

ELEMENTARY SCHOOL EDUCATIONAL SPECIFICATIONS

FACILITIES PLANNING STANDARDS

EXAMPLE

February, 2008

**STATE OF WYOMING
SCHOOL FACILITIES COMMISSION**

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INTRODUCTION

This Elementary School Educational Specification is a guideline to be used in planning and designing new and remodeling and renovating existing elementary schools. This Educational Specification describes the facility requirements to accommodate the instructional program, activities and support facilities. This document is a tool that is used to communicate basic facility design requirements and guidelines to architects, school districts, school staff and the School Facilities Commission.

Educational Specifications are guidelines that are critical to the development of an overall plan as they are applied to each individual school. Site adaptation and specific program requirements for each school district may be needed for each project.

These Educational Specifications are intended to be a dynamic document that allows for amendment as required to accommodate educational program changes. They should be reviewed and updated periodically by the School Facilities Commission.

This Educational Specification is intended to be used as a supporting document to other documents issued by the School Facilities Commission. It is not intended to supersede any other School Facilities Commission documents.

The Square Feet Summary in each section of these educational specifications shall be adjusted to the size of the facility as indicated in the Appendix: ES Gross Square Feet per Student.

ADMINISTRATION

SPACE DESCRIPTION:

The administrative area provides space for personnel concerned with the day to day operation of the school.

A. Administration Spaces:

1. Principal
2. Secretary/Reception
3. Nurse/Toilet
4. Counselor
5. Conference
6. Workroom
7. Staff Lounge
8. Staff Toilet
9. Itinerant Office
10. Technology Support
11. Storage

DESIGN CRITERIA:

Provide daylighting in all offices, work areas and lounge with a minimum of 20-30 fc of uniform daylighting throughout the spaces. Ceiling height in the Administration area shall be a minimum of 9'-4". All areas shall be ADA compliant.

A. Administration Spaces:

1. Principal:

- a. Provide general office space with guest seating for 4 people.
- b. Provide a door into the general office.
- c. Principal office shall be adjacent to the conference room.
- d. The main school entrance should be visible from the principal's office.
- e. Provide a small locking closet or wardrobe unit.

2. Secretary/Reception:

- a. This area shall have a waiting area that will comfortably hold _____ seated parents/adults and _____ students standing.
- b. A receptionist/secretary handles contact with the public, faculty and students. Locate the area near or adjacent to the main building entrance. This area is a buffer between external and instructional functions. There is also a direct relationship to core instructional and non-instructional facilities, particularly those with after-hours community use.
- c. Provide for 3 desk/computer workstations and 6 filing cabinets. The general office needs to be open and flexible for easy supervision by administrative and secretarial staff.
- d. A front counter shall be provided. Provide good visibility to the nurse, principal's office and outside to the entry/parking area. Visibility of the main lobby is necessary.

e. Attendance functions also take place in this area. An outside transaction window is recommended where students can wait in line from the corridor to use it.

f. The general office should also be near the administrative workroom. Wall space is required for the school fire/security alarm panel.

3. Nurse/Toilet:

a. This area is used to provide care for ill, injured, or upset children and contains storage of health supplies and records. Provide direct access from both the main office and the corridor. To provide supervision, secretaries in the main office must be able to easily view this area from the general office.

b. Provide desk space for a nurse's aide and two beds with screening curtains on ceiling mounted tracks that can be pulled for visual separation.

c. Casework should consist of base and wall cabinets. One base cabinet shall be a 3-drawer unit. Provide a 23-inch deep x 18-inch wide x 84-inch high wardrobe cabinet. All cabinets and drawers may contain medical supplies and must be lockable. Provide a single bowl, hot and cold water sink in a base cabinet fitted with a flexible gooseneck fitting. Provide space for an under counter refrigerator.

d. An accessible toilet room with an out swinging door is required. Provide a hand held shower mounted 48-inches above the floor with a single lever faucet on the wall adjacent to the water closet. Provide a floor drain.

e. This room shall have water resistant floor materials and wall materials the entire height of the walls.

4. Counselor:

a. Provide general office space with guest seating for 4 people.

b. The office should be close to, but separate from, the main office.

5. Conference:

a. The conference room requires seating for 10 and should be located near the principal's office. It may be removed from but close to the general office area.

b. Provide 6 feet of base cabinet with countertop.

6. Workroom:

a. The workroom shall be located adjacent to the general office area for convenience of the office staff.

b. Provide approximately 20 lineal feet of upper and lower cabinets for storage of supplies.

c. More than one door is desirable.

d. A copier, printers, a fax machine and other specialized equipment will be located in the room.

e. Provide a single bowl, hot and cold water sink.

f. Provide supplemental ventilation to dissipate equipment heat loads.

g. Provide a closet for administration staff and a lockable key cabinet.

h. Mailboxes for staff use only should be located adjacent to the workroom. Provide a pigeonhole mailbox with 48 slots 15-inches deep x

11-inches wide x 3-inches high. A tack surface for messages is required and may be located in the workroom.

7. Staff Lounge:

- a. The lounge provides staff break, lunch and meeting space. The lounge should be accessible but not necessarily contiguous to other administration areas.
- b. Exterior windows are preferred.
- c. Provide two 4-foot x 4-foot tack boards, a single stainless steel kitchen sink with hot and cold water, a gooseneck faucet, a garbage disposal and 10 lineal feet of base and wall cabinets. One wall cabinet must be lockable. Provide space and utilities for a dishwasher, microwave and full size refrigerator.

8. Staff Toilet:

- a. Provide two handicapped accessible toilet rooms.

9. Itinerant Office:

- a. Provide one general office space with seating area for two guests.

10. Technology Support:

- a. Provide one general office space with seating area for two guests.

11. Storage:

- a. The storage room must be central to all administrative areas and be lockable and secure.
- b. Provide approximately 15 Lineal feet of upper and lower cabinets for storage of supplies.

SQUARE FEET SUMMARY:

A. Administration Spaces:

- 1. Principal _____ sf
- 2. Secretary/Reception _____
- 3. Nurse/Toilet _____
- 4. Counselor _____
- 5. Conference _____
- 6. Workroom _____
- 7. Staff Lounge _____
- 8. Staff Toilet _____
- 9. Itinerant Office _____
- 10. Technology Support _____
- 11. Storage _____

Administration Spaces Total _____ SF

ACADEMIC AREAS

SPACE DESCRIPTION:

The classroom is the basic unit of the instructional program. It allows for development of teaching teams to utilize the instructional area to accommodate student's needs and program functions.

All student learning activities except art, music and physical education occur within the academic areas. Kindergarten and Special Education are integrated into the ES program and take place within the academic areas.

A. Instructional Suite Spaces:

1. Classrooms
2. Multi-use Room
3. Girls and Boys Toilets
4. Staff Toilet
5. Custodial Closet

DESIGN CRITERIA:

The site constraints and total number of classrooms needed are to be determined by the individual School District.

Classrooms surround or are adjacent to a support core containing a Multi-use Room and Toilets. The configuration should maximize interaction within and among teachers and students. A strong relationship is needed with the Media Center and other core instructional areas.

Provide daylighting in all academic rooms with a minimum of 20-30 fc of uniform daylighting throughout the spaces. Minimum ceiling heights shall be 10'-0". All areas shall be ADA compliant.

A. Academic Area Spaces:

1. Classroom:

- a. General classroom sizes are shown in the "Square Feet Summary at the end of this section. The classroom shape shall be appropriate to the educational delivery system of the individual school.
- b. Every classroom should have at least one outside view window that has an operable section. Maximum sill height shall be age appropriate. View windows shall have blinds and screens.
- c. Casework shall consist of 8 to 16 lineal feet of base and wall cabinets. Part of the casework should be a 23 inch deep x 12 inch wide x 84 inch high locking wardrobe unit for teacher coats and personal items.
- d. Team teaching requires the ability to open the wall between classrooms. Movable partitions providing a minimum of 12 lineal feet of opening shall be provided between each pair of adjoining classrooms. The amount of movable partition beyond the minimum prescribed and whether more than

two classrooms can open into each other shall be determined by the School District. Special consideration should be given to control of sound transmission through the ceiling space above the movable partition.

e. Coat hooks with a contiguous shelf above shall be located in the classroom. Provide for 20 hooks at 2 hooks per foot staggered 6 inches per adjacent row. Lockers may be used in lieu of coat hooks.

f. A wet area may be needed by the instructional program. A single stainless steel sink shall be provided with a gooseneck faucet. The floor material shall be appropriate for the use of the wet area.

h. A minimum ceiling height shall be 9'-4" for _____ sf or less and 10'-0" for _____ sf or more.

2. Multi-use Room:

a. This space may be used for teacher planning area, storage, small group teaching area, Title 1, workspace for teachers, students, and aides.

b. Provide one room per each 6-classroom area.

c. Windows, with blinds, into the corridor are required. No doors to the exterior are permitted.

d. Provide open and closed storage for books and instructional materials. Provide 23 inch deep base cabinets with adjustable shelves that contain a total of 40 cubic feet of storage for each classroom served. Provide an area to contain 20 lineal feet of 12 inch deep x 72 inch high open shelving.

3. Girls and Boys Toilets:

a. ADA compliant children's toilet with the size and number of fixtures depending upon the number of classrooms served.

4. Staff Toilet:

a. Provide a unisex single adult toilet in each academic area that is ADA compliant.

5. Custodial Closet:

a. The closet shall be used for academic area maintenance equipment, supplies and storage.

SQUARE FEET SUMMARY:

A. Academic Area Spaces (example is a 3 section K-5):

- | | | |
|--|---------------|----------|
| 1. Kindergarten (incl. toilet) | _____ sf x 3 | _____ sf |
| 2. First grade | _____ sf x 3 | _____ |
| 3. Second – Fifth grade | _____ sf x 12 | _____ |
| 4. Multi-use Room | _____ sf x 3 | _____ |
| 5. Girls and Boys Toilets (incl. in gross sf) | | |
| 6. Staff Toilets (incl. in gross sf) | | |
| 5. Custodial Closet (incl. in gross sf) | | |

(3 section K-5) Spaces Total _____ **SF**

SPECIAL EDUCATION

SPACE DESCRIPTION:

Space needs for exceptional children requiring special education may vary greatly depending on the conditions that pertain to each student and the particular requirements of the School District.

A. Special Education Spaces:

1. Self Contained Room
2. Resource Room

DESIGN CRITERIA:

Provide daylighting in all areas with a minimum of 20-30 fc of uniform daylighting throughout the spaces. All areas shall be ADA compliant.

Wet area requirements are the same as for regular classrooms except certain programs may require an instructional area with water in both classrooms and resource rooms.

A. Special Education Spaces:

1. Self Contained Room:

- a. Varies with the program and type of exceptional student.
- b. Ceiling height should be a minimum of 10'-0".

2. Resource Room / OTPT:

- a. This space adds versatility to the program. Additional support spaces may be necessary depending upon the program.
- b. Ceiling height should be a minimum of 10'-0".
- c. Support structure may be required for special ceiling hung apparatus.

SQUARE FEET SUMMARY:

1. Self Contained Room _____ sf
2. Resource Room / OTPT _____

Special Education Spaces Total _____ SF

ART EDUCATION

SPACE DESCRIPTION:

The art education area is a combined studio, workroom, kiln/clay storage room and material storage room. The room is sometimes messy, dirty, and noisy and should be designed to fit the function. Art activities include drawing, painting, crafts, clay, sculpture, plaster, wood and paper construction, weaving, stitchery, art appreciation, art history and display.

Students engage in independent reading and research, particularly upon completion of studio activities, in the resource area.

A. Art Education Spaces:

1. Studio Area
2. Teacher Work/Planning Area
3. Resource Area
4. Kiln/Clay Storage
5. Material Storage

DESIGN CRITERIA:

Provide daylighting in all areas, except storage rooms, with a minimum of 20-30 fc of uniform daylighting throughout the spaces. All areas shall be ADA compliant.

A. Art Education Spaces:

1. Studio:

- a. The studio room shall be in a shape appropriate to the function with a minimum ceiling height of 10'-0".
- b. Exterior view window(s) shall have maximum sill heights of 32 inches. Preferable window orientation shall be north facing. A minimum of one operable sash should be provided. View windows shall have blinds and screens.
- c. Walls shall be gypsum board with paint or vinyl wall covering for self-healing stapling and pinning.
- d. Casework for studio area storage shall consist of:
 1. Base cabinet of 20 lineal feet and 23 inches deep.
 2. Shelving: 20 lineal feet of adjustable shelving 48 inches wide x 32 inches deep for still life, plaster and buckets. 25 lineal feet of adjustable shelving 32 inches wide x 28 inches deep x 72 inches high for student projects, shelving should be non-rusting, non-warping, and cleanable without sliding doors. About 40% of the shelving should be lockable.
 3. Wardrobe Cabinet: Provide a 23 inch deep x 12 inch wide x 84 inch high lockable wardrobe cabinet for teacher personal items.
- e. The studio shall have two 4 foot high x 6 foot long white boards with marker trays. A tack strip with map hooks.
- f. Utilities:

1. Sinks: Provide one stainless steel unit with double sinks and integral drain boards at each end. The unit is 8 feet long x 24 inches deep with a 28 inch rim height and contains two 20 inch x 24 inch x 14 inch deep sinks with a 6 inch backsplash. Hot and cold single lever swing-type gooseneck faucet is required. Locate the sink away from the room entry. Pipe all sinks into an easily accessible plaster/clay trap. 2 inch drain lines are required. Provide one floor drain in front of the sinks.
2. Lighting: Provide a minimum level of 50 foot candles maintained and color correct general lighting. Provide a separately switched ceiling mounted “Unistrut” grid 20 feet x 15 feet in the room center mounted 6 inches below the ceiling for 3-D hanging displays and two 10 foot lengths of track lighting with 8 adjustable heads and color correct flood lamps. Locate the tracks to highlight student display walls.
3. Electrical Receptacles: Provide a minimum of 3 fourplex and 3 duplex receptacles with each fourplex on a dedicated 20 amp circuit. Locate data outlets close to the fourplex receptacles. Provide plug-mold over each base cabinet counter and removable safety netted drop-cords suspended from the ceiling over student work tables and pottery wheels.

2. Teacher Work/Planning Area:

- a. Area (part of Studio) with space for teacher desk, large paper cutter, and mat cutter.

3. Resource Area:

- a. Area (part of Studio) with space for flat files and quiet work area.

4. Kiln/Clay Storage:

- a. Kiln area casework: 4-units, 23 inches deep x 36 inches wide x 84 inches high with adjustable, washable shelves for storage of green-ware, bisque-ware and glaze-ware.
- b. Provide kiln and exhaust system.
- c. Provide a 220V dedicated circuit for a kiln and an 110V circuit for the kiln exhaust.
- d. Supplemental ventilation/exhaust is required.

5. Material Storage:

- a. This shall be a lockable room for art materials and is accessible only from the art studio.
- b. Provide built-in adjustable floor to ceiling shelving on all perimeter walls for paper sized 12” x 18”, 18” x 24”, 24” x 36” and 36” x 40”. Provide some vertical slotted poster board storage.

SQUARE FEET SUMMARY:

A. Art Education Spaces:

- 1. Studio _____ sf
 - 2. Teacher Work/Planning Area ____ incl. in Studio _____
 - 3. Resource Area ____ incl. in Studio _____
 - 4. Kiln/Clay Storage _____
 - 5. Material Storage _____
- Art Education Spaces Total _____ SF**

SAMPLE

MUSIC/PERFORMANCE

SPACE DESCRIPTION:

General music students engage in creative, high noise level activities in large and small groups. Music instruction and activities include moving to music in a creative manner and in formal folk dance. Students perform on percussion instruments, wind instruments, string instruments and piano. For assemblies, plays, presentations and other performances the general music room becomes the stage area by opening the operable wall and extending the curtains. The wall opens into the gym, which becomes the audience seating area.

Instrumental music activities involve students in groups of varying sizes performing on percussion, wind and string instruments. The instrumental music program is an occasional activity, usually occurring 8 to 16 hours per week. Office functions, meetings and instructional activities utilize the space at other times. Despite the multiple uses, the space should be designed primarily as a music space that will accommodate other uses.

Instrument storage is provided for security purposes and for the protection of instruments that, if damaged, are costly to repair or replace.

A. Music/Performance Spaces:

1. General Music/Performance Room
2. Instrumental Music/Office/Conference Room
3. Instrument Storage Room
4. Chair and Table Storage Room

DESIGN CRITERIA

All spaces shall be ADA compliant.

A. Music/Performance Spaces:

1. General Music/Performance Room:

- a. Range of _____ to _____ students with occasional choral groups of up to _____. The preferred height is 12 to 14 feet.
- b. No windows are preferred.
- c. A door to the corridor and to the gym space is required
- d. The performance opening to the gym should be on the short side of the gym in order to provide for the best audience sight lines.
- e. Operable wall between Music Room (Performance Space) and Gym (Audience Seating): provide sound wall of a minimum 52 STC. Noise transfer from both the PE class and the Music class will result in both spaces becoming less than appropriate learning spaces. Provide stacking area for the operable wall.
- f. Acoustical Treatments: Construction of the music room must provide a reverberation time of 1.5 – 2 seconds, which requires the use of lower absorption materials. The teacher must be able to hear the individual as well as the balance within the ensemble. Reflective parallel surfaces should be avoided. The ceiling treatment should alternate reflective and

absorbent surfaces to allow the sound to blend and to keep the average levels below OSHA guidelines. Range of _____ to _____ sf of acoustically absorptive material should be incorporated into the room design. Design and construction should maximize the acoustical isolation of music activities from other activities in the building.

g. Casework shall consist of 8 to 12 lineal feet of base and wall cabinets. Part of the casework shall be a 23 inch deep x 12 inch wide x 84 inch high lockable wardrobe cabinet for teacher coats and personal items. Provide lockable storage facilities for musical instruments, books, records, tapes and other classroom instruments. Provide 35 to 40 lineal feet of 30 inch deep x 7 foot high adjustable shelving cabinets with doors and locks and 8 to 12 lineal feet of 24 inch deep x 7 foot high adjustable shelving cabinets with doors and locks.

h. The music room shall have one 4 foot high x 8 foot long white board with a marker tray and a tack strip with map hooks. Provide a pull down projection screen.

i. Curtain and Track: Provide counterweighted backdrop curtains positioned as close as possible to the proscenium opening to hide backstage activity and to define an approximately _____ sf performance area. Provide a curtain stacking area.

j. Utilities:

1. Sink: provide a general purpose stainless steel sink for cleaning instruments. Include a gooseneck single lever faucet with hot and cold water.

2. Lighting: Provide general lighting with 50 foot candles maintained. Important issues to consider: lack of uniformity in music manuscripts, inks, paper, music symbol sizes and printing methods add to reading difficulty without proper illumination. Students must have proper lighting to read rapidly and accurately, manipulate their bodies and music and follow the teacher's motions. Irregular seating and standing arrangements cause students to face the teacher at various angles. When risers are used, students sitting or standing on the top levels have a different relationship with ceiling light sources than do students sitting or standing at floor level. Avoid lighting systems that produce a sixty-cycle hum.

3. Performance Lighting: Provide two separate clusters with six lights in each cluster. Lights should have removable gels so that lighting is easily changed and white light is available if needed. Position light clusters at audience (gymnasium) side of the performance platform within heavy-duty cages so that they may be left up at all times. Lighting should be capable of position adjustment that is 360-degrees horizontal and 180-degrees vertical. Switching should occur from the stage side so lighting can be operated during a performance.

4. Emergency Lighting: Provide an override switch to permit stage blackout.
5. Electrical Receptacles: Provide a minimum of three fourplex receptacles, each on its own 20 amp circuit, and three general duplex receptacles. Provide one duplex receptacle inside a 30 inch deep storage cabinet for the sound system. Provide five data receptacles close to the fourplex receptacles.
6. Sound System: Provide stereo speakers with jacks for connection to portable components located in lockable casework.
7. Public Address: The system is separate from the gymnasium system and music room sound system. Provide input jacks at the stage front and ceiling for a microphone and audio/visual amplifier to be housed in the sound system cabinet.
8. HVAC and Controls: Ventilation should be proportional to high levels of physical exertion involved with proposed activities. Independent control is preferred. The ambient sound of the HVAC system should not exceed a preferred room noise criteria of 25.

2. Instrumental Music/Office/Conference Room:

- a. There will be a limited number of students in the instrumental room at various times. The remainder of the time the space is used as a conference room, teacher office and student breakout space.
- b. Area of _____ sf is recommended with ceiling height of 10'-0".
- c. Windows are not recommended.
- d. Doors to the corridor and to the music room are required.
- e. Acoustical Treatments: Provide a maximum mid-frequency reverberation time of 0.8 to 1.2 seconds. Low frequency absorptive materials are required.
- f. Range of _____ to _____ sf of acoustically absorptive material should be incorporated into the room design.
- g. Design and construction should maximize the acoustical isolation of music activities from other activities in the building.
- h. Lighting: Locate dual level switching by the corridor door which provides a low level of 50 foot candles maintained and a high level of 100 foot candles maintained. Avoid lighting systems that produce a sixty-cycle hum.
- i. The ambient sound of the HVAC system should not exceed a preferred noise criteria of 25.

3. Instrument Storage Room:

- a. Provide _____ sf with a minimum ceiling height of 10'-0", a locking 3'-6" side door and 30 lineal feet of full height adjustable 24 inch deep shelving.

4. Chair and Table Storage Room:

- a. Provide _____ sf with a minimum ceiling height of 9'-4" and locking 3'-6" door.

Square Foot Summary:

A. Music/Performance Spaces:

- | | |
|--|----------|
| 1. General Music/Performance Room | _____ sf |
| 2. Instrumental Music/Office/Conference Room | _____ |
| 3. Instrument Storage Room | _____ |
| 4. Chair and Table Storage Room | _____ |

Music/Performance Spaces Total _____ **SF**

SAMPLE

MEDIA CENTER

SPACE DESCRIPTION:

The Media Center is the hub of the school and occupies a central physical and visual position in the building. The Media Center and its resources are an integral part of each school instructional program and serves as an extension of each academic area.

A. Instructional Component of Media Center Spaces:

1. Stack Area
2. Large Group Instructional Area
3. Individual and Small Group Activity Areas
4. Computer Public Access Catalogue

B. Management Component of Media Center Spaces:

1. Circulation Desk Area
2. Office
3. Equipment Storage
4. Staff Processing/Production Room
5. Learning Resource Storage

DESIGN CRITERIA:

Provide daylighting in all areas, except storage rooms, with a minimum of 20-30 fc of uniform daylighting throughout the spaces. All areas shall be ADA compliant.

A. Instructional Component of Media Center Spaces:

The instructional component of the Media Center used by students, teachers and parents, is the main “open” area and includes space for individual, large groups and small group activities, book stacks and a computer access catalogue. It should adjoin the Multi-Media Production Area. Provide seating area for _____ people that are easily supervised from the Circulation Desk Area.

Maintain 60 inch minimum clearance between furniture and shelving in traffic areas. Maintain minimum aisle widths of 44 inches between stacks and 60 inches at traffic lanes and shelving or seating areas.

Locate see-through display cases near the main Media Center entrance for announcements, student projects and other exhibits.

Ceiling height of 12’-0” minimum should be maintained.

1. Stack Area:

- a. The stack area contains the Media Center book collection of 10,000 items including fiction, non-fiction, paperback, reference, and large picture books.
- b. Book stacks are dispersed throughout the open instructional component of the Media Center in wall-mounted and freestanding bookcases and

book bins. A majority of the collection should be contained in perimeter shelving. Design stacks to provide good visual supervision from the Circulation Desk Area.

2. Large Group Instructional Area:

- a. The generally rectangular area is provided for general student reference activities and can also be used for group study sessions, special events, staff meetings, and after hour community meetings.
- b. Seating space is required for up to _____ students at tables.
- c. Locate the area centrally within the Media Center to provide easy access from the main entrance, computer access catalogs, reference materials, and Circulation Desk.
- d. Cable television outlets, data outlets, white board and power projection screen are required.

3. Individual and Small Group Activity Areas:

- a. The area provides space for story time, listening and viewing, independent study and reference, research, presentations, student productions, puppet shows, and guest speakers.
- b. The opportunity exists for architecturally creative items such as window seats, alcoves, nooks or tiers for cozy, inviting and comfortable reading spaces.
- c. Provide space for _____ to _____ students seated on the floor with easy access to the main entrance and near the “picture book bins” location. Locate the area away from Large Group Instruction and other student traffic.
- d. Cable television access and data outlets are required.

4. Computer public Access Catalogue Areas:

- a. The areas should be located to provide good access and visibility from the main entrance and Circulation Desk.
- b. Approximately _____ computer stations will be dispersed throughout the open space.

General Media Center Open Area Requirements

1. Doors, windows and skylights:

- a. Provide one or two entrances from the main corridor with direct access and visibility from the circulation desk. Double doors with large glass lights and sidelights are preferred. Sidelights should not be placed lower than 12 inches above the floor. The configuration should not encourage use of the Media Center as a “shortcut” through the building.
- b. Windows and/or skylights shall be used for daylighting the space, blinds and blackout capability is required.

2. Acoustical Considerations:

- a. Minimize reverberation to avoid disturbance caused by multiple simultaneous activities.
- b. Do not use angled or vaulted ceilings without acoustical absorptive materials on all angled surfaces.

3. Display Case:

- a. Provide built-in sliding glass door cases with 3 adjustable glass shelves and display lighting near the main entrance. Cases should be a see-through type visible from inside and outside the Media Center.

4. Computerized Public Access Catalogue:

- a. The counter should be an island-style with 36 inch minimum counter depth for computer terminals.
- b. Design for ADA accessibility for either sitting or standing use.

5. Shelving:

- a. Open adjustable shelving will be used to accommodate 10,000 titles in the following combinations:
 - 1. Book Bins: 6 bins 24 inches wide x 48 inches long. Contains 2,000 items.
 - 2. Range Shelving: 15 sections 36 inches long of freestanding 48 inch high double-sided bookcases with plastic laminate or wood and fabric end panels and tops. Contains 4,050 volumes.
 - 3. Wall-mounted single face adjustable shelving: 36 inches wide x 76 inches high with top shelf not higher than 66 inches. Provide 19 sections 36 inches wide to hold 4,150 volumes. The wall space for all wall shelving shall be blank. Windows, white boards, mechanical, electrical, phone, fire and security items shall not be placed on this wall space.

6. Lighting:

- a. A 50 foot candle minimum should be provided at each reading station.
- b. Separate lighting control is required for each of three activity spaces as well as for display cases.
- c. The use of daylighting is encouraged for a substantial amount of the lighting requirements.

7. Power Requirements:

- a. Activities in the Media Center will be electrically intensive. Floor and pendant receptacles are discouraged. Receptacles in permanent columns and architectural features are preferred.
- b. Computerized Public Access Catalogue: 110V duplex receptacles are required for computer terminals. Provide for concealed computer wiring.
- c. Large Group Instruction Area: Provide eight 110V duplex receptacles to accommodate student activities.
- d. Individual/Small Group Activity Areas: Provide eight 110V duplex receptacles for student listening and viewing activities.
- e. Wall Stacks: Provide alternating electrical receptacles above the 66 inch shelf and in the toe kick at 12 foot intervals.
- f. Provide electrical and data outlets at the Computerized Public Access Catalogue, Circulation Desk and Large and Small Group Areas. Provide additional data outlets and power receptacles for two cable television locations in a corner of the Large and Small Group Instruction Areas. Wireless computer use is encouraged.

g. In the Large Group Instruction Area provide one ceiling mounted power projection screen.

8. HVAC System:

- a. The HVAC system should be separately zoned from those parts of the building that are not mechanically conditioned year-round.
- b. Special attention must be given to adequate ventilation and humidity control to prevent mold and mildew year-round. Computer hardware and software must be protected from temperature and humidity extremes.

B. Management Component of Media Center Spaces:

Staff and adults use the Media Center Management Component. It includes the circulation and processing areas, staff production/processing workroom, storage areas for learning resources, equipment, and the Media Center office.

1. Circulation Desk Area:

- a. The Circulation Desk Area serves to check-in/out all learning resources such as books, non-print material, textbooks, audio/visual equipment, and other curriculum supportive material. Circulation-related clerical tasks such as word processing, computing, filing, record keeping are also performed.
- b. The work area behind the circulation desk provides space for Media Center personnel such as the library information specialist, clerk, aides, volunteers and student assistants to prepare library learning resources for inclusion into the Media Center collection, to identify materials needing repair, and to store items on-hold for students and teachers.
- c. The Circulation Desk Area should accommodate ____ to ____ students and 1 to 3 adults. Provide a central location with visibility to all other Media Center areas as well as direct easy access to the main entrance. Locate the Circulation Area adjacent to other Media Center Management Component areas such as Student Multi-Media Production Room, Learning Resources Storage, Equipment Storage, and the Media Center office.
- d. Casework:
 1. Circulation Desk: To be designed for appropriate function.
 2. Base Cabinets: 1 or 2 - 30 inch high workstations at Processing Area.
 3. Wall Cabinets: 1 or 2 above Processing Area workstations.
 4. Built-in Shelving: Adjustable wall shelving above casework behind circulation desk.

2. Office:

- a. The Office, located adjacent to the circulation area, provides workspace for the Media Center Specialist, aides and volunteers. It serves a number of Media Center support functions including storage of Media Center files, curriculum guides, manuals and other professional resources. Instructional planning, team meetings, and consultations may be held in the office.

- b. Visible supervision of the entire Media Center from the office is required.
- c. A minimum 9'-4" ceiling height is required.

3. Equipment Storage:

- a. The Equipment Storage room provides storage and retrieval for large equipment items such as monitors, and computers as well as small items such as tape recorders, CD/DVD players, microphones and digital cameras. Supplies such as bulbs, cords, and headphones are also stored.
- b. The space accommodates minor equipment repair and maintenance functions and provides a holding area for pickup and delivery of equipment needing repair. Provide a small workbench with overhead lighting and electrical receptacles.
- c. Provide direct access to Circulation Area and the main corridor. A rectangular room configuration is preferred.
- d. Casework:
 - 1. Base cabinets: 34 inch high counter/work surface.
 - 2. Wall cabinets: Full height units with shelves and doors.
 - 3. Adjustable shelving: Open, sturdy, with varying depths.

4. Staff Processing/Production Room:

- a. This room accommodates all materials production tasks such as dry mounting and laminating as well as clerical tasks such as word processing, copying, duplicating, collating, and publishing activities. It is the main processing area for the preparation of learning resources.
- b. Provide floor space for a copier requiring approximately 4 feet x 7 feet and a dedicated 220V receptacle with specialized plug configuration.
- c. Casework:
 - 1. Base cabinets: Must accommodate 30 inch high sit-down workstations with drawers and a 34 inch high peninsula or work island with drawers.
 - 2. Wall cabinets: Provide above workstations and equipment counter. Vertical slot storage for poster board is also required.
 - 3. Shelving: 20 lineal feet of adjustable shelving.

5. Learning Resource Storage:

- a. This room provides central storage and retrieval for books and learning resources including audio/visual and non-print materials. Other curriculum materials such as social studies kits, globes, math manipulatives and oversized materials such as flat and roller-type maps, posters, charts will also be stored.
- b. Wall shelving is required near the workstation for processing, repair and reserve of learning resources.
- c. Casework:
 - 1. Base cabinets: Provide 30 inch high counter space for a computer workstation and space for storage of materials and an optional 34 inch high counter space for preview of materials and for additional workstations for aides and volunteers.

- 2. Wall cabinets: Optional.
- 3. Specialized storage for flat maps and charts: Provide large shelves, vertical slot shelving, and cubbyhole storage for rolled charts, maps, and posters. Provide pegboard hooks for storage of roller-type maps.
- d. Fixed equipment: Provide floor space for a high-density shelving system to accommodate storage of various types of print and non-print media.

SQUARE FEET SUMMARY:

A. Instructional Components for Media Center Spaces:

- 1. Instructional/Open Area: _____ sf
 - Circulation Desk Area
 - Stack Area
 - Large Group Instructional Area
 - Individual and Small Group Activity Area
 - Computerized Public Access Catalogue
- Sub-Total of Instructional Components _____ SF

B. Management Components for Media Center Spaces:

- 1. Office _____ sf
- 2. Equipment Storage _____
- 3. Staff Processing/Production Room _____
- 4. Learning Resource Storage _____
- Sub-Total of Management Components _____ SF
- Media Center Spaces Total _____ SF**

COMPUTER LABORATORY

SPACE DESCRIPTION:

The Computer Laboratory provides a central location for instruction of computer technology skills. It houses desktop computers, laptop computers and related peripherals used to teach software programs. Locate the laboratory close to the Media Center and Student Multi-Media Production Studio.

DESIGN CRITERIA:

All areas shall be ADA compliant.

- A. The computer room, containing space for _____ workstations. The minimum ceiling height should be 10'-0".
- B. Windows to the exterior are not recommended, however, windows to the corridor and the Media Center are encouraged. A minimum sill height of 36 inches above the floor is required.
- C. Locate the Computer Laboratory to provide convenient access from the classrooms and direct access to the Media Center.
- D. The floor material shall be carpet.
- E. Lighting: Locate dual level three-way switching by the corridor door and the door from the Media Center. One level should provide 50 foot candles maintained; the second level should provide 75 foot candles maintained. There should be no glare on the computer screens and video displays. The use of indirect or direct/indirect lighting is encouraged.
- F. Electrical power: Provide 110V power supplied from wall mounted plug-mold for student stations desktop systems in three dedicated circuits of 20 amps each with surge protection. Two dedicated printer receptacles and two general convenience receptacles should be located near the teacher station. Student computer station power should be switched at the wall near the teacher station. Wireless technology is recommended for the use of connection to the internet and to the school network.
- G. Provide independently controlled cooling to maintain and even temperature of approximately 68 degrees F.
- H. Storage: Provide one 48 inch wide x 24 inch deep x 84 inch high lockable cabinet with adjustable shelves.

SQUARE FEET SUMMARY:

A. Computer Laboratory Spaces Total _____ SF

PHYSICAL EDUCATION

SPACE DESCRIPTION:

The space is a multi-use area. The goal is to provide a multi-use area that is almost 100 percent useable space for physical education and for the presentation of performance activities and programs. During physical education classes all students are kept actively engaged at all times. Total involvement requires complete flexibility and adaptability of the physical space. The gym area should be a simple, uncluttered space.

A. Physical Education Spaces:

1. Gymnasium
2. P.E. Equipment Storage Room
3. P.E. Office
4. Performance Chair Storage
5. Outdoor Area

Design Criteria:

Provide daylighting with a light level that will allow for access through the space without the use of artificial light. All areas shall be ADA compliant

A. Physical Education Spaces:

1. Gymnasium:

- a. The gym requires a direct relationship to outdoor physical education facilities. The narrow end of the gym should open to create the performance area. Built-in risers from the gym floor to the performance floor are prohibited, provide access to the performance area through a corner door to the side of the performance opening. Do not locate doors under or near the basketball goals. The wall areas behind the baskets require protective mats.
- b. Floor area required is _____ sf. A clear ceiling height of _____ feet (minimum) is required.
- c. Floor: Resilient sports flooring with activity stripe patterns.
- d. Walls are used to help develop skills. Walls should be flat, straight, smooth and easily cleaned. The recommended wall material is masonry in order to provide for wear and tear from physical education activities.
- e. Acoustical Considerations: Acoustical roof deck and sound absorbing masonry or acoustical wall panels required, which must provide 1.5 seconds maximum reverberation time.
- f. Provide one 4 foot x 8 foot whiteboard without tray.
- g. Utilities:
 1. Lighting should be controlled from a keyed switch bank and be designed to provide a minimum of 30 foot candles maintained at 36 inches above the floor. Protect all fixtures from ball damage. Fluorescent illumination is recommended.
 2. Power: Provide near the office and storage room a minimum of three recessed duplex receptacles with heavy-duty covers and two

recessed data outlets with heavy-duty covers locate near the power receptacles.

3. Provide a public address system with wireless microphones for P.E. teacher use during classes. The system is independent from the performance system.

4. Provide data and power outlets at each end of the gym.

h. Fixed Equipment: Provide two standard-duty steel, power folding, and adjustable (8 to 10 feet) main basketball goals at end walls. Provide four fixed adjustable (8 to 10 feet) secondary basketball goals at sidewalls.

2. P.E. Equipment Storage:

a. Provide a storage room with a pair of 3'0" doors for physical education equipment.

b. Mat storage is included in this room.

3. P.E. Office:

a. Provide a general use office with a window into the gym for supervision.

4. Performance Chair Storage:

a. Provide storage for folding chairs for performances with a pair of 3'-0" doors.

5. Outdoor Areas:

a. The outside Physical Education facilities, which are an integral part of the entire Physical Education program, are contained in a separate Site Development document.

SQUARE FEET SUMMARY:

A. Physical Education Spaces:

- | | |
|--|----------|
| 1. Gymnasium | _____ sf |
| 2. P.E. Equipment Storage | _____ |
| 3. P.E. Office | _____ |
| 4. Performance Chair Storage | _____ |
| 5. Outdoor Areas (See Site Development document) | _____ |

Physical Education Spaces Total _____ **SF**

CAFETERIA / MULTI-USE ROOM

SPACE DESCRIPTION:

The Cafeteria/Multi-Use Room area school functions include: Lunch room, rehearsal, indoor group activities, large and small meetings and conferences. Other functions may include: Community meetings and presentations.

A. Cafeteria/Multi-Use Room Spaces:

1. Cafeteria/multi-use room
2. Special programs storage room

DESIGN CRITERIA:

A. Cafeteria/Multi-Use Room Spaces:

1. Cafeteria/Multi-Use Room:

- a. Provide flexible area for cafeteria seating for _____ students at one time located adjacent to the kitchen with direct access to the main corridor and outdoor activity areas. Provide chair and table storage alcove(s). Ceiling height minimum 12'-0".
- b. Provide daylighting with a minimum of 20-20 fc of uniform daylighting throughout the space. Provide a minimum of two operable sashes. Sill height should not be less than 12 inches above the floor.
- c. Door configuration is critical for efficient traffic flow. The entrance should be from the main corridor directly to the kitchen serving line. Dish return circulation should not cross the serving line. A separate exit to the playground should be as far as possible from the serving line. The walkway from the cafeteria to the playground should not cross or pass close to the kitchen service drive or mechanical room.
- d. Acoustical treatments are critical. Use materials that produce low reverberation time and provide high absorption.
- e. Floor material shall be durable and easily cleaned.
- f. Utilities: Provide a drinking fountain or water cooler in the corridor within 25 feet of the cafeteria entry door.

B. Special Programs Storage Rooms (3 required):

- a. The spaces provide basic storage for school and outside programs.

SQUARE FEET SUMMARY:

A. Cafeteria/Multi-Use Room Spaces:

1. Cafeteria/Multi-Use Room _____ sf
Chair and table alcove _____
2. Special Program Storage - 3 x _____ sf = _____

Cafeteria/Multi-Use Room Spaces Total _____ SF

KITCHEN

SPACE DESCRIPTION:

The kitchen, providing space for personnel, delivery, storage, preparation, serving and cleanup of school food services, may contain the following components:

A. Kitchen Spaces:

1. Receiving Area
2. Dry Storage
3. Cooler/Freezer
4. Management Area
5. Preparation Kitchen Area
6. Serving Kitchen Area
7. Dishwashing
8. Locker/Toilet Room
9. Custodial/Laundry Room

DESIGN CRITERIA:

The configuration of the kitchen may vary and shall be determined by the School District for the facility that it serves.

A. Kitchen Spaces:

Locate the kitchen contiguous with the cafeteria. Provide a loading area with unobstructed outside access from the service drive. The ceiling height should be a minimum of 10'-0". Acoustical sound isolation is required between the kitchen and cafeteria as well as instructional areas.

SQUARE FEET SUMMARY:

Full Prep Kitchen Spaces Total _____ **SF**

Serving Kitchen Spaces Total _____ **SF**

CIRCULATION

SPACE DESCRIPTION:

The design and materials selected should result in circulation spaces that are durable, easily maintained, attractive, warm and non-institutional in appearance. Circulation spaces should be direct, simple and logical as a way-finding system into and through the building. All circulation spaces should use at least 50% daylighting for illumination.

A. Circulation Spaces:

1. Entries
2. Lobby
3. Corridors

DESIGN CRITERIA:

A. Circulation Spaces:

1. Entries:

- a. Entries shall be well defined from the exterior.
- b. If there are separate bus rider entries and automobile rider entries they should be readily identifiable as such.
- c. Vestibules are required at high use entrances and exits.
- d. Floors at all entries should have walk-off mats/carpet.
- e. Walls should be constructed of durable materials, similar to exterior materials.
- f. Ceiling height shall be a minimum of 10'-0".

2. Lobby:

- a. The floor material should be hard surfaces.
- b. Provide a built-in lighted display case in the Main Lobby.
- c. Ceiling height shall be a minimum of 10'-0".
- d. The Main Lobby shall be adjacent to the Administration area.
- e. Public Access: Provide lockable security separations to isolate the building areas that may be used after school hours by the public such as the gymnasium, music/performance area, cafeteria and media center.
- f. Signage: Provide directional signs to the main areas of the building. Provide a dedication plaque. All signage should be ADA compliant.

3. Corridors:

- a. Floors: Either resilient flooring or carpet.
- b. Walls: The preferred corridor wall is a 48 inch high durable surface wainscot with gypsum board walls above finished with heavy mil thickness paint. The wall finish will be high impact gypsum board on the lower 48 inches with the remainder of the wall standard gypsum board with heavy mil thickness paint. All exterior corners of gypsum board will have full height high-impact corner guards.
- c. Ceilings: Ceiling height shall be a minimum of 9'-4".
- d. Acoustics: Minimize reverberation times to avoid disturbance caused by multiple simultaneous activities.

e. Doors opening into corridors shall be recessed. Recognizing that staff and students often prefer open corridor doors, use electromagnetic hold open devices to maintain the integrity of the exit system.

f. Provide 200 to 300 sf of tack boards at 3 or 4 locations in the main corridors. Optional use of tack strips at various mounting heights for display.

g. Signage: Provide room name, number and replaceable teacher name plaques at each doorway. All signage shall be ADA compliant.

h. Electrical Power: Provide 110V general use duplex receptacles at 50 feet maximum spacing throughout the corridor system.

i. Lighting: Corridor lighting, as a supplement to daylighting, shall be 20 foot candles at 36 inches above the floor minimum.

j. Corridor Widths: Corridors that are narrow and congested result in excessive noise, improper student behavior and increase maintenance costs. Minimum corridor widths are:

- | | |
|-------------------------------------|-------|
| 1. Serving more than two classrooms | 8'-0" |
| 2. Serving more than ten classrooms | 9'-0" |
| 3. Main corridors | 9'-0" |
| 4. If lockers along one wall add | 2'-0" |
| 5. If lockers along two walls add | 3'-0" |

CUSTODIAL

SPACE DESCRIPTION:

Custodial support areas are required for the proper maintenance and operation of the facility.

A. Custodial Spaces:

1. Facility Manager Office
2. Custodial Closets
3. Custodial Storage Room

DESIGN CRITERIA:

Square footage is included in the Net to Gross Ratio.

A. Custodial Spaces:

1. Facility Manager Office:

- a. The space is a combination office and receiving and storage space which should be located close to the service entrance for receiving.
- b. The roof access hatch with built-in ladder should be located in this space.
- c. Provide general lighting, power, data and a telephone.

2. Custodial Closets:

- a. Provide one per academic area, one for the gym and cafeteria and one for the kitchen.
- b. Electrical transformers, panels and sub-panels shall not be located in these custodial closets.
- c. The closets should have space for 20 lineal feet of adjustable shelving.
- d. Each closet shall contain a floor mounted minimum 24 inch square service sink with a maximum lip height of 6 inches above the floor and with an industrial braced faucet with hot and cold water. Provide a mop holder with shelf above service sink.
- e. Provide 48 inch high FRP wainscot at the service sink.

3. Custodial Storage Room:

- a. Provide storage room for indoor floor cleaning equipment such as extractors, vacuum cleaners, buffers and other floor machines.
- b. The room is intended to keep the equipment from being stored in electrical, mechanical and communication rooms. Electrical transformers, panels and sub-panels are not to be located in the storage room.

MECHANICAL, ELECTRICAL AND COMMUNICATIONS ROOMS

DESIGN CRITERIA:

Square footage is included in the Net to Gross Ratio.

A. Mechanical and Electrical Rooms:

1. Rooms must be of adequate size to facilitate maintenance of equipment and movement of personnel during normal maintenance procedures.
2. Floors should be constructed at grade level, if possible.
3. Floor material should be painted concrete. Walls should be painted. Ceilings should be as required by the building code.
4. Direct exterior access should be through a pair of metal doors. The door opening size must permit passage of the largest piece of equipment and equipment maintenance items.
5. Acoustical isolation and sound attenuation from adjacent rooms and areas is a critical consideration in the location and design of mechanical and electrical rooms.
6. If access to the roof is needed in these rooms it may be by roof hatches and vertical ladders.
7. Provide at least one 110V general duplex receptacles in each space. Provide 30 foot candles of lighting at 36 inches above the floor maintained.

B. Communications Room:

1. Each school is required to have a communication room to house all building special systems control equipment. When data cable-run lengths exceed 300 total lineal feet, the communications room must be connected to remote intermediate data closets. The equipment contained in this room is costly and environmentally sensitive, for this reason the room is not permitted to be used as a building storage room. Key access should be limited.
2. Locate the room centrally within the building and provide a door from the corridor.
3. Ceiling height should be a minimum of 10'-0".
4. The floor shall be vinyl composition tile.
5. The wall finish should be ¾ inch nonflammable unpainted plywood.
6. Provide cooling for the room.
7. The room should be of adequate size to accommodate the equipment contained therein and room to maintain that equipment.

PLUMBING

SPACE DESCRIPTION OF PLUMBING SPACES:

A. Plumbing Spaces:

1. Academic Area Student Toilets
2. Academic Area Staff Toilets
3. Academic Area Work Sinks
4. Core Area Public Toilets
5. Administrative Staff Toilet
6. Nurse Area Toilet
7. Core Area Work Sinks
8. Drinking Fountains
9. Custodial Closets
10. Kitchen
11. Exterior Keyed Hose Bibs

DESIGN CRITERIA:

All plumbing facilities shall be ADA compliant. Square footage is included in the Net to Gross Ratio.

A. Plumbing Spaces:

1. Academic Area Student Toilets: For each academic area, provide one for each sex convenient to classrooms.
2. Academic Area Staff Toilet: For each academic area, provide one unisex toilet convenient to the Multi-Use Room.
3. Academic Area Work Sinks: One in each classroom with bubbler.
4. Core Area Public Toilets: Provide a minimum of one facility for each sex sized to accommodate more than one user at a time. Locate the toilets accessible to the gymnasium, cafeteria and administration.
5. Administrative Staff Toilet: Provide two toilets.
6. Nurse Area Toilet: Provide one unisex toilet with specialty shower and floor drain. See Administration section for further requirements.
7. Core Area Work Sinks: Provide sinks in each of the following areas: Nurse, Administration Workroom, Staff Lounge, General Music Room, Art room and Staff Processing/Production Room. See specific section for further requirements.
8. Drinking Fountains: Provide two minimum in the Core area. In academic areas include a bubbler in each classroom sink and an ADA accessible drinking fountain outside the toilets. Provide drinking fountains near the gymnasium, cafeteria and administration.
9. Custodial Closets: Provide one floor mounted sink in each closet.
10. Kitchen: Provide a staff toilet, custodial closet with floor mounted sink and other plumbing as may be required per kitchen design.
11. Exterior Keyed Hose Bibs: Provide one at the kitchen service entrance. Provide others as may be needed.

B. Additional Requirements:

1. Ceilings: Lay-in grid ceilings are not recommended in the toilets, kitchen or custodial closets.
2. Doors: Student toilet designs should not have doors.
3. Acoustical Considerations: To the greatest extent possible provide acoustical separation between instructional areas and toilets, with special consideration for noise generated by electric hand dryers.
4. Academic Area Student Toilets: Provide fixture ratios per the building code and plumbing code. Assume maximum building or instructional area capacity and assume 50% of each sex. Lavatory areas are permitted to have a unisex configuration if separated from the water closets and urinals.
5. Core Area Public Toilets: Fixture ratios should be provided according to requirements of the plumbing code. Design public toilets in conjunction with central student toilets to serve 50% of the maximum assembly occupancy of the gymnasium per the building code. Assume a 50% ratio for each sex.
6. Academic and Administrative Staff Toilets: Provide one water closet and one lavatory for each toilet.
7. Academic Area Classroom Work Sinks: Sinks should be child-accessible with minimum inside dimensions of 13 ½ inches x 16 inches x 17 ½ inches with a rigid gooseneck mixing faucet installed at either end. Supply with a drinking bubbler.
8. Drinking Fountains: Provide non-refrigerated fountains at the public toilets. Meet code fixture quantity requirements.
9. Provide supplemental exhaust for all toilets.

TECHNOLOGY WIRING STANDARDS

SPACE DESCRIPTION OF WIRING STANDARDS:

All buildings should be constructed to allow for the use of technology infrastructure by all students, faculty and staff. Infrastructure refers to connectivity issues and all necessary frameworks to implement technology.

The use of wireless technology is recommended. It increases the flexibility of the technology system and actually reduces the need for space. One case for this is the use of laptop computers in the classrooms that have wireless connections to a contact box. In some cases this approach has removed the need for a “computer lab”.

DESIGN CRITERIA:

A. General:

1. Wireless technology is recommended for use, at least, in the classrooms and Media Center. In lieu of wireless technology the standards shown below should be followed.
2. These Educational Specifications provide for design and construction of a Communications Room and the installation of video, voice and data receptacles, conduits and conduit stub-ups with the spaces listed below.
3. Infrastructure must meet industry standards such as those defined by EIA/TIA-568 Telecommunications Cabling Standards, EIA/TIA-569 Commercial Building Standard for Telecommunication Pathways and Spaces, and EIA/TIA-607 Commercial Building Grounding and Bonding requirements for telecommunications.
4. *If the infrastructure is not to be installed at the time of original construction, the capability to install these systems at a later date shall be provided.*
5. Ethernet/token ring hubs, work station cables and data patch cables should be installed to support the number of computers to be used plus a 20% growth factor at the time of installation. Additional hubs should be installed once the 20% growth factor is reached.
6. Data cabling shall be at least Category 5E.

B. Video Standards:

1. Video Outlet Locations:
 - a. One per classroom.
 - b. Two in the Media Center.
 - c. One drop each in the gymnasium and cafeteria.
 - d. One in each multi-teacher workroom.
 - e. One in administrative office.
 - f. One in the Principal’s office.
 - g. One in the administrative conference room.

C. Voice Standards:

1. Voice (telephone) Outlet Locations:
 - a. One per classroom.

- b. One in Media Center.
- c. One per Media Center office and Media Production room.
- d. Two per administrative office support staff.
- e. One per fax machine.
- f. One in gymnasium.
- g. One in cafeteria.
- h. One per teacher workroom.
- i. One per Principal or full time staff.
- j. One per Special Program.
- k. One in Facility Manager Office

If two-piece wire mold strips are required for installation, the wire mold must meet shielding requirements for Category 5E data cable. Provide duplex back boxes for use with wire mold.

D. Data Standards:

- 1. Data Outlet Standards:
 - a. Five per classroom. One data outlet should be located near or below the video outlet for use with video camera.
 - b. One per administrator and/or in each room in Administration area.
 - c. One in Facility Manager Office.
 - d. One in cafeteria. Coordinate location with Food Service personnel.
 - e. Media Center:
 - 1. Two for circulation desk.
 - 2. One for Media Center Specialists office.
 - 3. Five locations within the Media Center.
 - 4. One for Computer Public Access Catalogue.
 - f. One in gymnasium near or below video outlet for use with video camera.
 - g. One in cafeteria near or below video outlet for use with video camera.
 - h. Fifteen to twenty drops for Computer Laboratory.

If two-piece wire mold strips are required for installation, the wire mold must meet shielding requirements for Category 5E data cable. Provide duplex back boxes for use with wire mold.

E. Temporary Building Wiring Requirements:

- 1. One video outlet.
- 2. Three data outlets and three telephone outlets located in same back box.
- 3. One wall telephone outlet located near entrance door.

ELECTRICAL AND SPECIAL SYSTEMS

DESIGN CRITERIA:

A. Electrical Systems Voltages:

1. 480Y/277 volt systems (with transformers for 208Y/120 volt uses) should be provided when connected loads exceed 500 KVA. A cost analysis may warrant maintaining the existing voltage system with addition/renovation projects.

B. Service Entrance:

1. The impact of the short circuit interrupting capacity of the electrical utility at the secondary terminals of its transformer MUST be used when designing service entrance equipment and panels. Consider placing this capacity on a plaque on the main panel board for future reference.
2. The use of spare conduits from the utility transformer to the main panel for future growth is recommended.

C. Wiring Systems:

1. Copper conductors should be used for feeder circuits from the main panel to the sub-panels.

D. Electrical Panels:

1. Verification should be made that the panels, conductors, and the over-current protection for each are coordinated.
2. Disconnect switches are required for all motors, water heaters and large laundry equipment.

E. Grounding:

1. The proper grounding electrode system should be included with the correct sizes for the grounding "electrode conductors". Connections to ground rods and a second grounding point are required, such as the building steel or metallic water piping in contact with the earth for at least a 10 foot length. This applies to service entrance panels and step-down transformers.
2. Bonding and grounding diagrams should be included.

F. Illumination:

1. The use of daylighting is recommended to supplement the illumination systems in the building. This recommendation is not only for energy savings but daylighting research has shown that it actually increases the learning ability of the students.
2. Compact fluorescent fixtures should be installed where incandescent fixtures have been used traditionally for wall washing, display cases and down lighting in traffic patterns. Fluorescent lighting fixtures can be installed with equipment used in most desired applications for dimming, but where color rendition and brightness control may be critical, such as performance class settings incandescent spot lighting (track lights) may be used.

3. Incandescent fixtures should be avoided due to high operation costs and short lamp life.
4. The use of electronic ballasts and T-8 or T-5 fluorescent lamps in appropriate locations is strongly recommended.
5. Light-emitting diodes (LED) exit lighting fixtures are recommended because of their very long life and very low operating cost. Incandescent exit fixtures should be avoided. Location of exit and emergency lighting fixtures are critical.

G. Energy Lighting Controls:

1. The use of remote switches for lighting in corridors, toilets, gymnasiums and common areas is recommended. These switches should be located in areas accessible only to designated staff. Key-operated switches are a second choice.
2. Dual level lighting switching and the use of occupancy sensors are recommended.

H. Audio Enhancement System:

1. The system, consisting of a base unit, four speakers, and a wireless microphone, allows use of a hand free, wireless microphone to enhance voice projection. One unit is installed for each teaching station. The system provides the opportunity for all students to hear the teaching instructions whether they are hearing impaired or acoustical conditions of the teaching area do not allow for proper sound transmission.

I. CATV:

1. Cable TV should be installed throughout the school (See Technology Wiring Standards; B. Video Standards for locations).
2. Cable television control equipment shall be located in the Communications Room.

J. Central Energy Management System (CEMS):

1. The CEMS monitors the heating, ventilating and air conditioning systems (HVAC) and reports status information to a central monitor location.
2. CEMS control equipment is located in the Communications Room.

K. Clock System:

1. School clocks should be on a master self-adjusting electrical system.
2. Locate the master control in the Communications Room.

L. Data System:

1. A computer network should be installed throughout the school. The preferred system is a wireless network.
2. Control equipment is located in the Communications Room.

M. Fire Alarm System:

1. A fire alarm system must be installed throughout the school. A fire alarm status panel must be located in the vicinity of the main entrance door.

2. Control equipment is located in the Communication Room.
3. See applicable codes for required locations of fire alarm pull stations and horns.
4. Verify that enough horn/strobe lights are provided for sufficient coverage. Strobe lights are required in toilets.
5. Connect ductwork smoke detectors into the fire alarm system and design to shut down the air-handling units.
6. Provide connections for the kitchen fire extinguishing system to the fire alarm system and the shunt trip mechanisms to disconnect the cooking equipment and the kitchen hood fans.

N. Public Address System:

1. A public address system will be located in the Gymnasium.
2. The system consists of an amplifier, speakers, two wired microphones and two wireless microphones.
3. Locate operation controls in the Gymnasium office.

O. Security System:

1. See Security.

P. Communications System:

1. Thoughtful planning is required to accommodate sufficient numbers and proper locations of computers, telephones, TV, intercom/paging/radio and other integrated communication equipment.
2. For computers and other high-speed electronic equipment, the backbone can be fiber optic cables with “Category 5E” copper cables to the individual items of equipment.
3. Connection to the State Information Highway requires fiber optic cables.
4. Isolation transformers, surge suppression and lightning protection devices should be used to protect all electronic equipment and the panels to which they are connected.
5. Sufficient wire ways should be installed and located for ample expansion.
6. Cable tray over lay-in ceilings in corridors is the most common method for routing communications and computer cables.
7. A programmable phone/paging system should be provided.
8. Communications control equipment is located in the Communication Room.
9. Classrooms should be equipped with a two-way communication system for informational and emergency use. Every classroom should be equipped with a telephone.

SECURITY

SPACE DESCRIPTION:

Refer to the School District Security Plan.

Other than door control, security systems in schools are not a preventative measure. They primarily fulfill a monitoring and annunciation function.

Three methods for creating secure areas are: architectural design, electronic systems and manpower.

DESIGN CRITERIA:

A. Architectural Design:

1. Ensure clear sight lines around the building. (See Site Development Document.)
2. Position Administration adjacent to the main entrance with a security interlock vestibule.
3. Position areas frequented by staff throughout the building.
4. Provide reasons for staff to be seen in the corridors.
5. Eliminate secluded areas.
6. Limit the number of entry points to the building.
7. Design open, visible, bright areas.

B. Electronic Systems:

1. Provide electronic access control at all entrance doors, either card readers or phob ID system.
2. Provide door monitoring system on all exterior doors.
3. Provide a CCTV surveillance system with cameras located at the following areas: a) parking lot(s), b) main entrance, c) playgrounds and d) main corridors.
4. Building annunciation system (See Electrical and Special Systems, P.)

C. Manpower:

1. No piece of technology or building design can replace the eyes and ears of school staff out and about interacting with students.
2. Position Administration adjacent to the main entrance with a security interlock vestibule. The front desk shall be occupied at all times.
3. Position areas frequented by staff throughout the building and train them on security measures.
4. Provide reasons for staff to be seen in the corridors.

SUMMARY

ELEMENTARY SCHOOL EDUCATIONAL SPECIFICATIONS FOR

_____ STUDENT CAPACITY
(___ SECTION K-___)

_____ students X _____ sf/student = _____ sf

ADMINISTRATION _____ sf

ACADEMIC AREAS _____

SPECIAL EDUCATION _____

ART EDUCATION _____

MUSIC/PERFORMANCE _____

MEDIA CENTER _____

COMPUTER LABORATORY _____

PHYSICAL EDUCATION _____

CAFETERIA / MULTI-USE ROOM _____

KITCHEN _____

NET SQUARE FEET TOTAL _____ **SF**

NET TO GROSS RATIO (0.37) _____

GROSS SQUARE FEET TOTAL _____ **SF**

APPENDIX

SAMPLE