In designing specific play areas and spaces, there are a number of general issues to consider which will influence the character of each particular solution, and in return will influence the quality of the overall play setting. Most of these overriding principles will apply to all of the specific play areas. Overriding design principles are:

701 Ambiguous Settings and Objects
702 Loose Parts
703 Paced Alternatives
704 Challenging Environments Without Undue Risk
705 Nests of Quiet Play
706 Range of Social Scale
707 "Children Only" and Multi-Age Group Play Territories
708 Water Play Areas
709 Protected Sand and Dirt Play Areas
710 Play Above the Ground
711 Play Areas as Children's Landmarks
712 Clear Accomplishment Points
713 Retreat and Breakaway Points
714 Variety of 3-Dimensional Spaces
715 Small Arts and Crafts Nooks
716 Stages and Props
717 Supervised Fire and Cooking Area
718 Imageability and Orientation
719 Orderliness and Consistency
720 Emotional Release Points
721 Repetition and Multiple Coding
722 Barrier-Free Environment
ISSUE

CHILDREN'S SPONTANEOUS FANTASY PLAY IS STIMULATED BY AMBIGUOUS SETTINGS AND OBJECTS FROM WHICH THE CHILD CAN CREATE INNER FANTASIES, AND NOT BY THE MAJORITY OF OVERLY-SPECIFIC AND CONCRETE PLAY EQUIPMENT WHICH LITTERS THE NATION'S PLAYGROUNDS.

JUSTIFICATION

Considerable research in the area of child-environments indicates that ambiguous settings are necessary for a child's creative, imaginative, and self-initiating development (see summaries in Coates, 1976). In such settings, an undefined structure can become anything a child wishes, from a castle to a car, and the child can generalize play in order to create a personal setting or social role.

Ambiguous settings allow a child to imagine freely, without the intrusion of adult expectations in the form of specific representational objects.

Research conducted by Gary Moore in Australia shows that children indulge in fantasy play in two ways: informal or spontaneous fantasy which appears to be environmentally- or object-induced, and more structured and planned fantasy play which can happen anywhere (e.g., a group playing cowboys and Indians). Further, this research showed that fantasy play is a very fragile thing, the fabric of which can be shredded by the presence of an adult observer (Moore and Rose, 1976).
Defined spaces such as playhouses, garages, stores, and bridges evoke specific responses from a child. This modeling behavior is important for the exceptional child who is often over-protected and sheltered from real-world transitions. In this case, activities such as drawing curtains, washing dishes, etc., further intensify and reinforce appropriate modeling behaviors.

But for most children, "concrete turtles" are the nemesis of imagination. Ambiguous settings relate more specifically to imagination, emotional development, and representation abilities. More defined settings relate to role playing, personality development, and social interaction.

**PRINCIPLE**

**AMBIGUOUS SETTINGS AND OBJECTS**

*Provide areas and objects that are not overly concrete and are not explicit about an expected use.*

**RECOMMENDATIONS**

- Resist manufacturers' offerings which resemble real objects, e.g., a metal space ship, covered wagon, rocking horse, etc.
- Allow play structures to resemble a variety of things so that a child can choose to play house, fort, service station, airplane, whatever.
- Provide some small spaces (scaled to fit 2-4 children) protected from direct adult view in order to promote fantasy play.

- Provide novelty in the environment so more exploration will occur (Berlyne, 1968).

- Provide flexible spaces which can be closed with sliding panels or opened wide to create many combinations for children's imaginations.

- Provide LOOSE PARTS to combine with space in order to create an environment matching a child's imaginary world.

- Provide small spaces for 3-4 kids

novelty in the environment so more exploration will occur.
ISSUE

CHILDREN LEARN SPONTANEOUSLY THROUGH ACTIVE INTERACTION WITH THE ENVIRONMENT AROUND THEM, YET SO MANY ENVIRONMENTS DESIGNED FOR CHILDREN ARE STATIC AND RIGID. ONE OF THE MOST IMPORTANT PARTS OF GROWING UP IS HAVING THE OPPORTUNITY TO EXPERIMENT ON THE WORLD, TO CHANGE IT, TO SEE THE RESULTS OF THESE CHANGES, AND LEARN FROM THE TOTAL EXPERIENCE. THEREFORE, CHILDREN NEED TO BE ABLE TO MANIPULATE THE ENVIRONMENT AROUND THEM.

JUSTIFICATION

Children need to satisfy their curiosity and experience the pleasures which are derived from discovery and invention. Through "unstructured play" children learn new skills, gain self-confidence, take pride in their achievements, build up a picture of reality, sort out fact from fantasy, and extend their knowledge of the real world.

M. J. Ellis of the Motor Performance and Play Research Laboratory of the Children's Research Center, University of Illinois writes:

1. Children play for the stimulation they receive, not just to burn up energy.

2. Children need to indulge in activities that become increasingly complex with time.

3. As a by-product, children learn about their physical surroundings, and about their own roles in a social group.

The essential characteristic for a playground is that it should elicit new responses from the child as he plays, and that these responses increase in complexity as play proceeds. (1972, p. 4)

New responses can be elicited from children through the well-designed use of variables or "loose parts." Simon Nicholson (1971) stated the theory of loose parts quite simply:
In any environment, both the degree of inventiveness and creativity, and the possibility of discovery, are directly proportional to the number and kinds of variables in it. (p. 30)

In response to this challenge for designers, Nicholson expands upon the theory of loose parts:

There is evidence that all children love to interact with variables, such as materials and shapes; smells and other physical phenomena, such as electricity, magnetism and gravity; media such as gases and fluids; sounds, music and motion; chemical interactions, cooking and fire; and other people, and animals, plants, words, concepts and ideas. With all these things all children love to play, experiment, discover, and invent and have fun. (p. 30)

In NESTS FOR QUIET PLAY, the information cited from Garvey's (1977) findings suggest that children need objects in the environment with which to interact, therefore the concept of LOOSE PARTS is reinforced.

Loose Parts are a necessary component in any play environment. Even handicapped and exceptional children, though requiring special care and attention, can cope with a "rough and ready" atmosphere that is different from the usual supervised play environment. Exceptional children learn new skills and gain self-confidence in the same ways as average children (Handicapped Adventure Playground Association, n.d.). Therefore, environments for the exceptional child should provide similar challenges and experiences, yet be designed with the particular group of children in mind.
PRINCIPLE

LOOSE PARTS

LOOSE PARTS WHICH THE CHILD CAN MANIPULATE IN ORDER TO SHAPE A PERSONAL ENVIRONMENT ARE NECESSARY FOR COGNITIVE AND OTHER DEVELOPMENTS. THEY SHOULD BE DYNAMIC, INTERCHANGEABLE, AND MANIPULABLE.

THERE ARE THREE DIFFERENT TYPES OF LOOSE PARTS:

1. MANUFACTURED (E.G., A PUZZLE), IN WHICH THE CHILD REALIZES AN ININVARIABLE FINISHED FORM

2. MANUFACTURED KIT (E.G., TINKER TOYS, LEGO) IN WHICH THE FINISHED FORM IS FLEXIBLE

3. DISCARDED OR NATURAL PARTS (E.G., TIRES, BOARDS, SAND, GRAVEL) WHICH CAN BE USED IN AN NUMBER OF INTERCHANGEABLE WAYS (MOORE, COHEN, AND TEAM 699, 1978).

RECOMMENDATIONS

- Provide materials and space for children to build undetermined structures.
- Provide opportunities for children to find natural manipulables (e.g., sand, rocks, dirt, plants, etc., from nature area).
- Provide a variety of raw materials which can be assembled in a variety of ways (tires, wood, posts, etc.).
- Include provisions, storage, activity space, tools, for child use of "found objects" such as tires, boards, bricks, etc.
- Provide manufactured sets of loose parts such as tinker toys, etc.
- Provide opportunity for the child's awareness of a finished form before constructing it from a kit of parts (may mean involving children in design and construction).

RELATED ITEMS

NESTS FOR QUIET PLAY
ADVENTURE PLAY AREAS
STRATEGIES FOR IMPLEMENTATION
CREATIVE PLAY AREAS
ISSUE

THE ENVIRONMENT MUST DYNAMICALLY PACE (AND PUSH) THE CHILD WITHOUT EXCEEDING AN OPTIMAL LEVEL OF DISCREPANCY BETWEEN THE CHILD'S CURRENT LEVEL OF SKILL AND THE ENVIRONMENTAL DEMANDS PUT ON HIM OR HER. EACH CHALLENGE IS NOT BEYOND THE SKILL LEVEL OR ANTHROPO-METRIC FIT OF THE CHILD. THERE MUST ALSO BE STIMULUS FOR CONTINUING PROGRESSION TO THE NEXT SKILL LEVEL.

JUSTIFICATION

Environments with which the average child can cope are often frustrating or impossible for the person with reduced competency, e.g., a much younger child or infant. The environment must not frustrate any child, and yet must provide enough challenges to generate and maintain activity (Ayers, 1972; Cratty, 1974). Children have a great need to gain self-confidence and a positive self-image. Feelings and self-concept can be seriously damaged if children never reach goals which they set out for themselves (McCandless & Evans, 1973). Most development results from an optimal discrepancy between child and environment—challenges are made to existing motor, cognitive, and social schemata, motivating the child from one state of equilibrium to another.

PATTERN

PACED ALTERNATIVES

PACED ALTERNATIVES PROVIDE INCREMENTAL, PACED INCREASES IN REQUIRED SKILLS THROUGHOUT THE CHILD'S ENVIRONMENT.

RECOMMENDATIONS

• Arrange activities according to CIRCLES AND WEDGES to make pacing move around the circular zone.

• For each type of activity, provide several skill levels of accomplishment, e.g., climbing steps, climbing a ladder, climbing a cargo net, etc.

• For challenging activities, provide stopping places where children can feel good about leaving an activity, not feel that they are "quitting."
• Challenge should be provided in a variety of ways.

• Play experiences should provide an awareness of challenges ahead without being intimidating—children should be able to see new challenges and accomplishment points ahead while finishing another activity.

• There should be some portions of the environment designed to the scale and skill level of infants, as well as for children up to 13 years of age.

• Older children require less emphasis on balance, general coordination, and other physical activities, and should be provided with more complex and paced cognitive challenges.

• The play environment should provide for similar activities to occur at different rates without undue interference.

Related items:

- Clear accomplishment points
- Developmentally-appropriate spaces for infants
- Challenging environments without undue risk
CHILDREN NEED CHALLENGES, BUT SAFETY IS A MAJOR CONCERN OF PARENTS AND ADMINISTRATORS. ACCIDENTS WHICH HAPPEN TO PLAYING CHILDREN SEEM SO TRAGIC AND NEEDLESS.

Playgrounds in the past have been a source of numerous accidents (Sweeney, 1977). Hard-seat swings which can hit heads, free-standing slides from which children can fall, hard asphalt surfaces under equipment—all are dangerous elements.

Naturally, the two most prevalent dangers are:

1. Unwise zoning of activities within the play yard which permits children who are jumping from swings to land on children playing in the sand, etc.;

2. Unwise situating which forces children to cross busy streets to reach play areas (Wilkerson, 1978).

Other safety factors include "losing" small children if play area isn't enclosed, older children using hard balls and bicycles in areas where small children are playing, vandalism which leaves broken glass in sand play areas, and so on.

At first glance, the newer creative playgrounds and adventure playgrounds may seem to be much more dangerous than the older metal equipment and asphalt playgrounds. But the data contradict this assumption and precautions are being taken by designers and planners to reduce risk.

As dangerous as they may look to the uninitiated and though precise data is still somewhat scarce, preliminary evidence is that adventure playgrounds have fewer serious accidents than do traditional playgrounds (U. S. Adventure Playground Association, 1978).

In adventure playgrounds, the most important "risk-reducer" is the playleader. That person is always available to help children use tools, materials, fire, water, etc., safely, and is right on the scene in an emergency.
Another risk-reducer is the fence surrounding adventure playgrounds (Travel Report, 1978; see Harbourfront Adventure Playground). The fence protects children against traffic and circulation problems, human dangers, and vandalism.

Both creative and adventure play areas tend to limit hard surfaces and use instead natural ground covers such as grass, sand, wood chips, etc. (Liedermann & Trachsel, 1968; Lady Allen, 1968; Bengtsson, 1970; Utzinger, 1970).

A safety measure frequently taken in creative playgrounds is the zoning of activities (Dattner, 1969). (See DEFINED ZONES OF ACTIVITY.)

Unfortunately, these kinds of provisions for safety are often unperceived by administrators when reviewing playground designs.

On the other side of the issue is the importance of challenges. Designers are faced with the problem of providing challenges for children (see PACED ALTERNATIVES). Diane Seitzky, a nursery school teacher, in an address to the Convention of the Midwest Association for the Education of Young Children, said:

The playground offers an ideal environment in which young children can experience elements of risk and challenge. The real needs of children—including the need to test and to extend their abilities through risk-taking—can be met successfully in a well-planned play area without compromising a high degree of safety. . . . The safety of play area facilities can be maximized by such things as providing soft play surfaces, . . . proper construction of play structures, and thorough development of design criteria which should include concepts of freedom, control, complexity, interaction, and adaptability. (Seitzky, 1975)
Designs which actually provide CHALLENGING ENVIRONMENTS WITHOUT UNDUE RISKS may be rejected because their unconventional nature makes safety factors difficult to recognize (Travel Report, 1978; see interview with Jay Beckwith).

Safety is both a planning issue and a detailed design issue. While it deserves serious consideration at each phase, too great a fear of danger shouldn't stop the planning process. Safety becomes the responsibility of the designer and the review team.

**CHALLENGING ENVIRONMENTS WITHOUT UNDUE RISKS**

**PLAN PACED ALTERNATIVES WITH SAFETY FACTORS IN MIND: ZONING, SOFT SURFACES, SAFER EQUIPMENT, ETC., AND THEN CLEARLY INDICATE SAFETY PRECAUTIONS TO ALL REVIEW BOARDS.**

**RECOMMENDATIONS**

- Designers should carefully and clearly indicate the precautions taken to reduce risks. Safety is both a planning issue and a detailed design issue.

- Zone the activity areas by using safety as one factor in decision making.

- Plan circulation so it will not cross activity zones.

- Provide for easy maintenance of surfaces so litter and glass will not collect.
- Use "softer" surfaces such as grass, wood chips, dirt, and sand in areas where children would fall.

- Plan equipment to minimize risks, e.g., moving parts should be made out of "softer" materials such as tires, ropes, and canvas which are much safer than conventional metal (or hard plastic) and chain swings.

- Build slides into mounds rather than having them be free standing.

- Provide climbing equipment made of ropes, etc., which are safer than metal bars.

- Plan fire play and building activities only in supervised play areas.

**RELATED ITEMS**

- LOOPED CIRCULATION
- SEPARATED BUT LINKED ZONES
- SUPERVISED FIRE AND COOKING AREA
- PLAY ABOVE THE GROUND
ISSUE

CHILDREN HAVE A DEVELOPMENTAL NEED FOR COGNITIVE, MANIPULATIVE PLAY. THIS PLAY OCCURS INDIVIDUALLY OR IN SMALL GROUPS AND NEEDS A PRIVATE SPACE AWAY FROM ACTIVE AREAS.

JUSTIFICATION

Quiet, manipulative play with objects is essential to good developmental growth. Garvey (1977) suggests that for the child "an unfamiliar object tends to set up a chain of exploration, familiarization, and eventual understanding" (p. 41).

In studying the concept of privacy in childhood and adolescence, Wolfe and Laufer (1975) discovered that the meaning of privacy changes with age but that four major meanings are used at all ages—"alone," "controlling access to information," "no one bothering me," and "controlling access to space."

Observation at Bolling Air Force Base (Travel Report, 1978, p. 40) showed that "children use play areas for quiet play or as a place to meet, talk and wait as much as they use it for active play."

In playground design, Beckwith has allowed for two kinds of quiet play, play alone and in small groups (Hewes, 1975, pp. 145-146; see Big Toys, Travel Report, 1978). He notes that the organization of the space should permit children to talk to each other in normal conversational tones without having to shout.

The Central Mortgage and Housing Corporation of Canada (1978, p. 17) recommends that this space "should be intimate, away from boisterous activity . . . near to passive landscaping or an adult seating area."

PATTERN

NESTS FOR QUIET PLAY

SMALL ENCLOSEABLE SPACES BIG ENOUGH FOR 1-4 CHILDREN WITH PROTECTION FROM ACTIVE PLAY AREAS AND SMALL MANIPULABLE PLAY OBJECTS AVAILABLE WILL ENCOURAGE PLAY FOR COGNITIVE DEVELOPMENT.
RECOMMENDATIONS

- Provide spaces where children will be able to control access with flaps, gates, brush, etc.

- A nest has the following physical characteristics:
  - enclosure (single access direction that captures sunshine!)
  - small area (3-6 sq. ft.)
  - variety of textures
  - a low dry place off of the ground for sitting

- Within small quiet play areas provide storage (lockable and moisture proof) for small manipulable items which children can easily reach.

- Locate quiet nests away from large muscle, large group areas. Use acoustical buffers.

- Locate quiet nests close to compatible spaces such as the sand play and gardens.

- Make provision for child arrangement of the space which will facilitate conversation and interaction.

- Group size for cognitive, manipulative play will range from 1-4 children.

- Scale should be intimate to child (e.g., a 3 ft. high barrier will appear to make a space very private to a child).

- The spaces should have calming elements such as greenery, shade, etc.
RELATED ITEMS

AMBIGUOUS SETTINGS AND OBJECTS
RETREAT AND BREAKAWAY
RANGE OF SOCIAL SCALE
OUTDOOR STORAGE
ISSUE  CHILDREN WILL PLAY ALONE, IN PAIRS, IN SMALL GROUPS, IN LARGER GROUPS, AND WITH OLDER CHILDREN AND ADULTS. PLAY AREAS MUST HAVE A RANGE OF SPACES FOR SOCIAL INTERACTION.

JUSTIFICATION  In an earlier publication we argued the following:

Children...need places to work alone, to do task-oriented activities, or to retreat and dream (Gordon, 1972). Being alone and learning to accept oneself and others is also basic to the social and emotional development of a stable self-concept. There is always a need for spaces for a child and a staff member to work one-to-one. On the other hand...children often seek group experiences...Increased interest in play comes from greater social interaction (Moran and Kalakian, 1974). (Moore, Cohen, and Team 699, 1977)

According to research done by Whalen, Flowers, Fuller, and Jernigan (1975), smaller children use more personal space than older children and maintain greater distances from opposite-rather than from same-sex peers. Personal space refers to the imaginary boundaries around people which they consider to be private. Entry into that space by another person would be considered an intrusion unless proper social interaction had taken place.

In many playground designs, a common problem is the lack of small enough spaces for small groups of little children. We know from research that most spontaneous groups in outdoor open space are made up of from three to five persons (Saarinen, 1968). It has also been argued (Millar, 1968, p. 181) that the best size of a preschool play group is from two to four children.

Spaces for large-group activity are also necessary, though seldom are overlooked.
The provision of spaces accommodating a RANGE OF SOCIAL SCALE in terms of size, type, and enclosures, but most especially in terms of the size of group activity they will contain, would provide greater opportunities for different individual and interpersonal experiences. Solitude and physical togetherness can be experienced in small spaces while team sports can be organized in large open fields. Children and staff can work together intently without interruption in very separate places, while children can work best cooperatively when the space is large and open enough for them to see the activities of others. (Moore, et al., 1977, p.

**PATTERN**  
**RANGE OF SOCIAL SCALE**

PLACES APPROPRIATE IN SCALE FOR ONE CHILD, TWO OR MORE CHILDREN, AND CHILD-ADULT COMBINATIONS SHOULD BE CREATED WITHIN THE PLAY AREA.

**RECOMMENDATIONS**  
- Provide nooks and crannies for single children.

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PlACES FOR SINGLE CHILDREN
• Provide places which accommodate 1-4 children.

Places for groups of 1-4

• Provide spaces for large muscle activity, including wide-open spaces such as a field for games which accommodates at least 10 children (see DEFINED ZONES OF ACTIVITY).

Places for group play and games

• Provide a variety of spaces from small to large in any play area design.

• Multiple ways of enclosing spaces should be provided, e.g., moveable partitions boxes, building materials, canvas curtains, etc.

• Private places for solitary play must be easily accessible from larger activity areas.
- Private spaces must be easily "owned" and made personal.
- Allow "elbow room" in the layout of play areas for small children since they use more personal space.

RELATED ITEMS
QUIET PLAY
RETREAT AND BREAKAWAY
DEFINED ZONES OF ACTIVITY
CERTAIN PLAY ACTIVITIES INVOLVE ONLY CHILDREN OF A SPECIFIC AGE GROUP: OTHER ACTIVITIES CAN BENEFIT FROM PARTICIPATION OF MULTI-AGE GROUPS, INCLUDING ADULTS.

Small children, older children, and adults will all use a play space in various ways. Whether they will all feel comfortable and secure in the space will depend in part on the proper level of social interaction, which in turn will be affected by design-related factors such as the following:

- **Proximity to housing**
  - Parents and small children prefer to be within sight and hearing of each other.
  - The more adults potentially in sight and hearing of play areas, the better the supervision will be.

- **Proximity of participants**
  - Older children frequently supervise younger children.
  - Adults frequently take children with them to adult recreation areas.

- **Safety**
  - Older children may play games which are dangerous to young children (hard ball, bicycles, etc.).

- **Dramatic Play**
  - Children may be inhibited by too-close adult supervision.

- **Size and Scale**
  - Children prefer small enclosed spaces which are "room-like."

This information indicates that young child—older child and child-adult interaction spaces should be separated by barriers which do not interfere with visual and auditory contact. The information also suggests that adult spaces, child spaces, and older child
spaces should be planned in conjunction with each other in the NETWORK OF PLAY.

There is also an interface possible, a zone where all age groups can mingle, learn from each other and enjoy each other.

Adult-child and older child-child interactions are developmentally important and activities and furnishings, like seating, or close ballgame areas, that attract and encourage these contacts should be an organizing concept in a play area design. (Travel Report, 1978, p. 178)

The discussion of Mary B. Conolly Children's Playground suggested the following:

Certain play equipment seems to allow and encourage parents to actively play with (not just supervise) their children. ...
One possible clue here is the adult-like challenges and sizes of the largest play structure. (Travel Report, 1978, p. 144)

**PATTERN**

"CHILDREN ONLY" AND MULTI-AGE GROUP PLAY TERRITORIES

SOME PLAY ZONES WITHIN PLAYGROUNDS AND PARKS SHOULD BE FOR EXCLUSIVE USE OF ONE AGE GROUP, AND OTHER ZONES SHOULD BE FOR USE OF MULTI-AGE GROUPS.

**RECOMMENDATIONS**

- Barriers in child scale give children privacy without interfering with desired visual contact with parents.
- Adult or older-child areas may be raised slightly to "oversee" small-child play.
- Small-child play areas should be located in conjunction with adult recreation, shopping, etc.

- Adults and older children should have places to be in, things to do, where they can "keep an eye on" small-child play space.
- Provide seating at every playground at a minimum of one seat per 200 sq. ft.
- Seating should be peripheral to the play areas.
- 50% of seating should be single, 50% should be grouped.
- Groups of benches should be arranged at right angles to one another to encourage adult interactions.
- Provide an interface between play areas for young children and older children and adults. The characteristics of that interface would include:
  - defined edges (not chain link fencing)
  - clear entry points
  - buffering
  - seating

**Step 1**

- Parents & play activities
  - Separate age groups
  - Close to home shopping and adult activities

**Step 2**

Provide visual and audio contacts.

**Related Items**
- Proximity of Play Activities
- Sports Areas
- Network of Play
ISSUE

IN A CHILD'S EXPERIENCE OF NATURAL ELEMENTS, WATER PLAY IS AN IMPORTANT ACTIVITY, ALONE AND IN CONJUNCTION WITH OTHER ELEMENTS (E.G., SAND, DIRT, PLANTS, ANIMALS).

JUSTIFICATION

John T. Lyle (1970) in an article, "People-watching in Parks," found that in all park settings observed "water was an important attractor."

Robin Moore (1974), in analyzing children's reactions to Thousand Oaks Playground in California, discovered the following:

Water seems to be a powerful multi-purpose place maker—for contemplation: "I like the pond because just looking at the pond makes you feel something inside," and for play: "I like it when you can jump over the fences and play in the water with your rainboots on and get to the middle" (there was an island in the larger pond); "You go in there and play like you were in a ship or something and you can get to play with the frogs." (p. 637)
A powerfully evocative natural element such as a pond provides a good vehicle for the expression of values: "I like the pond because they're going to put fishes and frogs and stuff in there so we can take care of them, and we're really going to take care of that pond 'cause I don't want nobody throwing papers and stuff. It can be pollution in the water." (p. 637)

The team observed the outstanding popularity of water play for all ages in the Heckscher Foundation Playground in Central Park, the Huntington Beach Adventure Playground in Los Angeles, and Children's Village in Toronto. (Travel Report, 1978). Conversely, we heard many times how the availability of water play would greatly improve play experiences (e.g., Irvine Adventure Playground, Travel Report, 1978).

Water areas, then are attractive to people of all ages and can be a focal point for a whole neighborhood. Water can make play areas more attractive to adults and may help promote adult gatherings at playgrounds.

For play, water is one of the most attractive and useful elements:

- Playing with water should be an integral part of the play program.
- Water is soothing, clean, and full of surprises. It splashes. It moves. It bubbles, gurgles, spills, runs. It brings one back to those
earliest months of life when playing
in water while being bathed was one
of the highlights of almost every
day. It was the time, really, for
first learning about play. It was
a time for laughing and touching
and close human interaction. It
was a time for being held close,
for being warm afterwards, and for
being fed. And the buoyancy of the
water offered a bodily sensation
that was different from those
experienced during any other waking
activity. This sensation brought
about an unusual sense of freedom,
security, happiness, and well-being.
(Cherry, 1976, p. 114)

Various sources suggest ways to introduce
water into the play area such as having pools,
fountains, play streams, hand pumps, mounted
faucets, and sprinklers (Central Mortgage and
Housing Corporation, 1978).

Water is as much liked by small
children as sand. They are espe-
cially delighted when they can play
and "muck about" with sand and
water at the same time. . . .
For playing with water, various
possibilities can be considered:
in playgrounds where bathing
facilities for small children
are not wanted or are unsuitable,
a little drinking fountain is
sufficient, perhaps a simple
concrete trough, a hollowed-out stone block or a tree trunk (see page 68). Here the children can fill their buckets with water or float their paper boats. (Ledermann and Trachsel, 1968, p. 11)

Water is one of the joys of childhood; its endless possibilities for play should be fully exploited. A reasonable way to do this is to have tanks at varying heights connected by falls or channels with a circulation completed by a simple pump. The polls could otherwise be static, but would need to be cleaned out regularly. As the water would never be more than nine inches deep, this would be a simple operation. The highest tank might be at child's eye level for sailing little boats; a tank below for paddling; and at ground level a splash only an inch or so deep. Whether it is advisable to have sand-pits near the water source is open to opinion, but sand and water together make an entrancing mixture for children. (Lady Allen, 1968, p. 37)
Outside, water play becomes freer. A garden hose is helpful for playing car wash, fireman, plumber. A spray nozzle attachment lends itself to elaboration on these themes and others as it becomes a cosmic-ray gun, a rainstorm during a camping trip, a fountain. A wading pool is a place for sea divers, sailing to China, splash-down. A bucket of water with a wide paintbrush enables a child to paint fences, houses, cars. A tub resting on two orange crates is the right height for your preschooler. Sailing boats in the tub and washing doll clothes or toys is fun on very hot days. If the child has been encouraged to develop elaborate make-believe plots, there is less likelihood that the water will be used in aimless splashing or as an aggressive material. (Singer and Singer, 1977, p. 156)

Bicycle pumps make delightful bubbles.

Children also like rain puddles. They like to wade in them, see reflections, and sail paper, wooden, or plastic boats. Sometimes they find earthworms or insects in them.

Painting pavements and fences with large painter's brushes and water-filled paint buckets is a pleasant activity on hot, summery days when things dry out so fast they can be "repainted" many times.

Other forms of water play include watering plants, mixing powdered paints, and sand and dirt play.

Water play should not be without rainbows. After children have observed real rainbows in the sky, show them how to create their own rainbows with water sprayed from a hose. If the sun is shining behind the source of the spray, a rainbow will appear in the
spraying water. If you don’t see it readily, manipulate the position of the spray until you do. (Cherry, 1976, p. 115-116)

PATTERN

WATER PLAY AREAS

INCLUDE WATER PLAY AS A SEPARATE BUT FLEXIBLE AREA CAPABLE OF BEING LINKED TO SAND PLAY, ENVIRONMENTAL YARDS, ANIMAL PLAY, AND ADULT RECREATION AREAS.

RECOMMENDATIONS

- Include water in at least a minor form in any preschool play area.

- Include more elaborate water play areas where planners wish to encourage adult gatherings.

- Make connections between water play and sand play (wet sand for building), but include methods of separating them if play activities dictate.

- Include water animals as part of water play area if it is large enough for zoning.

- Provide a concrete wall on which children can paint with water.
- Plan storage area for equipment used in water play immediately adjoining water play area.

- Provide movable water nozzles and on/off faucets and valves for changeable play.

- Provide outdoor drinking fountains with a designed path for the water to flow (steps or height changes included for smallest children to get their own water). Use spring return valves to control water flow.

1. multi-height bubbler
2. spring-loaded faucet
3. water trough
4. puddle
5. dam
6. sand play and dry well

a bubbler that makes a water play area
• Water should not be any deeper than eight inches.

• Avoid stagnant water (recycle or inexpensively drain away).

• Make slight dishing in pavement surfaces, and provide drips and slight run-off channels in order to provide puddles in the dirt or pavement for play, sliding, and smashing ice).

• Design surfaces in and adjacent to water area which minimize danger of slipping when wet.

RELATED ITEMS
SAND AND DIRT PLAY AREAS
LOOSE PARTS
LANDSCAPING MATERIALS
ISSUE

CHILDREN MUST EXPERIENCE NATURAL ELEMENTS, PARTICULARLY ONES WHICH THEY CAN MANIPULATE AND SHAPE, IN ORDER TO FORM UNDERSTANDINGS OF THE WORLD AND THEIR RELATIONSHIP WITH IT.

JUSTIFICATION

Almost everyone can remember playing with or watching children play with sand and dirt by sculpting it into towers and houses, burying things, and making hills, rivers, and mud pies.

All sources agree that sand play is an essential experience for young children. As mentioned in LOOSE PARTS, they need to be able to manipulate and shape their environment, to feel various textures, see colors, build, revise, learn. In addition, the many forms of sand and dirt, the kinds of rocks to be discovered, and the small life forms encountered (worms, insects) all provide learning experiences.

Wood (1976), in "Early Mound Building: Some Notes on Kids' Dirt Play," found the following:

The role occupied by sand-dirt in play . . . lies principally in the fact that sand and dirt resemble nothing in the world but sand and dirt. Sand and dirt denote nothing not denoted by the kids except for its single inherent and self-denoted ability to foster growth. (p. 26)

R. Burton Litton, Jr. (1969) in "Ode to the Vacant Lot," suggests that dirt and grass combined have another use:

For group action, grass fights are the thing. Technically, the projectile is root mass with dirt attached; the stems are the handle, a humane weapon with high trajectory and low speed.
PROTECTED SAND AND DIRT PLAY AREAS

ALL PLAY AREAS SHOULD HAVE PROTECTED, SPECIFIC SAND/DIRT PLAY AREAS WITH SUN/SHADE MIXTURE IN SUMMER, STORAGE FOR PLAY EQUIPMENT, AND A WATER SOURCE AVAILABLE.

- Include sand play areas in all play spaces which will be used by younger children.

- Sand should be mixed with water for best "buildability" (Lady Allen, 1969).

- Sand should be contained with some type of barrier-level changes, walls, etc. (Bengtsson, 1970).

- Sand areas should be protected from more active pursuits (see CIRCLES AND WEDGES).

- Sand areas should be easily maintained and easy to clean so that children aren't hurt by glass, sharp metal, etc., and so that the sand isn't dirtied by animal droppings.

- Sand areas must be planned so that positive drainage is obtained.

- Sand areas must be protected from wind--blowing dry sand is very unpleasant.

- Sand areas should receive direct sunlight for part of the day for "purifying." But direct sun at midday in summer will make a sand area much too warm.
- Sand requires periodic renewal. It should be varied as to texture and color if possible. For smallest children, make sure quartz sand is round-edged.

- Sand areas need near-by storage areas for shovels, rakes, buckets, etc.

CIRCLES AND WEDGES
LOOSE PARTS
WATER PLAY
LANDSCAPING MATERIALS
Children love to climb and reach heights where they can gain a new perspective on their surroundings. For creating "challenge without undue risk," and for providing novelty and stimulation in play areas, children must be able to play at various heights on varying surfaces—structure, berm, tree, rope, etc.

With regard to the importance of play above the ground, Cherry (1976) says:

If I had room for only one piece of play equipment, my unhesitating choice would be something to climb on. As soon as seven- or eight-month-old infants start to creep, they climb over any objects they can that get in their way. They are very adept at learning to manage differing heights. They have an innate sense of depth perception from about the age of nine months. Climbing strengthens muscles, develops postural control, and orients children to varying views of the world. The area that a child can take in with one glance becomes much greater as the body climbs higher. For small children who spend so much time having to look "up" it must be an exhilarating experience to be in places where the view is "down." The resultant feelings of mastery have positive ego-building effects. Few experiences can make a child feel so important as sitting on top of a jungle gym—particularly if he is wearing an adult-type play hat that makes him even taller." (p. 53)

Climbing activity is basic to development of gross motor skills, particularly body control and coordination of the hands and feet for balancing on uneven, changing surfaces. A great variety of climbing experiences can be offered on the playgrounds by utilizing both rigid surfaces, such as rocks or trees, and flexible ones, such as ropes or tires." (Hewes, 1975, p. 130)
Observational research done by Leland Shaw showed that:

children enjoy playing in groups above the ground plane. Children were most often tabulated occupying the three feet to six feet horizontal section of space. (Shaw,(n.d.) p. 5)

Research done by Karlsson and Ellis (1972) showed that height preferences of children at play was inversely related to the complexity of the equipment, and that height preferences did not vary appreciably with increased age.

Climbing and play above the ground is developmentally important to children from nine months up.

Bengtsson (1970) lyrically describes the experience:

Climbing a hill, climbing a tree, climbing up onto a big rock, reaching new heights, exploring new worlds, daring more than the others, daring to do more than one thought one could do. These are activities and ambitions inseparable from children's play, and they are certainly of considerable importance in the development of personality. Risk is a stimulus, and should be present in some form even in the playground.... Play with ropes has become quite a marked feature of the more recent avant-garde playgrounds in England. It is often of the "Tarzan" variety. You swing by ropes from tree to tree, or from one platform to another. Its popularity is unbelievable and it attracts young people up to twenty years of age. Such games can be very advanced and naturally not without danger if equipment and method of suspension are not carefully supervised. This type of play can be arranged to offer varying degrees of difficulty, so that even the very young children are catered for. (p. 192 and 206)

Numerous sources agree that climbing and play above the ground should be "graded" so that all children can experience the activity at their own developmental level (see PACED ALTERNATIVES). Safety is another issue which concerns parents and administrators (see CHALLENGING ENVIRONMENTS WITHOUT UNDUE RISK).
PATTERN

PLAY ABOVE THE GROUND

CHILDREN MUST BE ABLE TO PLAY ALONE AND IN GROUPS IN A CHALLENGING BUT SAFE ENVIRONMENT ABOVE THE GROUND.

RECOMMENDATIONS

- Provide challenges, climbing, and resting experiences above the ground at many height levels and complexity levels.

- To maximize the response to children's preferences, simple climbing equipment such as steps and bridges can be higher than complex equipment such as mazes and rich natural terrains.

- Provide places above the ground where small groups can play together. This may be tied with the need for an observing space in "NESTS FOR QUIET PLAY."

- Use "houses," castles, towers, trees, platforms, nets, ropes, steps--a variety of climbing situations and places above the ground so that children can choose the challenge and excitement they are ready for. A single kind of climbing device on a playground is too limiting (e.g., the old jungle gym).

RELATED ITEMS

NESTS FOR QUIET PLAY
CHALLENGING ENVIRONMENTS WITHOUT UNDUE RISK PANCED ALTERNATIVES
DESIGNATED PLAY STRUCTURES
ISSUE
CHILDREN NEED TO SENSE THAT THE PLAY AREA IS "THEIR TERRITORY," EVEN WHEN REMEMBERING IT OR VIEWING IT FROM A DISTANCE.

JUSTIFICATION
Developmentally, children need to establish their "own" place. A place away from the home is important to small children in establishing their own separate identities and psychological independence. If a play space can help meet this need, it must have an image, a readily-perceived character which sets it apart from surrounding adult spaces where children may fear adult prohibitions, and that character must clearly say, "This is children's territory."

PRINCIPLE
PLAY AREAS AS CHILDREN'S LANDMARKS
SOME ASPECT OF THE PLAY AREA MUST HAVE A STRONG, EASILY-REMEMBERED IMAGE THAT MAKES IT A LANDMARK TO CHILDREN

RECOMMENDATIONS
- A play structure, a climbing tree, a hill, a pond—each may be strong enough to provide an identifying image.
- A tall feature which is visible from a distance, and from which children can view surrounding areas can be a powerful symbol or "touchstone."
- The identifying symbol or image can be something of the children's making.

memorable feature

awhile

a climbing tree

a pond

a rock

Something "Kid Built"
ISSUE

Children must perceive their own successful development and accomplishment at times in order to derive satisfaction, build a positive self image, and increase their self confidence.

JUSTIFICATION

Children are constantly being confronted with all the things they don't know. Young children in particular ask questions constantly. In order not to discourage and frustrate children with the vast amount they have still to accomplish, they must have very clear evidence of success at various points in their development. Success gives children positive feelings about themselves and their ability to continue to develop and eventually "grow up." Frustration only breeds failure (as any teacher of a fourth-grade non-reader will tell you).

PRINCIPLE

CLEAR ACCOMPLISHMENT POINTS

Responsive environments should incorporate recognizable stages of required performance, clear points of completion, and public display of performance.

RECOMMENDATIONS

- Provide clear stages of accomplishment in physical activity spaces (e.g., climbing ropes at several different heights, ladders or other climbing apparatus with several platforms at various heights.

- Provide a positive signal at the point of destination or accomplishment (e.g., a bell to ring at the top of the climbing apparatus).

- Immediate display places in building and arts and crafts area would signal "I'm done -- look!"

- In any activity area, provide stages of difficulty so that children can choose goals which they can accomplish.

RELATED ITEMS

PACED ALTERNATIVES
ISSUE

CHILDREN OCCASIONALLY NEED SOLITUDE FOR SELF-KNOWLEDGE AND SELF-CONTROL. THEY NEED TO BE ABLE TO GET AWAY BY THEMSELVES FROM TIME TO TIME TO THINK, REGAIN CONTROL, AND ESCAPE FROM A TOO-INTENSE PLAY SITUATION.

JUSTIFICATION

The provision of retreat areas is crucial to the development of self-concept and personal identity. When children are alone they have to come to terms with self, how the "I" relates to a tree, space, or the self. Being alone is more conducive to imagination, adding hypothetical activity and meaning to a simpler situation. In opposition to retreat is the need for children to learn their role in society, but a child must sometimes retreat to solitude when confused or overwhelmed by society. Good breakaway points encourage greater exploration by providing face-saving exits from unfavorable situations.

There are two aspects to this problem:

*There are occasions when an individual or even a group need to get away from it all. The bustle of other people sometimes can crowd or frustrate a person. An ideal retreat is neither too close nor too far from others and provides privacy and the opportunity for observing the behavior of peers and for imaginative or other quiet activity.*

*A more immediate need to escape can come from entering a too-challenging or unenjoyable activity. If the child wants to leave the activity and there is no way out other than completing the activity, panic or fear may overcome the child. A way out of ongoing activities which would maintain the child's positive self-concept is needed.* (Moore, Cohen, and Team 699, 1977, p. 82)

Supporting research on areas for RETREAT and UNOBTRUSIVE OBSERVATION/CHILD RETREAT CORNERS (Criteria Document--Child Support Services, 1979), has found that the number of children
observing others' play was equal to or greater than the number of those actively playing (Hale, 1966; Department of the Environment, 1973; Cooper, 1975).

Arvid Bengtsson (1970), Past-President of the International Playground Association, says of current playgrounds:

We are too concerned that every corner should be in full view, and this can make children go and play somewhere else. . . . Must we really know everything and control everything in a child's life? Nobody imposes anything like the same interference on the country child. They have haystacks, barns, woodlands, and so on, and no one sees anything dangerous to society in that. (p. 154)

The need for RETREAT AND BREAKAWAY POINTS is especially acute for handicapped or exceptional children for whom a task already attempted may be too difficult; a face-saving exit can be of great assistance in retaining a positive self-concept.

**PATTERN**

**RETREAT AND BREAKAWAY POINTS**

SHELTERED, SEPARATED SPACES WHICH ARE LARGE ENOUGH FOR ONE PERSON ONLY, LOCATED IN VARIOUS PARTS OF THE PLAY AREA WILL PROVIDE NECESSARY RETREAT POINTS FOR CHILDREN. PROVISION MUST ALSO BE MADE FOR A CHILD TO LEAVE BEFORE COMPLETING AN ACTIVITY WITHOUT FEELING AS A FAILURE.

**RECOMMENDATIONS**

- Settings should provide a child with the opportunity to gain and maintain personal privacy in their own sheltered world.

- Private spaces which are connected to larger activity areas should enable a child to get away from the group.

- Provide watching stations in child scale overlooking activity areas, e.g., small tree-houses, tower platforms, landscaping railroad ties.
• Provide breakaway points within an activity, (e.g., a ladder might have access to two platforms before reaching the top level, thus permitting children to stop at any stage while they are overcoming fears of height and gaining climbing abilities).

Opportunities should exist for groups of exceptional children to have seclusion and quiet.

**RELATED ITEMS**  **NESTS FOR QUIET PLAY**
**RANGE OF SOCIAL SCALE**
TO ASSIST IN THE AWARENESS OF SPACE AND IN STIMULATING PERCEPTUAL AND MOTOR DEVELOPMENT, CHILDREN SHOULD BE ABLE TO EXPERIENCE A VARIETY OF SPACES THROUGH DIFFERENT SENSORY-MOTOR AND LOCOMOTOR ACTIVITIES. BEING IN AND MOVING THROUGH DIFFERENT TYPES OF SPACES PROVIDES A RICH VARIETY OF SPATIAL EXPERIENCES.

In order to relate to large and small environments, a child must become aware of space and learn spatial concepts such as over/under and in/out through various locomotor activities. Early development of the perception of depth, for example, depends on texture and shadow (Bower, 1965; Pick and Pick, 1970) which therefore are important in all children's environments. The development of directionality, based on laterality, is dependent on the kinesthetic experiences of moving the body through a variety of three-dimensional spaces (Kephart, 1960). To become cognizant of more complex spatial environments--like buildings, neighborhoods, and cities--the child must become aware of spatial relations such as the topological, projective, and euclidian concepts of open/closed, left/right, near/far, and precise physical distances, etc. (Hart and Moore, 1973). Developmentally, a child organizes spatial relations around egocentric references (the child's position in space), fixed references (familiar places), and abstract reference systems (geometric and cardinal references) as they develop through three principle stages of environmental cognition (Moore, 1976).

To assist the child in these important cognitive developments, two things are necessary: first, the opportunity for a range of spatial experiences; and second, specific environmental stimulation. The opportunity for falling, a sometimes fearsome, frustrating, and humiliating activity, is an important example of the kinds of experiences so vital to the development of spatial awareness and subsequent continued development of various motor developments (Handicapped Adventure Playground Association, n.d.).
To directly stimulate the child, the environment—both indoors and outdoors—can be structured to motivate exploration and movement through a series of developmental stages. Examples include the provision of a variety of spaces having the following properties: on, beside, behind, over, in, along, under, before, between, through, against, around, across, by, from, toward, above, below, and so on, organized in terms of topological, projective, and euclidian progressions. Other examples include the provision of texture gradients, shadow patterns, other visual perceptual cues (see Hesselgren, 1975; Prak, 1977), a variety of fixed reference points, and alternative, clearly-articulated abstract reference systems (see Hart and Moore, 1973; Moore, 1976).

**PRINCIPLE**

**VARIETY OF 3-DIMENSIONAL SPACES**

**RECOMMENDATIONS**

- All environmental scales should provide for a variety of spatial experiences.

- High places, knolls, and towers with views of activity should be provided.

- Some crawling should be required in many different sized boxes, cubes, and squares.

- Depth cues such as texture, shadows, and others should be included in all portions of the environment.
- Opportunities should be provided to fall safely.

- A variety of locomotion experiences (up/down, under/over, etc.) should be provided for infants and older children, and should be organized to present a full range of topological, projective, and euclidian concepts to the child directly through experience.

- A variety of fixed reference points should be provided in the child's environment to aid in the development of an overall cognitive map of the environment.

**RELATED ITEMS**

- CONTINUITY AND BRANCHING
- PACED ALTERNATIVES
- PLAY ABOVE THE GROUND
- CHALLENGING ENVIRONMENTS WITHOUT UNDUE RISK
ARTS AND CRAFTS HAVE A VARIETY OF PURPOSES FOR THE DEVELOPING CHILD INCLUDING INTELLECTUAL, PHYSICAL, AND EMOTIONAL GROWTH. INDEPENDENCE AND CREATIVE EXPRESSION WILL BE BEST ENHANCED BY WELL-DESIGNED AND WELL-EQUIPPED AREAS.

There are so many things that children learn through art experiences that are appropriate to their age that it would be close to impossible to enumerate them all. (Cherry, 1976, p. 194)

Cherry then gives a list of cognitive values such as learning thick and thin, wet and dry, etc., and physical values such as hand-eye coordination.

Shure's (1963) finding that active social interchange is relatively low in art areas, and Housman's (1972) finding that art areas are associated with low conflict levels, have definite implications for planning arts and crafts areas. The resultant assumption is that art areas are places for individual expression rather than intensive social interaction. Further, art areas may be places for children who wish to retreat from the social milieu for periods of time.

Successful outdoor art areas observed by us (see Pacific Oaks College Children's School, Travel Report, 1978) were adjacent to indoor art space. Parts of the outdoor area were sheltered from excessive wind, sun, and precipitation. Porch-like areas or wide roof overhangs, if sited appropriately away from prevailing winds, can provide the necessary shelter. Partial shelter, storage, and a water source are useful in an outdoor art area. Protection from more physically active outdoor play is also needed.

WHEREVER INDOOR SPACE IS AVAILABLE ADJACENT TO A PLAY AREA, IT MAY BE APPROPRIATE TO INCLUDE AN OUTDOOR ARTS AND CRAFTS AREA. PROVIDE SHELTER, STORAGE, WATER, AND A PROTECTIVE SEPARATION AS APPROPRIATE.
RECOMMENDATIONS

- Art areas must be protected from circulation routes and other activities which will disturb individual involvement.

- Site outdoor arts and crafts areas with consideration for providing shelter from winds, extreme sun, and precipitation.

- Provide natural light, though only filtered sun.

- Art areas should include horizontal and vertical work surfaces for drawing and construction.
• Art areas should include storage for supplies, unfinished work (both two and three dimensional) and drying racks.

• Site art areas nearby surfaces impervious to clay, paint, etc.

• Site art areas near a water source.

• Provide display space for two and three dimensional work.

• Lockable art storage should be accessible to children.

• Outdoor art areas should be adjacent to indoor space.

RELATED ITEMS

FAVORABLE MICROCLIMATES
NESTS FOR QUIET PLAY
LANDSCAPED BARRIERS
POSITIVE DRAINAGE
DEGREES OF SHELTER
Children must be able to experience fantasy, make-believe, and dramatic play as a fundamental part of their developmental growth.

Children expand their experiences of the world and people in it by creating "mind-dramas" with settings, characters, and plots which incorporate familiar and unfamiliar elements. Fantasy play, dramatic play, role-playing, imitation, and creative expression are all important activities for young children. By role-playing, children can understand others better and increase social skills. By imagining unfamiliar places and props, children explore their environment widely. According to Claire Cherry (1976):

Dramatic play offers children safe ways to explore their awareness of their own growing abilities and changing roles and their relationship to others... a means of expressing antisocial ideas and impulses... responding to their ongoing need for creative expression. (pp. 217-218)

Garvey (1977) suggests that objects (or props) for dramatic play can be very ambiguous as children do not need literal props to stimulate imagination. In fact, props which are too specific and static (e.g., a metal rocket ship) will limit the inventiveness of children (Galambos-Stone, 1970).

Bengtsson (1970) suggests that costume, music, and props should be available:

A costume, even a rag around the head, makes a child bolder, and a clothes-chest is therefore an important piece of equipment in a playground. (p. 170)

Bengtsson (1970) also suggests that for dramatic play, two types of areas are needed:

- private spaces without an audience to spoil concentration and imagination
- area for audiences to watch more formal dramatic play
Although defined settings like play houses, mock garages, stores, and bridges allow for planned fantasy games and role modeling behavior, ambiguous settings like a pile of rocks, a wood pile, and a sand box provide open-ended situations which allow the children's imagination to give them meaning (see AMBIGUOUS SETTINGS AND OBJECTS).

PATTERN

STAGES AND PROPS FOR ACTING

PROVIDE A VARIETY OF STAGES AND PROPS FOR CHILDREN'S ACTING, WHICH INCLUDE SPECIFIC AND CONCRETE SPACES, AS WELL AS AMBIGUOUS ONES, PRIVATE AND SHELTERED PLACES AS WELL AS OPEN AND PUBLIC STAGES.

RECOMMENDATIONS

- Provide numerous "private stages" behind bushes, in places under play structures--wherever 2-4 children can play make-believe privately, sheltered from direct adult observation.

- Develop one area which can be (among other things) a stage for drama before an audience. Use child scale here so the area will not be intimidating. Separation of audience and performers may be very slight.
- Provide props and architectural elements which are ambiguous and able to become many things to many children.

- Ensure storage for props and costumes which can be locked and protected from moisture, vandalism, etc., but is also easily reached by children when unlocked.

related items
ambiguos settings and objects
outdoor storage

716-3
ISSUE

CHILDREN ARE FASCINATED BY FIRE. TODAY'S CHILDREN WHO LIVE IN APARTMENTS OR HOMES WITHOUT FIREPLACES, ATTEND SCHOOLS WHOSE HEATING PLANTS ARE REMOTE FROM THEIR SPACES, AND WHO SEE FIRE ONLY AS A BLUE-GAS FLAME ON THE STOVE, HAVE LITTLE CHANCE TO LEARN ABOUT FIRE AND ENJOY FIRE PLAY IN A SAFE AND SUPERVISED WAY.

JUSTIFICATION

Observation by John Chase (n.d.) reveals that even though they lack a safe place to experiment, children in high density housing play with matches as a favorite pastime.

In many European playgrounds, fire play is a very important and successful learning experience (Lady Allen, 1968; Bengtsson, 1970; Utzinger, 1970; Ledermann & Trachsel, 1968). Children experiment with many different materials to see what burns, how fast, etc. Just as they learn about other natural elements (Piaget, 1967), children must learn about fire and its uses.

According to Ulf Brammer, Secretary of the Danish Playground Association:

A bonfire site is a feature whose value soon becomes clear: first and foremost because it is an exciting element for children to "play" with and gather 'round; and secondly because the playground soon accumulates a lot of combustible rubbish which it is as well to burn. Today children have little chance of developing a mature attitude toward fire unless suitably introduced to it by adults.

Designers and builders of houses over centuries have recognized the hearth as the central gathering place. On a playground this focal point is also useful. It becomes a place for social interaction. Within this social framework the cooking and sharing of food can be a learning and growth experience. Early childhood teachers all over the world have incorporated cooking into their programs. What is more natural than that cooking also occur outdoors (perhaps near the garden where some of it is grown--see CHILDRENS' GARDENS).
Obviously, playgrounds which have fireplaces must be supervised. Only those where a playleader is present, notably those in conjunction with early childhood development centers and adventure playgrounds, should offer fire play.

**PATTERN**

**SUPERVISED FIRE AND COOKING AREA.**

**ESSENTIAL FEATURES OF FIRE PLAY AREAS INCLUDE ADEQUATE GROUND AREA TO ACCOMMODATE GROUPS OF CHILDREN, RAISED HEARTHS FOR EASE OF VIEWING, AND SHELTER FROM WINDS.**

**RECOMMENDATIONS**

- Offer fire play only where adult supervision is present.
- Plan fire areas away from combustibles.
- Raise the actual fire place 24 inches so children grouped around can see easily and have a clear view of the flames, demonstrations, cooking, etc.

- Locate the shelter area on the side of prevailing winds, or make shelter possible on any side.
- Locate fire place where gatherings of children are possible.
- Make provisions for cooking over fire.
- Garden - use garden products to cook with, use ashes as fertilizer.
- Rubbish - (if allowed) burnable rubbish pile located far enough away for safety.
- Picnic - eating space for children where they can view the fire and cooking while eating.

RELATED ITEMS
ENVIRONMENTAL YARDS
CHILDREN'S GARDENS
ADVENTURE PLAY AREAS
ISSUE

EXCEPTIONAL CHILDREN—THOSE WITH PERCEPTUAL OR LEARNING DISABILITIES, EMOTIONAL DISTURBANCES, OR WHO ARE RETARDED—NEED PROPER CUES TO HELP THEM PERCEIVE AND UNDERSTAND PHYSICAL SPACES, TIME, DIRECTION, AND RELATIONSHIPS.

JUSTIFICATION

Some exceptional children have difficulty finding their way through spaces because they cannot easily and quickly organize in their minds sequences of time and space. They also may have difficulty with sequences of verbal and spatial directions and with mentally forming a meaningful whole from separate experiences (Kephart, 1960; Cruickshank, 1967). They often have to accommodate themselves each time they enter a new space, which taxes their abilities (Bednar and Haviland, 1969). Therefore, the parts of an environment should be clearly presented so that the whole space can easily be recognized.

Easily understood cues can help children to develop a clear cognitive map of the environment and to relate perception to memory (Moore and Galledge, 1976).

In addition to being clear, the environment should not threaten children but rather induce them to explore it and thereby improve other cognitive abilities. Unnecessary ambiguity, stimulating to the average child but potentially confusing and frustrating to the special child, should be avoided (Bayes, 1967; Bayes and Francklin, 1969; Bednar and Haviland, 1969).

PRINCIPLE

IMAGEABILITY AND ORIENTATION

THE ENVIRONMENT SHOULD BE CLEARLY IMAGEABLE AND HAVE CLEAR ORIENTATION BASED ON VERTICAL AND HORIZONTAL CUES AND LANDMARKS.
RECOMMENDATIONS

- Cues should be provided to make the environment understandable, e.g., color and level changes, numbers, repeated representative elements, and so on.

- There should be visual consistency within spaces.

- The sequence and scheduling of activities should be clear to the child.

- Multisensory cues should be provided for children with sensory handicaps.

- There should be a range of settings with variably controlled stimuli; irrelevant stimuli should be controllable.

- Visual images should be made clear.

- As far as possible, elements with set functions and meanings should be minimized, and controlled ambiguity should be maximized.
- Spaces should be well-defined; caution should be taken when spaces are not clear and where they merge together.

- Environments should be as complex as possible without overburdening the children's cognitive abilities.

- There should be many opportunities for a variety of spatial experiences such as crawling through spaces.

- There should also be a variety of child-scaled environments which allow different movements such as straight/curved and fast/slow.

- The children must be able to personalize the environment so they can attach meaning to it.

- Where play spaces are near child-care centers, recreation buildings, or other children's centers, there should be a marked change between the indoors and the outdoors.

**RELATED ITEMS**

- AMBIGUOUS SETTINGS AND OBJECTS
- BARRIER-FREE ENVIRONMENT
EXCEPTIONAL AND HANDICAPPED CHILDREN ARE OFTEN CONFUSED AND EVEN THROWN INTO A HYPERACTIVE STATE BY ENVIRONMENTS WHICH ARE UNNECESSARILY AMBIGUOUS, CONTRADICTORY, AND COMPLICATED.

Many exceptional children have some sort of perceptual difficulty. When exposed to irrelevant stimuli, they may be thrown into a hyperactive state (Cruickshank, 1967). ORDERLINESS AND CONSISTENCY in the environment may reduce perceptual ambiguity, irrelevant stimuli, and hyperactivity, and thus may increase the conduciveness of the environment for the entire learning process. Predictability and a certain amount of simplicity may reduce the sensory-based hyperactivity and inner anxiety so common in the experience of the exceptional child (Ayers, 1972).

Although novelty, complexity, and dissonance are stimulating properties of the environment for children (Sutton-Smith, 1972), these qualities must be balanced with the special needs and limitations of special children. Applying this principle to exceptional children suggests that the environment should be subdued, but the designer must not take this too literally and leave out variety and interest in the surroundings and equipment. The reason for orderliness in the lives of such children is to avoid the over-stimulation and disorientation that easily affects them. There is a fine design line to be drawn, however, between chaos and boredom.

THE BUILT ENVIRONMENT SHOULD BE ORDERLY AND CONSISTENT SO THAT IT DOES NOT CONFUSE EXCEPTIONAL CHILDREN WHO HAVE LEARNING OR PERCEPTUAL DIFFICULTIES.

- Activity areas should be simple and have a limited number of pieces of equipment.
- Irrelevant stimuli should be eliminated. This will help control children who are prone to sensory hyperactivity.
- To aid in way-finding and orientation, the environment should be straightforward and unambiguous.

- Places of sudden movements and noises should be shielded from other places where children are expected to be involved in quieter pursuits.

- As children are not stimulated to develop by environments which are monotonous or boring, the needs for orderliness and consistency must be balanced with the needs for novelty, complexity, and excitement.
ISSUE

CHILDREN REQUIRE SETTINGS OR ACTIVITIES WHICH ALLOW THEM TO EXPRESS AND RELEASE EMOTIONAL ANXieties, SUCH AS ANGER, TENSION, OR FRUstration WITH THEMSELVES, OTHERS, OR THE ENVIRONMENT.

JUSTIFICATION

Children can become frustrated by their inability to function mentally or physically, e.g., inability to climb a ladder, to communicate successfully with others, or to cope with sensory overload.

For some children, the simple joy of free play outdoors or walking through a garden will help them get away and ease their frustrations. Other children need to be coaxed into relaxing or becoming active to help them forget their troubles. When children have trouble coping with the environment, they need an area in which they can express their emotions and release their tensions and aggressions.
The release of tension and frustration is most crucial to emotional development. Social development follows as the child becomes mentally stronger in dealing with communication and emotional expression, and in dealing with physical handicaps. Motor development is an indirect achievement, although this is not the main objective; large motor development also takes place in many of the activities suggested for emotional release areas.

**EMOTIONAL RELEASE AREAS**

Provide places for children to be coaxed passively with music or color, or areas in which they can get frustrations out of their systems by acting out a role. On the more active side, provide things to build, knock down, throw, or kick; and places to run, fall, jump, and let off steam.

**RECOMMENDATIONS**

- Provide areas where children can safely let loose.
- Provide active and passive color schemes: earthy reds and ochres are conducive to high activity; yellows are bright and cheery (Grey, 1969); light blues and grays are quieting and soothing.
- Provide secluded areas sheltered from sensory overload. (Note: some children also need to see others playing in order to let loose themselves.)

- Provide nature walks.

- Provide areas for role playing. (See AMBIGUOUS SETTINGS AND OBJECTS.)

- Provide areas with LOOSE PARTS so children can become involved in building, tearing down, and starting all over again.

- Provide soft areas where children can kick and punch away any violent aggressions.

For handicapped & exceptional children

For general use play areas

Secluded areas

Role playing areas

Large muscle areas

Soft areas
ISSUE

AN IMPORTANT PART OF CHILD DEVELOPMENT IS WHAT PIAGET CALLS GENERALIZING, RECIPROCAL, AND REPETITIVE ASSIMILATION--THE REPETITION OF FAMILIAR SEQUENCES OF BEHAVIOR AND THE GENERALIZING OF THEM TO NEW SITUATIONS.

JUSTIFICATION

The repetition of cues is important to the development of fine-motor, perceptual, and cognitive skills. Repetition of shapes, colors, textures, designs, and sounds helps maintain the child's interest in learning. It also helps the child achieve generalization, and thus apply newly learned information to other situations.

The environment needs to be designed for the varying sizes of the children, since developmental skills usually progress with age and size. The repetition of activities allows specific skills to develop by performing them on a variety of equipment.

Because every element, or group of elements is coded and explained in a variety of ways, the child's awareness, vocabulary, and mental capacity are expanded. The child learns words and ideas from cues in the outdoor environment in the same way adults learn the metric system by seeing signs on the highway and on food packages. Such repetitions of form and activity aid the child to "generalize," which is the application of what has been learned in one situation to other situations. This application ability indeed is the basis of true learning for all children, and this specific design principle is especially important for exceptional children (see Moore, Cohen, Oertel, and van Ryzin, 1979).

PRINCIPLE

CUES MAY HAVE TO BE REPEATED SEVERAL TIMES OVER TO HELP A CHILD GRASP A MESSAGE. MULTIPLE CODING IS THE USE OF SEVERAL CUES (COLOR, SHAPE, TEXTURE) TO IDENTIFY AN OBJECT.

RECOMMENDATIONS

- Shapes, colors, texture, and designs should be repeated in different and moderately complex ways (Cratty, 1972).
- There should be a planned amount of redundancy, repetition, and reoccurrence of space types.

- Many similar objects should be provided (Collard, 1972).

- Equipment or objects than can be moved to create various sounds should be provided (Moran and Kalakian, 1972).

- A variety of visual stimuli and tactile surfaces should be provided (Abeson and Blacklow, 1974).

- Explain concepts or provide information about any activity cluster or specific piece of equipment.

- When using numbers, words, colors, textures, shapes, etc., provide as many ways as possible to relate the same idea or meaning.

- Colors and numbers should be used in an integrative way to reinforce what is already inherent in the environment.
ISSUE

SINCE CHILDREN WHO ARE NOT ABLE-BODIED (SEE "EMERGING TRENDS-MAINSTREAMING") STILL HAVE THE SAME SOCIAL, COGNITIVE, AND EVEN PHYSICAL NEEDS AS ABLE-BODIED CHILDREN, IT IS OBVIOUS THAT THEIR PLAY NEEDS ARE ALSO SIMILAR. BARRING THEM FROM PLAYSpaces BY CREATING--OR NOT ELIMINATING--BARRIERS IN ACCESS, CIRCULATION, AND EQUIPMENT AMOUNTS TO STUNTING THEIR DEVELOPMENT BEYOND THE PROBLEMS THEIR PARTICULAR HANDICAP MAY IMPLY.

JUSTIFICATION

Children who have a handicap must be allowed and encouraged to develop as normally as possible, and to do this they must have access to most play opportunities other children have. Further, they must have access to other children, both handicapped and able-bodied. Research (Alexander, 1977, pp. 343-4) has shown that a child's peer group may be even more important than parents to healthy emotional development. This is especially true for handicapped children.

While not a developmental argument, one compelling reason for creating a barrier-free environment is that it is required by law in most circumstances (see "EMERGING TRENDS-MAINSTREAMING").

PRINCIPLE

BARRIER-FREE ENVIRONMENT

MINIMIZE BARRIERS WHILE EXPANDING ACTIVITIES IN WHICH ALL CHILDREN CAN PARTICIPATE. SOME SPECIAL ACTIVITIES MAY BE CONSIDERED WHERE USE INDICATES.

RECOMMENDATIONS

- While considering specific activity spaces, use A Playground for All Children (HEW, 1978) and ANSI 117.A (1978), Specifications for Making Buildings More Accessible to and Usable by the Physically Handicapped to add experiences which would enhance this type of activity for handicapped children. For example, "LOOSE PARTS" may be made especially rich in tactile and auditory experiences for blind children.

- Use ramps instead of, or in conjunction with, steps for children in wheelchairs or with braces, crutches, etc.
- Water fountains should have waterspouts upfront and foot-and/or hand-operated controls.

- Doors should be between 3' and 4' wide; thresholds should be flush with the floor.

- Indoor and outdoor seating furniture should have back and arm rests; the seat's depth and height should fit the specific age group of users. Picnic and other tables should have separate stool seats of various heights and distances from the table for those wearing braces, which also allows wheelchairs a closer approach; the bottom of the table should be 30" above the ground for wheelchairs or as appropriate for other seating arrangements.

- A fire pit with fire rings raised 24" from the ground provides a campfire usable and safe to everyone.

- Open field space should be free of potholes and ruts; it should be a flat, usable space.

- Provide a slide and allow for a crawling area to reach a slide, or provide a ramp with 8% maximum grade to reach the top, and a 5'x5' level platform on the top.

- A box-type swing or a tire swing is good for severely disabled children.

- The top of a sandbox should be at the same level as the ground to reduce obstacles; water and sand tables should be raised 30" above the ground for wheelchairs.

- Provide nature areas with dwarf trees that allow children to smell flowers or pick fruit; provide simple pathways and raised planting beds.

- Provide some soft surfaces which children who can't walk could crawl or roll on.

RELATED ITEMS
PACED ALTERNATIVES
EMERGING TRENDS-MAINTREAMING
• Use signage with raised letters at a height children can reach.

• Wheelchair access to hills should be made easier with nonskid surfaces and downslope stop curbs.

• A child should be able to sit under an overhang and play with his arms resting in sand and water.

• Surfaces should be hard enough for wheelchairs, yet safe and nonabrasive. Use a material such as composite rubber and acrylic or 3/8"-thick "Elastaturf" on concrete.

• Youngsters with braces, crutches, or in wheelchairs cannot open back-up doors. Therefore, incorporate "tambour" type doors which fold into recessed areas of the wall.

• Children should be able to easily move from the outdoor play area to transportation pick-up points.

• A berm, fence, or sign must be no higher than 48" if an adult in a wheelchair is to see over it. The height is reduced accordingly for children.

• Trails should be of a continuing common surface; steps and/or abrupt changes are to be avoided; trails should be 5'-0" wide to allow wheelchairs to pass; and gradients should not exceed 5%.

• Ramps must not have a slope greater than 1'-0" of rise in 12'-0" of run, and should be a nonskid surface; width should be 4'-0" at least; all ramps must have handrails on each side to fit children's reach, about 16"-24" above ramp. When appropriate two parallel handrails should be used.

• All stairs should have rounded nosing; riser 5-3/4" and tread 14"; handrails should be of the height described in the preceding recommendation.

• Rest areas should be provided especially where gradient is greater than recommended.