The following patterns are recommendations for specific types of play areas. Most are identified as unique activity areas or as places with special qualities. They, therefore, can be developed as individual play areas, may be joined together with LINKS (see 209) to provide a community-wide NETWORK OF PLAY (see 502), or they may be combined in one large site to create a COMPREHENSIVE PLAYGROUND (see 503).

601 Shared Open Space
602 Informal Paved Areas
603 Home-Based Activity Pockets
604 Open Grassy Playing Areas
605 Hard-Surface Playing Areas
606 Adventure Play areas
607 Creative Play Areas
608 Environmental Yards
609 Children's Gardens
610 Fenced Animal Areas
611 Designated Play Structures
612 Play Spaces for Infants
613 Skateboarding Runs
614 Residual Areas
CHILDREN ARE THE PRIMARY USERS OF OUTDOOR AREAS. UNDEVELOPED OPEN SPACE IN CLUSTERED HOUSING DEVELOPMENTS WHICH IS LEFT FOR THE RECREATIONAL USE OF RESIDENTS OFTEN GOES UNUSED. WHEN PLAY AREAS FAIL TO ABSORB THEIR INTERESTS, CHILDREN LOOK ELSEWHERE FOR PLAY OPPORTUNITIES.

According to Clare Cooper Marcus (1975), most designers of residential housing complexes spend their time worrying about where cars will be parked, the arrangement of house facades, and how garbage will be disposed of. After these issues are resolved, they then take care of children's needs by installing swings and sandboxes in leftover spaces.

After studying residents' use of communal open spaces at Easter Hill Village, Cooper Marcus concluded that such space will be used only if it is attractively landscaped and contains benches and play equipment as well as other social foci such as a commonly-used route between dwellings and other shared facilities. If one of more of these criteria is not fulfilled, she predicts that common open space will not be used and that social and play activities will more likely take place on adjacent sidewalks and in parking areas.

Similar observations have been made by Hill (1977) and England's Department of the Environment (1973). Hill emphasizes the importance of location when planning shared play areas. Observations of children's play activities reveal that young children tend to play close to home. The Department of the Environment recommends that play areas in residential housing complexes be as close as possible to the dwellings they serve. They emphasize that merely providing grassy open spaces is not enough to absorb children's interest and energies since grass is suitable for such a small range of activities. They argue instead for a network of large and small spaces which provide a variety of surfaces for children's activities.
Residents of housing complexes containing commonly-used territory can be encouraged to recognize it as "belonging" to them. It will be considered within their sphere of influence when such territory is combined with networks of private yards, public paths, and other shared-use facilities. The resulting intensity of use generally creates a safer atmosphere for children because their activities are easily observed by adults passing by.

At Easter Hill Village, Cooper Marcus also emphasized the need for including seating near children's play spaces. Seating areas not only allow adults to sit near by to observe children's activities, but also provide a convenient get-away place where parents can meet to talk to one another, yet still be close to home.

Hester (1975) described a similar situation which confronted designers at the Jefferson Park Housing Project in Cambridge, Mass. When the play court was redeveloped, residents were adamant in their desire to retain the four-corner clothesline areas with benches and tables where strong friendship circles had developed. Here fathers met to drink beer after work and young parents with limited mobility could get away from their home to socialize as well as watch their children play.

Hester notes that other housing complexes have been equally successful in dispersing their play areas rather than concentrating them. At Ridgefield Park in Chapel Hill, North Carolina, play areas are arranged around dwellings to enable parents to observe their children's play from inside their apartments. This dispersal method is beneficial where there are combinations of families with and without children. Smaller play spaces can be located in various parts of the complex away from childless families to reduce noise and other interference generated by children at play.

Where housing is planned in Radburn-type plans, as at many military installations, or where row- or single-family housing is grouped around shared open space, the proper design of this shared space can make or break it as a good play space for children.
One of the most successful schemes is St. Francis Square Housing Development in San Francisco by Marquis and Stoller, Architects.

St. Francis Square Housing Development
San Francisco, California

From our site visit there (see Travel Report, 1978, pp. 154-155), combined with published studies and comments by the evaluator, we derived the following lessons about why the interior shared spaces were successful for children's play:

- The open space is well-defined.
- There are small court-yard sized spaces, square or nearly square, which are in the range of 150-200 ft. on a side.
- The ratio of building height to open space is in the range of 1:5 to 1:8.
- Housing units open to the interior off pathways, with gardens, balconies, and heavily-used interior spaces like kitchens or work studios overlooking the courts, and with parking on the periphery.
- There is a variety of settings and landscape elements--spaces, grade changes, plant materials, surface types, site furniture, and, perhaps least important, play equipment.

- There is a variety of vertical elements not specifically designed as play areas--fences, bushes, benches, poles, lamp posts, trellises, garbage sheds, and slopes.

- There are wide pathways and other hard surfaces, undesignated for play, but where play will happen anyway.

- There are centralized, visually focusing and challenging play structures which act as magnets around which play may focus.

- Grass and berm areas--retreat and breakaway points--are near the center yet visually somewhat separated.

- Informal play areas with sand, water, grass, and trike areas are near dwelling entrances.

- Defensible territory is created by narrow openings from the street, grade changes from the street, and eyes on the interior open space.

**PATTERN**

**SHARED OPEN SPACE**

AMONG HOUSING, PROVIDE WELL-DEFINED, SMALL COURTYARD-SIZED SHARED OPEN SPACE WHICH IS COMPRISED OF SOFT- AND HARD-SURFACED AREAS, GOOD LANDSCAPING, AND HAS A VARIETY OF INFORMAL PLAY POSSIBILITIES FOR CHILDREN AS WELL AS SOCIAL POSSIBILITIES FOR ADULTS.

FURNISH IT WITH SAND AND WATER PLAY AREAS FOR YOUNG CHILDREN, SOME CLIMBING APPARATUS FOR ELEMENTARY-AGED CHILDREN, PERHAPS A SINGLE BASKETBALL HOOP, BENCHES, GARDENS, SLOPES, SOFT NIGHT LIGHTING, TABLES FOR GAMES OR PICNICS, AND GARBAGE RECEPTACLES.
RECOMMENDATIONS

- Locate SHARED OPEN SPACE on commonly-used paths where adults and children walk to shops, recreation facilities, other play areas, and along the shortest route to school.

- Ensure that all dwellings have ready access to the space, either directly from the unit or via ground-level private open space (Cooper, 1975).

- Where possible (as in new housing design), ensure a ratio of building height to open space of 1:5 to 1:8 (Travel Report, 1978, p. 155).

- Because children are the primary users to outdoor areas, it is important to tie shared open space into a NETWORK OF PLAY spaces in residential housing complexes.

- Provide a hierarchy of open space (Alexander, Ishikawa, and Silverstein, 1977) by ensuring that all SHARED OPEN SPACES are looked upon by smaller spaces and in turn look out upon larger, more public spaces.

- Provide activity pockets (see HOME-BASED ACTIVITY POCKETS) enclosed at the edges and NESTS FOR QUIET PLAY.

- Consider the provision of benches and tables for adults' activities, as well as a variety of sitting places, walls, and slopes.

- Provide DEGREES OF SHELTER

- As "children will be attracted to safe, interior landscaped areas of Radburn-type layouts only if they find them more interesting play spaces than the surrounding roads or parking areas," (Cooper, 1975), ensure a variety of activities including INFORMAL PAVED AREAS; CHILDREN'S GARDENS, etc. (see COMPREHENSIVE PLAYGROUND).

- As "children in the active-group-play age range (5-10) prefer to play in moderately sized, spatially-enclosed outdoor areas; as supervising adults like to be able to oversee the whole of such an area from some place in the dwelling; /and as / the maximum distance for recognizing and hailing someone is c. 70 feet, . . . the maximum dimension of the common open space
should approximate this. Supervision by adults is facilitated if the space is roughly square or rectangular in shape, (Cooper, 1975).

- Provide many vertical elements (Travel Report, 1978, p. 152), including fences benches, trees, platforms, garbage sheds, steps and slopes— as well as the other variety of small spaces, changes in level, changes in surface, stair seats, bushes, plantings, colors, textures, basketball hoop, overhead elements, etc.

- Visual relief can be provided to open spaces by using surplus soil, dirt and stone mounds, and wind rows of trees and bushes. These elements with their ambiguous play qualities are especially appealing to children. Mounds, bushes, and rows of trees also provide protection from the weather and when combined with other forms of shelter, such as roof overhangs and walls, can greatly extend the seasonal use of play areas, (See FAVORABLE MICROCLIMATE).

RELATED ITEMS

NEIGHBORHOOD-BASED PLAY
NETWORK OF PLAY
COMPREHENSIVE PLAYGROUNDS
FAVORABLE MICROCLIMATES
CONTROLLED ACCESS
VIEWS TO AND FROM PLAY AREAS
INFORMAL PAVED AREAS
HOME-BASED ACTIVITY POCKETS
CHILDREN'S GARDENS
NESTS FOR QUIET PLAY
WATER PLAY AREAS
PROTECTED SAND AND DIRT PLAY AREAS
RETREAT AND BREAKAWAY POINTS
DEGREES OF SHELTER
THE STREET HAS ALWAYS BEEN A NATURAL PLAYGROUND FOR CHILDREN IN RESIDENTIAL AREAS. SOME FORMS OF PLAY NATURALLY REQUIRE HARD SURFACES IN ORDER TO TAKE PLACE SUCCESSFULLY. BUT A SURPRISING AMOUNT OF OTHER PLAY ALSO OCCURS ON HARD SURFACES.

Research by the Department of the Environment (1973) and by Vera Hole (1966) demonstrated that children spend a vast majority of their play time in places other than DESIGNATED PLAY STRUCTURE areas. The most popular places to play were streets and other paved areas.

The street has always been the natural playground for a town child, and it was not until the dominance of motor vehicles that it became transformed into a traffic preserve, exclusively. Street play, however, is with us as much as ever, even if the "playgrounds" are nothing less than a danger to life. For lack of something better, children will still play in the street or car park. Among toys, the vehicle dominates to a greater extent than ever before, and they need a level surface. If the surface of the street is more suitable for this kind of play than the playing areas, it is easy to see where the child will be. (Bengtsson, 1970, p. 188)

As Bengtsson suggests, with the dominance of wheeled toys, paved streets provide ideal smooth runways which are often more suitable and more expansive than those in parks and recreation areas. Hence, there is little incentive for children to stay out of the streets.

Numerous other studies have shown that a very large amount of children's play occurs on hard surfaces, even when extensive grassy areas are provided. One study, for example, found that 19% of children's activities occurred on grassy areas which comprised 44%
of the site, while 60% occurred on paved areas which comprised 50% of the site (Cooper Marcus, 1974).

On another front, sociological studies in urban residential areas, (Fried and Gleicher, 1961; Brower and Williamson, 1973) report that many low-income families often prefer the street-front portion of their dwellings to parks for the excitement, convenience, and social opportunities it affords. Parents can easily monitor their children's activities from inside, or they can sit on their front porch or steps to watch children play as well as socialize with passersby.

Neighborhood spaces have also been identified (Hester, 1975) as being important to the socialization process of young children. Brower (1973) and Cooper Marcus (1974) found passive observational activities of children to be a significant part of informal paved area play activities. Children can act out roled imitating others and test out new skills.

Many games require hard surfaces: wheel toys, hop scotch, roller skating, basketball, four-square, tennis; and even some traditionally soft-surface games like baseball and kickball are often played by children on hard surfaces. In addition, of course, the provision of some hard surfaces provides places for games in damp weather or by shoveling away snow.

In addition to planned hard-surface play areas, like basketball courts, favorite hard-surface areas include streets, footpaths and sidewalks, entrance ways, parking lots, and specially-designed hard-surface gathering areas like squares or courts.

In many housing areas, including the Radburn-style military installations visited, the parking lot and front curb area become favorite play spaces despite the housing planners' provision of landscaped interiors to the site (e.g., Department of the Environment, 1973). This can be interpreted as due to the lack of other more suitable hard-surface areas. One third of the hard-surface play at St Francis Square Housing Development (see Travel Report, 1978) was observed to take place on footpaths within the site. (Additional, but lesser amounts of play occurred on peripheral parking lots and perimeter sidewalks.)
Though children often gravitate naturally toward streets and informal paved areas, it may be that interior courts designed in the correct proportions and adequately provided with a variety of hard surfaces may attract even more play activity.

At both military installations and civilian sites visited, hard surfaces were observed to be well used for a variety of ball games (e.g., Fort Hood; the Irvine Comprehensive Playground; and the Mary B. Connolly Children's Playground; see Travel Report, 1978).

In a major book on the neighborhood as children's play spaces, Pollowy (1977) advocates that "streets should definitely be reconsidered and redesigned in view of their potential as children's play spaces" (p.155). Some communities have experimented with creating cul-de-sacs for children's play, blocking off other streets, and diverting traffic to make corners as play nodes.

Final arguments in favor of paved area plan and street play in particular are that it provides for play in all seasons, requires little maintenance, provides for a variety of experiences, and allows easy accessibility and mobility.

A playground consisting only of lawn is not enough to attract the children away from the street, as they cannot play on grass their everyday games such as hopscotch, marbles, hoops, ball games, riding tricycles and scooters. A playground without some hard surfaces of "play roads" and paved paths, which can serve as a substitute for roads, is insufficient. The hard surface must be kept clear of playground equipment so that action games are not hindered. All equipment, including walls for ball games, should be placed near the periphery. (Lederman and Trachsel, 1968, p.11)
INFORMAL PAVED AREAS

PROVIDE A VARIETY OF PAVED AREAS FOR CHILDREN'S PLAY TO INCLUDE WIDE PATHWAYS, SMALL AREAS OFF THE CIRCULATION SYSTEM, "PLAY ROADS," AND HARD-SURFACE COURTS. PROVIDE SPECIAL HARD-SURFACE BALL GAME AREAS. DESIGN STREETS AND INTERSECTIONS WITH CHILDREN IN MIND. PLAN STREET PLAY ELEMENTS IN CONJUNCTION WITH DESIGNATED PLAY SPACES.

RECOMMENDATIONS

- All comprehensive playgrounds and networks of play should have a liberal amount of planned hard-surface areas for children's play. For reasons of providing also for unstructured, spontaneous, and quiet games which require different, softer settings, it would be unwise to create play areas which are predominantly hard-surfaced.

- Hard surfaces, horizontal and vertical, must be designed as play areas for wheel toys, ball play, and other "street play" activities.

- Slopes included in paved areas are highly used (Bengtsson, 1970).

- Sidewalks and curb areas must be made safe for play: sidewalks should be widened; traffic lanes should be reduced and traffic speed cut down; suitable street front perches and sitting places should be provided; all spaces should be paved, well lit, serviced with occasional trash cans, and shaded from extreme winds and sun.

- Some streets or intersections (e.g., near play areas) may be blocked off at certain hours, for certain days, or even whole seasons, as play areas.

- Hard surfaces in play areas should be near the perimeter and linked visually with the street.

- For safety, wheel toy areas and paths should not over-run other paved play areas. Markings on pavement and natural barriers (e.g., steps) can discourage vehicle traffic.
• Places for watchers (e.g., curbs, steps) should be a part of paved play areas. If these can also let watchers see things going by on the actual street, so much the better. As suggested by Alexander, Ishikawa, and Silverstein (1977), steps can be particularly appealing for street watching if they give the viewer a vantage point, but are low enough to put them "in the action."

• Streets in housing areas can be planned to support both vehicle traffic and street play.

• Entries to residences must be planned to be amenable to doorstep play (e.g., small play yards for very young children right at the doorstep).

• Sidewalks in housing areas and in conjunction with NETWORK OF PLAY should be wide enough to accommodate wheel toy play as well as pedestrian movement. Sidewalks for movement and play can be as wide as thirty feet (Jacobs, 195), though fifteen- to twenty-foot sidewalks in the center of housing areas and ten feet on the periphery still allow for many activities. It is important, furthermore, that these sidewalks intermingle with other activities, are immediately convenient and interesting, and have minor crooks and irregularities to provide nooks for various types of play.

• Court yards with partial-paved surfaces can be provided in the interior of blocks of housing. The best model we know of for this is St. Francis Square Housing Development (see Travel Report, 1978).

• Pedestrian paths or paved areas should be provided with good sight lines at all corners, intersections, and junctions with roads.

• The intersections between path and road systems should allow the free flow of activity of wheeled vehicles in particular; steps, high curbs, and railings should be avoided as much as possible.
RELATED ITEMS

NEIGHBORHOOD-BASED PLAY
NETWORK OF PLAY
COMPREHENSIVE PLAYGROUNDS
SHARED OPEN SPACE
HOME-BASED ACTIVITY POCKETS
DESIGNATED PLAY STRUCTURES
NESTS FOR QUIET PLAY
ISSUE
A GREAT DEAL OF PLAY, PARTICULARLY OF CHILDREN UNDER FIVE OR SO, TAKES PLACE CLOSE TO THE DWELLING ENTRANCE. WHEN THEY ARE PLAYING, YOUNG CHILDREN WANT TO BE WITHIN SEEING AND HEARING DISTANCE OF THEIR PARENTS OR OTHER ADULT CAREGIVERS, AND PARENTS TEND TO PREFER THIS TOO. AVAILABLE SPACES AROUND THE HOME SELDOM OFFER ADEQUATE OPPORTUNITIES FOR CHILDREN'S PLAY ACTIVITIES.

JUSTIFICATION
As they grow, very young children need to expand their indoor-oriented physical and social activities to include outdoor activities. Neighborhood parks and playfields are sometimes unsafe or inconvenient for small children to use. In addition, mothers may be housebound by responsibilities such as tending infants, cooking or housekeeping chores, and are unable to accompany their children to public recreational sites. If the immediate neighborhood is not secure from traffic or human dangers, parents have little choice except to require that their young children play at home.

Jane Jacobs (1961) stresses that spaces which accommodate home-based play are important not only for the play opportunities offered young children, but also for the informal social networks which may develop among adults, particularly home-bound adults such as young mothers and the elderly (see SHARED OPEN SPACES). In addition, the intensive use of outdoor space by neighborhood residents results in a safer atmosphere for young children who benefit from the intervention potential afforded by many "eyes on the street."

It is therefore important to provide protected pockets of space around and between dwellings which are visible from, but not part of, major circulation routes along streets and sidewalks, (see INFORMAL PAVED AREAS).

Favorite play places of this type for young children—and their parents—include: front porches; front sidewalks; nooks around trees and bushes; grassy slopes; recessed entry areas and entrance transitions; carports and driveways; gardens and other planted areas; doorsteps; and small courtyards or small fenced courts.
PATTERN

HOME-BASED ACTIVITY POCKETS

PROVIDE PROTECTED POCKETS OF SPACE AROUND DWELLING ENTRANCES AND AROUND AND BETWEEN DWELLINGS WHERE CHILDREN CAN PLAY, AND WHERE ADULTS CAN NATURALLY OBSERVE THEIR ACTIVITIES FROM INSIDE OF THESE DWELLINGS. MAKE THEM VISIBLE FROM, BUT NOT PART OF, MAJOR CIRCULATION PATHS ALONG STREETS AND SIDEWALKS. SCALE THEM FOR 1-3 CHILDREN.

RECOMMENDATIONS

- Provide attached porches 6 to 10 ft. wide, deep overhangs of at least 6 ft., or low walls with openings which small children can see through in order to create enclosures which do not isolate them from other neighborhood activities.

- Raised porches should be surrounded by a barrier which permits children to see other activities but which protects them from falling to the ground below.

- Recessed entry ways, carports, front steps, and front side-walks should be designed for children's play.

- Enclosed yards, porches, and other semi-private spaces should be highly visible from inside the home. Kitchen, den, or study windows overlooking these spaces allow parents to watch and hear their children while performing adult tasks.

- Provide a number of intimate nooks and crannies (see NESTS FOR QUIET PLAY) defined by natural vegetation and ground level changes.

- Provide a variety of materials such as grass, sand, gravel, wood, bricks, or concrete to accommodate a variety of children's play activities.

- Provide gentle slopes to offer opportunities for pushing and riding wheeled toys.

- Small pockets around or between houses or small apartment buildings can be created by separating them from the street with barriers such as level changes, low walls, plantings, mounds and varying material textures.
- A grouping pattern of small rowhouse units with closely-spaced and facing entrances makes it easy for a small group of children to play within earshot and eyeshot of parents.

- A few steps, benches, or a low wall permit parents or caregivers to sit to watch their children and to interact with other adults.

- Small courtyards or small, fenced courts with a combination of paved and natural surfaces, and perhaps with gardens and other loose dirt or sand in which play is permitted, make lovely children's HOME-BASED PLAY areas.

- All play spaces should be oriented to offer protection from the sun, wind, and rain (see DEGREES OF SHELTER).

RELATED ITEMS
- NEIGHBORHOOD-BASED PLAY
- VIEWS TO AND FROM PLAY AREAS
- SEMI-ENCLOSED PLAY SPACES FOR YOUNG CHILDREN
- DEGREES OF SHELTER
- SHARED OPEN SPACE
- INFORMAL PAVED AREAS
- CHILDREN'S GARDENS
- NESTS FOR QUIET PLAY
- PROTECTED SAND AND DIRT PLAY AREAS
- LANDSCAPING MATERIALS
PROVISION OF AREAS FOR PICK-UP Sports IS AN INTEGRAL PART OF ANY COMPREHENSIVE CHILDREN'S PLAYGROUND PLAN.

Pick-up games, informal sports, and large-group play are integral parts of the full range of children's outdoor play behavior, and can engage children for long and fun-filled hours.

In addition to their obvious benefit for gross motor and perceptual-motor development, team games also encourage children to develop social skills of communication, cooperation, and and competition.

Formal sport fields for organized, league play are outside the scope of this design guide, but informal playing fields for pick-up games, practice, and informal sports are an important part of any comprehensive children's playground plan.

Football, basketball, and baseball are popular children's outdoor sports, though at many elementary schools informal baseball is declining relative to kickball. Soccer and tennis are rapidly increasing in popularity, and communities are asking for new or expanded facilities for these games.

OPEN GRASSY PLAYING AREAS

PROVIDE AN OPEN, GRASSY, MULTIPURPOSE PLAYING FIELD FOR SOCCER, FOOTBALL, AND BASEBALL.

SCALE ALL OF THESE TO ELEMENTARY-SCHOOL AGE CHILDREN'S NEEDS, NOT REGULATION LEAGUE ACTION.
RECOMMENDATIONS

- Whereas league football and soccer require upwards of 75,000 sq. ft. (almost 2 acres) including end zones and side lines, a reasonable size for a children's open playing field should be approximately 45,000 sq. ft (one acre). Minimum size for children's informal soccer would be 300 ft. x 150 ft.

- Provision should be made for length to end to end games and for 2-3 games across, and for an informal baseball diamond and backstop at one end corner.

- Site the open playing field so that noise will not carry to surrounding houses, yet place it in the middle of the action, perhaps in an open area between two proximal housing complexes.

- Ring the playing fields with hedges, bushes, and tall grasses to provide NESTS FOR QUIET PLAY.
- Provide benches and grassy knolls nearby all areas for onlookers.

- In northern climates make at least one of the outdoor areas flat and depressed for flooding for winter skating; consider a warming house and storage for snow scraping equipment nearby (which might double-function with an adventure playground summer hut).

- Provide OUTDOOR STORAGE.

**RELATED ITEMS**

COMPREHENSIVE PLAYGROUNDS

FAVORABLE MICROCLIMATES

VIEWS TO AND FROM PLAY AREAS

HARD-SURFACE PLAYING AREAS

LANDSCAPING MATERIALS TO FIT ACTIVITIES

OUTDOOR STORAGE
ISSUE
PROVISION OF AREAS FOR SPORTS IS AN INTEGRAL PART OF ANY COMPREHENSIVE CHILDREN'S PLAYGROUND. CHILDREN GRAVITATE TOWARD HARD-SURFACE PLAY AREAS AND REQUEST HARD SURFACES FOR INFORMAL BALL GAMES.

JUSTIFICATION
Pick up games, informal sports, and large-group play are integral parts of the full range of children's outdoor play behavior, and can engage children for long and fun-filled hours.

In addition to their obvious benefit for gross motor and perceptual-motor development, team games also encourage children to develop social skills of communication, cooperation, and competition.

There are other behavioral considerations which are often overlooked, but which have importance in deciding where to site and how to lay out games areas. An important conclusion from one of Clare Cooper's (1975) studies of housing design and children's outdoor needs, is that teenagers like informal gathering places where they can "watch the action." Teenagers and preteens like to socialize, flirt, show off, and see and be seen by their peers. This is often the hidden agenda for boys' basketball and for girls "casually" passing by the basketball area. When informal sports are not in the center of the action, they are often underutilized or even abandoned.

PATTERN
HARD-SURFACE PLAYING AREAS

PROVIDE OPEN, HARD-SURFACE AREAS FOR BASKETBALL, KICKBALL, AND TENNIS.

RECOMMENDATIONS
- Provide hard-surface playing areas for basketball, kickball, and tennis. For children, these should be approximately 3,700 sq. ft. for basketball; 14,400 sq. ft. for two tennis courts; and 14,000-21,000 sq. ft. for kickball area.
- Site the hard-surface areas, especially the basketball and tennis areas, so they are centralized and visible without intruding on other activities, so they are in the center of the action, perhaps adjacent to a central housing parking lot.

- Provide benches and grassy knolls near by all areas for onlookers.

- Provide VIEWS TO AND FROM other activity areas.

- Basketball, tennis, and other hard-surface areas should be well-lit enough for nighttime use without the lighting being so bright as to disturb neighbors.

- Provide OUTDOOR STORAGE.

**RELATED ITEMS**

- COMPREHENSIVE PLAYGROUND
- OPEN GRASSY PLAY AREAS
- VIEWS TO AND FROM PLAY AREAS
- FAVORABLE MICROCLIMATES
- OUTDOOR STORAGE
- LANDSCAPING MATERIALS TO FIT ACTIVITIES
ISSUE PROVIDING PROGRAMS AND SETTINGS WHICH INTEGRATE COGNITIVE, SOCIAL, AND PHYSICAL PLAY IN A FREE AND EXCITING ENVIRONMENT.

JUSTIFICATION Adventure play has been described in Part I of this document. The numerous sources on adventure play (e.g., Lady Allen, 1968, Bengtsson, 1974, Cooper, 1970, etc.) all agree that adventure play programs fulfill more of children's play needs than any other single type of play program. Observation and interviews by team members showed that when children have the choice, they prefer adventure play to any other type (Travel Report, 1978).

Research by Hayward, Rothenberg and Beasley (1974) showed that, given the choice, more school-age children use adventure playgrounds than all other types of playgrounds combined. Further, the vast majority came at least one (and usually more) time per week, and this decision to come was made on their own (vs. having an adult decide as was the case for the majority of children at other play areas). Also, children tended to stay more than twice as long at adventure playgrounds as any other type (75 minutes vs. 21 and 32 minutes).
As Robin Moore (1974) says:

The opportunity for children to shape their own environment is fundamental to their healthy development and is the only way to ensure them adequate choices to meet their diverse needs. (p. 641)

The most necessary elements for adventure play are 1) a site, 2) a playleader, and 3) junk. Other things which are useful include a telephone for locating and soliciting more junk, water for play, plants and clean-up, tools of a reasonable quality, toilets if none are available nearby, electricity for lights and equipment, a hut for leaders, tool storage and rainy day play, and the obligatory solid fence to screen the "messiness" from housing areas.
European adventure play areas have been operating very successfully for years. A few have been established in the U.S. with enthusiastic response from children and some resistance from adults. Because adults may see adventure play areas as chaotic blots on the landscape, designers must pay special attention to siting and creation of visual barriers (Cooper, 1975). The siting of Irvine Adventure Playground (see Travel Report, 1978) is instructive.

Other design considerations include unloading zones for trucks delivering "junk" separate from children's entrance, storage for equipment, tools, etc., and a safe open space for fires (CMHC Pit 2).
ADVENTURE PLAY AREAS

AN ADVENTURE PLAY PROGRAM SHOULD INCLUDE A LEADER, A FENCED AREA, UTILITIES AS NEEDED, AND PLENTY OF JUNK MATERIALS.

RECOMMENDATIONS

- Adventure play should be available to all children within distances prescribed in "TYPE AND LOCATION."

- Adventure play areas must have (a) play-leader(s).

- Adventure play must be screened from view when near housing, by fences which can be locked if necessary for safety reasons.

- Adventure play areas should have two separate entries—one for children, one for vehicle unloading.

- Lockable, weatherproof storage for equipment is essential.

- Utilities should include electricity, water, and phone if at all possible.

- If a leader's hut is constructed, it will help extend the adventure play season. Allow children and adult volunteers to be involved in building this as a first project.

- Size of adventure play area will range from 1/3 to 1 1/2 acres depending on use and number of children available to use it (Pollowy, 1977; Allen, 1968).
ISSUE

CHILDREN, EVEN THE VERY YOUNG, NEED TO BE ABLE TO MANIPULATE AND FORM THEIR OWN ENVIRONMENT, TO DISCOVER THEIR OWN CAPABILITIES AND STRETCH THEIR IMAGINATIONS.

JUSTIFICATION

As has been stated in ADVENTURE PLAY AREAS, adventure play satisfies more play needs--cognitive, social and physical--than any other single type of play area.

But many parents may feel uncomfortable having very young children use tools, nails, rough lumber, and other LOOSE PARTS prevalent on adventure playgrounds.

An alternative to adventure play for very young children is the creative playground. This type of playground began in Sweden and included pre-designed LOOSE PARTS which, without nails, could be put together in numerous combinations to form play houses, climbing structures, and anything else a child might imagine (see Allen, 1968; Rock, 1975). Imagine giant tinker-toys or huge lincoln logs, and the type of building experience available in creative playgrounds becomes apparent.

The only creative playground to date on the North American continent exists at Harbourfront in Toronto. It is built in conjunction with the adventure playground there.

A playleader, a storage hut, and LOOSE PARTS are all that is needed for a successful playground. Staff find that most children separate themselves by age--older school-age children to adventure play, younger pre-school children to creative play.

To adults, creative playgrounds have the advantages of added safety and neatness, as all loose parts are put away at night.

From a description of William Rock (1975), the originator and landscape architect of the Harbourfront Creative Playground:
Creative-play also provides an opportunity for children to manipulate their environment to achieve their own ends and to sense that the world around them can be changed and need not be taken as given.

Opportunities for adults to interact and socialize while watching children play with their peers were also provided. This is an important part of the concept as most, if not all of the children of this age group (preschoolers) are brought to the play area and supervised by older children, parents, or other adults.

Play-leaders are essential to the operation of a creative playground. Their main task is to encourage the child's creative ability at the restraint of their own. The play-leader in this context is a facilitator helping children in their play and providing a fertile environment full of loose materials and opportunities for change, experimentation, and discovery. (p. 8)

**CREATIVE PLAY AREAS**

**CREATIVE PLAY AREAS REQUIRE PRE-DESIGNED LOOSE PARTS, STORAGE, AND A PLAYLEADER. THEY SHOULD BE LOCATED WHERE THERE IS A CONCENTRATION OF YOUNGER CHILDREN.**

**RECOMMENDATIONS**

- Creative play areas must have a qualified playleader in attendance when open.
- It is advisable, though unlike adventure play areas, not mandatory to have the site partially enclosed.
- Creative play areas must have a large lockable storage shed accessible to children during open hours. Provide a raised doorway which will not be blocked by snow and ice.
- Provide sand as a good base for building and LOOSE PART when dampened.
• Provide a water source to add bonuses in building, arts and crafts, and sand play.

• Design and construct large-scale modular parts. Examples would include cubes, solid rectangles, ladders, planks, rounds, much like an oversized set of child-care center unit blocks. They should be made of a light durable wood, should be constructed without nails, should be finished with a non-toxic polyurethane, and will need to be refinished annually (resanding and resurfacing).

• Creative play areas are ideal in conjunction with child-care centers, preschools and kindergartens, and should be an integral part of COMPREHENSIVE PLAYGROUNDS and community NETWORKS OF PLAY.

RELATED ITEMS

NETWORK OF PLAY
COMPREHENSIVE PLAYGROUNDS
SEMI-ENCLOSED PLAY SPACES FOR YOUNG CHILDREN
ADVENTURE PLAY AREAS
LOOSE PARTS
OUTDOOR STORAGE
ISSUE

CHILDREN MUST EXPERIENCE NATURAL ELEMENTS IN ORDER TO DEVELOP A CONCEPT OF THEIR ROLE IN THE ECOLOGY OF THE EARTH.

JUSTIFICATION

In studying the child's conception of the world, Piaget (1967) discovered through interviewing children that non-rural children view the natural elements of the world as person-made. Despite where they live, children must develop an understanding of natural processes. Children in urban, suburban, and town areas may take longer to form the concept of a natural order and the natural world which exists independently of people's control. Children who don't have this concept are then unable to appreciate the needs of plants and animals and therefore cannot really understand their own places in the ecology of the world. Children must begin to experience life forms other than human beings in order to develop a conserving attitude toward nature.

Studying a prototypical natural environment area for children in Berkeley, California, we observed the following:

At Washington Environmental Yard, children have learned about ecological cycles and principles which they might never have learned from books. They have been provided with tremendously imaginative play areas which a concrete or wood structure playground could never provide. As one parent said, "The range of play and environmental education available are much richer than they can get elsewhere." The children have learned, as one boy said "how to respect natural systems. We used to break off limbs, but now we understand how to enjoy nature, how it is, how it grows, and how to take care of it so it won't die." (Travel Report, 1978, p. 166)
Robin Moore, creator of Washington Environmental yard, writes:

My concern is the physical environment in which children play and grow up—and the extent to which it allows for the realization of their full potential as humane individuals.

Nature's overwhelming diversity is its single most important offering to men. (Moore, n.d., p. 46)

During observations of children in Wilmington, Vermont, Roger Hart (1973) became aware of the critical importance of natural environments:

The need to feel effective as an agent of change is another strong factor in the healthy development of a child. Compared to the complex and ever-changing world of people, the natural environment remains relatively stable. A child can immediately see the transformations that he has effected. I have observed that children from about the age of three freely and frequently modify the environment if there are suitable areas available. (p. 67)

Hart also saw evidences of the value for social development for children using the natural environment:

I have observed cooperative play to be particularly encouraged when sand or dirt (ideally with water) is available as a play medium. A recent project on the sandbank behind the local elementary school engaged as many as thirty children under nine years of age in the building of an elaborate stream system. . . . Such social cooperation among peers is unknown in conventional playgrounds. (p. 69)

Miller (1972) also theorizes about the relationship between early experiences with nature and later responsibility towards it:

Children and youth in the natural outdoor environment are exposed to a wealth of play and learning opportunities. They don't need devices;
they make their own play equipment from the many natural resources at hand. But all the natural things—trees, streams, boulders, and grassy hillsides—provided by nature are disappearing. Gone are the many of nature's provisions for youngsters' play. The object of the creative outdoor play area, is in part, to highlight or feature some of the resources of the natural rural outdoors in a man-made environment. Special attention must be given to the design of urban play areas to make up for the loss of trees to climb, streams in which to cool hot dusty feet, and stone walls upon which to walk and balance.

There is a direct relationship between knowing the outdoors and appreciating it. There is a direct relationship between appreciating the outdoors and protecting it and improving its quality. Youngsters who grow up playing in the outdoors in a variety of outdoor settings and learning about it will be children and eventually adults who will seek to preserve and improve the outdoors for themselves and others. These children and adults will be concerned about pollution, overpopulation, extinction of animal and plant species, and other problems. (p. 14)

Grady Clay (1969) reports on a research study conducted by Lukashok and Lynch (1959) which was based on the assumption

"that present adult memories reflect actual childhood preoccupations." Or—that memories of childhood are important emotional underpinnings of modern man's life, and are to be laughed away or disregarded at our peril and great loss. (p. 134)

Their findings show:

These people remember most vividly those elements of their childhood which involved landscape—lawns and pavement surfaces, foliage, woods and green hills, and water in the landscape. (p. 134)
Another reinforcement of the theory that early experiences with nature are guidelines for future behavior was found in a comparative study by Bannerjee and Lynch (1977) of the spatial environment of adolescent people in several cultures. One finding was that "natural-pastoral values dominated children's preference for future living environments regardless of their present setting" (p. 114).

Joseph Lee, known as the "Father of the Playground Movement," once made a list of facilities he wished every child could have. This list includes:

Winter and summer woods, climbing trees
(one fitted with ropes).
Ponds to skate on, also a flooded
marsh running far in among the trees.
The stars, moon and sunsets appur-
tenant to these.
A cow pasture and other playing fields.
Several barns with horses, cows, pigs
and smells appropriate thereto . . . .
(in Butler, Pioneers in Public Recreation, 1965)

Children use these natural facilities very successfully as seen in the Washington Environmental Yard and the Wildwood School near Aspen, Colorado, which was designed by Robert Lewis. The creation of these areas was unique in that Washington Environmental Yard was developed from a black-topped school yard and that Wildwood School was placed underground to help preserve the pre-existent natural environment. Both of these approaches to providing natural areas for children demonstrate interesting challenges to designers.

Some natural elements to be considered in the design process include water, sand, dirt, land formations, fire, rocks, plants (cultivated and wild), animals (domestic and wild), bushes, and trees. (Patterns on PROTECTED SAND AND DIRT PLAY AREAS; WATER IN THE LANDSCAPE; SUPERVISIED FIRE AND COOKING AREA; FENCED ANIMAL AREA; CHILDREN'S GARDENS; PLANTING AND GROUND SHAPING; and ADVENTURE PLAY AREAS will follow.)
Trees are very special plants. Roger Hart (1973) found:

The natural environment offers a wealth of play potential for young children, with trees and small patches of water the most valued elements. One tree can engage a child for days at a time, or periodically, over a span of years. Manufacturers of playground equipment have found it impossible to recreate such richness. The children of Wilmington demonstrated to me that there are countless routes up "a good climbing tree;" many notches, cracks, or rough spots can be used, depending upon the child's desire for challenge at any time. Any kind of bush or tree allows children to exercise great creativity in the construction of houses, forts, tents, and imaginative laboratories. A mature tree is excellent, of course, for hanging a rope swing and has the added attraction of a host of insects. (p. 69)

Other values of trees:
- Trees provide shade.
- Trees become part of fantasy play.
- Trees provide leaves to play in in the fall.
- Trees provide natural air conditioning in hot weather through transpiration.
- Trees attract wildlife, birds, insects, squirrels, etc.
- Trees may flower and seed—providing more playthings.
- Trees provide edible fruits and nuts.
- Trees may easily be classified and differentiated by children. (Washington Environmental Yard has over 100 different kinds of trees.)

Rocks and land formations have many of the same climbing, sliding, classifying, weather-protective values as trees.

Natural geological formations or topographical features of the play site should be used and capitalized upon for a quality play environment. In cases where a site has not yet been selected, the topography of varied areas under consideration should be an important criterion for final determination of the site.

When a play area has been in existence for a long time, and then the site is devoid of interesting and worthwhile natural features and formations, efforts to improve the area should include plans to restore or create topographical features. (Miller, 1972, p. 32)

ENVIRONMENTAL YARDS

ENVIRONMENTAL YARDS SHOULD BE AVAILABLE TO ALL CHILDREN, PREFERABLY IN CONJUNCTION WITH CHILD-CARE FACILITIES AND ELEMENTARY SCHOOLS, BUT ALSO ACCESSIBLE AT ALL HOURS TO THE FULL COMMUNITY OF CHILDREN (INFANTS TO PRE-TEENAGERS) AND ADULTS. THESE AREAS SHOULD COMBINE PLAY WITH A DEVELOPING AWARENESS OF NATURAL CYCLES AND ECOLOGICAL BALANCE.

RECOMMENDATIONS

- When a rich natural area including varied topography, trees, wild plants, insect and animal life exists in the siting area, preserve and enhance that area as a special feature.

- Create small access points while protecting the area with some type of barrier. Where no natural area exists, create one using Washington Environmental Yard as an example of what can be done in a very short time.
• Choose plantings which have value for wildlife, for play potential, for fruit and nut production.

• Provide ways children can see plants' and animals' total life cycle in the natural state: seedling beds, glass-sided ant hill or bee hive, water cycle demonstrations, etc.

• Coordinate natural area parks with schools. Schools can use them as integral parts of their curriculum and can help in maintenance and development.

RELATED ITEMS

CHILDREN'S GARDENS
FENCED ANIMAL AREA
PROTECTED SAND AND DIRT PLAY AREAS
WATER IN THE LANDSCAPE
SUPERVISED FIRE AND COOKING AREA
PLANTING AND GROUND SHAPING
ADVENTURE PLAY AREAS
ISSUE

CHILDREN NEED TO RELATE DIRECTLY TO THE NATURAL WORLD AND LEARN THROUGH THE EXPERIENCE THAT THEY HAVE A PLACE IN THE ECOLOGICAL WHOLE.

JUSTIFICATION

Natural resources such as water, vegetation, dirt and small animals offer kids unique opportunities for exploration, sensory stimulation and learning, that cannot be provided by man-made materials.

(Childhood City Newsletter, 1977)

In studying the child's conception of the world, Piaget (1967) found that even children who knew that plants grow from seeds were less knowledgeable about where seeds come from. Children theorized that they "come from the store," "a man makes them," etc. Children need to experience the entire life cycles of plants, to understand that humans are only part of a larger whole, and that the entire world is not man-made.

This experience can be gained through the use of gardens. Gardening helps children develop a sense of appreciation for nature and for growing things. They learn to classify plants as being food, flowers, weeds, etc. They learn about processes and sequences of growth. Habits of observation are developed and there is an awareness of the time element as differences in growing times of different plants are observed. Children become aware of the texture, color, moisture, content, and density of different soils. They learn to measure distances while laying out plots and planting rows. They learn cooperation and develop a sense of group responsibility when using tools and also discover that specific tools have specific uses and need to be handled safely.
maximum per child is an appropriate size (Miller, p. 71).

- Plots should be able to be shared or used by an individual (Lady Allen, 1968).
- Rapid growth vegetables (e.g., lettuce, radishes, beans, etc) are especially rewarding choices (Central Mortgage and Housing Corporation, 1978).
- Storage for tools should be adjacent and lockable.
- Garden areas should be near animal areas to demonstrate most clearly the interdependence of plants and animals.
- Garden areas may be near fire/cooking areas to emphasize the uses of plants by people.
- Garden areas may be near wildlife "natural" areas to emphasize distinctions and similarities between wild and domesticated plants, pollination and seeding of both, uses of both, etc.
- In some climates, for children to participate in the entire life cycle of plants, a greenhouse area should be provided. Though it need not be, this may be in conjunction with child-care or other school facilities.
Lady Allen suggests another value to gardens:

One of the great advantages of having a garden in a playground is that it gives the children a continuous, constructive interest. From the age of five to twelve, or sometimes even later, they have an instinctive desire to grow something, be it food, flowers, or pets. There is much talk about discipline. The discipline of the seasons, the weather, the type of soil and its feeding are valuable in showing children that they must obey certain rules in order to get results—and results are what they want.

Since gardening must have adult supervision for children's enjoyment, garden spaces must be planned where such supervision is possible. Alexander, Ishikawa, and Silverstein (1977) suggest plots for family gardens near living spaces where parents and children can garden together and harvest at home. The Pacific Oaks College Children's School includes a garden as part of the outdoor play yard (Travel Report, 1978).

PATTERN

CHILDREN'S GARDENS

IN ADULT SUPERVISED AREAS, CHILDREN SHOULD HAVE THEIR OWN GARDEN PLOTS TO EXPERIENCE PLANT GROWTH, CARE, AND PRODUCE. SOME WILDLIFE PLANT AREAS COULD ALSO BE AVAILABLE IN NON-SUPERVISED PLAY AREAS.

RECOMMENDATIONS

- An area should be provided for children to grow flowers and vegetables. Some of these plants could be used to feed any animals which may be kept at supervised garden/animal areas.

- The garden area should be divided into small plots for each child to grow things.

- Gardening plots for children should be broken up with walkways to allow safe passage through them (Sutcliff, 1976).

- Plots should be no more than 2 ft. wide to allow children to reach without walking on plants (Central Mortgage and Housing Corporation, 1978). Twenty-four sq. ft.
THE INTERACTION OF CHILDREN WITH PLANTS AND ANIMALS ALLOWS THEM TO GAIN KNOWLEDGE, UNDERSTANDING, AND APPRECIATION OF LIVING THINGS. CONTACT WITH ANIMALS MAY ALSO PLAY A VITAL ROLE IN A CHILD'S EMOTIONAL DEVELOPMENT.

In studying the child's conception of the world, Piaget (1967) discovered that the clear connection adults perceive between animals and animal products is lost to children. Connections between chicken-egg, cow-milk, bee-honey are not readily apparent to a child who has little or no experience with these particular animals. Children who take the perspective of the entire environment as being man-made, have lost their essential link with the surrounding environment which they must eventually rely on and conserve.

Children, however, do appreciate the value and wonder of animals as an intrinsic part of the world. As their experience with animals increases, children become aware of likenesses and differences between animals and begin to classify them in appropriate groups. Children learn that other living creatures may depend on their actions. This leads to a sense of responsibility and feelings of tenderness and love. Animals may be less demanding than the humans they know.

Robin Moore, in surveying children at Washington Elementary School, Berkeley, found that children mentioned an amazing number of organisms they liked which may be called "wildlife:" birds, butterflies, gophers, snakes, ants, ladybugs, beetles, salamanders, mice, turtles, frogs, fishes, etc. "I'd like to see animals, 'cause I just love animals..." wrote one girl.

Another value which experience with animals can give to children is the chance to love and care for a being which has no authority over them. Alexander, Ishikawa, and Silverstein (1977) cite evidence which suggests that children who have difficulty relating to other people can relate to and love animals, and that this can in turn help them respond to people again.
Bengtsson (1970), Miller (1972), and Lady Allen (1968) all mention the positive values for children of contact with animals. Miller suggests a children's farm where children can see the entire life cycles of useful domestic farm animals. Lady Allen suggests animals in residence at supervised playgrounds and also (alternately perhaps) a travelling petting zoo in the summer. Bengtsson recommends animals but cautions:

*If a playground is to be equipped with animals, a fundamental condition must be that their well-being is guaranteed. . . . According to experiments made in various playgrounds, this does not seem to pose any problem . . . but it should not be assumed that their upkeep is to be left entirely to the children. . . . Supervision is still essential.* (pp. 168-169)

**PATTERN**

**FENCED ANIMAL AREAS**

**RECOMMENDATIONS**

- A supervised area should be provided in which children can come into contact with animals.

- Rabbits, sheep, goats, guinea pigs, and other tame animals should be provided.

- Provisions should be made for the proper care of the animals including care during weekends and vacations. The thorough cleanliness of pens, cages, and the animals themselves should be supervised, but their upkeep should be left to the children, if possible.

- Animals should be contained in locked cages or in an enclosed courtyard to protect them from vandalism.

- A contained area should be provided that allows a child to capture an animal easily and then play with it.

- Design child-sized hutches which protect smaller animals from the weather and yet provide easy viewing and access to children.
- Disturbances caused by contact with animals should be minimized. They should be kept out of main circulation paths in a quiet part of the outdoor play area, and given private spaces away from children.

- Plan animal hutches, watering places, etc., within a fenced and protected area, with easy access to children and on children's natural paths through the community.

- Plan areas where wildlife will thrive and where children can observe ants, snakes, etc., in their natural habitat to increase children's respect for and enjoyment of the natural world.

- Plan animal areas adjacent to or in conjunction with plant areas so that children can see natural connections—bees pollinate, animals eat, etc.

**RELATED ITEMS**

**ENVIRONMENTAL YARDS**

**CHILDREN'S GARDENS**
DESIGNATED PLAY STRUCTURES

ISSUE

PLAY EQUIPMENT HELPS INTEGRATE TYPES OF PLAY WHILE PROVIDING AS MANY LARGE MUSCLE ACTIVITIES AS POSSIBLE.

JUSTIFICATION

When most people imagine "playgrounds" the image called forth is one of an area filled with traditional metal equipment designed primarily for large-muscle activity. Since many people used to feel that children's play value lies in "letting off steam," it seemed reasonable to provide primarily for large-muscle play and ignore other play values.

Large-muscle play is still considered vital by play experts. Children need to climb, master graded challenges, and develop muscle coordination (see PLAY ABOVE THE GROUND). Children also need an element of risk and physical accomplishment (see CHALLENGING ENVIRONMENTS WITHOUT UNDUE RISK).

Osmom gives the following list of large muscle activities which children need to engage in:

a) running
b) throwing
c) jumping
d) climbing
e) pedalling
f) pushing and pulling
g) hitting and punching
i) kicking
j) creeping and crawling
k) rhythmic exercises
l) somersaulting
m) rolling and tumbling
n) balancing (Osmom, 1971, p. 101)

Friedburg adds two essentials which are missing in Osmom's list--swinging and sliding:

It is essential that the play areas provide equipment that allows children to jump, swing, slide, climb, crawl, run, find out how high, far, and fast they can go. The adult's caution tends to reduce the amount of challenge because adults underestimate a child's discretion. Even while learning their capabilities, children rarely overextend themselves.
At the same time it is essential to take into account a child's reach, the distance he or she can jump, climb, and so on, because all activities must be scaled to the child's size and skill level. (Friedburg, 1970, p. 4)

There are many choices currently available from play equipment manufacturers which do provide for a range of large-muscle activities.

Traditional metal equipment--swings, slides, merry-go-rounds, teeter-totters, monkey bars, etc., whether they are plain or decorated to look like rocket ships, covered wagons, or whatever--do in fact provide for large muscle activity (though they also are the most dangerous types of play apparatus--see CHALLENGING ENVIRONMENTS WITHOUT UNDUE RISK and SAFETY).
Contemporary play equipment made of wood and rope also provide a variety of large-muscle activities--climbing nets, slides, tire and rope swings, ramps, steps, etc. They usually provide platforms at several levels (see PLAY ABOVE THE GROUND) and sometimes nooks and crannies (see RETREAT AND BREAKAWAY, and SPECIFIC AND AMBIGUOUS STAGES AND PROPS FOR DRAMATIC PLAY in Criteria Document-Child Support Services).

But both traditional and contemporary equipment as selected from manufacturers' catalogs may have severe limitations:

- Play equipment, which may actually dominate the site, frequently only allows large-muscle play--and discourages other equally developmentally-important types of play.

- Each type of large muscle play is usually provided at only one level of difficulty--paced alternatives for different developmental levels are not available.

- Safety considerations are neglected--large numbers of reports on the dangers of traditional metal equipment are published each year in newspapers across the
country. It takes little imagination to see that free-standing slides, hard-seat swings, traditional see-saws, and 10'-12' high metal bars are very dangerous. While children need challenges, risk of actual physical impairment is unnecessary.

- Safety problems may be less easy to spot in contemporary wood equipment. The major safety problem with structures which manufacturers try to make "all purpose" is the many conflicts which occur between activities. Circulation is confused and a toddler may be trying to crawl up a ramp which older children are sliding down. A rope swing and a slide may both deposit jumping children to the same spot at the same time. One set of steps may lead to and from so many areas children crash into each other frequently.

- There is usually not a clear linking of developmental activities. Typically each activity is isolated. The extreme example is a traditional playground with equipment set individually. Sliding doesn't get the child anywhere but to the ground, not to another activity. Large muscle play is not perceived as part of the whole play experience but as an isolated pastime.
In research of playgrounds which used only traditional equipment, Bishop, Peterson and Michaels (1972) found that swings and slides are considerably more attractive to children than are horizontal ladders, monkey bars, see-saws, or horizontal bars. They further found that children prefer thematic and colorful environments that were clearly recognizable as places to play. A third finding was that children prefer groups of 3-4 children over larger and smaller groups.

Cooper found that children prefer traditional equipment which moves (e.g., swings) over static architectural structures. However, she also found that designed play structures which incorporate features popular with children will be used:

Among those structures which have proved popular with children are those which involve a number of different ways of climbing down again (e.g., slide, slippery pole, pulley-swing); a variety of levels and sizes of spaces; some small and partially hidden spaces accessible only to smaller children; larger high-up spaces where older children can congregate, survey the scene, and feel a sense of mastery over the environment. (Cooper, 1975, p. 237)

Of children interviewed at Bolling Air Force Base and at Fort Hood where they had a choice of contemporary or traditional equipment, the clear choice was for contemporary equipment (Travel Report, 1978).

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PATTERN

DESIGNATED PLAY STRUCTURES

PLAY STRUCTURES SHOULD PROVIDE MANY LARGE-MUSCLE ACTIVITIES IN GRADED CHALLENGES. PLAY STRUCTURES SHOULD BE ZONED WITH IDENTIFIABLE CIRCULATION WHICH LEADS TO OTHER TYPES OF PLAY.

RECOMMENDATIONS

- Play equipment, whether traditional, contemporary, or especially built, should be used only as a part of an overall design to incorporate activity zones (as in CIRCLES AND WEDGES: DEFINED ZONES OF ACTIVITY).
- Play structures should only be used if they are large enough to support definite zones.

- If traditional equipment is used, plan it in conjunction with one or more other elements that would fulfill the symbolic needs which contemporary wood provides: the impression of warmer, softer, more protected hominess than the hard, cold institution-feeling of metal tubing.

- Play structures should double-function to provide for as many large-muscle activities as possible while also providing other play activities (e.g., AMBIGUOUS SETTINGS AND OBJECTS; RETREAT AND BREAKAWAY).

- Play structure circulation should encourage movement through progressively more difficult developmental tasks with stop-off places for RETREAT AND BREAKAWAY, and exits as a child reaches too difficult a challenge.
Play structures should always include swings (soft: tires, ropes, etc.) and slides of some kind—preferably located as to lead the child to another activity.

Play structures may include several activities. Cherry (1976) suggests as being developmentally important for younger children: rocking boat, rope ladders, rocking pan or flying saucer, barrel, ramps, and balance boards.

Include moving equipment for the very young.

RELATED ITEMS
CONTINUITY AND BRANCHING
PACED ALTERNATIVES
CLEAR ACCOMPLISHMENT POINTS
PLAY AREAS AS CHILDREN'S LANDMARKS
PROXIMITY OF PLAY ACTIVITIES
RANGE OF SOCIAL SCALE
CHALLENGING ENVIRONMENTS WITHOUT UNDUE RISK
PLAY ABOVE THE GROUND
CIRCLES AND WEDGES: DEFINED ZONES OF ACTIVITY
MAINTENANCE MINIMIZED
VARIETY OF 3-DIMENSIONAL SPACES
AMBIGUOUS SETTINGS AND OBJECTS
THE EXPLORATORY BEHAVIORS OF INFANTS ARE DEPENDENT UPON A STIMULATING SOCIAL AND PHYSICAL ENVIRONMENT, YET LITTLE CONCERN HAS BEEN GIVEN TO THE PARTICULAR QUALITIES WHICH PLAY ENVIRONMENTS FOR THIS AGE GROUP SHOULD HAVE. IN GENERAL, IF THE ENVIRONMENT WERE RIGHT, INFANTS WOULD PLAY OUTSIDE AS MUCH AS OLDER CHILDREN.

Millar (1968) describes infants as being "hungry" for stimuli when they are awake and comfortable. Chase and Williams (1974) suggest that the availability of objects appropriate to the sequential exploratory behaviors of infants may play an important role in the development and organization of thinking and understanding.

Because infants' levels of ability develop rapidly, they need stimulating play areas which offer a variety of graded challenges suitable to the full range of developmental stages. It is important that play things for infants and toddlers provide them with opportunities to experience the satisfaction of mastering their "world." Such experiences influence children's later development of confidence in their abilities.

Exploring by infants and toddlers usually involves moving toward, touching, and handling objects. This implies that for infant play environments, a variety of small, manipulable objects which can be visually examined, thrown, dropped, and squeezed, offer the greatest possibilities for infants and toddlers to repeatedly experience a bodily sensation which he or she is exploring. According to Millar (1968), this repetition is important to infants in order for them to test out, confirm, and "fix" an experience.

Evans and Saia (1972) stress that in addition to large and small muscle toys, it is important to provide opportunities for practicing sitting, standing, walking, and climbing skills. They suggest that padded steps of varying heights, simple climbing structures, and shallow pits which form a protective surrounding onto which toddlers can hold, are an aid for very young children to gain an awareness of their bodies and the forces acting on them.
There are few playgrounds in the U.S. which are explicitly designed for infants. The closest are the play yards immediately outside infant-care centers, which, with few exceptions, are dreadful smaller-sized versions of traditional play areas for older children. That which lacks developmental potential for older children certainly is inappropriate for infants who are developing at an even more rapid rate.

One positive example of an infant outdoor play space is the Pacific Oaks College Infant Care Center (Travel Report, 1978). A 1500 sq. ft. outdoor area adjoins a 700 sq. ft. indoor space and thereby provides a ratio of 90 sq. ft. of usable outdoor space per infant. The space is designed in a series of developmental steps from safe crawling space for the youngest infants (e.g., 4-5 months) to low climbing ramps, slides, and look-out places for older infants (e.g., 1-2 years). As the youngest children master crawling and shunting themselves over slight barriers between areas, more of the rest of the play area opens to them. Conversely, there is no way for an infant to get to a space which is too high, dangerous, or otherwise inappropriate for his or her developmental level—they cannot get to the steep wooden stairs until they have mastered slighter inclines; they cannot get to the loose sand (which the youngest would immediately ingest) until they have mastered fairly sophisticated crawling (which developmentally occurs at roughly the same time as when they are no longer interested in putting absolutely everything in their mouths), and so on.

The entire environment at the Pacific Oaks College Infant Care Center meets the principles of PACED ALTERNATIVES and CLEAR ACCOMPLISHMENT POINTS. It was the inspiration for our thoughts on this matter, and is a clear and powerful image to influence other designs of infant spaces.

INFANT PLAY SPACES

CREATE INFANT PLAY SPACES WHICH HAVE PACED ALTERNATIVES SCALED THROUGH A SERIES OF MOTOR AND PERCEPTUAL-MOTOR TASKS APPROPRIATE FOR INFANT DEVELOPMENT. CREATE THESE SPACES FROM SOFT CRAWLING SURFACES, WARM MATERIALS, AND PLAY THINGS WHICH ARE SCALED AND SAFE FOR USE BY INFANTS AND YOUNG TODDLERS.
RECOMMENDATIONS

- The designed environment and the equipment within it must be responsive to the infant's changing scale and posture—from crawling with eye level at 6" above ground to standing at 20". Pits and platforms as described by Evans (1972) offer ways to safely separate infants from toddlers who are moving about.

- A variety of developmentally-appropriate equipment and play things will provide a range of increasingly more challenging tasks for the rapidly changing abilities of infants. Gradually sloping slides, ramps and sets of carpeted steps with other soft surfaces around them offer opportunities for infants to master their use.

- Most infant areas should be visually supervised from close proximity, and those which might require quick intervention and help should provide direct, ready access for adults (see VIEWS TO AND FROM PLAY AREAS).

- Because young children are usually fascinated with their mirror image, a reflective surface which reflects the infants and their activities is an important addition to infant areas.

- Textures which are typically beyond infants' reaches should become accessible, e.g., sand, grass, smooth stone, etc.

- Safe infant-toddler play areas can be created by physically separating them from those of older children; yet sounds of and views to older children's areas should be provided by visual and aural connections.

- Soft, multi-textured crawling surfaces with the proper supports are needed to facilitate graduation from crawling to walking. A paved area in the infant area is also desirable as a surface for pushing or riding wheeled toys and vehicles.

RELATED ITEMS

PACED ALTERNATIVES
CLEAR ACCOMPLISHMENT POINTS
VIEWS TO AND FROM PLAY SPACES
SKATEBOARDING IS A PHENOMENA WHICH EBBS AND FLOWS IN POPULARITY, BUT WHICH, UNHAPPILY FOR MANY PARENTS, NEVER GOES AWAY.

The main issue with regard to skateboarding is not its contribution to overall development, but its danger and its apparent inevitability of being popular. Children will skateboard down steep streets, curl around stop signs, glide near parked cars, and so on. They also will do incredibly beautiful tricks involving handstands on boards, and aerial acrobatics. The danger cannot be underemphasized (manufacturers are now making great profits on special gear and pads), but neither can the apparent inevitability of this sport. Some communities have legislated against skateboarding on public thoroughfares, but if alternatives are not provided which equal or surpass the challenge and even risk of streets, children will continue to play in peril.

Skateboarding can be developed into a relatively safe and physically-developing activity. If properly designed, skateboard runs can provide safety for the child in two ways:

- removing sources of danger (e.g., parked and moving cars)
- providing PACED ALTERNATIVES (much like ski slopes) so that children can be challenged and can succeed at their own level without having to try too dangerous runs

If properly designed, skateboard runs can also provide sufficient challenge to excite children, and if properly located, it can still be the center of activity, thus meeting older pre-teenaged children's needs to be seen by their peers and to receive peer approval.

One such good example of a skateboard run is part of the Irvine Comprehensive Playground south of Los Angeles (see Travel Report, 1978). Here the skateboard track is adjacent to the adventure playground, the community building and library (and thus first aid, telephones, etc.). Yet it is built into a large hill,
has many twists and turns, and generally is an exciting child place.

**PATTERN**  

**SKATEBOARD RUNS**

As part of a comprehensive playground or network of play, provide a skateboard run. Build it into a hill, or use ground shaping to create a hill. Provide turns, embankments, twists, even perhaps a large-diameter tunnel.

**RECOMMENDATIONS**

- Locate skateboard runs as part of comprehensive playgrounds or networks of play.

- Keep the skateboard run separated from pedestrian and other traffic paths.

- Locate a first aid station and telephone adjacent to an adventure play area, a creative play area, an arts and crafts area, or some other children's center which has an adult playleader or supervisor.

- Slopes of 1-in-4 are common, with curved side walls and even the possibility of a complete tunnel.

**RELATED ITEMS**

Play Leaders  
Comprehensive Playgrounds  
Network of Play  
Challenging Environment Without Undue Risk
PLANNING FOR CHILDREN'S PLAY IS CONSIDERABLY MORE THAN JUST LAYING OUT VARIOUS INDEPENDENT, WELL-DEFINED PLAY AREAS.

Following only the preceding patterns for specific types of play areas could lead to a rigid and bland playground which is comprised of adjacent areas for different uses, but which does not have any overall organization or character. Antedates to this are the preceding organizing principles, the following qualities of play spaces, and the allowance for residual areas.

A playground is not simply comprised of adjacent, well-defined areas for different types of play (e.g., sports, kickball, climbing, adventure play). Rather it is, in large part, the residual or left-over spaces between these other spaces which tie the overall playscheme together and which provide much of the joy and excitement for children. It is in these unprogrammed spaces that children explore and invent, that they create their own fantasies from the random, unplanned assortment of environmental cues, and that they may just lie back and watch or dream.

As one of our clients recently said, "We need more places where children can retreat from highly structured and active play, where they can be quiet and just allow the world around them to come to them through all of their senses."

As part of our site visits and research on military bases, we observed several such spaces. At Fort Lewis, for instance, there were several places where edges of wooded areas near housing provided such spaces. In one case, a finger of wild grasses and small trees cut partially between a school designated play structure area and a grassy field. Paths and matted grass were seen throughout this area--clear evidence of its importance to children.

Such areas are natural links between other play areas and provide views to and from other areas.
PATTERN  RESIDUAL AREAS

PLAN RESIDUAL OR LEFT-OVER SPACES IN AND AROUND ALL OTHER SPECIFIC PLAY AREAS. USE NATURAL LANDSCAPING TO CREATE THESE SPACES. ALLOW GRASSES, WILD FLOWERS, BUSHES, AND TREES TO GROW IN A NATURAL MANNER.

RELATED ITEMS  NETWORK OF PLAY
COMPREHENSIVE PLAYGROUNDS
VIEWS TO AND FROM PLAY AREAS
SEPARATED BUT LINKED ZONES
NESTS FOR QUIET PLAY
LANDSCAPING MATERIALS