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## **VOL. 1 -- DESIGN STANDARDS GENERAL**

### **1 SCHOOL PLANNING GENERAL CRITERIA**

The Architect Design Manual (ADM), Volume 1 – “Design Standards General Criteria,” provides general design criteria, such as functional space or room requirements (classroom, kitchen, toilet room, parking, etc.), specific school type requirements (elementary, secondary), and general site and environmental criteria.

The ADM standards complement the California Educational Code, and deal with general planning and design issues. The guidelines and criteria of this volume must be closely coordinated with the codes, standards, legislative and regulatory requirements affecting schools in California, including:

- ∞ Title 5 of the California Code of Regulations (especially Sections 14001 and 14030)
- ∞ Title 24 of the California Code of Regulations (State Building Code)
- ∞ Title 22 of the California Code of Regulations for Children’s Centers
- ∞ American Disabilities Act (Public Law 101-336, Title II)
- ∞ Education Code Section 39113.5 for before- and after-school Child Care Programs

#### **1.1 SMALL LEARNING COMMUNITIES**

Unless the Architect is directed otherwise by the District, High Schools and Middle Schools shall be planned and designed with Small Learning Communities of not more than 500 students.

#### **1.2 ENERGY AND SUSTAINABILITY**

The principles of sustainable design and energy conservation, as embodied in these requirements and in the CHPS criteria, represent important District goals, and shall be applied in all aspects of school planning and design, including building orientation and configuration, envelope and fenestration selection, and selection of building systems and equipment. (See ADM Vol. 1 - Section on “Environment and Sustainability”)

#### **1.3 ROOM ACCESS**

Do not provide entry to any room through another room. Exceptions are lobbies, teacher’s workrooms from classrooms, administrator private offices from an open work area, toilet rooms for Special Education or Kindergarten classrooms, or smaller rooms serving a general kitchen area. All building service areas – such as custodial rooms, computer equipment rooms, HVAC or electrical rooms – shall have direct access from a public corridor or space.

## 1.4 SCHOOL NAME AND ROOM NUMBERS

Provide for a school-name sign in a prominent location near the main entrance, but do not specify the actual name until the working title is replaced by the District with the permanent school name.

Define a final room-numbering system early in the Construction Document Phase, so that keying schedules, data addresses, and other systems dependent on room numbers will not have to change during or after construction. Submit for District approval and then include approved numbers on CD plans.

## 2 SCHOOL BUILDING - FUNCTIONAL SPACES CRITERIA

### 2.1 ADMINISTRATION

The Administration Unit provides core area space for staff functions; provides spaces for interaction between staff, parents and students; and serves as the main public entry to the school.

#### 2.1.1 Typical Spaces and Functional Needs

Private offices for principal, assistant principals, and other appropriate staff.

Typical elementary school staffing includes the principal, vice principal, two clerks, resource specialist, health aide, community resource worker, counselor, itinerant speech therapist, itinerant psychologist, and custodian. Refer to “Facilities Program” for specific school requirements.

Office receptionist, secretary or clerk needs to greet people when they enter the office.

Principal’s secretary’s office in “line of sight” of the Principal.

Provide lockable file cabinets for student records. Attendance area needs work space.

Vice Principal’s office shall be located separate from the Principal’s office; usually adjacent to the Attendance Area if it is separate, with area for at least two students’ chairs.

Open office for clerical assistants, computer operators, volunteer workers. Provide appropriate areas for file cabinets, to be lockable. (N.I.C. – OFOI).

Staff/faculty work room(s) for office supplies, reprographics equipment, space for copying, assembling and binding. Ample storage for supplies, sized and equipped appropriately for the school size.

Staff and teachers mail boxes (may be located in faculty / staff lounge in elementary schools). (See Palm Elementary School example.)

Public lobby:

- ∞ Waiting/seating area with counter reception and control center. (Separate the counter area and the back-of-house clerical operations.)
- ∞ Counter heights appropriate to the population age at both standing and wheelchair levels.
- ∞ Seating and writing surfaces for staff or students to fill out forms.

Conference space for staff meetings, staff-teacher conferences or visitors.

Education Support Services: RSP Classroom, size 16' x 8' minimum.

Main telecommunications room (LAN Room), secured.

Additional spaces as programmed, such as security (police) office, athletic director, etc.

Adult toilet rooms for staff and visitors (off corridor or lobby).

Public payphone.

Provide visual access to view windows for all offices.

### **2.1.2 Location**

As the main entrance to the school campus, Administration must be prominently located and directly accessible to the public. Functioning also as the central access point of control, Administration, together with Counseling and Health, may need after-hour or weekend accessibility, and should be secured against access to other school areas when school is closed.

## **2.2 COUNSELING AND ATTENDANCE**

The Counseling and Attendance functions are an integral part of the counseling and guidance programs, and provide a service center for families dealing with enrollment, transfers, transportation and work permits.

Counselors confer with students and parents, administer psychological examinations, and maintain files and records for each student.

The Attendance Office maintains attendance records and student files. The unit functions partly as an accounting department.

Provide space for student record files, with all file cabinets to be lockable.

### **2.2.1 Typical Spaces and Functional Needs**

Counselors' offices with work area, guest seating, computer workstation and window.

Student Waiting Area with controlled supervision, shared with Attendance Unit.

Psychologist's Office and guest waiting area.

Interview and Testing Stations.

Other workstations as programmed.

Enclosed bulletin board outside the unit in a highly visible location.

### **2.2.2 Location**

Counseling and Attendance activities are integrated into the Administration Unit adjacent to the main lobby.

## **2.3 HEALTH UNIT**

A centrally located Health Unit provides health services to students, storage for student health records, and information for use by teachers, counselors, school administrators

and aides. Student privacy and confidentiality are important when accessing health services and require lockable cabinets for student files.

### **2.3.1 Typical Spaces and Functional Needs**

Nurse's office and student waiting space.

Cot room or space.

Separate accessible restroom within the health office.

Shower for clean up after accidents.

Private storage within the health office for special services, including giving injections, catheterizing, bandages.

Office/exam space for visiting healthcare professionals.

Ten-foot long eye-exam lane.

### **2.3.2 Location**

Adjacent to Administration Unit, with public accessibility from lobby.

## **2.4 FACULTY AND STAFF LOUNGE**

Provide space for Faculty and Staff Lounge for relaxation, private work, meetings, mail boxes, and dining when a separate faculty dining room is not available or convenient.

### **2.4.1 Typical Spaces and Functional Needs**

Ample seating and table space, sized appropriately for the school.

Sink, tack board, payphone, and space/utilities for refrigerator, coffee station, microwave, and vending machine(s).

### **2.4.2 Location**

Central and convenient, often near food service in elementary schools, and near the Administration Unit in middle and high schools.

## **2.5 GENERAL CLASSROOMS**

Classrooms are the most important single element in the school. They must be designed to flexibly accommodate varied activities and future technologies. Designs should reflect concern for the way children work and learn in the room. Adaptability of the room to various grade levels is provided through selection and arrangement of furnishings.

Because of the importance of daylight and views to performance and learning, provide windows in all classrooms – with one or more operable to provide occasional ventilation and for emergency exit.

Show alternative furniture layouts. Do not place the teacher's desk close to a door. Typically, locate the teacher's desk near the front, or instructional, wall, close to the lighting switches or dimmers and the AV equipment.

In elementary schools, adjacent to classrooms and playgrounds, provide one or more rooms with exterior access for PE equipment storage -- approx 6 x 10 (<12x12)

Refer to other sections of this “Architect Design Manual” for such items as windows, lighting, acoustics, finishes, air quality and communications.

### **2.5.1 Size**

Minimum classroom size: 960 square feet.

### **2.5.2 Location**

Classrooms are laid out in groups, in linear form or clusters, accessed either by external walks and balconies or by internal corridors. They need convenient access to the library/ media center, as well as to administration, multipurpose/ food service, and physical education or playground areas.

### **2.5.3 Flexibility**

Consider measures to allow some classrooms to be easily altered in size or shape at reasonable cost (for example, to accommodate changes in class size policy).

### **2.5.4 Outdoor Study Areas**

Consider classroom clusters with access to outdoor instructional space for Elementary Schools if the budget is not impacted.

### **2.5.5 Instructional Materials and Interior Finishes**

Provide the following basic finishes and materials in each classroom:

- ∞ White board (twelve linear feet) at the main teaching wall, perpendicular to the window wall(s).
- ∞ Tackable wall covering (24± linear feet, full height), opposite main window wall.
- ∞ Other walls: Painted gypsum board.
- ∞ Acoustical tile ceiling for sound absorption.
- ∞ Support platform and electric / data outlets for overhead digital projector (projector is OFOI).
- ∞ Ceiling audio speakers for AV presentations (preferably part of a sound-enhancement system).
- ∞ Projection screen, 4-ft. by 6-ft wide minimum.

See ADM, Volume 2, for additional requirements of lighting, acoustics, computers, AV provisions, etc.

### **2.5.6 Casework and Storage**

Provide casework for work surfaces and for storage as determined for a specific project, but with the following minimums:

- ∞ Sixteen linear feet of base cabinet with work counter top and adjustable shelving for storage of books, materials and supplies.
- ∞ Four linear feet of base cabinet with shelves and electric / data outlets for AV equipment (DVR, VHS, sound enhancement receiver, etc.), proximate to the teacher's desk.

- ∞ Two linear feet of 72-inch-high cabinet for teacher's coat and shelf storage.
- ∞ Four additional linear feet of base cabinet and sink in elementary schools for sink and wash-up.

As an alternative to the base cabinets, “teaching walls” may be provided. (See Roberts ES for plan.)

### **2.5.7 Wash Facilities**

Kindergarten and elementary school classrooms must have sinks, drinking fountain, soap dispensers, paper towel dispensers, and trash container. (See ADM Vol 2, Toilet Accessories.)

## **2.6 KINDERGARTEN CLASSROOMS**

### **2.6.1 Typical Spaces and Functional Needs**

The Kindergarten unit is specialized and self-contained learning environment so that children may participate in active and varied learning experiences within their own realm separate from the older children. Space and furnishings should provide flexibility for a variety of indoor and outdoor activities. Provide visual lines of supervision of the classroom and play yards, and provision of a safe, interactive environment.

Minimum Kindergarten Classroom size is 1,350 square feet, including storage, teacher preparation, wet and dry areas, and toilet rooms self-contained within the kindergarten complex.

Typical unit consists of four classrooms with am/pm sessions, eight sessions per day total. Verify if District adopts full-day kindergarten. (See Bradley ES as example.)

Follow requirements for “General Classrooms” as well as special provisions applicable for early childhood education.

Provide storage for coats -- cubbies are preferred because each student's belongings are separate (e.g., head lice)

Ensure that electrical outlets are designed as “child-proof” and have safety protection measures integral to the outlet.

### **2.6.2 Location**

Close to parent drop-off and bus loading areas, with separate drop-off area.

### **2.6.3 Kindergarten Outdoor Play Spaces**

The Kindergarten Play Space is an extension of the classroom, directly accessible and fenced for exclusive use by Kindergarten students. It must accommodate a variety of outdoor activities for the development of large motor skills, including running, climbing, sliding, cycling, and dancing. Innovative design solutions are encouraged and with maximum safety in mind.

A desirable play area to classroom area ratio is 2:1. (Typically, play yard may be length of the building and approximately 60'-0” wide.)

Provide a minimum 400 square feet resilient mat area at play equipment.

Provide play equipment as programmed and specified in ADM Vol 1, Outdoor Space and Functional Requirements.

Provide shade for quiet activities.

## **2.7 SCIENCE LABORATORIES**

### **2.7.1 Typical Space and Functional Needs**

Science laboratories are typical general classrooms, equipped for science instruction and experimentation.

Minimum size: 1,300 sf

For chemistry and biology labs, provide 16 lab work stations, typically. Work stations include sink with hot and cold water, gas outlet, 2-120-v. electrical outlets (GFCI), computer outlet, and storage cabinets with adjustable shelves beneath fixed benches. These are CFCI.

(If matching work tables are provided as OFOI equipment, show them on the floor plans as such.)

For physics and industrial technology labs, provide the same, unless specifically directed otherwise by the “Facilities Program.”

Provide adequate work space and seating for students for lectures.

Provide teacher demonstration bench, including all work station facilities, and two computer outlets. (This is in addition to teacher’s desk.)

Provide adequate electrical and data outlets or strips at the work stations and teacher’s station (not under the work areas).

### **2.7.2 Location**

In general, cluster science classrooms together and locate away from other rooms. If adapting to small learning communities, plan the communities so that science classrooms are in reasonable proximity (for sharing equipment and curriculum planning).

In multi-story buildings, locate on top floors to minimize vent and exhaust plumbing and ducts.

### **2.7.3 Preparation Rooms**

Provide separate rooms directly accessible from classrooms, usually one for every two or three laboratories, for teacher preparation and for storage of supplies and equipment, including a refrigerator (NIC) location.

### **2.7.4 Hazardous Materials**

Provide science laboratory design that is consistent with the requirements for proper hazardous materials management specified in California Department of Education publications:

- ∞ “Science Facilities Design for California Public Schools,” 1993
- ∞ “Science Safety Handbook for California High Schools,” 1987

Provide secure (lockable) storage areas for volatile, flammable and corrosive chemicals and cleaning agents.

Provide work surfaces/countertops with splashguards composed of epoxy resin wherever volatile, flammable or corrosive chemicals or cleaning agents may be utilized.

Accommodate necessary safety equipment and supplies, including fixed (not hose/drench) emergency deluge shower and floor drain, fixed eyewash (not hose/drench), master disconnect valve for gas, fire extinguishers, and first aid kit.

In the teacher preparation rooms, provide an approved drench hose system for emergency use.

Provide appropriate exhaust and ventilation for hazardous materials, including exhaust fume hoods, and a high volume purge system in the event of accidental release of toxic substances that may become airborne.

Provide floor and ceiling ventilation in secure areas where chemicals are stored.

Provide special plumbing, including isolated waste lines and acid-resistant piping, for hazardous liquids.

## **2.8 LIBRARY MEDIA CENTER**

The Library Media Center is an information laboratory serving the instructional needs of the entire school. It should be an aesthetically pleasing environment inviting purposeful activity for the development of positive attitudes toward reading and learning.

### **2.8.1 Typical Space and Functional Needs**

Library space is planned in proportion to the maximum planned enrollment, in accordance with the Facilities Program, but not less than 960 square feet.

Library shelving: Cantilevered adjustable steel shelving.

**Manufacturer:** Montel

Space and technology for 40 computer terminals for student use, instruction, research and report writing, including electrical outlets and data network connections for each computer terminal. Provide in a separate area with separate HVAC zone controls.

Other requirements:

- ∞ Room with shelving for extra books and for text-book storage if not provided in a separate facility.
- ∞ Librarian's Office (private) adjacent to circulation desk and staff work area.
- ∞ Staff work room
- ∞ Secure storage for special collections.
- ∞ Secure storage for technology and media equipment.
- ∞ Book-theft detection antennas at entrances in Secondary Schools.
- ∞ Visual supervision from the circulation desk to study areas; stack spaces and student work centers.

- ∞ Area for multimedia presentations.
- ∞ Freestanding display case near entry.

Provide a story-telling area in elementary-school libraries (e.g., Roberts Elementary School).

### **2.8.2 Location**

Central to the academic areas of the school, easily accessible from classrooms.

Directly accessible to the public for community use and extended hours of operation. Secure the Library/Media Center from other parts of the campus to allow evening and weekend events without intruding on other school spaces

Locate on the first floor unless exceptions for specific reasons are given. Assure adequate floor strength and thickness for book-shelving support and overturning anchorage.

### **2.8.3 Collection and Storage**

Appropriate to the school, and as shown in the Facilities Program.

Book Shelving: appropriate in height for the age of the children served.

Kindergarten picture book shelves: 14” high by 12” deep, sectioned with vertical dividers. Angle top shelves as display.

## **2.9 PHYSICAL EDUCATION GYMNASIUM**

Physical education provides directed training toward the development of physical and social skills. Activities include individual and team sports, rhythmic instruction, body mechanics, health, first aid, and safety.

See additional requirements under “Secondary Schools.”

### **2.9.1 Typical Space and Functional Needs**

Spaces in accordance with the Facilities Program, including sports areas, lockers, showers, team rooms, and such spaces as lobby or foyer, ticket booth, sound equipment room, press box, kitchenette, snack bar and laundry spaces.

In elementary schools, provide separation between primary and upper grade playground areas.

Typical elementary school playground equipment would include tether ball, 4-square, ball wall, basket ball, volleyball, kickball, field areas. (See “Facilities Program” for specific exterior PE and sports requirements.)

In middle and high schools, male and female faculty offices with line of sight to gym and lockers.

Toilets for public use other than in the shower/locker areas.

Gyms, aerobics rooms, fitness centers, locker rooms and other activity areas must have durable, abuse resistant walls. Do not use gypsum board unless it is abuse-resistant.

For lockers, see ADM Vol 1, “Lockers.”

Bleachers to have side rails and shall not be chain driven. District prefers individual friction drives for each section with the motors tied to the central panel with indicator lights for trouble shooting.

Roll-up doors with fusible links. Assure safety features that stop doors if there is interference and that control descent speed.

### **2.9.2 Location**

Adjacent to play fields.

Directly accessible to the public for community use and extended hours of operation, with clearly defined entrance and access control for events.

Secure the gymnasium and outdoor sports areas from other parts of the campus to allow evening and weekend events without intruding on other school spaces.

## **2.10 MULTIPURPOSE ROOM**

The Multipurpose Room functions as a combination assembly hall, lecture hall, testing room, indoor dining area, performing arts classroom, physical education classroom, and a general activity room. It may also serve community youth groups, civic organizations or professional events.

In some schools, especially high schools with an auditorium, there may be a separate indoor dining area in the cafeteria.

See additional requirements under “Secondary Schools.”.

### **2.10.1 Typical Spaces and Functional Needs**

Stage serving as performance space or podium, complete with rigging and lighting. Possibly under stage storage for chairs.

Assembly area with acoustical treatment and lighting and sound systems controls for assemblies and performances.

Movable chairs for assemblies or dining, with storage space for chairs and carts.

Folding tables for dining, with storage space.

Lobby or foyer.

Public toilet rooms.

See ADM, Vol.2, “Electrical Power and Lighting,” and “Electrical Communications” for additional requirements, including phased provisions for stage lighting systems. See requirements for Secondary Schools below for additional requirements.

### **2.10.2 Location**

Adjacent to kitchen/serving area if used for indoor food service.

Directly accessible to the public for community use and extended hours of operation.

Secure the areas from other parts of the campus to allow evening and weekend events without providing access to other school spaces.

## **2.11 SPECIAL EDUCATION CLASSROOMS AND AREAS**

### **2.11.1 Typical Spaces and Functional Needs**

Properly equipped classrooms for the students who will occupy them, their age and their disabling conditions, as defined in the “Facilities Program” and specific school requirements..

Provide room of 240 square feet minimum for the Resource Specialist, or as programmed.

Provide room of 200 square feet for individualized instruction in the speech and language program.

Provide satellite toilet room/shower locations on large sites.

Provide access to a conference area to conduct individualized education program meetings for special-education students.

Provide separate bus drop-off, pick-up areas

Locate medical therapy units, if planned for the site, close to visitor parking areas and with after-school-hour accessibility.

Distribute Special Education classrooms, when so programmed, throughout the campus with age-appropriate regular education programs.

Classroom loading, generally, is 1 teacher; 1 aide; 16 students non-severe & 12 students severe

Refer to the Education Code, Section 17747(a), for space allowances for classrooms and other spaces to support special education programs.

### **2.11.2 Non-Severe Special Education Classrooms**

Classrooms do not need any special features—should be the same as general education classrooms.

### **2.11.3 Severe Special Education Classrooms**

Provide toilet room adjacent to and accessible from classroom. Showers are not needed.

Wheel chairs; toilet assistance is needed, but no special lifts are necessary.

Provide washer, dryer, refrigerator and microwave.

Classrooms same size and facilities as general. Furniture may need to be moved around.

Provide storage for car seats, change of clothes, special food in open casework shelving and in cabinets.

### **2.11.4 Special Education Classroom Buildings**

Special Education uses an inclusion model, in which special education students are included in regular education classes to the maximum extent possible. When Special Education Classrooms are not distributed throughout the campus, provide a separate building.

Special Education Classroom Buildings must be physically and visually integrated with other campus buildings, with proximity to all other facilities.

Provide a room for IEP Meetings (10-12), Health Office, and facilities for DIS: speech therapist, psychologist, etc.

Buildings should have a minimum of three classrooms to enable appropriate mixing of students.

## **2.12 OTHER CLASSROOM TYPES**

Refer to the Facilities Program and additional criteria and information specific to other classroom types, such as visual and performing arts, technology labs, business or industrial arts

## **2.13 FOOD SERVICE AREAS**

All aspects of the food services areas shall be in accordance with local health department requirements.

### **2.13.1 Location**

Plan the food service areas not only for functional efficiency, but also for economical sharing of services such as power, water, floor sinks and drains.

Provide convenient access for service and delivery vehicles, separated from student areas.

### **2.13.2 Typical Spaces and Functional Needs, General**

Following criteria are for general planning purposes. For additional requirements, see the “Facilities Program” and consult with District representatives for school-specific criteria.

Examples of present District practice for kitchens are:

- ∞ Elementary Schools: Anton ES
- ∞ Middle Schools: Chavez MS
- ∞ High Schools: Arroyo Valley HS

Dining area shall be in the Multipurpose Room unless a separate Cafeteria is called for in the “Facilities Program.” See requirements for “Cafeteria” below.

Space for a cafeteria/serving line to accommodate the flow of traffic for each lunch period

Door widths to accommodate large equipment, including an exterior service door minimum size of 4'-0”w by 7'-0”h.

Insect screens for operable exterior windows.

Roll-up counter doors at serving windows, both interior and exterior. Automatic smoke activation at interior serving windows. (Cookson or equivalent.)

Stainless steel sinks and work surfaces, with adequate pitch to work surfaces and sink bottoms to ensure drainage.

Stainless steel counter tops for all serving stations.

Dishwashers, a dish shelf on dining room side aligned with soiled dish counter in kitchen.

Range hood with filters for combination supply and exhaust air system.

Dry chemical fire extinguishing system integral with range hood.

Show movable tables and benches (N.I.C.).

### **2.13.3 Serving Area**

Provide one large interior serving window (within the Multipurpose Room or Cafeteria) for elementary schools.

Provide exterior serving windows as required for a specific school (padlock inside).  
Applicable to secondary schools.

Provide floor electrical and data outlets for cashier booth or charger cart at ends of serving area.

For secondary schools provide:

- ∞ Two (minimum) cash stations for Serving Area, with electric and data outlets in floor.
- ∞ Two (2) locations for milk coolers.
- ∞ Points of Sale with cover/shelter, electrical and data outlets.
- ∞ Barbeque area with gas and electrical outlet and shelter
- ∞ Avoid cross traffic.

Door leading into serving area from kitchen to be 4'-0" wide by 7'-0" high minimum to accommodate cart's; salad bar, milk cooler, etc

### **2.13.4 Kitchen Areas**

Areas of Kitchen spaces are as follows, unless "Facilities Program" shows different requirements. (See the facilities at Anton ES as an example.)

- ∞ Kitchen area 800 sf.
- ∞ Dry Storage area 185 sf with shelving and cart access.
- ∞ Walk-in refrigerator 210 sf
- ∞ Office (2 desks, file space)
- ∞ Changing room w/lockers (120 sf
- ∞ Toilet room with hot water 70 sf
- ∞ Custodial closet adjacent to kitchen with floor hopper sink and hot water 40 sf

### **2.13.5 Kitchen Requirements**

Kitchen hood should be Type II hood – Ansul -- over convection oven.

Dishwasher including adequate electrical power

Grease interceptors 750 gal min.

Cleanout must be outside, accessible

Trash and trash-can cleaning area close to back door)

Provide hose bib and dual-function drain at trash area (see Volume 2, Technical Standards also

### **2.13.6 Finishes**

Quarry tile floors

Hard gypsum-board ceilings

Paint must be “light” in color

### **2.13.7 Delivery Area**

Food delivery entrance into kitchen close to the dry storage area

Food delivery door 4'-0" wide by 7'-0" high.

Provide doorbell at service entry door with alarm in office and work area for deliveries when door is locked.

### **2.13.8 Equipment**

Technical specifications for food-service equipment, including equipment lists, for Elementary, Middle, and High Schools will be provided by the District, based on existing operating schools in the District. (Jim Cunningham is the District source.)

## **2.14 CAFETERIA**

All aspects of the food services cafeteria area shall be in accordance with local health department requirements.

### **2.14.1 Typical Spaces and Functional Needs**

Ample area for the cafeteria waiting line, oriented to provide a smooth traffic flow.

Provide additional cash stations as necessary for a specific school.

Covered rain and sun protection at exterior waiting line and food serving area.

Covered access to Lunch Shelter.

Serving windows at the appropriate height for grade levels served.

Show space for trash and recycling receptacles in designated areas throughout the dining areas.

Adjacent storage for cleaning supplies.

Provide hose bibs.

### **2.14.2 Location**

Adjacent to playground with student toilet rooms easily accessible.

## **2.15 LUNCH SHELTER**

### **2.15.1 Typical Spaces and Functional Needs**

Roof structure providing shelter from rain and sun, designed to prevent birds from perching in and around the lunch shelter.

Concrete floor slab sloped to adequate floor drains so that all food products drain to sanitary sewer system.

Conveniently located drinking fountain with multiple bubblers and hose bib.

Lighting and speaker system.

### **2.15.2 Location**

Immediately adjacent to cafeteria, playground, and outdoor eating areas.

### **2.15.3 Outdoor Eating Areas**

Outdoor eating areas are intended to supplement cafeterias and lunch shelters.

Consider ways to reduce heat reflection and glare, and provide shade.

Do not provide structures or plants that encourage birds.

## **2.16 TOILET ROOMS AND DRINKING FOUNTAINS**

### **2.16.1 Typical Spaces and Functional Needs**

Toilet stalls shall be sufficient in number to accommodate the maximum planned enrollment, staff and visitors, and located on campus for both convenience and supervision. The California Plumbing Code provides minimum requirements.

For additional requirements for student toilets, see ADM Vol 2, Sections on “Toilet Accessories” and “Plumbing.”

Toilets must be designed and equipped to comply with all Title 24 Accessibility Requirements, including access and usability for all fixtures, mirrors, and accessories. Make sure accessible stalls are wide enough to accommodate District standard paper dispensers.

In student toilet rooms (except kindergarten and early education centers), provide electric hand dryers in lieu of paper-towel dispensers and waste receptacles. Locate hand dryers along exit path from room.

For other toilet rooms, surface-mounted paper towel dispensers are standardized throughout the District. Provide space for freestanding trash containers. See ADM Vol. 2, “Toilet Accessories.”

Mirrors in student toilet rooms: Highly polished stainless steel – not glass.

Provide floor drains in all toilet rooms.

### **2.16.2 Location**

Provide separate toilet rooms for students and faculty. Student toilet rooms may be used by the public for public events.

Provide toilet rooms adjacent to Special Education classrooms.

Locate toilet rooms and at least one drinking fountain on each floor as a minimum.

Distribute staff toilet rooms to locations proximate to their workstations, with maximum walking distance for any employee of 200 feet or less.

Locate toilet rooms and drinking fountains appropriately to serve such areas as multi-purpose and dining areas, media center, auditoria, lunch shelters, and athletic facilities and playfields. Provide for them to be fully accessible to students and staff during the day, and to the public after school and for special events without violating school security. Size toilet rooms to handle the anticipated capacity of each such facility area.

Entries to toilet rooms shall be only from public spaces, corridors, lobbies, or vestibules, and not through other rooms or functional spaces. All restroom entries shall have doors and screen walls or vestibules to prevent visibility of interior areas from the exterior when doors are open.

Restroom entries shall be visibly prominent for ease of supervision.

Provide at least one exterior-access staff toilet room (unisex acceptable).

Toilet rooms having direct access from the exterior shall have entries that are visible from the playground and easily supervised.

Locate drinking fountains as follows:

- ∞ Adjacent to all student toilet room entries, both interior and exterior.
- ∞ Interior, as well as exterior, adjacent to each Gymnasium.
- ∞ Adjacent to exterior play areas, including courts, play yards, and athletic fields.
- ∞ Adjacent to lunch shelters and outdoor eating areas where students have their lunch or breaks.
- ∞ Near other public areas where students will congregate.

Drinking fountains in corridors or along busy sidewalks shall be located in alcoves at least 15" deep, surfaced with water-resistant material. Provide water-resistant and slip-resistant flooring in alcove that extends 3 feet minimum into the passageway.

### 2.16.3 Fixture Requirements

Type of Occupancy	Water Closets (Fixtures per Person)		Urinals	Lavatories
	Male	Female		
Kindergarten & Childcare	1 : 1-20 2 : 21-50 Over 50, add 1 fixture for each add'l 50 persons.	1 : 1-20 2 : 21-50 Over 50, add 1 fixture for each add'l 50 persons.		1 : 1-25 2 : 26-50 Over 50, add 1 fixture for each add'l 50 persons.
Elementary Schools	1 : 30	1 : 25	1 : 75	1 : 35
Secondary Schools	1 : 40	1 : 30	1 : 35	1 : 40
Staff and Visitor Use – All Schools	1 : 1-15 2 : 16-35 3 : 36-55 Over 55, add 1 fixture for each add'l 40 persons.	1 : 1-15 2 : 16-35 3 : 36-55 Over 55, add 1 fixture for each add'l 40 persons.	1 : 50	1 : 40
<p>The total number of water closets for females shall be at least equal to the total number of water closets and urinals required for males in each location. Where the above ratios do not match this requirement, increase the number of fixtures for females to achieve equity.</p> <p>Provide one drinking fountain per each 150 occupants, with a minimum of one per floor.</p>				

### 2.16.4 Occupancy Load for Fixture Requirements

Type of Occupancy	Type of Space	Person/Space
Students, Elem. School	Classrooms, incl. Kindergarten, Special Day, Set-Aside (Use for total school fixture count)	25
Students, Second.School	Same	30
Staff, Visitors (Adult)	Same	2
Special Locations	Auditorium, MultiPurpose, Dining, Athletic Facilities (for local toilet room fixture count within school total)	Exiting Load (Approx)
<p>Occupancy assumes 50% male and 50% female. When actual ratios differ (e.g., for elementary school teachers), verify ratio and adjust fixture count to achieve equity.</p>		

## 2.17 LOCKERS

Construction shall be sheet steel, with vent openings, factory applied enamel or powder coat finish. Sides, top, & back–24 ga.; Doors–16 ga.

Provide built-in combination locks with options for multiple combinations and operable with a master key.

**Manufacturer:** [Penco](#) or [Vanguards](#).

### 2.17.1 Student Book Lockers

When student book lockers are required by the “Facilities Program” in secondary schools, provide one book locker for each student enrolled, with enrollment count based on 32 students per classroom

Locate lockers in locker recesses in corridors, covered walks, or in special covered kiosks within secured areas and in highly visible places.

Capacity: 4-high, 12” wide by 15” deep by 18” high, with a sloped top, bolted to wall and floor and skirted.

### 2.17.2 Physical Education Lockers

In secondary schools provide student lockers for the percent of enrolled students listed below, with enrollment based on 32 students per classroom – 50% in boys locker room and 50% in girls.

- ∞ Middle Schools: 100% of enrollment
- ∞ High Schools: 60% of enrollment

Verify the PE and athletic program planned for each project to confirm these allotments.

Capacity:

- ∞ Student Lockers: 3-high, 12”w x 15”d x 24”h
- ∞ Team Lockers: 2-high, 18”w x 18”d x 36”h
- ∞ Faculty Lockers: 1-high, 15”w x 21”d x 72”h

### 2.17.3 Team Lockers

In high schools, provide two team locker areas with additional team lockers in each of the boys and girls’ locker rooms.

- ∞ Team Room: 100 team lockers
- ∞ Team Secure Caged Area: 60 team lockers

Provide faculty lockers for PE instructors and coaches in a separate dressing and shower room.

## 2.18 CORRIDORS AND STAIRS

### 2.18.1 Typical Spaces and Functional Needs

Corridors and stairways shall be designed to accommodate peak student traffic flows between classes, but with a minimum width face-to-face of wall finishes or closed locker doors of 12 feet in secondary schools and 9 feet in elementary schools.

Corridor walls shall have durable finishes – minimum finish construction of “abuse-resistant” gypsum wallboard (not required behind or above lockers).

Exterior Corridors shall be provided between buildings for Elementary Schools, and for Secondary School core areas.

## 2.19 BUILDING SERVICES SUPPORT

### 2.19.1 Typical Spaces and Functional Needs

Building Services Support consists of Custodial Closets located throughout the campus, plus a Central Support Unit that includes Central Receiving and Storage Rooms, Loading Dock, Gardening and Exterior Maintenance Equipment Room, and Enclosed Trash and Dumpster Area.

### 2.19.2 Custodial Rooms

Provide lockable Custodial Rooms at strategic locations throughout the campus, including:

- ∞ One per wing per floor for each building.
- ∞ Boys and Girls Locker Rooms at Gyms
- ∞ Multi-Purpose Room/Auditorium
- ∞ Kitchen/Cafeteria
- ∞ Other locations to assure adequate custodial coverage of building areas (Administration, Library, etc.)

Custodial Rooms must be lockable, with access only from corridors or other public spaces (e.g., not from toilet rooms) and must include:

- ∞ Hopper sink, floor mounted, with hot and cold water and standard garden hose threads on the water spigot., stainless steel wall splash
- ∞ Tool rack
- ∞ Adjustable **metal storage shelves on one full wall (show shelving as “N.I.C.”)**
- ∞ Secure storage cabinet for supplies and chemicals
- ∞ Space for service carts
- ∞ Electrical GFCI receptacles (3) on a dedicated 20-amp circuit
- ∞ Light fixture with guard to prevent lamp breakage
- ∞ Outswinging door
- ∞ Exhaust air to outside, not recirculated

See “Facilities Program” for space and equipment criteria. Typical size is 70 sf.

Custodial facilities are not to be combined with other uses (electrical/phone/mechanical equipment, water heaters, access ladders, other building services).

### 2.19.3 Central Receiving and Storage Unit

Central Receiving and Storage Unit provides the centralized facilities to support the entire custodial function for the school.

Locate the Central Receiving and Storage Unit away from the general classroom and food-service areas, to avoid material and staff congestion, reduce mis-directed deliveries, and keep custodial chemicals and odors well separated from students and food preparation. Cleaning chemicals may be mixed or repackaged in the Receiving Room, so it must have non-re-circulated ventilation. Provide a hopper sink in this room.

Provide toilet facilities and lockers (two-high) for custodial staff.

Provide an emergency eyewash and a hopper sink in all Central Receiving and Storage Units.

#### Elementary Schools:

- ∞ In elementary schools, custodial Receiving and Storage functions may be combined into one space, minimum of 300 sf. (See “Facilities Program” for space criteria for each school.)
- ∞ It must accommodate one desk with computer, three chairs, file cabinet, wall and base storage cabinet, and metal shelving.

#### Secondary Schools:

- ∞ In secondary schools, provide separate Receiving and Storage Rooms. Receiving must have space for receiving material deliveries, inspecting and breaking down shipments.
- ∞ It must also accommodate two desks with computer, six chairs, three file cabinets, wall and base storage cabinets, and shelving.
- ∞ Storage Room must have adjustable metal shelving and a lockable metal cabinet N.I.C.) for custodial supplies. (See “Facilities Program” for space criteria for each school.)

Provide secured facilities for flammable liquid storage. In secondary schools where gasoline drums are stored, this must be a separate building area with required fire-resistive separation and with direct truck access for refilling drums

Provide 6’ wide door openings into both rooms, with pairs of 3’ wide doors.

Provide access from a street entrance, separate from student areas, with a loading dock at secondary schools, and adequate yard space for deliveries and truck turnaround.

Provide an outside area adjacent to Receiving for the placement of 8’ x 40’ containers for future storage:

- ∞ One for elementary schools (about 500 square feet), and
- ∞ Two for secondary schools (about 800 square feet).

#### **2.19.4 Gardening and Exterior Maintenance Equipment Room**

Gardener's Storage shall include workspace, equipment storage area, and storage equipment (shelving, cabinets, and racks).

Exterior Equipment Storage space shall be adequate for equipment (mowers, sweepers, vacuums, etc.) with an overhead rolling door. Verify equipment requirements for each school.

Locate adjacent to or near the Central Receiving and Storage Unit where feasible, but it must be easily accessible to areas to be maintained.

#### **2.19.5 Trash and Dumpster Enclosed Areas**

Provide trash enclosures with direct truck access to all containers. Area shall be secured by walls and lockable gate that screen the area from public view, with reinforced concrete slab properly sloped to drains, hose bibb, dual-mode drainage, electrical outlet and exterior lighting. (See also ADM Vol. 2.)

Locate remotely from student activities and food service areas, accessible to street for truck pick up, convenient to trash-generating activities and adjacent to freight elevator in a multistory facility.

In some schools, a trash compactor may be required. Verify type, size, and utility connections for the equipment and container.

### **2.20 BUILDING SECURITY**

The following security measures must be addressed in the initial design concepts, and shall be integrated with the overall building design: See also other sections of the ADM, Vol. 1 and 2.

#### **2.20.1 Site-Related Security and Visual Surveillance**

Fences shall be decorative wrought iron vertical bars (especially at front entrance) or chain link fence.

Avoid easy access to roofs from fences, trash bins, trash enclosure walls, air conditioning units, bike racks, storage benches, low retaining walls, etc.

Landscape: Clear lines of visibility of from interior and exterior: avoid hiding spaces, no large bushes shall be planted close to the buildings.

Lighting required for visual street surveillance

#### **2.20.2 Windows**

All windows accessible from the exterior shall have security measures, to prevent breaking and entering. Accessible windows include any windows with:

- ∞ Bottom sills less than ten feet above grade.
- ∞ Bottom sills less than ten feet above balconies, stairs, or other circulation means.
- ∞ Bottom sills less than ten feet above roofs that have any portion less than ten feet above grade, adjacent walls, or other access points.

Do not locate windows within 48 inches of exterior doors.

### **2.20.3 Doors**

Do not locate exterior doors in recesses or alcoves that would provide cover for an intruder attempting to enter the door.

Provide exterior security lighting that illuminates all exterior doors.

### **2.20.4 Parking**

Separate parking lot entrance and exit.

Staff Parking secured and enclosed.

Separate bus traffic entrance and exit.

Separate student drop-off and pick-up entrance and exit.

### **2.20.5 Visitor Controls**

School frontage or main entrance shall have clear visibility by the Administration Office

Provide for one point of entry for visitors' access when facility is locked down, with visual surveillance from the Administration Office.

The following spaces shall be remote and secured away from the main entrance:

- ∞ Vice Principal's Office
- ∞ Nurse's Office
- ∞ Counselors' Offices

### **2.20.6 Alarms**

Provide a security alarm system for intrusion detection and door control. (See ADM Vol. 2, "Electrical Communications.")

Key pads for access control shall be installed strategically in places where students have limited access.

Sensors shall be installed in areas high and out of students reach

Security alarms zone in gyms and sport facilities.

Exit door to exterior of campus perimeter shall have an alarm.

### **2.20.7 Security Office**

In secondary schools, provide a Security Office for security personnel. (Elementary schools do not have security personnel assigned to the campus.)

Location: Centralized with easy access to entire complex, direct access to Administrative Office.

Size: 100 sf minimum, larger for high schools or schools with more security personnel (see Facility Program).

Other requirements:

- ∞ Reception desk for one with telecommunication outlets
- ∞ Video Surveillance station

- ∞ Two visitor’s chairs minimum – six in high schools.
- ∞ Toilet Room (high schools only)
- ∞ Separate sink/wash area
- ∞ Wall lockers three minimum, ten in high schools
- ∞ Bicycle storage for two bikes minimum, 6 in high schools
- ∞ Refrigerator
- ∞ Microwave oven
- ∞ Alarm Key Pad

### **3 SCHOOL BUILDING PROGRAMMING DATA**

The following information supplements the more general criteria provided above for the special needs and typical Facilities Program elements for Elementary Schools and for Secondary Schools.

#### **3.1 ELEMENTARY SCHOOLS**

##### **3.1.1 Capacity**

Typical student capacity for a new elementary school historically has been 1,300, but this can vary significantly. Verify staff requirements with the “Facilities Program.”

##### **3.1.2 Administration**

Typical administrative staff space requirements.

<b>Space Requirement</b>	<b>Type</b>	<b>Nbr.</b>
Principal	Private	1
Principal Secretary (adjoining Principal’s Office)	Open	1
Vice Principal	Private	1
Secretaries Workroom	Private	
Attendance Verifier	Open	1
Nurse’s Aid	Private	1
Small Conference Room (next to Principal’s Office)		10 - 12
School Counselors (with Storage for materials)	Private	1
Shared room for Psychologist / Speech Therapist	Private	1
Staff Lounge/Work Room (with teachers mail boxes, windows)		
ASB Secretary	Private	1
Community Liaison Meeting / Workroom		6 - 8
Clerks (adjacent to work room)	Open	TBD

Toilets (Men’s and Women’s)

### **3.2 SECONDARY SCHOOLS**

#### **3.2.1 Capacity**

Typical student capacity for a new middle school historically has been 1,600 to 1,800, and for a new high school 2,400, but these figures can vary significantly. Verify staff requirements with the “Facilities Program.”

Typical student capacity but this also can vary significantly.

#### **3.2.2 Administration**

Typical administrative staff space requirements.

<b>Space Requirement</b>	<b>Type</b>	<b>Nbr.</b>
Principal	Private	1
Principal Secretary (adjoining Principal’s Office)	Open	1
Vice Principal	Private	2-4
Security Office	Private	1
Secretaries Workroom (see Arroyo Valley HS plan)	Private	
Attendance Officer	Open	1
Nurse’s Aid	Private	1
Small Conference Room (next to Principal’s Office)	Private	10 - 12
School Counselors (with storage for materials)	Private	6 - 8
Shared room for Psychologist / Speech Therapist	Private	1
Staff Lounge/Work Room (with teachers mail boxes, windows)		1
ASB Secretary	Private	1
Community Liaison (with lockable storage)		6 - 8
Clerks (adjacent to work room – number varies with school))	Open	TBD

Toilets (Men’s and Women’s)

#### **3.2.3 Computer Labs**

Provide two typical classrooms (plus additional computer outlets) to be dedicated for computer labs: one each for Math & English

40 computer stations plus one at teacher station

Lockable storage for software equipment, 6’ height

Shared Workroom

### **3.2.4 College Career Center**

Provide one typical classroom to be dedicated as a career center.

Private office required

### **3.2.5 Career Technical Classroom**

Provide one typical classroom (plus additional computer outlets) to be dedicated for a career technical classroom

40 computer stations plus one at teacher station

Lockable storage, 6' height

### **3.2.6 Business Technology**

Provide one typical classroom (plus additional computer outlets) to be dedicated for a business technology classroom

40 computer stations plus one at teacher station

Lockable storage, 6' height

### **3.2.7 Science Laboratories**

Provide science laboratories (see requirements above) in accordance with the “Facilities Program.”

### **3.2.8 Visual Arts and Three Dimensional Art**

Provide multi-discipline arts classrooms in accordance with the Facilities Program.

Include separate Preparation and Storage Room for each two classrooms.

Typical classroom size: 1,000+ sf.

Provide exhaust hood.

Provide two clean-up sinks with mud traps

Include space and other provisions for:

- ∞ Bulk Clay storage
- ∞ Completed or in-process artwork storage
- ∞ Large partition or panel storage
- ∞ Large paper (flat drawers) storage
- ∞ Potter's Wheel storage
- ∞ Easel storage
- ∞ Outside covered storage, where accessible

If conventional Photographic Arts are included in the Instructional and Facilities Programs, include a dark room with utilities for film development and for photo enlargers.

### 3.2.9 Instrumental and Choral Music

Provide multi-discipline musical arts classrooms in accordance with the Facilities Program.

Typically, this would include an instrumental music classroom, a choral music classroom, and instrument storage room, a band uniform storage room, a music storage room, small practice rooms (4), and a teacher's office with space for two desks.

Typical classroom size: 1,000+ sf.

Rooms shall have flat (not stepped) floors, and enough sound absorption material (walls and ceilings) to keep unoccupied Reverberation Time (RT) within reasonable limits (about 0.8 seconds). Walls and ceiling/floor construction shall provide a Sound Transmission Class (STC) rating of 0.50 or better.

Risers, musical instrument storage cabinets and racks, and other storage units, shall be movable manufactured items, included in the construction contract.

**Manufacturer:** Wenger

### 3.2.10 Dance Studios

Provide dance studios in accordance with the Facilities Program.

Typical studio size: 1,000+ sf.

Typically, they would include.

- ∞ Two studios
- ∞ Teacher's office with casework for music media storage
- ∞ Changing room with clothes lockers adequate for classes (unless located adjacent to physical education locker rooms)
- ∞ Special floors (wood or rubberized)
- ∞ Autonomous sound system with multiple speakers ("surround sound") and casework (lockable) to hold multi-media audio players
- ∞ Mirrors on one wall
- ∞ Exercise bars along walls

### 3.2.11 Performing Arts and Multipurpose Rooms

See general requirements for Multipurpose Rooms above. For High Schools provide also:

- ∞ Classrooms (2) for general instruction and for use as a "green room."
- ∞ Set preparation area (adjacent to stage)
- ∞ Storage for stage sets (adjacent to stage)
- ∞ Dressing rooms with toilets (men and women)
- ∞ Ticket booth
- ∞ Chair storage

∞ Stage access from exterior (typically with loading dock)

### **3.2.12 Industrial Arts and Technology**

Specific school requirements to be developed in the Facilities Programming stage.

### **3.2.13 Education Support Services**

Provide a classroom that is the equivalent of a computer lab, for course recovery and reading lab use.

### **3.2.14 Library**

See Library at Arroyo Valley High School as example.

### **3.2.15 Physical Education**

Provide physical education facilities, indoor and outdoor, in accordance with the “Facilities Program” and specific requirements for each school. Typical requirements include:

#### **Gymnasium:**

- ∞ General Classroom
- ∞ Main court plus 3 practice cross-courts
- ∞ Spectator bleachers on both sides of main gym court (Home and Visitor sides)
- ∞ Shower and locker rooms (female and male)
- ∞ Team Rooms off locker rooms (2)
- ∞ Weight Room
- ∞ Fitness Center
- ∞ Coaches Offices(2) with computers
- ∞ Equipment Storage Room
- ∞ Training Room with whirlpool, ice machine, floor sink, sink with hot- and cold-water mixing valve with hose attachment.
- ∞ Windows from office to dressing rooms with clear view of lockers

#### **Outside PE Area:**

- ∞ Basketball courts – Full (3 min.)
- ∞ Handball courts (6 min.)

#### **Athletic Facilities (as programmed):**

- ∞ Football field
- ∞ Running track and field events
- ∞ Baseball fields
- ∞ Softball fields
- ∞ Soccer fields



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- ∞ Tennis courts
- ∞ Bleachers and accessible Press Box
- ∞ Swimming pool

## **4 SCHOOL SITE – GENERAL CRITERIA**

### **4.1 TYPICAL SPACES AND FUNCTIONAL NEEDS**

The site design process must balance many diverse requirements including accessibility, convenient circulation, physical security, ease of supervision, community connections and image, and environmental factors like solar orientation, wind mitigation, ambient noise, and air quality. Urban context, adjacencies, aesthetics as well as the physical and geotechnical characteristics of the site must all be considered.

Playgrounds, playfields, and outdoor instructional spaces are essential to the instructional program, and must be carefully integrated into the site plan.

The circulation system, both on and off site, must safely separate pedestrians, bicycles, cars, buses and delivery vehicles while providing immediate access for emergency vehicles.

Provide separate locations for parent drop-off and pick-up, bus drop off and pick up, material deliveries and trash pick-up, and kindergarten and special education cars and busses.

Plan pedestrian circulation to reduce opportunities for short cuts over planting areas.

Give consideration to consolidating building program elements into a compact, space-conserving floor plan in order to maximize open space and enable a more energy-efficient building shell.

The reduction of storm-water runoff is an important component of sustainable design and is greatly improved by more planting and water absorption areas, including roof drain discharge into such areas.

Present all these site planning considerations and their influences, including environmental, in the Schematic Design Phase.

Skating or skateboarding is not allowed on school property. Paving and other site structures should be designed to discourage such use.

Obtain signage requirements from the District for site perimeter and other building signs and integrate them into the site design. Signs must be reviewed by the District along with the school principal or other local district staff to assure correct content.

See ADM Vol 1, “Environment and Sustainability” for additional site design criteria.

### **4.2 FUTURE EXPANSION**

Site layouts shall have the capacity for future expansion without substantial alterations to existing structures or playgrounds. Indicate future building locations on site plans.

Make provisions in utilities systems to accommodate future growth without rework of installed components.

Exits, corridors, stairs and elevators must be sized and located to accommodate capacity of future growth, particularly in multipurpose, cafeteria, gymnasium and auditorium facilities.

## **4.3 BUILDING PLACEMENT AND CIRCULATION**

### **4.3.1 Building Location**

Site layout of buildings, parking, driveways and physical education areas shall be planned to meet the instructional, security and service needs of the “Facilities Program.”

Physical relationships of classrooms, auxiliary and support areas must allow unobstructed movement of staff and students around the campus, and provide optimum patterns for pedestrians.

Place buildings to be compatible with adjacent functions (i.e., do not place the band room adjacent to the library).

Locate toilet rooms to provide easy access from playgrounds and classrooms, with exterior doors visible from playgrounds to minimize supervision requirements.

Consider location of buildings relative to parking areas and other paving to minimize solar reflectance and dust impacts on buildings.

Locate buildings in ways that improve campus security. Present site security measures as part of the Schematic Design Phase.

Minimize niches, screening and other areas of architectural interest that could obstruct supervisory line of sight.

Provide a system of covered walkways between all buildings unless a specific exception is provided by the District.

Place buildings to have favorable relationships to wind, sun, and natural light and to optimize the effects of sun light and solar loads. Provide an analysis of sun effects on energy consumption and on interior day lighting at the Schematic Design Phase.

Wherever site conditions permit, orient classroom windows to the north and south directions.

## **4.4 OUTDOOR SPACE AND FUNCTIONAL REQUIREMENTS**

### **4.4.1 Playground and Field Areas**

Provide the number, types and sizes of outdoor physical education spaces, which consist of a variety of physical education teaching stations, including hard courts, fields and apparatus areas, as provided in the Facilities Program.

Provide tetherball, 4-square, basketball, handball, volleyball, kickball, and a multi-use turf field as a minimum.

Provide storage for Elementary School Physical Education equipment – space minimum of 8' x 8', adjacent to playground area.

Plan outdoor play areas and fields to accommodate public access and joint use with other public agencies.

Provide separation between primary and upper grade playground areas.

Locate buildings (including relocatable buildings) so they do not impair observation or obstruct playfield supervision.

Minimize potential for distraction or harm to occupants of lunch shelters, outdoor classrooms and assembly areas, by physical education spaces and related activities, including balls, noise, incidents, etc.

Provide resilient protective surfacing at playground structures.

Skating or skateboarding is not allowed on school property. Paving and other site structures should be designed to discourage such use.

#### **4.4.2 Outdoor Assembly Area**

The outdoor assembly area is central to campus, preferably near cafeteria and lunch shelter. This outdoor assembly area accommodates the student body for informal gathering place, instructional and theatrical presentations, and graduation exercises, as well as outdoor dining.

Provide a central lawn area large enough to accommodate the enrollment wherever site size permits. Create compact alternatives for smaller urban sites.

Minimize walks crossing grass area.

Plan a raised stage considering solar orientation, preferably facing north, but also away from morning sun.

Slope ground toward stage for amphitheater style seating. .

#### **4.4.3 Outdoor Eating Spaces**

Outdoor eating spaces supplement cafeterias and lunch shelters. (See ADM Vol 1, Sections on Cafeteria and Lunch Shelters.)

Integrate with lunch shelter and outdoor assembly area.

#### **4.4.4 Emergency Assembly Area**

Designate an emergency assembly area on the site with a net area of six (6) square feet for each school occupant.

Edge of emergency assembly area shall not be closer than 1.5 times the height of the nearest structure, measured from the lowest grade on the side of the assembly area to the highest portion of the structure.

The area shall have a gate that discharges directly to the sidewalk. Use a single 4'-0" gate to swing in the direction of egress. Gates shall not be closer than 15'-0" from the edge of a vehicular drive gate unless separated by a perpendicular fence or wall.

Grades to and within the assembly area shall conform to accessibility requirements.

**Provide additional space for emergency supply containers (standard 20' or 40' shipping containers).**

The primary unit stored usually is emergency water supply for three days for the entire site population (students, teachers and staff). The requirement is one barrel of water for each 35 people. A 20' container will hold 30 water barrels. A 40' container will hold 60 barrels. Calculate the size and number of containers and provide flat, smooth-graded areas for the containers provided by the District.

## 4.5 LANDSCAPE

### 4.5.1 Typical Spaces and Functional Needs

Because schools represent important visual elements in the community, a well-conceived landscape design is essential – one that provides a naturally beautiful campus that enhances its neighborhood yet still is physically secure and economically maintainable. Landscape and planting standards must be adapted to the specific site, with designs scaled to fit the ecological, cultural and economic requirements of the project.

In addition to the aesthetic considerations, considerations for planting shall include provision of shade for buildings, play areas, and paved heat islands. Use trees to provide:

- ∞ Year-round shading of outdoor teaching, dining, gathering and play areas.
- ∞ Seasonal shading of buildings to reduce cooling energy requirements, while allowing winter warming of buildings in the cooler climatic areas.
- ∞ Use trees and shrubs to provide windbreaks on those sites exposed to strong winds, but without disrupting favorable summer wind patterns.

Additional considerations shall include using planting as a means of physical security, and as areas for absorption of storm water.

Identify existing trees and plant structures that should be saved, and, so far as possible, incorporate them in site planning.

Refer also to Architect Design Manual, Vol. 2, “Planting and Irrigation.”

### 4.5.2 Walks, Mowing Strips and Other Paving:

Design landscaping, turf areas, and hardscape areas to minimize the amount of edging required.

Separate lawn and other planting areas with 8-inch minimum concrete mow strips.

Provide a continuous concrete mowing strip, 8" wide, on each side of a fence, which separates two adjacent lawn areas, and for lawns next to raised planters, buildings, fences, walls or curbs.

Provide a continuous mow strip, 8" wide, for lawn or turf areas next to fences by extending concrete or asphalt paving outside fence into lawn or turf areas.

All covered and main circulation walks shall be of concrete.

Pave corners of planting areas at walk intersections.

Adjacent to buildings, provide a separating strip from planting areas that is 6"-thick concrete and not less than 24" wide, for improved pest management and to reduce water infiltration onto below-grade building walls, floor slabs and footings.

### 4.5.3 Middle and High School Physical Education Fields:

Provide turf fields for Middle and High School Physical Education Areas that may include space for football, soccer, baseball and track and field. Where programmed, these facilities may be used for interscholastic athletics as well as physical education.

Coordinate location of backstops, pitching mounds and skinned areas with sprinkler layouts.

Design grading so that surface drainage from sprinklers will not channel across skinned infield area of baseball and softball diamonds.

Pave small areas behind backstops where large mowers cannot operate efficiently. Provide mow strips if planted with turf.

#### **4.5.4 Outdoor Assembly Area:**

Provide lawn at the Outdoor Assembly Area amphitheatre area.

Plant perimeter trees for shade while maintaining interior line of sight toward stage.

Plant screening foliage behind stage as a visual backdrop.

Plant shade trees on either side of stage to cast protective shadows.

#### **4.5.5 Plants**

The District is committed to a long-term program to conserve water. Therefore, select drought-tolerant planting, with durable, long-lived plants requiring the least amount of maintenance and water.

Use low spreading shrubs on slopes. Do not use vines.

Avoid all poisonous plants and shrubs with dangerous thorns.

Allow space for normal growth of plants.

Consider pest management needs in locating plants.

Plant locations shall be no closer to buildings than:

- ∞ Mature canopy of trees: **3** feet.
- ∞ Mature canopy of shrubs: **2** feet.

Do not locate large shrubs in front of windows or school signs that would obstruct visibility. Do use lower shrubs that would inhibit access to walls and windows.

Do not locate plants close to buildings that would allow children to climb onto the roof.

Where possible, use trees and shrubs in front of graffiti-prone walls to deter taggers and reduce visibility of applied graffiti.

#### **4.5.6 Trees**

Provide for fast-growing shade trees on perimeter of elementary school playgrounds, surrounding outdoor assembly areas, in outdoor eating areas, in kindergarten play areas, and in selected areas for outdoor instruction and small group gatherings.

Provide trees to shade buildings, where other conditions permit, as follows:

On south exposure, tall deciduous trees to provide shade for high summer sun and warming from low winter sun.

On east exposure, deciduous trees for morning shading in summer and warming in winter; on west exposure, evergreen trees for year-round shading.

Provide trees to shade parking and other large paved areas to reduce the heat-island effect.

Keep trees out of drainage flow lines and 20'-0" feet away from vitrified clay sewers.

Space trees to have a maximum of 5-feet overlap of full canopies.

Tree plantings at all sites will be held to the minimum amount required to provide shade and aesthetic value.

## **4.6 SITE SECURITY**

### **4.6.1 Gates and Fencing**

Provide full perimeter fence or wall (8' 0" height) enclosure for school campus.

At adjoining residential areas, provide CMU walls, unless alternative is approved by District.

Provide full perimeter fence enclosure for all parking areas.

Provide fence and gate design special gates for main entry and frontage of school to complement architectural design.

See also ADM, Vol. 2, "Civil Engineering Section."

### **4.6.2 Utilities Protection**

Wherever pipe and valve assemblies are exposed above grade, provide a secure locked enclosure to protect them from unauthorized use or vandalism. These may be walls, fences, or manufactured enclosures that are made for this purpose.

### **4.6.3 Site Lighting**

Provide exterior lighting to enhance site security, including area lighting, walkway lights, and building perimeter illumination. Also for:

- ∞ Visual street surveillance.
- ∞ Bus drop-off and pick-up.

Prevent direct beam projection off site or glare off buildings into adjoining residential areas or other occupancies.

## **4.7 BUS AND VEHICULAR ACCESS AND PARKING**

### **4.7.1 Vehicular Access and Pedestrian Safety General Requirements**

In general, orient the primary site and building entrance toward the street with the least traffic volume and activity. To optimize the traffic flow to and from the school site and to minimize traffic hazards to pedestrians, meet with representatives of the local traffic early in the design process to review the schematic site design.

Ensure adequate and safe access for students, staff and visitors, walking, entering and circulating on the campus. Vehicle traffic patterns shall not interfere with major pedestrian traffic patterns. Foot traffic shall not pass through entrance driveways. Crosswalks must be clearly marked.

Provide safe and clearly indicated student drop-off and pick-up provisions by car or bus.

Provide on-site driveways for parent and bus drop-off and pick-up wherever space permits.

Provide the parent's student drop-off area adjacent to the main entry gate for a central point of control.

Provide adequate curb length for expected drop-off and pick-up traffic, with a minimum of 160 feet for Elementary Schools and 200 feet for Secondary Schools. Use curb cuts and inset drop-off lanes when site space permits.

Separate parent's student drop-off and bus loading areas to minimize traffic conflicts and to allow more effective supervision of waiting areas.

Locate bus drop-off space at a separate secondary entry or wherever possible. Provide adequate safe sand covered waiting space for students.

Provide adequate curb length for expected bus parking for drop-off and pick-up, with a minimum of 100 feet for Elementary Schools and 200 feet for Secondary Schools.

Locate small bus drop-off areas for special education students in the area of the SDE classrooms, with adequate space to accommodate all the busses at peak time, with flat surface for loading zone of wheel chairs.

Provide curb cuts for accessibility at both bus and automobile loading zones.

Provide appropriate "Passenger Loading" signs at all passenger loading zones.

Delivery and Utility Areas:

- ∞ Provide unobstructed (attention to overhangs) service truck access to all buildings and fields.
- ∞ Provide vehicular access that does not jeopardize staff and student safety. Separate access from bus and parent loading areas and parking areas.
- ∞ Delivery and utility vehicles shall have direct access from the street without crossing playgrounds or fields.

#### **4.7.2 Parking General Requirements**

Seek creative parking solutions to maximize usable land for educational and recreational functions.

Parking layouts shall conform to good design practices. San Bernardino City requirements shall be used as minimum criteria.

Avoid placing student parking in remote areas where there is little supervision. In general, locate student parking near the classrooms.

Parent's student drop-off and pick-up, bus loading areas, and parking areas shall be separated to allow students to enter and exit the school grounds safely.

Driveways shall not be located in a bus-loading area or a student drop-off or pick-up area.

Parking stalls shall not be located, or parking patterns designed, so that a vehicle must back into a public street, a bus-loading area, or a student drop-off or pick-up area.

Provide a separate entrance and exit to each parking lot.

Avoid herringbone-pattern parking layouts and tandem parking. (Tandem parking may be used in special circumstances with District permission.)

Requirements for accessible parking shall conform to Title 24.

When one stall for handicap parking is provided the space shall be 14'-0" wide, striped to provide 9'-0" wide parking and 5'-0" wide loading.

When more than one stall for handicap parking is provided, 2 parking spaces can be provided within a 24'-0" wide area lined to provide a 9'-0" wide parking space on each side and a 6'-0" wide loading area between.

Provide a wheel stop for each parking stall wherever stalls are head-on to fencing, wall, building, planting area or other obstructions.

Wheel stops shall be reinforced pre-cast concrete 6'-0" long.

Locate wheel stops with a minimum setback of 3'-0" from fences, walls, and buildings.

Straight-line arrangement of wheel stops is preferred.

Provide speed bumps in parking areas only in long driveways where it is necessary to protect pedestrians crossing the aisles.

Isolate trash pickup from student activities.

Verify all requirements with District in the Design Development Phase.

#### **4.7.3 Parking Areas and Loading Zones**

Main entrance:

- ∞ Designated entrance and exit; pick up/drop off separate.
- ∞ Bus Loading Zone Visibility from the Administration office
- ∞ Enclosed access to direct students into the facility
- ∞ Elementary Schools need a shelter or canopy system

Bus loading:

- ∞ With-in the property and not on the street wherever possible.
- ∞ Exterior lighting in bus loading zones
- ∞ Bus turn radius for full buses to exit left
- ∞ Elementary Schools need space for seven full-size buses (7) parked

Separate Kindergarten parent pick-up / drop-off and parking

SDC loading zone:

- ∞ Provide space for all bus loading zone on the property with enough space for wheel chairs and assisted help

- ∞ Verify Special Education Loading (number and size of buses for typical High, Middle and Elementary Schools) T
- ∞ SDC bus loading zone needs to be flat to accommodate the platform for loading of wheelchairs, etc.

Parent/Vehicle Loading zone

Visitor Parking

Staff Parking

Deliveries, trash loading zone

#### **4.7.4 Parking Space Requirements**

Provide staff /student / visitor parking spaces based on the following ratios to programmed classrooms.

- ∞ Elementary School **2.25** per Classroom
- ∞ Middle School Classroom **2.25** per Classroom
- ∞ High School Classroom **2.50** per Classroom

Locate visitor parking spaces adjacent to the Administration Building.

Provide Handicapped Accessible Parking in the following ratios:

- ∞ 1-25 Spaces: 1 Accessible Space
- ∞ 26-50 Spaces: 2 Accessible Spaces
- ∞ 51-75 Spaces: 3 Accessible Spaces
- ∞ 76-100 Spaces: 4 Accessible Spaces
- ∞ 101-150 Spaces: 5 Accessible Spaces
- ∞ 151-200 Spaces: 6 Accessible Spaces
- ∞ 201-300 Spaces: 7 Accessible Spaces
- ∞ 301-400 Spaces: 8 Accessible Spaces
- ∞ 401-500 Spaces: 9 Accessible Spaces
- ∞ 501-1000 Spaces: 2% of total
- ∞ 1001 or More: 20 plus 1 for each 100 or fraction over 1001

#### **4.7.5 Parking Security**

Provide adequate and safe night lighting throughout the site, especially to and from parking and loading areas. (see ADM Vol 1 – Section “Site Security”). Lighting is automatically controlled by the school Lighting Control System..

Secure all surface parking areas with a fence or wall.

## **5 ENVIRONMENT & SUSTAINABILITY**

### **5.1 COLLABORATIVE FOR HIGH PERFORMANCE SCHOOLS (CHPS)**

In general, the District intends for new schools to be designed to achieve a CHPS High Performance School” rating (using the CHPS Scorecard). On a project-specific basis, the District may elect to increase the utilization of “CHPS Best Practices” to improve “green” performance and to obtain incentive funding for high-performance schools.

As a general requirement, each school is to achieve, as a minimum, the “CHPS School” rating of **32 points** as defined in the CHPS Best Practices Manual, Volume III, “Criteria,” 2006 Edition” (available at [www.chps.net](http://www.chps.net)). Architects shall submit a CHPS Scorecard as follows:

- ∞ Schematic Design: Forecast of CHPS points anticipated to be achievable.
- ∞ Design Development: Detailed account of CHPS points achieved in the school design.
- ∞ Final Design (100%): Final confirmation of CHPS points achieved with certification by a principal of the firm.

Use the template CHPS Scorecard included as an addendum to the ADM. It identifies those credits that will be automatically obtained based on the District’s policies and resolutions, and on specific requirements of the ADM.

## 5.2 LIGHTING AND DAY LIGHTING

Daylighting is an important component of the classroom environment, with studies showing that both natural lighting and views to the outside improve student performance. Adequate day lighting, integrated with electric lighting and controls, is required in all classrooms. The following options for day lighting may be used.

- ∞ Daylighting designed and calculated in accordance with the criteria and examples included in the “CHPS Best Practices Manual, Volume III, Criteria.” This approach requires computer analysis and point-by-point light level calculations. However, it will also result in smaller and more economical window sizes.
- ∞ Provide a daylight factor of 2% in 75% of all classrooms,

In either case, achieve the CHPS IEQ Credit 1: “Daylighting in Classrooms.”

Both daylighting and electric lighting standards and control requirements are described in ADM Vol 2, “Electrical Power and Lighting.”

## 5.3 ENERGY PERFORMANCE

By integrating the design of all building components to increase energy efficiency, the source energy requirement of a proposed new school must be below (that is, “better than”) that required by the California energy efficiency standards (Title 24) by 10% as a CHPS Prerequisite for being a “CHPS School.” Further, to obtain the CHPS rating, at least 2 credits must be obtained. 15% to 35% (CHPS Criteria, Energy Credit 1: “Superior Energy Performance”).

It is the intent of the District to maximize the “Superior Energy Performance” of schools, within feasible economic limits. Every new school shall perform at **20% or better** (5 credit points) than Title 24, unless compelling justification is provided to the District for a lower efficiency.

Schools have been designed in Southern California that achieve significantly better energy performance than this, while still using reasonably priced unitary HVAC systems and monolithic glazing. Credit points of 7 to 10 should be readily achievable.

To verify the credit, energy performance must be verified using an alternative, whole-building” performance modeling approach. An initial simulation run must be made during the Schematic Design Phase, to permit further envelope and orientation variations to be considered.

Each school shall be submitted by the Architect to the appropriate utility company for the “Savings by Design” program using the “Whole Building Approach.” The Architect shall contact the utility company (with information and copies to the District) early in the Schematic Design phase to develop a collaborative approach and to define procedures, criteria and submittal requirements.

## **5.4 ACOUSTICS**

Analyze the acoustical environment of the site (such as traffic) and the characteristics of planned building components (such as HVAC), and design to achieve a classroom acoustical performance of 45 dBA background noise level (unoccupied) or better and a reverberation time (RT) of 0.6 seconds maximum (see CHPS Criteria, IEQ Prerequisite and Credit 5: Improved Acoustical Performance).

Present acoustics considerations of site planning in the Schematic Design Phase.

While the desired performance target of 35 dBA, or even 40 dBA, may not be practicably achievable, the Architect shall explore innovative design options for obtaining classroom speech intelligibility goals with wall and ceiling reflective surfaces, strategically placed absorptive surfaces, sound-isolation measures for walls and floors, and voice-reinforcement (“sound enhancement”) systems.

For roof-top air-conditioning units, mounting and sound-isolating measures described in the HVAC section of the ADM must be followed to achieve the 45 dBA or better level. Provide architectural details fully defining the construction requirements.

## **5.5 COMMISSIONING**

The District intends that all new buildings be commissioned, at least to the level of “Fundamental Building Systems Testing and Training,” as described in the CHPS Best Practices Manual, Vol. III, “Criteria,” as a Prerequisite.

The Architect shall prepare the “Abbreviated Commissioning” process documents as defined by the EDR Cx Assistant database tool. Review with the District whether the school shall have “Enhanced Commissioning” (either “Standard” or “Comprehensive” as defined in the “Criteria” volume), and prepare the necessary documents.

The Architect must include in the contract documents the necessary provisions to cover the work of the General Contractor in providing the commissioning services required, including Division 1 Specification Section(s), “Commissioning Plans,” and other documents.

The required “Basis for Design” required in the Architect’s scope of work at the Design Development Phase must be complete with all design parameters, assumptions and criteria (not simply a reference to District design guidelines), so that the design intent is fully available to the Commissioning Authority two or more years later.