will be subjected to broad-based consultations, review and examination from various stakeholder groups from which a final approved version will be presented. The Standards will be implemented after administrative approvals are acquired and use for the design of new schools and retrofitting / upgrading of existing facilities.

It is assumed that this document will become a part of the Ministry of Education – Non-academic norms document and issued as a standard document.

1.4 Application of use:

These standards shall be

- Mandatory for all newly constructed and retrofitted Secondary School facilities owned, leased or operated by the Ministry of Education, Government of Guyana,
- All privately owned and operated “special schools” or facilities that cater for education needs of students of special needs, and
- encouraged for all other facilities, whether new or retrofitted which will be used by persons of special needs where some sections of this standards will be applicable to allow for improved accessibility and usage.

1.5 Administration & Compliance

The Ministry of Education will appoint an official or department within the Ministry, to monitor and manage the compliance and implementation of the approved standards. It is anticipated that a standards’ compliance form will be used and designers and officials will be required to review and sign that the applicable standards were met.

The Regional Administration Offices [RDC] should submit any and all new design and retro-fit information [Drawings & Bills of Quantities with specifications] to the Ministry of Education appointed department or person for review and approval.

2.0 GENERAL FEATURES OF A SECONDARY SCHOOL

- 2.1 General
- 2.2 Grade Category of Secondary Schools
- 2.3 General List of Physical Facilities in A Secondary School
- 2.4 Environmental Standards
- 2.5 Site and Context

2.2 GRADE CATEGORY OF SECONDARY SCHOOLS

SCHOOL GRADE**	Max. school population	Min. School Population	Comment
A+	1,000	800	<i>** The Grade Category of Secondary Schools is subject to modifications and exceptions as deemed necessary by The Chief Education Officer of the Ministry of Education.</i>
A	799	550	
B	549	400	
C	399	250	
D	249 and below		

2.3 GENERAL LIST OF PHYSICAL FACILITIES IN A SECONDARY SCHOOL

General

- Secondary Schools shall have the below list of physical facilities with variations, modifications and exceptions. The latter is influenced by the Grade of school, academic programme and needs, geographical location needs, physical site constraints and other factors.
- The Size and Content of the below spaces are determined by the School Grade and related factors.
- Refer to Technical Space Requirements in appendix A for drawing details.

Category of Space	Title of Space
2.3.1 Administration Spaces	<ul style="list-style-type: none"> a) Head Teacher / Principal Office b) Deputy Head Teacher's Office c) Principal Secretary d) Reception cubicle / Space + Reception Space with waiting area e) Staff Room with Kitchenette f) Store Room / Strong Room g) Meeting/Boardroom h) Office [multi-use space for Guidance Counsellor / social worker / parent visitation]

			<ul style="list-style-type: none"> i) Toilet for Head Teacher / Visitor incl. wheelchair access unit. j) IT Room - Administration
2.3.2	TEACHING / INSTRUCTION SPACE	Classroom	<ul style="list-style-type: none"> General Classroom Smart Classroom
	Science Laboratories	Type of Laboratories **	<ul style="list-style-type: none"> a) Integrated Science b) Physics Lab. c) Chemistry Lab. d) Biology <p><i>**Refer to below sections for size and inclusion into schools by Grade</i></p>
	Performing Arts		<ul style="list-style-type: none"> a) Performance Arts Room [Dance] b) Music Room c) Creative Arts Room [art & craft]
	Maths & Technology		<ul style="list-style-type: none"> a) Language Laboratory b) Computer / IT Room c) Audio- Visual Room d) Mathematics Laboratory
	Industrial Technology		<ul style="list-style-type: none"> a) Mechanical Workshop b) Wood Working Workshop c) Technical Drawing [CAD & Board]
	Home Economics		<ul style="list-style-type: none"> a) Clothing & Textile Classroom b) Home Management Classroom c) Food & Nutrition Lab.
2.3.3	Resource Spaces	Library	<p>Library Spaces</p> <ul style="list-style-type: none"> • Librarian room • Store Room / work space for books preparation • Reading / study area with seating • Book Shelves / Stacks • Carrel booths
2.3.4	Support Spaces	Sanitation	<ul style="list-style-type: none"> a) Boys Toilets, Urinals and Shower units b) Girls Toilets, Urinals and Shower units c) Teachers' Toilets and Shower units - Male d) Teachers' Toilets and Shower units - Female e) Handwashing Facilities [Trough / Sink] f) Drinking Water dispensing unit / Drinking outlets

Auxiliary	<ul style="list-style-type: none"> a) Janitor/Cleaners' Room b) First aid Room / Sick Bay c) Store Room - general d) Store Room – Agriculture Science e) Store Room – School Supplies f) Students Lockers g) Electrical Room h) Generator Room i) Pump House
Recreation / Assembly Space	<ul style="list-style-type: none"> a) Students' Lounge Space / Canteen / Kitchen b) Assembly Area c) Auditorium with Stage + Prep
External Spaces / Systems	<ul style="list-style-type: none"> a) Agriculture Plot with Work Shed b) Chicken / sheep – livestock pens c) Recreation Space with Games Demarcation d) Bicycle Rack covered e) Landscape and Planting
2.3.5 Services / Utilities	
Water	<ul style="list-style-type: none"> a) Water Supply [storage and distribution] b) Waste Water Disposal c) Site Drainage
Power	<ul style="list-style-type: none"> a) Electrical Installation / Solar Plant b) Generator Room / Fuel tank
Waste Management	<ul style="list-style-type: none"> a) Sewer Treatment b) Refuse Disposal Chamber [Garbage bay / incinerator]
Technology / Communication	<ul style="list-style-type: none"> a) Internet Services b) Network Connection
Security / Safety	<ul style="list-style-type: none"> a) Fire Fighting/detection and Warning System b) Security Huts / Booths c) Boundary Fence & Site Lighting
Other	<ul style="list-style-type: none"> a) Oxygen Gas [Home Economics + Physical and Chemistry Labs] b) Dilution Tank [for chemistry Lab.]
Boat / Water landing access	<p>Exclusive Specific River access location</p> <ul style="list-style-type: none"> a) Boat Shed b) Boat Landing, Deck & Access Stairs with waiting shed <p><i>Boat accommodation facilities are specific to particular geographical location e.g. schools located in the Pomeroon river etc.</i></p>

2.3.6 Accommodation

Provision of residential Facilities for Staff and students is applicable to specific location only.

Staff	<ul style="list-style-type: none"> a) Head teacher's Quarters - 2-bedroom unit b) Staff Quarters: family - 2 bedroom unit c) Staff Quarters: family - 1-bedroom unit d) Staff Quarters for singles/ bachelor e) MoE Admin. Staff Quarters – 2-bedroom unit
Students	<p>Dormitory Plant</p> <ul style="list-style-type: none"> • Male Dormitory • Female Dormitory • Kitchen and Dining Facilities • Recreation / Site and Utility Services

2.4 ENVIRONMENTAL STANDARDS

2.4.1 Introduction & Context

Environment may be defined as the sum of all physiological (physical / human body) and physiological (mental and emotional) phenomena experienced by people.

An efficient environment is a controlled environment to the extent that it eliminates those phenomena [situation] harmful to the functioning of the humans, while incorporating those stimuli (factors and features) necessary for survival.

Guyana can be divided into three (3) climatic regions: The Coastal Plain, the Forest Zone and the Plateaus and Interior Savannas. For design purposes, therefore, the design of education building projects must articulate to suite the specific Geographical location where it is intended to be sited with respect to regional climatic variations. This consideration is pertinent in the current and future climate change effects.

Comfort is achieved when there is harmony and balance of the major factors affecting the learning process — the climate, the light and noise levels. Education delivery can be severely affected by uncomfortable physical conditions for both the students and instructors. Acceptable comfort in an education facility is achieved when there is harmony and balance of the major factors affecting the learning process.

- The temperature and humidity of the space / room
- Light
- Sound [Noise Level]
- Air Quality

The economies of the school building programme do not permit desirable indoor comfort levels to be obtained by mechanical means, except in special areas such as Computer work room / laboratories.

Buildings must by and large be "naturally conditioned". The design and construction of the internal environment of the school building(s) must therefore be sufficiently informed to ensure optimum comfort and the best premises for the accomplishment of the learning activity.

The following performance standards indicate the targets the designer has to achieve, without necessarily stipulating the "means" by which to do so. The designer must be able to choose the most suitable solution that will satisfy the standards. This affords the designer freedom to appropriately introduce new materials and technologies, controlled only by the performance standards and the need to honor any cost ceiling.

2.4.2 Micro Climate of Education Facilities

The micro climate refers to the physical and physiological environmental conditions within school facilities which is the focus of the design and maintenance standards.

The comfort level for students and teachers in education facilities is affected by (1) Temperature (2) Humidity (3) Ventilation and Air Movement.

In warm humid climates such as Guyana's, thermal comfort depends largely on the control of solar heat and air movement. The creation of optimum indoor comfort through the efficient use of building materials and

natural breezes, therefore has high priority among the design criteria for educational facilities. In this context the placement of habitable spaces is influenced by orientation to prevailing wind and sun path.

2.4.2.1 Temperature

Temperature is the measure of hotness or coldness expressed in terms the centigrade scale.

The acceptable range of temperate of key spaces in education buildings are:

Classroom	minimum 18°C	-maximum of 30°C
Offices/Admin.	minimum 18°C	-maximum of 30°C
Laboratory	minimum 18°C	-maximum of 30°C
Sanitary [WC]	minimum 18°C	-maximum of 30°C
Corridors / Circulations	minimum 18°C	-maximum of 35°C

Temperatures above 30°C can be considered unacceptable, as they can lead to heat stress, discomfort, and impaired cognitive function.

- Monitor the temperature regularly: Use a thermometer to check the temperature in the classroom regularly, especially during hot weather.
- Ventilate the classroom: Open windows and doors to allow fresh air to circulate in the classroom.
- Use fans: Fans can help to cool the air and make the classroom more comfortable.
- Provide shade: Window blinds or awnings can help to block out sunlight and reduce heat gain in the classroom.
- Consider air conditioning: If other measures are not sufficient to cool the classroom, air conditioning may be necessary.

2.4.2.2 Humidity

Relative Humidity is defined as the amount of water vapour present in air expressed as a percentage of the amount needed for saturation at the same temperature.

Relative Humidity level in Education Facilities should be kept at 50% min. to Max. 70%

2.4.2.3 Ventilation

Natural ventilation (through windows, vents etc.) should ensure a minimum of 6-15 air changes per hour (ACH). This means that the air in the classroom should be completely replaced 6 to 15 times every hour. This is necessary to remove indoor air pollutants, such as carbon dioxide, dust, and volatile organic compounds (VOCs), which can build up to unhealthy levels in classrooms.

The air change per hour shall be increase under the following considerations:

- Occupancy: The more people there are in the classroom, the more ventilation is needed.
- Activity level: Classrooms where students are engaged in physical activity will need more ventilation than classrooms where students are sitting.
- Areas / location with high dust content [Region 9, Mining areas etc.]
- Classroom design: Classrooms with windows and doors that can be opened will have more natural ventilation than classrooms without windows or doors.

Air Movement:

Air movement across spaces should be controlled so as not to exceed the speed of 2 meters/second with an optimum of 1 meter/second

The two latter requirements will determine the location and size of windows and or vents.

In terms of Design criteria, the following should be observed

- Exterior wall openings must be designed to create maximum airflow through internal spaces.
- Inlet openings shall approach 100% of the exterior wall surface area.

2.4.3 Light / Illumination in School Buildings

Good lighting, both natural (daylight) and artificial, is a basic requirement for an educational environment since most of the school's teaching and learning activities in Guyana take place during the hours of 8:00am to 3:00pm (35hrs/week), it is very important to adequately design or modify for optimum use of natural lighting in school buildings. Inadequate, fluctuating (contrasting) or excessive levels of light may result in vision impairment in students and teachers alike.

In order to calculate the amount of natural light falling on a surface within an enclosed space, the quantity of natural light available at that given location must be known. The total amount of daylight reaching any point within a room is the sum of the following components

- a) the direct sunlight entering the room,
- b) the light received from the sky,
- c) the light received after reflection from the ground or other external surfaces and
- d) the light received after reflection from internal spaces.

The size of openings required to achieve the needed illumination level as well as the nature and colour of the finished surfaces can then be determined. The following is a list of standard illumination levels for specific school areas and activities (measured at working surface height) from internal spaces.

Area / Space	Illumination Level [LUX]	Light Colour
Lobby / Reception Areas	200	Warm white
General classrooms	300	Daylight
Smart Classroom		Daylight
Computer / IT room		Daylight
Science Laboratories	500-750	Daylight
Home Economics	300	Daylight
Art – Creative arts	300	Daylight
Industrial Work Rooms		
Mechanical workshop	250	Daylight
Wood Working Workshop	250	

Technical Drawing [drawing board]	300	
Libraries		Daylight
Reading Tables	300-500	
Book Stacks	200-300	
General Office / Staffroom	300	Daylight
Corridors	75-100	Warm white
Stairway	75-100	Warm white
Toilet Stalls / Block	150-300	Warm white

Colour temperature: On the whole, the colour rendering index (CRI) ranges from 70 to 85, although it can go up to over 90 in areas that require increased light quality. Whatever the case, the appropriate colour temperature is around 3,500 K.

Contrast and Glare: Direct sunlight must not be permitted to enter any portion of the interior space. It is undesirable because, while increasing illumination levels, it creates excessive contrasts and introduced solar heat, both sources of extreme discomfort. Sun-shading devices must exclude the sun's direct rays during its most critical altitudes.

Artificial lighting: General recognized standards for illumination levels related to specific tasks shall provide the criteria for artificial lighting. It should be assumed that the school facilities will be utilized in the evenings for purposes of adult training, special courses, etc. and therefore artificial lighting must satisfy the minimum requirements.

Undeveloped areas: Where limited or no electric energy supply exists to school buildings, the school facilities shall be designed and constructed to naturally (non-mechanically) achieve standard illumination levels.

2.4.4 Noise Control (Acoustics) In Schools

The level and quality of noises in a teaching space must be such that they do not interfere with the learning process. A teacher in action of talking produces 75 dB to 80 dB when addressing the students in a normal or slightly raised voice.

Sound, however, decreases in loudness inversely as the square of the distance from the source. Example - a teacher speaking with a sound level of 75 dB will be heard by a student 7.0 meters away as producing a sound of 7 dB less, that is 78 dB.

The general noise in the classroom must therefore be inferior to the sound produced by the teacher. A sound level of 35 dB in the classroom is therefore the design target. This means that outside sources (adjacent to the classroom, road, corridor) must be neutralized to the extent of not interfering with the classroom activity (i.e- if the adjacent road produces a traffic sound of 80 dB, the architect will have to develop external walls and windows capable of achieving a sound reduction of 40 dB).

Classrooms	35 dB
Computer labs	40 dB
Libraries	35 dB
Art rooms	45 dB
Science labs	45 dB
Gymnasiums	50 dB
Auditoriums	45 dB

| Space | Reverberation time (seconds) |
 |---|---|---|
 | Classrooms | 0.6 - 0.8 |
 | Computer labs | 0.8 - 1.0 |
 | Libraries | 0.8 - 1.0 |
 | Art rooms | 0.8 - 1.0 |
 | Science labs | 0.8 - 1.0 |
 | Gymnasiums | 1.0 - 1.2 |
 | Auditoriums | 1.2 - 1.4 |

The following is a recommended list of acceptable noise reduction capacities for various types of major building elements that affect the movement or transmission of sound/noise in schools:

- Reduction capacity (insulation) of external walls 20- 50 dB (according to location of school)
- Reduction capacity of internal partitions (between classrooms) 30-35 dB
- Reduction capacity of partitions between a "noisy" space (workshop, music room) and a "quiet" space (classroom, library) 40 - 50 dB
- Reduction capacity of floors separating educational spaces 50-65 dB

It should be noted that materials with a high acoustical value are usually very expensive and difficult to acquire, as such their use is only justified when the sound level in review will interfere with, and adversely affect the learning process. If the noise made at a particular source such as a school workshop, is too loud, then there are four possible ways of dealing with it.

- a) Reducing the noise at the source: e.g. using quieter machines or methods of works of work, isolating machines on vibration absorbing pads, etc.;
- b) Enclosing the source of the noise: e.g. enclosing working areas with walls and ceilings that reduce sound transmission;
- c) Absorbing the sound energy produced using absorbent materials;
- d) Increasing the distance between the source of the noise and those affected by it.

The preferred method of reducing noise and its effects is obviously the cheaper way. Thus as long as the site is adequate and the imagination of the architect fertile, the least expensive method of noise reduction is the fourth in the list above.

Special areas which warrant thorough acoustical analysis and informed design are the school's auditorium, gymnasium and music / recording rooms. Sounds hitting the surface of walls in these areas result in high levels of reverberation ("echo" effect). Suitable materials should be introduced to ensure that the reverberation time would remain the range of 0.8 to 1.4 seconds.

3.0 FUNCTIONAL SPACE REQUIREMENTS FOR A SECONDARY SCHOOL

- 3.1 Administration Spaces
- 3.2 Teaching / Instruction Spaces
- 3.3 Resources Spaces

3.1 ADMINISTRATION SPACES

Title of Space: 3.1.1 HEAD TEACHER / PRINCIPAL'S OFFICE		Reference Detail:	D20
DEFINATION			
A head teacher / principal's office is a secure enclosed room in a building that provides accommodation for administration and management functions of the school. This room is located in the administration section of the school building.			
ROOM FEATURES			
a) <u>Room Occupancy</u> : 1 person			
b) <u>Room size & Contents</u>			
<ul style="list-style-type: none"> • Recommended room size and contents by School Grade. 			
Grade of School	Room Size range [sf]	Room Contents	
A+ and A	320-400	Toilet, Sink and Closet, 1 Writing desk and chair, 3 units seating for visitors, 2 Metal Filing Cabinets, 1 lockable Cabinet with glass door, Keys Cabinet, CCTV camera controls, Internet Base Station, <ul style="list-style-type: none"> • Air Condition [where possible] and Fan • Computer and Printer with internet access [where service is available] • Notice Pin Board or similar 	
B	200-300	1 Writing desk and chair, 3 units seating for visitors, 2 Metal Filing Cabinets, 1 lockable Cabinet with glass door, Keys Cabinet, CCTV camera controls, Internet Base Station, Fan, Computer and Printer with internet access [where service is available]	

C	180-200	1 Writing desk and chair, 3 units seating for visitors, 2 Metal Filing Cabinets, 1 lockable Cabinet with glass door, Keys Cabinet, Internet Base Station, Fan, Computer and Printer with internet access [where service is available]
D	120-180	1 Writing desk and chair, 3 units seating for visitors, 2 Metal Filing Cabinets, 1 lockable Cabinet with glass door, Keys Cabinet, Internet Base Station, Fan, Computer and Printer with internet access [where service is available]

c) Physical Characteristics:

- Ceiling: Min. ceiling height [CH] is 9ft, Recommend CH is 10ft [AC spaces]
- Floor: Tiled or of a quality surface floor finish material.
- Door: Strong solid timber door or door with a min. of 90-minute fire rating.
- Door Lock: Dead Bolt + I access lever and may include a grille door.
- Windows: a minimum of 30% of the boundary walls surface, must be windows that allow for visibility and natural light. Windows shall be metal grille secured.
- Safety: Fire safety - minimum of One [1] 2-3kg fire extinguisher for Class A fires, one 3-4 gal. sand bucket, 1 Smoke detector, pull stations and Horn can be integrated with other nearby rooms.

d) Environment:
Air Condition equipment [where possible], LED lighting, 4 nr. power outlets 110v 60Hz.

Title of Space: 3.1.2 DEPTUY HEAD TEACHER	Reference Detail: D20						
DEFINATION A deputy head teacher / principal's office is a secure enclosed room in a building that provides accommodation for administration and management functions of the school. This room is located in the administration section of the school building.							
ROOM FEATURES Room Occupancy: 1 person Some Schools may have separate office space for senior teachers / head of department. Room size & Contents <ul style="list-style-type: none"> • Recommended room size and contents by School Grade. <table border="1"> <thead> <tr> <th>Grade of School</th> <th>Room Size range [sf]</th> <th>Room Contents</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>		Grade of School	Room Size range [sf]	Room Contents			
Grade of School	Room Size range [sf]	Room Contents					

A+ and A	320-350	Toilet, Sink and Closet, 1 Writing desk and chair, 3 units seating for visitors, 2 Metal Filing Cabinets, 1 lockable Cabinet with glass door, Keys Cabinet, CCTV camera controls, Internet Base Station, <ul style="list-style-type: none"> • Air Condition [where possible] and Fan • Computer and Printer with internet access [where service is available] • Notice Pin Board or similar
B	200-300	1 Writing desk and chair, 3 units seating for visitors, 2 Metal Filing Cabinets, 1 lockable Cabinet with glass door, Keys Cabinet, CCTV camera controls, Internet Base Station, Fan, Computer and Printer with internet access [where service is available]
C		<i>This School grade does not have a deputy head teacher</i>
D		<i>This School grade does not have a deputy head teacher</i>

Physical Characteristics:

- Ceiling: Min. ceiling height [CH] is 9ft, Recommend CH is 10ft [AC spaces]
- Floor: Tiled or of a quality surface floor finish material.
- Door: Strong solid timber door or door with a min. of 90-minute fire rating.
- Door Lock: Dead Bolt + I access lever and may include a grille door.
- Windows: a minimum of 30% of the boundary walls surface, must be windows that allow for visibility and natural light. Windows shall be metal grille secured.
- Safety: Fire safety - minimum of One [1] 2-3kg fire extinguisher for Class A fires, one 3-4 gal. sand bucket, 1 Smoke detector, pull stations and Horn can be integrated with other nearby rooms.

Environment:
Air Condition equipment [where possible], LED lighting, 4 nr. power outlets 110v 60Hz.

Title of Space: 3.1.3 PRINCIPAL SECRETARY & WAITING AREA		Reference Detail:	D20
DEFINATION Principal Secretary space allow for the administration support work for the school and direct support to the Head & Deputy Teachers. It is located in proximity to the Head-teacher's office. The position controls access to the Head teacher office and include a waiting space for visitors. This is a designated space and may not be enclosed in a room.			
ROOM / SPACE FEATURES <u>Space occupancy:</u> 1 person This is a designated space and may not be enclosed in a room. <u>Space size & Contents</u> • Recommended space size and contents by School Grade.			
Grade of School	Space size range [sf]	Room / Space Contents	

A+ and A B C D	Secretary space = 100-120	1 Writing desk and chair, 2 Metal Filing Cabinets, Fan, Computer and Printer with internet access [where service is available] AC is optional
	60-100	<ul style="list-style-type: none"> • Access Space near HT office • Waiting Chairs / sofa and may include a small coffee table. • Display Items of the school information. • Notice Board

Physical Characteristics:

- Ceiling Height: Min. ceiling height [CH] is 9ft for AC room and 12ft for Non-AC room
- Floor: Tiled or of a quality surface floor finish material.
- Windows: a minimum of 30% of the boundary walls surface, must be windows that allow for visibility and natural light. Windows shall be metal grille secured.
- Safety: Fire safety - minimum of One [1] 2-3kg fire extinguisher for Class A fires, 1 Smoke detector, Pull-stations and Horn can be integrated with other nearby rooms.

Environment:
LED lighting, 2 nr. power outlets 110v 60Hz.

Title of Space: 3.1.4 RECEPTIONIST CUBICLE / SPACE + RECEPTION & WAITING AREA		Reference Detail:	D20
DEFINATION			
Receptionist space allow for the administration support work for the school, and is in proximity to the main entrance to the administration section / office. This space is often integrated with the reception and waiting area for the admin. Section. Some existing schools may have alternative spaces intended for this purpose.			
ROOM / SPACE FEATURES			
<u>Space occupancy:</u> 1 person and may be a security office, This is a designated space and may not be enclosed in a room.			
<u>Space size & Contents</u>			
<ul style="list-style-type: none"> • Recommended space size and contents by School Grade. 			
Grade of School	Space size range [sf]	Room / Space Contents	
A+ and A B C D	space = 50-70	<ul style="list-style-type: none"> • Raised counter for standing enquires / or small desk with chair, • Computer and Printer with internet access [where service is available] AC is optional • Located near entry doorway • Reception Counter-top • Waiting Chairs / sofa and may include a small coffee table. • Display Items of the school information. • Notice Board 	
	Reception and Waiting Area = 50-60		
<u>Physical Characteristics:</u>			

- Ceiling Height: Min. ceiling height [CH] is 9ft for AC room and 12ft for Non-AC room
- Floor: Tiled or of a quality surface floor finish material.
- Windows: a minimum of 30% of the boundary walls surface, must be windows that allow for visibility and natural light. Windows shall be metal grille secured.
- Safety: Fire safety - minimum of One [1] 2-3kg fire extinguisher for Class A fires, one 3-4 gal. sand bucket, 1 Smoke detector, Pull-stations and Horn can be integrated with other nearby rooms.

Environment:

LED lighting, 1 nr. power outlets 110v 60Hz.

Title of Space: 3.1.5 STAFF ROOM WITH KITCHENETTE		Reference Detail:	D20
DEFINATION Staff room is a restricted space, dedicated to accommodate school staff in an office setting with provision of working space + lounge area for eating and interaction activities.			
ROOM FEATURES <u>Space occupancy:</u> 15-50 Teachers / Admin. Staff MoE Teacher-Student Ratio: 1 teacher to 35 students <u>Space size & Contents</u> <ul style="list-style-type: none"> • Recommended space size and contents by School Grade. • <i>There maybe 2-3 rooms at various location within the school buildings – identified as staff rooms</i> 			
Grade of School	Approx. Number of Staff	Room Size range [sf]	Room Contents
A+ and A	40-55	55-65 sf per person. Room Size range from 3,500-2,600	<ul style="list-style-type: none"> • 1 Writing desk and chair per staff, Work table for books, Wall Cabinet / Book Shelves, • 3 chair - seating for visitors, • 2-4 Metal Filing Cabinets, • Internet Access, • Air Condition [where possible] and Fans [portable or/ ceiling fans] • Computer and Printer with internet access [where service is available] • Pin Board or similar
B	35-45	2,500-1,800	
C	25-34	1,800-1,500	

D	10-24	600-1,750	<ul style="list-style-type: none"> • Kitchenette with sink/ counter-top and cupboards, and may include accessories such as kettle, stove and utensils. • Toilets / Sinks [as separate units and or in proximity to students' sanitary block] refer to section on sanitation for size and amount ratio information.
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Physical Characteristics:

- Ceiling Height: Min. ceiling height [CH] is 9ft for AC room and 12ft for Non-AC room
- Floor: Tiled or of a quality surface floor finish material.
- Windows: a minimum of 30% of the boundary walls surface, must be windows that allow for visibility and natural light. Windows shall be metal grille secured.
- Safety: Fire safety - minimum of two [2] 2-3kg fire extinguisher for Class A fires, two 3-4 gal. sand bucket, 2 Smoke detectors, pull stations and Horn can be integrated with other nearby rooms.

Utilities:

LED lighting [ref. to section for details],
 Power outlets amount: 1 duplex x 110v 60Hz per desk + 3 GFCI in Kitchen area + 2 nr. for printers and work area + 4 nr. extra for utilities.

Title of Space: 3.1.6 STORE ROOM / STRONG ROOM	Reference Detail:	D20
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DEFINITION

Store Room / Strong room is a secure space in the administration section of the building – intended to retain with restricted access – school records, books and supplies, new equipment and valuable assets.

ROOM FEATURES

Space occupancy:

In administration building and in proximity to the HT / Secretary office space.

Space size & Contents

- Recommended space size and contents by School Grade.

Grade of School	Approx. Room Size	Room Contents
A+ and A	120-150	<ul style="list-style-type: none"> • Metal Shelving • Cupboards • Small Safe
B	100-120	
C	100	
D	80-100	

Physical Characteristics:

- Ceiling Height: Min. ceiling height [CH] is 9-10ft
- Floor: Tiled or of a quality surface floor finish material.

<ul style="list-style-type: none"> • Windows: No windows • Safety: Fire safety - minimum of one [1] 2-3kg fire extinguisher for Class A fires <p><u>Utilities:</u> LED lighting [ref. to section for details], Power outlets amount: 2 duplex x 110v 60Hz</p>

<p>Title of Space:</p> <p>3.1.7 MEETING ROOM / BOARDROOM / CONFERENCE ROOM</p>	<p>Reference Detail:</p>	<p>D20</p>											
<p>DEFINITION</p> <p>This room is intended to accommodate meetings with staff / parents / special education purposes / officials & small community groups as required. The room should allow for presentation, meetings and consultations. Some existing schools may have alternative spaces intended for this purpose.</p>													
<p>ROOM FEATURES</p> <p><u>Space occupancy:</u> General space to accommodate 12-24 persons [vary by school grade]</p> <p><u>Space size & Contents</u></p> <ul style="list-style-type: none"> • Recommended space size and contents by School Grade. <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Grade of School</th> <th style="width: 15%;">Approx. Number of Seats</th> <th style="width: 15%;">Room gr ,?> <m Size range [sf]</th> <th style="width: 55%;">Room Contents</th> </tr> </thead> <tbody> <tr> <td>A+ and A</td> <td style="text-align: center;">20-24</td> <td>15-20 sf per person. Room Size range from 400-500</td> <td rowspan="2"> <ul style="list-style-type: none"> • A drop-down or fixed white board / presentation screen, • Boardroom table with chairs to accommodate the number of persons noted. • Internet Access, • Air Condition [where possible] and Fans [portable or ceiling fans] • Pin Board or similar </td> </tr> <tr> <td>B</td> <td style="text-align: center;">12-19</td> <td>300-400</td> </tr> </tbody> </table>			Grade of School	Approx. Number of Seats	Room gr ,?> <m Size range [sf]	Room Contents	A+ and A	20-24	15-20 sf per person. Room Size range from 400-500	<ul style="list-style-type: none"> • A drop-down or fixed white board / presentation screen, • Boardroom table with chairs to accommodate the number of persons noted. • Internet Access, • Air Condition [where possible] and Fans [portable or ceiling fans] • Pin Board or similar 	B	12-19	300-400
Grade of School	Approx. Number of Seats	Room gr ,?> <m Size range [sf]	Room Contents										
A+ and A	20-24	15-20 sf per person. Room Size range from 400-500	<ul style="list-style-type: none"> • A drop-down or fixed white board / presentation screen, • Boardroom table with chairs to accommodate the number of persons noted. • Internet Access, • Air Condition [where possible] and Fans [portable or ceiling fans] • Pin Board or similar 										
B	12-19	300-400											

C & D	6-11	200-300	<ul style="list-style-type: none"> Kitchenette with sink/ counter-top and cupboards, small refrigerator.
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Physical Characteristics:

- Ceiling Height: Min. ceiling height [CH] is 9ft for AC room and 12ft for Non-AC room
- Floor: Tiled or of a quality surface floor finish material.
- Windows: a minimum of 20-35% of the boundary walls surface, must be windows that allow for visibility and natural light. Windows shall be metal grille secured.
- Safety: Fire safety - minimum of two [2] 2-3kg fire extinguisher for Class A fires, 1-2 Smoke detectors, pull stations and Horn can be integrated with other nearby rooms.

Utilities:

LED lighting [ref. to section for details],
 Power outlets amount: 1 duplex per two [2] seats + 1 GFCI in Kitchen area + 2 nr. for printers and work area + 1 nr. at Front presentation area + network / internet connectivity where available.

Title of Space: 3.1.8 OFFICE – Multi Use [multi-use space for Guidance Counsellor / social worker / parent visitation]	Reference Detail:	D20									
DEFINATION An generic office room, that is intended for multiple uses: by a visiting social worker/ guidance counsellor / parents meeting etc.											
ROOM FEATURES Room Occupancy: 1 – 2 persons Room size & Contents <ul style="list-style-type: none"> Recommended room size and contents by School Grade. <table border="1"> <thead> <tr> <th>Grade of School</th> <th>Room Size range [sf]</th> <th>Room Contents</th> </tr> </thead> <tbody> <tr> <td>A+ and A and B</td> <td>150-160</td> <td> <ul style="list-style-type: none"> 1 Writing desk and chair, 3-5 chairs / seating for visitors, Air Condition [where possible] and Fan Computer and Printer with internet access [where service is available] </td> </tr> <tr> <td>C & D</td> <td>120</td> <td> <ul style="list-style-type: none"> Notice Pin Board or similar </td> </tr> </tbody> </table>			Grade of School	Room Size range [sf]	Room Contents	A+ and A and B	150-160	<ul style="list-style-type: none"> 1 Writing desk and chair, 3-5 chairs / seating for visitors, Air Condition [where possible] and Fan Computer and Printer with internet access [where service is available] 	C & D	120	<ul style="list-style-type: none"> Notice Pin Board or similar
Grade of School	Room Size range [sf]	Room Contents									
A+ and A and B	150-160	<ul style="list-style-type: none"> 1 Writing desk and chair, 3-5 chairs / seating for visitors, Air Condition [where possible] and Fan Computer and Printer with internet access [where service is available] 									
C & D	120	<ul style="list-style-type: none"> Notice Pin Board or similar 									
<u>Physical Characteristics:</u> <ul style="list-style-type: none"> Ceiling: Min. ceiling height [CH] is 9ft, Recommend CH is 10ft [AC spaces] Floor: Tiled or of a quality surface floor finish material. Door: Strong solid timber door or door with a min. of 90-minute fire rating. 											

- Door Lock: Dead Bolt + I access lever and may include a grille door.
- Windows: a minimum of 30% of the boundary walls surface, must be windows that allow for visibility and natural light. Windows shall be metal grille secured.
- Safety: Fire safety - minimum of One [1] 2-3kg fire extinguisher for Class A fires, and
- Air Condition equipment [where possible], LED lighting, 2 nr. power outlets

3.2 TEACHING / INSTRUCTION SPACES

TITLE OF SPACE	3.2.1 CLASSROOM
DEFINATION	<p><i>Classroom is defined as: an established room in a school building where students in grades 7 to11 are provided with education instructions and can accommodate related education activities [some school include grades 12&13 for CAPE].</i></p> <ul style="list-style-type: none"> a) Classroom must be secure and safe student-centred environments that promote learning, i.e. classrooms should allow for adequate seeing, hearing, interaction and allow for students to move freely and collaborate with each other. b) Environment conditions: such as temperature, humidity, lighting and noise level are inclusive of the physical space qualities that are critical to create a learning environment.
ROOM DATA [Refer to section on Classroom Size]	<ul style="list-style-type: none"> a) <u>Room Occupancy:</u> 15-30 students per room [Optimal size is 24 pr room], b) <u>Room space ratio:</u> 21.5 sf to 25 sf per student [Optimum space ratio is 25 sf per student], c) <u>Volume:</u> 250 ft³ pr student space volume. Minimum ceiling height [CH] is 9.5ft, Recommend CH is 11ft [Non AC spaces] d) <u>Room Contents:</u> Students' Furnishing [see furniture drawing]

	<p>Teachers' furnishing: One Desk + 2 Chairs White/chalk board & eraser, Other teaching resources including technology units. 2nr. Bulletin board 4' x 4' white or cream 2 Large Cupboards</p> <p>Safety: shall have a minimum of two [2] entry/exit doors, Fire safety [GFS] Minimum of One [1] 2-3kg fire extinguisher for Class A fires, one 3-4 gal. sand bucket, 2 Smoke detector, Signage [exits] Pull stations and Horn can be integrated with other nearby rooms.</p> <p><u>Environment:</u> Adequate ventilation and lighting, protection from weather and related environmental conditions. Refer to section for details on the above listed data including technical components standards.</p> <p>Fans</p> <p><u>Accessibility:</u> A minimum of 50% of total classrooms must be accessible for persons of special needs, this shall include the required access travel path + height of furnishing / accommodation. Each classroom shall have a minimum of 5% of total seats [1 to 2] dedicated to meet the needs for a person in a wheelchair [i.e. special furnishing]</p>
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TITLE OF SPACE	3.2.2 SMART CLASSROOM
DEFINATION	A smart classroom is an enclosed learning environment (room / space) that uses technology to enhance teaching and learning. It is equipped with a variety of educational technology tools, such as interactive whiteboards, projectors, computers, tablets, and internet access.
ROOM DATA [Refer to section on Classroom Size]	<p><u>Room Occupancy:</u> 24 students per room [Optimal size is 20 students per room],</p> <p><u>Room space ratio:</u> 30 sf to 40 sf per student [Optimum space ratio is 35 sf per student], This is due to the type of seating / furnishing required and allowance of space for equipment.</p> <p><u>Volume:</u> 180-210 ft3 per student space volume. Minimum ceiling height [CH] is 9ft, Recommend CH is 10ft [AC spaces]</p> <p><u>Room Contents:</u> Students' & Teachers' furnishing, White/chalk board & eraser, Other teaching resources including technology units.</p>

	<p>2nr. Bulletin board 4' x 4' white or cream 2 Large Cupboards</p> <p>Safety: shall have a minimum of two [2] entry/exit doors, Fire safety [GFS] Minimum of One [1] 2-3kg fire extinguisher for Class A fires, one 3-4 gal. sand bucket, 2 Smoke detector, Signage [exits] Pull stations and Horn can be integrated with other nearby rooms.</p> <p><u>Environment:</u> Air Condition equipment, Adjustable LED lighting,</p> <p><u>Accessibility:</u> A minimum of 50% of total classrooms must be accessible for persons of special needs, this shall include the required access travel path + height of furnishing / accommodation. Each classroom shall have a minimum of 5% of total seats [1 to 2] dedicated to meet the needs for a person in a wheelchair [i.e. special furnishing]</p> <p>IT Requirement</p>
<p>VARIATION & EXCEPTION</p> <p>Based on Grade & location requirement</p>	<p>VARIATION</p> <p>Based on Grade of School</p>

<p>Title of Space: 3.2.3 SCIENCE LABORATORIES</p>	<p>Reference Detail:</p>	<p>D20</p>
<p>DEFINATION</p> <p>Science laboratories in a secondary school are specialized rooms where students can conduct experiments and learn about science concepts in a hands-on way. Science laboratories are typically equipped with a variety of scientific instruments and equipment, depending on the specific science disciplines that are taught in the school</p> <p>Type of Secondary School Laboratories **</p> <p>a) Integrated Science, (b) Physics Lab., (c) Chemistry Lab. and (d) Biology</p> <p>** Comment on type and number of Laboratories:</p> <ul style="list-style-type: none"> In some Schools - where only Integrated Science is taught, then One [1] Lab. Is required. 		

- In Smaller Schools [Grades C & D], The minimum requirement is two [2] laboratories, where the three [3] core science subjects are taught.
- Schools of Grades A+B category shall have 3 separate laboratories. Size and details follow.

COMMON FEATURES OF ALL SCHOOL SCIENCE LABORATORIES

Location preference: At Ground Floor [level 1] in the building. Physics and Chemistry Labs. Maybe next to each other to share a central gas supply unit.

Safety:

(a) Fire safety [GFS] Minimum of two [2] 2-3kg fire extinguisher with Type ABC with Class BC for Chemistry Lab specific., One 3-4 gal. sand bucket, two [2] Smoke and one [1] heat detectors, Wired Pull stations and Horn can be integrated with other nearby rooms.

(b) Exit and Fire Signage to reqd. placement - ref. to section of technical standards (c) A minimum of two [2] doors with one being a min. of 5ft wide x 7ft high. and one door opens outwards.

(d) Gas Supply shall be within floor in covered ducts, copper pipes must be secured, gas bottles must to be retained in a secure safe ventilated enclosure [refer to drawing detail].

(e) Electrical wires must be concealed within solid concrete walls in conduits and electrical outlets recessed. Where the lab. has timber walls – the electrical wires shall be in metal conduits affixed with metal clips at 24" apart. (f) Laboratory written conduct and safety rules must be posted on walls in a visible location.

Services:

(a) Water supply pressure is a minimum of 30psi to sinks, a minimum of 450gal. of water should be dedicated to the labs. per day usage. A 2-3-day water supply is recommended. [b] Internet connectivity [c] Gas to Chemistry and Physics labs.

Power

110v 60Hz via GFCI outlet. It is recommended that all outlets be fitted with a switch or a central switch on/off. Where the laboratories are in a separate building, an electrical room is required with external access and a sub-main for direct power control of the building.

Light fitting:

LED Light Fixture with Poly-carbonate Diffuser -1'x 4' - 5,400 Lumens, Suspended [Colour Temperature = DAYLIGHT], 40-54 Watts. Fitting located not less than 40" above work table top.

Security:

(a) Laboratory rooms should have security doors, windows and openings. In most situations this is achieved by fixed metal Grille with bolt locks. At least 2nr. exit / entrance doors must be kept open when the room is occupied.

Accessibility:

- All Labs. must be accessible for persons of special needs, this shall include the required access travel path + height of furnishing / accommodation. Each Lab shall have a minimum of one [1] seat dedicated to meet the needs for a person in a wheelchair.

Environment:

- Adequate ventilation and lighting, protection from weather and related environmental conditions. Allow for natural light by Clear fixed or openable windows grille. A minimum of 10% of wall space is recommended.
- Windows: a minimum of 30-35% of the boundary walls surface, must be windows that allow for visibility and ventilation. Windows shall be metal grille secured.
- Where metal louvres are employed – insect screen should be integrated.
- Recommended is POV metal louvre windows with a section 30"x24" above of fixed laminated glass for natural light.

Recommended Floor Finish:

- 1st Option: Epoxy system such as Self-Levelling Urethane Mortar designed to provide impact, abrasion and corrosion resistance – by FloroCrete SLX. Trowelled-applied, or
- 2nd Option: Porcelain Tiles - High quality grade A; 9mm thk. 12"X18" / 24" Approx. size. non-skid, bedding to floor on tinset with max. 1/16" joint
- 3rd Option: 3/8" thk. Terrazzo or Polished concrete

Management: For Grades A & B Secondary Schools - A room for the office of Head of Science Department should be provided as approx. 120-140 sf with ceiling, tiled / finished floor and required office furnishing.

Room Occupancy: 16-30 students per room [Optimal size is 24 per room],

Room space ratio:

40 to 55 sf per student [Optimal Space ratio is 45 sf per student] inclusive of support rooms.

All four types of laboratories retain this space planning ratio.

Laboratory Physical Space

Number of Students	Laboratory physical size [sf]	Nr. of Lab. Work tables at 4nr. student per lab. work table
16	820	4nr. + 1 for Tutor
24	1,100	6nr. + 1 for Tutor
30	1,350	8nr. + 1 for Tutor

Internal Circulation:

shall have a minimum width of 40-48" and shall be in the centre aisle, side, front and rear of the room.

Volume: 350 ft3 per student min. space volume. Min. ceiling height [CH] is 12ft. Recommend CH is 14ft [Non AC spaces]

Room Contents:

- (a) Laboratory work tops and seating for students [see technical details],
- (b) White/chalk board, other teaching resources including Technology aid etc.,
- (c) Raised tutor platform approx. 12" H x 6ft x 8ft that includes a lab. table with a sink.
- (d) A bag Bay cubby or similar.

Specific Requirements for Laboratories in addition to general listed requirements above:

Physics laboratory	<ul style="list-style-type: none"> • Special Laboratory Grade Sink and Faucet x 3nr. [with 1 for tutor table] • Bunsen Burners at 2 outlets per Lab. table plus one unit for tutor's lab. table • A Store Room of approx. 80-100 sf
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	<ul style="list-style-type: none"> • Preparation room of approx. 100 sf • Gas supply to Bunsen Burner
Chemistry laboratory	<ul style="list-style-type: none"> • Bunsen Burners at 2 outlets per Lab. table plus one unit for tutor's lab. table, • Special Laboratory Grade Sink and Faucet at 1 per sink at each Lab. table, • Power outlets for each lab. table x 2nr. duplex with weather cover, • Gas supply to Bunsen Burner • Fume Cupboard • Emergency Eye Wash and sink station • Support Spaces including: <ul style="list-style-type: none"> • A Store Room of approx. 80-100 sf • Preparation room of approx. 100 sf • Secure Chemical Storage room
Biology laboratory	<ul style="list-style-type: none"> • Special Laboratory Grade Sink and Faucet at 1 per sink at each Lab. table, • Power outlets for each lab. table x 2nr. duplex with weather cover, • Support Spaces including: <ul style="list-style-type: none"> • Preparation room of approx. 100 sf • Living Materials Store (A/C) • Work Counter-tops in addition to Lab. tables

Title of Space: 3.2.4 PERFORMANCE ARTS DEPARTMENT	Reference Detail:	D20
<p>DEFINATION</p> <p>This department comprises of three main activity spaces that focus on students' creative development and self-expression. This include visual arts, music and dance / theatre and related activities.</p> <p>Components of Performance Arts [PA] Department **</p> <p>(a) Performance Arts Room [Dance], (b) Music Room and (c) Creative Arts Room [art & craft]</p> <p>** Comment on type and number of PA rooms:</p> <ul style="list-style-type: none"> • Some schools may have one, two or all three PA rooms, which is dependent on the subjects are being taught. • Schools of Grades A+B category shall have 3 separate PA rooms. Size and details follow. 		
<p>COMMON FEATURES OF <u>Performance Arts [PA] Department</u></p> <p><u>Location preference:</u></p> <ul style="list-style-type: none"> • At Ground Floor [level 1] in a building or in a separate building. • Music room is recommended to be some distance away from classroom due to noise generate. <p><u>Safety:</u></p>		

- Fire safety [GFS] Minimum of one [1] 2-3kg fire extinguisher with Type ABC, one 3-4 gal. sand bucket, two [2] Smoke and one [1] heat detectors, Wired Pull stations and Horn can be integrated with other nearby rooms.
- Exit and Fire Signage to reqd. placement - ref. to section of technical standards (c) A minimum of two [2] doors with one being a min. of 5ft wide x 7ft high. and one door opens outwards.
- Electrical wires must be concealed within solid concrete walls in conduits and electrical outlets recessed. Where the lab. has timber walls – the electrical wires shall be in metal conduits affixed with metal clips at 24" apart. (f) Written conduct and safety rules must be posted on walls in a visible location.

Services:

- Water supply pressure is a minimum of 30psi to sinks, a minimum of 450gal. of water should be dedicated to the art studio room. A 2-3-day water supply is recommended.
- Internet connectivity.

Power

- 110v 60Hz via GFCI outlet. It is recommended that all outlets be fitted with a switch or a central switch on/off. Where the PA department is in a separate building, an electrical room is required with external access and a sub-main for direct power control of the building.

Security:

- Rooms should have security doors, windows and openings. In most situations this is achieved by fixed metal Grille with bolt locks.
- At least 2nr. exit / entrance doors must be kept open when the room is occupied.

Accessibility:

- All PA rooms must be accessible for persons of special needs. This shall include the required access travel path + height of furnishing / accommodation. Each PA room shall have a minimum of one [1] seat or space, dedicated to meet the needs for a person in a wheelchair.

Environment:

- Adequate ventilation and lighting, protection from weather and related environmental conditions. Allow for natural light by Clear fixed or openable windows grille. A minimum of 30% of external wall space is recommended.
- Windows: a minimum of 30-35% of the boundary walls surface, must be windows that allow for visibility and ventilation. Windows shall be metal grille secured.
- Where metal louvres are employed – insect screen should be integrated.
- Recommended is POV metal louvre windows with a section 30"x24" above of fixed laminated glass for natural light.

Recommended Floor Finish:

- Dance Studio activity space shall have Luxury Vinyl Planks [LVT] on level timber floor. [Note – do not use PVC LVT imitation planks].
- 1st Option: Epoxy system such as Self-Levelling Urethane Mortar designed to provide impact, abrasion and corrosion resistance – by FloroCrete SLX. Trowelled-applied, or
- 2nd Option: Porcelain Tiles - High quality grade A; 9mm thk. 12"X18" / 24" Approx. size. non-skid, bedding to floor on tisset with max. 1/16" joint,

- 3rd Option: 3/8" thk. Terrazzo or Polished concrete.

Management: For Grades A & B Secondary Schools - A room for the office of Head of Department should be provided as approx. 120-140 sf with ceiling, tiled / finished floor and required office furnishing.

Room Occupancy: 16-24 students per room [Optimal size is 20 per room],

Room space ratio:
40 to 45 sf per student [Optimal Space ratio is 42.5 sf per student] inclusive of support rooms.
All three [3] types of PA rooms retain this space planning ratio.

Room Physical Space

Number of Students	Room physical size [sf]	Recommended dimension
12	520	20' x 26'
16	700	25' x 28'
24	1,100	30' x 36'

Volume: 350 ft³ per student min. space volume. Min. ceiling height [CH] is 12ft. Recommend CH is 14ft [Non AC spaces]

Room Contents:

- Activity space and seating for students – where applicable [see technical details],
- White/chalk board, other teaching resources including Technology aid etc.,
- Store rm. For accessories and teaching aids.
- A bag Bay cubby or similar.

Specific Requirements for Arts room in addition to general listed requirements above:

Music Room	<ul style="list-style-type: none"> • Store Room 8ft x 8ft. secure space [ceiling / roof and door] to store music instrument. • Light sound insulated wall where possible.
Performance Arts [dance]	<ul style="list-style-type: none"> • Change booth x 2nr. for M/F at 4.5' x 6' • Performance area – LVT floor finish with Handrails and wall mirrors [see dwg.] • Circulation space to be tiled. • Storage room 100-120 ft²
Creative Arts [art studio]	<ul style="list-style-type: none"> • External work space – outdoor sculpture activity area of 300-350 ft² Covered and connected to main arts room [see dwg.] • Large concrete sink 8-10ft x 30" w x 18" deep x 2nr. see dwg] to allow for clay model works, paint washing and mixing etc. • 2nr. double doors, • Support Spaces including: <ul style="list-style-type: none"> • Storage room 100-120 ft² • Work tops furniture

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Title of Space: 3.2.5 MATHS & TECHNOLOGY DEPARTMENT	Reference Detail:	D20
<p>DEFINATION</p> <p>This department, focuses on learning of languages, computer technology and mathematics. This is done by the use of contemporary digital media, learning interfaces and within enhance learning spaces.</p> <p>Components of MATHS & TECHNOLOGY DEPARTMENT [MTD] Department **</p> <ul style="list-style-type: none"> a) Language Laboratory Room, b) Computer / IT Classroom c) Audio- Visual Room d) Mathematics Laboratory <p>** Comment on type and number of MTD rooms:</p> <ul style="list-style-type: none"> • Some schools may have one, two, three or all four MTD classrooms, which is dependent on the subjects are being taught. • Schools of Grades A+B category shall have 3 or 4 separate MTD rooms. Size and details follow. 		
<p>COMMON FEATURES OF <u>MATHS & TECHNOLOGY DEPARTMENT [MTD] Department</u></p> <p><u>Location preference:</u> This department can be physically located anywhere in the school complex, preferably in a quiet, secure section and in proximity to the Library and administration sections of the school complex.</p> <p><u>Safety:</u></p>		

(a) Fire safety, minimum of two [1] 2-3kg fire extinguisher with Type ABC, two [2] Smoke and one [1] heat detectors, per classroom plus wired Pull stations and Horn can be integrated with other nearby rooms.

(b) Exit and Fire Signage to reqd. placement - ref. to section of technical standards (c) A minimum of two [2] doors with one being a min. of 5ft wide x 7ft high. and one door opens outwards.

(c)Electrical wires must be concealed within solid concrete walls in conduits and electrical outlets recessed. Where the lab. has timber walls – the electrical wires shall be in metal conduits affixed with metal clips at 24" apart. (f) Written conduct and safety rules must be posted on walls in a visible location. See special requirements section.

Services:

(a) Internet connectivity with the required bandwidth / fibre connection, (b) network connection and linked to MoE learning channel (c) Backup power via UPS (d) IT equipment (e)Stable and adequate power supply and general lighting. See special requirements section.

Power

110v 60Hz via GFCI outlet. It is recommended that all outlets be fitted with a switch or a central switch on/off. Where the PA department is in a separate building, an electrical room is required with external access and a sub-main for direct power control of the building.

Security:

(a) Rooms should have security doors, windows and openings. In most situations this is achieved by fixed metal Grille with bolt locks. At least 2nr. exit / entrance doors must be kept open when the room is occupied.

Accessibility: All classrooms must be accessible for persons of special needs. This shall include the required access travel path + height of furnishing / accommodation. Each Classroom shall have a minimum of 5% seats [i.e. 2 seat for a room of 24 students and 3 seats for a room to accommodate 30-36 students], dedicated to meet the needs for a person in a wheelchair.

Environment:

- All MDT rooms should be temperature controlled by means of air condition equipment, where possible. At a minimum, the computer / IT room and the IT server room/ cabinet should be in a temperature 18-20 degree centigrade.
The basic calculation method is 45-60btu per each ft2 of room space with 20 occupants and equipment heat. Hence a room size of 20' x 30' with 9ft ceiling height will require 2nr. 12,000 BTU AC Units. It is recommended to have 2nr. units of smaller size that one large unit. A ceiling fan should be added to aid air circulation.
- Windows: a minimum of 20% of the boundary walls surface, must be windows that allow for visibility and ventilation. Windows shall be metal grille secured.
- Metal framed windows with 5% grey tint to 6mm laminate glass infill is recommended. This can be single hung or horizontal sliding windows. In schools in proximity to sea / salt air – PVC window frames should be use.

Recommended Floor Finish:

- 1st Option: Epoxy system such as Self-Levelling Urethane Mortar designed to provide impact, abrasion and corrosion resistance – by FloroCrete SLX. Trowelled-applied, or

- 2nd Option: Porcelain Tiles - High quality grade A; 9mm thk. 12"X18" / 24" Approx. size. non-skid, bedding to floor on tinset with max. 1/16" joint. Off white or grey colour is recommended.
- 3rd Option: 3/8" thk. Terrazzo.

Management: For Grades A & B Secondary Schools - A room for the office of Head of Department should be provided as approx. 120-140 sf with ceiling, tiled / finished floor and required office furnishing.

Room Occupancy: 16-30 students per room [Optimal size is 24 per room],

Room space ratio:

25 to 35 sf per student [Optimal Space ratio is 30 sf per student] excluding support rooms.

General planning ratio is outlined below:

Room Physical Space

Classroom	Number of Students	Room physical size [sf]	Recommended dimension
Language Laboratory Room	16-20	500	20' x 24'
Computer / IT Classroom	30	750	25' x 30'
Audio- Visual Room	24	720	30' x 24'
Mathematics Laboratory	16-20	480	20' x 24'

Volume: 350 ft3 per student min. space volume. Min. ceiling height [CH] is 9ft. Recommend CH is 12ft

Rooms' Content:

- (a) Special seating for each room and to accommodate applicable equipment – where applicable [see technical details],
- (b) Interactive Screen, 75-80 Smart TV with HDMI connection, Projector and screen
- (c) Store rm. for accessories and teaching aids.
- (d) IT server room with UPS and server [air cooled] in a secure room [no windows] with insulation to the walls and ceiling.
- (e) A bag Bay cubby or similar and
- (f) Seating and equipment for Teacher / Tutor.

Specific Requirements for MTD room in addition to general listed requirements above:

Language Laboratory Room Language laboratories are study rooms equipped with electronic sound-reproduction devices, enabling students to hear model pronunciations of foreign languages and to record and hear their own voices as they engage in pattern drills.

- Language Laboratory shall include the following:
- a) The audio-visual aids including headsets,
 - b) Display Information,
 - c) White board / Smart board,
 - d) Smart TV 75-80" wide format with HDMI Connections,
 - e) Computer Equipment and connection and
 - f) Appropriate furnishing.

Computer / IT Classroom	<p>An advance language laboratory should integrate sound insulation into the walls and ceiling for improved sound control.</p> <p>IT rooms shall adhere to the general cabling and equipment standards outlined in section... Technology in Schools.</p> <p>Equipment Each classroom should be equipped with a projector and two overhead speakers. (N.B - no Bluetooth devices should be used) with adequate cable length to connect to teacher's device. Some rooms may use a Smart TV with HDMI connection [75-90" size] instead of a projector and screen. The Latter is recommended.</p> <p>IT Room Furniture requirements All Desks should be 8 feet long x 2½ feet wide 28-30" high, the table / desk to is recommended to be durable material of quartz top or ¾" thk. Finished plyboard lacquered. [refer to furniture drawing details]. A 4ft central aisle shall be provided in the middle of the room.</p> <p>Each Computer table or desk is size to accommodate 1-4 seats in a row. The table and placed on either side of the room to the walls where the power, network and UPS connective are affixed.</p> <p>Each Computer shall be allocated with the following: 1 power, 1 network, 1 UPS outlet each. Not more than 4 outlets shall be branched on an electrical circuit. The power outlet shall be 15A to GPL NEC Standard.</p>
Audio- Visual Room	<p>An audio-visual room (AVR) is a specialized learning space equipped with audio and visual equipment such as projectors, smart TV, Inter-active screen, sound system, and a variety of audio and video sources. All are connected via the internet into other learning system information and groups. The purpose is the presentation of multimedia content, facilitating group activities etc.</p> <p>Audio-Visual rooms shall have the following:</p> <ol style="list-style-type: none"> a) The space shall be Echo free and Noise-free, b) External Light control by means of retractable curtains, c) Light intensity control – with adjustable / dimmer type, d) Speakers and Microphones as Audio Aids e) Camera to Aid Visual Display f) Interactive Presentation Technology g) Connected Devices via WiFi / HDMI h) Smart TV with HDMI Screen, can also include touch screen i) Adequate stable power supply
Mathematics Laboratory	<p>A mathematics laboratory is a specialized learning space equipped with mathematical manipulatives, tools, and technology to support teaching and learning tools to be hands-on and interactive, providing students with opportunities to explore mathematical concepts and solve problems in a concrete and engaging way.</p>

Appropriate technology media – computers and tablets etc.
 Physical models and learning display charts
 Various mathematics tools such as scale and rules etc.

In this context, a math Lab. shall include the following facilities

- a) Seating and work tops
- b) Display boards
- c) Tables for work tools and models
- d) Computers with connectivity and stable power
- e) Interactive white board.

<p>Title of Space: 3.2.6 INDUSTRIAL TECHNOLOGY DEPARTMENT</p>	<p>Reference Detail:</p>	<p>D20</p>
<p>DEFINITION</p> <p>This department, focuses on practical base training for the main fields of industrial fields as mechanical, wood working and technical drawing.</p> <p>Components of INDUSTRIAL TECHNOLOGY DEPARTMENT [ITD] Department **</p> <ol style="list-style-type: none"> a) Mechanical Workshop b) Wood Working Workshop c) Technical Drawing [AUTOCAD & Drawing Board] <p>** Comment on type and number of ITD rooms:</p> <ul style="list-style-type: none"> • Some schools may have one, two or three of ITD work classrooms, which is dependent on the subjects being taught. • Schools of Grades A+B category shall have the three categories of ITD rooms. Size and details information follow. 		
<p>COMMON FEATURES OF INDUSTRIAL TECHNOLOGY DEPARTMENT [ITD] Department</p> <p><u>Management:</u> For Grades A & B Secondary Schools - A room for the office of Head of Department should be provided as approx. 120-140 sf with ceiling, tiled / finished floor and required office furnishing.</p> <p>.....</p> <p><u>Location preference:</u></p>		

- At Ground Floor [level 1] in a building or in a separate building.
- The building or rooms shall be located downwind and at the rear of the school site. This is necessary to mitigate dust and noise levels. Adequate access shall be provided to facilitate the delivery / maintenance of equipment and materials.
- Exception - TD room can be located within classroom blocks.

Safety:

- Fire safety [GFS] Minimum of one [2] 2-3kg fire extinguisher with Type ABC, two 3-4 gal. sand buckets, two [2] Smoke and one [1] heat detectors, Wired Pull stations and Horn can be integrated with other nearby rooms. Exception - TD room can be treated as an IT room / smart classroom.
- Exit and Fire Signage to reqd. placement - ref. to section on technical standards
- A minimum of two [2] doors with one being a min. of 5ft wide x 7ft high. and one door opens outwards.
- Electrical wires must be concealed within solid concrete walls in conduits and electrical outlets recessed. Where the ITD rooms have timber walls – the electrical wires shall be in metal conduits affixed with metal clips at 24” apart. (f) Written conduct and safety rules must be posted on walls in a visible location.
- Special power requirement and safety stop switches will be required for specific equipment [refer to section]

Services:

- Internet connectivity is required in All Workshops especially the TD Room.

Power

- Special power requirement and safety stop switches will be required for specific equipment [refer to section that list the equipment and power requirement recommended]
- General outlets are: 110v 60Hz via GFCI outlet. It is recommended that all outlets be fitted with a switch or a central switch on/off. Where the ITD department is in a separate building, an electrical room is required with external access and a sub-main for direct power control of the building.

Security:

- Rooms should have security doors, windows and openings. In most situations this is achieved by fixed metal Grille with bolt locks. At least 2nr. exit / entrance doors must be kept open when the room is occupied.

Accessibility:

- All ITD rooms must be accessible for persons of special needs. This shall include the required access travel path + height of furnishing / accommodation.
- Each ITD room shall have a minimum of one [1] seat or space, dedicated to meet the needs for a person in a wheelchair.

Environment:

- Adequate ventilation and lighting, protection from weather and related environmental conditions. Allow for natural light by Clear fixed or openable windows grille. A minimum of 30% of external wall space is recommended.

- Windows: a minimum of 30-35% of the boundary walls surface, must be windows that allow for visibility and ventilation. Windows shall be metal grille secured.
- Where metal louvres are employed – insect screen should be integrated.
- Recommended is POV metal louvre windows with a section 30"x24" above of fixed laminated glass for natural light.

Recommended Floor Finish:

- 1st Option: Epoxy system such as Self-Levelling Urethane Mortar designed to provide impact, abrasion and corrosion resistance – by Floro-Crete SLX. Trowelled-applied, or
- 2nd Option: Polished Concrete with hardener and dust-proofer such as Nitro Floor Hard Top with SIKA dust-proofer & concrete hardener skdust5
- 3rd Option: 3/8"thk. Terrazzo with non-skid sealant.
- Exception: The TD Room can be finished with: Porcelain Tiles - High quality grade A; 9mm thk. 12"x18" / 24" Approx. size. non-skid, bedding to floor on tinset with max. 1/16" joint.

Room Occupancy: 12-24 students per room [Optimal size is 20 per room], TD room maybe designed to accommodate up to 24 students.

Room space ratio:

- a) Mechanical and Wood Working Workshops [where tools and equipment are installed], the space ratio [total floor area / nr. of student] is 70 to 100 sf per student [Optimal Space ratio is 85 sf per student] excluding support rooms. Where the area for support rooms are include in the computation – this space ratio per student is 100-110 ft2 per student. Wood Working Workshop shall have an additional open [but covered] external space for materials preparation and stacking [refer to sample drawing for details].
- b) Technical Drawing [AUTOCAD & Drawing Board] space ratio is 40-55 ft2 per student. This room shall include 50-60% of room space for TD drawing boards and stool plus 40-50% of space for desk and chairs to accommodate computers [AutoCAD] drafting. The latter shall be model as an IT Classroom with Air Condition, Smart TV with Tutor's station.

General planning ratio is outlined below:

Room Physical Space

Classroom	Number of Students	Room physical size [sf]	Recommended dimension	Floor Space per student [gross] ft2
Mechanical Workshop	20	2,000	45' x 45'	100
Wood Working Workshop	20	2,000 Plus 600	45' x 45' Plus 15' x 40' covered external work space	130
Technical Drawing [AUTOCAD & Drawing Board]	20	1,200	40' x 30'	120

Volume

Applies to Mechanical Workshop / Wood Working Workshop

- Ceiling: ITD department / room should have no ceiling [gypsum, PVC, timber boarding]. Where ceiling is necessary, this can be of non-flammable cement boarding.
- The roof plate height [where ITD is a stand alone building] shall be a minimum of 10ft with 15ft as the recommended height.
- Roof design is recommended as a Gable V-Roof with a plate height of 10-15ft and roof slope of 25degrees.
- Metal Roof sheeting fixed with metal Z-purlin is recommended.
- TD Room can be located in the General Classroom block and be designed and outfitted as an IT Classroom.

General Room Contents:

- (a) Activity space and seating for students – where applicable [see technical details],
- (b) White/chalk board, other teaching resources including technology aids etc.,
- (c) Store rm. For accessories and teaching aids.
- (d) A bag Bay cubby or similar.

Specific Requirements for ITD Rooms in addition to general listed requirements above:

Mechanical
Workshop

Room Spaces:

- Mechanical Store Room 15ft x 10ft. secure space [with ceiling / roof and door] to store materials and students work.
- Mechanical Tool Room 15' x 10' secure space [with ceiling / roof and door] to store hand tools and accessories,
- General Activity spaces with fixed and non-fixed equipment – open floor plan,
- Furnishing: Mechanical work benches [3' x 6' special unit] with VICE
- Fixed work-tops 30" wide x 30" high and 30ft or more long in 2-3 sections against walls – to allow for use of hand tools

Room Contents:

Students' Furnishing [see furniture drawing] – for Workshop
 Teachers' furnishing: One Desk + 2 Chairs
 White/chalk board & eraser,
 Other teaching resources including technology units.
 1nr. Bulletin board 4' x 4' white or cream
 2 Large Cupboards
 Equipment fixed and tools [see TVET equipment schedule]

Wood Working
Workshop

Room Spaces:

- Store Room 10ft x 10ft. secure space [with ceiling / roof and door] to store materials and students work.
- Tool Room 10' x 10' secure space [with ceiling / roof and door] to store hand tools and accessories,
- General Activity spaces with fixed and non-fixed equipment – open floor plan,
- Furnishing: work benches [3' x 6' special unit]
- Fixed work-tops 30" wide x 30" high and 30ft or more long in 2-3 sections against walls – to allow for use of hand tools

- External open area with roof [covered] of approx. size of 400-550 ft² for open wood working activity, materials stacking and storage.

Room Contents:

- Students' Furnishing [see furniture drawing] – for Workshop
- Teachers' furnishing: One Desk + 2 Chairs
- White/chalk board & eraser,
- Other teaching resources including technology units.
- 1nr. Bulletin board 4' x 4' white or cream
- 2 Large Cupboards
- Equipment fixed and tools [see TVET equipment schedule]

Technical Drawing
[AUTOCAD &
Drawing Board]

This room is divided into two [2] sections
[a] TD drawing boards with stools for manual drafting activities. This can be a size of 20ft x 30ft to accommodate 20 students at 30ft² per student and
[b] An computer work section – this area is designed and layout as an IT room.

In schools of Grades A and B, the IT Laboratory setting is required for a dedicated TD room with similar furnishing and power requirement.

In schools of Grades C+D, the IT Lab. can be schedules and utilized for this activity and a dedicated AUTOCAD classroom may not be required.

Room Contents:

- Students' Furnishing [see furniture drawing] – for TD Room
- Teachers' furnishing: One Desk + 2 Chairs
- White/chalk board & eraser,
- Other teaching resources including technology units.
- 1nr. Bulletin board 4' x 4' white or cream
- 2 Large Cupboards
- Teaching Aids [see TVET equipment schedule]
- For AUTOCAD room or section – refer to IT Room requirements

Title of Space: 3.2.7 HOME ECONOMICS DEPARTMENT	Reference Detail:	D20
<p>DEFINATION</p> <p>This department, focuses on practical base training for Clothing and textile, Home Management and Food & Nutrition disciplines.</p> <p>Components of Home Economics [HED] Department **</p> <ul style="list-style-type: none"> a) Clothing & Textile Classroom b) Home Management Classroom c) Food & Nutrition Lab. <p>** Comment on type and number of HED rooms:</p> <ul style="list-style-type: none"> • Some schools may have one, two or three of HED work classrooms, which is dependent on the subjects being taught. • Schools of Grades A+B and C category shall have the three categories of HED rooms. Size and details information follow. 		
<p>COMMON FEATURES OF <u>INDUSTRIAL TECHNOLOGY DEPARTMENT [ITD] Department</u></p> <p><u>Management:</u> For Grades A & B Secondary Schools - A room for the office of Head of Department should be provided as approx. 120-140 sf with ceiling, tiled / finished floor and required office furnishing.</p> <p>.....</p> <p><u>Location preference:</u></p> <ul style="list-style-type: none"> • At Ground Floor [level 1] in a building or in a separate building. • The building or rooms shall be located is a strategic position for enhance wind flow. <p><u>Safety:</u></p>		

- Fire safety [GFS] Minimum of one [2] 2-3kg fire extinguisher with Type ABC, two 3-4 gal. sand buckets, two [2] Smoke and one [1] heat detectors, Wired Pull stations and Horn can be integrated with other nearby rooms.
- Exit and Fire Signage to reqd. placement - ref. to section on technical standards
- A minimum of two [2] doors with one being a min. of 5ft wide x 7ft high. and one door opens outwards.
- Electrical wires must be concealed within solid concrete walls in conduits and electrical outlets recessed. Where the ITD rooms have timber walls – the electrical wires shall be in metal conduits affixed with metal clips at 24" apart. (f) Written conduct and safety rules must be posted on walls in a visible location.
- Special power requirement and safety stop switches will be required for specific equipment [refer to section]
- Gas Supply shall be within floor in covered ducts, copper pipes must be secured, gas bottles must to be retained in a secure safe ventilated enclosure [refer to drawing detail]. This is applicable to the Food & Nutrition Lab.

Services:

- Water supply pressure is a minimum of 30psi to sinks, a minimum of 450gal. of water should be dedicated to the department for daily usage. A 2-3-day water supply is recommended.
- Internet connectivity
- Gas to the Food & Nutrition Lab

Power

- Special power requirement and safety stop switches will be required for specific equipment [refer to section that list the equipment and power requirement recommended]
- General outlets are: 110v 60Hz via GFCI outlet. It is recommended that all outlets be fitted with a switch or a central switch on/off. Where the HED department is in a separate building, an electrical room is required with external access and a sub-main for direct power control of the building.

Security:

- Rooms should have security doors, windows and openings. In most situations this is achieved by fixed metal Grille with bolt locks. At least 2nr. exit / entrance doors must be kept open when the room is occupied.

Accessibility:

- All HED rooms must be accessible for persons of special needs. This shall include the required access travel path + height of furnishing / accommodation.
- Each HED room shall have a minimum of one [1] seat or space, dedicated to meet the needs for a person in a wheelchair.

Environment:

- Adequate ventilation and lighting, protection from weather and related environmental conditions. Allow for natural light by Clear fixed or openable windows grille. A minimum of 30% of external wall space is recommended.

- Windows: a minimum of 30-35% of the boundary walls surface, must be windows that allow for visibility and ventilation. Windows shall be metal grille secured.
- Where metal louvres are employed – insect screen should be integrated.
- Recommended is POV metal louvre windows with a section 30"x24" above of fixed laminated glass for natural light.

Recommended Floor Finish:

- 1st Option: Porcelain Tiles - High quality grade A; 9mm thk. 12"X18" / 24" Approx. size. non-skid, bedding to floor on tinset with max. 1/16" joint,
- 2nd Option: 3/8" thk. Terrazzo with non-skid sealant.

Room Occupancy: 12-20 students per room [Optimal size is 20 per room].

Room space ratio:

Clothing & Textile Classroom [where work tables are placed], the space ratio [total floor area / nr. of student] is 55-65 sf per student [Optimal Space ratio is 60 sf per student] inclusive of support spaces / rooms.

Home Management Classroom [where several model rooms are included and a work classroom], the space ratio [total floor area / nr. of student] is 45-55 sf per student [Optimal Space ratio is 50sf per student] inclusive of support spaces / rooms.

Food & Nutrition Laboratory [where work tables and equipment are placed], the space ratio [total floor area / nr. of student] is 45-55 sf per student [Optimal Space ratio is 50sf per student] inclusive of support spaces / rooms.

General planning ratio is outlined below:

Room Physical Space

Classroom	Number of Students	Room physical size [sf]	Recommended dimension	Floor Space per student [gross] ft2
Clothing & Textile Classroom	20	1,200	30' x 40'	60
Home Management Classroom	20	1,000	30' x 33'	50
Food & Nutrition Laboratory	20	1,000	30' x 33'	50

Volume

350 ft³ per student min. space volume. Min. ceiling height [CH] is 9ft. Recommend CH is 12ft

General Room Contents:

- Activity space and seating for students – where applicable [see technical details],
- White/chalk board, other teaching resources including technology aids etc.,
- Store rm. for accessories and teaching aids.
- A bag Bay cubby or similar.

Specific Requirements for HED Rooms in addition to general listed requirements above:

<p>Clothing & Textile Classroom</p>	<p><u>Room Spaces:</u></p> <ul style="list-style-type: none"> • Clothing & Textile Store Room 20-15ft x 10ft. secure space [with ceiling / roof and door] to store materials and students work. • Closet Room 5' x 10' secure space [with ceiling / roof and door] to store accessories, • Fitting Room 5' x 10' secure space [with ceiling / roof and door] as a changing room, • General Activity spaces with non-fixed work tables and students seating – open floor plan of approx. size 850 ft², <p><u>Room Contents:</u></p> <ul style="list-style-type: none"> • Students' Furnishing [see furniture drawing] • Teachers' furnishing: One Desk + 2 Chairs • White/chalk board & eraser, • 1nr. Bulletin board 4' x 4' white or cream • 2 Large Cupboards • Equipment and tools [see TVET equipment schedule]
<p>Home Management Classroom</p>	<p><u>Room Spaces:</u></p> <ul style="list-style-type: none"> • Store Room 8ft x 6ft. secure space [with ceiling / roof and door] to store materials and students work. • General Activity spaces with non-fixed work tables and students seating – open floor plan of approx. size 600-500 ft² • Model Bathroom / Toilet unit with shower, sink and toilet. • Model Bedroom with closet of approx. 140-160 ft² open floor plan • Model Laundry room of approx. size 7' x 8' with laundry sink and shelving. • Model Kitchen – open plan integrated into the classroom area with kitchen sink [double unit and drain board] counter-top of approx. 12ft long x 22-24" wide with base and overhead cupboards. <p><u>Room Contents:</u></p> <ul style="list-style-type: none"> • Students' Furnishing [see furniture drawing] • Teachers' furnishing: One Desk + 2 Chairs • White/chalk board & eraser, • Other teaching resources including technology units. • 1nr. Bulletin board 4' x 4' white or cream • 2 Large Cupboards • Fridge and washing machine / dryer • Model bed [queen size] with bedding • Shelving and accessories typical for a small house. • Chairs and base furnishings.
<p>Food & Nutrition Laboratory</p>	<p><u>Room Spaces:</u></p> <ul style="list-style-type: none"> • Store Room 8ft x 8ft. secure space [with ceiling / roof and door] to store materials. • Resource Room 8ft x 6ft • General Activity spaces with non-fixed work tables and students seating – open floor plan of approx. size 750-800 ft² <p><u>Room Contents:</u></p> <ul style="list-style-type: none"> • Students' Furnishing [see furniture drawing]

<ul style="list-style-type: none"> • Teachers' furnishing: One Desk + 2 Chairs • White/chalk board & eraser, • Other teaching resources including technology units. • 1nr. Bulletin board 4' x 4' white or cream • 4 Large Cupboards • Kitchen appliances and utensils [see equipment and resources' list. • Large work tables / work tops with power outlets for small appliances. • Fridges [2nr.] • Kitchen module: that includes a Stove [4 burners] with cupboard units and sink. A module kitchen is for 2-4 student, hence a class of 20 students will require 5 units plus one unit for the tutor demonstration. The stoves are connected to an external gas supply unit.
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3.3 RESOURCES SPACES

<p>Title of Space: 3.3.1 LIBRARY</p>	<p>Reference Detail:</p>	<p>D20</p>
<p>DEFINATION</p> <p>A school library is a dedicated collaborative learning space that provides students, staff, and sometimes parents with access to a wide range of resources and services to support their educational and informational needs.</p> <p>School libraries typically contain a collection of books, periodicals, audio-visual materials, and digital resources. These resources are carefully curated to support the school's curriculum and to provide students with access to a variety of perspectives and viewpoints. School libraries also provide a variety of services to their users, such as:</p> <ul style="list-style-type: none"> • Book borrowing and circulation • Reference and research assistance • Information literacy instruction • Programming and events • Technology access 		
<p>ROOM FEATURES</p> <p><u>Room Occupancy:</u> A flexible space with accommodation to seat at least 10% of the students at anyone time and at least 10 books per student and reference section for teaching staff. This space must lend itself to easy adaptation for the inclusion of Computers.</p> <p><u>Room Spaces</u></p> <ul style="list-style-type: none"> • Librarian's office • Store Room / work space for books preparation • Reading / study area with seating and Book Shelves / Stacks 		

- Carrel booths for secondary schools

Room size & Contents

Recommended room size and contents by School Grade.

Grade of School	Room Size range [sf]	Space per student [gross]	Room Spaces / Contents
A+ 1,000-800 students	2,500 To accommodate 80 persons	30 ft2 per student	<ul style="list-style-type: none"> • Librarian's Office • Store Room / work space for books preparation • Reception and Management Counter • Reading / study area with seating and Book Shelves / Stacks • Carrel booths for secondary schools
A 799-550 students	2,000 To accommodate 65 persons	30 ft2 per student	<ul style="list-style-type: none"> • Librarian's Office • Store Room / work space for books preparation • Reception and Management Counter • Reading / study area with seating and Book Shelves / Stacks • Carrel booths for secondary schools
B 549-400 students	1,500 To accommodate 50 persons	30 ft2 per student	<ul style="list-style-type: none"> • Librarian's Office • Store Room / work space for books preparation • Reception and Management Counter • Reading / study area with seating and Book Shelves / Stacks • Carrel booths for secondary schools
C 399-250 students	1,200 To accommodate 32-40 persons	30 ft2 per student	<ul style="list-style-type: none"> • Store Room / work space for books preparation • Reception and Management Counter • Reading / study area with seating and Book Shelves / Stacks • Carrel booths for secondary schools
D 250 and below	800 To accommodate 25 persons	35 ft2 per student	

Location preference:

- At Ground Floor [level 1] in the building. Preference of location is in a quiet area with low foot traffic and allow for supervision / management.

Safety:

- Fire safety [GFS] Minimum of two [2] 2-3kg fire extinguisher with Type ABC., One 3-4 gal. sand bucket, two [2] Smoke and one [1] heat detectors, Wired Pull stations and Horn can be integrated with other nearby rooms.
- Exit and Fire Signage to reqd. placement - ref. to section of technical standards

- A minimum of two [2] doors with one being a min. of 5ft wide x 7ft high. and one door opens outwards.
- Electrical wires must be concealed within solid concrete walls in conduits and electrical outlets recessed. Where the lab. has timber walls – the electrical wires shall be in metal conduits affixed with metal clips at 24" apart.
- Written conduct and safety rules must be posted on walls in a visible location

Services

- Internet Connectivity

Power

- 110v 60Hz via GFCI outlet. It is recommended that all outlets be fitted with a switch or a central switch on/off.
- Allow for 5-10 power outlets at reading area to allow for lap-top connectivity.

Light fitting:

- LED Light Fixture with Poly-carbonate Diffuser -1'x 4' - 5,400 Lumens, Suspended [Colour Temperature = DAYLIGHT], 40-54 Watts. Fitting located not less than 40" above work table top.

Environment:

- Air Condition equipment were possible.
- Adequate ventilation and lighting, protection from weather and related environmental conditions. Allow for natural light by Clear fixed or openable windows grille. A minimum of 20% of wall space is recommended.

Recommended Floor Finish

- 1st Option: Porcelain Tiles - High quality grade A; 9mm thk. 12"X18" / 24" Approx. size. non-skid, bedding to floor on tinset with max. 1/16" joint,
- 2nd Option: 3/8" thk. Terrazzo or Polished concrete.

Ceiling

- Where the room is AC control – the ceiling height should be 9-10ft. Where the room is naturally ventilated, the ceiling height should be 10-12ft.
- The ceiling type recommended is Drop/suspended ceiling with Gypsum panels 24"x24"

Security:

- Rooms should have security doors, windows and openings. In most situations this is achieved by fixed metal Grille with bolt locks. At least 2nr. exit / entrance doors must be kept open when the room is occupied.

Accessibility:

- Libraries shall be accessible for persons of special needs. This shall include the required access travel path + height of furnishing / accommodation. A minimum of three [3] seats or spaces, dedicated to meet the needs for a person in a wheelchair.

Rooms' Contents and Spaces:

Spaces

- Reading Room with chairs and tables [see furniture details]. A minimum of 50% of the library space shall be dedicated as a reading / study space.
- A bag Bay cubby to accommodate a minimum of 25 bags.
- Store Room with shelving 80-100 ft² with ceiling and strong door,
- Librarian office with furniture. 80-100 ft² with fixed glass panel for supervision visibility to the library,
- Book Shelves / stacks with circulation spaces [refer to furniture drawings],
- Reception Counter – Librarian management desk to receive and check out books. This shall be a raised fixed furniture with counter-top [see furniture details].

3.4 SUPPORT SPACES

3.3.1 Sanitation

- a) Boys Toilets, Urinals and Shower units
- b) Girls Toilets, Urinals and Shower units
- c) Teachers' Toilets and Shower units - Male
- d) Teachers' Toilets and Shower units - Female
- e) Handwashing Facilities [Trough / Sink]
- f) Drinking Water dispensing unit / Drinking outlets

3.3.2 Auxiliary

- a) Janitor/Cleaners' Room
- b) First aid Room / Sick Bay
- c) Store Room - general
- d) Store Room – Agriculture Science
- e) Store Room – School Supplies
- f) Students Lockers
- g) Electrical Room
- h) Generator Room
- i) Pump House

3.3.3 Recreation / Assembly Space

- a) Students' Lounge Space / Canteen / Kitchen
- b) Assembly Area
- c) Auditorium with Stage + Prep

TOILET FACILITIES

This section provides the standards for the erection, installation, alteration, repairs, relocation, replacement, addition to, use or maintenance of plumbing equipment and systems.

Number of Stalls / Units

International standards vary with respect to Sanitary facility ratios required for education facilities. The below information was selected based on UK standards, principles of inclusive design principles and consultations with stakeholders. Cognizance that females are more frequent to toilets at longer duration than males and the rush to toilets at lunch and break periods, the minimum number of required Plumbing Fixtures (Toilets, Bathroom and Sink Facilities) for Secondary Schools¹ are provided below:

PLUMBING FIXTURE	TOILET SET / WATER CLOSET	SHOWER UNIT	SINK / LAVATORY
<p>MALE</p> <p>Ratio for Secondary Schools</p> <p>Non-Adult [Children]</p>	<p>1 toilet stall for every 10 students and where the school has <u>less than 100</u> pupils.</p> <p>1 toilet stall for every 20 students plus 4nr. units, where <u>the school has more than 100 pupils.</u></p>	<p>1 shower unit for every 100 students with a minimum number of 2nr. for any school</p> <p>All Main toilet blocks shall have 1 or more shower units for all school grades.</p>	<p>Nr. of Sinks / Lavatory = the nr. of toilet stalls</p> <p>A tiled WASH TROUGH can be an alternative to</p>

¹ Planning & Design Handbook. 5th Ed. Routledge, UK. Pg.339 & International Building Code: S2902. 2018. P. 572. ICC

<p>FEMALE</p> <p>Ratio for Secondary Schools</p> <p>Non-Adult [Children]</p>	<p>The minimum number to toilet stalls is 14 for any school over 100 students.</p> <p><i>ADA Wheelchair WC stall shall not be computed in the total number of toilet stalls required in a school. This is a separate provision.</i></p> <p>URINALS</p> <p>Urinal should be included in boys' toilet block section at a ratio of 1 urinal unit for every 20 boys.</p> <p>This can replace the Toilet unit. Maximum of urinal units allowed of total required number is 50%. i.e If 20 toilet units are required for boys, then 10 units can be urinal fixtures and 10 can be toilet closet units.</p>	<p>This unit shall be kept lock to mitigate misuse.</p>	<p>sinks with faucets [taps] amount being</p> <p>1 tap / faucet per every 30 student</p> <p>Height of Sink is 850mm from the finished floor elevation.</p>
<p>Special Needs / Wheelchair accessible</p> <p>For students [Male and Female]</p>	<p>A minimum of 5% of Toilets stalls shall be wheelchair accessible with a minimum of 2nr. per school.</p> <p><i>ADA Wheelchair WC stall shall not be computed in the total number of toilet stalls required in a school. This is a separate provision.</i></p> <p>At least one accessible toilet stall should be place in each sanitary block with over 10 toilet stalls.</p> <p>In the event of space limitations, accessible toilet stall can be unit-sex and be kept locked.</p> <p>The required travel path to the accessible toilet shall be established. Where this is not possible, the toilet stall shall be located on the Ground Floor and accessible by ramps.</p>	<p>Shower stalls for wheelchair access is 10% of shower units in the school with a minimum of one unit per school.</p> <p><i>ADA WC shower stall shall not be computed in the total number of toilet stalls required in a school. This is a separate provision.</i></p> <p>The required travel path to the accessible shower stall shall be established. Where this is not possible, the toilet stall shall be located on the Ground Floor and accessible by ramps</p>	<p>Sink for Special Needs toilet is within each toilet enclosure.</p>

SUMMARY TABLE OF SANITARY UNITS' REQUIREMENTS					
School Grade	Population	Nr. of Toilet Stalls	Nr. of Showers	Nr. of lavatory / sinks	Nr. of Taps / Faucet
A+	1,000-800	54-44	10-8	54-44	54-44
A	799-550	44-32	8-6	44-32	44-32
B	549-400	32-24	6-4	32-24	32-24
C	399-250	24-17	4-3	24-17	24-17
D	249 & under	14 as the minimum number for any school	2 as the minimum amount.	14 as the minimum nr.	14 as the minimum nr.

Teachers / Staff Toilets	1 toilet stall for 8 teachers [female]	1 shower stall for Female Teachers	1 nr. lavatory / sink for every 2nr. toilet stalls
	1 toilet stall for 10 teachers [male] plus 1 nr. urinal Separate Toilet stalls with sinks shall be provided for head and deputy head teachers for Grades A/B and C schools.	1 Shower Staff of Male Teachers	1nr. tap / faucet for every 2nr. toilet stalls.
Other Provisions	1 toilet stall should be provided for use by security personnel, landscape workers and visitors. This unit can be located in the school compound with external access and as a separate unit where possible.	None	1 lavatory sink with a faucet.

GENERAL GUIDELINES – SANIATRY FACILITIES

Location of Sanitary Block / Toilet units

- All toilet blocks / toilet stall units shall be located downwind and adequately ventilated to an external wall. The minimum amount of ventilation opening shall not be less than 5% of the wall section.
- Where toilet block / or toilet stall cannot be located to an external wall – there shall be a form of mechanical extractor fan ventilation to a minimum of 40CFM.

Separate facilities.

- Where plumbing fixtures are required, separate facilities shall be provided for each sex.

Access.

- The route to the public toilet facilities shall not pass through kitchens, storage rooms or closets. Access to the required facilities shall be from within the building. The path of travel [walking distance] to toilets shall not exceed a distance of 3280 feet (100 m) as per BS 6465.

Prohibited Toilet Room Location.

- Toilet rooms shall not open directly into a room used for the preparation of food.

Signage

- Toilet Facilities shall be provided with signs that designate the sex, Signs shall be readily visible and located near the entrance to each toilet facility. The height of the text size is 1.5" and the graphic image size 2-4" high.
- Directional signage indicating the route to the required public toilet facilities shall be posted in a lobby, corridor, aisle or similar space, such that the sign can be readily seen.

Plumbing Systems - Pipework

- All pipe and pipe fittings should be PVC type and pressure gauge [Sch.40].
- Recommended that all pipe network be exposed, but in a protected space to allow for cleaning and maintenance.
- All Water supply and waste water disposal pipe work should be exposed [except where unavoidable], bracketed with metal straps @ 18-14" at centres to walls and underside floors.
- Water supply pressure to dorm building is 20-40psi and 20-60 to Kitchen [depends on type of fittings],
- No pipe work should be placed under or in solid poured concrete floors.
- No pipework should be on or pass over a walkway. Where water lines [water and cold-water distribution lines] traverse walkway or at the concrete footing around building, these should be placed under the concrete slab.
- No Sewer [toilet] pipe conduits should pass over or through a habitable space [bedroom / kitchen or dwelling space]

Fittings

- All plumbing fittings should be durable type preferable Twyford or American standard – industrial grade that are designed for public utility educational / accommodation facility grade,
- All valves and taps should be metal lever [not PVC],
- Water supply and distribution network should have metal lever shut-off valves at critical location.

TOILET AND BATHROOM LAYOUT

Toilet and bathroom layout, size of spaces, type of plumbing fittings, adequacy of light and ventilation are a major deficiency in all dormitory buildings, which result in discomfort and major inconvenience for the occupants of the dormitory. The drawings below indicated minimum dimensions for spaces within toilet blocks [Wheelchair accessibility standards are noted in the relevant section]. List of Standard pertaining to toilet / sanitary block is listed below:

a) Arrangement

- All Toilet bowl should be placed against an external wall that is down-wind or against a vented duct Void 3ft wide.
- Mechanical extractor fan maybe employed if there are ventilation constraints.

b) Ventilation

- Good ventilation shall be essential to reduce humidity and to dispel odours. All Toilet cubicles should be vented to an external wall by means of an openable window or vent blocks not less than six [6] sq. ft in area.
- c) Toilet Cubicle**
- Toilet cubicle shall be conveniently arranged with special attention to clearances, flushing system and floor drainage and cleaning. The outlet P-Trap and the toilet bowl should be 18" clear from any wall and is preferred at the central axis of the toilet cubicle. The minimum clear space in a toilet cubicle is 18"-30" as per the door swing [ref. to drawing].
 - CRITICAL DIMENSIONS – all Sanitary blocks & toilet units must meet the minimum standard.
 - The minimum size of a toilet cubicle is 36" wide x 6'5" long [with door in-swing] or 36" w x 5'-1" [with door out-swing].
- d) Materials**
- Walls: The toilet cubicle walls should be of a non-porous surface such as concrete blocks rendered to both faces. Internal cubicle walls should have spaces beneath to allow for cleaning / prevention of dirt accumulation and air ventilation.
 - In remote locations of Guyana, timber walls may be the only option, in this event, the internal wall base should be 5"-3" off the ground and all spaces between the boards should be sealed.
 - The walls of the toilet should be tiled to a height of 3ft.
- e) Floor:**
- Toilet stall floor should be tiled impervious surface. The tiles should have a minimum joint and edge with a tiled skirting.
- f) Toilet Accessories**
- Toilet paper holder shall be placed at 26" from the floor on the right side of the cubicle and 8-12" from the toilet bowl.
 - Female Toilets should have a female hygiene sanitary bin, preferable the non-touch type with anti-bacteria features.
 - Toilet Bowl must be of a durable preferable Twyford or American standard – industrial grade that are designed for public utility educational / accommodation facility grade. P-Trap outlet connector, Cistern is 6L flush [not 4L], Spatula lever operated [not push button]. All toilet unit must have a shut-off metal valve.
 - Low cost toilet set and fittings must not be used.
- g) Shower Stall**
- Shower stall should be located in a toilet block unit or in proximity not more than 10ft away. The minimum size of a shower stall is 3'8" x 3'8" with door outswing.
 - A bathroom shower floor surface should be non-porous by means to non-skid ceramic floor tiling or use a shower tray fitting to a solid sub-base. The wall of a shower cubicle should be tiled with glazed ceramic tiles at least 6ft high.
 - Shower stall should have a towel rod 18"-24" long at 4.5' fixed to the internal door surface of near the exit door.
 - A small shelving is recommended for soap and bath accessories support at 48" H above the floor.