CHAPTER 9

PLAY AREA COMPONENTS

9-1. Introduction.

A play area is more than a collection of play equipment. Many different component parts work together to support child development and play in a quality play environment. Some components create defined settings that support play activities, such as sand play, dramatic play, and pathways. Other play area components, such as gathering places and signage, provide comfort and convenience for users. This chapter provides design guidelines for play area components. For each component, design considerations, age appropriateness, safety considerations, and required level of maintenance is identified.

9-2. Maintenance Requirements.

Maintenance requirements are an important factor to consider when selecting play area components. Rough estimates of required maintenance for the play area components are summarized in table 9–1. Actual maintenance needs cannot be determined until the design elements for each component are selected.

9-3. Entry Area.

Play area entrances should create a welcoming feeling. Defined entrances may serve as social gathering places and locations for displaying community information. Play components may also have a defined entry. For example, the entrance to the dramatic play component can be marked by an arch, flag, or banner. Entries may also include play activities, such as games or interactive exhibits.

Table 9–1. Maintenance Requirements for Play Area Components.

Play Area Components	Maintenance Level		
	Low (< 3 hrs/mo)	Moderate (3-5 hrs/mo)	High (> 5 hrs/mo)
Entry area	✘		
Pathways		✘	
Sports and games	✘		
Dramatic play			✘
Sand play			✘
Garden			✘
Gathering place		✘	
Manufactured play equipment		✘	
Plant materials		✘	
Landforms			✘
Separation and barriers	✘		
Signage	✘		
Parking	✘		

✘ - Maintenance level.

a. Design Elements. An entry may include: arches and gateways, pathways, sculpture and other art work, community bulletin boards, informational signs, interpretive signs, graphic signage, interactive play events, surfacing, seating, tables, bike racks, drinking fountains, restrooms, shelters, vegetation, and trash receptacles. Temporary or permanent embellishments may include banners, flags, decorations, and posters.

b. Recommended Ages. All ages will use the entry.

c. Safety Concerns.

(1) *Visibility.* Visibility from the surrounding neighborhood should not be obstructed. Design elements such as vegetation should not block views into the play area from adjacent streets or housing.

(2) *Separation From Traffic.* Entries should be separated from parking and traffic with barriers, such as bollards.

(3) Signage. Entries are a good location for informational signage describing play area layout and the age groups served. However, it should not be assumed that children will read and understand written warning signs.

d. Maintenance Level. The level of maintenance required for this play area component is low. A well-maintained entrance creates a positive first impression of' the play area.

9-4. Pathways.

Two types of pathways may be provided. Primary pathways provide accessible routes of travel to the play area, around the play area, and to all accessible activities within a play area. Auxiliary pathways are secondary pathways.

a. Design Elements. Pathways may include: surfaces, curb cuts, ramps, crosswalk markings, curbs, vegetation, seating, signage, and lighting.

(1) *Pathways Layout.* Pathways should be installed along likely routes of pedestrian travel.

(2) *Primary Pathways Leading To and Around the Play Area.* When a road crossing cannot be avoided in order to reach the play area, curb cuts, ramps, and crosswalk markings should be provided.

(3) *Primary Pathways Within Play Areas.* Primary pathways connect various play area components, such as manufactured play equipment, sand play, and dramatic play.

(a) Loop Pathways. Loop pathways are preferred to accommodate continuity of movement. Including branches and decision points increases the child development opportunities provided.

(b) Bikeways. Primary pathways should be designed to accommodate wheeled toys and bikes. In large parks and play areas where heavy bike traffic is anticipated, a separate bikeway may be constructed adjacent to primary pathways.

(4) *Auxiliary Pathways Within Play Areas.* Auxiliary or secondary pathways allow children to explore the environment. Surfacing materials, such as packed soil, gravel, and woodchips, which provide more challenge for children with disabilities, may be used on auxiliary pathways. Auxiliary pathways can accommodate a variety of play activities, including hiking, biking, wheeled toy play, interpretive activities, and hide and chase games. An auxiliary pathway with more challenging terrain can also serve as an adventure bike path for youth age 9 to 15.

(5) *Bicycle parking.* Bicycle parking areas should be located adjacent to pathways, but away from congested pedestrian areas. Bike racks should be provided.

(6) *Textures.* Changes in pathway texture may be used to indicate an interesting design feature, seating area, or sign location, or may serve as a warning texture for individuals with visual disabilities. Changes may be achieved by use of a different paving material, varied paving treatment such as multiple score joints, or a contrasting pavement color.

(7) *Service Vehicle Access.* A minimum 3 to 3.6 m (10- to 12-foot) wide maintenance access point should be provided.

b. Recommended Ages. All ages will use pathways.

c. Safety Concerns.

(1) *Crosswalks.* Auditory warnings and traffic lights are recommended at busy street crossings.

(2) *Dead-Ends and Congested Pathways.* Avoid creating dead-ends or inadequate, congested pathways where users might collide.

(3) *Pathways Within Use Zones.* Synthetic safety surfacing that is stable, firm, and slip-resistant will be installed on pathways within play equipment use zones.

(4) *Bold Patterns or Colors.* Bold patterns, such as checkerboards, or bright colors that may be disorienting over a continuous pathway surface should be avoided.

(5) *Conflict of Use.* Conflict of use is a major safety factor if bikeways are not separated from circulation paths, play areas, or vehicular traffic. Separate bike lanes or fast and slow lanes are recommended for primary bikeways that may be used for high speed travel.

(6) *Bike Racks.* Bike racks should be selected that are not tempting as a climbing structure.

(7) *Lighting.* Lighting should be provided along all primary pathways intended for night use.

(8) *Drainage Grates.* Drainage grates should be designed to prevent incorrect placement of grates by maintenance staff.

d. Maintenance Level. The level of maintenance required for this play area component is moderate.

9-5. Sports and Games.

Ball play is a universally popular play activity. The popularity of ball games varies with the seasons. Many ball play areas serve more than one function during the year. For example, some ball play areas accommodate both baseball and soccer. Guidance for the planning and design of outdoor sports facilities is provided in TM 5–803–10/AFM 88–33.

a. Design Elements. Sports and games components may include: multiple use hard surfaces or turf areas required for specific sports and games, surfacing, ball walls, fences, vegetation, drinking fountains, storage, lighting, seating, and trash receptacles.

(1) *Multiple Use.* Designs that can accommodate more than one type of sport, as well as community events, such as picnics and festivals, are preferred. An irregular boundary that accommodates the estimated distance of ball travel and is defined by a vegetative barrier adds visual interest and encourages multiple use.

(2) *Surfacing.* Surfacing is an essential consideration. Hard surfaces are required for some ball games. Turf is preferable for other sports and games.

(3) *Ball Walls.* Ball walls should be provided at a height of *3* to *3.6* m (10 to 12 feet) to contain balls. Several walls may be provided. Curved walls add interest. Ball walls also make excellent surfaces for murals.

(4) *Limited Space.* Sports and games components, such as half-court basketball, can be provided even when available space does not accommodate full-size sports fields. Smaller courts are easier to incorporate into an irregular layout and are often in high demand. When space allows, a full-size court may be provided that can also function as two half-courts. Badminton and volleyball do not require special court surfaces or regulation dimen-

sions for informal play, but a relatively flat surface should be provided. Tetherball is a game for school-age children that requires little space. Outdoor ping-pong tables have low space requirements and may be provided in low wind areas or in high wind areas if wind protection is adequate.

(5) *Drainage.* A minimum 2% slope for positive drainage should be provided for open turf areas and sports fields. Flat grades should be avoided.

b. Recommended Ages. Sports and games components are recommended for children ages 3 and older. Younger children participate in cooperative group activities while older children enjoy competitive sports.

c. Safety Concerns.

(1) *Multi-Use Hard Surfaces.* Multi-use hard-surfaced sports areas will not intrude into play equipment use zones.

(2) *Falls and Collisions.* Recognize that pedestrian falls onto hard surfaces and collisions are the most common forms of minor injury. These types of injuries are difficult to prevent.

(3) *Shade.* Partial shade should be provided for comfort.

(4) *Water.* Access to drinking water should be provided to prevent dehydration.

(5) *Lighting.* When night use is anticipated, lighting should be provided.

d. Maintenance Level. The level of maintenance required for this play area component is low.

9-6. Dramatic Play.

Children from preschool age to teenagers engage in dramatic play. At age 3, children play house and mimic domestic roles. At age 9, super heroes and "real life" role models, such as teachers, provide material for role plays. At age 15, dramatic play focuses on social interaction. Young children through teens enjoy attending and participating in performances. Because the types of dramatic play vary at different ages, the design elements included in dramatic play components intended for different age groups will vary.

a. Design Elements. Dramatic play components may include: playhouses, play platforms, pathways, vegetation, shade, water elements, and seating.

b. Recommended Ages. Dramatic play components are recommended for children ages 18 months to 15 years.

c. Safety Concerns. Surfaces that are trip- and slip-resistant under wet and dry conditions should be provided.

d. Maintenance Level. The level of maintenance required for this play component is high.

9-7. Sand Play.

Sand is an excellent medium for creative play and social interaction. When combined with water, sand offers even greater play potential. Sand can serve both as a play material and as a safety surface. Sand play components should be designed to accommodate groups of varying sizes.

a. Design Elements. Sand play components may include: sand; water elements; containment barriers; sand tables; seating; playing surfaces, such as boulders, tables, or shelves; and vegetation.

(1) *Type of Sand.* A fine, washed plaster sand is best for sand play and construction. Sand should be free of soil, clay, silt, oxides of iron, or other contaminants.

(2) *Depth of Sand.* A 450 to 600 mm (18- to 24-inch) depth of sand should be provided for sand play areas.

(3) *Water Supply.* A variety of water elements may be provided. A spring-loaded or dripping, tamperproof faucet is recommended. Hoses, hand water pumps, or trickling water troughs may also be used. Drinking fountains should be located away from sand play areas.

(4) *Ambient Microclimate.* The area should be protected from prevailing winds. Depending on site conditions, shade may be desirable. However, all sand play areas should receive sun for at least part of the day.

(5) *Drainage.* Positive drainage should be provided to avoid water-logging.

(6) *Barriers.* Barriers keep sand in place and discourage children in adjacent areas from disturbing the sand play of others. Barriers may include seating or sand shelves for play. A variety of places for individual and small group play for one to four children should be provided. These smaller areas may be connected to a larger sand area. Shallow sand benches or tables allow standup play and wheelchair accessibility.

(7) *Play Surfaces.* Play surfaces within the sand area include sand tables, boulders, and shelves. These surfaces may be used as work surfaces, seating, and back support.

(8) *Play Props.* Children like to play in sand with small toys, especially pocket-sized trucks, animals, and vehicles, or with props found onsite, including vegetation. A variety of play surfaces support this activity.

b. Recommended Ages. Sand play components are recommended for children ages 12 months to 8 years.

c. Safety Concerns.

(1) *Cleaning.* Sand play areas will require daily cleaning to remove litter, broken glass, and cat and

dog feces. Sunlight and adequate drainage should be provided to keep sand free of microorganisms.

(2) *Slip Hazards.* Sand creates slip hazards when spilled onto concrete or asphalt.

(3) *Sand Particles.* Sand particles may be ingested or inhaled by small children. The particles may cause eye abrasions when thrown, blown, or rubbed into the eye.

d. Maintenance Level. The level of maintenance required for this play are a component is high.

9-8. Gardens.

Gardens allow children to observe plants throughout the life cycle and harvest plant materials for play, cooking, craft, and science activities.

a. Design Elements. Gardens may include: vegetation, planters, fencing, storage, water, irrigation, compost bins, tables, and seating. Fencing with lockable gates should be provided for formal gardens.

b. Recommended Ages. Gardens are recommended for children ages 3 years and older.

c. Safety Concerns.

(1) *Tools.* Lockable storage should be provided for tools.

(2) *Harmful Plants.* Poisonous plants and plants with thorns or berries should be avoided.

d. Maintenance Level. The level of maintenance required for this play area component is high.

9-9. Gathering Place.

Gathering places should be designed to accommodate groups of different sizes and people of all ages. Gathering places may include: boulders set in a circle as seating; seating constructed from large timbers or logs; a meadow enclosed on three sides by trees to create a room-like atmosphere for group gathering; and simple arrangements of site furnishings such as tables or benches.

a. Design Elements. Gathering places may include: tables, shelters, benches, infant crawl areas, trash receptacles, boulders, logs, timbers, shelters, and vegetation.

(1) *Shelters.* Covered shelters may be provided for shade and protection from weather.

(2) *Tables.* Tables should be provided for gathering, working, eating, and game playing.

(3) *Seating.* Comfortable adult seating should be provided. Adult seating should be located in both sunny and shaded locations and should allow clear supervision sight lines. Seating should be provided for children. Some seating should be located on the edge of play activity areas where children can observe activities. Seating may include benches, infant crawl areas, planter walls, boulders, logs, timbers, etc. Seating should be provided at 200 to 300 mm (8 to 12 inches) high for children under 5 years and 300 to 430 mm (12 to 17 inches) high for children ages 5 through 12 years old.

(4) *Infant Crawl Area.* Gathering places may include a turf-covered infant crawl area. The infant crawl area should be provided adjacent to adult seating areas. Crawl areas should be partially or fully shaded.

(5) *Trash Receptacles.* Trash receptacles should be provided along paths, near seating areas, in eating areas, and at play area entrances. Dumpsters should be located away from play areas for convenience and sanitation.

(6) *Vegetation.* Vegetation can be used to separate a gathering place from other parts of the play area, providing a feeling of privacy and reducing noise from adjacent play areas. Vegetation should be used to protect gathering places from cold winds and to provide shade.

b. Recommended Ages. Gathering places are recommended for all ages.

c. Safety Concerns.

(1) *Location.* Site furnishings should not conflict with play activities, block paths of travel, or create trip hazards. Seating should be located to allow adults to comfortably view children at play.

(2) *Trash Receptacles.* Trash receptacles with removable lids should be provided for easy trash removal. Drain holes in dumpsters and receptacles should be plugged or covered with mesh screening.

(3) *Harmful Plants.* The use of toxic plants, plants with thorns, plants with berries, and trees that drop limbs should be avoided.

(4) *Boulders.* Large boulders may be used for seating in play areas intended for children ages two and older. Boulders should be composed of granite, feldspar, schist, or other solid, noncrumbling rock. Artificial boulders such as those simulated from concrete may also be used. Boulders should be free of sharp corners, open cracks or holes. Boulders should be a maximum size of 600 mm (24 inches). Boulders should be set firmly into the soil to prevent rolling, rotation, or settling. At least 30% of a boulder should be buried.

(5) *Logs.* Logs with a maximum diameter of 600 mm (24 inches) should be selected. The logs should be set firmly into the soil to prevent rolling, rotation, or settling. At least 30% of a log should be buried.

(6) *Wood Preservatives.* Wood preservatives will meet the requirements of CPSC and ASTM F 1487.

(7) *Visibility.* Visibility into gathering areas should be provided from more than one location on the play area.

(8) Shade. Shade maybe especially desirable where people may be sitting for more than a few minutes. Shade can be provided with trees, canopies, trellises, etc.

d. Maintenance Level. The level of maintenance required for this play area component is moderate.

9-10. Manufactured Play Equipment.

Manufactured play equipment will be carefully selected to meet safety guidelines for the primary age group of the play area users. Safety surfacing will be provided in manufactured play equipment use zones.

a. Design Elements. Manufactured equipment components may include both freestanding equipment, such as climbers, swings, slides, and balance beams, and composite structures that include more than one play event.

b. Recommended Ages. Manufactured play equipment components are recommended for children from infant to 12 years. Separate age-appropriate manufactured play equipment areas should be provided for children under 5 years. Young children have been gravely injured while playing on equipment intended for older children, sometimes while parents are facilitating their play. Similarly, serious accidents may occur when older children use equipment designed for children under 5 years.

c. Safety Concerns. Children will use play equipment in ways that were never intended. Therefore, play area designers should design the environment so that children's misjudgments do not result in life-threatening injuries. Play equipment will meet all the safety guidelines provided by CPSC, ASTM F 1292, and ASTM F 1487, as well as all additional guidelines described in this manual. Safety surfacing will be provided throughout play equipment use zones.

d. Maintenance Level. The level of maintenance required for this play area component is moderate.

9-11. Plant Materials.

Plant material provides children with opportunities for nature exploration, props for play, settings for social interaction, and climbing opportunities. Existing vegetation provides a mature and unique character in the play area. Native plants or plants adapted to the local climate create a regionally appropriate character. Except when required for play value, plants with low life cycle costs and low maintenance requirements are preferred.

a. Design Elements. Design elements may include: plants selected from local plant lists; seating; water; irrigation; planters; containment barriers; ground surfaces; and tree guards.

b. Recommended Ages. Plant material is used by all age groups.

c. Safety Concerns. Important considerations include: toxic or undesirable plant material; surfacing; protrusions and entrapment; visibility; and use of pesticides, herbicides, and fertilizers.

d. Maintenance Level. The level of maintenance required for this play area component is moderate.

9-12. Landforms.

Landforms provide spatial variety and create the opportunity to experience three-dimensional space.

a. Design Elements. Design elements may include: hills, slopes, earth mounds, boulders, stepping stones, logs, seating, bridges, surfaces, and vegetation.

(1) Existing *Landforms.* Slopes, varied topography, and land forms satisfy many play needs. Existing landforms should be retained when possible.

(2) *Landform Site Improvements.* Earthmoving and related site improvements can be expensive. Site improvement opportunities will vary depending on existing site conditions and budget. A simple approach may include creating a small mound on a flat site by importing material. An extensive approach may involve complete regrading to create a continuously varied ground surface with topographic features.

(3) *Low Mounds.* Low mounds provide challenge without the potential of falls from elevated heights. Through careful manipulation of landforms, access can be provided without the use of ramps.

(4) Berms. Berms or natural hills may be used to provide access for children with disabilities up to and onto equipment.

(5) Slides. Slides that are incorporated into slopes can pose little potential for falls. Landforms may be designed to provide access to the slide entrance for children in wheelchairs.

b. Recommended Ages. All ages can make use of landforms.

c. Safety Concerns.

(1) *Slopes.* Slopes should be appropriate to the age of users. Steep slopes should be avoided.

(2) *Dropoffs.* Sudden dropoffs should be avoided.

(3) *Guardrails.* Paths and ramps should be evaluated to determine whether guardrails are needed.

(4) *Bridges.* Bridges between mounds should meet requirements for play equipment stationary bridges, including requirements for protective barriers, entrapment, and use zones.

d. Maintenance Level. The level of maintenance required for this play area component is high due to possible erosion and handmowing requirements.

9-13. Separation and Barriers.

Separation and barriers should be used to define the spatial organization of the site, to define the pattern movement, to enclose play component areas, and to protect plantings. Barriers, such as low walls or vegetation, should be used to separate age groups with conflicting safety needs or to prevent circulation through high activity areas.

a. Design Elements. Design elements may include: fencing, gates, pathways, vegetation, containment barriers, play walls, and art displays.

(1) *Height.* Separation and barriers should be high enough to stop direct forward movement into areas where traffic or adjacent land use features could create a hazard.

(2) *Materials.* Materials that support the design purpose should be selected. Separation and barriers may be transparent or solid. Undesirable views can be screened with solid barriers. Barriers may be metal, wood, chainlink, mesh, concrete, or vegetative.

(3) *Play Elements.* Play experiences may be incorporated into the design of fencing and barriers where appropriate. For example, peek-a-boo holes, chalking surfaces, child-created mosaic walls, and murals may be incorporated. Nooks and hangouts may be formed by varying fence lines.

(4) *Appearance.* Highly visible separation and barriers should be attractive from adjacent sites. Shrub plantings, ground covers, and vines should be used to screen unsightly fences.

b. Recommended Ages. Separation and barriers should be provided for all ages when needed.

c. Safety Concerns. The following safety concerns apply:

(1) *Enclosure.* When fencing is required to protect children from hazards, such as traffic or bodies of water, fences should be a minimum height of 1200 mm (48 inches). Fencing and gate designs that can be easily climbed or crawled through should be avoided.

(2) *Visibility.* Visibility into the play area should be provided from more than one location.

(3) *Entrapments.* The space between the bottom of the fence or gate and the ground surface should not exceed 50 mm (2 inches).

(4) *Sharp Objects.* If chainlink fencing is provided, the bottom of the fencing should have woven ends or continuous loops with no exposed sharp wires.

d. Maintenance Level. The level of maintenance required for this play area component is low.

9-14. Signage.

Signs should communicate information to people of all ages and abilities. Signs should be colorful and playful.

a. Design Elements. Signs may be informative, directional, or regulatory.

(1) *Informative Signs.* Informative signs present general information both with text and graphics for those who cannot read. Signs may address the site layout and programs available at the site. Signs can educate people about the historic or natural site features. Temporary signs, such as banners, may be used to advertise special events. Identification signs present information in both words and pictograms to identify specific features or facilities.

(2) *Directional Signs.* Directional signs indicate directions to a space or facility. Arrows or other graphic symbols should be used. Directional signs should be located at the site entry and all decision points.

(3) *Regulatory Signs.* Regulatory signs present notification of rules, requirements, warnings, and restrictions, and are used for traffic delineation and control. Regulatory signs may be used to convey safety information, such as the intended age group for a play area.

(4) *Design.* Graphic signs should be emphasized, especially for child-oriented or child-designed signs. International characters and symbols should be used when possible. Although there are no standardized graphic signs for playground areas, the American Institute of Graphic Arts (AIGA) has evaluated symbols used in transportation-related facilities and at international events. Based on their analysis, a standardized set of graphic symbols for public services, concessions, regulations, and transportation-related processing activities was developed. Some of these symbols may be appropriate for playground signage, such as the symbols developed for restrooms, drinking fountains, parking/no parking, no pets, no entry/exit, and litter disposal. Refer to *Symbol Signs* (AIGA) for guidance.

(5) *Play Activities.* Signs may be designed as play activities with tactile, auditory, interactive, or manipulative parts.

b. Recommended Ages. Signage is used by children 2 years and older, as well as by adults.

c. Safety Concerns. Regulatory signs may be used to provide information on play area safety. However, it should not be assumed that children will be able to read signs or to comprehend the implications of the message. Providing signage that identifies the age of the designated play area user group may assist parents in selecting safe play areas for children.

d. Maintenance Level. The level of maintenance required for this play area component is low.

9-15. Parking.

Offstreet parking areas may be provided for play areas serving the entire installation.

a. Design Elements. Design elements include bollards, hard surfaces, lighting, and signage.

(1) *Parking Design.* Military design standards should be followed for parking area design.

(2) *Signage.* Signage should be provided to identify dropoff zones and limit use of these zones to "pickup/dropoff" functions.

(3) *Lighting.* Adequate lighting should be provided.

b. Recommended Ages. Offstreet parking should be provided at neighborhood and destination parks serving all age groups.

c. Safety Guidelines.

(1) *Separation.* Parking areas should be separated from play and circulation areas.

(2) *Automobile Circulation.* One-way traffic circulation should be provided. Backup and turnaround maneuvers should be minimized through careful orientation of automobile circulation.

(3) *Dropoff Zone.* Where the dropoff zone is at the same grade as the adjacent walk, bollards or some other suitable device should be provided to separate the two functions.

(4) *Bollards.* Bollards should contrast in color with the ground surface. Lighting should be provided to minimize the risk of a person inadvertently walking into bollards.

d. Maintenance Level. The level of maintenance required for this play area component is low.