CHILDREN'S PLAY AND CHILD PLAY FACILITIES
1. That children's play is as essential to healthy social intellectual and physical development as any other major area of their lives

2. That children need many different kinds of play opportunities to fulfill all their various play needs--social, intellectual, and physical

3. That policies should be adopted stressing the imperative of play and of neighborhood- and home-based play areas for children

4. That an advocate for play be appointed on every base with broad reaching latitude to work with various agencies to implement policies and plans for better outdoor play and recreation for children of all ages (infancy through the teen years)

5. That play leaders be hired to work with children in a variety of play and recreation capacities

6. That children will play anywhere and everywhere, and the entire site must be considered when planning for play

7. That every base should work towards implementing a tiered park system, hierarchically organized from a regional park to several neighborhood parks and playgrounds and many home-based play areas (see Recommendations 200-209)

8. That the kinds of play opportunities provided at a particular play area and its location will be major determinants in the frequency and length of use it receives. That the more experiences offered and the more convenient the location to housing, the more use it will get

9. That any architectural program developed for a particular park or playground should be based both on general patterns selected from this document, together with local needs, perceptions, values, and site conditions. That the program should be developed cooperatively by all interested parties--parents, base personnel, architects, child development experts, and the children themselves (see Recommendations 300-402)
10. That the programming of design of play spaces should incorporate a variety of different activity spaces for different types of play (structured games, creative play, play with natural elements, water and sand play, quiet play, shared open space, etc. (see Recommendations 600-614, plus 708, 709, and 715-717)

11. That the overall design of a successful play area is not just the haphazard juxtaposition of different activity spaces, but depends on the organization of the total site in accordance with sound site-organizing principles (see Recommendations 500-512)

12. That play spaces designed to separate age groupings are less effective than those arranged to be developmentally appropriate for children of different ability levels... That areas designed for different developmental levels should be inter-linked and accessible visually and in terms of movement for children of all levels and ages

13. That play areas which allow children to manipulate their own environment in some way (e.g., adventure play, creative play, environmental yards, etc.) provide for more kinds of relevant play than any other single type of designated playground

14. That the overall quality of all play spaces will be enhanced by good design which responds to a variety of other children's needs (e.g., ambiguity to stimulate fantasy play, loose parts to stimulate creative play, nests for quiet play, retreat and breakaway points to get away from too intense interaction, clear accomplishment points to reinforce the development of self-concept, etc. (see Recommendations 700-722)

15. That landscaping, the design of site details, and the selection of site materials all should be considered with the child in mind

16. That the ultimate success of a play area will depend in some measure on the amount of involvement community members (adults and children) feel in the design and construction process
17. That the set of planning recommendations and design criteria contained in this document represents a comprehensive approach to children's outdoor play, recreation, and learning needs, and that adoption of the recommendations and patterns will lead to the better design of environments suitable for the developing child.
What is play? Why do children play? Is play important or is it superfluous to child development?

Parents, educators, child psychologists, and architects have different assumptions about play and its importance. As the child psychologist, Susanne Millar (1968) says:

_The term "play" has long been a linguistic wastebasket for behaviour which looks voluntary, but seems to have no obvious biological or social use. . . . Common-sense questions about any human behaviour do need answering. But they have to be "unpacked" before the behaviour can be studied in a way that precludes mere speculation. (p. 11)_

Awareness of the importance of play in the life of the child has grown in recent years to the point where many new programs and environments are being created for children's play. This awakening has come from several thrusts. First, research has shown incontrovertably that the playful behavior of children is critical for their development.

The world's most respected child psychologist, Jean Piaget, has pointed out two complementary aspects of development which he termed "assimilation" and "accommodation." These are technical terms for what teachers and parents refer to as unstructured play and structured learning.

Much of the child's development occurs spontaneously from unstructured activities--play--where the child is learning and growing from his or her own initiative, exploration, and discovery.

Learning also occurs, of course, from structured and semi-structured situations as when parents are reading with their child, when child-care workers are showing a child a new set of colors or shapes, and in all school situations.
However, Piaget's point is that optimal development is arrived at by a complementary balance of unstructured play experiences interspersed with times of structured learning.

Research has also shown that the first five years or so of a child's life is the time of most active development. The critical importance of stimulation during these early years has been demonstrated by Head Start Programs. The nation's consciousness has been raised and a growing lobby continues to push for universal early childhood programs. Equal to the need for programs is the need for more and better environments for children's play.

THE HISTORY OF PLAY

Though the importance of play has recently gained national recognition, the history of recorded ideas about play can be traced back to the time of Plato and Aristotle. One can imagine them walking down a narrow roadway underneath Corinthian columns arguing whether play is learned or innate. Plato might say, "Do you not agree that all behavior is learned from the social context?" to which Aristotle might reply, "No, the youngest baby smells and is playful lying in his basket even before learning could occur. Play must be a significant adaptive agent given to all children at birth." Plato was the first to realize the intellectual value of play, while Aristotle saw play as a testing ground for adult social development. Echoes of both these wise views have survived to modern times.

Following the great educational reformers of the seventeenth to nineteenth centuries, from Rousseau to Pestalozzi and Froebel, teachers seriously accepted the idea that education should take account of the natural, spontaneous proclivities, interests, and stages of development of the child. Froebel was one of the strongest advocates, stressing the importance of play in learning. Recent major thinkers--such as Maria Montessori and Jean Piaget--have been the most articulate spokespeople for this view.
EARLY THEORIES AND POPULAR IMPRESSIONS

Between the time of Pestalozzi-Froebel and Montessori-Piaget was the rise of the British-German play movement. Schiller and Spencer called play an expression of exuberant energy, and argued that play evolved in the higher animals as they needed to spend less time on keeping themselves alive and thus had more available energy (cf. Millar, 1968). This came to be known as the "surplus energy" theory of play, the basic assumption being that children had to burn off excess physical energy in order to concentrate more fully on the more serious academic--cognitive--pursuits of school.

Parallel with the surplus energy theory was the rise of the German physical education movement which saw physical education as necessary to other types of more scholastic education. With the concurrent division between church and state and between families and schools, this led to the quatro-frication of the individual. Cognitive growth was the function of the school; social development the function of the family; spiritual the function of the church; and physical of the sports club or as an adjunct to the school.

These two influences, then, led to play being seen as related only to physical development and the burning off of excess energy so children could get on with the less playful, structured development offered by the other social institutions.
Unfortunately, although the surplus energy theory of strictly physical play has been discredited (cf. Millar, 1968; Piaget, 1962; Ellis, 1973; Garvey, 1977), it remains as the most prevalent popular conception held by lay people. Many parent groups and even some teacher groups believe that play has its importance in physical growth and/or the burning off of excess energy. Out of this attitude comes the spate of traditional, fixed-in-place play equipment areas which pass for playgrounds.

United States playgrounds and parks for adults have also been affected by the German physical education movement. As a consequence many former holistic recreation parks have been turned into sports fields. "Park" used to connote a comprehensive outdoor naturalistic recreation site for the whole family (cf. Wurman, Levy, and Katz, 1972). Unfortunately, in the lay person's mind, park is often now synonymous with sports playing field. For example, the lovely meadows designed by Olmstead in the center of Central Park in New York City and Golden Gate Park in San Francisco have been entirely taken over by a grid of baseball diamonds.

More recently, articulate voices have been raised for seeing play and recreation as being important to the whole child—to cognitive and social as well as physical development—and to holistic development, not just burning off energy (cf. Piaget, 1963; Millar, 1968; Ellis, 1973; Garvey, 1977). This has led, in turn, to the design of new types of playgrounds in response to contemporary notions of play as integral to full development (see TYPES OF PLAY AREAS AND THEIR LOCATIONS).
CURRENT MAJOR THEORIES OF PLAY

In order to better understand the importance of play, a brief description of the theoretical frameworks needs to be undertaken.

There are three major theories of play which correspond to the major currents in child development research and theory:

1. psychoanalytic
2. behaviorist learning theory (both social learning and exploration theories)
3. cognitive-developmental theory

FREUD AND THE PSYCHOANALYTIC THEORY OF PLAY

In psychoanalytic theory, the physical environment is seen as an inanimate object on which to (safely) project feelings, e.g., the child may act out anxiety or anger toward a mother who leaves him or her. It also is seen as an inanimate foil for wish-fulfillments no longer compatible with the child's sense of grown-upness in adult-like social situations, e.g., using an animal or a playhouse as a subject for fantasies seen as less mature (cf. Searles, 1961).

Play is seen as a source of emotional release, anxiety reduction, compensatory wish fulfillment, and social role playing. Play is wishful thinking, and as such substitutes the world of fantasy for the world of reality. In psychoanalytic theory, therefore, play is seen basically as supporting the emotional growth of the child, and to a slightly less extent his or her social growth.

BEHAVIORISM AND LEARNING THEORIES OF PLAY

Strict behaviorism, either classical al la Pavlov and Watson or operant al la Skinner, deny the existence of anything between stimulus and response. As a consequence, as Millar (1968) points out:

The main affect that learning or behaviour theory has had on the psychology of play is that the subject as such no longer exists. (p. 37)
"Play" is seen as a motley collection of behaviors that ought to be considered separately. A pre-school child chasing a rolling ball is not playing, but is making a generalized response to a small moving object, and will be rewarded for succeeding in the task. Interestingly, this view has many similarities with Piaget's (to be discussed below), but the critical aspect in learning theory is that the child is seen not as spontaneously exploring the world, but rather as totally under the control of reinforcing stimuli and rewards.

Two important variations on this position explore other aspects of play in a learning context. The first, a social learning theory, holds that play is critical to the child's learning of social relations. Play is treated as a learned behavior. As Ellis (1973) points out, this view of play sees the structure of children's behavior as a reflection of the
organization of social contingencies around them. Thus adults selectively reinforce—though perhaps unintentionally—behavior in the child that is socially acceptable. Play is thus an important way of learning cultural rules.

Child psychologist Garvey (1977) has argued that children learn language, social rules, and rituals through play. Tanon (1978) has also argued that play is social practice, a primary way children learn social rules of society. Through play, children learn to integrate different social groups and learn to respect their similarities and differences.

Tanon and many others argue that there are four stages in social play:

1. solitary
2. parallel but non-interacting
3. associative, aware of each other and responding to each other without interaction being the primary activity
4. cooperative play
The role of the physical environment is to stimulate and reinforce cooperative play behavior toward this goal. This can be done by creating spaces for various sized groups, and by designing play equipment which are only fun to play with when two or more children cooperate together.

The second learning-derived theory is the stimulus-seeking theory of Berlyne and his followers (cf. Ellis, 1977). This theory holds that play is in the service of exploration for arousing stimuli. The physical environment plays a definite stimulus role, e.g., novel situations and objects elicit exploratory behavior.

The underlying assumption is that there is a need for optimal arousal and that the child seeks stimulation in order to optimize arousal. The freedom to engage in exploratory behavior is therefore critical for the child, as is stimulation arising from optimal levels of novelty, complexity, dissonance, and/or ambiguity in the environment.

PIAGET AND COGNITIVE-DEVELOPMENT THEORY

The final theory to be highlighted is the cognitive-developmental theory, of which Piaget's thoughts are the best known and most influential, especially on early childhood educators, and more recently, on architects.

In this theory, the child is seen as adapting to a combination of external and internal demands. The child is assumed to be an active agent, giving direction to his or her own behavior. Play is seen, therefore, as integral to development, and, in fact, play is the complement of more-structured learning.

In Piaget's own terms, play is the relative emphasis of assimilation over accommodation. That is, a child takes in stimuli and transforms them to fit his/her needs at that moment, e.g., fantasy play where environmental stimuli are freely transformed into fantasy objects or situations.
More structured learning, then, is the relative emphasis of accommodation over assimilation. That is, one adapts one's behavior or way of thinking to the nature of the stimulus situation, e.g., struggling to learn a concept being taught by a teacher.

Development always and everywhere involves both assimilation and accommodation; one never works to the complete exclusion of the other. The implication, then, is that environmental situations need to be provided which will provide stimuli for both free assimilation and for more-structured accommodation, and which will provide the freedom for the active organism to freely explore, structure activities, and test ideas. As the
child passes through a regular series of stages of development, the environment can provide "aliment" or food for thought and action to help the child progress from stage to stage.

From Hart and Moore (1973)
Used by permission

Thus the cognitive-developmental theory emphasizes the need for play areas where the child can impose on reality his or her own conceptions and constraints (cf. Ellis, 1971). When, as Nicholson (1971) says, we cease to cheat children's opportunities for creativity, and instead provide them with environments full of dynamic loose parts which can be manipulated physically and mentally, we will have created responsive environments for developmental growth.
TYPES OF PLAY

Following from the above general conceptualization of play, there are three major types of play, and many variations and hybrids:

1. Physical-motor play
2. Cognitive-intellectual play
3. Social play

PHYSICAL-MOTOR PLAY

This type of play includes opportunities for large-muscle development, both of the structured, game type, e.g., kick-ball and basketball, and of the unstructured kind, e.g., climbing, jumping, running, etc. Small muscle play, and eye-hand and eye-foot coordination are other types of major physical-motor play activities, e.g., playing with small toys, playing with sand or mud, manipulating small, loose parts, etc. Opportunities for the traditional sports games and less-formal ball play, as well as opportunities for climbing, swinging, running, sliding, and jumping should be included with activities of balancing and fine-motor and perceptual-motor activities like repairing objects, making a fishing pole, building tree forts, etc.
COGNITIVE-INTELLECTUAL PLAY

This type includes any activities in which children manipulate objects or the environment, find out about new objects through any of the five senses, fantasize, create, or solve problems. Make-believe, informal drama, role-playing activities, and fantasy are all important examples. Other activities of this type are exploring the environment, working with gardens or animals, conducting informal experiments, and building things like toy canals, sluice-ways, dams, and power-generators, etc.

SOCIAL PLAY

Social play includes a variety of dramatic and role-playing situations (which are both cognitive and social play), organized games, cooperative projects, and even just talking, walking, and watching the goings-on of other children.
Quiet, reflective play where one or two children withdraw to play peacefully by themselves is also an important aspect of social play.

Play spaces and activities which require cooperation for use are especially helpful for the development of cooperative play from the earlier stages of isolated and parallel play. Any games with rules, whether they be set by tradition, or set by the children themselves as the results of a cooperative process, are examples of social play—marbles, hide-and-seek, four square, hop skotch, even a casual game of catch. Social materials, identities, roles, and plans are all involved in social play.
DEVELOPMENTAL STAGES OF PLAY

1. Sensori-motor play—occupies the period from infancy through the second year, when the child is busy acquiring control over movement and learns to coordinate gestures and perception of their effects. This stage of play corresponds to the sensori-motor stage of development.

Infants derive pleasure from mastering motor skills, from mastering the connections between perception, language, and motor skills, and from experiences of touch, sound, and sight.

2. Cognitive, symbolic, or representational play—predominates after the age of two to about six. During this pre-operational period of development, the child acquires the ability to encode experiences in symbols—images of events can be recalled and combined without the concrete event or referent for the event needing to be present. A child may begin to play with words, images, pictures, and symbols and their combinations, pretending, for example, to fill a nest with eggs while piling marbles in a doll's hat. Findings from many studies indicate that ambiguity in the environment encourages this type of fantasy and make-believe play (see the design pattern 701 AMBIGUOUS SETTINGS AND OBJECTS).
3. Social and rule-oriented play -- the third and final stage of the development of play, this stage occurs during the school years, and evolves around the variety of games children play which involve social concepts of cooperation and competition, rules, rituals, etc. The child has begun to understand the ways of social groups, of different points of view, and of the reciprocal nature of social cooperation. This stage in play corresponds to the concrete operational stage in the overall development of the child.

At each period, the respective stage predominates in children's play, but the other types of play are still present and need to be provided for in both programs and facilities. In order to encourage the child's development from sensori-motor to social play, and more importantly the integration of all three, the environment needs to be progressively structured towards social-cooperative play involving sensory experiences, motor tasks, and cognitive-intellectual challenges.
CONCLUSION

In a major address at the Seventh World Congress of the International Playground Association, Valia Tanon, a Swiss child psychologist and associate of Piaget's, argued against any one, singular theory of play. Pointing out that theorists often separate theories—as above—into physical, intellectual, and social theories, she asked, "How much longer must we wait to break away from scholastic ways of learning?"

The above review of major theories of play is not an attempt at a scholastic categorization of theories as much as it is meant to point out the numerous reasons why children play, the varied types of play they engage in, and the importance of that play to their overall development.

Thus, we see that play is integral to overall child development, that it is not just the burning off of excess energy, but that it is a natural complement of more structured learning situations. We also see that play is significant for the child's cognitive, emotional, social, and physical development. It is important for the child's being able to deal with emotional situations, including dealing with family conflicts. It is important for the child's learning of social rules, rituals, and customs of his or her society and culture. It is important for exploratory behavior and for cognitive development.
TYPES OF PLAY AREAS AND THEIR LOCATIONS

There are several types of playground currently in existence. For convenience in discussion we will use the names given in most of the literature. Obviously, a playground may actually be a hybrid— a mixture of several generic types and may thus share the virtues and/or sins of each.

TRADITIONAL/CONVENTIONAL PLAYGROUNDS

The type of play area seen most often, relying heavily on standard equipment selected from catalogs by administrators, community groups, teachers, etc. This equipment may be metal or wood. The equipment is generally single-use and intended for large muscle activity.

Pros

- Research has shown that traditional playgrounds provide for large muscle activities and motor development.
• The equipment can present a strong play image immediately identifiable to children as "their place."

• Children rate swings and slides as two of their favorite activities in such play areas.

Cons

• Safety, especially with usual metal equipment, is at a comparatively low level. Hard swings, free-standing slides, teeter-totters, monkey bars all can be very dangerous. In fact, in a National Electronic Injury Surveillance System list of accident frequency related to 105 consumer products, playground equipment ranked as number 8 (Sweeny, 1977).

• Traditional playgrounds do not provide for cognitive and social play, although these kinds of play may occur as a by-product (Hayward, Rothenberg, and Beasley, 1974).

• Traditional play areas are not as popular with children as contemporary and adventure play areas. Of children questioned at each play area:

  At traditional: 15.4% prefer traditional
  At contemporary: 55.2% prefer contemporary
  At adventure: 75% prefer adventure (Hayward, Rothenberg, and Beasley, 1974).
At peak hours, two studies found traditional play areas vacant 88% of the time (Wade, 1968; Dee and Liebman, 1970, quoted in Hayward, Rothenberg, and Beasley, 1974).

CONTEMPORARY/SCULPTURAL PLAYGROUNDS

Generally planned as "one-off" designs by architects or landscape architects, these play areas are less numerous and more costly. They may be recognized by the sculptural quality of the landforms and equipment. Contemporary playgrounds are usually fairly static—nothing moves except the children. They can have special features such as water jets, climbing hills, slides built into berms, tunnels, etc.

Pros

- Usually very aesthetically pleasing. Adults enjoy having a play area like this in the neighborhood.

- Children may be attracted by novel features—water is a great attractor.

- Places for social play, watching, retreat and quiet play are more evident than in the traditional play areas.

- Use of plants and trees can be especially pleasant for children and adults.

Cons

- Because of large moldings of concrete, earth-shaping, etc., this type of play area can be very expensive.
- Some of children's favorite large muscle activity--on moving equipment--is missing.

- Lack of manipulable items for children is a serious drawback. There is no way children can affect their environment. Everything is fixed. Boredom sets in quickly.

ADVENTURE PLAYGROUNDS

The antitnesis of a contemporary play area in that almost nothing is fixed or static, adventure playgrounds require no equipment except tools and "junk" and provide an opportunity for children to create their own play environment. The site requirements include an opaque barrier to screen the "messiness" from adults, play with electric and water hookups and access for delivery trucks.

The money normally spent on equipment and maintenance on traditional and contemporary playgrounds may be used to hire a playleader for an adventure playground. The playleader is an absolute essential for any adventure play program. The leader and the children (and possibly adult volunteers) construct a
first hut which will be the base of operations from which the playleader will dispense tools, advice when asked, and from which the playleader will solicit, via telephone, "junk" from any sources available. The children can then build, dig, make gardens, play with animals, do arts and crafts, play games, etc.

Pros

- Children, when given a choice, overwhelmingly prefer adventure play programs to either of the above two types of more conventional playgrounds.

- Children stay longer and come more often to playgrounds with a playleader (Department of the Environment, 1973).

- Adventure play satisfies most developmental needs: cognitive, social, and physical.

- Safety at adventure playgrounds is very good (American Adventure Play Association, 1978).

- Adventure play supports problem-solving, cooperation, and exploration in children.

Cons

- Unless approached properly, the adults will object to the playground appearance and may feel their children are getting second best because they have to play with "junk" (Spivak, 1969).

- Adult participation by parents may be discouraged by children.
• Usually used by school-age children, not younger children, although younger children can learn to use tools (Bengtsson, 1974).

CREATIVE PLAYGROUNDS

Based on values inherent in both aesthetically-pleasing sculptural/contemporary playgrounds and manipulable-environment adventure playgrounds, creative playgrounds offer modular "loose parts" which kids can use to form their own environment. The modular pieces are designed to allow children to create their own playgrounds without the necessity of tools.

Children can also participate in arts and crafts activities and in dramatic activities at creative playgrounds. Creative playgrounds originated in Sweden. The only one in North America is the Harbourfront Creative Playground in conjunction with the adventure playground there (Travel Report, 1978). Use of a playleader and a slant toward younger children are apparent there.
Pros

- Promotes values similar to adventure play.
- More aesthetically pleasing to adults.
- Easily used by very young children.
- Also provides all three kinds of play: cognitive, social, and physical.

Cons

- Modular pieces do not give total freedom of design to children.
- Children don't learn to use tools as they do in adventure playgrounds.

"SPECIAL" PLAY/LEARN ENVIRONMENTS

Designed specifically for non-able-bodied children, these play areas try to provide social, physical, and cognitive play in adapted form. They provide paced alternatives some of which can give the most severely handicapped a sense of accomplishment at play. Typically included are soft surfaces, gentle slopes, sounds, color, tactile changes, and as much variety in sense experience as possible so that all children can enjoy at least some parts. Some "normal" play experiences are adapted, e.g., sand and water play may be in raised tables so that wheelchairs may be pushed under it. Examples of special
playgrounds may be found in the work of Leland Show, Richard Dattner, and Moore, Cohen, Team 699.

Pros

- They give handicapped children normal play experiences.
- They provide cognitive, social, and physical play.

Cons

- Separation of non-able-bodied children from other children may be undesirable for both groups (U.S. Department of Housing and Urban Development, A Playground for All Children, 1978).
ENVIRONMENTAL YARDS

Using natural features of the countryside to shape play areas, environmental yards offer unique experiences to children. Plants and animals, flowers and trees, water and dirt, give children a chance to explore their environment, observe life cycles, interact with other living things and cooperate with nature. The yards which exist now are in cooperation with schools (Washington Environmental Yard, Berkeley, California, and Wildwood School Area, Aspen, Colorado). Washington Environmental Yard took a school's asphalt play yard and turned it into an environmental yard. Wildwood School was planned and built underground to preserve a beautiful existing natural environment. Both approaches have worked beautifully.

Pros

- Schools can use yards to help teach values, ecology, biology, botany, color, form, texture, etc.
- Children gain respect for the environment while being able to manipulate and encourage growth.

37
A yard may be as inexpensive as setting aside an existing natural site.

Children can find cognitive, social, and physical play experiences in an environmental yard.

Cons

- It may take 3-5 years to develop a yard when starting from scratch.
- Regular care is required during the first couple years until the plants are well established.

INFANT PLAY YARDS

Planned especially for children under 2 years of age, these yards are small, enclosed spaces with many different kinds of sense experiences (colors, forms, sounds, textures) and paced alternatives (e.g., 2", 4", and 6" risers to climb). The one at Pacific Oaks College Infant Care Center (Travel Report, 1978) is raised so that adults on a tower walkway at the perimeter can see infants at child level.

CHILDREN'S ZOOS, FARMS, AND GARDENS

Special places where children can interact with various animals, domestic and wild, and with cultivated plants can produce many benefits. First, children can relate to animals easily since animals are responsive and non-threatening (Searles, 1966; Alexander, Ishikawa, and Silverstein, 1977). Secondly, children who do not see life cycles in plants
and animals lose any concept of life forms independent of man. They believe that everything is man-made—food, lumber, etc. (Piaget, 1962). Thus, they cannot understand their dependency on plant and animal life and their responsibility to conserve it.

Thirdly, the traditional values of pets—companionship and responsibility—are denied some children (particularly children who must move frequently).

Children's zoos or farms are generally in a rather central location. Adult supervision of animal care is necessary whether children help with care or not. Animals must be provided a suitable habitat including a place to "get away" when children become too importunate.

Pros

• Values in positive interaction of children with animals

• Cognitive learning experiences in making connections between animals, plants, and products (e.g., bees-honey, cow-milk, tree-apples, etc.).

Cons

• Expense of maintenance and adult supervision may be high (though animal and garden areas in child support facilities are extremely inexpensive).

DO-IT-YOURSELF AMUSEMENT PARKS

The best example of this type of play area is Children's Village in Toronto (Travel Report, 1978). Admission is charged and children use play equipment as they would amusement park rides, going from one to the other. The "rides" include very special play equipment such as water fight squirters, soft shape jungle-gyms, water slides, etc., equipment which might be too expensive to install and maintain without the admission charge.

Pros

• Very exciting for children. Can have play equipment which is too expensive to have elsewhere.
Cons

- Planned more for immediate attraction than long-term developmentally-relevant play.

- Shy children may be uncomfortable in the noise and crowd.

- Admission charge may deter some children.
OPEN MULTIPURPOSE SPORTS PLAYING FIELDS AND HARD-SURFACE AREAS

Ball fields, basketball courts, and other organized-sports facilities are a necessary part of play area planning, particularly for school-age children. Studies have shown that older children are particularly attracted to ball playing areas (Cooper, 1975). Since older children are frequently temporary caretakers for younger children, it would seem reasonable to maintain visual contact between sports fields and other play areas for younger children.

COMPREHENSIVE PLAYGROUNDS

A comprehensive playground is a centralized, spatially-interconnected set of play spaces. It is analogous to a Network of Play, which is a decentralized, linearly-linked series of play experiences.

Arvid Bengtsson is a famous Swedish planner and landscape architect who has written extensively and engagingly about comprehensive playgrounds. He says:

The Comprehensive Playground or play park . . . should contain layouts for different age groups, i.e., not only for children and adults, but for the age groups in between for which we often fail to provide in traditional parks. In such a play park, tennis courts and courts for other ball games—they could be of the simplest kind—are just as essential as swings and sandpits; and
resting places for the aged are no less important than layouts for active pursuits.
(Bengtsson, 1970, p. 110)

This type of play area includes a wide variety of activities for many age groups integrated into a single site. Examples are the Irvine Comprehensive Playground and the Mary B. Connelly Children's Playground (see Travel Report, 1978). Many comprehensive playgrounds exist in Europe and have been successful in attracting adults and children to play together (Bengtsson, 1970; Utzinger, 1970; Ledermann and Traschel, 1969). Comprehensive play may include traditional, sculptural, and creative play equipment, adventure play area, adult play (e.g., tennis, handball, etc.), swimming/ice skating, and ball fields and courts.
Pros

- Can be a powerful attractor to a specific location for both adults and children.

- Can make adult recreation more useable by providing play for the children who adults might otherwise hesitate to bring along.

- Can help parents and children enjoy recreation time together rather than having to separate to pursue their own interests.

Cons

- Central location of all these facilities may mean less accessibility to entire population that if they were scattered throughout the community. Small children may be able to come only when parents bring them.

TIERED PARK SYSTEM

A tiered park system is a coordinated collection of small to large play areas and parks connected by park links. The system is designed to facilitate the distribution of a variety of large and small, linear and concentrated, quiet and noisy, traditional and innovative recreation and play activities for children and adults. The parks range from those focused on natural features (resource-oriented, e.g., regional hiking trails) to those that are focused on specially-designed facilities (facility-oriented, e.g., comprehensive playgrounds).
LOCATION OF PLAY AREAS

In planning play spaces for an entire base, there is a hierarchy of locations which must be considered:

- Housing Areas and Undesignated Play Spaces
- Designated Neighborhood Play Areas
- Child-Support Centers and Schools
- Centralized Community-Use Spaces
- Links and Networks

HOUSING AREAS AND UNDESIGNATED PLAY SPACES

Children actually play in spaces other than playgrounds during the majority of their play time (Hole, 1966; Department of the Environment, 1973; Cooper Marcus, 1975; Travel Report, 1978).

For younger children, the major play area is within a short distance of their own front door. This may include doorstep or balcony, yard, indoor entry space, on a fence, or wall, low garage roof, etc. (same studies).

For older children, undesignated play areas expand to include the whole neighborhood--vacant lots, streets and sidewalks, driveways, nearby school-yard, etc. These undesignated play areas will be used whether they are designed for play or not. Therefore planners and designers must be aware of this use and plan these spaces to be safe and satisfying for play.

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 Marcus, 1975, p.
DESIGNATED NEIGHBORHOOD PLAY AREAS

To complement the proper design of undesignated play areas, a variety of designated playgrounds can be planned for a community. These can include any or all of the above playground types as the needs of a community dictate (see Matrix in ORGANIZATION AND USE OF THIS DOCUMENT for ways to determine how to assess a community's needs and decide what types of designated playgrounds are required).

CHILD-SUPPORT CENTERS AND SCHOOLS

The outdoor areas for child-care facilities and for schools become an extension of indoor activity spaces. The emphasis is on the continuity between indoor and outdoor uses. Water play or sand play may occur in a continuum which includes both types of spaces. Plant study may happen in a sunny window greenhouse and an outdoor garden.
Outdoor activity spaces should include some sheltered "porch-like" space adjacent to indoor space so that outdoor areas can be used year-round.

In elementary and secondary schools, an important element of the outdoor spaces will be sports fields, hard-surface courts, and other sports facilities. It is reasonable to assume that these would be located adjacent to indoor sports (gymnasium) spaces.

CENTRALIZED COMMUNITY-USE SPACES

In each community, there will be places where people—adults and children—naturally gather. Such places may include shopping areas (e.g., "downtown"), community service places such as the town hall and library, centralized parks and recreation centers, and any other attractive places intended for use by the whole community.

Anywhere people gather there should be places for play. Parents will be much more comfortable taking children with them if they know special activities for children will be available where they want to go. Centralized community-use spaces would be appropriate locations for child-play areas which are unique, such as children's museum, children's farm or zoo, and do-it-yourself amusement park. Adventure play areas, though needing to be more numerous than those just mentioned, may also be located in conjunction with heavy-use areas. Because of staffing, an adventure play or creative play area in conjunction with a children's library might allow staff double-functioning (Hill, 1978).
LINKS AND NETWORKS

In the past, playgrounds have been relegated to "left-over" land—places which were not desirable for other uses. They have provided amenities for those children who happened to use them, but many have remained mostly vacant, lacking any special attraction that made it worth the effort by children to go to them. These play areas, located by chance, may in fact solve some problems in one specific neighborhood, but lack any real connection with other play opportunities for children whose needs extend beyond those available in the single location. Further, isolated playgrounds do not meet the needs of different age groups, young children, older children, and adults who need recreation opportunities together.

Comprehensive playgrounds, located centrally, solve many problems by providing numerous play possibilities by all age groups. But the central location will limit use by many children. Young children, older children without bicycles, and children whose parents can't bring them when they want to come will all find distance a difficulty.

Drawing by Steve Schroeder
A more rational approach to providing a wide range of play opportunities with reasonable accessibility for children is to plan a hierarchical network of play. A network provides play for youngest children closest to home, and as the children's age and home range increase, provide play at a higher developmental level at varying distances from home. A very young child may only choose from home one local playground and central playgrounds where their parents may take them. Older children may choose from two to three local play areas, the child-care facility outdoor play and central play areas. A school-age child may choose from local play areas, a school playground, an environmental yard, or adventure playground within bike range.

The play locations, the links between them (including bike and pedestrian trails), and their connections to other community activities, are considered as a total play network. This assures each parent and child that integrated and developmentally-appropriate play opportunities will be available as needed.
### OCCURRENCE OF TYPES OF PLAY IN KINDS OF PLAYGROUNDS

<table>
<thead>
<tr>
<th>KINDS OF PLAYGROUNDS</th>
<th>TYPES OF PLAY</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>cognitive</td>
<td>social</td>
<td>physical</td>
<td>large</td>
<td>fine</td>
</tr>
<tr>
<td>home-base</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>traditional</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>contemporary</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>natural</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>small hands-on museum</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>adventure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>network-comprehensive</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>link</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**CODE**
- Occasionally
- Some
- Frequently

1. Both traditional and contemporary playgrounds emphasize one type of play: large muscle play.
2. "Theme" playgrounds emphasize a wide variety of types of play.
3. Comprehensive playgrounds or play networks include all the types of play that emphasize broader developmental goals.
4. Home-base play or play in the immediate neighborhood can include a variety of types of play and can support a variety of developmental goals.
EMERGING TRENDS

There are several themes which appear with increasing frequency in the current literature on child play areas. Administrators and designers should be aware of these trends as they cooperate to produce good, user-oriented play areas.

THE DEVELOPMENTAL RELEVANCE OF PLAY

The recent emphasis by child psychologists on the importance of play in children's development has begun to affect designers of child play areas. Play is integral to development and not a superfluous burning off of excess energy (Millar, 1968). Children's play is critical to psychomotor, intellectual, and social development. Paraphrasing the famous Swiss child psychologist, Professor Valia Tanon (1978) we may say that play is socially very significant.

Relative to the triple goals of social, cognitive, and physical play, traditional and sculptural playgrounds have been evaluated and been found wanting (Hayward, Rothenberg and Beasley, 1974). Emergent ideas have arisen for the integration of play opportunities for these three types of play.

Designers are beginning to stress cognitive and social developmental play opportunities along with traditional physical play. This means that such things as adventure play, creative play, and environmental play areas are receiving more emphasis. Two other ways of doing this are proposed below--treating the entire neighborhood as a setting for play, and creating special networks and comprehensive areas for developmentally-integrated play.
RECOGNITION THAT CHILDREN PLAY "EVERYWHERE"

Planning for children's play everywhere in a child's environment is becoming a recognizably desirable goal. Leading researchers and students of children's outdoor free-time behavior are well aware that informal, home-based and neighborhood settings are the primary source of discovery and learning—not traditional playgrounds (e.g., Jacobs and Jacobs, 1978; Bengtsson, 1978).

A new awareness of home-based play and neighborhood play in undesignated play areas is becoming an important design factor. Research showing that children spend a majority of playtime outside of designated "playgrounds" has stimulated a search for design solutions to play in other places (Department of the Environment, 1973, Cooper Marcus, 1975, Moore, Burger, and Katz, 1979).

At all bases visited as part of this team's research (see Travel Report, 1978), children were observed to play more in the streets, on front porches, around front yards, corners, cul-de-sac drives and natural areas than they were in any designated traditional type of play spaces, whether they were located behind housing, in the "green belt," or on school playgrounds. This is the same pattern as found in other research.

Strategies to deal with this growing awareness include designing play in at the beginning of a residential development's construction, rather than shoving play into "left-over" spaces; conserving space for future play area development as communities grow; planning to integrate play with other community life activities; and—in general—designing all areas of a child's environment to accommodate play.
NEW MODELS SUPPLANT TRADITIONAL PLAYGROUNDS

The value of traditional playgrounds is questionable on several grounds. These include a lack of play other than physical; dangerous moving equipment like swings, teeter-totters, and merry-go-rounds; the even more dangerous predilection for concrete and asphalt surfaces; lack of paced alternatives for children at different developmental levels; few if any loose parts allowing children to manipulate their environment, etc.

New models which do in fact provide play possibilities which traditional playgrounds do not include adventure play and creative play programs, and environmental yards. These alternate types of play areas are becoming increasingly popular as designers research and analyze child development principles and user needs.

COMPREHENSIVE PLAY PARKS AND NETWORKS OF PLAY

Realizing that the need for play cannot be completely satisfied by any one specific playground, planners, designers, and administrators are beginning to see that a large variety of play possibilities for all age groups must be provided.

This may be done in a comprehensive play park, where many play area types are gathered into one central site. Or it may be done by a connected network of play which reaches through the entire community and integrates with other community activities. These trends are reified below in the forms of particular design recommendations and criteria.

MULTI-AGE GROUP PLAY AT THE NEIGHBORHOOD LEVEL

While zoning of developmental levels is appropriate, and zoning for safety is necessary, artificial separation of age groups is seen as undesirable.

This is especially crucial in child-care centers where the theory is that the center should combine the best of the home situation with developmental challenges and materials only able to be provided in a centralized, professionally-staffed facility. The implication is that children should not be
isolated into strict age groups, but should have the freedom to observe younger and older, and to play in mixed-age groups.

Provisions for adults and children, older children and younger children, to play together are beginning to be made in several recently-designed comprehensive playgrounds (see Irvine Comprehensive Playground and the Mary B. Connolly Children's Playground in the Travel Report, 1978).

Further, play which takes into account the needs of all age groups is being considered at the neighborhood level. Some play opportunities for all age groups can be provided locally whether adults and children play together or separately (with visual connections).

INTEGRATION WITH COMMUNITY LIFE ACTIVITIES

As play is a part of life, its importance in community life is beginning to be emphasized by integrating play with other heavy-use community facilities. Shopping centers, libraries, town halls, schools, etc., all can be linked with play facilities. Anywhere adults go, children need to go as well. Providing them with special play places will help both child and parent to feel comfortable and at ease with each other in these otherwise potentially trying situations.

Further, watching others is a prime play activity (Cooper, 1975). What better place to watch than in a heavily-used shopping area. Places which are designed to play in and watch from at the same time fulfill both needs.

MAINSTREAMING

Making it possible for handicapped people to integrate themselves into normal life (including play) is now mandatory. If play and peer group interaction are vital for normal children, they are just as, if not more, important for non-able-bodied children and for learning disabled and mentally retarded children. There are positive values for both kinds of children in playing together (see U.S. Department of Housing and Urban Development, 1978; and Moore, Cohen, Oertel, and van Ryzin, 1979).
CONCERN FOR SAFETY

Playgrounds in the past were based on certain assumptions about safety, which, as date has been collected, have proven to be false. Traditional equipment is, in fact, very dangerous as are hard surfaces so common on America's playgrounds (Settles, 1974; Sweeney, 1978; Wilkinson, 1978).

Designers are beginning to make some design decisions specifically to increase safe use of play areas. Building slides into berms rather than leaving them free-standing is one example. Zoning very active play to prevent collisions, etc., is another.

ROLE OF PLAYLEADERS

As psychologists, designers, and administrators are realizing the vital role of play in a child's development, they are also beginning to re-examine the advantages of a trained adult playleader. Play leaders can be just as, if not more, important than teachers to a child.

Some of the most developmentally relevant types of play areas require a playleader (e.g., adventure play, children's museums, environmental yards, etc.). Research has shown that children come more often and stay longer at play areas with playleaders than at those without.

Canada and Great Britain are far ahead of the U.S. in re-introducing playleaders onto playgrounds. In Britain, for example, there are now special training courses at technical colleges and teacher-training schools, and several textbooks on playleadership have been written. In Canada, a National Task Force on Children's Play set this as one of its top priorities, and has recently developed a Play Leadership Training Kit for trainers of a new breed of playleaders (see Canadian Council on Children and Youth, n.d.). In the United States, there are the beginnings of a new move to train playleaders, and this trend is expected to continue.

Planning for play areas with playleaders has become a very important administrative and design decision.
COMMUNITY PARTICIPATION IN THE PLANNING AND CONSTRUCTION PROCESS

Presenting a community with play areas which have been pre-designed by an outsider without community input is less than desirable. Parent and child participation in design will help ensure the appeal and usability of the play area. The play equipment and other play items which adults find appealing are very often lifeless and unenticing to children (Stone, 1970).

Further, participation by adult and child community volunteers in the construction of the play area will enhance the image of the play area as "their own." Involvement will increase use, increase community interest in maintaining the play area, and help enhance resident pride in their own neighborhood (Hogan, 1974; Ellison, 1974; Hewes, 1974; Friedberg, 1975).

The most articulate statement of the trend for involvement of children in the planning and construction process came in a speech by Paul Davidoff at the 1978 International Playground Conference in Canada. He said:

I would like to propose that in this, the International Year of the Child, this conference go on record as supporting the undertaking of actions to increasingly involve children in the planning and administration of programs of play. . . . It is disrespectful of the child to exclude him or her from determining his or her own interests. . . . Planning with the child in mind, with the child present, with the child planning, means empowering the child to act responsibly in accord with his or her own evaluation of goals, means, and available resources. . . . I believe that realization of democratic objectives depends greatly on education of children in the practice of democracy. (Davidoff, 1978)
THE TYRANNY OF PLANNING FOR PLAY

An articulate argument has been raised recently by Eva Auslander, a famous Scandinavia parks and recreation expert. She argues two things: on the one hand, she calls for planning the total environment for children, not just play spaces, or even more limited, not just traditional playgrounds and playing fields. Following from the Ekistics planners in Greece, she asks, "Imagine how a city would look if it were designed without children in mind? Would it be any different? Not much" (Auslander, 1978).

But as an antidote to overplanning, over-designing, and generally to making the environment just so, without any possibilities for easy change and for users to shape it, she argues on the other hand that most currently designed children's spaces are over-designed, they are too thought out, nothing is left for the children to explore, to make, to shape, to make emotional ties with.

Young children are more open to sensations than ever again in life. Accessibility is therefore the key--if children can get around the city--or a base--or a suburb--and if there are things for them to do on their own terms when they get there, then we are on our way to making a good environment for children.

She says, furthermore, that play per se is silly--children don't want to "play" as if this is some unimportant leisure time pursuit; they want to be involved in life experiences, with adults and other children. We give children toys--or playgrounds--rather than spend time with them and allow them to come into community pursuits and to freely use the total neighborhood.

Professor Madeiros from Brazil echoes the same theme in saying, "The only time a toy is educational is when the child leaves it, and the father trips over it" (Madeiros, 1978). You can't buy off your kids by buying them toys.
EMERGING INTERNATIONAL AND NATIONAL POLICIES ON CHILDREN'S PLAY AND CHILDREN'S PLAY AREAS

There are two major international organizations which look out for the rights of children including their rights to play and play areas—UNESCO/UNICEF and the International Playground Association (IPA).

UNESCO and the IYC Policies

UNESCO is the educational, scientific, and cultural arm of the United Nations. UNICEF is its fund-raising and consciousness-raising aspect. In November of 1959, the General Assembly of the United Nations adopted a new Declaration of the Rights of the Child which would tie in with the Universal Declaration of Human Rights. Principle 7 of the 1959 Declaration states:

The child shall have full opportunity for play and recreation, which should be directed to the same purposes as education; society and the public authorities shall endeavor to promote the enjoyment of this right.

To further the application of this Declaration of Children's Rights, the UN General Assembly proclaimed 1979 the International Year of the Child (IYC). Thus the UN asked the world to

think children, to celebrate their true potential, to take a hard look at each nation's programs for children, and then mobilize every possible supportive action in both the developing and the developed countries alike, at the local, national, and international levels, to promote all children's possibilities.

As stated in a UN publication, the IYC should be far more than a one-time, twelve-month effort. It should and can become America's open-ended framework for strong, far-reaching actions directed toward permanently improving the status of all children. As opportunities for play and recreation—"which should be directed toward the same purpose as education"—are an important part of the Declaration of Children's Rights, they are an important part also of the International Year of the Child.
IPA Policies

The International Playground Association (IPA) is the world's leading organization concerned with children's leisure and with play and play facilities. An international body with members in countries around the world, and with official representatives in 22 countries, it is chartered as a Category B organization in UNESCO and thus has an informational and consultative role in UNESCO. It holds triennial international meetings, the last ones in Milan (1975) and Ottawa (1978—during which one member of this project team was invited to speak).

At each of the triennial meetings, resolutions and recommendations have been passed aimed at promoting and improving the development of play opportunities and play environments world-wide. These policy recommendations are then advocated at the national and local levels by official representatives and members.

Among these internationally-adopted resolutions are the following—the earlier of which have become standard practice in many parts of the world, and the more recent of which promising also to become standard operating procedure:

Ensuring the child's right to play

- All aspects of the development of children and youth and leisure time must be brought to the knowledge of governments and local authorities. (Paris, 1969)

- All aspects of play and the development of children must be included in the education of architects, planners, landscape architects, educators, recreation managers, playleaders, hospital workers: all persons planning for, or caring for, children in any aspect of their work. (Paris, 1969; Milan, 1975)
• Each country should endeavor to establish a centre where expert information can be made available to all concerned with play and where research can be undertaken. (London-Liverpool, 1967)

• Governments and local authorities should take provision for the out-of-school life of children as seriously as provision of formal education, building of roads and parking places, and disposal of sewage. (Vienna, 1972)

• In order to obtain sufficient play and recreation facilities near as many homes as possible, legal regulations should be aspired to in every country. (Zurich, 1964 -- Enabling legislation existed in Denmark, Germany and Sweden as of 1964)

• No new housing schemes should receive either government or municipal financial subsidies nor municipal planning consent unless adequate space has been reserved for play. (Zurich, 1964; London-Liverpool, 1967; Vienna, 1972)

• When reorganizing old neighborhoods, legislation should be directed to the recycling of space, to allow sufficient new open space for play and recreation use near to homes. (Zurich, 1964)

• Due to growing recreational problems of all age groups, government and local authorities should give extensive financial assistance for planning, capital cost, and programmes. (Zurich, 1964)
Recommendations re play programs and re design of playgrounds

- In order to encourage better design, national and international guidelines for space arrangement should be formulated suggesting size and layouts. Functional drawings of successful solutions should be collected and made available. (Zurich, 1964)

- Governments must take care of the education of playleaders. The national education shall be completed with international contacts, exchange, and study tours. (Paris, 1969)

- As the training of personnel for play in all its forms is a matter of urgency, governments should make provision for the training of those able to work with people in creative ways on adventure playgrounds and in similar play environments. It is recommended that this training should be democratic, socially relevant, practically based, and with no academic bar to entry. The recognition of and appropriate salary for playworkers must be commensurate with the importance of their work for society. (Milan, 1975)

- Every large estate or development, district, or village, should contain:
  
  - a public park with lawn, walks, seats for children
  
  - play, sport, and romping fields for all kinds of ball games for young and old
  
  - an all-weather surfaced area and open-air theater
  
  - building and workplace, adventure or Robinson type playground
  
  - playcorners for young children
  
  - recreation centre with play and club rooms, library, and workshops (Zurich, 1964)
- In addition to physical recreation, young people need opportunities for free constructive play and for raw natural materials that they can use to suit their own desires. (London-Liverpool, 1967)

- Governments and local authorities should provide for the development of adventure playgrounds which must be related to all other play spaces and other types of playgrounds, open spaces, and areas in public parks. (Vienna, 1972)

- It is imperative that governments should conserve natural areas for play. (Milan, 1975)

- The total urban area must be viewed as a potential play environment for children and be developed accordingly. (Milan, 1975)

- We must recognize the total environment in considering children's play, not just parks and playgrounds. (Ottawa, 1978)

- We must ensure children's safe access, without constant adult supervision, to a diverse and expanding environment close to home. (Ottawa, 1978)

- The diversity accessible to children should include all aspects of daily life of the adult community and its natural and built surroundings. (Ottawa, 1978)
Planning with community participation

- Each planning team for housing and redevelopment areas should include a person knowledgeable about the needs of children. (Milan, 1975)

- Indoor and outdoor play environments should be managed and developed according to individual community needs. There ought to be a maximum consultation and participation with the community concerned, and this includes the children.

- The process of planning, design, and management of the environment should be one of participation by the total community, including its children. Professionals should work at this level to encourage community self-reliance. (Ottawa, 1978)