

# Head Start Design Guide

## A Guide for Building a Head Start Facility



US Department of Health and Human Services  
Administration for Children and Families  
Administration on Children, Youth and Families  
Head Start Bureau

HEAD START DESIGN GUIDE **A Guide for Building a Head Start Facility**



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# Chapter 1

## Introduction to the Guide

This chapter describes the purpose of the *Head Start Center Design Guide*, its organization, intended audiences, how the information may be applied to Head Start centers, and other useful references. The *Guide* also contains a helpful glossary of Head Start terms, included in *Appendix I*.

## 1.1 Purpose

The *Head Start Center Design Guide* (hereafter referred to as the *Guide* in this document) contains suggested guidelines for planning and designing Head Start centers that are federally funded but locally owned or managed. To simplify the text, throughout this *Guide* the term Head Start represents both Head Start and Early Head Start programs, agencies, grantees, and delegate grantees.

The objective of the *Guide* is to encourage careful design of centers that are child-oriented, developmentally appropriate, beautiful, environmentally sensitive, and functional. A child may be in a center up to 12,500 hours, if he or she enters Head Start as an infant and remains until entering kindergarten. Since all enrolled children spend many hours at Head Start centers, the design of the space is important to their sense of well-being.

The suggested guidelines are intended for use both in developing new centers and expanding or renovating existing centers. To support design professionals and their judgment, the *Guide* explains both design guidelines and the rationale for the guidelines. The *Guide* also includes the baseline levels of features and finishes for Head Start centers and desirable best practice design features.

Experience has demonstrated that the design effort must allow for, and be sensitive to, the differences in space attributes for children and adults, as well as the differences in space usage by children in different age groups. To provide a rationale for specific design aspects, information about the



characteristics and activities of children is included in the text. Specific maximum or minimum guidelines are stated, when appropriate. The *Guide* also provides a discussion of issues that affect design.

*The recommendations in the Guide are intended to establish optimal design and*

to set a benchmark for best practice. However, there may be situations when recommendations for optimal design elements cannot be adopted. These concerns should be discussed with the design professional during the planning and design phase of the project.



## 1.2 Users

This *Guide* is intended to be the source of basic architectural information for all individuals involved in the design of Head Start centers. Individuals seeking detailed information on Head Start practices, center operations, or general Head Start building standards should refer to the Head Start Performance Standards, 45 CFR 1304, et. seq.

Specific users of the *Guide* will include the following:

- Architects and Engineers (A/E's) who provide design services under the direction of the Head Start grantee. These individuals should use the *Guide* for pre-design planning or to assess the extent of improvements required in an existing center in order to achieve the standards established herein.
- Head Start Bureau staff, who use the guide for reference and offer guidance to the Regional Offices and grantees.
- Head Start center Property Managers, who maintain the centers and improve existing ones to meet the benchmarks set in the *Guide*. In addition, the Head Start center managers will use it for guidance in the repair and replacement of existing conditions and equipment.
- The Head Start design team, including parents, teachers, administrators, staff and others.
- Head Start grantees and agencies planning to contract with private sector architectural firms to establish new centers or renovate existing ones.
- Head Start Regional Office staff, who will use the guide to help

interpret the application of best practices to the center plans and specifications.

- Head Start staff members, including program managers, agency administrators, financial officers, center directors, facility managers, and others concerned with facility design and management who may refer to the *Guide*, especially when they contract with private architectural firms to establish new centers or renovate existing ones.
- Head Start staff, parents, boards, Policy Councils, and others interested in Head Start space may want to use the *Guide* as a reference.

### 1.3 Applicable Documents and Web Sites

A Web site that may be useful was developed by the Department of the Army to include their facilities standardization program for child development centers. The address is

[http://www.ccb.org/docs/UFC/4\\_740\\_14.pdf](http://www.ccb.org/docs/UFC/4_740_14.pdf).

Other Web sites and facility information may be linked through the Head Start Bureau's Web site [www.acf.dhhs.gov/programs/hsb](http://www.acf.dhhs.gov/programs/hsb).

Current editions of documents that users may reference may be obtained by contacting the Head Start Publications Management Center ([www.hsinfo.org](http://www.hsinfo.org)), the Facilities Referral and Information System (<http://www.hsnrc.org>), or the Head Start Bureau ([www.acf.dhhs.gov/programs/hsb](http://www.acf.dhhs.gov/programs/hsb)).

They include the latest edition of the following documents:

- The Head Start Act, as amended, 42 USC 9801, et. seq.
- The Head Start Facilities Manual, Head Start Bureau, Administration on Children and Families. This manual contains thirteen assessment worksheets for Head Start and Early Head Start grantees to use when preparing budgets, planning preventive and routine maintenance of classrooms and playgrounds, purchasing furniture, ensuring safety, and other matters.
- The Head Start Program Performance Standards, 45 CFR 1304, et. seq.

- The Head Start Deep Look Survey, Health Resources and Services Administration, Office of Engineering Services, February 2000.
- The Individuals with Disabilities Education Act (IDEA), P.L.105-17.
- Section 504 of the Rehabilitation Act of 1973, as amended.
- Uniform Federal Accessibility Standards (UFAS), Federal Standard 795, General Services Administration.
- Americans with Disabilities Act (ADA), and the Americans with Disabilities Act Architectural Guidelines (ADAAG), Department of Justice, Office of the Attorney General.
- Accreditation Criteria and Procedures of the National Academy of Early Childhood Programs, National Association for the Education of Young Children (NAEYC).
- Developmentally Appropriate Practice in Early Childhood Programs Serving Children from Birth to Age Eight, National Association for the Education of Young Children (NAEYC).
- Fire Safety Retrofitting in Historic Buildings, August 1989, Advisory Council on Historic Preservation and the General Services Administration.
- Lead-Based Paint Interim Guidelines for Hazard Identification and Abatement in Public and Indian Housing, September 1990, Department of Housing and Urban Development (HUD).
- Radon in Water Sampling Manual (EPA/EERF-Manual-78-1), Environmental Protection Agency.
- The Environmental Resource Guide, with Supplements, the American Institute of Architects, 1996.
- Building Security Assessment provided by the regional Federal Protective Service (FPS).
- Leadership in Energy and Environmental Design (LEED) Green Building Rating System, Version 2.0, US Green Building Council, March 2000. Including draft version for Renovation, March 2002. [www.usgbc.org](http://www.usgbc.org).
- Leadership in Energy and Environmental Design (LEED) Reference Guide, Version 2.0, US Green Building Council, August 2000.
- The Environmental Protection Agency's "Comprehensive Procurement Guidelines," which addresses requirements for use of recycled materials in government procurement.

The following documents are available from the source:

- Lead in School Drinking Water, EPA 570/89-001.
- State licensing requirements for the individual states where Head Start centers are located.
- Handbook for Public Playground Safety, U.S. Consumer Product Safety Commission (CPSC).
- The Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings, U.S. National Park Service.

## 1.4 Organization

The following are brief descriptions of each chapter.

### Chapter 1: Introduction to the *Guide*

The chapter describes the purpose of the *Guide*, its organization, the intended audiences, how the information may be applied to Head Start centers, and other useful references.

### Chapter 2: Mission, Goals, Administration, and Policy

The chapter describes the Head Start Bureau's goals and objectives for center design and operation, the persons and processes involved in planning and designing the center, real estate management policies affecting center development, and standards with which design and operations must comply.

### Chapter 3: Adults and Children in the Center

The chapter identifies the adults and children who will use the center and describes their activities. It also includes a discussion on basic developmental needs and activities for each age group, and how these needs and activities affect the design of the center.

### Chapter 4: Head Start Centers and Use of Space

This chapter summarizes the Head Start Program Performance Standards relevant to the design and use of space, including child group sizes and staff-child ratios.

### Chapter 5: Planning Space and Location

The chapter contains general criteria to be used when selecting a center location and for planning and programming the space requirements.

### Chapter 6: Site Design

This chapter provides concepts and criteria for site design and design of play yards. It describes the general types of outdoor areas, the relationships of these areas to other outdoor and indoor spaces, and detailed criteria for fences, dimensions, and surfaces for these spaces.

### Chapter 7: Interior Space Design

The chapter provides concepts and criteria for the design of the interior spaces of a Head Start center. Area categories include entry and circulation areas, staff rooms, classrooms, common, and service areas.

### Chapter 8: Furnishings and Equipment

This chapter includes general criteria regarding furnishings and equipment for centers and includes references to applicable codes and regulations.

### Chapter 9: Interior Finishes

The chapter provides a consolidated discussion of finishes required in Head Start centers, establishes the baseline finishes for walls, floors and ceilings, and discusses acceptable options.

## Chapter 10: Technical Criteria

This chapter includes technical criteria for fire protection, security, and accessibility and for the design of electrical, plumbing, lighting, heating and cooling systems throughout the center. This chapter also covers testing for hazardous materials.

### Appendices:

**Appendix A** provides accessibility standards.

**Appendix B** provides information on Sustainable Design and the environment.

**Appendix C** provides listings of Head Start Central and Regional Offices.

**Appendix D** provides additional technical information on metric conversion.

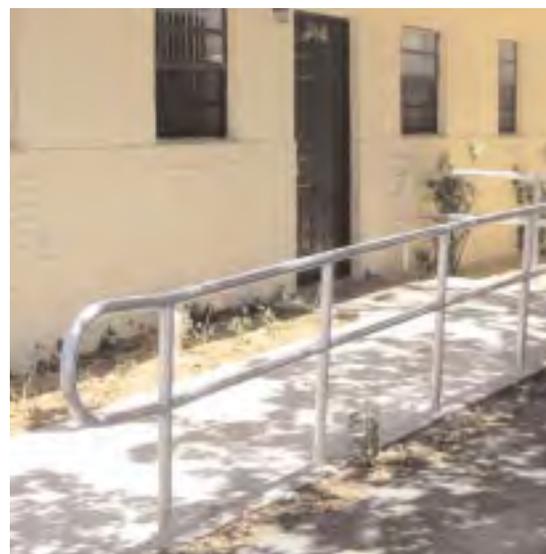
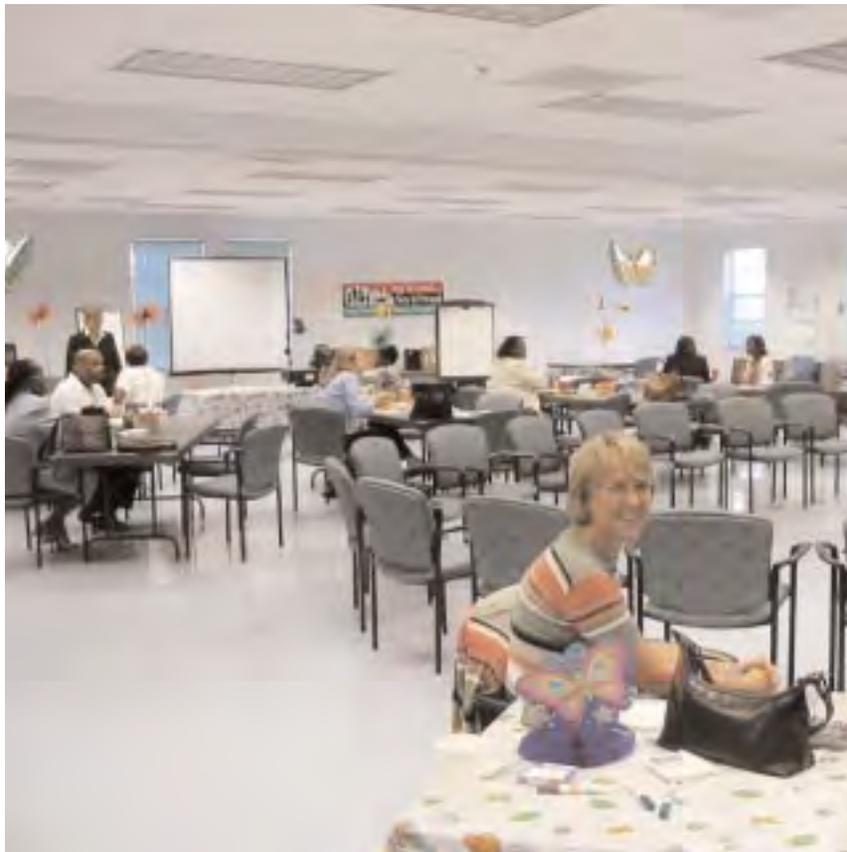
**Appendix E** provides information on the Head Start Program Performance Standards.

**Appendix F** provides terms used for construction and/or renovation projects.

**Appendix G** provides listings of high, medium, low, and non-toxic plants so designers can make judgments about appropriate plantings in the vicinity of Head Start centers.

**Appendix H** provides information on the playgrounds and playground products that reduce environmental impact.

**Appendix I** provides a glossary of commonly used terms in the Head Start and early childhood education communities.





## Chapter 2

### **Mission, Goals, Administration and Policy**

This chapter describes the Head Start Bureau's goals and objectives for center design and operation, the persons and processes involved in planning and designing the center, real estate management policies affecting center development, and standards with which design and operations must comply.

## 2.1 Program Goals and Objectives

An important goal of all Head Start programs is to offer the community an opportunity for quality child care services and programs in locally owned or controlled spaces. The Head Start center design must meet the needs of children, their parents, classroom personnel, service personnel, and administrators.

To achieve these objectives, HSB recommends that planners take the following steps:

- Support the care of children by creating environments that allow staff to focus their efforts on nurturing and caring for children. The design should provide features that encourage strong, positive relationships between staff and children.
- Create an environment that comfortably accommodates the needs of staff in order to attract and retain highly qualified people.
- Design centers that are pleasing and will enhance the involvement of families and the children’s caregivers in the center.
- Respond to local cultures, climate, and regional preferences in designing the center. Seek and consider the goals of parents, the sponsoring agency, and the governing board of directors.
- Create a center environment that attests to Head Start’s high level of commitment to providing appropriate, well-planned and beautiful environments for children of the community. The appearance and functional arrangement of the center should enhance the center’s assets.

- Design “through the eyes of a child” with sensitivity to children’s scale. Consider how the children will use the space, what they will see from their perspective, and what kind of experience they will have in the environment.
- Provide an intriguing environment with features and literal “themes” that reflect the community and its culture. For example, tribal Head



Start programs may provide language activities, legends, and dance activities, use traditional symbols for their wall decorations, or use traditional colors, songs, and music during their “circle” activities.

- Size the classroom to accommodate recommended group sizes and adult-to-child ratios. The design should use space efficiently and incorporate features such as strategically situated storage.
- Provide durable and cost effective materials and design details. Designers should consider the intense use a center receives and should be particularly sensitive to the life cycle cost of materials.

- Establish a distinctly child-oriented environment within a controlled facility. The impression created by the design should be the antithesis of a typical institutional setting. The center should “feel like home” for the child.
- Create an accessible center for the disabled, staff, parents and children and emphasize cost effectiveness. Refer to *Appendix A* for accessibility requirements.
- Provide a healthful indoor and outdoor environment.



## 2.2 Process

Through experience with design and construction, the Head Start Bureau has learned that grantee or delegate involvement during initial planning at the beginning of the design process is a valuable investment that can ensure an excellent and cost effective result.





The process starts with planning and pre-design stages and continues through the design concept. The early stages of design, leading up to the concept, form the foundation for functional design.



A well-designed center requires an array of functional and aesthetic requirements in a relatively small space and must satisfy a wide range of customers. Therefore, the design process for new construction or major center renovation/ expansions should begin with a high level of communication.



To accommodate this need, the Head Start Bureau recommends that projects start with a “design workshop.” The design workshop also can be associated with a partnering session, which can be highly effective in clarifying roles and responsibilities. For example, the partnering session can result in a written charter

signed by attendees who commit themselves to taking clearly defined collaborative steps.

## 2.3 Standards

Best practice suggests that Head Start center design comply with the following guidelines:

- Uniform Federal Accessibility Standards (UFAS) and Americans with Disabilities Act (ADA). The design must accommodate children and adults with disabilities. (Refer to Accessibility Standards in *Appendix A*.)
- Historic Preservation Act. Modification of historic buildings or buildings deemed eligible for the National Register of Historic Places must follow specific guidelines. The guidelines affect a structure with the following characteristics:
  - At least fifty years old (or will be when the renovation is completed).
  - Deemed to be exemplary of a particular style.
  - Historically significant in terms of events related to the building.
  - Comprehensive Procurement Guideline (CPG), US EPA, Office of Solid Waste and Emergency Response. Through this document, EPA designates items that must contain recycled content when purchased by federal, state, and local agencies, or by government contractors using appropriated federal funds. Under E.O. 13101 EPA is required to update the CPG every 2 years.
- The Energy Policy Act of 1992. The center design should minimize energy use. It should use the life-cycle costing methodology in estimating and comparing investment decisions involving capital and operating costs. Mechanical systems and introduction of

features, such as overhangs to diminish energy use, are examples of such considerations.

- Head Start centers must comply with state and local licensing regulations and any other applicable standards.
- In addition, there should be discussions about including sustainable features in the design during the initial stages of the project.

This emphasis on non-toxic green building is explained further in *Appendix B*.



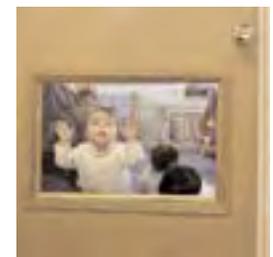
## 2.4 Center Management

The Head Start Bureau does not directly operate Head Start centers.

Instead, each Head Start program is responsible for the day-to-day management and operation of the center.

In addition, a Policy Council is established for the purpose of providing information to parents and other community members and engaging them in the operation of the center. The Policy Council can be a valuable resource for comments on center design.

*Appendix C* includes contact information for the Administration on Children, Youth and Families' Head Start Bureau and Regional Offices.





## Chapter 3

### Adults and Children in the Center

When designing a Head Start center, it is important to accommodate the needs of children, parents, teachers, visitors, administrators, and service personnel. This chapter describes how and why adults and children use Head Start centers and the needs of each group.

The center environment should be comfortable, nurturing, and allow adults to care for children in settings designed primarily for use by children. Metric/English conversions are included in *Appendix D*. The activities of groups of children categorized by age are included in the chapter for design purposes.

### 3.1 Parents

The designers of Head Start centers should keep in mind the needs of busy parents and caregivers who bring children to



Head Start centers. The design should provide a setting that supports a community of center users and serves the needs of the children and their families. Designers can respond to these needs by addressing the following:

- Temporary parking arrangements for drop-off and pickup.
- Ease of navigating corridors for people pushing strollers and buggies (angled corners are an aid).
- Stroller storage.
- A clearly visible bulletin board.
- Mail boxes for parents.
- A central, relaxed place for parents to meet and talk to other parents and staff.
- Spaces that accommodate several children and adults who wish to remove or need assistance removing outer garments.
- Private space for parents and teachers to conference.
- Adequate refrigerator space to store formula and food.
- The need for parents and caregivers to visit the center while dropping off children, spending time with them in classrooms, on the playground, and picking them up. Parents and caregivers also may

eat lunch at the center with the children, meet with teachers and staff, socialize with other adults, and participate in center activities, organizations, and programs. Some adults enjoy the center because it offers friendly human contact that may not be available in their work environment .

- Parents who bring children to Head Start may accompany them to the classroom and help the children remove and store outdoor clothing. They may bring infants in strollers. They also may leave messages for teachers and receive messages from them, usually at one location designed specifically for that purpose. They may linger to spend time with the child or to talk to the teacher before departing. The entry, reception, and classroom cubby areas should provide a social setting for the parents, without disrupting the flow of activity in the classrooms. Nursing mothers who visit the center to feed their infants need a private, quiet area for that purpose.
- Information may be posted for the parents on a bulletin board, which typically will be located along the entrance path.
- Finally, parents and other adult caregivers are encouraged to participate in volunteer activities at the center, such as serving on committees or boards, participating in fund-raising activities, assisting with field trips, and offering classroom assistance. Center design should offer space for their involvement and for meetings between adults with storage for their belongings.

### 3.2 Teachers

Teachers care for and supervise children. In a Head Start program, they promote learning and developmental activities through a curriculum designed for learning. Curriculum activities occur in classrooms, play yards, multiple-purpose spaces, and on excursions outside the center.

Teachers are responsible for children while at the center. They greet them and their families or caregivers when they arrive. Teachers prepare curriculum materials and projects for children and confer with parents and administrators. To help them prepare, teachers need time away from their classrooms. A lounge, which doubles as a workroom, can meet this need. Teachers also need adequate storage areas, not only for curriculum materials and supplies, but also to secure their personal possessions. The teacher has a demanding job that requires focus on the children. Because highly organized spaces are required, designing a center can be challenging. The design can facilitate the needs of teachers for organized space by providing the following:

- Ample elevated wall hung storage (above children's level but also located to avoid the possibility of adults striking their heads) designed to avoid the possibility of items inadvertently falling on children below.
- Elevated electrical outlets for equipment such as audio devices. (There also should be CD and tape storage.) Locations should comply with local code and licensing agencies.
- Planning and designing the center so that

the location of outlets is convenient to elevated electronic equipment.

- Conveniently located, accessible adult toilet(s), complying with ADAAG.
- Convenient storage for teachers' outer garments and locked space to store personal belongings.
- A comfortable and private place to confer with parents.
- A resource room for orderly visible storage of teaching materials and equipment.
- A comfortable lounge that teachers can use for breaks, lunches, and to prepare teaching plans and materials.
- Adequate shelving or counter space for teachers to display teaching materials.
- An area for displaying children's art projects at their eye level.



### 3.3 Administration

The Administrator also referred to as director, center director, executive director, CEO, coordinator, or site supervisor is responsible for managing the center, supervising the teaching staff, and communicating with parents, boards of directors and the ACF regional offices. In small centers, the administrator also may assume a teaching role for part of the day. In large centers, the director usually will have a secretary or assistant to help with the administrative workload.



The needs of the center administrator may be met by providing the following:

- Optimal visibility of those approaching and entering the facility.
- Locked space for personal belongings.
- An office with room for a desk, an office chair, at least two visitor chairs, filing cabinets, space for equipment (unless it is placed elsewhere) including a personal computer, printer, copier and fax machine.
- Center personnel, including the administrator, should be consulted during design for their input about workflow, filing, and equipment needs. This *Guide* will assist designers in making informed judgments about center staff requests.

### 3.4 Service Personnel

Centers require food, laundry, janitorial service, delivery, waste and refuse removal, and general maintenance services. The design must provide space and controlled access for those performing these services.

Some centers use catered food services while others have an in-house preparation kitchen with heavy-duty equipment and a cooking staff.

Infants and toddlers generally use disposable diapers provided by parents. All soiled diapers are to be contained and processed separately from other waste and linens. Facilities should provide space for these tasks.

The needs of the service personnel can be expedited by the following:



- Adequate locked space in a well-located closet for cleaning materials.
- Space for easy supply delivery.
- Facilities that are efficiently designed for waste disposal.
- Spaces and containers that accommodate recycling.
- Adequate counter space and efficient kitchen arrangements that support easy transit of food to classrooms or other places designed for eating.
- Adequate refrigerator space.



- Generous, deep, three-compartment sinks, gooseneck faucets with spray attachments, and disposals in kitchens.
- Finish materials and building design features that are easy to clean with minimal use of cleaning materials.
- Design that offers protection from the potential health and indoor air quality impacts of cleaning and maintenance activities.

### 3.5 Children

Head Start and Early Head Start children who are in center based programs may spend up to of nine hours or more per day at the center. For most of their day, children remain at the facility. There are occasions when the children leave the center on field trips with teachers and center vol-

unteers. Best practice suggests the center promote a child's optimal development by providing safe, interesting, and appropriate environments that allow the children to engage in developmentally appropriate activities.

Children's needs often correspond to their ages. Although each child develops according to his or her unique pattern, children can be characterized as belonging to general age categories of development. Each age group has a different set of needs. To meet these needs, the space designed for each age group will have different characteristics.



The following three age groupings will be referenced throughout the *Guide*. In many centers, actual age ranges of groups overlap. In some centers, children may be grouped in mixed-age classrooms.

Age ranges follow:

- Early Head Start Infants (birth to 18 months)
- Early Head Start Toddlers (18 to 36 months)
  - Toddler subgroups:
    - EHS Younger toddlers (18 to 24 months)
    - EHS Older toddlers (24 to 36 months)
- Head Start pre-school age children (3 to 5 years old)

### 3.5.1 Early Head Start—Infants

The infant classroom should be warm and nurturing in character. Ideally, the classroom environment should provide opportunities for infants to enjoy activities throughout the day. Typically, infant groups will be comprised of no more than eight infants cared for by two teachers, on a 4:1 ratio. In Head Start centers, infants are brought to their classroom by their parents or caregiver.

Storage is an important consideration in the infant area. Clothing and supplies, usually carried in a diaper bag, are stored in each infant's cubby. Diapers and wipes are stored in separate compartments and within easy reach at the diapering area. Strollers or tote bags are stored on pegs or rods in storage areas. Formula and breast milk are kept

refrigerated and clearly marked with the name of the infant and date.



Spaces designed for infants are used for a variety of activities. Sleeping areas should be separate from areas of greater activity. Each infant will have a unique sleeping schedule. As they mature, their sleep needs decrease from the frequent naps of young infancy to a few naps at regular times during the day. Besides sleeping, infants will be playing, eating, cuddling, and nursing.

Since most infants have not begun toilet training, frequent diaper changes are needed. A teacher with an infant at the diaper-changing table needs to maintain visibility of all other infants. The design and location of changing tables should enable visible connection between teachers and other infants.





The design and scale of furnishings and equipment in the infant room should be appropriate for the infant's activities. The design must allow teachers to see and hear all the infants at any given time and to quickly reach any one of them if the need arises. Infants must be able to see the teacher because they need the security of a teacher's presence.

During the first year, the infant's diet progresses from nursing and bottle-feeding to soft foods and finger foods. Eating is nurturing for the infant whether nursed by mothers or bottle fed by another adult. Teachers may start to feed infants soft foods at around 5-6 months. At around 9 months, infants, seated in low high chairs, begin to feed themselves and drink from cups. This process can be messy, since infants are exploring, and

floor surfaces should accommodate this. Later, at or near 12 months of age, infants eat at low, round tables. At that point, the dining atmosphere changes from a quiet, intimate environment to an active, social event, and it is important to provide adequate easy-to-clean space for this activity.

Developmentally appropriate activities for infants include interaction with teachers, children, and other infants; experiencing the environment through all the senses; and physical movement through space. Infants need a safe, stimulating environment where they can

explore, absorb, and organize information about their world. They exercise muscles by crawling and climbing on soft surfaces and over slight level changes. They also can pull to standing and practice walking by using low grab bars.

Stimulating toys and learning materials that can be manipulated and help infants learn about objects and increase development of motor coordination. Toys should be on low, open shelving where the infant can see and grasp them. In rooms with high ceilings, mobiles hung from the ceiling should be at least 6.6 feet above the floor.

The classroom should offer a series of intriguing attractions for crawling and standing infants, particularly at eye level (12 to 18 inches above the floor). The environment, including toys, should aid the infants' language development by including objects teachers can name and describe.

Infants, particularly those crawling and starting to walk, require outdoor opportunities to explore and move about the safe world of the infant play yard. They spend time in their outdoor play yard under the supervision of their teachers. This space should be apart from, but usually in view of, the older children.

Teachers may assist infants in their exploration of the world by taking them on strolls through the building and outdoors. Infants, riding in groups in multi-passenger strollers, benefit from both social interaction and sensory stimulation on these excursions. Therefore, hallways and play yards should be designed to accommodate the strollers.

Conditions that enhance the quality of care that teachers provide to infants include:

- A gross motor area (away from the main area of circulation) with a continuous soft mat that can be easily cleaned. The area should be defined by a low (12 – 18 inches) padded bumper, which is built-in to contain the crawl area and provides adult seating near the infants.
- Low padded risers for level change.

- Visibility of the exterior of the gross motor area at infants' eye-level.
- Cribs that can be observed easily by teachers.
- Cribs located under soft, preferably dimmer-controlled lighting.
- Toys easily accessible to infants on open shelving.
- Continuous impervious flooring in the feeding area.

It is essential that the A/E verify dimensions and indicate the location (using dotted lines) of all major equipment on the architectural plans, particularly cribs and components of the feeding area. This will ensure the proper fit of equipment and adequate clearances above and between items.

### 3.5.2 Early Head Start—Young Toddlers

The toddler classroom hums with activity as toddlers quickly move through their space. They are usually anxious to be involved in all the activities available to them. This environment is stimulating and offers the child a safe, warm, and nurturing place to spend the day. This

group typically includes 2 teachers and 8 young toddlers.



At the beginning of the day, toddlers arrive at the classroom with their parents, who may assist them in removing their outdoor clothing and in storing items in cubbies. Young toddlers usually will have diaper bags to store in their

cubbies and supplies to be placed at the diapering area.



Toddlers are in the process of gaining independence, and are advancing in their feeding, toileting, and dressing skills. Furnishings and equipment should be scaled for this age group to encourage growth toward independence.

Younger toddlers nap often and need a crib in a quiet area. Most care functions take place in the classroom with the teacher's assistance.

Toddlers gather at child-scaled tables for snacks and lunch. They can feed themselves with some assistance. Young toddlers need diapering areas as well as child sized toilet facilities.

### 3.5.3 Early Head Start—Older Toddlers

Older toddlers are busy experiencing their environment and developing essential motor skills as they take part in active play. They are mastering walking and are beginning to develop running, jumping, and climbing skills. The toddler's room should provide stimulating opportunities for active crawling, pushing wheeled toys, climbing in and out of play components, cruising, (movement through space to view and select from a variety of activities), and beginning to walk and climb up and down stairs. They may nap only once each day. Adequate space for storage if cots and mats must be part of design phase planning.

Older toddlers may bring lunches or toys from home in satchels or back-

packs that can be used to carry papers and artwork home at the end of the day. These items may be stored in cubbies or in the classroom on hooks.

Toddlers tend to move about very quickly, often in groups rather than individually, and the design must allow for this group activity. Features, such as wide access to lofts and generous, clear pathways that avoid sharp corners, should be provided. These pathways should accommodate multi-passenger strollers.

Toddlers thrive on exploration and creativity; enjoying fantasy activities, playing with props, and making choices. Manipulative toys, blocks, pictures, puzzles, music, and other materials should be located on low, open shelving where the toddler can see and reach them easily.

Teachers in the toddler classroom assist and interact with the toddler, encouraging the development of greater independence. Though space should be scaled to a child's size, the classroom design also must permit teacher access to all spaces. Experience has shown that a diaper-changing table should be provided in older toddler classrooms to help teachers of toddlers not yet toilet trained. The space also should contain a child-scaled toilet.

While toddlers are beginning to develop, they need easy visual





access to their teachers for security and comfort. One highly recommended functional and nurturing feature is a simple series of three to four low risers (not necessarily built-in) that several toddlers at a time can occupy. This arrangement also provides excellent seating for adults while they interact with several children when reading them a story, for example.

Toddlers accompanied by their teachers will spend time in their outdoor play space. This should be apart from but not visually or acoustically separated from play spaces for older children. The outdoor space offers many opportunities for activities, such as cruising, climbing, and manipulative play involving materials such as sand and water. Toddlers may take part in activities in a multiple-purpose area.

Toddlers and their teachers, may go on excursions for more exploration and interaction. Older toddlers may walk hand-in-hand with their teachers.

### 3.5.4 Head Start—Pre-School Children

Head Start or pre-school children are expanding their vocabulary, developing language, enhancing small and large muscle coordination, and

learning complex cognitive/social skills. This group may consist of as many as 18 to 20 children (with a teacher, an aide and a parent volunteer) busily pursuing all recommended activities available for their age group. Their environment should be safe, durable, and interesting without being over-stimulating.



The children arrive at the classroom with their parents or caregivers or on the school bus. After storing their outdoor clothing and personal items, they begin their day. The Head Start classroom should include large, bright, unrestricted spaces, as well as intimate, quiet areas outfitted with soft materials.

Head Start children usually need a nap or quiet time. This normally occurs in the classroom on cots or mats that are stored appropriately when not in use. The design and sizes of classrooms to accommodate stored items such as cots and mats should be carefully considered.



The ideal Head Start classroom will include large architecturally unrestricted available space that teachers and children can divide into smaller learning environments. The number of children in the group and the type of activities in which they are involved will affect the requirements of this space.

Head Start children will enjoy time in an outdoor play space and in a

multiple-purpose space. They will participate in many of the same activities in the play space as they pursue in the classroom.

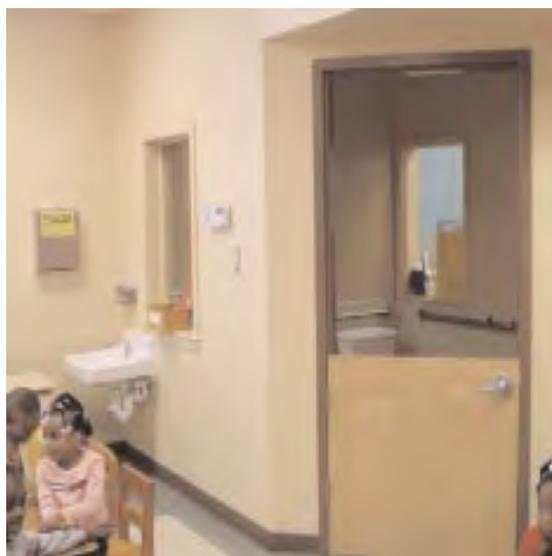


Children also go on field trips outside the center, either walking with their teachers or using transport.



Children at this age are actively exploring their environment; exercising large muscles by running, jumping, galloping, riding wheeled toys, and engaging in dramatic play. Because they have become more independent, the children tend to initiate their own activity by accessing appropriate materials and are interested in displaying their own work.

Other activities for this age group include music, painting, puzzles, block play, and storytelling. Children are involved in art projects, manipulative play, simple food preparation, elementary math, problem solving, science, and gardening.





## Chapter 4

### Head Start Centers and Use of Space

This chapter summarizes the Head Start Program

Performance Standards relevant to the design and use of space including child group sizes and staff-child ratios.

Should a conflict arise between Head Start standards and other applicable codes and regulations, those deemed most restrictive will apply. Refer to *Appendix E* for a comprehensive listing of relevant standards and guidance on design and space use.

## 4.1 Design Implications of Program Standards

The Head Start standards criteria are stated in ten broad categories, each having a primary goal. Citations of the minimum goals and discussion of the general design implications follow. The design criteria in the *Guide* should achieve or exceed the Head Start standards.

### 4.1.1 Interactions Among Staff and Children

**GOAL:** Proper organization of the space ensures that the full program of activities can be accomplished. Successful programs take place with high-quality interactions between children and staff. *Refer to 45 CFR §1304.53(a).*

Successful design allows teachers and children to interact verbally and non-verbally in large and small groups. Classroom space should not be crowded with material and equipment that is used occasionally such as cots and mats. Ideally, classroom size should be sufficient so that this equipment can be stored out of sight. Classrooms should include low tables, several interest areas, and space for teachers to communicate individually with children. If there is adequate space, tables and counters that put children face-to-face can encourage social interaction.

All rooms should have comfortable seating for adults. The design should include chairs and may include hammocks and built-in benches. Window seats can be particularly inviting for adult-child interaction. Space for glider chairs can be included in infant rooms to offer soothing motion for infants and comfortable seating for teachers and visiting parents. The design of the glider chairs should prevent fingers from being trapped in moving parts.

### 4.1.2 Facilities and Learning

**GOAL:** The physical environment and facilities must be conducive to learning and reflect the different stages of development of each child.

Making facilities welcoming, accessible, comfortable and safe for all children, including those with disabilities, ensures their full participation in Head Start.



Best practice indicates that classrooms should have sufficient space, equipment, and storage to support a developmentally appropriate curriculum.

Classrooms must be configured to allow circulation to each area while minimizing disturbances to other children engaged in an

activity. Well-located storage is vital for ease of circulation and supervision. The center should have child-accessible displays of curriculum materials, either on built-in open shelving at the child's height or on movable, open, child-scale shelving units. The design should support a balance of the following activities:

- Indoor and outdoor
- Quiet and active
- Individual and group

- Large and small motor activity
- Child and staff initiated activity

Best practice includes unencumbered wall space at the child's level that promotes interesting room arrangements and displays. There also is a need for flexible space and easily changeable furniture arrangements.

#### 4.1.3 Staff-Parent Interaction

**GOAL:** Parents must be invited to become actively involved in the development of the program and in the approach to child development and education. *Refer to 45 CFR § 1304.21 (a) (2).*

Best practice indicates that the center should provide adequate areas for private consultation between teachers and parents. A reception area for check-in and check-out is advisable. Space in the classroom should be adequate to accommodate parent visits. Bulletin boards for parent notices are worthwhile.

#### 4.1.4 Skilled Staff and Center Design

**GOAL:** Head Start programs must comply with section 648A of the Head Start Act and any subsequent amendments regarding the qualifications of classroom teachers. *Refer to 45 CFR §1306.21.*

The quality of a center's design can play an important role in attracting and retaining skilled staff who spend so much of their time in classrooms. A prop-

erly designed center can improve staff attitude, reduce stress, and ease the workload of the teachers. It also can integrate appropriate acoustical treatment and separation of active and quiet areas to reduce noise levels. In an Early Head Start classroom, strategic arrangement of the diapering areas allows teachers to supervise other children and makes the staff's job easier.

Classroom features ought to make performing teachers' tasks easier. Conference space should be adequate for staff training sessions and regular staff meetings. A separate lounge can provide staff members with a quiet break area and should include ample storage space for resources, equipment, and lockable storage space.

#### 4.1.5 Administration and Space

**GOAL:** The program is administered in accordance with the Head Start Program Performance Standards and addresses the needs of children, parents, staff, and visitors.

The location of the director's office space should facilitate frequent contact with the children, parents, and staff. Space should be available for parent orientation sessions, workspace, and file storage to support administrative tasks. Office space should be arranged to ensure available storage and equipment should be placed conveniently.

#### 4.1.6 Staffing and Classroom Space

**GOAL:** Staffing is in accordance with the Head Start Program Performance Standards to meet the needs of children and promote their physical, social, emotional, and cognitive development. *Refer to 45 CFR §1306.32 (a)(1-12)*

Classrooms size must allow for an optimal supervision ratio between staff and children. Head Start Performance Standards establish the permissible staff-child ratios and group sizes:

#### PREDOMINANT AGE OF CHILDREN IN THE CLASS

| Ages                                | Class Size   |
|-------------------------------------|--|
| 4 and 5 year olds                   | Program average of 17-20 children enrolled per class. No more than 20 children enrolled in any class                   |
| 4 and 5 year olds in double session | Program average of 15-17 children enrolled per class. No more than 17 children enrolled in any class.                  |
| 3 year olds                         | Program average of 15-17 children enrolled per class. No more than 17 children enrolled in any class.                  |
| 3 year olds in double session       | Program average of 13-15 children enrolled per class in these classes. No more than 15 children enrolled in any class. |

Head Start classes must be staffed by a teacher and an aide or two teachers and, when possible, a volunteer. For Head Start, a maximum staff-to-child ratio of 1:10 with class sizes of fewer than 20 children; Early Head Start staff ratios are 1:4. However, EHS group sizes are limited to 8 children. Head Start centers also must comply with local licensing and zoning regulations.

#### 4.1.7 Physical Environment

**GOAL:** Grantee and delegate agencies must provide appropriate space for of all program activities. *Refer to 45 CFR §1304.53(a)(2) and 3404.53 (a)(10) and 45 CFR §1308.4.*

The physical environment not only supports the operational quality of a center and affects the behavior and development of children, but also the efficient functioning and sense of well-being of adult caregivers. A pleasant functional environment influences the way caregivers react to children and also will have a positive effect on children who are receptive to their environment.

The ideal environment is intriguing, rich, and challenging to children but is not over-stimulating. It is rich in subtle visual and tactile experience, incorporating natural elements as much as possible. Best practice indicates that the center must



have sufficient activity space, storage, and curriculum materials for all children including those with disabilities. Both outdoor and indoor space must be provided for activities featuring quiet and active play areas.

#### 4.1.8 Health and Safety

**GOAL:** A safety inspection must be conducted to ensure that each facility's space, light, ventilation, heat, and other physical elements are consistent with the health, safety, and developmental needs of children. *Refer to 45 CFR §1304.53 (a) (10).*

The center's design must comply with the requirements of the Head Start Program Performance Standards. The center also must comply with state and local codes and their applicable standards. The center design should facilitate both teacher supervision and ease of maintenance. Design details should take into account the fact that centers must be cleaned frequently. Properly designed, well-located toilet and hand-washing facilities are essential. Lockable storage should be provided for all cleaning materials in each classroom, kitchen, and laundry area.

There should be formal consultations with local fire officials to determine appropriate fire drill practices and procedures.

#### 4.1.9 Nutrition and Meal Service

**GOAL:** Grantee and delegate agencies must ensure that nutritional services in center-based settings contribute to the development and socialization of enrolled children. *Refer to 45 CFR §1304.23.*

The center design should provide ample space for storing and preparing food. Space requirements depend on whether food is catered or prepared on site. (Usually food is prepared on site.)



Food service facilities should accommodate the serving of nutritious meals and maintain the highest quality of food. Best practice indicates that special accommodations should be provided for infant feeding and nursing.

#### 4.1.10 Record Storage

**GOAL:** Grantee and delegate agencies must establish and maintain efficient and effective record-keeping systems to provide accurate and timely information regarding children, families, and staff. They must ensure appropriate confidentiality of this information. *Refer to 45 CFR §1304.51(g).*

Space should be supplied for filing and storing records, observations, case studies, and other reports.

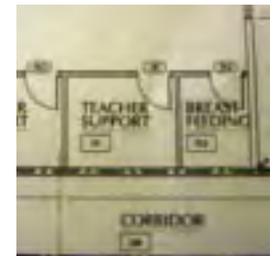
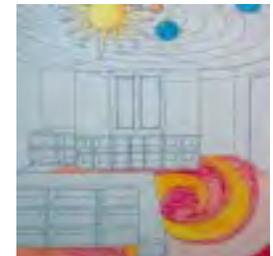
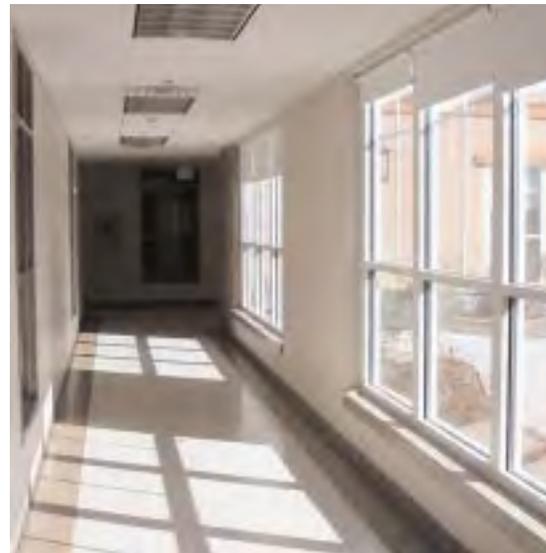
## 4.2 Head Start Program Performance Standards on Space

The Head Start Program Performance Standards, 45 CFR § 1304, et seq., contain specific requirements for the use of space, physical environment, functional areas, maintenance, repair, safety and security, fireproofing, heat, cooling, lighting, cleaning, ventilation, equipment, and sewage. *Refer to Appendix E.*

## 4.3 Additional Requirements

In addition to complying with Head Start Program Performance Standards, Head Start centers must comply with the licensing and zoning requirements of the state or jurisdiction in which they are located. When there is conflict between Head Start and state, tribal, and/or local criteria, the most stringent requirements apply.

Licensing requirements vary among states and jurisdictions and are constantly being updated and modified. The user should review the requirements of the specific state, tribal, and local jurisdictions early in the design process.





## Chapter 5

### Planning Space and Location

This chapter contains general criteria to be used when selecting a center location and planning and programming the space requirements.

The center is subject to state licensing requirements. The designer, architect, engineer, and user must review these requirements during the initial phases of design to avoid redesign. When the requirements of the Head Start Program Performance Standards and state and local requirements differ, the standards deemed more restrictive shall apply.

## 5.1 Criteria for Center Location

The location of the Head Start center is critical to a child's safety, well being, and quality of care. Best practice indicates that location requirements can be grouped according to the following broad facility categories of mandatory and recommended criteria: available useable space, environment, safety, security, and accessibility. For further technical information on these categories, refer to Chapter 10 of this document.



## 5.2 Construction and Renovation Terms



*See APPENDIX F:  
TERMS USED FOR  
CONSTRUCTION  
AND  
RENOVATION  
PROJECTS*

### 5.3 Overall Space Requirements

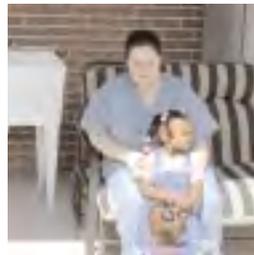
**Interior:** The Head Start Performance Standards, 45 CFR 1304.53(a)(5), provide that centers must have at least 35 square feet of available usable indoor space per child. This footage is exclusive of bath-



rooms, halls, kitchen, staff rooms, and storage places. (It should be noted that this is a minimum standard.)

**Exterior:** The Head Start Performance Standards, 45 CFR 1304.53(a)(5), provide that there must be at least

75 square feet of usable outdoor play space per child.



**Best Practice:**

The outdoor play space should be divided, with each outdoor area having no dimension less than 8.1 feet and a minimum size not less than 1,205 square feet. At least 50 percent of the outdoor play space must be exposed to sunlight at any given time during hours of operation.

There must be shade in the outdoor play space provided by planting, gazebos, umbrellas or other similar elements offering. When play space cannot meet these criteria, the center should provide access to



alternate play areas for developing large-muscle skills. This alternate area may include, but is not limited to, an open courtyard or an outdoor space, such as a nearby public park, if permitted by state, tribal, and local licensing requirements.

In areas of the country with particularly rainy weather (for instance, the Northwest), it is desirable to provide covered areas, such as generous porches, for exterior play. Interior multipurpose space is particularly valuable in areas of the country with inclement winter weather but it should not be considered a substitute for exterior play space.



See Chapter 6, Section 6.2.2, for a full discussion of parking requirements.

## 5.4 Environmental Quality

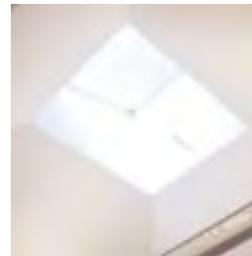
### Best Practice:

- Natural lighting is an important feature of nurturing and quality environments for children. Natural light should be the primary source of light in classroom spaces in Head Start centers. Total natural lighting would be ideal. Designers should face classroom space south, if possible, so that children benefit from the light throughout the day. Absence of natural light should be a prime consideration when contemplating relocating an existing center.
- Classrooms without windows should have full spectrum, indirect lighting as described in Chapter 10, Section 10.9, of this *Guide* and, if possible, a variety of light sources.
- Minimum quality design requires that classrooms have window space to the exterior area not less than 8 percent of the floor area.
- Since artificial light cannot substitute for the quality of natural light, if



artificial lighting is needed, it should include a variety of fixture and lighting types with high color rendition. See Chapter 10 for artificial light requirements.

- Classroom and facility designers should use natural lighting from at least two directions. Window seats also are effective in maximizing the effects of natural light.
- Design for good indoor air quality uses low- or non-toxic finishes (see



Chapter 9), acceptable ventilation levels, and careful system design (see Section 10.8.2 in Chapter 10).

- Studies suggest that indoor plants may improve indoor air quality by filtering pollutants from the air. Indoor plants also create a more “home-like” atmosphere and may positively affect the behavior and well-being of both adults and children.
- The center should not be located near noisy areas, such as major highways, street intersections, railroad lines, or under airport flight paths. If proximity to high levels of noise is unavoidable, acoustical control measures are necessary, as discussed in Chapter 10, Section 10.5.
- Maximum acceptable noise levels depend on the area around the center and whether or not the sound is continuous or intermittent. Children and infants are particularly sensitive to unexpected or inter-

mittent loud noise. See Chapter 10, Section 10.5 for guidelines on maximum acceptable noise levels.

- The center should not be exposed to fumes or dust from industrial operations and vehicles, furnace and incinerator exhaust, mists from cooling towers, or other similar pollutants. Avoid placing centers near exhausts from food processing and waste handling operations, loading docks, or similar sources of unpleasant odors.
- Ideally, the site should have desirable natural features, such as trees, south-facing slopes, and views of natural or man-made vistas.
- The selected location should allow outdoor play yard orientation appropriate for local climatic conditions.
- The building structure should comply with area limitations, mixed-use separation, and construction requirements in state, tribal, or local codes and other applicable standards.
- Ideally, the center location should provide direct at-grade exit with a minimum of two means of egress from each floor if the center is located on two floors.
- The center should be located away from hazardous conditions or sites. This includes contaminants from hazardous materials such as lead and PCBs. The site, including the playground, should be certified as free of these contaminants before design begins.
- The location should meet criteria to prevent exposure to Legionella Pneumophila.



- The location must allow for the safe arrival and departure of children.
- The location must be free of hazards, including fountains, wells, open pools, unprotected ledges, drop-offs and cliffs, and dangerous equipment. Play areas must not have open drainage ditches or openings to storm sewer systems.
- The location must be free of rodents, hazardous insects, vermin, and toxic plants.
- The center should have operable windows that allow ventilation. Awning and hopper windows below head level on the exterior or interior of the building should not be used.
- Consider proposed major future construction projects within the building and adjacent to the site. If possible, avoid these locations because of extended disruptive high noise levels and poor air quality.

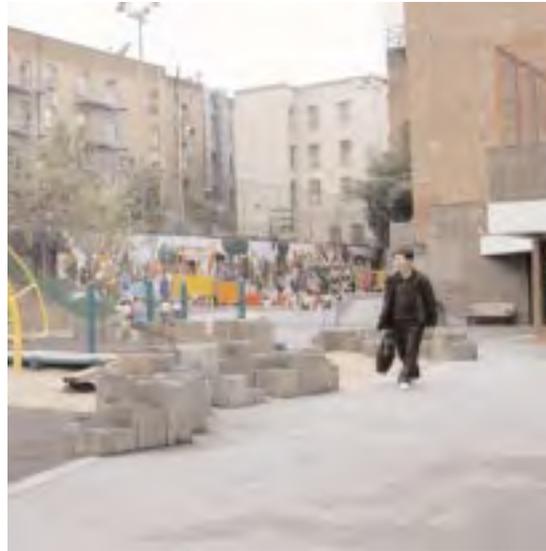
## 5.5 Security

### Best Practice:

- The location must meet requirements established by state and local building and licensing codes.
- The center location must be readily identifiable and accessible to emergency response personnel.
- The location must allow for secure exits and entrances. Normally, movement should be restricted through one secured main entrance and perhaps an additional secured service entry for kitchen and other bulk supply deliveries.



- Provide maximum visibility of entry points from inside the center.
- Ideally, the location should be a defensible space with a secure perimeter and controlled access.



## 5.6 Approach and Access

### Best Practice:

- If possible, the center location should be within walking distance of public transportation. Bicyclists and persons using mass transit need safe approaches to the building which do not endanger child or adult pedestrians.
- The center's layout must accommodate adults with disabilities. The center must comply with the UFAS (Uniform Federal Accessibility Standards) and ADA (Americans with Disabilities Act). Where there is real or apparent conflict, the center must comply with the more stringent of the two standards.
- The play yard should be directly accessible from the building or as close to it as practical. If the site cannot support a play yard, consider using a public or a private park within walking distance.
- The center should not be close to busy streets and intersections. Otherwise, the designer should devise mitigation measures, such as bollards, to lessen the effect of congestion and to increase safety, especially at playgrounds near busy intersections. Intersections where traffic is heavy require particular attention.
- The center location should provide ease of short-term, drop-off

parking for parents and buses as children arrive and depart. Sufficient short-term parking spaces are needed for parents. This parking should be as close to the center as possible.

- Ideally, classrooms should have direct access to the play yard.

### 5.7 Historic Preservation

The decision to locate a center in a National Historic Building must take into consideration the historic preservation. If located in a historic building, any renovation activities or changes in the building must be in compliance with all federal and state regulations in close coordination with the State Historic Preservation Office (SHPO) or tribal organization. Play space location also is a vital consideration in assessing the effect of the center location on historic structures or neighborhoods.



### 5.8 Space for Children Classrooms

A classroom is the area that contains each group of children and their teacher(s). Classrooms may be separated by full partitions or full (floor to ceiling) walls or non-permanent barriers that allow controlled visual or acoustical connections to other groups. However, best practice indicates that at least one interior viewing panel at children's height should be located both adjacent to corridors and between classrooms, where possible. The classrooms themselves should be as open as possible allowing for supervision and the accumulation of natural light. Classrooms should be flexible enough to adjust to variable demographics and to allow program adjustments to serve a fluctuating demand for Head Start services. Adequate space is necessary for storing children's and teachers' personal items, curriculum materials, supplies, and equipment.

#### Common Spaces

Spaces shared by more than one group are included in this category. The designer should be aware that the children spend long hours of the day away from their own homes and the center becomes their home away from



home. A common area that feels like the core of the center is an excellent organizing concept that will dispel an institutional feeling, especially if it is developed as a friendly environment.

This may simply be an area of circulation that provides a stopping place and allows social interaction. However, it should not be the

multi-purpose room. Circulation through the multi-purpose room has proved to be an undesirable design feature.

Other common areas may consist of one or more of the following: multi-purpose areas, large motor activity areas, meeting/gathering areas, and separate sick bays, if required to meet local licensing requirements.

### Play Spaces

Play spaces are outdoor extensions of the classrooms providing many of the same opportunities as indoor spaces.

They should provide for a variety of developmentally appropriate activities and include storage for curriculum equipment as well as



wheeled toys, tricycles, and wagons. Spending time on the playground is undoubtedly the preferred activity of children. Therefore, to the greatest extent possible, the design should incorporate ease of access to the play spaces.



## 5.9 Space for Adults

### Parent Spaces

Spaces within the center that are used by parents include the entry, reception/living room area, conference room, and the classroom (for observing, visiting, conferring with teachers, and feeding infants). Parents should have direct access to a lavatory. A lactation area, preferably near the nap area, should be provided to offer privacy for nursing mothers. This need not be an enclosed room or even a partitioned area.

### Staff Spaces

Spaces designed for use by teachers and directors may include the resource room, the classroom and play spaces, the entry and reception areas, offices, conference and lounge, resource storage, and adult lavatories.

### Service Spaces

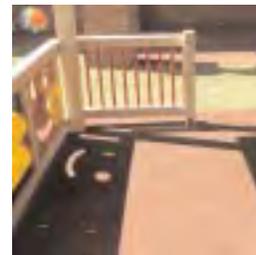
Spaces allocated for service and support to the center include the kitchen and food storage, laundry, janitor's closet, and the electrical/mechanical and telephone equipment room.

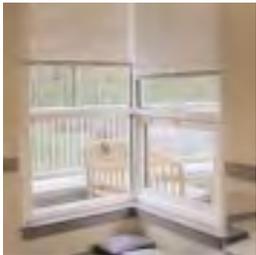


### Circulation

This term applies to the space dedicated to major pathways that connect all the interior spaces.







## Chapter 6

### Site Design

This chapter provides concepts and criteria for site and play yard design. It identifies the general types of outdoor areas required, discusses the relationships of the outdoor and indoor spaces, and provides detailed criteria for fences, dimensions, and surfaces for these spaces.

## 6.1 Concepts for Site Design

The conceptual site design for Head Start centers must be integrated into the design of the overall site to include the movement of vehicles and pedestrians, parking, entry and service points, and constructed or landscape features, such as porches, decks, fences, and shrubs. The site should meet general site design principles and should include specific details on orientation, grading of landscape forms, aesthetics, construction, plant selection, lighting, signage, and amenities.

Before site or playground selection, the soil should be tested for dangerous contaminants such as lead and PCBs. After development, the site should be monitored periodically under the direction of the environmental safety staff to ensure that it does not become contaminated, especially by lead. This is particularly important in urban areas or where there are large numbers of automobiles or nearby industrial facilities. Any old structure located near a playground should be checked for lead or other hazards.

Five conceptual areas of site design relating to Head Start centers include:

- Entry and Circulation
- Parking
- Service
- Safety and security
- Outdoor play space



### 6.1.1 Context

The designer should consider the building in the context of the existing site and should design to enhance that site. Examples of context and exterior design include culturally sensitive art and play activities, colors and textures that reflect regional and community orientation, and games that promote and reflect nationality.



## 6.2 Entry and Circulation

The standards for entrances, parking, service, and security are addressed below.

### 6.2.1 Entry Approach

The center design should include a feature, such as a porch, as a welcome to those arriving and as a transition from the outside. The transition porch could be combined with a covered walkway (recommended for all climates) and connect with short-term parking. The walkway would protect arriving children and parents from inclement weather.



Space should be provided at exit doors to ensure that doors can completely open without obstruction. Drop-off areas should be arranged so that a



child and adult may exit a vehicle from the pedestrian side and proceed directly to the center without crossing in front of traffic, or in front of or behind vehicles.

Ideally, the center entrance should be separate from both the main entrances to the building and from the service area entrances.

### 6.2.2 Parking

Short-term parking should be provided for adults bringing children to the center.

Most often, parents or caregivers bring their children into the center to “sign in” and later “sign out.” Parking spaces are needed to allow time for adults and caregivers who drop off children to have brief conversations with teachers.

Short-term parking for the center should be separated from other tenant parking and located as close to the center as possible. The arrangement should minimize the risk to pedestrians and allow vehicles to move safely. Parking should be located away from busy intersections or vehicle circulation routes. The parking arrangement should never force children or persons in wheelchairs to move behind parked cars. Walkways in front of vehicles must be protected by tire guards, bollards, or other means to prevent any portion of a vehicle from advancing into the walkway.

At least one parking space, typically for the center director's use but also for emergency use, should be provided as near to the center entrance as possible. One service parking space in front of the center is desirable for local mail or package deliveries.

Ideally, an unobstructed line of sight should be provided between the interior of the center director's office through the center entrance and into the short-term parking area.

Employee parking spaces should be as close to the center as possible for ease of access and for safety. This is particularly important in winter



months when staff members may leave the center after dark. Staff parking should be provided for 80 percent of employees at peak capacity. As in any other work place, staff may choose to travel to work using a variety of means. Features to assist those choosing to commute via bicycle, public transportation or carpool should be provided to serve at least 5 percent of the adults

occupying the building. These features may include secure bicycle parking, safe walkways to bus or metro stops, and designated preferred parking spaces for carpools.

Parking should include spaces for staff vans as well as for vans for the handicapped. Van accessible parking spaces must be wide. Parking for staff and visitors who are disabled should be located close to the center

### 6.2.3 Service

Centers that occupy part of an existing building may make use of that building's dock space and service access or provide its own service access (although a completely separate dock may not be necessary). In a stand-alone center, service access will be important, but a dock may not be necessary.

The service access for sanitation removal and for food and supply delivery should be separate from short-term and staff parking. Likewise, a sanitation dumpster should have private access away from parking and play spaces.

The ventilation system design should ensure that emissions from vehicles at the service entry cannot permeate the indoor air of the Head Start center.

### 6.2.4 Security

The security of the center is a prime area of concern in establishing a site. Centers should be separated from public areas by buffer zones and



barriers such as fences or screens particularly in high-security-risk areas. Buffer zones can be created with open turf areas or with rows

of trees, perimeter hedges, berms, or any combination of these elements.

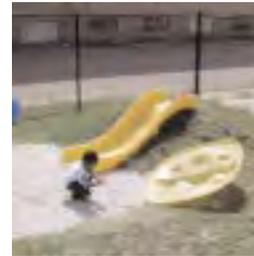


Buffer zones are useful because they offer the center staff the opportunity to observe individuals as they approach the center. In addition, they help shield children from unwanted wind, noise,

and other disruptions. The center location and local conditions may necessitate the use of fences and screens to block the view of the exterior. These should be designed to enhance the relationship of the center to its neighboring buildings and their residents.

### 6.3 Concepts for Play Space Design

The activity spaces in play yards are largely determined by the outdoor play space's architectural landscape features. Individual play spaces



should provide for a range of developmentally appropriate activities for social, emotional, intellectual, and physical development. All play spaces should be designed according to the guidelines in the most recent edition of the Handbook for Public Playground Safety by the Consumer Product Safety Commission.



Best practice indicates that outdoor play spaces should serve as extensions of classroom spaces, especially where a temperate climate allows children and staff to move easily in and out of the exterior space. To the greatest extent possible, outdoor play spaces should be integrated into the overall design of the

center. Separate play spaces are necessary for Head Start and Early Head Start.

Some states require a separate play space for infants and toddlers. Even without such complete separation, individual play areas can be developed to serve each of the following age classifications

- Infants
- Toddlers
- Head Start children (ages 3-5)

Within each age-appropriate play space, spaces should be developed to support and promote each of the following activities:

- Sand/water play
- Dramatic play
- Large muscle play (climbing and playing on toys with wheels)

In addition, equipment storage should be directly accessible from play spaces. It is important to consider installing walk-off mats at every entry point from the play yard to the building, especially for the Early Head Start children.

Additional information on play spaces and play equipment may be obtained from any of the following sources:

- US Product Safety Commission, Child Care Center Design Guide
- The latest ASTM F1487-01-F15.29 Standard Consumer Safety Performance Specifications for Playground Equipment for Public Use
- The latest ASTM F1292-99 Standard Specification for Impact Attenuation of Surface Systems under and around playground equipment
- The latest ASTM F1951-99 Standard Specification for the determination of accessibility of surface systems under and around playground equipment
- The latest ASTM F2049-00 Guide for Fences/Barriers for Public, Commercial and Multi-Family Residential Use Outdoor Play Areas
- American Society for Testing and Materials (ASTM)  
100 Bar Harbour Drive  
West Conshohocken, PA 19428-2959  
(610) 832-9585, Fax: (610) 832-9555
- 36 CFR Part 1191 The Americans with Disabilities Act (ADA)
- Architectural and Barrier Compliance - latest of all applicable Sections
- Architectural and Transportation Barriers Compliance Board  
1331 F Street, NW., suite 1000  
Washington, DC 20004-1111  
(202) 272-5434 extension 139 (voice); (202) 272-5449 (TTY)

- Uniform Federal Accessibility Guidelines (UFAS) for General Services Administration  
[www.access-board.gov/ufas/ufas-html/ufas.htm](http://www.access-board.gov/ufas/ufas-html/ufas.htm)
- American Academy of Public Health Association Academy of Pediatrics-Caring for our Children/Out of Home Head Start Programs 2002
- American Academy of Pediatrics. Injury Control for Children and Youth. Elk Grove, IL: American Academy of Pediatrics, 1987 (under revision).
- Head Start Information and Publication Center, Toll Free: 866-763-6481

## 6.4 General Design Concepts

Areas within the play space should be zoned by activity type, age group, and landscape character. Play areas for infants and toddlers must be physically separated from play areas for older children but should retain some visual connection.

*Fencing without sharp edges is to be used to separate the play areas. It should end 3.3 feet above the ground and should be similar in appearance to the perimeter fence or wall. The tops of fencing and spacing of pickets must present no hazard to children or adults. Spacing between pickets should be no more than 3.5 inches.*



Tops of fence pickets should be flat and end at the top horizontal rail to protect against punctures. Horizontal elements that can be used as ladders should not be included in the design of the fence. Walls adjacent to playgrounds should not be accessible for climbing.

### 6.4.1 Location

Activity areas within the play yard should be placed near elements that serve as a point of reference by both children and teachers as they move throughout the different play spaces. Entrance points, transition and staging areas, storage facilities, seating areas, overhead structures, trees, gathering areas, and larger play structures may all function as points of reference or landmarks within play spaces.

### 6.4.2 Separation

Circulation paths, barriers, screens, structures, play equipment, plantings, landscape forms, grade changes, and open buffer areas may define specific play spaces. Separation of play spaces should be subtle, allowing some visual, audible, or physical connections.



A 3-ft. evergreen shrub or picket fence with rounded corners are appropriate for separating infant/toddler play yards from preschool areas.

### 6.4.3 Transitional Areas

Linkage of interior and exterior spaces with transitional areas, such as decks or open vestibules is appropriate and allows for blending these environments.



They also may function as a point of departure or staging area for play yard excursions.



### 6.4.4 Porches and Decks

Porches are desirable outdoor play areas where weather is problematic. Porches and decks can be used for shade to avoid heat, sun, and rain. In areas with moderate year-round temperatures, porches and decks can be used throughout the year.

Porches provide the nurturing environment and serve as a transition to natural elements. They are substantially less expensive than interior, conditioned, or finished space. If west-facing glass is required, a connected covered porch at least 7 feet wide will significantly reduce the air conditioning load in the classroom and the center.

### 6.4.5 Shade

Approximately half of the play space should be shaded, and the other half of the play space should be exposed to direct sunlight. Levels of exposed direct sunlight may be measured at noon on the Summer Solstice

(June 21st). The following solar declension Web site is a useful resource:

<http://www.usc.edu/dept/architecture/mbs/tools/vrsolar/index.html>

#### 6.4.6 Circulation

Circulation within play spaces should allow movement throughout the various areas. Dedicated pathways and routes suitable for wheeled toys should be provided. A circulation pathway 60 inches wide at a minimum provides the primary element that ties the play yard together. These pathways should be wide enough to accommodate movement of wheeled vehicles in both directions (unless movement is restricted to one direction).

The play yard should have a minimum of two access points, one from the classroom and one from the play yard to outside the site. The access point from the play yard to outside the site



should allow for retrieval of play equipment.

The design should accommodate the movement of maintenance equipment into the play yard and allow an emergency exit. All access points should be controlled and readily visible for security purposes.

The design of the playground should accommodate the movement of disabled children and adults through the play yard.

#### 6.4.7 Site Furniture

It is advisable to provide child seating in a shaded area of the play space with views of other areas. Children should be able to talk with each other or their teachers in a relaxed fashion or enjoy a story group. Tables and chairs, a bench, or a picnic table will allow children and visiting parents to eat their lunches or snacks or to occupy themselves with drawing and other activities.

Easels for open-air painting are desirable and can improve the appearance of centers. There should be adequate approach and fall zones for equipment and furniture, as prescribed by the current edition of *Handbook for Public Playground Safety*, issued by the Consumer Product Safety Commission.

Wood treated with pentachlorophenol or creosote should not be used on the site.

### 6.4.8 Storage

Storage areas and containers should be uniquely marked and easily recognized to indicate their use. Storage bins provide an opportunity



for children to learn organization and cooperation skills and acquire a sense of responsibility by learning to return toys and tools to the correct storage areas.

There should be visibility and ventilation into storage areas. Exterior storage should have

locks that operate on the exterior but can be released from inside.

## 6.5 Types of Outdoor Play Spaces

### 6.5.1 Sand and Water

Facilities offering sand and water play allow children to pretend and to project their ideas using those elements. Sand and water play should be accessible to children to encourage their imaginations, play, and social skills.



Sand and water tables should have play surfaces at children's height allowing them to dip out a portion of sand or water onto a stable surface. It is valuable to allow play space and storage for props such as spoons, shovels, pails, plastic toys, containers, and buckets, as these add to the quality of play experiences.



It is wise to provide a hose connection for water play and for filling wading pools that is accessible. It also is desirable to emphasize the source of the water in the design, since it is such an important part of the play yard.

In particularly warm areas, there will be a need for a child-scaled drinking fountain on the playground. This should be discussed during the design phase.

### 6.5.2 Dramatic Play

Children often use many different areas of the play yard as stage settings for dramatic play. Good design will offer many opportunities for children to engage in role-playing and make-believe activities.

Playhouse structures should have seating, adequate play areas, and storage for a wide variety of props, such as boards, scrap lumber, dress-up clothes, cooking utensils, tarpaulins, banners, signs, and other items that

support high quality dramatic play. The dramatic play area should be adjacent to and incorporate paths and parking areas for wheeled toys. Level changes greatly enhance the quality of dramatic play.

### 6.5.3 Large Motor Play



Large motor play areas support the physical development of children. These areas offer opportunities for climbing and riding wheeled toys, as well as running, jumping, sliding, and balancing. Fixed equipment, such as super-structure play pieces and slides, encourage children to explore the limits of their physical

abilities by offering varying levels of difficulty and challenge. Berms that create small hills provide challenges, and are cost effective



additions. They also provide visual interest and can help add a connection to nature.

The degree of difficulty, challenge, or risk must be obvious to children involved in any given activity. Hidden or unforeseen risks are dangerous and can result in injuries

Small berms and hills, large rocks, stumps, trees and bushes not only provide settings and obstacles for children to climb over, jump on, dodge around, or hide behind but also present challenges. Playing with wheeled toys, such as tricycles and wagons, helps develop coordination and physical strength. The large space required for these activities and the boisterous character of this play dictate that this area be established away from more quiet areas. Local licensing authorities should be consulted as early as possible in order to avoid design misinterpretations.



Play areas should be made accessible to children with disabilities. The proposed rules are quite complex, and the designer should consult with playground equipment manufacturers and refer to the Web site: [www.access-board.gov/](http://www.access-board.gov/)

To provide a safe environment that allows gross motor activity, move the children rather than equipment. The following elements have been found to be unsafe in group care settings:

- Metal slides can cause burns when they become hot.
- Enclosed tunnel slides make observation difficult and can allow one climbing child above the enclosed tunnel to fall on top of another at the tunnel exit.
- Traditional seesaws can result in injuries when one child unexpectedly jumps off.
- Spring mounted, rocking toys with very heavy animal seats can strike a child. (There are acceptable, lighter weight rocking toy alternatives.)
- Swings, other than tire swings.

## 6.6 Play Yards for Different Age Groups

### 6.6.1 Infant Outdoor Play Areas

Play areas for infants require special design considerations. Best practice indicates that separate spaces for infants should be near toddler play areas, providing visual and audible connections but limited physical contact. Ideally, infant play areas should be exposed to the natural environment, though shielded from wind or sun.



Infant play area surfaces should consist of soft, resilient materials that protect crawling children

and provide a comfortable surface on which they can sit. Soft surfaces may have different textures and colors that indicate changes in activities and challenges.

Developmentally appropriate challenges should be contained within boundaries or behind slight barriers. These challenges could take the form of crawling spaces with slight inclines, low, easy-to-cross barriers or berms, pull-up bars, and low platforms and slides. There should be a surface hard enough to allow the use of wheeled and push toys.

### 6.6.2 Toddler Outdoor Play Areas

Toddlers should have play areas for walking, jumping, climbing, running,



drawing, painting, block play, group play, sorting, and exploring. The play environment should allow for a wide range of movement and stimulate the senses through a variety of novel challenges. Simple climbing equipment is more appropriate for toddlers than scaled-down versions of older children's play

structures. Toddlers enjoy semi-enclosed spaces, such as small playhouses or climb-through tunnels. They also enjoy small slides. Toddlers seek out experiences offering motion or movement.

Play structures in toddler areas should be surrounded by a resilient surface. A variety of surfaces and materials (including sand and dirt, pavement, and open grassy areas) should be provided so the toddlers can play with an assortment of objects. There should be a hard surface area and paths for wheeled toys.

When combined with toys, sand is a major resource for toddler play. All sand areas require fitted water-permeable covers to deter rodents and other pests.

### 6.6.3 Head Start Outdoor Play Areas

Play areas for Head Start children should support dramatic, constructive, and creative play, active and quiet play, sand and water play, and exploration of nature. Head Start children interact, socialize, discuss, negotiate, and engage in socio-dramatic play. Running, jumping, climbing, and swinging are often part of make-believe play.

The center should include a large, open-ended play structure offering many activities leading to

dramatic play. The center site should have elements such as playhouses, stages, and props to encourage dramatic play and should be positioned within the play area to allow dramatic play to spill out and flow into other spaces. Facilities for play with sand and water should be included and placed adjacent to one another allowing these activities to overlap.

Pathways for wheeled toys provide circulation and allow activities to flow through the play areas. Safety helmets should be required on hard surfaces. Circulation surfaces in play yards should be suitable for wheelchair use.

Materials for creative play, such as musical devices, painting materials, chalkboards, construction materials, and blocks, should be included. A covered porch is an ideal location for painting and drawing.

Generally, the best large muscle activities in group care settings occur when children are moving, not the equipment. Though tire swings are appropriate, standard swings are too problematic.



## 6.7 Specific Site Technical Criteria

### 6.7.1 Fences and Enclosures

These best practices should guide the play yard design:

- Play yards must be enclosed with a fence or shrubs to define play space, allow ease of supervision, and provide security and protection from unauthorized individuals. Since fence design and shrubs are visible elements in the center, they should be attractive elements. Chain link fencing is discouraged; however, if used, it should be dark and vinyl-coated (not green). Exposed galvanized wire is not appropriate because it has an institutional look. The fence can have no sharp exposed connections accessible to children. Note: A/E to reference ASTM fence standards (F2049-00).
- Bollards, raised planters or other devices should be used to keep automobiles from veering into the play yard area.
- The height, transparency or opaqueness of the fence will depend on the location



and environmental conditions.

- Spaces between fence pickets should be between 3.4 and 9 inches wide to prevent children's heads from becoming trapped. There should be no openings between 0.3 inch and 1 inch wide. Refer to the most recent edition of the Handbook for Public Playground Safety of the Consumer Product Safety Commission (CPSC).
- A 6-foot-high fence should enclose the play yard. Also acceptable is a shorter fence with plantings or landscape features that are positioned so that an adult can not reach over the fence.
- When the play yard is adjacent to hazardous areas such as busy roadways or a high-security-risk neighborhood, an 8-foot-high fence is recommended. Views from the play yard should be screened by either plants or other suitable alternatives.
- The fence bottom should be no higher than 3 inches above the ground. Exposed fence bottoms should have a smooth finish.
- Wood fences should have a smooth finish, be splinter-free and guaranteed to be non-toxic.
- Gates should be self-closing and latching. Children's fingers should be protected from pinching or being crushed on gate hinges. Ideally, each play yard should have a vehicle gate as a service entrance.



- Fences may be used for protection from the elements and to control sunlight and wind exposure.
- Fences must have smooth caps and no finials or sharp picket tops.
- Fence design should discourage climbing and the fence must be able to withstand code-specific force applied horizontally.
- Fence construction should not use horizontal rails except for the cap and base to prevent climbing.
- Fastening devices should not project outward since that could injure children.
- Remove or trim trees with low hanging limbs if they allow for climbing from either side of the fenced area. In no case should limbs project below 6.5 feet from the ground.

### 6.7.2 Plant Materials

All plant materials must be non-toxic. See *Appendix G* for a listing of common toxic and non-toxic plant material. The local agricultural Extension Service can provide detailed information on toxic or poisonous plants in the local area. Common plant hazards include berries, thorns, and plants with toxic leaves, stems, roots, or flowers.

It is advisable to design planting and irrigation systems to eliminate using potable water.

Instead, maximize the use of native vegetation, which has lower maintenance requirements than introduced species. Avoid the use of chemical fertilizers and pesticides. Use locally acquired composted materials for fertilizing and practice integrated pest management to





control pests using the least toxic methods feasible. Use alternate, less toxic termite prevention systems rather than chemical soil treatment for wood-framed buildings. Where soil treatment is determined to be necessary, use less toxic chemicals than chlorpyrifos

(“Dursban”), which is currently being phased out by the EPA.

Consider the following advice about plant materials:

- Plants should be used to introduce nature to the play yard environment.
- The center atmosphere is enlivened by the color, texture, sound, and motion of plant materials.
- Observation of plant growth is beneficial to children.
- Plant materials that change with the seasons are desirable. Visual barriers, screens, and shade and wind protection can be created using plant materials with or instead of man-made structures.
- Plant materials should be used to define interesting play areas.

### 6.7.3 Dimensions and Clearances

Best practice indicates that centers should be designed with the following guidelines in mind:

- Main entrance pathways should be 6 to 8 feet wide. All pathways must provide adequate clearance as prescribed by the UFAS and ADA standards. Pathway slopes should be no greater than 1:20 and should include handrails.
- Platforms, stairs, handrails on stairs, guardrails, and protective barriers on platforms should comply with requirements in the latest edition of the *Handbook for Public Playground Safety of the CPSC*. The height of platforms and the age group using the platform will determine when a guardrail or protective barrier is required. Guardrails may be used on platforms at lower heights, while protective barriers should be provided on higher platforms.
- Handrails should be provided to accommodate the intended age group including adults on all stairs. For children, heights will range between 20 and 36 inches above the leading edge of the tread. In certain instances, it may be necessary to have dual railings mounted at different heights.
- Guardrails should be provided for infants and toddlers on all platforms higher than 12 inches above adjacent surfaces. Guardrails must be provided for Head Start-age children on all platforms greater than 20 inches above adjacent surfaces. The top of the guardrail must be 30 inches above the platform. The guardrail should not have openings between 3.4 and 9 inches to avoid the possibility of head entrapment.

There should be no openings in the fence between 0.3 and 1 inch wide to prevent finger entrapments.

- Protective barriers should be provided for all children on all platforms more than 30 inches above adjacent surfaces. The protective barrier should be 30 inches above the platform with no openings larger than 3 inches and no horizontal footholds.
- Maximum platform height for infants is 18 inches above the adjacent floor level.
- Maximum platform height for toddlers is 36 inches above the adjacent floor level.
- Maximum platform height for Head Start children is 4.5 feet above the adjacent floor level.
- Pathways under trees and constructed elements must have at least 6.7 feet of headroom.
- There must be a fall zone with a resilient surface under all climbing and moving fixed play equipment, as specified in the current



CPSC and local licensing criteria. Typically, a minimum 6-foot radius is required. The criteria for resilient surfaces are discussed below.

- There should be a 6-foot radius clear approach zone to all play equipment not including the fall zone. No tricycle path should run through a fall zone.

#### 6.7.4 Shading

At least half of the play yard should be exposed to sunlight during the morning and afternoon hours when it is in use.

The degree of shade depends on local climatic conditions. Shade areas, including porches, gazebos, and other structures, should provide a minimum shaded area of 6 feet in all directions. Shade may be provided by trees, exterior screened rooms, park shelters and structures, awnings, and umbrellas.

#### 6.7.5 Play Yard Surfaces

A variety of ground surface texture is required on a playground. Surfaces for play yards are based on their physical properties and are categorized into three general types: resilient, hard, and grass/turf.

#### 6.7.6 Resilient Surfaces

Resilient surfaces reduce the impact from falls and should be used in specific equipment areas referred to as fall zones. Refer to ASTM F-355, *Shock Absorbing Properties of Playing Surface Systems and Materials* and the most recent publication of the CPSC's *Handbook for Public Playground Safety*,

for specific requirements concerning these resilient surfaces. Examples of approved resilient surface materials include pre-engineered wood chips (not simply wood mulch), pre-formed rubber matting, and poured-in-place rubberized surfaces. Water should drain through these surfaces.

If using a rubber play yard surface, the EPA's Comprehensive Procurement Guidelines (CPG) indicate that rubber play yard surfacing materials should be made from at least 90-100 percent recycled tire rubber including rubber pavers or loose granulated rubber surfacing.



The fall-absorbing capacity of each surface depends upon the installed thickness and the method of installation. Designers should follow the CPSC recommendations for the type of surface used.

These surfaces vary dramatically in cost. The least expensive are the loose-fill variety which typically require a much higher level of maintenance to ensure that the required depth is maintained. This problem should be discussed during the design process. The designer may recommend the more expensive rubberized solutions for ease of maintenance, but should receive written assurance that exposure to sunlight does not lessen the impact-absorptive properties. Adequate drainage should be provided beneath any resilient material including wood chips.



A combination of materials, such as grass, resilient surface, and pre-engineered wood chips, incorporates the advantages of each material and renders a more natural, less institutional appearance than any one surface alone.



The designer also should take note of the following information when planning:

- Organic materials, such as wood chips, bark chips, and pre-engineered wheel chair accessible processed wood fibers, have good impact-absorbing potential but require proper maintenance to ensure they retain consistent depth.
- Although tire chips have good resiliency and are relatively inexpensive, they can leave black marks on shoes and clothing and require ongoing maintenance to ensure that proper depths are maintained. Steel belt residue should be removed.
- It is important to ensure that manufactured resilient mats retain slip resistance when wet and are tightly installed to prevent tripping hazards.
- Artificial turf alone does not have enough resiliency for fall zones and can be abrasive.

### 6.7.7 Hard Surfaces

Hard surfaces should be provided in areas used for wheeled riding, in game court areas, and on some all-weather pathways, such as those for wheelchair access. Examples of hard surface materials include concrete, asphalt, stone, or masonry pavers. The durability of each material will vary based on factors such as installation and the thickness of the surface material.

Although the severity of weather affects all paving surfaces, cast-in-place concrete over a well-compacted sub-grade is the most durable, maintenance-free paving material for hard surface areas. It should be finished to be non-slip. Asphalt paving is an acceptable alternative in vehicular areas, but it degrades more quickly than concrete. Masonry pavers can make a durable surface and have numerous options for patterns.

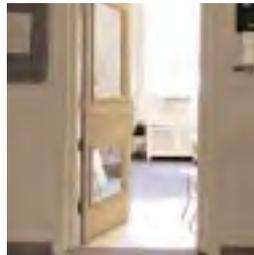
Consider the following when planning hard surfaces and pathways:

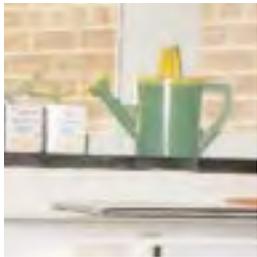
- The use of pavers may introduce joints and textures in the paving surface. They can become uneven over time, if they are not laid over a concrete base. Unevenness may present a tripping hazard. Cost varies depending on the method of installation. Asphalt usually is the least expensive, and stone or masonry pavers are the most expensive. It is possible to use a variety of surface configurations and materials to increase the impression of “naturalness” in the play yard. Specifications and supervision to ensure excellent compaction will affect the serviceability of the surface material.

- Materials for pathways should allow use during inclement weather. Acceptable materials include concrete, asphalt, stone or masonry pavers, rubberized surfaces, rubber matting, or wood chips. The edges of pathways should not create trip hazards and should be tapered for transitions. All surfaces should allow wheelchair access.
- The main entrance pathway should be paved. Gravel and loose stone are not recommended for walkway surfaces for children. Smooth surfaces provided for wheeled toys on pathways should not have joints wider than 1/2 inch because wide joints can cause toys to tip.

### 6.7.8 Grasses/Turf Surfaces

Grass/turf is desirable for open play areas but is not appropriate in fall zones. This surface is seasonal and is not suitable during periods of rainfall or snow. Exposure to grass/turf allows children to experience natural materials and provides a pleasant texture to play on, but the surface requires constant maintenance and may need an irrigation system. This type of surface requires maintenance regularly.





## Chapter 7

### Interior Space Design

This chapter provides concepts and criteria for the design of the interior spaces of a Head Start center. Area categories include entry and circulation areas, staff rooms, classrooms, common areas, and service areas.

## 7.1 General Information

Spaces within the center can be separated into three major types: 1) the classroom and common use areas for children; 2) the staff areas for teachers and administrators; and 3) the service areas for servicing the center. The entries to the center and main circulation pathways unify these areas. Descriptions for each space type are as follows. See Chapter 9 for finish recommendations.

### 7.1.1 Entry and Circulation

The entry includes the transition space, vestibule, and reception area where parents, teachers, children, and visitors enter the facility. The main circulation provides pathways between discreet functional spaces.



### 7.1.2 Staff Areas

Staff areas include the director's office, assistant or secretary's work space, staff lounge and work area, staff toilet, parent/teacher conference area, and central resource storage.

### 7.1.3 Classrooms

Classrooms for infants, toddlers, and Head Start children are specific to the group using the space. Best practice indicates that these classrooms must have a variety of spaces to support the children's care and developmentally appropriate activities.



Architecturally defined spaces within classrooms include the entrance, cubby storage, classroom and teacher storage, diapering station and storage, toileting and hand washing, sleeping, nursing, and food preparation. The classroom should have an art sink, raised areas, and loft areas (though these level changes need not be built in), and open, architecturally unrestricted areas.



### 7.1.4 Common Areas

The center may have additional space in a centrally located area for use by children, teachers, and parents. A beneficial by-product of a Head Start center is a stronger sense of community among those using the center.



The center may include a multiple-purpose space. The multiple-purpose space may be used as a meeting area and as a large-motor-activity area. Best practice indicates that if no adequate outdoor play yard space is available or climate is not conducive to outdoor play during significant portions of the year, an indoor large-motor-activity area should be provided. If either portable or permanent lofts are to be located in this room, appropriate protective surfacing should be provided for the highest unprotected deck. (Ref: ASTM-F1292-99)

Unless local licensing requires a separate sick bay, the area should be near the center director's office. A sick child must wait here until he is picked up by his parent. (See Chapter 10 for ventilation requirements.)



### 7.1.5 Service Areas

The center requires space for services including food, laundry, janitorial, and service dock/entrance.

### 7.1.6 Entrance and Circulation



These spaces should provide a safe and convenient arrival and departure site. The main entry is vital to creating a friendly impression for children and a non-threatening transition from parents' care to staff care.

Certain features help promote a successful transition:

- An entrance door glazed with safety glass provides full visibility for children and adults.
- Entryway visibility of classrooms and interesting displays for children can help to ensure a smooth transition at arrival time.
- A reception desk that allows children to see the adult staffing reception, if one is required. (Typically centers with a population of 74 or more might have a reception desk to monitor access to the center.) The reception desk should be simple not a high counter. Note that the need for a reception desk should be discussed during design development because this feature is often underutilized in existing centers.
- The main entrance should be in close proximity to an adult lavatory for use by parents and staff.

Other points of entry for the facility include service entry access to the play yards and the classrooms. The main entry should include an exterior transition area, or a covered bench for good-byes, shoe-tying and other child/parent interactions. Ideally, the entry that conforms to ADA dimension requirements would include a vestibule for energy conservation and a reception area. Secondary entries should have transition areas but do not require thermal vestibules. Depending on the climate, porches or mudrooms can serve this purpose. In spaces that are difficult to monitor, fire egress doors should be alarmed.

### 7.1.7 Exterior Transition Spaces

Rough textured ground surfaces combined with landscaping that keeps soil and foliage away from the entry path are appropriate in these areas. Ground materials and landscaping leading to the building entry should be designed to minimize the potential for tracking soil and water into the building.

All exterior entries used by children should have transition spaces with a bench and a covered area of at least 22.5 square feet. The covered area may be a roof, canopy, or trellis. Transition spaces are important in creating a comfortable environment and integrating the exterior



and the interior. These spaces allow children to adjust to the changes between interior and exterior light levels and temperatures.

A transition space also may serve as a mud room or may provide an area for children in the outdoor environment.

Elements extending from the building, such as porches, verandas,

canopies, or arcades, can create successful transition spaces and in warm climates can be used as program areas.

### 7.1.8 Vestibule

Provide views of the short-term-parking area from the entry vestibule and design the windows with low sills so that children can look through the windows. Vestibules should consist of two sets of doors to provide energy conservation. The doors must be arranged to permit use by those in wheelchairs. There should be a flush-mounted walk-off mat to prevent tracking of water and soil into the center. The entrance may need security devices. This equipment should be non-intrusive and have a non-threatening appearance. Refer to Chapter 10 for more information on technical requirements. In areas with snow and ice, a roof overhang or canopy should be installed to ensure that the exit is readily accessible at all times.

### 7.1.9 Reception

A reception area should be located immediately inside the entry. It should be warm, bright, and welcoming. The reception area connects the entrance to the main circulation pathways of the center. Parents escort children to the classroom from this location.

A small reception table at desk height may be provided in large centers. It can serve as a sign-in facility or a spot for parent/teacher mailboxes. A counter, which is typically simpler and less expensive than a reception desk, may serve these functions. A child should be able to see the adult

behind the desk. Furnishings in the reception area may include a sofa, chair, end table, and coffee table.

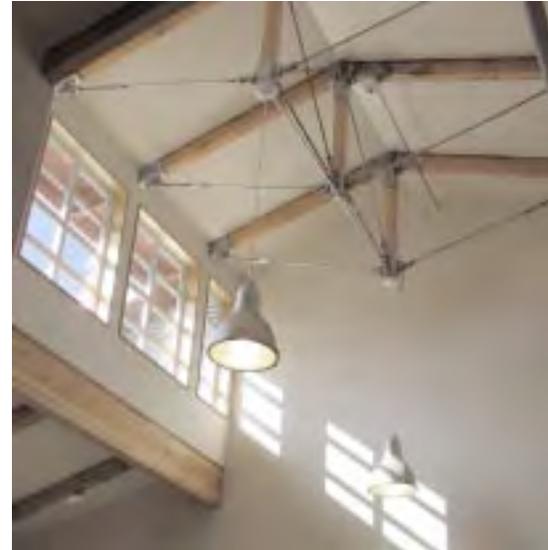
The design team should select durable finishes (Chapter 9) that have an informal, comfortable appearance and should establish a warm, inviting feeling through use of color, soft seating, plants, and artwork. Recommended finishes include a carpeted floor and a washable durable wall finish. Cut-pile carpet has proven less durable than looped pile. Oriental-style patterned rugs may be associated with a home environment. All rugs in the center should have non-slip backing.

#### 7.1.10 Main Circulation

A center includes two types of circulation paths: the main circulation connecting the various classrooms and major spaces of the center path, and the internal circulation patterns within those spaces. Circulation within classrooms will be discussed in the classroom section of this chapter.

The main circulation path serves as a community space as well as a pathway. The circulation space should not be utilitarian in character. Instead, it should be a street or a gallery with stopping and queuing areas along the way. There should be an opportunity for important social interaction along the circulation path. It is a space to meet other children and parents, a vantage point to see into classrooms, and an exhibition space for children's art.

The designer should strive to limit the floor space devoted to pure



building circulation. There should be at least one accessible drinking fountain in the corridor. It is advisable to avoid the institutional appearance that is created by long, undeviating, double-loaded corridors with doors to rooms on both sides.

When it is not feasible to vary the layout of the circulation corridor, consider adopting the following design strategies to deemphasize the impression long corridors make:

- **Lighting:** The designer can introduce artificial lighting. Instead of the dead-center placement of fluorescent lights in corridor ceilings, add strategically placed wall washing lights or natural light through skylights. Putting a window, glazed door, or skylight at the end of a corridor is advisable.
- **Floor Pattern:** Using patterns can create a strong sense of place for children and when skillfully used will diminish the impression of long, double-loaded corridors. Large pattern repeats are often effective

for de-emphasizing the tunnel appearance of double-loaded corridors. Patterns that are not symmetrically arranged or that emphasize functional areas, such as entrances to classrooms, are an effective means to achieve the same end.

- Color: The designer should use color to visually alter the dimensions of otherwise institutional looking double-loaded corridors. Care should be taken in choosing the colors. Some think that bright colors may over-stimulate a child. However, since some cultures and com-

munities use colors as a means of identity, color is an important local decision.

Children gain a sense of orientation when they can see the entrance to their classroom and recognize landmarks, such as displays, common areas, and other design features.

Teachers and children

require clear views between the classroom and circulation areas at their viewing levels.



The main circulation path should be designed to serve as a primary means of regular and emergency egress. Through judicious arrangement, the designer should strive to reduce the area devoted to purely utilitarian circulation. No more than 30 percent (some design suggests no more than 20 to 25 percent) of the Occupiable Floor Area (OFA) within a facility should be used for primary circulation and service areas, unless the center location is irregular. The Occupiable Floor Area (OFA) allowance includes circulation within the classroom.

Outside corners in the circulation pathways should be eliminated as much as possible. Angled or curved corners can facilitate cart and stroller traffic and may decrease the possibility of injury.

Recommended finishes for major circulation paths include impervious surfaces at the floor and at wainscot height, paint above wainscot height, and safety glass in windows along the corridor.

#### 7.1.11 Staff Spaces

Staff areas usually include the following spaces:

- Director's office
- Assistant's or secretary's work space
- Parent/teacher conference area
- Area for family workers and health staff to work and interact with parents.
- Staff lounge and work area

- Staff toilet
- Central resource storage

Spaces used by the staff, particularly teachers, should be easily accessible from the main circulation area.

#### 7.1.12 Director's Office

The director will normally perform deskwork and interviews in his/her office. The director may use this space to meet with parents, staff members, children, or other visitors and to conduct parent interviews. Larger centers may have an assistant or secretary who works closely with and shares duties with the director. Space for this staff member should be located near the director's office.

Place this office in a quiet space, next to the reception area and accessible to visitors. To supervise properly, the director's office must have excellent views of the main entry, the reception area, and as many classrooms as possible.

The director's office should be comfortable with a carpeted floor and washable wall surfaces. There should be adequate lighting with task lighting components and acoustical separation of at least 45 STC from the children's active areas.

Furnishings probably would include a desk and chair, two guest chairs, filing cabinets, a coat rack, shelving for books and resources, and lockable storage cabinets or a closet for personal belongings and first aid items.

The director's office requires a telephone and may have security video monitors. There should be adequate power supply to accommodate a personal computer, printer, and a fax machine. A copier and video equipment also may be stored here.

#### 7.1.13 Parent/Teacher Conference Room

Parent/teacher conferences and meetings between staff members normally require space. This space should be located in a private area, adjacent either to the director's office or the staff lounge. It should have data connect cables and jacks.

The conference space should be comfortable, pleasant, and quiet. Furnishings should include a conference table and seating for a suggested minimum of six, shelving for books, and a notice/bulletin board. Lighting should be dimmable so that video tapes may be viewed.

#### 7.1.14 Staff Lounge

The staff may use this space as both a retreat and a workroom. They may relax and eat here, plan curricula, and prepare classroom materials. The lounge may contain a cot or sofa and should be located near the adult lavatory and central resource storage area. This space requires visual and acoustical separation from children's areas but should be easily accessible to the staff.

The lounge should be comfortable, pleasant, and soothing. It should contain a counter with a microwave, a sink, an under-counter refrigerator, and

cabinets. The flooring at the counter area should be impervious. All base cabinets should have childproof hardware. Recommended furnishings include a table with four chairs, a small sofa, and storage cabinets, some of which lock.

The workroom should have adequate space and power connections for telephone, computer, video equipment, and laminating and copy machines (unless they are in the director's office). The machines should be isolated in an alcove for better control of noise. There also should be space on the counter for a butcher paper holder and an art waxer (a piece of equipment that allows children's art to be hung without tape or pins).

#### 7.1.15 Staff Lavatory

A center must provide at least one adult lavatory, although two, at either end of the center are recommended. Two adult lavatories improve the center's functioning because this enables teachers to be out of classrooms for shorter periods.

Adult lavatories in the center must meet all UFAS and ADA code requirements. Lavatories should be accessible from the reception area and staff lounge. Recommended finishes include impervious flooring such as linoleum and painted walls above an impervious wainscot. One adult lavatory should be located in or near the infant and young toddler classroom areas. Electronic faucets are advisable in adult lavatories.

#### 7.1.16 Central Resource Storage

The director and teachers may use a centrally located resource room for bulk storage of curricula materials and supplies and for storage of resource tapes, books, and audio/video equipment. The central resource storage is not a substitute for small-scale storage within the classroom. This storage is typically wall-mounted cabinets in the classrooms. The base of these securely anchored cabinets must be no lower than 4.5 feet above the finished floor below.

The storage room should have open shelving, lockable, closed-door storage, and filing cabinets. If space permits, a work counter and a counter-height stool may be provided.

## 7.2 General Concepts for Classroom Design

Children spend most of their day in the classroom. Classrooms afford facilities for care and opportunities for developmentally appropriate activities. Parents typically drop off and pick up children in the classroom, and adults may visit during the day or help as classroom volunteers.

### 7.2.1 Classroom Areas

The classroom design includes functional areas defined by furniture arrangements and constructed elements that vary depending on the age of the children in the class. To maximize the space devoted to these important functions, the circulation between entrance and exits should be as direct as possible. It is appropriate to position tables and work surfaces adjacent to circulation areas, while retaining corners and floor areas for more protected and nurturing activities.



Ideally, classroom areas should be designed or arranged to fit four or five children and one adult. There also should be a group gathering area. Areas located in alcoves can allow children to be by themselves or in small groups. Classrooms should be equipped with convenient bins for recycling waste paper and other items.

Major classroom elements, such as plumbing connections, risers or case goods secured in place for safety reasons will remain fixed.

Children and their teachers may modify the remaining space to create areas for their activities. The classrooms should provide flexibility for these activities.



Manufactured cubbies anchored to full partitions have been found to be more cost-effective than built-in types. The designer should ensure that the classroom space can accommodate the manufactured cubbies. It is wise to prevent an excess of



children's personal items in and around cubbies that would affect the order and function of the classroom. The cubbies could be arranged to form a cloakroom, an entrance alcove, or a transition area with openings facing away from the main classroom.

Children should have opportunities for diverse activities in the classroom. Lofts offer an opportunity for exploration; however, built-in lofts

are not recommended. Low shelves and partitions should be secured to prevent tipping if they are used to separate use areas.

A well-equipped classroom for particular age groups should have the following areas:

### Infant Classroom

- Entrance
- Cubby storage
- Classroom and teacher storage
- Adult lavatory within the classroom (preferable) but no more than 33

feet from the infant classroom entry

- Diapering station and storage
- Sleeping/crib area
- Nursing area
- Eating/table area
- Food preparation area
- Open activity and crawling area for play and development



### Young Toddler Classroom

- Entrance
- Cubby storage
- Classroom and teacher storage
- Adult lavatory within 10 meters of entry
- Diapering station and storage
- Children's toilets and sinks
- Eating/table area
- Food preparation area
- Open activity area for play and development
- Area with level change (three risers minimum)
- Cot storage



### Older Toddler Classroom

- Entrance
- Cubby storage
- Classroom and teacher storage
- Children's toilets and sinks (one sink at toilet exit is preferable to avoid congestion)
- Eating/table area
- Art sink
- Area with level change (three risers minimum)
- Open, unrestricted activity area
- Water fountain
- Cot storage

### Head Start Classroom

- Entrance
- Cubby storage
- A classroom for three-year old children requires a small diaper changing area
- Classroom and teacher storage
- Children's toilets and sinks (one sink at toilet exit preferable to avoid congestion)
- Eating/table area
- Art sink
- Water play area
- Drinking fountain

- Loft area (not built in)
- Area with level change (three risers minimum)
- Open, unrestricted activity area
- Block area (64 square feet minimum) located away from main circulation
- Cot storage

Separate male/female child-sized toilets should comply with ADAAG and with UFAS. If this is a problem, the designers should insure that the doors are low enough (59 inches max.) to allow adult supervision.

If windows are installed, they should be located to allow adult supervision of the classroom.

The proper zoning of classrooms is critical to the success of the center. The designer and users should consult at length.

General classroom design principles include the following:

- Discreet functional areas need to be included in the design of the classroom even though they may be created primarily with furniture.
- Noisy and active areas need to be away from quiet areas.
- The circulation from equipment such as slides should flow away from activity centers.
- Block play is an essential activity and areas must be provided where blocks can remain in position for more than a day and be protected

from main circulation pathways and active play.

- Do not crowd the space with more tables than necessary for mealtime. and avoid excessive distance between tables. Rectangular tables should be arranged with 3.25 feet of clear space between them.

### 7.2.2 Classroom Location

To receive the maximum access to natural light, classrooms should be located along the exterior perimeter of the building. If not possible, the classroom should be located near areas that are along an exterior wall with windows.

Where possible, classrooms should have direct access to a central circulation system and direct access to play yards. They should be close to common use spaces.

### 7.2.3 Classroom Size

Design classrooms to accommodate the number of children for each age group. The Head Start Program Performance Standards and local licensing requirements must be referenced. Infants and young toddlers must have classrooms separate from other age groups. The design should allow for future expansion in all centers.

### 7.2.4 Separation of Spaces

Solid or glazed partitions at full height, doors, casework, cabinets, panels, and railings can be used for separation.

Three types of separation must be considered:

- Acoustical separation
- Visual separation
- Physical separation

The following aspects of separation should be considered when designing the classroom spaces:

- Groups or classrooms of children must be physically separated from each other.
- Sound transmission between classrooms should be controlled



with not less than 34 STC partitions, although complete acoustical separation is not suggested.

- High noise levels



from adjoining classroom spaces can negatively affect class activities.

- Small, strategically placed windows between classrooms are recommended to offer children a view of other classroom activities. Placement of windows should not interfere with potential placement of classroom furniture. Install at least one window at child and adult levels.

Provide partial height enclosure for fixed elements in the following areas: food preparation, children's toilet and hand washing, and the rear of cubbies. Food preparation and toileting/diapering areas must be separated to reduce the chance that a caregiver could inadvertently spread germs. Partitions with vision panels can be used effectively to separate these areas while allowing supervision.

Provide complete enclosure for teacher storage within the classroom and complete enclosure for the adult toilets.

### 7.3 Scale

The design of a nurturing classroom must reflect the designers' appreciation of children's scale, including the size of individual spaces within the classroom and the scale of furnishings. (Refer to Table 7.3 showing Physical Dimensions of Children.).

While areas of high ceilings in a classroom may be desirable, height must be modified in spaces that the child perceives as too high to have a residential character (for example, 85 percent of the room is over 11 feet high).

Consider using pendant lighting or ceiling fans hung no lower than 7.5 feet above the occupied floor area below. Pendant task lighting over fixed elements may hang as low as 5.5 feet as long as headroom is not required for passage. Choose fans to improve air flow and energy efficiency with rotation that can be reversed. Aside from the obvious mechanical and lighting enhancements that these strategies provide, they also help tailor spaces to children's spatial perceptions. In addition, this provides the opportunity to hang banners and create trellis ceilings over activity

**Table 7.3 — PHYSICAL DIMENSIONS OF CHILDREN**

The following dimensions are stated in inches and represent averages. Metric measures have been converted to English equivalents using the conversions in *Appendix D*.

|                         |       |      |      |      |      |      |      |
|-------------------------|-------|------|------|------|------|------|------|
| AGE IN YEARS            | BIRTH | .5   | 1.0  | 2.0  | 3.0  | 4.0  | 5.0  |
| BODY LENGTH             |       | 20.0 | 26.4 | 30.0 | 34.4 | 38.0 | 45.7 |
| HEAD LENGTH             |       | 4.9  | 5.9  | 6.9  | 7.5  | 7.7  | 7.9  |
| HEAD WIDTH              |       | 3.8  | 4.7  | 5.2  | 5.5  | 5.6  | 5.7  |
| HEAD CIRCUMFERENCE      |       | 21.9 | 17.3 | 18.6 | 19.6 | 19.6 | 20.1 |
| TRUNK LENGTH            |       | 8.3  | 11.6 | 12.6 | 13.6 | 14.3 | 15.3 |
| SHOULDER WIDTH          |       | 5.9  | 7.0  | 8.0  | 8.8  | 9.3  | 10.0 |
| CHEST CIRCUMFERENCE     |       | 13.0 | 17.2 | 18.7 | 20   | 20.5 | 21.7 |
| ABDOMINAL CIRCUMFERENCE | N/A   | 16.1 | 17.5 | 18.2 | 8.5  | 20.3 | 20.4 |
| PELVIC WIDTH            |       | 4.6  | 4.6  | 5.1  | 5.7  | 6.2  | 7.3  |
| ARM LENGTH              |       | 7.6  | 10.0 | 12.0 | 14.6 | 6.4  | 16.7 |
| HAND LENGTH             | N/A   | N/A  | 3.8  | 4.2  | 4.7  | 4.9  | 5.0  |
| HAND WIDTH              |       | 1.4  | 1.6  | 1.7  | 1.9  | 2.0  | 2.2  |
| LEG AND THIGH LENGTH    |       | 6.6  | 8.2  | 9.6  | 12.2 | 14.6 | 22.9 |
| SITTING HEIGHT          | N/A   | 17.6 | 19.2 | 21.2 | 22.5 | 23.5 | 24.5 |
| KNEE WIDTH              |       | 1.5  | N/A  | 2.5  | 2.6  | 2.7  | 2.7  |
| WEIGHT IN POUNDS        |       | 7.5  | 16.7 | 22.0 | 28.0 | 32.0 | 43.0 |
| KNEE PIVOT TO FLOOR     | N/A   | N/A  | N/A  | 9.6  | 10.4 | 11.3 | 12.5 |
| KNEE WIDTH              |       | 1.5  | N/A  | 2.5  | 2.6  | 2.7  | 2.7  |

Source: Anita R. Olds, Ph.D., *Architectural Prototype Document*, Commonwealth of Massachusetts, 1987; Diffrient, N., Tilley, A.R., and Bardagly, J.C., *Humanscale 1/2/3 Manual*, Cambridge: MIT Press, 1974; Society of Automotive Engineers, Inc., *Anthropometry of U.S. Infants & Children*, Michigan: 1975.

areas. It is important to ensure that they do not interfere with the function of the sprinkler system.

The height of windowsills and counters depends upon the age of the children using the space. Leave 1.5 feet beneath windowsills (measured to the classroom finish floor) so that furniture and equipment can be placed easily along exterior walls. Storefront-type windows starting at the finished floor are not desirable.

Any furnishings and equipment for children should be child-scaled. Countertop height and reach depth should provide children with the opportunities to use them unassisted.

Consideration should be given to the adults using the space. Center design should be both adult and child friendly. Not all elements should be reduced in scale. Door locks, light switches, fire alarm pull stations, and other functional elements should retain adult scale and be mounted at standard heights. Food preparation, storage and service spaces, and other areas of the center used primarily by adults should remain at standard scale.

Furnishings that adults use should be adult scale. Some items may have a double function for both children and adults.

In placing electrical/telecommunication or security equipment, ensure that cords and wires are not placed within reach of children.

## 7.4 Architectural Form

The architectural form of the classroom should create an appropriate setting for a child. It should convey a definite sense of place while preserving optimal flexibility. The majority of the space should be free of constructed elements, and furniture arrangements should be used to create required functional areas.

The following guidance applies to architectural form:

- Vary ceiling heights to define areas, disperse light, and create interest. Higher ceiling heights often encourage greater activity levels. Lower ceiling heights support quiet activities. The probability of higher construction costs must be considered in determining the extent of ceiling variation.
- Vary floor levels to create riser lofts and low platforms. Sunken areas also are effective. The designer should be aware that permanent,



constructed level changes may restrict flexibility and use valuable open floor space. Fixed level changes will require a wheelchair accessible ramp. When deciding where to place level changes, consider placement of furniture that is not fixed to the floor or walls. Used effectively, level changes can add interest and create intimate areas for children. For example, terraces and platforms provide areas for dramatic play activities and can double as seating areas. Lofts that accommodate 3-5 children offer space for large motor activities, dramatic play, or quiet activities.



The designer should keep in mind that low-level changes can cause tripping.

- Vary wall configurations to create interest, soften a space, or create a more nurturing impression in special spaces. The designers should avoid 90 degree or acute outside corners that pose hazards to children who may walk or run into them. Instead, consider curved or obtuse angled partitions. One inch rounded outside corner drywall beads should be used. The designer must keep in mind that visibility of all areas within the classroom is a key factor and avoid creating “blind” areas that make teacher supervision difficult.
- Locate plumbing fixtures in one area for efficiency. For example, elements with plumbing connections, such as toilet areas and art sinks,

should be grouped. The food preparation area must be separate from diapering and lavatory areas, though the areas can be placed on the opposite sides of a wall that separates them.

- Provide ample display space at children’s height for display of art work and projects. Devices for display of artwork should not involve tacks or tape. Use tacky tape, magnets, clamps, or similar fasteners.
- Preserve inside corners to create differentiated areas. Use features such as low partitions behind cubbies to create

nurturing corner spaces.

- Providing natural light benefits centers by reducing total energy use and improves the indoor environment. Day lit schools saved an average of \$0.27/SF in energy costs over non-daylit schools. (Source: Energy Performance of Daylit Schools Innovative Design, NC)
- Provide views for children to increase their awareness of their surroundings and the world beyond the center. Views should be provided to the outside, particularly to play



yards. Views to atria and planters, common spaces, other classrooms, and circulating pathways also benefit children. Windows should be located at sills low enough for children to see outside and yet should allow placement of small-scaled furniture beneath them.

- Provide visibility so teachers have an unrestricted view of the children at all times in the classrooms and play yards. Views should be provided between classrooms and other spaces in the center. Any interior doors, with the exception of adult lavatories, should have visibility panels. The top sash of a Dutch door should be secured when in the open position. Interior glazing allows visual supervision and lets children see others in the center. Partitions at the sides of toilets should be no higher than 3.5 feet. Finally, there should be gates (with view panels) in infant and toddler classrooms to prevent children from accessing kitchen and diaper areas.



- Zone classroom space to separate active and quiet activities.
- Use variations in ceiling and floor height, wall configuration, light levels, finishes, and open areas to modulate activity levels in different areas of the classroom. Zone high-activity areas, such as the entrances, eating/ table areas, and exits to the play yard away from areas intended for sleeping and other quiet activities. Likewise, separate messy and clean areas.

## 7.5 Classroom Component Areas

### 7.5.1 Classroom Entrances

Each classroom should have a distinct and welcoming entrance that meets all emergency exit requirements. A second classroom entrance to the main circulation path or to play yards should be considered for egress depending on center configuration. Place the classroom entrance along a wall leaving corners available for activity areas. Entrances should allow views from the main circulation area into classrooms. There should be a sign-in counter (with storage below) near the classroom door at approximately 845 millimeters above the finished floor.

### 7.5.2 Cubby Storage Area

Children typically store their outdoor clothing and personal belongings in a cubby alcove when they arrive in the classroom. Designers should be aware that children may again need their outdoor clothing during the day. Parents may linger in the cubby alcove spending time with their children or with teachers or other parents. The design of the cubby area must consider this activity so bottlenecks do not occur. Cubbies should be arranged in a cloak room so as not to take up valuable classroom wall space.

Cubby storage areas should include the following features:

- Open-front cubbies scaled to child size, one for each child in the classroom, and secured to the floor and wall to prevent tipping accidents.
- A three foot clear area in front of the cubbies to ensure easy access.

- Seating which may be integrated with the cubby for either adult or child use, such as a bench.
- A parent bulletin board and mail box may also be located in the reception area.

The size and type of cubby storage may vary according to the age group in the classroom. It is wise to include a shelf for child safety seats, if space allows. If the cubbies are purchased, the designer should ensure that the dimensions fit the classroom space and design.

### 7.5.3 Infant and Young Toddler Cubbies

Infants and young toddlers need storage for diaper bags, clothing, and supplies. Typically, these purchased cubbies are about 1 foot wide, 1 foot deep and 1.5 feet high. The bench in the infant area should be about 1.2 feet above floor level so parents can sit comfortably while removing or putting on their children's outdoor clothing.

Parents may wish to leave collapsible strollers or other child-carrying equipment at the center during the day. Rods for this purpose should be provided in this storage area or near the reception area. Provide 9 to 12 inches of rod length for every five children and install rods approximately 4.5 to 5 feet above the floor. If a double storage rod is needed, install the top rod about 7 feet above the floor and the bottom rod about 3.5 feet above the floor. Provide a retaining rail to keep the lower end of the strollers in place.

#### 7.5.4 Older Toddler and Head Start Children's Cubbies

Older toddlers and Head Start children need to store bulkier outdoor clothing in their cubbies. Satchels and backpacks may be stored on hooks. These cubbies should be a minimum of 1 foot wide, 1 foot deep, and 3 to 4 feet high. Two hooks are needed in each compartment for hanging garments. A shelf should be included for boxes, boots, or extra shoes. The bench in this area should be about 10 inches high for children to sit comfortably while preparing for outdoor activity.

#### 7.5.5 Open Activity Area

Each classroom should have an open, unrestricted activity area, clear of constructed elements. Teachers and children are the architects of this space and should be able to adjust and alter this flexible area in response to their needs and activities. This can be accomplished through the use of elements such as curricula equipment and materials, moveable panels and demountable walls, fabrics, furniture such as seating or shelving, and display racks. The required space allotment for this area is described in Chapter 5, Section 5.8.

Requirements for activities occurring within this space will vary according to the age of children. Play activities may involve:

- Discovery, including sand and water play
- Large motor activity
- Art/Music/Dramatic play
- Reading/listening
- Manipulation of small puzzles and finger toys

- Block building
- Woodworking
- Science, including nature study
- Math



It is wise to locate an open activity area within the classroom to take full advantage of natural light.

Arrange the fixed elements along inside walls to reduce bottlenecks and maximize use of natural light in the space. The design should encourage traffic pathways minimizing disruption and avoiding areas of activity. Offset walls or partition patterns will allow more intimate areas for children but not obstruct teachers' views of the activity area. Corner areas providing natural boundaries can set apart an activity area.

Include the following architectural features in open activity areas:

- Acoustically treated surfaces to reduce noise.
- Full-spectrum dimmable lighting to supplement natural light.
- Blunt corner angles since it is important to avoid acute or 90-degree angles on outside corners projecting into the space. Provide a 1/2-inch radius or beveled edge on all outside corners of constructed features.
- Ample counter areas at child height for work surfaces and display areas. Consider a counter near the windows for growing plants and conducting nature studies.
- Adequate electrical outlets to serve counter areas for items such as radios, tape players, projectors, and keyboards. Locate outlets for this kind of equipment at least 4.5 feet above the finished floor, so that children cannot reach the outlet or pull equipment off counters using cords connected to low-mounted outlets.
- Consideration of how the child views the surroundings. Spending time on the floor at a small child's viewing level is a helpful exercise for a designer of children's spaces.
- Furnishings that are child-scale, including tables, chairs, and open storage units. Adult-sized comfortable seating is needed. Bulletin boards and other display areas should be placed at children's height.



Continuous strips from which to hang children's art are strongly recommended. These strips may be placed approximately 3.2 feet to 4.5 feet above the finished floor.

- Adequate storage for all curricula materials and supplies. Refer to the discussions on storage in this chapter. (Sections 7.1.1b, 7.5.2, 7.5.3, 7.5.4, 7.7.3, 7.7.9, 7.7.10, and 7.7.16)

### 7.5.6 Activity Area for Infants

The infant open activity area should offer opportunities for discovery and learning. This area must be designed as a safe, soft, print rich, stimulating environment in which babies can crawl, explore, and interact with teachers and other adults.

Provide the following architectural features in the infant classroom:

- Soft-surfaced level changes that should be slight with a maximum of 3 to 4 inches between levels. The space should be soft and cushioned with a variety of textures and coverings. Create level changes using constructed platforms with ramps or stacked upholstered blocks in various configurations. Maximum unenclosed platform height for padded level changes should be 1.5 feet above the floor. Consider including an enclosed raised area for infants at 3 feet above floor level so infants can be at the same eye level as seated adults and be able to view the entire room.
  - Nests and crawl spaces that provide a safe environment for infant exploration can be constructed with low, permanent, soft barriers or with movable objects such as crawling tubes, tunnels, or cardboard boxes.
  - Low grab bars at 1.5 feet above floor level to help infants pull up to a standing position may aid an infant's sense of security while developing walking skills. A minimum total length of 5 feet should be provided in each infant classroom.
  - Licensing requirements in some states preclude carpet in infant rooms. Therefore, unpadded floors should be constructed of tile, linoleum, or wood that can be mopped and sanitized daily. Soft areas can be provided using area rugs, and floor mats with anti-slip surfaces to prevent accidents.
  - Views to the outside and to the circulation pathways from floor level, if possible.
- Interesting things to observe from a baby's point of view including views while the child is being held by seated or standing adults.
  - Mirrors placed at approximately 1.5 feet above the finished floor so babies can see reflections. Mirror material must be shatterproof, such as safety glass, acrylic, or reflective metal with no sharp edges.

#### 7.5.7 Activity Area for Toddlers

The toddler open activity area should offer an even greater range of challenging opportunities for exploring and developing large muscles and motor skills. Toddlers often move quickly in groups of two or three. The activity area must allow for running and cruising (movement through space to view and select from a variety of activities) without disrupting children engaged in other activities.

Consider the following architectural features in the open activity area for toddlers:

- Broad pathways to accommodate group movement or cruising.
- Intimate spaces that allow toddlers to maintain a visual connection with the teacher.
- Hard surface, impervious flooring throughout, unless the initial design meetings reveal a strong preference for carpet. If carpet is chosen, the quantity will be determined during the initial design concept phase. Area carpets with non-skid backing and mats should be provided for quiet areas.
- Sand and water play areas that may consist of freestanding tables or

troughs with nearby hooks for smocks and towels and impervious floor finish. If feasible, provide a floor drain. Sand and water play can occur in the art sink area. Art sinks should be provided only for older toddlers but not for young toddlers.

### 7.5.8 Activity Area for Head Start Children

The Head Start open activity area is larger than the areas designed for younger children. Head Start children are involved in a wide range of activities. Their skill level enables them to take part in more advanced activities than infants and toddlers and requires a greater number of interest areas, configured for small groups of children.

Consider the following architectural features in the Head Start classroom:

- Design the space to allow for maturing skills in large muscle development. Refer to the discussion on lofts and platforms in Section 7.6 of this chapter.
- Allow sand and water play using freestanding tables or troughs with nearby hooks for smocks and towels. An impervious waterproof floor finish and a floor drain should be used where feasible. Sand and water play also can occur in the art sink area or outside.
- Include hard, impervious floor surfacing throughout with area rugs for quiet areas. If carpeting is required, the amount of carpet will be determined during the initial design concept phase.

## 7.6 Lofts and Platforms

Lofts and platform areas are optional constructed elements within the classroom. They offer many activity opportunities and advantages. Lofts and platforms are not appropriate for every classroom, because they can minimize flexibility. Lofts must be designed and positioned with child safety in mind. Constructed elements should reduce the risk of children falling from the loft. Typically, lofts will be purchased pieces of equipment that the architect-engineer will include in the design.

Lofts with slides and steps offer a variety of experiences. However, it is best for circulation if they descend in the same direction.

It is important to coordinate sprinkler requirements and to avoid placing sprinklers under lofts too close to children.

### 7.6.1 Infant Lofts and Platforms

Infant classrooms require soft, colorful crawling areas with slight level changes such as low, carpeted, constructed platforms, moveable foam shapes, or forms that provide level changes. Ramps or small 3- to 4-inch steps should be used between levels. All corners should be rounded, and all surfaces should be soft to minimize falls. The maximum height of platforms for infants is 18 inches.



Recessed constructed areas provide infants with large, contained spaces in which to move and

explore. Low retaining sides allow infants to pull themselves up and move. Similar portable low boundaries also might be effective. Use caution if planning to permanently construct such an area as a permanent installation could reduce classroom flexibility.

### 7.6.2 Toddler and Preschool Children's Lofts and Platforms

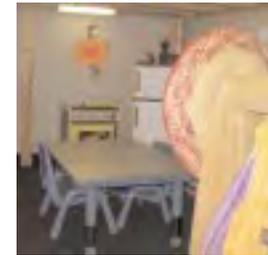
Lofts enhance toddler and Head Start classrooms by offering the following advantages:

- Challenging, large-muscle activities
- Small intimate spaces
- Additional spaces for exploration
- Opportunities for a child to view the environment from another level
- A classroom with more character



The following design requirements should be considered in the design of a loft for toddler and Head Start age groups:

- Lofts should be no higher than 3 feet above the finished floor for toddlers and 4.5 feet above the finished floor for Head Start children. The design should minimize conflict and allow more than one child at a time to use the space. For instance, offering stairs going up and a slide coming down can minimize congestion and possible conflict.



- Loft features should meet the definition for fall zones and have resilient surfaces, as prescribed by the CPSC's Handbook for Public Playground Safety. Refer to Chapter 6, Section 6.7.5, Play Yard Surfaces.
- Lofts should meet applicable local, state, or other standards.
- Guardrails should be provided to protect children from falling from raised areas.
- Toddlers should have guardrails on any constructed surface more than 10 inches above adjacent surfaces. Head Start children should have guardrails on any raised surface more than 20 inches above floor level. The top of the guardrail must be at least 2.5 feet above the platform, or in accordance with local codes, whichever is more stringent. Openings between 3.5 and 9 inches should be avoided to prevent head

entrapment and openings between 0.3 inch and 1 inch should be avoided to prevent finger and hand entrapment.

- Protective barriers should be provided on all raised surfaces 2.5 feet above floor level or higher for Head Start and younger children. Protective barriers can be vertical slats or acrylic panels (for clear visibility). Openings in these panels should be no larger than 3 inches to prevent entrapment. Avoid using horizontal rails that allow climbing.
- All protruding corners should have a minimum radius of 1/2 inch.
- Teachers must be able to see and reach all areas of a loft.
- The loft should present an image of safety and should not include overly challenging elements, such as cantilevers or narrow bridges.
- Level changes should be appropriate to the age group and accessible by ramps, steps, or ladders. Two children should be able to use the steps and ladders at the same time. Riser heights for stairs should be a maximum of 5 inches for toddlers and Head Start children. Minimum tread depth should be approximately 11 inches. Stairs and ramps should be a minimum of 3 feet wide.
- Handrails should be provided for all stairs and ramps at 22 inches above the leading edge of the treads. All handrails should adjoin the wall to avoid the possibility of injury. Handrails should meet state, tribal, and local codes.

## 7.7 Other Areas

In addition to required spaces in the classroom, others located elsewhere in the center can provide specialized activity settings for children, teachers, and parents. These areas should not be considered part of the minimum required activity square footage area.

### 7.7.1 Art Sinks

For toddler and preschool classrooms, HSB suggests providing a stainless steel sink with a gooseneck faucet and wrist handles mounted in a 22-inch-high counter for children to use in art and other activities requiring water and cleanup. The gooseneck faucet will allow teachers and children to place a bucket under the faucet. Traps should be accessible for easy cleaning.

The art sink area should include storage, display, and drying areas for finished work or works-in-progress. The counter should be 16 to 22 inches deep, so that children can reach the faucet. The design should provide 3 to 4 feet of open counter length adjacent to the sink. It is good practice to provide an adult height art sink in all toddler and Head Start classrooms. Faucets and levers should be located behind the sink adjacent to the wall rather than at the side of the sink. Faucet controls should be no less than 14 inches from the leading edge of the counter.

The art sink should be next to the eating/table area, since most art activities require tables; and this provides a dual use for tables with similar finishes. Ideally, the sink should be close to display walls and equipped with

dry marker boards or chalkboards. Install impervious floor coverings with sealed seams and a floor drain in this area.

Including a built-in counter with a configuration that allows children to face each other during activities is advisable. A shatterproof mirror above the counter is a desirable feature.

### 7.7.2 Toilets and Sinks

The following plumbing requirements are for areas devoted to toddlers and Head Start children:

- A minimum of two toilets in the center but not less than one toilet and two child-height hand-washing sinks. Include one lavatory and one drinking fountain for every 10 children. Two classrooms may share one toilet area.
- Toddlers: Two adult sinks at a minimum, one for diapering in the toddler room and one for use near food preparation.
- Head Start: One adult sink and one or two hand-washing sinks for every 10-20 children and one connection for water play.
- Toilet areas may be used by both girls and boys and may be partially screened. If doors are provided, they should not lock. This offers some privacy but allows adult supervision. Toilet areas are to have gates or half doors at entrances and may have child-height partitioning between toilets. As with all full-height doors, these elements should have hinge protection so that children's hands and fingers are not accidentally pinched.



- An adult toilet should be located outside the older toddler and Head Start classrooms and either in or near infant and

young toddler classrooms.

- Classroom toilets should be placed toward the interior perimeter to leave the exterior free for access to natural light and views. They should be constructed as part of the fixed elements and, where possible, should share plumbing walls with other areas requiring plumbing connections.



The toilet area should be physically separated from food preparation and eating areas and partially screened from the view of remaining spaces. Hand-washing sinks may be located within the toilet area but are best placed in the classroom on a wall

adjacent to the toilet area to facilitate supervision and reduce congestion in the toilet area.

- Toilets are to be child-size for toddlers. Larger toilets may be chosen for Head Start children. They must be accessible to children with special needs.
- Toddler and Head Start toilet areas should have durable, water-resistant finishes and bright, cheerful lighting. Recommended flooring includes ceramic tile with an integral cove base and a ceramic tile wainscot to 3 feet above the floor with a painted wall above.

Following are suggested features for the toilet area:

- For toddlers, a toilet seat height of approximately 11 inches including the seat. Head Start children who are four to five years old may use adult-size toilets.
- A floor drain.
- A toilet tissue dispenser next to toilet.
- Exhaust ventilation.

Recommended features for the hand-washing sink include:

- A sink mounted 22 inches above the floor and counters 16 to 22 inches deep allow children to reach controls. Junior-height wash fountains also may be used with a washbasin rim height of approximately 25 inches.

- The hot water temperature should be controlled to a maximum of 109.4° F. Hot water heaters should be placed where they are not accessible to children.
- Soap dispensers should be at each sink.
- One paper towel dispenser per sink area. Metered roll dispensers are preferred with one at each sink area. The dispenser should not have a serrated edge. Even though rolled goods are usually more economical and environmentally sensitive, note that children often waste rolled goods because they lack the coordination to tear rolled paper easily.
- One freestanding pedal-operated waste receptacle per sink area. Metal receptacles should not have sharp edges.

- Moveable waste receptacles.
- Safety mirrors mounted at child height.



### 7.7.3 Diapering Station and Storage Areas

A diapering station and diaper storage area are needed in each classroom serving infants or toddlers. Locate this area in an easily accessible, central location, but apart from food preparation and eating areas. Orient the diapering station so that a teacher can maintain visual supervision of the other children while diapering a baby or toddler, and the children can see the teacher. This component should be constructed as part of the fixed elements within the classroom and designed to maximize use of the existing plumbing connections.

The diapering station and storage area consists of a changing table, counter-top with sink, waste bin, and upper storage cabinets for diapers and other

supplies. All equipment and storage needed for this area must be easily cleaned, non-porous, and accessible to the teacher at the changing table. The teacher should not move away from the child being diapered.

The diapering station should be designed to reduce possible trans-



mission of blood-borne pathogens. The table should be easily sanitized or sterilized, and all material contaminated with feces should be stored safely and hygienically in sealed receptacles.

Specific equipment at the diaper station should include:

- Changing table with an impervious surface. The top surface should be at least 2.8 feet above the floor. There must be a safety device on either side of the baby, such as a tubular rail to provide side restraint 3 inches above the surface of the mat. Since mats are typically 1 inch thick, the top of the rail should be approximately 4 inches above the surface of the changing table. The table should be 2 feet wide and 3.3 feet long. It should have a waterproof covered pad. Check with local licensing for possible additional requirements.
- Hand washing sink with sloped sides and within reach of the changing table. It should have hands-free or wrist-blade faucet controls. Diaper sinks should not have gooseneck faucets because this type causes more splashing than standard faucets.
- Paper towel, soap, and rubber glove dispensers within reach of the teacher at the changing table.
- Open compartmentalized upper cabinets approximately 9 inches wide, 9 inches high, and 12 inches deep.
- Waste storage for disposable diapers must be in a waterproof, washable container with a disposable plastic liner. The waste storage must be covered with an airtight lid and must be within reach of the teacher at the changing table and must be operable without utilizing both

hands. A pedal-operated waste container may be used and should be placed under the counter out of reach of children. If both cloth and disposable diapers are used, separate containers must be provided.

- Movable or retractable steps are necessary to help toddlers up onto the changing table. Steps are particularly helpful for caregivers who may be challenged by excessive lifting.
- Exhaust ventilation free from drafts would be ideal. A separate zone or a ceiling-mounted unit heater may be provided at the changing table to maintain a temperature warmer than the rest of the classroom. Recommended finishes include impervious flooring and millwork, countertops, and a wall splash. Wall surfaces adjacent to the changing table should have impervious finishes. Finishes must be unaffected by disinfectants used to clean the changing table surface.

#### 7.7.4 Sleeping and Napping Areas

Special areas for sleeping are provided in infant rooms and often in young toddler rooms. Infant sleeping areas should be quiet and pleasant and located in a space within the classroom where infants can sleep according to their individual schedules. Teachers must have visual and acoustical access to this area at all times. It is best to locate sleeping areas away from active areas.

Installation of walls or half walls and glass in the nap area is not advisable as this may mean the nap area will be designated as a separate sleeping area. Some licensing authorities might require a teacher to be stationed in the nap room. Allow ample space for one crib per infant, placed 36 inches apart. Recommended finishes include carpeted floor and painted walls

above an impervious wainscot and washable, glossy paint, or another washable surface. It is important to use dimmable lighting. Window treatments can be used to control direct sunlight through exterior windows.

Provide a crib for each infant and young toddler. One of every four cribs should be an evacuation crib that is especially constructed for this purpose. It should be equipped with 4-inch wheels and capable of holding and transporting up to five infants. The evacuation crib(s) should be placed closest to the emergency exit point and must be capable of easily passing through a 3-foot-wide door.

Sleeping areas should be equipped with smoke detectors. Recommended fire safety requirements for children's sleeping rooms can be found in Section 10.1, Chapter 10.

Older toddler and Head Start classrooms generally will not have space allocated for a sleeping area but will provide napping cots that can be stored within the classroom when not in use. A few cribs may be needed in a toddler classroom.

#### 7.7.5 Nursing and Lactation Areas

A quiet, semi-private area in the infant classroom may be provided for a mother to visit and nurse her infant or for lactation. Locate this space near the sleeping area with some visual separation from the other areas of the classroom and privacy from the circulation pathways. This space should be located near a sink and be as comfortable as possible. It should

have adjacent counter space and a carpeted floor. Include at least one comfortable chair.

### 7.7.6 Food Preparation

Children usually eat in their classrooms with teachers. A food preparation area should be provided in infant and young toddler classrooms for storing and heating bottles and for preparing foods.

It is advisable to locate infant and young toddler food preparation areas near fixed elements within the classroom. The area should be adjacent to the eating/table area and separated from the diapering station, toilet, and hand-washing areas. Placing food preparation areas near activity areas provides teachers with clear views of the classroom. No food preparation area should be located under sewer or drainpipes concealed in the ceiling.

The food preparation areas in classrooms may include the following heavy-duty items:

- Upper and lower washable cabinet storage: HSB recommends providing childproof latches or locks to prevent child access to any storage within reach
- Counter area: It is wise to provide an adult-scale impervious counter, at least 8 feet long with a back splash. The top of the counter should be 2.8 feet high. Drawer and door pulls should be non-projecting types. Hinges should be heavy duty and durable because they receive intensive use. One cabinet should be lockable.

- A sink with a single-lever faucet, spray hose, and garbage disposal. The hot water temperature should be limited to 109.4°F.
- A bottle warmer
- A refrigerator providing a minimum of 8 cubic feet of refrigerator storage and a lockable box in each refrigerator for storing medication.
- Finishes include impervious flooring and a gloss-painted wall above an impervious wainscot. Plastic laminate finishes include laminate countertop, cabinet face, and back splash. Use post-formed counters with integral coves and bullnose. Ceiling tile should have washable facing.

### 7.7.7 Eating/Table Area

Meal and snack times in the classroom are opportunities for children and their teachers and visiting adults to enjoy social interaction in small groups, such as the family would at home. A parent may join the child at the table to share lunch. Usually, this area is part of the open, unrestricted portion of the classroom and is used for other activities during the day.

Small infants are held during bottle-feeding, while older infants who are able to sit may be placed in a low high chair while being fed soft foods. Traditional high chairs are not recommended because of the risk of falling and tipping and the reduced opportunity for social interaction.



Provide low stools for the teachers to sit on while feeding older infants. Provide a gliding chair or other comfortable chair for a teacher to sit in while bottle-feeding. Locate the infant eating space near the food preparation area, away from the open, unrestricted area where other children may be moving about. Young toddlers may be seated together at the same low table. Rectangular tables make better use of space than round tables.

Locate eating/table areas for older children in a central location away from toilet areas and in a pleasant area with natural light and items of interest, such as plants. For toddlers and older children, the eating/table area can be part of the general activity space.

Children older than infancy need movable chairs and tables built at the appropriate scale for their eating area. Storable tables may be used so the room can accommodate other activities. Each toddler and Head Start classroom should provide a separate, drinking fountain, preferably in the eating area. Mount the drinking fountain at 1.8 feet above the floor in a central location on a plumbing wall for toddlers. For Head Start children in general areas, the fountain should be mounted at 2.6 feet above the floor.

Recommended finishes for the eating/table areas include sheet vinyl flooring and a vinyl wall covering or a high-gloss, washable painted wall.

### 7.7.8 Child-Accessible Display

Shelving placed low to the floor allows children to see available curriculum materials and make selections. These materials may include books, art supplies and equipment, manipulative toys, large or small blocks, pull or push toys, and dramatic play materials. HSB suggests using open shelving approximately 16 inches deep by 30 inches high for this purpose.

Small items requiring further organization can be placed on this shelving in containers, such as plastic tubs or wire or wicker baskets. Shelving can be built-in millwork or freestanding movable units. Where appropriate, open shelving should be considered to create an open feeling in the classroom. If shelf backing is used, it should be attractive and useful. For instance, it may be mirrored with non-breakable reflective material.

Movable units lend greater flexibility, though they should be equipped with locking casters. A combination of built-in and freestanding units offer the best design solution. Some state, tribal, and local codes may require these units to be fixed to the floor.

### 7.7.9 Classroom and Teacher Storage

It is essential for classroom design to include adequate storage for the items required for a quality program. Inadequate storage conveys a cluttered, chaotic, or shoddy impression. Plan storage for cots, strolling equipment, curriculum materials, and supplies. Use of doors on storage areas should be minimized, because doors can cause finger entrapment and create a greater possibility of an accident occurring.

Any necessary door should have full-vision panels and the hardware to allow a trapped child to exit when the door is locked from the outside. Alcoves without doors can be used for storing stackable cots.

Provide some lockable storage in the classroom but ensure that some cabinets are situated to limit a child's access. Provide one lockable cabinet in each group of cabinets. This storage area is necessary for storing classroom equipment, materials, and supplies. Hooks and pegboards can be used to provide easy storage of aprons and small equipment.

Other storage may include overhead cabinets or shelves in food preparation areas. A lockable cabinet should be located above children's reach for storage of items such as medications, cleaning products, and other restricted items. Medications also may be stored in the refrigerator or food preparation area in a locked container.

### 7.7.10 Teacher Storage

Some lockable storage should be provided in the classroom for teachers to store outdoor clothing and other personal belongings. This storage may be provided in the storage area or in cabinets intended for the teacher's use. It should include a closet with a rod for hanging coats as well as shelving installed above the rod.



### 7.7.11 Multi-Purpose and Motor Activity Spaces

If space is available, HSB suggests providing a versatile, large, indoor open area for activities. A multipurpose space is especially important when large-muscle activity typically occurring on a playground must take place indoors because of poor climate. This indoor space also can be used for group gatherings or meetings. Note that use of multi-purpose space should never be considered an adequate permanent substitute for playing outdoors.

Play equipment should be considered carefully to ensure that it can be used within the confines of an enclosed room. Such a room may have features, such as sprinklers and pendant-hung lighting fixtures, which must be protected from damage. Windows are not as important a feature in multipurpose spaces as they are in classrooms. However, natural lighting from non-breakable skylights is highly desirable and energy efficient.

It is wise to include movable partitions and a carpeted raised area for dramatic play in the multipurpose space. Furthermore, locating the multipurpose room near the kitchen and including a pass-through can increase the versatility of the space.

HSB suggests providing the following architectural features and equipment for multipurpose areas:

- High ceilings.
- Acoustical treatment on walls and ceilings and consideration of acoustical separation between the multipurpose room and adjoining rooms.
- Impervious flooring. If carpeted areas are desired to provide soft areas, non-slip area rugs should be used.
- A hard, durable, washable surface as a wall finish.
- Play equipment.
- Protective resilient surfaces in fall zones.
- Hard-surface pathways for wheeled toys.
- Storage for equipment and supplies.

#### 7.7.12 Sick Bay

The sick bay which is required in some states, is used to temporarily isolate ill children until they can be taken home. Typically, if state licensing allows, a sick child waits on a cot in an alcove adjacent to the center director's office rather than in seclusion. If the sick bay is a separate space, locate it adjacent to the director's office or other program staff offices for uninterrupted supervision.

The sick bay should be near a toilet and include a cot or bed with a night-light. This area should have simple, pleasant finishes that are easy to clean and lockable storage for first aid supplies. A bookshelf for the storage of books and toys is appropriate, and a view of the exterior is recommended.

#### 7.7.13 Service Spaces

Spaces for service areas such as the kitchen, laundry, the janitor's closet, and a telephone equipment room should be located at the rear of the facility near the service entrance and separate from children's activities. These service areas should not be accessible to children with the exception of the kitchen.

Major food staging and serving activities should be centralized in a kitchen area. The kitchen should be near the Head Start classroom.

Locating the multipurpose area near the kitchen makes it easier for children to use that space to work on cooking activities. This arrangement also provides an area for group lunches and other gatherings that may need kitchen access.

#### 7.7.14 Kitchen

The type of food service provided to the center affects the scope and size of the kitchen area. HSB does not recommend any standards, codes, or requirements for full commercial kitchens with deep-fat fryers, ventilation hoods, and similar equipment. If the center includes a kitchen of this type, a food service specialist should be consulted as part of design services.

It is desirable to install a kitchen with heavy-duty equipment that can function primarily as a warming area for food or snacks and a staging area for receiving catered meals. Large centers may have two kitchen areas. The architect-engineer should not design a commercial kitchen on a scale that may trigger the need for sophisticated venting and hood-mounted fire suppression equipment. Especially in existing buildings, this type of commercial kitchen could force expensive modifications that could affect other sections of the building. For instance, in a multi-story building, this type of kitchen may require openings through several floors as well as through the roof to accommodate a vent duct.

The kitchen should be accessible to service personnel, staff, and other adults. For safety reasons, children will not be allowed in this space unless



escorted by an adult. The kitchen should be in a central location with access to the service entrance near the multi-purpose area and separate from the classrooms.

Suggested components include:

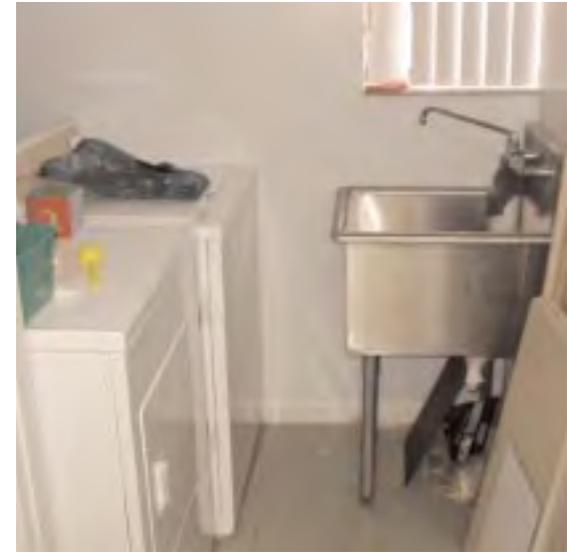
- A stainless steel, three-compartment, deep sink with required plumbing and hot and cold water connections located near the dishwasher and include a gooseneck faucet.
- A separate hand-washing sink.
- A garbage disposal with plumbing connections.
- A floor drain.
- A heavy duty, commercial-type dishwasher.
- A commercial-type refrigerator with storage at or below 39.2°F and freezer storage at or below -0.4°F. (Many centers will require two refrigerators and one or two commercial freezers. This issue should be clarified during initial design meetings.)
- A microwave oven (but not for warming formula or baby food).
- A convection oven and range.
- A range.
- Adequate deep counter space (2-foot minimum).
- Closed storage for dry food, equipment, and supplies on wire metal shelves.
- A recycling bin.
- Commercial style kitchen equipment with washable finishes such as stainless steel.

- A dietitian corner with a telephone.
- Ample, easily washed metal cabinets with accessible interior shelving.
- Stainless steel countertops and washable, seamless wall surfaces made for kitchens.
- An impervious, durable, easily cleaned floor finish.
- A washable ceiling finish.
- Space for two or more stainless steel food carts
- Adequate lighting, ventilation, and clearances .
- Locked storage for hazardous materials.
- Clean, dry, well-ventilated storage off the floor for food not requiring refrigeration.
- Shelving in kitchen areas that is not exposed wood. Metal wire shelving is the best choice for this purpose.
- Storage for all utensils and equipment off the floor in clean, dry, closed spaces.
- Food storage, preparation, and service areas placed in areas without sewage or drainpipes above.
- Ample electrical outlets out of children’s reach with ground-fault interruption (GFI) in wet areas.

### 7.7.15 Laundry

Laundry rooms should only be accessible to adults. They should be located near the infant/toddler classrooms and convenient to food service areas. For acoustical purposes and to ensure adult-controlled access, the laundry rooms should be away from children’s areas and have lockable doors that can be opened from inside.

Ideally, the laundry rooms should be close to exterior walls to minimize the run of the dryer exhaust vent to the exterior. Note that dryer exhausts contain combustible lint which can present a fire hazard when the exhaust is excessive. Dryers must be vented separately and not combined with other building exhaust systems.



Recommended equipment includes:

- A heavy-duty residential style washer and dryer.
- Large centers may require additional equipment.
- An electrical power outlet, venting, plumbing connections, floor drain, deep sink, and millwork with closed, and lockable storage.
- A dishwasher to wash toys that are often soiled by children, if space and budget allow.
- A counter for folding clothes and lockable wall cabinets for storage.

### 7.7.16 Janitor's Closet

Service personnel and staff use this space for storing janitorial supplies and equipment which should include a mop sink with plumbing connections and storage for pails, mops, vacuums, and related cleaning supplies and equipment. The door should have a lock, which can be opened from

the inside without a key and lockable cabinets for cleaning supplies. Provide exhaust ventilation. Special fire safety and ventilation requirements can be found in Chapter 10.



Though isolated from children's activity areas, janitor's closets and maintenance facilities should be designed for the convenience of the

cleaning and maintenance staff.

To protect indoor air quality from the potential impact of cleaning and maintenance activities, the following should be considered:

- Fully enclosed areas with separate outside exhaust;
- No air recirculation ;
- Negative pressure where chemical use occurs, as described in LEED Version 2.0; and
- Automatic chemical mixing dispensers to assure correct dilutions of cleaning materials.

### 7.7.17 Service Entrance

A key-access service entrance is needed by service personnel to deliver food and supplies and for trash removal. This entrance should be accessible to maintenance and kitchen staff. Locate the entrance next to service areas and away from the front entry and children's activity areas.

## 7.8 Mechanical/Electrical Telephone Equipment

Except when they are freestanding buildings, centers typically will be provided with mechanical service by a central plant. In freestanding buildings, interior space should be provided for mechanical or rooftop equipment.

When deciding to use rooftop equipment careful consideration should be given to the additional maintenance and roof support needed and the type of structural engineering that this configuration entails. This caution is particularly applicable to regions of the country with significant precipitation. HSB suggests using equipment and systems that will have long-term operating and maintenance costs that are low.

Space for telephone service should be centrally located and separate from the children's areas. Although a dedicated telephone closet is not always necessary, if one is provided, it should have a lockable door not accessible by children, but which can be opened from the inside. Finishes may include painted walls and sealed concrete for the floor.

## 7.9 Design Features to Avoid

A short list of undesirable center features follows. The list is not exhaustive:

- Excessive areas of fixed carpet.
- Sinks that are not deep enough.
- Inaccessible shelving.
- Excessive space devoted to lavatories such as separate areas for each classroom instead of shared areas. If separate lavatories are provided, ADA-mandated wheelchair clearances must be included in each room and this is not an economical use of space.
- Cubbies that line up facing the classroom waste precious classroom wall space and create a chaotic visual impression.
- Solid interior doors that do not allow supervision.
- Inadequate or improper storage creating crowded chaotic-looking classroom environments. Note that large central storage rooms will not solve a center's storage problems. Instead, wall-mounted cabinets and closets close to children's activity areas in the classroom are essential.
- Diapering areas that face walls and do not allow supervision.
- Ceiling-mounted institutional troffer-type fluorescent light fixtures typical of office space that have no dimmers and poor color rendition. This type of poor lighting is often accompanied by a lack of adequate task lighting.
- Using 90-degree or acute-angled walls where an obtuse angle would be safer and easier to negotiate.

- Windows mounted too high for children's use or without risers to allow accessing the view.
- Long dead-end corridors do not maximize efficiency. Corridors that must be lengthy because of site configuration need areas available for stopping, queuing, and socializing.
- Inadequate natural light.
- Misuse of color. This includes over-stimulating, overly-bright, or dark and oppressive wall colors. Since these mistakes usually result from relying on small sample color chips, color choice should be based on large samples.





## Chapter 8

### Furnishings and Equipment

This chapter provides suggestions regarding furnishings and equipment for centers and includes references to applicable codes and regulations.



## 8.1 General Criteria

Following are the general criteria for center furnishings and equipment:

- Age appropriate.
- Sufficient quantity.
- Sufficient variety.
- Durable.
- Readily accessible.
- Child-scale for child use.
- Adult-scale for adult use.
- Safe.
- Easily cleaned.
- Adaptable, flexible, movable.
- Dual purpose, where appropriate.
- Stackable/hangable, if possible.
- Does not convey an institutional impression.
- Soft and comfortable, where appropriate.
- Optimizes the use of natural materials and contains minimal amounts of formaldehyde and other chemicals which may affect children, particularly those with allergies.
- Texture rich.
- Calm, soothing, coordinated color schemes.

Furnishings and equipment in the center shall meet all applicable codes and standards. Where synthetic materials are used, use products made with recycled content and avoid finishes with polyvinyl chloride (PVC)

content to the extent possible. The following agencies and organizations have established criteria pertaining to play equipment for all age groups of children, and this criteria should be used as a reference:

- Consumer Product Safety Commission
- American Society for Testing and Materials (ASTM) for Juvenile Products (1487-1-F 15.29, F1292-99, F1951-99, F2049-00, 36 CFR Part 1191)

Below is a reference list of ASTM requirements specific to a childcare center, including Head Start:

- Chairs with high sides or foam nests for infant feeding - ASTM F-404
- Cribs - ASTM F-966 and ASTM F-1169
- Carriages/strollers - ASTM F-833
- Gates/enclosures - ASTM F-1004
- Hook-on chairs - ASTM F1235
- Toy safety - ASTM F-963
- Evacuation cribs are required for all infants and, depending on local licensing, for young toddler groups (typically one for every four children). These special cribs must be of durable construction, narrow enough to pass through a 3 foot wide door, and have sturdy caster wheels approximately 4 inches in diameter, which allow one person to easily roll the cribs over different indoor/outdoor surfaces. The evacuation crib must have the capability of supporting and transporting a minimum of five 18-month-old children weighing a total of 121 lbs.

The evacuation cribs will be placed closest to the exit in the sleeping rooms. They also will function as standard sleeping cribs.

### 8.1.1 Storage

Easily accessible adequate storage space should be provided for items such as carriages and strollers, wheeled toys, and cots or mats for Head Start classrooms. In the initial design process, the designer should obtain the number and approximate size of equipment to be stored.

Storage within the classrooms should appear uncluttered when the classroom is occupied and should meet functional needs. A combination of low open shelving, baskets, drawers, cabinets with doors, boxes, chests, hooks that do not present a hazard, adult height shelves, wall-hung cabinets, storage bags, buckets, crates, and bins may be utilized.

### 8.1.2 Flammability Codes and Standards

All textiles and upholstered components should comply with the applicable interior finish requirements stated in the Head Start Performance Standards and any other local or state standards that apply.

### 8.1.3 Upholstered Furniture

If possible, choose furniture upholstered with recycled fiber fabrics, such as PET from recycled beverage containers. Textile materials that can be removed easily for regular cleaning are generally preferred over fixed materials.

### 8.1.4 Chemicals

#### **Volatile Organic Compounds (VOC):**

Carpets must have been tested for VOCs and bear a green label from the Carpet and Rug Institute indicating that the carpet emissions are within the acceptable range. (See Section 9.3.2 for carpet requirements and Section 9.3.1 for VOC and harmful ingredient restrictions for paint.)

**Formaldehyde:** Formaldehyde is a known irritant. Products should contain less than 0.05 parts per million (ppm) of formaldehyde or have tested emission levels of formaldehyde lower than 0.05 ppm. Give preference to products made with zero added formaldehyde. Any product purchased with formaldehyde levels above 0.05 ppm must bear a label in accordance with 29 CFR 1910.1048.

EPA's Agency-wide Multimedia Persistent, Bioaccumulative, and Toxic (PBT) Pollutants Initiative focuses on the following top priority PBTs: aldrin/dieldrin, DDT, DDD, and DDE, mirex, toxaphene, hexachlorobenzene, chlordane, octachlorostyrene, benzo(a)pyrene, alkyl-lead, mercury, and compounds, PCBs, and dioxins and furans. Only materials and equipment whose manufacturing processes are completely free of the above chemicals should be used in Head Start facilities.

### 8.1.5 Safety

Shelving, tabletops, and counters should have 1/2-inch rounded edges. Furnishings in children's areas that are 3 feet high or higher should be secured in place. Local codes may require all large furnishings to be

secured in place. Mirrors should be constructed of safety glass, acrylic, or reflective metal.

### 8.1.6 Storage Units

Storage units for the children must be visible, accessible, and easy to use. Units may be dual purpose and serve as space dividers as well as storage units. They may be movable with locking casters except where local codes prohibit and should be designed to prevent climbing. Shelving open on both sides creates an uncluttered, light appearance. The back of a shelving unit can display children's art.

### 8.1.7 Seating

Adult seating in the infant and toddler classroom should be soft and comfortable to provide a place where teachers can nurture children. Child-scaled seating can include upholstered or exposed frame chairs, foam cubes, carpeted constructed seating, or cushions and pillows. Bean bag pillows should not be used for infants, since infants can easily suffocate if face down.

### 8.1.8 Tables and Chairs

Tables and chairs should be scaled to the child. The table height should be approximately 12 inches for infants; 16 inches for toddlers; and 20 inches for Head Start children.

Chair seat height should be 10 inches for toddlers and 12 inches for pre-school children. Infants and toddlers require high-sided chairs.

Seating should have backs and arms with a seat height of approximately 8 to 12 inches for Head Start children.

Work surfaces or tables should have appropriate knee clearance for children in wheelchairs and should be 24 inches above the finished floor, 24 inches deep, and 30 inches wide. Top surface height should be a maximum of 2 inches higher than knee clearance and adjustable, if possible.

### 8.1.9 Countertops

Countertops should be approximately 18 inches above the finished floor for toddlers and 20 inches above the floor for pre-school children. Counter depth should be 18 to 20 inches when accessed from only one side. Counters that children can access from both sides encourage socialization and should be at least 24 inches deep.

## 8.2 Playground Equipment

The basic purpose of playground equipment is to stimulate play and offer challenges while safeguarding children and minimizing hazards. Play structures should be versatile and allow opportunities to rearrange elements for imaginative play.

Major parameters in determining quality in playground equipment are durability, low maintenance, safety, functionality, challenge, and appeal to the child. All equipment should comply with the CPSC's Handbook for Public Playground Safety. Refer to *Appendix H* for information on products that reduce environmental impact.

It is important to follow safety guidelines regarding playground equipment. Refer to ASTM F1148-88 (Home Playground Equipment) and ASTM F15.29 (Entrapment, Installation and Maintenance, Materials, Terminology, Falls, Environmental), ASTM 1487-95, PS 83-97, F1292 and the Consumer Product Safety Commission requirements.

Refer also to the American Public Health Association and American Academy of Pediatrics in the publication *Caring for Our Children; National Health and Safety Performance Standards: Guidelines for Out-Of-Home Child Care Programs*, 1992, particularly Appendices 0-1 through 0-12, for recommendations on playground equipment.

Major types of playground equipment are:

- Slides
- Tire swings
- Climbing equipment
- Sand and water tables
- Playhouses
- Benches with seating
- Crawl-through structures
- Tables with seating
- Balancing equipment
- Wheeled toys
- Platforms/lofts
- Trash receptacles





## Chapter 9

### Interior Finishes

This chapter provides a consolidated discussion of the types of finishes required in Head Start centers, establishes the baseline finishes for walls, floors and ceilings, and discusses acceptable options.



## 9.1 General Requirements

Because safety is of the utmost importance, finishes shall meet all local or state smoke and flame retardant requirements. In addition, designers should consider toxicity and the off-gassing of materials.

Because children are more vulnerable to toxic materials than adults, it is important to adopt the following rigorous requirements:

- Test carpets for volatile organic compounds (VOCs) and request a green label from the Carpet and Rug Institute indicating that the carpet emissions are within the acceptable range.
- Ensure that the carpet meets the State of Washington Standards. Adhesives should be the least toxic, effective products available. Reference the AIA Environmental Resource Guide, with the 1997 supplement.
- The carpet should be recyclable to reduce the nation's waste stream.
- HSB supports compliance with the GSA's Facilities Standards for Public Buildings Services as it pertains to flame spread ratings and smoke development.
- Formaldehyde. Products should contain less than 0.05 parts per million (PPM) of formaldehyde or have tested emission levels of formaldehyde lower than 0.05 ppm. Any product purchased with



formaldehyde levels above 0.05 PPM must bear a label in accordance with 29 CFR 1910.1048. Provide chamber tests of materials to substantiate formaldehyde content. Give preference to products made with zero added formaldehyde. (See also Section 8.1.4 in Chapter 8.)

- Sequence the installation of finishes in a manner consistent with EPA's protocol for Environmental Requirements, Baseline IAQ and Materials, for the Research Triangle Park Campus, Section 01445. This will allow adequate time in the construction schedule to ventilate gas-containing materials prior to the installation of absorptive materials (carpet, acoustical tiles, and upholstered furniture). In new centers, allow up to a month between the installation of materials that need to off-gas and the occupancy of the center. Renovations should allow the maximum feasible time of one month and no less than one week to off-gas. If necessary, use mechanical means to ventilate the space once renovation is complete.
- Durability, maintenance requirements, life cycle costs, appropriateness, and aesthetics of materials must be considered when choosing finishes. In addition, the selection should be environmentally sensitive.



Consider the following:

- Recycled content materials, following EPA's Comprehensive Procurement Guidelines (CPG), where possible.
- Locally manufactured materials, where possible, including locally

mined or harvested raw materials and/or locally manufactured end products, to reduce transportation impacts.

- FSC-certified sustainable harvested wood for minimum 50 percent of all wood materials, including temporary formwork as well as permanent building components.
- Rapidly renewable, bio-based materials (such as fiberboards made from non-wood agricultural materials).
- Low-embodied energy materials.
- Materials whose components have zero ozone-depleting potential.
- Zero- or low-VOC adhesives, sealants, paints and coatings, CRI Green Label carpeting and formaldehyde-free composite wood or agrifiber products, where applicable.
- Low-maintenance materials, requiring minimal use of cleaning products or equipment.
- Materials that are likely to have a long life expectancy when installed in a Head Start facility.
- Materials that can be recycled or are biodegradable after their useful life.
- Finishes should feel “home-like.” Small-scale finish materials, such as bricks, are typically preferable to large pre-cast panels, because the brick’s dimension is more congruent with the size of a child. Finishes should emphasize natural materials, and



harmonize a variety of textures, colors, and shapes.

All construction should be designed for safe use by children and should comply with the following criteria:

- Rounded (bullnose) outside corners (minimum radius 1/2 inch).
- Non-toxic finishes.
- Finished hardwood with eased edges to reduce splinters.
- Slip-resistant floor coverings.
- Sealed seams and joints for sanitary cleaning and reduction of tripping hazards.
- No projecting connections.
- Impervious finishes in wet areas.
- Protective resilient fall zones under interior climbing equipment in accordance with the Handbook for Public Playground Safety, US Consumer Product Safety Commission.
- Additional protection for gypsum wallboard, such as veneered plaster, impact resistant wallboard, or fiberglass wall covering to “toughen” otherwise vulnerable surfaces in high use areas.

## 9.2 Color and Texture

Both color and texture have a great impact on children. The sense of touch is directly related to cognitive development, and color has far-reaching effects influencing behavior. While cool colors tend to have a calming effect and warm colors tend to create warmth and excitement, neither extreme is desirable.



### 9.2.1 Use of Color

Overstimulation and excited behavior can result from the overuse of a strong color scheme. The predominant color above the level of the wainscot should be neutral. Stronger, more vivid colors may be applied on one wall in corridors and along the rear walls of classrooms (opposite windows). Bear in mind that children's clothing is usually much more colorful than that of adults, and their toys and art add a great deal of color to the environment. Too little color is better than too



much in an environment where children will spend a great deal of time. Avoid complex patterns on walls and floor coverings. Select colors appropriate to the activity using color cues to identify particular areas. Warm as opposed to bright hues are preferred.



### 9.2.2 Use of Texture

Provide a variety of textures on surfaces within reach of children, especially for infants and toddlers. Soft textures promote relaxed and quiet behavior when used in quiet or sleeping areas. Hard textures are more appropriate for large motor activity areas where livelier behavior occurs. Subtle, varied, natural textures are encouraged, since they are soothing and interesting to children.



## 9.3 Types of Finish Materials

The following sections contain guidelines for finishes for floors, walls, and ceilings and discuss issues to consider when selecting finishes.

### 9.3.1 Wall Finishes

**Paint:** Paint should be non-toxic with 200 grams/liter of VOC or less. Consider paint which contains a minimum of 50 percent post-consumer waste paint taken from community collections. In addition, it should be lead and chromate free as defined by Department of Housing and Urban Development guidelines, and should not contain any of the EPA 17 chemi-



icals. More information is available on the Internet from GSA's Paints and Chemicals Center at 1-800-241-RAIN (7246) or GSA Advantage! at the

following address: <http://www.gsa.gov>.



**High-build coatings:** High-build coatings are durable, can be scrubbed, and should be used in high-wear areas. Allow ample time to off-gas in projects when specified.

**Glazed coatings:** Glazed coatings are appropriate for wet areas.

**Vinyl wall coverings:** Type II vinyl wall coverings are durable with Oznaburg fabric backing. Vinyl wall coverings should be neutral in color and scrubbable. Allow ample time to off-gas in projects when specified. Reference the AIA Environmental Resource Guide with Supplements for guidance on adhesives. Vinyl coverings typically may require corner guards to deter delaminating at corners in a high-use facility. Ensure that corner guards have a minimum 1/2-inch radius bullnose.

**Textiles:** Textiles on vertical surfaces within reach of children are not recommended, but they work well for surfaces, such as bulletin boards above children’s reach.

**Glazed ceramic tile:** Glazed ceramic tile is appropriate for wet areas, such as toilets and kitchens. Ceramic tile is durable, non-porous, and easily cleaned, especially if the grout material is epoxy. Sound deflection can be a problem with this type of finish.

**Display surfaces:** Marker boards and magnet boards may be provided as a wainscot up to 3 feet or higher. Display systems requiring tacks should not be used nor should tape which may damage finishes. The baseline amount of space available for display for each classroom should be 8 feet long and 3 feet high. Consider using art wax equipment, which

allows children’s art to adhere to finishes without clamps, tacks, or tape.



**Mirrors:** Provide shatterproof mirror surfaces, particularly in crawling and toddler areas. Install grab bars in front of mirrors for infants and toddlers. Mirrors should be acrylic or reflective metal and mirror space for infants and toddlers should be 6 feet long and 1.5 feet high per classroom.



### 9.3.2 Floor Finishes

**Carpet:** Carpet is appropriate in quiet areas and crawling spaces. Fixed carpet over a large area is not

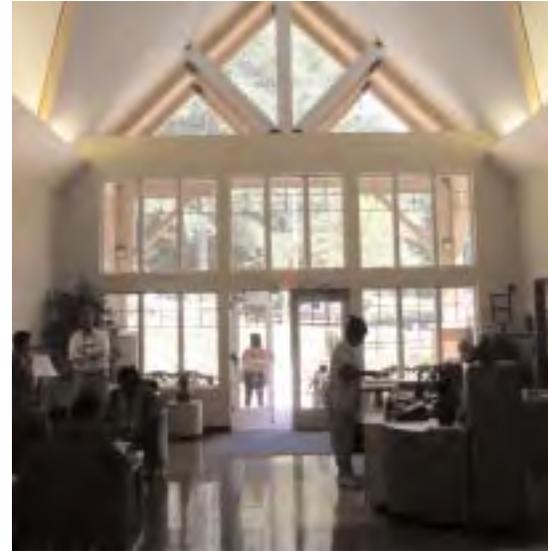


recommended since carpets can retain dust and other allergens to which many children are susceptible. The carpet selected should include a high-quality yarn system (currently type 6.6 nylon) with inherent stain resistance; a minimum face yarn density of 5000; low-level loop or cut-pile construction (maximum pile height, 1/4 inch); a minimum of 10 stitches per inch; and an anti-microbial feature; a 6 foot minimum width, and a backing system. The recommended backing system should be bonded permanently with a permanent moisture barrier

and installed with factory-applied adhesive with seams sealed on-site. The designer also should consider using a carpet with subtle flecks, patterns, or color variations that do not accentuate wear. Refer to the AIA Environmental Resource Guide, 1997 Supplement, for environmental recommendations including the recommended types of adhesive.



**Sheet vinyl:** Sheet vinyl is recommended for children's toilets, wet areas, and kitchens. Sheet vinyl is capable of receiving chemically sealed seams at joints and an integral cove base to create a moisture barrier. Provide a high-quality commercial grade with high vinyl content, a minimum 0.05-inch wear layer, and 860 kPa. Provide slip-resistant materials in wet areas. The designer should consider using material with subtle flecks, patterns, or color variations, which do not accentuate scuffs and wear. This material should not be used without adequate time to off-gas, as defined above.



**Resilient vinyl tile:** Although this material is economical, it requires higher maintenance than sheet vinyl. It is durable and can be scrubbed but cannot form a moisture barrier because it has many joints.



**Linoleum:** Linoleum is a material without

the off-gassing problems associated with vinyl, is durable and can be used under the same conditions as vinyl.

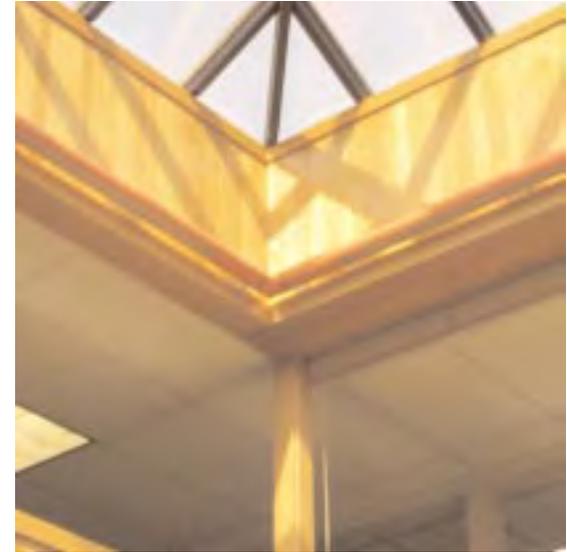
**Fluid-applied flooring:** This material can be costly but is durable, easily cleaned, and can create a moisture barrier. However, it also can result in an undesirable, institutional appearance. This material should not be used without adequate time to off-gas.

**Sealed concrete:** Sealed concrete is economical and appropriate for hard-surface areas. With an appropriate admixture, stain, and finish, it can

dispel the impression that it is unfriendly or industrial.

**Rugs:** Rugs provide comfort and are economical. Tripping and slipping hazards created by rugs should be addressed through use of proper underlayment pads designed for rugs or by the use of effective edge binding and transitions. Non-slip surfacing on the reverse side of throw rugs is essential.

**Ceramic mosaic slip-resistant tile:** Ceramic mosaic slip-resistant tile is appropriate and decorative for wet areas.



## 9.4 Ceilings

Because acoustical ceiling tile is economical, most children's areas use this type of tile, 0.8 to 1 inch thick, for effective acoustical ceiling treatment. When the ceiling is too low and fluorescent fixtures are integral with the ceiling, 2x2 feet fixtures render a less institutional appearance and offer greater flexibility. The designer should consider the benefits of incorporating other materials such as gypsum board bulkheads and soffits, as well as a variety of lighting that produce a more home-like environment.

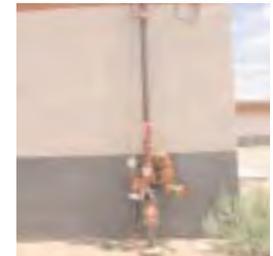
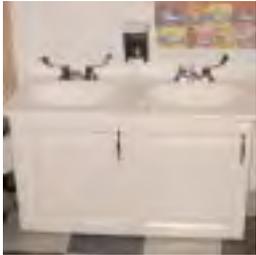


Painted gypsum board is appropriate in areas with soffits, ceiling height changes, vaults, or wet areas. Gypsum board is not recommended for ceiling areas where ceiling access is required for plumbing, air conditioning, or other equipment.

Exposed structural ceiling elements provide children with an interesting environment and may increase the perceived height in low spaces. This can require acoustical treatment such as the addition of acoustical baffles.

Luminous ceilings should not be used in areas occupied by children.

Ceiling tiles should have high recycled content varying by manufacturer and style. Ceiling tiles should be of high (80 percent minimum) light reflectance to enhance the lighting quality of interior spaces. Limited use of mirrored ceiling tiles is encouraged over an activity area (2 meter squared maximum per classroom).





## Chapter 10:

### Technical Criteria

This chapter provides technical criteria for fire protection, security, accessibility and the electrical, plumbing, lighting, heating, and cooling systems throughout the center.

The chapter also covers testing for hazardous materials.

## 10.1 Fire Protection, Safety and Environmental Issues

### 10.1.1 Compliance

The majority of the fire protection, environmental, and safety requirements are contained in numerous national codes and standards. Compliance with the most stringent national or state codes and standards is mandatory.

### 10.1.2 National Codes and Standards

For new construction and renovation projects, HSB requires compliance with the nationally recognized model building codes or with state building codes, whichever is more stringent. However, for all new construction and renovation projects, the exit requirements of the National Fire Protection Association (NFPA) Life Safety Code must be met instead of exit requirements of the national model building code. See section 10.1.3.

### 10.1.3 Means of Exit

The exit requirements of the NFPA Life Safety Code shall be used instead of the requirements in the national model building code.

Special requirements for Head Start centers using the Life Safety Code include:

Each center shall have at least two means of exit through protected corridors with the required fire separations. The center should have at least one door leading directly to the outside, and two exits for each floor unless local codes require another arrangement.

Mount panic hardware on exit doors a maximum of 3 feet above the finished floor or as required by local codes.

Provide both audible and visual fire alarm signals. In addition to fire alarms sounding in the center, any fire emergency should be announced on the central building panel or a 24-hour manned security post. See the most current editions of NFPA 72 Chapter 5 and UL 1971 for requirements on audible and visible alarms.

No common path of travel shall exceed 75 feet.

The distance between any room door intended as an exit access and an exit shall not exceed 100 feet.

The distance between any point in a room and an exit shall not exceed 150 feet.

The distance between any point in a room and an exit shall not exceed 150 feet.

Each classroom and activity room shall be provided with one direct exit to the outside if at all possible in Head Start buildings.

Center doors shall be arranged so that they open readily from the exit side whenever the center is occupied. Locks shall not require the use of a key, a tool, or special knowledge or effort for operation from the exit side. All

locking arrangements shall meet the requirements of the latest edition of the NFPA Life Safety Code if local codes do not require other arrangements.

Every effort shall be made to locate the entire center on the ground level (level of exit exit) along either an outside wall with window access to the exterior or a courtyard with window access. Centers adjacent to a courtyard should have approved fire exit out of the courtyard to an area of safety. If portions of the center are located on the floor above the level of exit, only Head Start children should be housed there. In no instance shall any portion of the center be located higher than the floor above the level of exit. The center should not be located below an exit, unless the entire building is fitted for sprinklers, and the local fire authority approves the arrangement. All arrangements should ensure safe exit in the event of fire.

Head Start centers should be separated from other occupancies depending on the fire gradient of the adjacent occupancy. In no case should the separation be less than a minimum of a one-hour fire-resistant-rated wall with doors having a fire protection rating of not less than 20 minutes. A fire detection, alarm, and communications system should be installed in all centers that meet the requirements of the NFPA Standards No. 70, NEC, NFPA 72, Standard for the Installation, Maintenance, and Use of Protective Signaling Systems, NFPA 72E, Standard on Automatic Fire Detector. The design should comply with local and state fire safety requirements. In the event of conflict, the more stringent requirements should apply.

Adjacent hazardous areas, e.g., a boiler room without sprinklers, shall be separated from the center by a minimum two-hour fire-resistant-rated wall with self-closing doors and a fire protection rating of not less than 90 minutes.

Adjacent hazardous areas, e.g., a boiler room with sprinklers should be separated from the center by a minimum one-hour fire-resistant-rated wall with self-closing doors and a fire protection rating of not less than 45 minutes.

The center should be protected by an approved supervised automatic system using quick-response sprinkler heads throughout. Sprinklers should have guards in areas such as multipurpose rooms where there may be ball-throwing activities.

An approved supervised smoke detection system should be located in the sleeping and napping areas of the center. Smoke detectors should be installed in all areas of the center, especially in unoccupied areas including closets and closed space. This provision increases flexibility, since it allows the location of sleeping and napping areas that require smoke detection to be changed.

When screened operable windows are used, window guards should be installed to protect children from falling through the screens.

## 10.2 Security

Additional safety issues can affect space planning. HSB suggests treating the perimeter of the building and play yards as a controlled filter with only one primary means of public access and exit. All other service and emergency exit points should be controlled with access limited to authorized individuals.

### Recommendations:

The entry approach should be visible by center staff located inside. Position the reception area adjacent to the entry and director's office.

Buildings should be covered by security personnel.

The design should ensure that a child is unable to leave the center without the knowledge of the staff. For instance, the designer should avoid placing operable windows near a public sidewalk and be mindful of the ability of children to open exit doors.

Keeping children safe within the center, safeguarding them from outside intruders, and protecting them from hazards to the fullest extent possible is the purpose of security measures. HSB recommends that systems include equipment, electrical power, and a conduit to protect electrical cables and wires, as required. All security alarms should report either to an alarm system or to a central monitoring station or to both as an audible and visual alarm signal. Security equipment may include a perimeter secu-

rity alarm system, video surveillance for entrance doors and vestibules, and an announcement system for main entrance doors.

The following should be provided:

- A video camera at the entry/exit doors is recommended when the center entrance cannot be seen by the building security staff or if a security risk assessment prescribes video monitoring at the entrance.
- Announcement at the entry door
- An electronic security system, including alarms, cameras and hardware. Monitors should be at the director's office and should have covers to conform to the ADA requirement to lower mounting heights for fire pulls and duress alarms while also minimizing children's access to them.
- A keypad at the entry door for authorized entry to the center without relying on other staff for assistance or monitoring and suitable for use by the disabled.
- Alarms at all entry points and delayed alarm locks at exit doors. Exit doors not intended for children's use should be equipped with electronic magnetic locks.
- Duress alarms if prescribed by a security risk assessment.
- Audible and visible emergency alarm signals.

### 10.3 Accessibility

The site as well as the access to and within the center should comply with the most stringent of the current edition of the Uniform Federal Accessibility Standards (UFAS), the final rules of the Americans with Disabilities Act Accessibility Guidelines (ADAAG), and local accessibility codes. The designer should ensure that there is an accessible route to all ground-level play areas. Refer to *Appendix A*.

Head Start design teams may wish to examine the standards for buildings and facilities that contain child care facilities. The standards were issued on January 13, 1998, and include scoping and technical requirements for accessibility to and within such buildings. The standards are available via the Internet at [www.access-board.gov/rules/child.htm](http://www.access-board.gov/rules/child.htm) or from the Department of Justice.

Pertinent standards for children with disabilities follow:

- Passage width: The minimum clear width of aisles and corridors for children's wheelchairs is 3 feet with a passing space of 5 feet provided at least every 200 feet.
- Minimum door width: 2.7 feet wide with a 5-foot-deep landing area in front of all ramps, gates, and doors. Doors through which evacuation cribs must pass to reach an exit should have a minimum width of 3 feet.
- Forward and side reach: Maximum high reach should be 35 inches and minimum low reach should be 20 inches.
- If space is available slope and rise: 1:16 to 1:20 is preferred; the maximum should be 1:12.
- Curbs should have cuts that comply with UFAS requirements.
- Drinking fountain controls should be front or side operable, and the spout should be a maximum of 29.5 inches above the finished floor. Knee clearance space should be 16 inches above the finished floor, 18 inches deep, and 30 inches wide.
- At least one side bar and one grab bar should be provided in an accessible location in the children's toilet areas. Follow the most recent requirements established by ADAAG.

## 10.4 Historic Preservation

If a center is housed in a building included in or eligible for inclusion in the National Register of Historical Places (NRHP), or if the center or its playground is within visible, close proximity to such a building, the center design should retain, respond to, and respect the use and character of the historic structure(s). State historic preservation officers must be contacted if changes are contemplated to historic structures.

Work on historic buildings, structures, or properties should comply with the *Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Structures* (current edition) and the *Fire Safety Retrofitting in Historic Buildings* (August 1989) jointly written by the Advisory Council on Historic Preservation and the General Services Administration.

## 10.5 Acoustics

Acoustical concerns include (1) controlling exterior noise entering the space; (2) modulating and controlling the transfer of interior noise generated within the space; and (3) controlling the transfer of noise between the center and adjacent tenants.

### 10.5.1 Control of Exterior Noise

Minimizing exterior noise is typically required only when the center is adjacent to or near airport flight paths, major highways, or busy rail lines. If proximity to high levels of noise is unavoidable, acoustical measures may be necessary. Maximum acceptable noise levels depend on which area of the center is subject to the noise and whether the sound is continuous or intermittent. Suggested maximum acceptable noise levels at the center's exterior follow:

Outdoor play yards:

- Continuous: 70 dBA
- Intermittent: 80 dBA

Centers with sleeping and quiet areas placed next to outside walls:

- Continuous: 60 dBA
- Intermittent: 65 dBA

Centers with sleeping and quiet areas protected by and not located along outside walls:

- Continuous: 65 dBA
- Intermittent: 70 dBA

If noise exceeds these levels, acoustical treatment may be necessary. Under these circumstances, HSB recommends the following:

- Window and door glazing should be acoustically laminated glass with an STC rating of 35 to 45 with an air space of 2 to 4 inches. (Conventional double-glazing and thermal glazing are not effective in this case.)
- Exterior doors should be high-quality commercial doors with an STC rating of 30.
- Sound-rated doors are an acceptable but more costly solution.

### 10.5.2 Modulating Interior Noise Generated within the Space

In addition to standard commercial construction, other provisions are necessary to ensure sound control within a center:

- Acoustical ceiling tile should be installed throughout the center except in service areas.
- Either non-slip throw rugs or permanently installed carpet should be used in appropriate spaces. Carpet may be particularly effective in noisy narrow corridors.

- Acoustical panels should be installed where appropriate.
- Baffles, banners, and fabrics should be considered in the design to help absorb sound generated within a center.

### 10.5.3 Controlling the Transfer of Noise Inside the Space

Maintaining low noise levels in sleeping, napping and quiet areas is important.

The following methods can be used:

- Extend interior partitions to the structure above the ceiling. Partitions may be single-layer gypsum wallboard and should have cavity insulation and be completely caulked at the top and bottom.
- Use solid-core doors for openings into noisy areas.
- Use fabrics and baffles to absorb sound.
- Provide acoustical baffles in all ductwork that penetrates sound-attenuating partitions.
- Avoid back-to-back electrical outlet boxes.

### 10.5.4 Controlling the Transfer of Sound to Adjoining Areas

Separation between centers and adjacent office spaces is recommended to be STC55. This may involve considerable expense, since not only should partitions be insulated but also should be continued to the structure above any suspended ceiling. Joints may require complete caulking.

No door or window openings should be placed in walls adjoining other building tenants.

Acoustical baffles should be provided in all ductwork that penetrates sound-attenuating partitions.

## 10.6 Windows, Doors, and Hardware

### 10.6.1 Windows

Natural light into the interior, visual access from the interior to the outside, and visual access within the center are important in environments for children. Windows should be provided from classrooms to the outside, between classrooms, and from classrooms to circulation paths.

Both children and adults should be considered. The height and scale of windows, type of glass, clear view, control of light, and safety factors should be weighed. At a minimum, the designer should provide an exterior window for every classroom. In interior areas for children, the design should allow optimal access to light and view via clerestories, sidelights, windows, and clear lite-doors with safety glass.

Children's spaces have a total window area of at least:

- Eight percent of the floor area of the room, if windows face south directly to the outdoors.
- Ten percent of the floor area of the room, if windows face east or west.
- Fifteen percent of the floor area of the room, if windows face north.
- Twenty percent of the floor area of the room, if windows are not on an exterior wall. These windows should be oriented to capture the maximum natural light. Toilets, kitchen areas, laundry areas, multipurpose rooms, offices, conference rooms, lounges, and storage rooms do not need windows if the design cannot accommodate them

Window systems (glazing, frames, anchorage to supporting walls) on the exterior facades of centers should be designed to mitigate the hazard of glass fragments or panes of glass flying into occupied space because of an exterior explosion. The design should balance the features of the glazing, framing, and attachments with the capacity of the supporting structure to ensure maximum resistance. Horizontal window muntins (horizontal Mullions) should not be located between 2 feet and 3.6 feet above the finished floor, because they might be used for climbing.

Windows should be placed at children's viewing height above the floor. Maximum windowsill heights for children are 1.5 feet above the finished floor for infants, 2 feet above the finished floor for toddlers, and 2.5 feet above the finished floor for pre-school children. Planning sill placement lower than 1.5 feet above the floor is undesirable because placing furniture in front of such a window would block the view and light. For the same reason and because of the likelihood of drafts, glass to the floor is undesirable.

Windows and doors with glass lower than 3 feet above the finished floor should have safety guards or be constructed of safety-grade glass or polymer and should be equipped with a vision strip. If cost permits, wire glass should be replaced with an approved alternative. All glazing should be clear glass. Tinted glass is not recommended except when matching existing glazing as in a renovation project.

Guards should be installed to protect children from falling through the screens when screened operable windows are used.

## 10.6.2 Standards for Safety Glass

The standards for safety glass follow:

- Consumer Product Safety Commission, 16 CFR, Part 1201, Safety Standards for Architectural Glazing.
- ANSI Z97.1, Safety Performance Specifications and Methods of Testing for Safety Glazing Materials Used in Buildings.
- Operable windows may be mandatory to provide for rescue and/or ventilation. All operable windows should have draft deflectors, screens, and safety locks, to prevent children from falling through the windows. Exterior window glazing should be insulated glass. Interior windows should not be insulated, although interior spaces requiring acoustical separation may employ laminated glazing.
- Interior glass should not present a safety risk for children and should comply with code. Use only glass that will not break in areas near children's activities or glass that will not harm children or puncture skin when it breaks.
- All exterior windows in children's areas should have light control and energy conservation features either by exterior or interior methods. In new construction, either exterior overhangs, low-E-glass or both should be included in areas of the country with a warm climate. They should prove cost effective over the life cycle of the building and may well justify a higher first cost, particularly in elevations with excessive heat gain. Overhangs are desirable but should not restrict natural light excessively, especially during winter months. In addition, simple blinds, shades, or draperies also should be used where it is important

to control light and heat gain. Valances may be used to provide color, sound absorption, and a non-institutional appearance.

- Exterior windows in napping and sleeping areas may require window treatments to control direct sunlight, and the staff should have the flexibility to change window treatments. Light levels in all rooms, including sleeping rooms, should be sufficient to provide visual observation of the space from adjoining spaces. All blind cords should be kept out of children's reach.

### 10.6.3 Doors

Doors and openings should include the following features:

- Vision panels at adult and child viewing height except on doors to adult toilets.
- Clear opening widths of doors in paths of exit at a minimum of 3 feet wide to allow crib movement.
- Interior doors that swing in the direction of emergency exit toward the exterior. Avoid Dutch doors, because children's fingers can be injured in the hinge space. Young children are vulnerable to injury when they strike projecting hinges. Inexpensive devices that fit over hinges are available and should be used to ensure safety.
- Panic hardware on exit doors in centers. Since this hardware is accessible to children, centers should consider installing alarms on doors with delayed-activation hardware for emergencies. The designer should select doors that require the maximum amount of force allowed by ADAAG and applicable codes.

### 10.6.4 Door Hardware

All door hardware should comply with UFAS. Lever types appropriate for use by the disabled should be used on all door locks, latch sets and on the opposite side of a door leaf with a panic hardware device. To prevent injury, all doors should have rate-restrictor closers. Doors accessible to children should have hardware operable from both sides using components with smooth edges and no sharp protrusions. Door openings intended for adult use only should have hardware installed at adult height. Panic hardware should be mounted per code.

All exit doors should be equipped with appropriate emergency hardware. Doors to the exterior not used by children should have electronic magnetic locks that operate in an emergency. Consider an electronic strike release with a keypad or a card reader and remote release for main entrance doors. Keypads and card readers must meet UFAS standards.

### 10.6.5 Mounting

The following standards apply for mounting plumbing fixtures, mirrors, and paper towel dispensers:

- Flush controls should be mounted 20 to 30 inches above the finished floor on the wide side of toilet areas.
- Toilet paper dispensers should be mounted 14 inches above the finished floor within children's reach.
- The sink top should measure 22 inches above the finished floor with a minimum clearance of 19 inches for knee space.

- Faucets on children's lavatories may be fitted with sanitary and energy-conserving automatic controls, but the designer should ensure that these devices are acceptable to local licensing. Faucet controls mounted on the face or rim of a counter surface should be no more than 14 inches from the leading edge.
- Mirrors should be mounted over the sink with the bottom edge no higher than 29.5 inches above the finished floor. One full-length mirror should be provided with the bottom edge a maximum of 18 inches above the finished floor. All mirrors should be shatterproof.
- Paper towel dispensers should be mounted beside or close to the sinks. No dispensers of any kind within children's reach should have serrated edges.

## 10.7 Plumbing

The following plumbing features are important:

- Provide paper towel and soap dispensers without serrated edges at all sinks.
- Provide easily reached clean-outs for waste piping.
- Provide a shut-off valve for each fixture so that maintenance procedures do not affect multiple plumbing facilities.
- Provide a floor drain in each toilet for children, in the laundry, and in each water play activity area.
- Provide hot water supplies accessible to children with a controlled temperature not to exceed 105° F, unless local regulation requires otherwise. Provide a hot water supply to the dishwasher.
- Provide drinking fountains with a mouth guard and an angled jet with a spout height of no more than 21 inches above the finished floor.
- Check drinking fountains to ensure they are not contributing to high levels of lead or asbestos in water.
- Use lead-free solder for domestic water piping.

## 10.8 Heating/Ventilation and Air Conditioning

The comfort and safety of the children and adults in the center are of prime importance. Consider the following standards for temperature and ventilation.

### 10.8.1 Temperature and Humidity Levels

Temperature and humidity should be maintained within selected ranges. Temperature levels are measured at lower than normal heights above the floor to accommodate children. Children spend a great deal of time on the floor. Therefore, it is important to control temperature and avoid drafts. Best practice suggests maximum insulation of floors (depending on the project location) including perimeter insulation of floor slabs. Heating systems installed in the floor slab are not recommended because of problems with maintenance and flexibility.

Use the following guidelines for acceptable temperature and humidity (measured at 3 feet above the finished floor):

- Winter: 69.8 °F and 35 percent minimum relative humidity
- Summer: 75.2° to 78.8°F and 50 percent maximum relative humidity
- Tamper-proof thermostats should be located at least 3 feet above the finished floor to monitor the temperature at a child's level. The optimum temperature control is zoned, and it should be appropriately adjusted for different activity areas. Infant areas may be more comfortable for these children at 1-3 degrees warmer temperatures than other areas. The design A/E needs to consider this issue and make recom-

mendations for the optimal solution to heating and cooling distribution during the concept development stage. Thermostats should be accessible to the center director or other designated staff members.

### 10.8.2 Ventilation

In addition to heating and cooling equipment, a humidifier/dehumidifier may be needed to meet suggested levels. Each space should be supplied with a minimum of 15 liters per second of outside air for each occupant to control odors. None of this air is to be returned to the rest of the building. To ensure comfort levels, the air motion in the occupied space should not exceed 8,000 mm per minute.

There should be proper exhaust venting for a range and clothes dryer. It is wise to consider noise level, service, and efficiency when locating equipment. Whenever possible, HVAC should be separate from the other building systems. Apart from other advantages, this will facilitate better filtration of the dust and molds to which many children are particularly sensitive. Air diffusers can be used to minimize drafts.

### 10.8.3 Heating and Cooling Safety Issues

The following restrictions are suggested:

- Prohibit portable electric fans.
- Prohibit space heaters.
- Vent heating units that use flames to the outside and supply them with sufficient combustion air.
- Ensure that heating units hotter than 109.4°F are inaccessible to children by using locks or other barriers.

### 10.9 Lighting

Well-considered lighting for each activity area is a key element in creating a home-like environment in Head Start centers. The quality of light should remind children of a home environment. To achieve this effect, use broad ambient lighting for large-muscle activity areas, task lighting for manipulative activities, and lower light levels for quiet and sleeping areas.

The amount and orientation of natural light should be considered in the design. Variation in light levels up to a maximum of 500 lx is acceptable in rooms with poor natural lighting capability. See Table 10.9 for the minimum suggested light levels for various functions.

Table 10.9: LIGHTING REQUIREMENTS

| Space                        | Natural Light | Lighting in lux                    |
|------------------------------|---------------|------------------------------------|
| Vestibule                    | View          | 250-350                            |
| Reception                    | View          | 250-350                            |
| Main Circulation             |               | 100 - 350                          |
| Director's Office            | View          | 500                                |
| Sick Bay                     |               | 300 - 500 (dimmable)               |
| Staff Lounge                 | View          | 500 (dimmable)                     |
| Parent/Teacher Conference    |               | 500 (dimmable)                     |
| Adult Toilet                 |               | 150-250                            |
| Central Storage              |               | 250-350                            |
| Laundry                      |               | 300 - 400                          |
| Kitchen                      |               | 300 - 500                          |
| Janitor's Closet             |               | 300 - 400                          |
| Telephone Closet             |               | 400 - 500                          |
| Multipurpose Space           |               |                                    |
| Play Area                    |               | 300 - 500                          |
| Meeting Area                 |               | 300 - 500 (dimmable)               |
| Play Yard Storage            |               | 300 - 500                          |
| Infant Activity Area         | Natural light | 250-500<br>(quiet areas dimmable)  |
| Toddler Activity Area        | Natural light | 300-1000<br>(quiet areas dimmable) |
| Pre-Schooler Activity Area   | Natural light | 300-1000<br>(quiet areas dimmable) |
| School-Age Activity Area     | Natural light | 300-1000<br>(quiet areas dimmable) |
| Cubby Storage Area/Locker    |               | 300 - 500                          |
| Food Preparation             |               | 300 - 500                          |
| Eating                       | Natural light | 300 - 500                          |
| Children's Art Sink          | Natural light | 500 - 1000 (dimmable)              |
| Sleeping/Crib/Napping        |               | 50 - 500 (dimmable)                |
| Diapering Station            |               | 300 - 500                          |
| Children's Toilet            |               | 300 - 500                          |
| Children's Hand-washing Sink |               | 300 - 500                          |
| Children's Private Toilet    |               | 300 - 500                          |

In addition, the following should be provided:

- Use 500 lux (lx) on children's work surfaces for reading and close work.
- Use 250 lx ambient light for class and play areas with additional task lighting up to 500 lx provided where appropriate.
- Ensure that light is capable of being dimmed in a range of 500 lx to 50 lx for sleeping and napping areas.
- Use 100 lx in stairs and corridors.
- Install dimmable light fixtures in classrooms and nap rooms.
- Light levels in all rooms, including sleeping rooms, should be maintained at a sufficient level to allow observation of the space from adjoining spaces. Lighting should be used to emphasize areas, designate boundaries, create a pleasant environment, or support a certain activity.

When using fluorescent lighting, electronic ballast light fixtures are recommended. Their high-frequency cycles avoid perceptible flickering and allow dimming. Fluorescent lamps should have a color temperature of 4,100 degrees Kelvin with the highest possible color-rendering index (CRI). Minimum CRI should be 80 or greater to enhance the center's environmental quality. If there is adequate ceiling height, use better quality reflected, ambient lighting from pendants or recesses instead of troffer-style down-light fluorescent fixtures.

Using reflected light will ensure that children, who are at a far lower vantage point than adults, avoid looking directly into the light source which can cause eye fatigue because of the glare. If troffer use is unavoidable, a specular finish and parabolic louver are recommended. Provide dimmable lighting in infant sleep areas and in all classrooms. Task lights, such as those provided by residential-type pendant fixtures, should be used for reading, painting, and close work.

Variety is advisable in designing lighting. Use devices such as dimming controls, separate switching, adjustable directional fixtures, and pendant fixtures positioned over work areas. Consider using specialized lighting to display artwork, pools of light to create excitement and variety, and high levels of light in areas designed for physical activity. Food preparation areas should have fixtures that have shielded or shatterproof bulbs.

Light entering from the exterior can be controlled with adjustable blinds, shades, or other types of window coverings. Window treatments on interior windows should allow clear visibility.

Planning adequate exterior lighting for a building will allow safe exterior circulation and site security.

All lamps should have shatterproof lenses or covers.

## 10.10 Electrical

Consideration for the safety of children and future electrical needs is critical. Defining data, equipment, and communication requirements in advance may prevent the need to expand electrical capacity in the future.

### 10.10.1 Electrical Safety Issues

If there are other applicable codes and standards deemed more stringent than the safety standards listed below, the more stringent standards should apply.

Outlets in areas accessible to children must be tamper resistant as defined by NEC Article 517-18c. Outlets that are within children's reach should be modified to avoid any possibility of electrocution. An alternative is to locate them out of children's reach at least 4.3 feet above floor level.

No electrical outlet should be located within 6.2 feet of a water source unless it is protected by an approved ground fault circuit interrupter.

Computer cables should be encased in conduits or channels.

No cables or wires in the center should have enough slack present to risk strangulation of a child.

Locate tamper-proof outlets 4 inches above the finished floor wherever counters are provided for adult use and at computer stations.

No raised electrical boxes with sharp metal edges should be installed in areas or passageways used by children.

All hot equipment, including resistance-heating elements, should be screened and inaccessible to children.

Care should be taken in selecting and locating telephone sets and other devices, to avoid a child's entanglement in the device's wires and cords. The same applies to window blinds with pull cords. Such wires, cords, and strings should be 4.5 feet above the floor and out of children's reach.

### 10.10.2 Electrical Requirements

Recommendations:

- Provide wall duplex outlets at intervals of approximately 13 feet.
- Provide one duplex outlet per wall on walls less than 10 feet wide.
- Provide electrical power outlets for kitchen and laundry areas for a refrigerator, oven, range, garbage disposal, and washer/dryer.
- Consider closed-circuit TV cameras at all entrances and exits.
- Provide for a possible additional monitor location in the staff area.
- Coordinate requirements and provide for the installation of the following: electrically switched doors, security alarms, and intercom systems.
- Provide a power supply for a TV, a VCR, audiovisual equipment, telephones, and computers for staff and children's areas.
- Provide smoke detectors in each closet or enclosed space.

### 10.11 Lead-Based Paint

Test all existing painted surfaces in the center interior and playground equipment for lead-based paint following Department of Housing and Urban Development (HUD) guidelines. Exterior paint in any area that children may access must be tested. All detected lead-based paint must be abated using HUD procedures and re-tested to ensure compliance.

Please refer to *Lead-Based Paint: Interim Guidelines for Hazard Identification and Abatement in Public and Indian Housing*, 1990 (HUD).

### 10.12 Lead in Water

In new and major renovation projects that involve plumbing, conduct lead tests for all sources of water used by the center for lead when the substantially completed project is accepted. At a minimum, water in buildings over 25 years old should be tested annually, using guidance in the Environmental Protection Agency pamphlet *Lead in School's Drinking Water*, EPA 570/9-89-001, January 1989. If the lead exceeds safe levels, the affected water supply must not be used, and mitigation actions must be taken immediately.

### 10.13 Asbestos

Survey the center (or the area anticipated to house the center) for the presence of asbestos-containing materials. An asbestos abatement and control program must be implemented if asbestos is present. Asbestos-containing materials that are damaged or subject to disturbance should be abated in accordance with regulatory requirements and guidelines.

In a limited area of the country with highly acidic drinking water, water also may contain asbestos. This is considered a lesser hazard than crumbling asbestos found in buildings. Nevertheless, tests should be conducted and, if the drinking water supply shows the presence of asbestos, it should be eliminated as a hazard. (See *Raising Children Toxic Free*, referenced in the "Selected References" section of the *Guide*.)

### 10.14 Radon

For a minimum of 90 days, test the center for radon in the air using alpha track detectors or electric ion chambers. If radon levels are at, or exceed, 4 picoCuries per liter, corrective actions must be taken immediately followed by re-testing.

Test the center water for radon if the drinking water is obtained from a non-public water source. Environmental Protection Agency guidelines shall be used for testing as prescribed in *Radon in Water Sampling Manual* (EPA/EERF-Manual-78-1). If radon levels are at, or exceed, 300 picoCuries per liter, the affected water supply must not be used and mitigation actions must be taken immediately followed by re-testing.

### 10.15 Off-Gassing

Allow a new center to “air out” before occupancy. The schedule of work should provide ventilation for off-gassing of new synthetic materials for 30 days.

### 10.16 CO<sub>2</sub> Monitoring

Provide the capacity for permanent carbon dioxide monitoring, including operational set point parameters to prevent indoor CO<sub>2</sub> levels from exceeding outdoor levels by more than 700 parts per million (ppm), as described in LEED Version 2.0.

# Appendix A

## **Accessibility**

This Appendix is included primarily to aid non-design professionals in understanding accessibility requirements.

Architects and engineers should consult the latest ADAAG and UFAS regulations.

Note that the following information is in feet and inches because the codes and regulations that they reference are expressed in that manner. If the contract calls for drawings to be in metric, it is the A/E's responsibility to express all dimensions metrically.

## Appendix A

### ACCESSIBLE ROUTE

Passage width: The minimum clear width of aisles and corridors for children's wheelchairs is 3 feet with passing space of 5 feet provided at least every 66 feet.

### ALARMS

Care must be taken to prevent audible signals greater than 90db to prevent hearing damage in young children.

### CONTROLS AND OPERATING MECHANISMS

Forward and side reach: Maximum high reach is 35 inches; minimum low reach is 20 inches.

### CURB RAMPS

Curbs must have cuts that comply with UFAS requirements.

### DOORS

Doors should be accessible but not so easily that young children could escape. Keep in mind that doors must be operable only by adults.

Hardware on doors leading out of classrooms should be installed as high as possible – 48 inches AFF. Hardware on doors to toilets serving the classroom should be as low as practical for the age group. Minimum door width is 32 inches with a 5-foot deep landing area in front of all ramps, gates, and doors. For doors providing evacuation cribs access to exits, the minimum width is 3 feet.

### DRINKING FOUNTAINS

Drinking fountain controls are front or side operable. The spout should be a maximum of 29.5 inches above the finished floor. Clearance under the unit is not required if clear floor space for a parallel approach is provided. Also, provide a clear floor space of 30 inches x 48 inches to allow a child in a wheelchair to approach the unit facing forward.

### ELEVATORS

Elevator controls should be installed as high as possible so that young children cannot interfere with their operation.

### FAUCETS

Faucets on children's lavatories may be fitted with sanitary and energy conserving automatic controls, but the designer must ensure that these devices will be acceptable to local licensing authorities before specifying them. Faucet controls mounted on the face or rim of counter surface should be no greater than 14 inches from the leading edge.

## FIXED OR BUILT-IN SEATING AND TABLES

Fixed or built-in seating or tables used primarily by Head Start and Early Head Start children who are age 5 are not required to be accessible if parallel side approach is provided.

Tops of accessible counters and tables shall be 26 inches to 30 inches above the floor. If knee space is required, it shall be at least 24 inches high, 30 inches wide and 19 inches deep. Clear floor space also must be provided.

## HANDRAILS

A second set of handrails with a gripping surface shall be provided a maximum of 28 inches above the floor. Elements of the adult handrail shall not interfere with the children's handrail. Nine inches must be provided between handrails to prevent entrapment.

## LAVATORIES AND MIRRORS

Lavatories used by Head Start children and Early Head Start children are not required to have knee or apron clearance if a side parallel approach is provided.

Mirrors must be mounted over the sink with the bottom edge no higher than 29.5 inches above the finished floor. Provide one full-length mirror with the bottom edge a maximum of 18 inches above the finished floor. All mirrors are to be shatterproof.

## RAMPS

Maximum slope and rise is 1:16; a slope and rise of 1:20 are preferred if space is available. The maximum is 1:12.

## SIGNAGE

Children's signs shall be mounted a maximum of 40 inches above the floor.

## SINKS

Sinks used by Head Start and Early Head Start are not required to have knee or apron clearance if a side parallel approach is provided.

## SPACE ALLOWANCE AND REACH RANGES

Circulation surfaces leading to play events in the play yards shall accommodate wheelchair access and use.

Improper reach ranges create unsafe situations in Head Start and Early Head Start centers. Electrical plugs, switches, fire alarm pulls, intercoms, etc. fascinate children. These devices must be kept away from curious hands. The maximum side reach for an adult in a wheelchair is 54" from a side approach. Although 60" is preferred, 54" will keep most children safe.

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### STORAGE

Closets and storage areas should not be accessible to children.

Built in or fixed storage accessible to children shall be located at 20 inches to 44 inches above the finished floor.

Clothes hanger rods, coat hooks, or shelves shall be located 36 inches to 44 inches maximum above the finished floor.

### TOILET STALLS

Toilets and toileting are major issues in Head Start centers. Children become “toilet trained” within a broad range of ages but at an average age of 2 years. Before this time, they are diapered. Until the age of 5 or 6, toilets are an extension of the classroom, where children learn proper health habits. Therefore, properly designed Head Start centers have toilets directly accessible to the classroom not multiple toilets as used in elementary schools. The most pressing problem in Head Start classroom design is the application of the regulations to every toilet room. BOCA Code states that non-required bathrooms, designed for children’s use are not required to be accessible. Generally, toilet rooms will be located between two classrooms.

If the tank height or the flush valve prevent the placement of a grab bar over a fixture, a 24-inch grab bar may be placed (offset) to the wide side.

### TOWEL DISPENSERS

Towel dispensers should be mounted beside or in close proximity to the sinks. No dispensers within a child’s reach should have serrated edges.

### WATER CLOSETS

Toilets shall be sized for the intended age.

Children’s toilets should have (at a minimum) one-side grab bar in the children’s toilet area. In areas designated as accessible, there should be two grab bars on each side plus one on the back wall. In all cases, follow the most recent requirements established by ADAAG.

Flush controls should be mounted 19.5 inches to 29.5 inches above the finished floor on the wide side of toilet areas.

Toilet paper dispensers should be mounted 13.5 inches above the finished floor within children’s reach.

# Appendix B

## **Head Start Centers and Sustainable Design**

### **Greening Head Start Centers**

As designers and planners learn more about the effects the environment has on the learning and attention, they realize that the built environment is a concern. Buildings can turn their backs on their surroundings and depend on mechanical and electrical systems to create comfort, or they can be designed to work with the site and natural systems and become healthy and productive places. This approach, called sustainable design, provides huge benefits to children, staff, community, and the environment at large.

The grantee and Design Team will benefit from addressing the complex issues of sustainable design for Head Start centers. Perhaps in no other building type, other than private homes, are the benefits of green design more applicable and timely. The care and nurturing of the nation's children who are preparing to enter school are of major importance.

There is an abundance of data from research on K-12 children. The parallels to pre-school children are compelling since the benefits of green design may be even more effective for pre-schoolers. Research has shown improved test scores, increased attentiveness and higher attendance because of daylighting factors and natural ventilation. This research has

## Appendix B

been repeated and corroborated in different parts of the country. The evidence shows that natural light provides better visual acuity for 3D objects, which are so important for pre-school children. Daylight also stimulates higher hormonal levels through the pituitary gland resulting in better attentiveness and calmer behavior.

Natural ventilation contributes to these benefits. Fresh air combined with daylight can transform a static indoor environment into an environment connected with natural rhythms. This in turn results in a more stimulating space. Natural ventilation also contributes to improved indoor air quality and is linked directly to health and attendance.

One of the biggest problems in schools has been poor indoor air quality that contributes to higher levels of asthma and "sick building" syndrome. Poor air quality and indoor pollutants have an even higher potential for adverse effects on pre-school children. Today, Americans spend up to 90 percent of their time indoors, and pollution concentrations are frequently 2 to 5 times greater than those outdoors.

The way buildings are heated and cooled and the designs used to modulate the environment have a marked effect on indoor air quality. Coupled with the type of materials used, especially the indoor finishes, design has an even more marked effect.

Following are some of the design solutions and systems that support the goals of green building:

- Effective and comprehensive daylighting design may be the single most important design issue for spaces for children. Different spaces, locations, and site conditions require different approaches to daylighting and designers should be aware of the options. Benefits to daylighting include potentially reduced cooling requirements and reduced artificial lighting requirements.
- Green roofs, cool roofs, sunshades all contribute towards reduced energy requirements and can benefit Head Start grantees by reducing their operating costs.
- Using green materials with low or no Volatile Organic Compounds (VOCs) can help restore good indoor air quality. Such materials can be found for most finishes, paints, caulks, carpeting, flooring, wall coverings, and other surfaces.
- Flushing out buildings prior to occupancy can improve air quality.
- Installing operable windows in schools and child care centers increases air circulation. (Over the last 15 years these windows have almost disappeared.)
- Effective landscaping for control of water run-off, shading, and cooling.
- Carefully designing parking and providing access to public transportation.

It is possible to aid the process of preparing children to learn by carefully designing facilities and surrounding areas. There is another reference to environmentally sensitive planning in Section 2.3 of Chapter 2. Grantees also should be aware of Historic Preservation restrictions where applicable when renovating or rehabilitating an existing facility. Head Start's Facilities Environment Documentation Course is available on a CD-ROM and has information about special procedures for dealing with historic preservation.

*The Head Start Bureau appreciates the contributions to this Appendix by Daniel F. Hellmuth, AIA, hellmuth + bicknese architects, St. Louis, Missouri .*

# Appendix C

## **Head Start Bureau Central Office and ACF Regional Offices**

Refer to the Head Start Bureau contacts Web page for updates to the following information:  
<http://www.acf.hhs.gov/programs/hsb/contacts/index.htm>

### **CENTRAL OFFICE**

US Department of Health and Human Services  
Administration for Children and Families  
Administration on Children, Youth and Families  
Head Start Bureau  
330 C St., SW  
Washington, D.C. 20447  
202-205-8572

### **ACF REGIONAL OFFICES**

#### **REGION I**

(Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont)

ACF - BOSTON

Government Center  
JFK Federal Building, Room 2000  
Boston, MA 02203  
617-565-1020

## REGION II

(New Jersey, New York, Puerto Rico, and the Virgin Islands)

ACF – NEW YORK

26 Federal Plaza, Room 4114

New York, NY 10278

212-264-2890

## REGION III

(Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, and West Virginia)

ACF - PHILADELPHIA

150 South Independence Mall, West, Suite 864

Philadelphia, PA 19106

215-861-4000

## REGION IV

(Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee)

ACF – ATLANTA

61 Forsyth Street, SW, Suite 4M60

Atlanta, GA 30303

404-562-2900

## REGION V

(Illinois, Indiana, Michigan, Minnesota, Ohio, and Wisconsin)

ACF – CHICAGO

233 North Michigan,

Suite 400 Chicago, IL 60601

312-353-4237

## REGION VI

(Arkansas, Louisiana, New Mexico, Oklahoma, and Texas)

ACF – DALLAS

1301 Young Street, Suite 914

Dallas, TX 75202

214-767-9648

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### REGION VII

(Iowa, Kansas, Missouri, and Nebraska)

ACF - KANSAS CITY

Federal Building

601 East 12th Street, Rm. 276

Kansas City, MO 64106

816-426-2223

### REGION VIII

(Colorado, Montana, North Dakota, South Dakota,  
Utah, and Wyoming)

ACF – DENVER

Federal Office Building

1961 Stout Street, 9th Floor

Denver, CO 80294

303-844-1129

### REGION IX

(Arizona, California, Hawaii, Nevada, American Samoa,  
Commonwealth of the Northern Mariana Islands,  
Federated States of Micronesia, Guam, Marshall Islands,  
and Republic of Palau)

ACF - SAN FRANCISCO50

United Nations PlazaRoom 450

San Francisco, CA 94102

415-437-8400

### REGION X

(Alaska, Idaho, Oregon, and Washington)

ACF – SEATTLE

Blanchard Plaza

2201 Sixth Ave., Suite 600

Seattle, WA 98121

206-615-2557

Administration for Children and Families  
American Indian/ Alaska Native Branch  
330 C Street, S.W.  
Washington, D.C. 20447  
202-205-8539

Administration for Children and Families  
Migrant and Seasonal Branch  
330 C Street, S.W.  
Washington, D.C. 20447  
202-205-8397

# Appendix D

## Metric/English Conversions

The list below includes Metric to English conversions used in the *Guide*.

| <b>GIVEN</b>       | <b>MULTIPLY BY</b> | <b>TO OBTAIN</b> |
|--------------------|--------------------|------------------|
| <b>Length</b>      |                    |                  |
| Centimeters        | 0.0328             | Feet             |
| Centimeters        | 0.3937             | Inches           |
| Feet               | 0.3048             | Meters           |
| Feet               | 304.8              | Millimeters      |
| Inches             | 25.4               | Millimeters      |
| Inches             | 2.54               | Centimeters      |
| Inches             | 0.0254             | Meters           |
| Meters             | 3.28084            | Feet             |
| Meters             | 39.37              | Inches           |
| Yards              | 0.9144             | Meters           |
| <b>Area</b>        |                    |                  |
| Acre               | 4046.87            | Sq. meters       |
| Hectares           | 2.471040           | Acres            |
| Square centimeters | 0.155              | Sq. inches       |
| Square meters      | 10.76              | Sq. feet         |
| Square feet        | 0.0929             | Sq. meters       |
| Square inches      | 645.16             | Sq. mm           |
| <b>Volume</b>      |                    |                  |
| Cubic centimeters  | .06102             | Cu. inches       |
| Cubic feet         | 0.028317           | Cu. meters       |
| Cubic inches       | 16.38              | Cu. cm           |
| Cubic meters       | 1.38               | Cu. yards        |
| Cubic yards        | 0.7645             | Cu. meters       |
| Gallons, US        | 3.7854             | Liters           |
| Liters             | 0.26417            | Gallons          |

| GIVEN                       | MULTIPLY BY         | TO OBTAIN                  |
|-----------------------------|---------------------|----------------------------|
| <b>Weight/Mass</b>          |                     |                            |
| Kilograms                   | 2.2046              | Pounds                     |
| Pounds                      | 0.4535              | Kilograms                  |
| Tons                        | 907.2               | Kilograms                  |
| <b>Mass per Unit Area</b>   |                     |                            |
| Kilograms per sq. cm        | 14.22               | Lb/sq. inch                |
| Kilograms per sq. meter     | 0.0205              | Lb/sq. foot                |
| Pounds per sq. foot         | 4.8824              | Kg/sq. meter               |
| Pounds per sq. inch         | 0.0703              | Kg/sq. centimeter          |
| <b>Mass per Unit Length</b> |                     |                            |
| Kilograms per meter         | 0.672               | Lb/foot                    |
| Pounds per foot             | 1.49                | Kg/meter                   |
| <b>Mass per Unit Volume</b> |                     |                            |
| Kilograms per cubic meter   | 0.0624              | Lb/cu. foot                |
| Pounds per cubic foot       | 16.02               | Kg/cu. meter               |
| <b>Energy</b>               |                     |                            |
| BTU                         | 1055                | Joules                     |
| BTU per hour                | 0.293               | Watts                      |
| <b>Volume per Unit Time</b> |                     |                            |
| Cubic feet per minute       | 0.0004719           | meter <sup>3</sup> /second |
| Cubic meters per second     | 2119                | Ft <sup>3</sup> /minute    |
| Cubic meters per second     | 15,580              | Gallons/minute             |
| <b>Units of Temperature</b> |                     |                            |
| 1 Degree Celsius            | $(- 32) \times 5/9$ | Fahrenheit degree          |
| 1 Degree Fahrenheit         | $(32) \times 9/5$   | Celsius degree             |

# Appendix E

## Head Start Program Performance Standards on Design and Space Use

The following Head Start Program Performance Standards, 45 CFR Part 1304, are relevant to facilities. Those cited apply to fixed, built-in environments. A summary of the official guidance is included, where applicable.

### **Performance Standard 1304.21(a) (5) (i) (5)**

In center-based settings, grantee and delegate agencies must promote each child's physical development by providing sufficient time, indoor and outdoor space, equipment, materials and adult guidance for active play and movement that support the development of gross motor skills.

### **Performance Standard 1304.22(e) (6)**

Potties that are utilized in a center-based program must be emptied into the toilet, cleaned, and disinfected after each use in a utility sink used for this purpose.

### **Performance Standard 1304.53(a) (1) (a)**

Grantee and delegate agencies must provide a physical environment and facilities conducive to learning and reflective of the different stages of development of each child.

**Guidance:** There should be developmentally appropriate indoor and outdoor environments that are safe, clean, attractive, and spacious.

Indoor environments include floor coverings and soft elements such as rugs and cushions; an open area on the floor allowing for the safe movement of infants and toddlers; a configuration of existing space that promotes individual and group activities; and low, open shelves, which allow children to see and to select their own materials.

Outdoor environments include a variety of surfaces, such as soil or sand for digging; hills; flat, grassy, and hard areas for wheeled toys; areas of sunlight as well as shade or portable shade equipment; a variety of equipment for riding, climbing, balancing, and digging; areas for individual and small group play.

### **Performance Standard 1304.53(a) (2)**

Grantee and delegate agencies must provide appropriate space for the conduct of all program activities.

**Guidance:** There should be doors, gates, counters, and walls to keep food preparation areas separate from other areas; cribs and cots for infants and toddlers are kept at least 3 feet apart. There should be space for children who become ill during the day and cannot be sent home; there should be sufficient space for program activities and support functions, including office work, the storage of staff belongings, food preparation, janitorial services, and children and parent activities.

### **Performance Standard 1304.53(a) (3)**

The center space provided by the grantee and delegate agencies must be organized into functional areas that can be recognized by the children and that allow for individual activities and social interactions.

**Guidance:** Classrooms should be divided into functional areas, using child-sized, age-appropriate shelving; low walls; large pillows; mats; or platforms to separate the different areas. Space for preschool children and older tod-

dlers is arranged to facilitate a variety of large group, small group, and individual program activities. Active or noisy areas are separated from inactive or quiet spaces. Activity areas are near necessary resources. (For instance, art areas are near water.)

Indoor traffic patterns should keep preschool children from running, yet enable them to move easily between areas.

Playgrounds should be laid out to ensure clearance space from walkways, buildings, and other structures, and to avoid crowding in any one area. Outdoor separate space should be provided for each type of activity - throwing or kicking balls, climbing hills, digging, and using stationary playground equipment.

### **Performance Standard 1304.53(a) (4)**

The indoor and outdoor space in Early Head Start or Head Start centers in use by mobile infants and toddlers must be separated from general walkways and from areas in use by preschoolers.

**Guidance:** Mobile infants and toddlers must be kept away from surfaces and equipment that may injure them. Carpeting should be well padded, secure, and clean.

### **Performance Standard 1304.53(a) (5)**

Centers must have at least 35 square feet of usable indoor space per child available for the care and use of children (i.e., exclusive of bathrooms,

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halls, kitchen, staff rooms, and storage places) and at least 75 square feet of usable outdoor play space per child.

**Guidance:** Indoors: cribs and cots should be at least 3 feet apart. If less than 75 square feet of accessible outdoor space is available per child, a large indoor activity room meeting the 75-square-foot room requirement-per-child should be used. This indoor space should accommodate activities performed outdoors. These interior spaces must be ventilated with fresh air when windows cannot be opened.

An adjoining or nearby school yard, park, or playground that is safe, clean, and provides drinking water and toilet facilities may be provided in lieu of on-site outdoor play area.

### **Performance Standard 1304.53(a) (6)**

Facilities owned or operated by Early Head Start and Head Start grantee or delegate agencies must meet the licensing requirements of 45 CFR 1306.30.

### **Performance Standard 1304.53(a) (7)**

Grantee and delegate agencies must provide for the maintenance, repair, safety, and security of all Early Head Start and Head Start facilities, materials, and equipment.

**Guidance:** Outdoor play areas must be free of broken glass, stones, sharp objects, standing water, poisonous plants, brush or high grass, and ice and

snow accumulations. There should be a system to monitor entry into the building. Staff should check the facility regularly for damage or other conditions that present hazard to children (e.g., plumbing, electrical, structural problems). Leases and rental agreements should specify the property owner's responsibilities for maintenance and repairs. A facility that is unsafe, unclean, or otherwise in disrepair will be suspended from use.

### **Performance Standard 1304.53(a) (8)**

Grantee and delegate agencies must provide a center-based environment free of toxins, such as cigarette smoke, lead, pesticides, herbicides, and other air pollutants as well as soil and water contaminants.

**Guidance:** The facility must work with health officials to determine inspections that are conducted for environmental hazards such as asbestos, radon, and formaldehyde. Inspection and removal of any environmental or health hazards should be by certified or licensed contractors.

### **Performance Standard 1304.53(a) (9)**

Outdoor play areas at center-based programs must be arranged so as to prevent any child from leaving the premises and getting into unsafe and unsupervised areas. En-route to play areas, children must not be exposed to vehicular traffic without supervision.

**Guidance:** Streets crossed should be clearly marked by traffic lights and have marked crosswalks. Fences or other physical barriers should be installed to separate the outdoor play areas from vehicular traffic and other

dangers. Fences and other physical barriers should be high enough and constructed well enough to prevent children from exiting the area. When a rooftop is used as a play area, it should be enclosed with a fence that is high enough to prevent falls and constructed of materials that can prevent children from climbing the fence. The rooftop must have an approved fire escape. Bus loading and unloading areas must be safely configured.

#### **Performance Standard 1304.53(a) (10)**

Grantee and delegate agencies must conduct a safety inspection, at least annually, to ensure that each facility's space, light, ventilation, heat, and other physical arrangements are consistent with the health, safety, and developmental needs of children.

**Guidance:** Fire prevention measures (e.g., absence of flammable materials, presence of currently inspected and fully charged fire extinguishers, smoke detectors with working batteries, exits, and evacuation routes) must be in use. Painted surfaces must be lead-free. Inspections should be conducted of playground equipment and surfaces, electrical outlets, water supply, toilets and hand-washing facilities, diaper and changing areas, ventilation and air quality, and sewage and waste disposal systems. Adaptations to the facility must comply with the Americans with Disabilities Act.

#### **Performance Standard 1304.53(a) (10) (i)**

In climates where such systems are necessary, there is a safe and effective heating and cooling system that is insulated to protect children and staff from potential burns.

**Guidance:** Safe cooling and heating systems should be checked by staff or by other appropriate professionals to ensure that tribal, state, and local laws are followed. Heating and cooling units should be vented properly. Radiators, hot water pipes, and similar equipment should be screened or insulated to prevent burns and other injuries. Heating units, including baseboard heaters hotter than 110 degrees Fahrenheit, should be inaccessible to children. Electric space heaters that are UL-approved should be placed in locations inaccessible to children and at least 3 feet from curtains, papers, and furniture. These heaters also should have protective coverings to prevent injury. Portable open-flame and kerosene space heaters and portable gas stoves may not be used. Electric fans must be inaccessible to children. Heating and ventilating equipment should be professionally inspected annually, or immediately after there is a concern or malfunction. An inspection should verify that the equipment is properly installed, cleaned, and maintained.

#### **Performance Standard 1304.53(a) (10) (ii)**

No highly flammable furnishings, decorations, or materials that emit highly toxic fumes when burned are used.

**Guidance:** Agencies are to follow state, tribal, and local licensing regulations and the guidelines of the U.S. Consumer Product Safety Commission regarding the flammability of materials, furnishings, and equipment.

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### Performance Standard 1304.53(a) (10) (iii)

Flammable and other dangerous materials and potential poisons are stored in locked cabinets or storage facilities separate from stored medications and food and are accessible only by authorized persons. All medications including those required for staff and volunteers are labeled, stored under lock and key, refrigerated if necessary, and kept out of the reach of children.

**Guidance:** Cleaning materials, detergents, aerosol cans, pesticides, medications, poisons, chemicals used in lawn-care treatments, and other toxic materials should be stored in their original containers and entirely separated from food and out of children's reach. Medications must be under lock and key, have child-protective caps, labels, and be stored away from food at the proper temperature.

### Performance Standard 1304.53(a) (10) (iv)

Rooms are well lit and provide emergency lighting in the case of power failure.

**Guidance:** Test emergency lighting regularly. Light fixtures should contain shielded or shatterproof bulbs. The facility should not have sodium or mercury vapor lamps since they produce toxic fumes. In case of power failure, electrical and circuit breaker panels are to be readily accessible to authorized adults and the circuits clearly labeled. Lights used in places where infants look at the ceiling should not be unnecessarily harsh, bright, or glaring.

### Performance Standard 1304.53(a) (10) (v)

Approved working fire extinguishers are readily available.

**Guidance:** Agencies should support fire prevention by:

Determining the size, type, placement, and number of fire extinguishers to be installed by consulting with the fire marshal or an insurance company fire loss prevention representative, and by examining local building and fire codes.

Placing fire extinguishers in accessible locations and making staff aware of their precise locations.

Providing staff with training on how to use fire extinguishers and posting instructions for their use on or near the extinguishers themselves.

Servicing fire extinguishers annually and tagging them with the service date.

### Performance Standard 1304.53(a) (10) (vi)

An appropriate number of smoke detectors are installed and tested regularly.

**Guidance:** Smoke detectors are to be placed throughout the facility, no more than 40 feet apart, and in accordance with the manufacturer's instructions. Smoke detectors and evacuation procedures are to be tested monthly.

Smoke detectors are to be replaced annually. The facility should comply with all smoke detection requirements in state, tribal, or local building codes and should conduct installation and testing of the fire alarm system as prescribed by state, tribal, or local licensing requirements.

#### **Performance Standard 1304.53(a) (10) (vii)**

Exits are clearly visible and evacuation routes are clearly marked and posted so that the path to safety outside is unmistakable.

**Guidance:** Agencies should ensure the safe evacuation from the facility by following the recommendations of the National Fire protection Agency (NFPA) including the suggestion that exits have a minimum width of 36 inches. Exits must be unobstructed and not padlocked or chained shut during program hours. All exit doors are to operate easily and open outward. Entrance and exit routes should be examined and approved by local fire authorities and clearly marked. Monthly fire and evacuation drills should be conducted. The facility should have enough evacuation cribs and strollers available to evacuate infants, toddlers, and children with disabilities who cannot walk on their own, and smooth ramps on which evacuation cribs and strollers can be wheeled. There are to be at least two exits on each floor of a building, each of which leads to an open space at ground level.

#### **Performance Standard 1304.53(a) (10) (viii)**

Indoor and outdoor premises are cleaned daily and kept free of undesirable and hazardous materials and conditions.

**Guidance:** There are to be outward-opening, self-closing doors, closed windows, screening and curtains, and any other effective means to prevent entrance of flies or other airborne insects. Basement windows used for ventilation and all other openings to a basement or cellar should not permit the entry of rodents. Each foundation, floor, wall, ceiling, roof, window, exterior door, basement, cellar hatchway or other opening is to be free from cracks and holes. Trash and garbage containers are to be placed in designated areas. Play areas should not provide shelter or a breeding ground for pests.

#### **Performance Standard 1304.53(a) (10) (ix)**

Paint coatings on both interior and exterior premises used for the care of children do not contain hazardous quantities of lead.

**Guidance:** Qualified professional assistance should be obtained for testing surfaces (exterior and Interior) painted prior to 1978 for lead levels of 0.06 percent or more. If professional inspection reveals paint with excessive lead levels, agencies are to obtain qualified professional assistance in removing lead-contaminated paint, or the area is to be refinished with lead-free, encapsulate paint or other locally approved, nontoxic materials. Sanding, scraping, or burning of high lead surfaces should be strictly prohibited, and the agency is to ensure that no paint containing hazardous quantities is ever used. Products containing lead are to be replaced immediately.

Agencies with concerns about lead paint should seek the assistance of the Lead Poisoning Prevention Program at the Centers for Disease Control and

## Appendix E

Prevention in Atlanta, Georgia, or Environmental Protection Agency (EPA) or Housing and Urban Development (HUD) authorities.

### **Performance Standard 1304.53(a) (10) (x)**

The selection, layout, and maintenance of playground equipment and surfaces minimize the possibility of injury to children.

**Guidance:** Playgrounds and playground equipment is to be designed, installed, inspected, and maintained with the children's safety in mind so that equipment does not pose the threat of serious falls and will not pinch, crush, or entrap the head or any part of a child's body or clothing. All playground equipment is to be installed in strict accordance with the manufacturer's instructions over shock-absorbing materials, and equipment is to be securely anchored to the ground. The agency is to consult the U.S. Consumer Product Safety Commission to insure proper surfaces surrounding playground equipment and to verify if any recalls of equipment have occurred. Equipment is to be situated so that the clearance space allocated to one piece of equipment does not encroach on that allocated for another piece of equipment. Moving equipment, such as swings, is to be located toward the edge or corner of a play area, or the space is to be designed in another way to protect children from running into the path of the equipment.

### **Performance Standard 1304.53(a) (10) (xi)**

Electrical outlets accessible to children prevent shock through the use of child-resistant covers, the installation of child protection outlets, or the use of safety plugs.

**Guidance:** Agencies are to prevent shocks by insuring that all electrical equipment and appliances are properly grounded and that all electrical cords are in good condition and placed out of the reach of children. All electrical outlets are to be covered with child-resistant safety covers, unless childproof electrical outlets are installed.

### **Performance Standard 1304.53(a) (10) (xii)**

Windows and glass doors are constructed, adapted, or adjusted to prevent injury to children.

**Guidance:** Windows and glass door panels in rooms used by children are to have safety guards (e.g., rails or mesh), or are to be constructed of safety-grade glass or polymer. Windows that can be opened are to be equipped with childproof devices that do not block natural light, and screened when open so children cannot pass through the windows or become stuck in any way. All glass doors are to be marked with opaque tape or other materials.

### **Performance Standard 1304.53(a) (10) (xiii)**

Only sources of water approved by the local or state health authority are used.

**Guidance:** Agencies are to ensure that their facilities are supplied with piped running water that is under correct pressure and from a source approved by the Environmental Protection Agency (EPA) or by the state, tribal, or local health authority, and that provides an adequate water supply to every available fixture. When water is supplied by well or other

private source, the agency is to ensure that it meets all applicable federal, state, tribal, and local health standards, and that the local health department or its designee approves it. The agency is to keep documentation of water supply approval on file.

### **Performance Standard 1304.53(a) (10) (xiv)**

Toilets and hand-washing facilities are adequate, clean, in good repair, and easily reached by children. Toileting and diapering areas must be separated from areas used for cooking, eating, or children's activities.

**Guidance:** Agencies are to ensure that the following guidelines are met:

Accessible toilets and sinks are to be provided at a ratio of roughly 1 to 10 for toddlers and preschool children. A maximum toilet height of 11 inches and a maximum hand sink height of 22 inches are recommended. (Step stools or low platforms are used where toilets or hand-washing facilities are too high.)

Every toilet room door is to be easily opened by children from the inside and the outside.

A hand-washing sink is to be accessible to each classroom and group of infants.

Utility sinks are to be used for rinsing soiled clothing or for cleaning toilet training equipment.

A separate sink is provided for washing and sanitizing mops and cleaning equipment.

Diapering areas are not to be located in dental hygiene or food preparation areas and are never to be used for the temporary placement or serving of food.

Diapering areas are to be separate from adult bathrooms.

Changing tables should have impervious, nonabsorbent, clean surfaces, and be sturdy, at an appropriate height for adults to work at when standing, and equipped with railings.

Storage areas are to be close to or within diapering areas for clean diapers, wipes, gloves, and other supplies.

Hand-washing sinks are to be adjacent to the diaper changing tables.

### **Performance Standard 1304.53(a) (10) (xv)**

Toilet training equipment is provided for children being toilet trained.

**Guidance:** Child-sized toilets, safe step aids that can be sanitized and modified toilet seats (where there are only adult-sized toilets) should be used in all facilities. If child-sized toilets, step-aids, or modified toilet seats cannot be used, potty chairs that are easily sanitized are to be provided for toddlers, preschoolers, and children with disabilities who require them.

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Hand-washing sinks must be located nearby.

### **Performance Standard 1304.53(a) (10) (xvi)**

All sewage and liquid waste is disposed of through a locally approved sewer system, and garbage and trash are stored in a safe and sanitary manner.

**Guidance:** Waste is to be kept away from children's indoor and outdoor activity areas used for storage and preparation of food. Raw or treated wastes are not to be discharged on ground surfaces.

### **Performance Standard 1304.53(a) (10) (xvii)**

Adequate provisions are made for children with disabilities to ensure their safety, comfort, and participation.

**Guidance:** The facility is to be accessible to persons with disabilities by making accommodations such as ramps and railings, wider pathways, and wheel-chair-accessible toilets, sinks, and drinking fountains. The physical environment is to be maintained in a consistent and stable manner for children with visual or hearing problems. Appropriate space is to be provided for children who may require individual therapy or activities.

### **Performance Standard 1304.53(b) (1)**

Grantee and delegate agency must provide and arrange sufficient equipment, toys, materials, and furniture to meet the needs and facilitate the participation of children and adults.

### **Performance Standard 1304.53(b) (1) (i)**

Equipment, materials, and furniture are supportive of the specific educational objectives of the program:

**Guidance:** (If fixed) A variety of climbing structures and steps as well as other structures that are safe for exploration are provided.

In outdoor environments, a variety of materials are provided as well as equipment and structures for climbing, riding, pushing, pulling, and digging. Materials should be offered that extend indoor activities to the outdoors.

### **Performance Standard 1304.53(b) (1) (ii)**

Equipment, materials and furniture are supportive of the cultural and ethnic backgrounds of the children.

**Guidance:** Materials used should demonstrate acceptance of each child's gender, family, race, language, and culture. Environments should be established and maintained to support the culture of the children. The outdoor area safely should utilize the natural environment, adding culturally relevant structures and materials when possible.

### **Performance Standard 1304.53(b) (1) (iii)**

Equipment, materials, and furniture are age-appropriate, safe, and supportive of the abilities and developmental level of each child served, with adaptations if necessary for children with disabilities.

**Guidance:** All federally assisted programs, including Head Start, must be accessible to persons with disabilities, including staff, parents, and children. This does not mean that every building or part of a building must be physically accessible, but the program services as a whole must be accessible. Structural changes to make program services available are required if alternatives, such as reassignment of classes or moving to different rooms, are not possible. For nonverbal children, communication boards, computers, and other assistive technology devices may be helpful. Surfaces are to ensure safety of children with disabilities and promote their learning. Staff is to ensure that children with physical disabilities have chairs and other pieces of furniture of the correct size and type for their individual needs as they grow.

#### **Performance Standard 1304.53(b) (1) (iv)**

Equipment, materials, and furniture are accessible, attractive, and inviting to children.

**Guidance:** Learning materials are to be easily accessible on low shelves that children can explore by themselves. Materials are to have interesting shapes, textures, and colors that invite play, exploration, and learning. Equipment and furniture is to be child-sized, age-appropriate, and adaptable for children's use. Equipment and materials should be selected and designed to give children choices.

#### **Performance Standard 1304.53(b) (1) (v)**

Head Start equipment, materials, and furniture are designed to provide a variety of learning experiences and to encourage each child to experiment and explore.

#### **Performance Standard 1304.53(b) (1) (vi)**

Head Start equipment, materials, and furniture (fixed) are safe, durable, and kept in good condition.

#### **Performance Standard 1304.53(b) (1) (vii)**

Head Start equipment is stored in a safe and orderly fashion when not in use.

**Guidance:** Each activity area is to have its own storage space. As much space as possible should be reserved for children's use by storing materials in locations not used by children. Children must not be able to pull over bookcases and shelves. Outdoor equipment is to be stored in a shed or other enclosed storage space to protect these items and to keep the outdoor area free from clutter.

# Appendix F

## **Terms Used in Construction and Renovation Projects**

Architects, engineers, contractors, and managers in construction projects use specific terms, phrases, and definitions. Those involved in center development may wish to be familiar with construction terminology.

**Abate or abatement:** To remove material.

**Acceptance test:** A test conducted by a purchaser (or his or her agent) to determine if the material, devices, or equipment delivered conform to the purchase contract specifications or the product supplied by the vendor.

**Access:** A means of approach, e.g., a road, street, or walk.

**Accessible:** Allowing physical contact, as by means of an easily removable cover or door, or a part of the building structure or finish materials. Providing access to a fixture, appliance, or piece of equipment; removal of a cover, panel, plate, or similar obstruction may be required.

**Acres:** A unit of land measurement equal to 43,560 sq. ft. or 4,046.85 sq. m. One sq. mile (2.59 sq. km.) equals 640 acres.

**ADD:** On drawings, abbreviation for addendum.

**Addendum:** A supplement to bidding documents issued prior to the submission of bids for the purpose of clarifying, correcting, or adding to the specifications previously issued.

**Addition:** A floor or floors, a room, a wing, or other expansion to an existing building, or any new construction that increases the height or floor area of an existing building or adds to it, such as a porch or attached garage. An amount added to the contract sum by a change order.

**Additional services:** The professional services that may upon the owner's request or approval be rendered by the architect in addition to the basic services identified in the owner-architect agreement.

**Additive alternate:** An alternate bid in an addition to the same bidder's base bid. Same as alternate bid.

**Administrative authority:** The individual, official, board, department, council, or leader established and authorized by a political subdivision created by law to administer and enforce the provisions of the code.

**Advertisement for bids:** The published public notice soliciting bids for a construction project. Most frequently used to conform to legal requirements pertaining to projects to be constructed under public authority, and usually published in newspapers of general circulation in those districts from which the public funds are derived.

**A/E:** Abbreviation for architect-engineer.

**Agent:** One who is empowered to enter into binding transactions on behalf of another person

**Agreement form:** A document setting forth in printed form the general provisions of an agreement with spaces provided for inserting specific data relating to a particular project.

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**All-in contract:** Same as turn-key job.

**Alterations:** Remodeling.

**Alternate bid:** The amount stated in the bid to be added to or deducted from the amount of the base bid if the corresponding change in project scope or alternate materials and/or methods of construction is accepted.

**Application for payment:** The contractor's written request for payment of amount due for completed portions of the work. This may include, if the contract so provides, materials delivered and suitably stored pending their incorporation into the work.

**Appraisal:** An evaluation or estimate (preferably by a qualified professional appraiser) of the market or other value, cost, utility, or other attribute of land or other facility.

**Approved equal:** Materials, equipment, or methods approved by the architect for use in the work as acceptable as an equivalent in essential attributes of the material, equipment, or methods specified in the contract document.

**Architect:** A person trained and experienced in the design of buildings and coordination and supervision of all aspects of the construction of buildings.

**Architect-engineer:** An individual or firm offering professional services as both architect and engineer. This term generally is used in government contracts, particularly those involving the federal government.

**Area method:** A method of estimating the probable total construction cost by multiplying the adjusted gross floor area by a predetermined cost per unit of area.

**Base bid:** The amount of money stated in the bid as the sum for which the bidder offers to perform the work, not including that work for which alternate bids also are submitted.

**Base services:** The services performed by an architect during the following five phases of a project: schematic design; design development; construction documents; bidding or negotiation; and contract administration.

**Bid:** An offer to perform the work described in a contract at a specified cost, a complete and properly signed proposal to do the work. Competition for a job based on lowest cost to do the work. Bids generally are cost specific, based on the cost of labor, materials, profit, and overhead. Bids are normally not negotiated and cannot be changed once accepted by the owner. Bids are time sensitive and are generally good for 30 to 60 days after the bid opening.

**Bid bond:** A form of bid security executed by the bidder as principal and by a surety.

**Bid date:** The date established by the owner or the architect for the receipt of bids.

**Bidder:** One who submits a bid for a prime contract with the owner, as distinct from a sub-bidder who submits a bid to a prime bidder. A bidder is not a contractor on a specific project until a contract exists between him and the owner.

**Bid documents:** The advertisement or invitation to bid, instructions to bidders, the bid form, and the proposed contract documents, including any addenda issued prior to receipt of bids.

**Bidding or negotiation phase:** The fourth phase of the architect's basic service, during which competitive bids or negotiated proposals are sought as the basis for awarding a contract.

**Bidding period:** The calendar period beginning at the time of issuance of bidding requirements and contract documents and ending at the prescribed bid time.

**Bidding requirements:** Those documents providing information and establishing procedures and conditions for the submission of bids. They consist of the notice to bidders or advertisement for bids, instructions to bidders, invitation to bid, and sample forms.

**Bid form:** A form furnished to a bidder to be filled out, signed, and submitted as his bid.

**Bid guarantee:** Same as bid security.

**Bid opening:** The opening and tabulation of bids submitted by the prescribed bid time and in conformity with the prescribed procedures.

**Bid price:** The sum stated in the bid for which the bidder offers to perform the work.

**Bid security:** The deposit of cash, certified check, cashier's check, bank draft, money order, or bid bond submitted with a bid and serving to guarantee to the owner that the bidder, if awarded the contract, will execute such contract in accordance with the bidding requirements and the contract documents.

**Bid time:** The date and hour established by the owner or the architect for the receipt of bids.

**Bona fide bid:** A bid submitted in good faith, complete and in prescribed form which meets the conditions of the bidding requirements and is properly signed by someone legally authorized to sign such bid.

**Bond:** A financial guarantee by a surety company that work will be completed as described in a contract.

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**Bonding capacity:** An indication of a contractor's credit rating.

**Bonus and penalty clause:** A provision in a construction contract for payment of a bonus to the contractor for completing the work prior to a stipulated date, and a charge against the contractor for failure to complete the work by such stipulated date.

**Boundary survey:** A mathematically closed diagram of the completed peripheral boundary of a site, reflecting dimensions, compass bearings, and angles.

**Builder's risk insurance:** A specialized form of property insurance to cover work in the course of construction. Also property insurance.

**Building code:** A collection of rules and regulations adopted by authorities having appropriate jurisdiction to control the design and construction of buildings, alteration, repair, quality of materials, use and occupancy, and related factors of the buildings within their jurisdiction.

**Building inspector:** A member of a building department, usually of a municipality, who inspects construction to determine if it conforms to both the requirements of the building code and the approved plans.

**Building permit:** A written authorization to an applicant for a specific project allowing him to proceed with construction; granted by the authorized agency, a tribe, or local municipality having jurisdiction after plans have been filed and reviewed.

**Cash allowance:** An amount established in the contract documents for inclusion in the contract sum to cover the cost of prescribed items not specified in detail, with provision that variations between such amount and the finally determined cost of the prescribed items will be reflected in change orders appropriately adjusting the contract sum.

**Certificate for payment:** A statement from the architect to the owner confirming the amount of money due to the contractor for work accomplished, or for materials and equipment suitably stored, or both.

**Certificate of insurance:** A memorandum issued by an authorized representative of an insurance company stating the types, amounts, and effective dates of insurance in force for a designated insured.

**Certificate of occupancy:** A document issued by governmental authority certifying that all or a designated portion of a building complies with the provisions of applicable statutes and regulations, and permitting occupancy for its designated use.

**Change order:** A written order to the contractor signed by the owner and the architect issued after the execution of the contract, authorizing a

change in the work or an adjustment in the contract sum or the contract time as originally defined by the contract document. It may add to, subtract from, or vary the scope of work. A change order may be signed by the architect alone, provided he has written authority from the owner.

**Closed specifications:** Specifications stipulating the use of specific products or processes without provision for substitution. Same as base bid specifications.

**Code:** A legal instrument adopted within a political jurisdiction that prescribes the minimum acceptable levels of the design, construction, installation, and performance of materials, components, devices, items of equipment, appliances used in a building, or building system and/or subsystem.

**Code of practice:** A technical document setting forth standards of good construction for various materials and trades.

**Completion bond, construction bond, contract bond:** The guarantee of a bonding company that a contractor will perform and deliver the work contracted free of all encumbrances and liens.

**Completion date:** In the contract documents, the date of substantial completion of the work.

**Comprehensive general liability insurance:** A broad form of liability insurance covering claims for bodily injury and property damage which combines under one policy coverage for all liability exposures on a blanket basis and automatically covers new and unknown hazards that may develop. It automatically includes contractual liability coverage for certain types of contracts.

**Comprehensive services:** Professional services performed by the architect in addition to the basic services in such related areas as project analysis, programming, land use studies, feasibility investigations, financing, construction management, and special consulting services.

**Conditions of the bid:** Conditions set forth in the instructions to bidders, the notice to bidders or advertisement for bids, the invitation to bidders, or other similar bid documents prescribing the conditions under which bids are to be prepared, executed, submitted, received, and accepted.

**Conditions of the contract:** Those portions of the contract documents which define, set forth, or relate to the following: contract terminology; the rights and responsibilities of the contracting parties and of others involved in the work; requirements for safety and compliance with laws and regulations; general procedures for the orderly prosecution and management of the work; payments to the contractor; and similar provisions of a general, non-technical nature.

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**Consent of surety:** Written consent of the surety on a performance bond and/or labor and material payment bond to contract changes, such as change orders or reductions in the contractor's retainage, final payment, or waiving notification of contract changes.

**Construction:** All the on-site work done in building or altering structures, from land clearance through completion, including excavation, erection, and the assembly and installation of components and equipment.

**Construction bond:** A completion bond.

**Construction budget:** The sum established by the owner as available for construction of the project, or the highest acceptable bid.

**Construction cost:** The cost of all the construction portions of a project. This is generally based upon the sum of the construction contracts and other direct construction costs. It does not include the compensation paid to the architect and consultants, the cost of land, right-of-way, or other costs defined in the contract documents as being the responsibility of the owner.

**Construction documents:** The working drawings and specifications.

**Construction documents phase:** The third phase of the architect's basic services. In this phase the architect prepares from the approved design development documents, for approval by the owner, the working draw-

ings and specifications and the necessary bidding information. In this phase the architect also assists the owner in the preparation of bidding forms, the conditions of the contract, and the form of agreement between the owner and the contractor.

**Construction inspector:** Same as project representative.

**Construction loan:** A loan to a builder for a short-term, financing of construction prior to permanent financing.

**Construction management:** The special management services performed by the architect or others during the construction phase of the project, under separate or special agreement with the owner. This is not part of the architect's basic services, but is an additional service sometimes included in the comprehensive services.

**Construction phase - administration of the construction contract:** The fifth and final phase of the architect's basic services, which includes the architect's general administration of the construction contract.

**Consultant:** An individual or organization engaged by the owner or the architect to render professional consulting services complementing or supplementing the architect's services.

**Contract:** A legally enforceable promise or agreement between two or more persons.

**Contract administration:** The duties and responsibilities of the architect or consultant during the construction phase.

**Contract bond:** Same as completion bond.

**Contract date:** Same as date of agreement.

**Contract documents:** Those documents that comprise a contract, including: the owner-contractor agreement, conditions of the contract, plans and/or drawings, specifications, all addenda, modifications, and changes together with any other items stipulated as being specifically included.

**Contracting officer:** The person designated as the official representative of the federal government with specific authority to act on behalf of the government in connection with the project.

**Contractor:** One who undertakes responsibility for the performance of construction work, including the provision of labor and materials, in accordance with plans and specifications and under a contract specifying cost and a schedule for completion of the work; the person or organization responsible for performing the work and identified as such in the owner-contractor agreement.

**Contractor's estimate:** A forecast of construction cost, as opposed to a firm proposal, prepared by the contractor for a project or a portion of a project.

**Contractor's liability insurance:** Insurance purchased and maintained by the contractor to protect him from specified claims which may arise out of or result from his operations under the contract, whether such operations are by him, by any subcontractor, or by anyone directly or indirectly employed by either, or by anyone for whose acts the contractor or subcontractors may be liable.

**Contractor's option:** A provision of the contract documents under which the contractor may select certain specified materials, methods, or systems at his own option, without change in the contract sum.

**Contractor's proposal:** Same as bid.

**Contract sum:** The price stated in the owner-contractor agreement, which is the total amount payable by the owner to the contractor for the performance of the work under the contract document. This can be adjusted only by a signed change order.

**Contract time:** The period of time established in the contract document pursuant to other agreements between the parties, or by operation of law, within which the work must be completed.

**Contractual liability:** Liability assumed by a party under a contract by express language, implication, or operation of law.

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**Cost breakdown:** Same as schedule of values.

**CPM:** Abbreviation for critical path method.

**Critical path method:** CPM, a system of project planning, scheduling, and control which combines all relevant information into a single master plan, permitting the establishment of the optimum sequence and duration of operations. It contains the interrelation of all the efforts required to complete a construction project and includes the efforts critical to timely completion of the project.

**Damages:** Same as liquidated damages.

**Date of agreement:** The date stated on the face of the agreement. If no date is stated, it may be the date on which the agreement is actually signed, if this is recorded, or it may be the date established by the award. This date also is referred to as the contract date.

**Date of commencement of the work:** The date established in a notice to proceed, or, in the absence of such notice, the date of the agreement, or another date established by the concerned parties.

**Date of substantial completion:** The date certified by the architect when the work or a designated portion of the work is sufficiently complete in accordance with the contract documents so the owner may occupy or use the designated portion as intended.

**Debt service:** The periodic payment of a loan, including both accrued interest and a portion of the principal.

**Deduction:** The amount deducted from the contract sum by a change order.

**Deductive alternate:** A substitute bid resulting in a deduction from the bidder's base bid. This is the same as an alternate bid.

**Deed:** Any duly attested, written document executed under seal and delivered to effect a transfer, bond, or contract, such as a conveyance of real property or interest in the property.

**Deed restriction:** A limitation on the use of land, which is set forth in a deed conveying the restrictions.

**Defective work:** Work not complying with the contract requirements.

**Demolition:** The systematic destruction of a building, all or in part.

**Deposit for bidding documents:** Monetary deposit required to obtain a set of construction documents and bidding requirements, customarily refunded to bona fide bidders on return of the documents in good condition within a specified time.

**Design:** To compose a plan for a building. The architectural concept of a building as represented by plans, elevations, renderings, and other drawings.

**Design development phase:** The second phase of the architect's basic services. In this phase the architect prepares the design development documents consisting of drawings and other documents to fix and describe the size and character of the entire project, including structural, mechanical, and electrical systems, materials, and such other essentials as may be appropriate. The architect also submits to the owner a further statement of probable construction cost.

**Design documents:** Same as structural design documents.

**Detailed estimate of construction costs:** A forecast of construction costs prepared on the basis of a detailed analysis of materials and labor for all items of work, as contrasted with an estimate based on current area, volume, or similar unit costs.

**Employer's liability insurance:** Insurance protection for the employer against claims by employees for damages which arise out of injuries or diseases sustained in the course of their work and which are based on common law negligence rather than on liability under workmen's compensation acts.

**Engineer:** A person trained and experienced in the profession of engineering; a person licensed to practice the profession by the authority in the area.

**Engineering survey:** A survey conducted to obtain essential information for planning an engineering project or developing and estimating its cost.

**Environmental design professionals:** The professionals collectively responsible for the design of man's physical environment.

**Environmental impact statement:** A detailed analysis of the probable environmental consequences of proposed federal legislation, major federal actions, or large-scale construction making use of federal funds likely to significantly affect environmental quality; such a statement is required by the National Environmental Policy Act of 1969.

**Estimate:** Same as detailed estimate of construction costs. Same as statement of probable construction costs. Same as contractor's estimate.

**Extended coverage insurance:** Same as property insurance.

**Facility:** The building(s), playground(s), parking area(s), and campus where the program or construction site is located.

**Field supervision:** That portion of the architect's supervisory work done at the construction site.

**Final acceptance:** The owner's acceptance of a project from the contractor upon certification by the architect that it is complete and in accordance with the contract requirements. Final acceptance is confirmed by making final payment, unless otherwise stipulated at the time of making such payment.

**Final completion:** The completion of work and all contract requirements by the contractor.

**Final inspection:** The final review of the project by the architect prior to his issuance of the final certificate for payment.

**Final payment:** Payment made by the owner to the contractor of the entire unpaid balance of the contract sum as adjusted by change orders upon issuance by the architect of the final certificate for payment,

**Fire and extended coverage insurance:** Same as property insurance.

**Fixed limit of construction cost:** The maximum allowable cost of the construction work as established in the agreement between the owner and the architect. Same as construction budget.

**Force account:** A term used when work is ordered to be done without prior agreement as to lump-sum or unit-price cost thereof, and is to be billed for at the cost of labor, materials and equipment, insurance, taxes, etc., plus an agreed percentage for overhead and profit.

**General conditions:** That part of the contract document that sets forth many of the rights, responsibilities, and relationships of the parties involved. Same as conditions of the contract.

**General contract:** Under the single contract system, the contract between the owner and the contractor for construction of the entire work.

**General contractor:** The prime contractor who is responsible for most of the work at the construction site including that performed by the subcontractors.

**Generally accepted standard:** A specification, code, rule, guide, or procedure in or related to the field of construction that is recognized and accepted as authoritative.

**Guarantee:** A legally enforceable assurance of the quality or duration of a product or of work performed.

**Guaranteed maximum cost:** An amount estimated in an agreement between the owner and contractor as the maximum cost of performing specified work on the basis of cost of labor and materials plus overhead expense and profit.

**Guaranty bond:** Same as bid bond. Same as labor and material payment bond. Same as performance bond. Same as surety bond.

**Inspection list:** A list of items of work to be completed or corrected by the contractor during or after completion of the work and during the warranty period.

**Instructions to bidders:** Instructions contained in the bidding requirements for preparing and submitting bids for a construction project. Same as notice to bidders.

**Invitation to bid:** A solicitation of competitive bids. The term usually is employed in connection with private construction projects, but also may be used for government projects, for the purchase of supplies or other goods, or in connection with the sale of property. Same as advertisement for bids.

**Invited bidders:** The bidders selected by the architect and the owner as the only ones from whom bids will be received.

**Job:** Same as project. Same as work.

**Job site:** The site of the construction project.

**Job superintendent:** Same as superintendent.

**Labor and material payment bond:** A bond of the contractor in which a surety guarantees to the owner that the contractor will pay for labor and materials used in the performance of the contract. The claimants under the bond are those having direct contracts with the contractor or any subcontractor.

**Landscape architect:** A person trained and experienced in the design and development of landscapes and gardens.

**Land survey:** A survey of landed property establishing or reestablishing lengths and directions of boundary lines. Land boundaries are usually defined by ownership, commencing with the earliest owners through successive ownerships and partitions.

**Latest start date:** The latest possible point in time by which an activity must be started if the project is not to be delayed.

**Letter of intent:** A letter signifying an intention to enter into a formal agreement, usually setting forth the general terms of such agreement.

**Liability insurance:** Insurance that protects the insured against liability on account of injury to the person or property of another.

**Licensed architect:** Same as architect.

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**Licensed contractor:** A person or organization certified by governmental authority, where required by law, to engage in construction contracting.

**Licensed engineer:** Same as professional engineer.

**Lien:** A right enforceable against specific property to secure payment of an obligation.

**Lien waiver:** Same as waiver of lien.

**Life-cycle cost:** The cost of a building or equipment based not only on the initial expenditure but also on its maintenance and operating cost over its entire lifetime.

**Liquidated damages:** A sum specified in a contract whereby damages in the event of breach are to be determined. In a construction contract, liquidated damages usually are specified as a fixed sum per day for failure to complete the work within a specified time.

**Lowest responsible bidder, lowest qualified bidder:** The bidder who submits the lowest bona fide bid and is considered to be fully responsible and qualified to perform the work for which the bid is submitted.

**Lowest responsive bid:** The lowest bid that is responsive to and complies with the bidding requirements.

**Lump-sum agreement:** Same as stipulated sum agreement.

**Main contractor:** Same as general contractor.

**Maintenance bond:** A bond that provides a guarantee to an owner that the contractor will rectify defects in workmanship or materials reported to the contractor within a specified time period following final acceptance of the work under contract.

**Measured drawing:** An architectural drawing of an existing structure, drawn to scale.

**Mechanic's lien:** A lien on privately owned real property created by state statute in favor of persons supplying labor or materials for a building or structure or improvements thereof, generally for the value of the labor or materials supplied by them.

**Model code:** A proposed building code that is written and published by building official associations available for adoption by states, counties, and municipalities.

**Modification:** A written amendment to the contract document signed by both parties. A change order. A written order for a minor change in the work issued by the architect.

**Modular construction:** Construction in which a selected unit or module, such as a box or other sub-component, is used repeatedly in the aggregate construction.

**Negligence:** Failure to exercise a degree of care that a reasonable and prudent person would exercise under the same circumstances.

**Negotiation phase:** Same as bidding or negotiation phase.

**Non-collusion affidavit:** A notarized statement by a bidder that he has prepared his bid without collusion of any kind.

**Nonconforming work:** Work that does not fulfill the requirement of the contract documents.

**Notice to bidders:** A notice contained in the bidding requirements informing prospective bidders of the opportunity to submit bids on a project and setting forth the procedures for doing so.

**Notice to proceed:** Written communication issued by the owner to the contractor authorizing him to proceed with the work and establishing the date of commencement of the work.

**Occupancy permit:** Same as certificate of occupancy.

**Opening of bids:** Same as bid opening.

**Ordinance:** A law or rule adopted by a local governmental authority.

**Orientation:** The placement of a structure on a site with regard to local conditions of sunlight, wind, and drainage.

**OSHA:** Abbreviation for Occupational Safety and Health Administration, Department of Labor.

**Over design:** As applied to structural design, a design based on requirements higher than service demands, usually as a means of compensating for unknown or anticipated deficiencies.

**Owner:** The architect's client and party to the owner-architect agreement.

**Owner-architect agreement:** A contract between the architect and the client for professional services.

**Owner-contractor agreement:** A contract between the owner and contractor for a construction project.

**Owner's inspector:** A person employed by the owner to inspect construction in the owner's behalf.

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**Owner's liability insurance:** Insurance that protects the owner against claims arising from his ownership of property and that may be extended to cover claims arising from operations of others under the construction contract.

**Parcel:** Of land, a contiguous land area that is considered as a unit, that is subject to a single ownership, and that is legally recorded as a single piece.

**Partial occupancy:** Occupancy by the owner of a portion of a project prior to final completion.

**Partial payment:** A progress payment.

**Payment request:** Same as application for payment.

**P.E.:** Abbreviation for professional engineer.

**Penalty clause:** A contract provision setting forth the damages a party must pay in the event of breach. If such a clause is regarded by the court as too harsh to be regarded as a fair estimate of probable damages, it will normally be held invalid. Same as liquidated damages.

**Percentage agreement:** An agreement for professional services in which the compensation is based upon a percentage of the construction cost.

**Percentage fee:** Compensation based on a percentage of construction cost. Same as fee.

**Performance bond:** A bond of the contractor in which a surety guarantees to the owner that the work will be performed in accordance with the contract documents. This is frequently combined with the labor and materials payment bond, except where prohibited by statute.

**Permit:** A document issued by a governmental authority having jurisdiction to authorize specific work by the applicant.

**Personal injury:** In insurance terminology, injury or damage to the character or reputation of a person, as well as bodily injury. Personal injury insurance usually covers such situations. Same as bodily injury.

**Personal property:** Movable and other property not classified as real property.

**PERT:** Acronym for project evaluation and review technique.

**PERT schedule:** A PERT chart of the activities and events anticipated in a work process. Same as critical path method (CPM).

**Planning:** The process of studying the layout of spaces within buildings and of buildings and other facilities or installations in open spaces in order to develop the general scheme of a building or group of buildings.

**Post-completion services:** Additional services rendered after issuance of the final certificate for payment, such as consultation regarding maintenance, processes, systems, etc.

**Preliminary drawings:** Drawings prepared during the early stages of the design of a project.

**Preliminary estimate:** same as statement of probable construction costs.

**Premises:** Land and/or its appurtenances.

**Pre-bid conference or pre-bid walk-through:** A meeting of any interested bidder, at the job site, giving an opportunity to review the project and discuss any unclear design or programming issues.

**Pre-qualification of prospective bidders:** The process of investigating the qualifications of prospective bidders on the basis of their competence, integrity, and responsibility relative to the contemplated project.

**Prime contract:** A contract between the owner and contractor for construction of a project or a portion of a project.

**Prime contractor:** The contractor on a project having a contract directly with the owner.

**Prime professional:** Any person or firm having a contract directly with the owner for professional services.

**Principal:** One on whose behalf or in whose name binding transactions may be entered into by another, usually called the agent.

**Production drawings:** Same as working drawings.

**Professional adviser:** An architect engaged by the owner to direct an authorized design competition for the selection of an architect.

**Professional engineer:** A designation reserved, usually by law, for a person or organization professionally qualified and duly licensed to perform engineering services such as structural, mechanical, electrical, sanitary, and civil.

**Professional liability insurance:** Insurance designed to insure an architect or engineer against claims for damages resulting from alleged professional negligence. Also known as errors and omissions insurance.

**Program:** A statement prepared by or for an owner, with or without an architect's assistance, setting forth the conditions and objectives for a building project, including its general purpose and detailed requirements, such as a complete list of the rooms required, their sizes, and special facilities.

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**Program evaluation and review technique (PERT):** A management control technique applied to building construction. It explains what must be done to complete construction by a given date.

**Progress chart:** A chart prepared by a contractor and updated monthly. The principal trades involved in the project are tabulated vertically and the scheduled construction time is shown horizontally.

**Progress payment:** A partial payment made during progress of the work for work completed and/or materials suitably stored.

**Progress schedule:** A diagram, graph, or other pictorial or written schedule showing proposed and actual times of starting and completing the various work elements.

**Project:** A construction undertaking, composed of one or more buildings, and site improvements planned and executed in a fixed time period.

**Project budget:** The sum established by the owner as available for the entire project, including the construction budget, land costs, equipment costs, financing costs, compensation of professional services, contingency costs, and other similar established or estimated costs.

**Project cost:** The total cost of a project, including professional compensation, land costs, furnishings and equipment, financing, and other changes, as well as the construction cost.

**Project manager:** A third party consultant or employee of the owner who works for the owner and coordinates the activities of the project. Assists with the development of specific strategies of the project (including bidding and contracting), establishing time frames and benchmarks for the project, hiring other professional services, reviewing plans and drawings and making recommendations to the owners, monitoring the budget in all phases of the project, working with all consultants, monitoring the day-to-day work progress of the contractor, performing close-out activities, and preparing for occupancy.

**Project manual:** The manual prepared by the architect for a project, including the bidding requirements, conditions of the contract, and technical specifications.

**Property:** Any asset, real or personal.

**Property damage insurance:** Part of general liability insurance covering injury to or destruction of tangible property, including loss of use of the property resulting from the damage.

**Property line:** A recorded boundary of a plot.

**Property survey:** Same as boundary survey.

**Proposal:** A document prepared by an applicant for a contract and used to evaluate the professional capabilities of a business, agency, or individual

against a set of criteria that may include previous working experience. The content of the proposal may be weighted on a numerical scale using a set of questions that allows the person or persons choosing the contractor to determine the best business, agency, or individual to hire for a specific job. Preference can be given to local or in-state businesses. The proposal also includes the qualifications of the lead professional and team that will be working on the project. Normally, a proposal does not include the cost of services. Cost is generally a negotiated amount after the competing proposals have been evaluated and ranked.

**Proposal form:** Same as bid form.

**Public liability insurance:** Insurance covering liability of the insured for negligent acts resulting in bodily injury, disease, or death of other than employees of the insured, and/or property damage.

**Quality assurance:** The inspection, testing, and other relevant action taken to ensure that the desired level of quality is in accordance with the applicable standards or specifications for the product or work.

**Quality control:** The inspection, analysis, and other relevant action taken to provide control over what is being done, manufactured, or fabricated, so that a desired level of quality is achieved and maintained.

**Quality survey:** A detailed analysis and listing of all materials and equipment necessary to construct a project.

**Quotation:** A price quoted by a contractor, subcontractor, material supplier, or vendor to furnish materials, labor, or both.

**Real estate:** Property in the form of land and all its appurtenances, such as buildings.

**Real property:** Land, everything growing on it, and all improvements made to it.

**Realty Officer:** An employee who assists the government in realty issues including, but not limited to, disputes, developments, and assignments.

**Record drawings:** Construction drawings revised to show significant changes made during the construction process, usually based on marked-up prints, drawings, and other data furnished by the contractor to the architect.

**Record sheet:** On a construction job, a sheet or printed form for keeping a record of materials delivered, number of men working at the various trades, hours worked, and other information.

**Regulation:** Any rule prescribing permitted or forbidden conduct, whether found in legislation or in the actions of an administrative agency or federal agency.

## Appendix F

**Release of lien:** An instrument executed by one supplying labor, materials, or professional services on a project that releases his mechanic's lien against the project property.

**Render:** To create a mechanical drawing, including elevation and an indication of shades and shadows.

**Resident engineer:** A person representing the owner's interests at the project site during the construction phase. This term is frequently used on projects in which a governmental agency is involved.

**Resident inspector:** Same as owner's inspector.

**Responsible bidder:** Same as lowest responsible bidder.

**Restricted list of bidders:** Same as invited bidders.

**Restriction:** On land, an encumbrance limiting its use.

**Restrictive covenant:** An agreement between two or more individuals, incorporated within a deed that stipulates how land may be used.

**Retainage:** A sum withheld from progress payments to the contractor in accordance with the terms of the owner-contractor agreement.

**Retention:** The withholding of a portion (usually 10 percent) of a periodic

payment to a contractor, by prior agreement, for work completed. The retention is held in escrow for a stipulated time period after the acceptance of the completed work by the architect and owner.

**Retention money:** Same as retention.

**Right-of-way:** Any strip of land, including surface and overhead or underground space that is granted by deed or easement for the construction and maintenance of specified linear elements, such as power and telephone lines.

**Satisfaction:** Cancellation of an encumbrance on real property, usually by payment of the secured debt.

**Schedule:** A detailed tabulation of components, items, or parts to be furnished.

**Schedules of values:** A statement furnished by the contractor to the architect reflecting the portions of the contract sum allotted to the work and used as the basis for reviewing the contractor's application for a progress payment.

**Schematic design phase:** The first phase of the architect's basic services. In this phase, the architect consults with the owner to ascertain the requirements of the project and prepares schematic design studies consisting of drawings and other documents illustrating the scale and relationship of

the project components for approval by the owner. The architect also submits to the owner a statement of probable construction costs.

**Schematic drawing:** Same as schematic design phase.

**Scheme:** The basic arrangement for an architectural composition; the primary sketch for a design.

**Selected bidder:** The bidder selected by the owner for discussion relative to the possible award of the construction contract.

**Selected list of bidders:** Same as invited bidders.

**Setback:** The minimum distance between a reference line and a building, or a portion thereof.

**Shop drawings:** Drawings, diagrams, illustrations, schedules, performance charts, brochures, and other data prepared by the contractor or any subcontractor, manufacturer, supplier, or distributor that illustrate how specific portions of the work shall be fabricated and/or installed.

**Single contract:** A contract for construction of a project under which a single prime contractor is responsible for all the work.

**Site:** An area or plot of ground with defined limits on which a building or project is located or proposed to be located.

**Site investigation:** An examination of the subsoil and surface of a site to obtain complete information necessary for the design of foundations and structures on them.

**Site plan:** A plan of a construction site showing the position and dimensions of the building to be erected and the dimensions and contour of the lot.

**Special conditions:** A section of the conditions of the contract, other than general conditions and supplemental conditions, which may be prepared for a particular project. This is the same as conditions of the contract.

**Special hazards insurance:** Additional perils insurance to be included in property insurance.

**Specifications:** A written document contained in the project manual describing in detail the scope of work, materials to be used, methods of installation, technical nature of materials, equipment construction systems, and standards and quality of workmanship for a parcel of work to be placed under contract. This is usually used in conjunction with working drawings in building construction.

**Standard:** A document prepared by a recognized standard-setting organization that prescribes methods and materials for the safe use and consistent performance of specific technologies.

## Appendix F

**Standards of professional practice:** Statements of ethical principles promulgated by professional societies to guide their members in the conduct of professional practice.

**Statement of probable construction cost:** Cost forecasts prepared by the architect during the schematic design, design development, and construction phases of basic services for the guidance of the owner.

**Statute of limitations:** A statute specifying the period of time within which legal action must be brought for alleged damage or injury. The length of the period varies from state to state and depends upon the type of legal action.

**Stipulated sum agreement:** A contract in which a specific amount is set forth as the total payment for performance of the contract.

**Structural design documents:** The plans, design details, and job specifications prepared by the structural designer.

**Structural drawings:** Drawings, usually prepared by a structural engineer, of the design, and working drawings of a building's structure.

**Structural engineering:** That branch of engineering concerned with the design and construction of structures to withstand physical forces.

**Sub-bidder:** One who offers to a bidder on a prime contract a proposal to provide materials and/or labor.

**Subcontract:** An agreement between a prime or general contractor and a subcontractor for the execution of a portion of the contractual obligation of the prime contractor to the owner.

**Subcontractor:** A person or organization who has a direct contract with a prime contractor to perform a portion of the work at the site.

**Subcontractor bond:** A performance bond given by a subcontractor that guarantees performance of a contract and the payment of bills for labor and materials.

**Substantial completion:** Same as date of substantial completion.

**Substitutions:** Materials or processes offered in lieu of, and understood to be equivalent to, specified materials or processes.

**Successful bidder:** Same as selected bidder.

**Superintendent:** At a construction site, the contractor's representative who is responsible for continuous field supervision, coordination, and completion of the work, and, unless another person is designated in writing by the contractor, is responsible to the owner and the architect for any accidents.

**Supervision:** The observation and inspection of construction work to ensure conformity with the contract documents. This includes direction of work by the contractor's personnel.

**Supplemental or supplementary conditions:** Part of the contract documents that supplement and may modify provisions of the general conditions.

**Surety:** A person or organization who, for a consideration, promises in writing to make good the debt or default of another.

**Surety bond:** A legal instrument under which one party agrees to answer to another party for the debt, default, or failure to perform by a third party.

**Survey:** A boundary and/or topographic mapping of a site.

**Terminal expense:** An expense incurred in connection with the termination of a contract.

**Time:** Time limits or period stated in the contract.

**Timely completion:** Completion of the work or a designated portion of the work on or before the date required.

**Time of completion:** The date established in the contract, by name or by number of days, for substantial completion of the work.

**Title insurance:** Insurance, offered by a company, that the title to property is clear or that it may be cleared by curing specified defects.

**Title search:** An inquiry into the historical ownership record of a property.

**Topographical survey:** The configuration of a surface, including its relief and the locations of its natural and man-made features.

**Trade:** A person's occupation or craft, usually involving manual skill.

**Turn-key job:** A job in which the contractor completes all work and furnishings of a building so that it is ready for immediate use.

**Variation order:** Same as change order.

**Waiver of lien:** An instrument by which a person or organization who has or may have a right of mechanic's lien against the property of another relinquishes such right. Same as release of lien.

**Work:** All labor necessary to produce the construction required by the contract document.

**Working drawings:** Drawings intended for use by a contractor, subcontractor, or fabricator that form part of the contract documents for a building project.

## Appendix F

**Workman's compensation insurance:** Insurance covering liability of an employer to his employees for compensation and other benefits required by workmen's compensation laws.

**Zoning:** The control by a municipality of the use of land and buildings, the height and bulk of the buildings, the density of population, the relation of a lot's building coverage to open space, size and location of yards and setbacks, and the provision of any ancillary facilities.

**Zoning permit:** A permit issued by appropriate governmental authority authorizing land use for a specific purpose.

# Appendix G

## Poisonous Plants

Many popular house and garden plants are poisonous and can produce symptoms ranging from minor to severe. This list in this Appendix is not exhaustive, but provides some of the most popular plantings that are both poisonous and non-poisonous. The list is provided by the U.S. Army Corps of Engineers. Check with local extensions of the U.S. Department of Agriculture and local poison control centers for more information about the nature of common plantings in specific locations.

Toxic levels are based on the best information available. However, precise scientific data is not available.

Toxicity is subject to numerous variables, including quantity, exposure, and individual reactions.

Plants on the high toxicity list are known to have caused death and could be hazardous with very little exposure. They should never be used. Plants on the medium toxicity list have toxic parts, but deaths have been rare, usually after prolonged exposure or consuming large quantities. Do not use these plants inside the play yard.

Plants on the low toxicity list include those that may cause a rash or dermatitis. Use these plants with caution.

## Appendix G

### HIGH TOXICITY PLANTS

| Botanical   | Common                              | Toxic Part                 | Botanical                               | Common                                    | Toxic Part                             |
|---|-------------------------------------|----------------------------|---|---|--|
| <i>Abrus Precatorius</i>                                      | Rosary Pea                          | seeds                      | <i>Melia azedarch</i>                   | Cape lilac or White cedar                 | fruit, leaves, bark, flowers           |
| <i>Acokanthera spectabilis/</i><br><i>Carissa spectabilis</i> | Winter sweet                        | fruit & plant              | <i>Melianthus comosus</i>               | Tufted honey flower                       | entire plant, esp. roots               |
| <i>Aconitum napellus/</i>                                     | Aconita, Monkshood                  | all parts                  | <i>Nerium oleander</i>                  | Oleander                                  | all parts                              |
| <i>Delphinium spp</i>   | Cunjrvoi                            | all parts                  | <i>Nicotiana glauca</i>                 | Tree tobacco                              | entire plant; esp. leaves              |
| <i>Alocasia macrorrhiza</i>                                   |                                     |                            | <i>Prunus armeniaca</i>                 | Apricot                                   | kernel in large amounts                |
| <i>Brugmansia sanguinea</i>                                   | Red Angles trumpet                  | nectar, seeds              | <i>Prunus dulcis</i>                    | Almond                                    | kernel-bitter type                     |
| <i>Conium maculatum</i>                                       | Hemlock, carrot fern or Carrot weed | all parts, large amounts   | <i>Prunus persica</i>                   | Peach                                     | kernel, lower, leaf, bark              |
| <i>Convallaria majalis</i>                                    | Lily of the Valley                  | all parts                  | <i>Rheum Rhaponticum</i>                | Rhubarb                                   | leaf blade                             |
| <i>Daphne spp</i>   | Daphne                              | berries                    | <i>Rhododendrom</i>                     | Rhododendron or Azalea                    | leaf                                   |
| <i>Diefenbachia spp.</i>                                      | Dumbcane                            | berries, few               | <i>Ricinus communis</i>                 | Castor Oil plant                          | seeds: 2-8                             |
| <i>Duranta repens</i>   | <i>Duranta</i> or Golden Dewdrop    | berries                    | <i>Solanum nigrum</i>                   | Black nightshade or Blackberry nightshade | green fruit                            |
| <i>Ervatamia coronaria</i>                                    | Crepe Jasmine                       | all parts                  | <i>Solanum psedocapsicum</i>            | Madeira winter cherry or Jerusalem cherry | berries                                |
| <i>Euphorbia pulcherrima</i>                                  | Poinsettia                          | sap                        | <i>Solanum sodomaeum</i>                | Apple or Sodom                            | fruit                                  |
| <i>Euphorbia tirucalli</i>                                    | Naked Lady or Pencil bush           | sap                        | <i>Solanum tuberosum</i>                | Potatoes                                  | green skin                             |
| <i>Gloriosa superba</i>                                       | Glory lily roots                    | all parts, esp.            | <i>Taxus baccata</i>                    | Yew                                       | all parts, esp. seed in pod            |
| <i>Ilex spp</i>   | English/ American Hollytree         | fruits & leaves            | <i>Thevetia peruviana</i>               | Yellow oleander                           | all parts, esp. seed in kernel         |
| <i>Jatropha spp</i>   | Physic nut, Coral bush              | seeds                      | <i>Wisteria floribunda, W. sinensis</i> | Wisteria                                  | seeds & pods                           |
| <i>Kalmia spp</i>   | Mountain/Western Laurel Calico Bush | all parts                  | <i>Zanthesdeschia aethiopica</i>        | Calla lily or White Arum lily             | all parts, esp. juice of leaves & stem |
| <i>Laburnum anagyroides</i>                                   | Laburnum or Golden Chain            | all parts                  |   |   |  |
| <i>Lantana camara</i>   | Lantana                             | green fruits               |   |   |  |
| <i>Lobrlia cardinalis</i>                                     | Cardinal flower                     | all parts                  |   |   |  |
| <i>Lingustrum spp.</i>  | Privet                              | fruit                      |   |   |  |
| <i>Malus spp.</i>   | Apple                               | leaves, seed in large amt. |   |   |  |

**MEDIUM TOXICITY PLANTS**

| <b>Botanical</b>                                     | <b>Common</b>                       | <b>Toxic Part</b>                   | <b>Botanical</b>                 | <b>Common</b>                              | <b>Toxic Part</b>       |
|--|-------------------------------------|-------------------------------------|----------------------------------|--|-------------------------|
| <i>Aesculus</i> spp                                  | Horse Chestnut, Buckeye             | all parts                           | <i>Gelsimium sempervirens</i>    | Carolina Jessamine                         | all parts               |
| <i>Aleurites fordii</i>                              | Tung-oil tree                       | fruit kernel                        | <i>Hedera helix</i>              | English Ivy                                | all parts, esp. berries |
| <i>Allamanda</i> spp                                 | Allamanda                           | fruit                               | <i>Hura crepitans</i>            | Sandbox Tree                               | all parts               |
| <i>Alocasia maculatum</i>                            | Lords & Ladies                      | sap                                 | <i>Hyacinthus orientalis</i>     | Hyacinth                                   | all parts, esp. bulb    |
| <i>Amaryllis belladonna</i>                          | Belladonna lily                     | bulb                                | <i>Hydrangea</i> spp             | Hydrangea                                  | flowers                 |
| <i>Anemone</i>                                       | Windflower                          | all parts                           | <i>Iris germanica</i>            | Flag iris, Flag lily, or Fleur de lis      | all parts               |
| <i>Aquilegia</i> spp                                 | Columbine                           | seeds                               | <i>Laburnum anagyroides</i>      | Common gold chain                          | seeds                   |
| <i>Arum italicum</i>                                 | Italian Arum                        | sap, esp. in berries                | <i>Lupinus</i> spp               | Lupine                                     | seed pods               |
| <i>Asclepias fruticosa</i>                           | Swan plant                          | Pods                                | <i>Manihot esculenta</i>         | Cassava                                    | raw roots               |
| <i>Castanospermum australe</i>                       | Black bean or Moreton Bay chestnut  | seeds                               | <i>Moraea</i> spp                | Butterfly iris                             | all parts               |
| <i>Celastrus orbiculatus</i> ,<br><i>C. scandens</i> | Bittersweet                         | all parts                           | <i>Narcissus jonquilla</i>       | Jonquil                                    | sap & bulb              |
| <i>Cestrum</i> spp                                   | Green cestrum, Cestrum or Jessamine | all parts, esp. fruit               | <i>Narcissus pseudonarcissus</i> | Daffodil                                   | sap & bulb              |
| <i>Colocasia esculenta</i>                           | Elephant's ears or Taro             | root                                | <i>Nerine</i> spp                | Spider lily                                | bulb                    |
| <i>Cotoneaster</i> spp                               | Cotoneaster                         | fruit, flowers                      | <i>Ornithogalum thyrsoides</i>   | Star-of-Bethlehem or Chincerinches         | bulb & flower spike     |
| <i>Crataegus</i> spp                                 | Hawthorn                            | fruit                               | <i>Philodendron</i> spp          | Philodendron                               | all parts               |
| Botanical  | Common                              | Toxic Part                          | <i>Physalis</i> spp              | Ground cherry, Chinese Lanterns, Tomatillo | unripe fruit            |
| <i>Cycas</i> spp<br>tree <i>Zamia</i>                | <i>Zamia</i> palm or                | seeds, fresh or improperly prepared | <i>Plumeria</i> spp              | Frangipani                                 | sap                     |
| <i>Cydonia oblonga</i>                               | Quince                              | seeds, fresh leaves                 | <i>Poinciana gilliesii</i>       | Bird-of-paradise plant                     | unripe seed pod         |
| <i>Delphinium</i> spp                                | Larkspur                            | all parts                           | <i>Prunus cerasus</i>            | Cherry                                     | kernels                 |
| <i>Digitalis purpurea</i>                            | Foxglove                            | all parts                           | <i>Prunus laurocerasus</i>       | Cherry laurel                              | bruised leaves          |
| <i>Eriobotrya japonica</i>                           | Loquat                              | seeds (many)                        | <i>Pyrus communis</i>            | Pear                                       | seeds                   |
| <i>Euonymus europaeus</i>                            | Spindle tree                        | all parts, esp. fruit & seeds       | <i>Rhamnus</i> spp               | Buckthorns & Cascara Sagrade               | fruit                   |
| <i>Euphorbia marginata</i>                           | Snow-on-the-mountain                | sap                                 | <i>Robinia pseudoacacia</i>      | Black locust or Robinia                    | all parts               |

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| Botanical                    | Common                          | Toxic Part           |
|------------------------------|---------------------------------|----------------------|
| Schinus molle                | Pepper tree                     | fruit                |
| Schinus terebinthifolius     | Japanese pepper tree            | fruit, large amounts |
| Scilla jonscripta, peruviana | Bluebell, squill                | bulb                 |
| Solandra spp.                | Golden chalice                  | sap, leaves, flowers |
| Solanum dulcamara            | Bittersweet or Woody Nightshade | berries              |
| Solanum laciniatum or vescum | Kangaroo Apple                  | green fruit          |

## LOW TOXICITY PLANTS

| Botanical                | Common                            | Toxic Part |
|--------------------------|-----------------------------------|------------|
| Achillea millefolium     | Yarrow or Milfoil                 | all parts  |
| Agapanthus orientalis    | Agapanthus or African Blue Lily   | sap        |
| Artemisia absinthium     | Wormwood                          | all parts  |
| Caladium spp             | Caladium                          | all parts  |
| Chrysanthemum morifolium | Florist's chrysanthemum           | all parts  |
| Chrysanthemum parthenium | Feverfew                          | all parts  |
| Chrysanthemum coccineum  | Pyrethrum                         | all parts  |
| Chrysanthemum maximum    | Shasta daisy                      | all parts  |
| Clematis spp             | Traveller's joy                   | all parts  |
| Colohicum autumnale      | Autumn crocus                     | flowers    |
| Cosmos bipinnatus        | Cosmos                            | all parts  |
| Dicentra                 | Bleeding heart                    | all parts  |
| Echium lycopsis          | Paterson's curse                  | all parts  |
| Euphorbia milii          | Crown of Thorns                   | sap        |
| Helenium autumnale       | Sneezeweed                        | all parts  |
| Helianthus annuus        | Sunflower                         | all parts  |
| Monstera deliciosa       | Fruit salad or Swiss Cheese plant | ripe fruit |
| Primula obconica         | Primul                            | all parts  |
| Ranunculus spp.          | Buttercups                        | all parts  |
| Rhus cotinus             | Smoke tree                        | sap        |
| Rudeckia hirta           | Black-eyed-Susan                  | all parts  |
| Sencio cineraria         | Dusty miller                      | all parts  |
| Tanacetum vulgare        | Common pansy                      | all parts  |
| Urtica spp.              | Stinging nettle                   | all parts  |

**TOXIC PLANTS BY COMMON NAME ONLY**

(Fruits, pits or seeds are toxic.)

**Common**

|                   |                         |
|-------------------|-------------------------|
| Amaryllis         | Mistletoe               |
| Barberry          | Mountain laurel         |
| Boxwood           | Narcissus               |
| Castor bean       | Nephthytis/Arrowhead    |
| Chinaberry        | Nightshade family       |
| Chinese evergreen | Oak (acorns)            |
| English ivy       | Peony                   |
| Euonymous         | Philodendron family     |
| Four o'clock      | Poison ivy/oak/sumac    |
| Gladiola          | Pokeweed                |
| Holly             | Privet                  |
| Jerusalem cherry  | Snowball bush/Hydrangea |
| Jimsonweed        | Water hemlock           |
| Jonquil           |                         |

**NON-TOXIC PLANTS BY COMMON NAME ONLY**

(No evidence currently exists that these plants are poisonous.)

**Common**

|                  |                             |
|------------------|-----------------------------|
| African violet   | Jade plant                  |
| Christmas cactus | Lilac                       |
| Coleus           | Marigold                    |
| Corn plant       | Norfolk pine tree           |
| Crocus (spring)  | Peperomia                   |
| Dandelion        | Petunia                     |
| Dogwood          | Prayer plant                |
| Dracaena         | Pyracantha/Firethorn        |
| Easter lily      | Rose                        |
| Ferns            | Rubber tree plant           |
| Ficus*           | Sansevieria/Snake plant     |
| Forsythia        | Scheffiera*                 |
| Fuchsia          | Spider plant                |
| Geranium         | Swedish Ivy                 |
| Hibiscus         | Tulip*                      |
| Honeysuckle      | Wandering Jew               |
| Impatiens        | Wax plant                   |
|                  | Wild strawberry/Snake berry |
|                  | Zebra plant                 |

*\*Sap may be irritating*

# Appendix H

## Playgrounds and Their Environment

Legislation and Executive Order number 13101 mandates the purchase of playground products that reduce environmental impact. The Environmental Protection Agency (EPA) has developed a list of designated products, commonly referred to as the CPG (Comprehensive Procurement Guidelines). The CPG items are those which Federal agencies are required to purchase. EPA has established specified amounts of post-consumer materials required as the recycled content for each designated item. To date, EPA has grouped 54 CPG items into eight product categories. Two specific product categories (Park and Recreation Equipment and Playground Surfacing) apply to the development of Head Start and Early Head Start play space.

As the first step in a play space plan, the coordinator and designer must consider what size and type of equipment is optimal for the specific project. At this point, it is necessary to consider CPG requirements for recycled content materials as identified under "Park and Recreation Equipment." This general heading includes requirements for park benches and picnic tables, playground equipment, playground surfaces, and plastic fencing. Refer to [www.epa.gov/cpg](http://www.epa.gov/cpg).

In the bid process, the vendor's proposal must include the proportion of recycled material that is in the product.

The EPA standard is:

- Steel 4, 16% (post consumer) / 25–30% (total) 67% (post consumer)
- Aluminum 25% (post consumer) / 25% (total)
- Plastic 3, 90–100% (post consumer)/100% (total)
- Plastic Composites, 50–75% (post consumer)/95–100% (total)

Some wood playground and landscaping equipment may deteriorate at a more rapid pace opposed to plastic or metal structures. However, with the proper care, wood playground and landscape equipment will last for many years. There are alternatives that do not have the problems of wood on play yards. Exceptions include marine plywood as well as engineered wood fiber impact resistance surfacing. If using wood, check vendors that offer this kind of product and request as part of their proposal the amount of recycled material that is used as part of the structures. The standard is:

- Structural Fiberboard, recovered materials - 80-100%
- Laminated Paperboard, post consumer paper - 100%

The center may or may not be seeking proposals for the fall zone surfaces as part of the same scope of work. Regardless of the approach to this purchase, it is important to first consider what type of fall zone material is most appropriate for the specific application. If the decision is to use a rubber mat, poured in place rubber surface, or rubber pieces, recycled material may be used. The standard is:

— Plastic or Rubber, 90–100% (post consumer)

If the decision is to go with an engineered wood fiber, the standard is:

— Wood/Paper, 100% (total)

When developing a bidders' list or listing potential playground contractors, it is important to inquire about the CPG designation and number. If a vendor lacks the CPG designation, request that they provide on letterhead or other commonly available company literature/Web site the amount of recycled material in the playground components that are part of the request.

Refer to <http://www.epa.gov/cpg/pdf/parks.pdf>. (The vendors on the EPA Web site may or may not be on the GSA schedule.)

It may be possible to locate environmentally sensitive products and companies/ vendors that use such products on the Internet. Two Web sites offering this information are:

<http://www.gsaadvantage.gov> (and look for the CPG icon)

<http://www.epa.gov/cpg/pdf/parks.pdf>

# Appendix I

## Glossary of Head Start Terms

**Administration for Children and Families (ACF)**—An agency within the Department of Health and Human Services (DHHS) that is responsible for federal programs that promote the economic and social wellbeing of families, children, individuals, and communities.

**Administration on Children, Youth and Families (ACYF)**—An agency within the Administration for Children and Families (ACF) that administers the major federal programs that support: social services promoting the positive growth and development of children and youth and their families; protective services and shelter for children and youth in at-risk situations; child care for working families and families on public assistance; and adoption for children with special needs.

**Americans with Disabilities Act**—Signed in 1990, it provides disabled Americans, including those with AIDS, the same rights to jobs, public transportation and public accommodations that women and racial, religious and ethnic minorities receive under the Civil Rights Act of 1964.

**Center-based programs**—Programs that provide for the growth and development of children, including physical development through outdoor and indoor active play and development of cognitive and language skills through creative expression, at a Head Start sponsored facility.

**Child Care**—Provision of safe environments, nurturing care, and appropriate developmental experiences for children—usually while their parents work or attend school. Childcare is locally and individually administered under not-for-profit or for-profit status, and is diversely funded, largely through parent fees, although the Department of Health and Human Services (DHHS) and state childcare agencies are providing growing support, especially to families with low incomes.

**Children with disabilities**—Children whose condition may include mental retardation; hearing impairments, speech or language impairments; visual impairments; serious emotional disturbances; orthopedic impairments; autism; traumatic brain injury; specific learning disabilities and who by reason thereof, need special education and related services.

**Code of Federal Regulations**—Publication containing all federal regulations, including Head Start 45 CFR Parts 1300-1308.

**Curriculum**—A written plan that includes the goals for children's development and learning; the experiences through which they will achieve the goals; what staff and parents do to help children achieve the goals; and the materials needed to support the implementation of the curriculum.

**Davis-Bacon Act**—Signed in 1931, it requires payment of prevailing wages to employees of contractors or subcontractors working on government construction projects, including construction of Head Start facilities.

**Delegate agencies**—Public or private nonprofit organizations to which a grantee can delegate the carrying on of all or part of its Head Start program.

**Department of Health and Human Services (DHHS or USDHHS or HHS)**—An agency within the federal government, of which the Administration for Children and Families (ACF) is a part, that is responsible for all federal programs dealing with health and general welfare.

**Developmental stages**—Natural or common divisions of the process of human growth, characterized by types of behavior, by biological properties or manifestations, or by mental processes.

**Developmentally appropriate**—Any behavior or experience that is matched to the maturity of the individual child with respect to age, needs, interests, developmental levels, and cultural background.

**Early childhood**—Birth to eight years.

**Early childhood development**—The process by which children from birth to age eight gradually gain the skills and confidence needed to succeed in their present environment and the cognitive skills needed to form a foundation for school readiness and later school success.

**Early childhood education**—Activities and/or experiences that are intended to effect developmental changes in children from birth through

the primary units of elementary school (grades K-3).

**Early Head Start**—A program that provides low-income pregnant women and families with children from birth to age three with family-centered services that facilitate child development, support parental roles, and promote self-sufficiency.

**Early intervention**—Efforts to redirect individuals at risk for, or in the early stages of mental, physical, learning or other disorders; usually targeted at early childhood, sometimes including prenatal care.

**Education environment**—Conditions, forces, or factors within or outside a teaching setting capable of influencing the setting or those within it.

**Eligibility**—Qualifying for certain benefits or services (e.g. enrollment in Head Start or Early Head Start).

**Eligibility criteria**—Those elements that would render an individual or family qualified to participate in a program, or a program qualified for funding, or an individual qualified for a position.

**English as a Second Language (ESL)**—Designation given to programs for students whose first language is other than English.

**Environmental education**—Utilization of the natural world and its relationships to promote experiential learning and to enrich the curriculum.

## Appendix I

**Exceptional children**—Refers to children with disabilities and to gifted children.

**Experiential learning**—Learning by doing; acquisition of knowledge and skills outside of book/lecture learning sessions, through work, play and other life experiences.

**Extended families**—A form of family organization consisting of blood relatives and their several nuclear family units.

**Family literacy**—The ability of the family as a whole to read and write.

**Family literacy services**—Programs that promote early childhood education, literacy training for parents (including teaching English as a second language), interactive family literacy activities, and training for parents for their role as primary teacher of their children and full partners in their education.

**Family partnership agreements**—Opportunities to expand parents' knowledge about community services and resources and to develop networks and relationships with families, service providers, community agencies and school systems.

**Federal Register**—The official daily U.S. Government publication of proposed and final federal regulations and announcements of programs and policies.

**Federal-State relationship**—Interaction between federal and state officials, agencies and programs.

**Free Appropriate Public Education**—What the Local Education Agency (LEA) is required to provide to all children including those with eligible disabilities.

**Full day/full year programs**—Programs in which a child is enrolled for a substantial part of each day for the period of twelve months.

**Governing boards**—Groups charged with the responsibility for some degree of management or control over affairs of public or private institutions.

**Grantee**—A local corporation or other legal entity, either public or private, to which a Head Start grant is awarded.

**Grants**—Funds given by a foundation, government, institution or other organization, usually for a specific purpose.

**Head Start Bureau**—The bureau within the Department of Health and Human Services/ Administration on Children, Youth and Families which administers the Head Start Program.

**Head Start Program**—Founded in 1965, the program provides comprehensive child development services to low-income children and families through a network of grantee and delegate agencies.

**Head Start Reauthorization Act of 1998**—Signed into law to amend the Head Start Act and extend the Head Start program authorization period through fiscal year 2003.

**Health care screening**—A series of tests used to identify individuals who are likely to benefit from, or have difficulty in, some program or treatment, or who should be examined in greater depth.

**Health care services**—Refers to medical, dental and mental health support provided to individuals and families. Services must be provided by staff or consultants with training and experience in public health, nursing, health education, maternal and child health or health administration.

**Health Services Advisory Committee**—A group that includes professionals and volunteers from the community, established to address health service issues and to help agencies respond to community needs.

**Home visitor**—The staff member in the home-based program option assigned to work with parents to provide comprehensive services to children and their families through home visits and group socialization activities.

**Home visits**—Used to assist, encourage and support parents as they foster the growth and development of their children, including physical development through outdoor and indoor active play, and the development of cognitive and language skills through creative self-expression.

**Home-based**—A program option for serving children and families in their homes, in which the parent is trained to provide for the comprehensive needs of the family.

**Homeless families**—Families without permanent or fixed residences, typically living in abandoned buildings, public places, or the streets, and at times seeking temporary shelter with public or private charities.

**Immunization recommendations**—Issued by the Centers for Disease Control and Prevention, as well as any additional recommendations from the local Health Services Advisory Committee that are based on prevalent community health problems.

**Indian reservations**—Tracts of land, set aside by agreements between governments and Indian tribes, which are reserved for the exclusive use and occupancy of those tribes.

**Individualized Education Program (IEP)**—Educational plan geared to an individual student's needs, and conducted in accordance with a written agreement between the student (and/or parents) and school officials.

**Individualized Family Service Plan (IFSP)**—A written plan for providing early intervention services to a child eligible under Part H of the Individuals with Disabilities Education Act (IDEA), developed by multidisciplinary teams of health care and educational practitioners for families of young children.

## Appendix I

**Individuals with Disabilities Education Act (IDEA)**—Federal special education legislation which states must implement and which requires special education for all children age three and older; states may also serve children younger than three at their discretion.

**Indoor active play**—Activities that take place inside (e.g. within a center or within the child's home).

**Infants**—Children in the earliest period of life, especially before they can walk.

**Infants and toddlers**—Children from birth through approximately three years of age.

**Intellectual development**—Increasing complexity or growth of reasoning and thought processes.

**Interagency cooperation**—Cooperation of organizations with each other or with other groups.

**Kindergarten**—A program or class for four- to six-year-old children that serves as an introduction to school.

**Kinship families**—Relatives other than biological parents that are caring for children.

**Learning disabilities**—Category in federal legislation referring to disorders involved in understanding or using language, manifested in imperfect ability to listen, think, speak, read, write, spell or do mathematical calculations.

**Learning problems**—Conditions interfering with the ability to learn, which may be caused by visual, hearing or motor impairments; mental retardation; behavioral disorders; health impairments; or by cultural, environmental or economic disadvantage.

**Learning readiness**—State or condition of an individual that makes it possible for him or her to engage profitably in a given educational activity.

**Least Restrictive Environment**—An educational placement that ensures that, to the maximum extent possible, children with special needs are educated with children not in need of special education services.

**Local Education Authority (LEA)**—A general term used in the Individuals with Disabilities Education Act (IDEA) for school districts or Regional Special Education Districts mandated to provide special education.

**Mainstreaming**—Progressively including exceptional students (disabled or gifted) in classes and schools with regular or normal students, with steps taken to see that special needs are satisfied.

**Meal services**—Nutritional services in center-based settings; grantee and delegate agencies must ensure that meals contribute to the development and socialization of enrolled children by serving a variety of food to broaden each child's food experience.

**Mental health services**—Assistance for mental and emotional disorders, provided by licensed or certified mental health professionals with experience and expertise in serving young children and their families.

**Migrant Head Start Programs**—A Head Start program that serves families who are engaged in agricultural work and who have changed their residence from one geographical location to another in the preceding two-year period.

**Minimum requirements**—The lowest levels of overall accomplishment that a Head Start agency may achieve and still remain in compliance with the program performance standards.

**Minority groups**—Subgroups within a larger society that are distinguished from the majority and each other by race, national heritage, or by religious or cultural affiliation.

**Motor development**—Stages of growth in the ability to manipulate and control limbs and body movement.

**Multicultural education**—Education involving two or more ethnic groups

and designed to help participants clarify their own ethnic identity and appreciate that of others, to reduce prejudice and stereotyping, and to promote cultural pluralism and equal participation.

**Multicultural principles**—Program elements that validate and build upon the cultures and strengths of the children enrolled in Head Start and their families.

**Non-Federal Share**—Cash or in-kind contributions required to match a federal grant.

**Notice of Financial Assistance**—Official notification by the federal government that an agency's request for funding has been approved and funds are available for expenditure.

**Notice of Proposed Rule Making**—Publication of proposed, new, or revised federal regulations in the Federal Register for public comment.

**Office of Financial Operations**—Monitors the financial portion of the Head Start grant. Located in the Administration for Children and Families (ACF) Regional Office.

**Office of Management and Budget**—The federal agency that oversees the budgeting process of the executive branch of the federal government and that approves information-gathering forms before they can be used.

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**PA 20 Program Account 20**—A category within the Head Start grant budget specifically for training and technical assistance needs.

**PA 22 Program Account 22**—The largest and most flexible category within the Head Start grant budget, which is used for program operations.

**PA 25 Program Account 25**—A category within the Head Start grant budget for funds for Parent and Child Centers which are awarded to a limited number of grantees.

**PA 26 Program Account 26**—A category within the Head Start grant budget for Full Day, Full Year Head Start funds.

**Parent Committees**—Groups comprised of parents of children currently enrolled at the center level for center-based programs or at the equivalent level for other program options that share governance with the Policy Committee and Policy Council.

**Performance Standards**—A federally defined set of minimum criteria for each component in Head Start.

**Policy Committee**—An appointed group that shares program governance with the Parent Committee and Policy Council; at least 50% of the membership must be parents of the children enrolled in that delegate agency program and it must also include representatives from the community.

**Policy Council**—A committee set up at the grantee level which shares program governance with the Parent and Policy Committees; includes representation from parents, community, and all delegate agencies. If the grantee has no delegates, then the representation is from all centers and other factions of that program.

**Policy groups**—The formal group of parents and community representatives required to be established by the agency to assist in decisions about the planning and operation of the program.

**Program evaluation**—Judging the feasibility, efficacy, and value of a program in relation to its stated objectives, standards, or criteria.

**Program governance**—A formal structure of shared administration through which parents can participate in policy making or in other decisions about the program.

**Program implementation**—Carrying out a plan or design through concrete measures.

**Program Information Report**—An annual report completed and filed electronically at the end of each school year by every Head Start program in the nation, supplying data used by the Administration on Children, Youth and Families (ACYF) to report to Congress and for program monitoring. Note: Forms for this report are sent to every grantee to fill out and

return. Collated results are distributed to all programs, with data reflecting state, regional and national trends.

**Program performance measures**—Methods and procedures used to assess the strengths and weaknesses of Head Start programs, and to identify problem areas that require training and technical assistance resources.

**Program planning**—A systematic, ongoing process that includes consultation with the program's governing body, policy groups and program staff, and other community organizations; also includes community assessment, formulation of short term objectives and long range goals, and development of written plans for implementing services.

**Quality Improvement Plan**—A document developed by grantees to outline solid solutions for eliminating identified program deficiencies, and including the time frame within which each will be corrected.

**Regional Office**—Main office in each of twelve nationally stipulated Department of Health and Human Services (DHHS) administrative areas.

**Related services**—Transportation and other developmental, corrective and supportive assistance that is required to help a child with disabilities benefit from special education; assistance also can include social services and parent counseling and training.

**Request for Proposals (RFP)**—An official/formal solicitation by an

agency or organization for proposals in a wide range of categories such as funding, special projects, training events, and so forth.

**Safety councils**—National organizations, such as the Children's Safety Network, Program for Playground Safety, Consumer Product Safety Commission, the American Academy of Pediatrics, Safe Kids Coalitions and the National Highway Transportation Safety Association, which are concerned with identifying and publicizing hazards and helpful information.

**School readiness**—Levels of cognitive, physical and psychosocial maturity prerequisite to learning in a school setting.

**Sensory development**—Stages of growth in organizing and understanding impressions gathered through the senses, i.e., the process of recognizing, identifying or becoming aware of objects, qualities or relations.

**Special education**—Teaching programs and services for disabled and/or gifted individuals who have intellectual, physical, emotional, or social characteristics different from those who can be taught through normal methods or materials.

**Special needs students**—Broad legislative category referring to all students identified as needing special assistance to achieve educational equity, e.g., the disabled, the disadvantaged, those seeking nontraditional careers, limited English speakers, and others.

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**Special populations**—Refers to culturally distinct groups such as American Indians, refugees, Eskimos, and others.

**Staff-parent conference**—Meetings at which parents can discuss their child's development, progress and education with teachers and other caregivers.

**State Early Childhood Programs**—Locally and state-funded child development services, either for all interested families or primarily for families with low income.

**State Education Agency (SEA)**—A department of education at the state level composed of the chief state school officer and staff who carry out work delegated to them by law.

**State licensing boards**—Agencies that authorize the practice of a profession or operation of a business in a state after determining that established standards and requirements have been met.

**Toddlers**—Children approximately one to three years of age.

**Transition coordination**—Refers to the management of activities that facilitate a child's transition from Head Start programs to elementary school.

**Transition planning**—A process undertaken for each child and family at least six months prior to the child's third birthday that takes into account the child's health status and developmental level, progress made by the

child and family while in the program, current and changing family circumstances, and the availability of child care services in the community.

**Transition programs or transition services**—Procedures to support successful transitions for enrolled children and families from previous child care programs into Early Head Start or Head Start programs and from Head Start into elementary school or other child care settings.

**Tribal government**—Governments of American Indian tribes.

**Tribal sovereignty**—The authority or right of tribal entities to exercise decision-making power and choice regarding their political, social and cultural patterns.

**University partnerships**—Grants awarded to universities to work with Head Start agencies in conducting research on Head Start programs, or awarded to graduate students to conduct research in Head Start programs.

**Verbal development**—Growth in the ability to use and comprehend words in either oral or written form.

**Waivers**—Dispensations from rules or penalties.

**Wrap Around**—Arrangements between Head Start and other funding sources to provide a full range of comprehensive services for Head Start children according to their needs.

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