CHILDREN'S PLAY AREAS
## BASIC DATA

<table>
<thead>
<tr>
<th>Client</th>
<th>United States Army</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>Fort Bragg, North Carolina 28307</td>
</tr>
<tr>
<td>Date</td>
<td>In progress</td>
</tr>
<tr>
<td>Users</td>
<td>Children of surrounding family housing</td>
</tr>
<tr>
<td>Size</td>
<td>&quot;Self-help&quot; playgrounds between 400-1,000 sq. ft.; &quot;turnkey&quot; playgrounds c. 2,000 sq. ft.</td>
</tr>
<tr>
<td>Cost</td>
<td>Self-help, c. $3,800 ea. for equipment only; &quot;turnkey&quot;, not available</td>
</tr>
<tr>
<td>People</td>
<td>Col. Tabb, Head of the Self-Help Program</td>
</tr>
<tr>
<td></td>
<td>Interviewed Mr. Cameron, Housing Manager</td>
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</table>
The play areas among family housing are primarily the result of two programs: self-help and "turnkey."

Self-Help Program

In this program, an official from Community Services finds out if neighbors would like a playground. If they do, then there are meetings to select equipment and confirm a site. The self-help part is the agreement to assemble and install the equipment, with the capital cost being picked up as a base expense. On occasion the neighborhood group chooses to add things like sandboxes, jumping tires, or special homemade climbing or swinging equipment.

"Turnkey" Program

The playgrounds in the newest housing areas are part of the "turnkey" package of housing units and site development that contractors are required to include in their housing area proposals. Contractors with playgrounds and other amenities receive some preference when their proposals are being reviewed.

FACILITY DESCRIPTION

Four "Turnkey" Playgrounds

The "turnkey" playgrounds are sited in the network of open space between or at the backs of the housing units in a land use plan that resembles some aspects of Radburn town planning. The play areas are accessible to most users without crossing a street. Two of the four facilities are adjacent to paved play areas as part of the "turnkey" offering. Several additional housing areas have similar playgrounds and basically the same equipment:

- swing set for preschoolers
- youth swing set (6 16)
- slide
- merry-go-round
- climber
- enclosing curb
- sand surface

Four Self-Help Playgrounds

A data sheet on the self-help playground program at Fort Bragg listed 74 pieces of equipment totaling $31,800 (about $440 each). Four types of equipment were ordered:

- swing for preschoolers
- youth swing set (6-16)
- slide
- climber

Eleven housing areas had been invited to participate; eight choose to. Two typical installations are shown. The second shows the addition of tires as a special effort on the part of the community group and the Community Life Program's representative.
OBSERVATIONS AND INTERVIEWS

COMMENTS FROM INTERVIEWS

Two people from the based joined the team on our inspections of the play sites; Colonel Tabb, Head of the Self-Help Program and Mr. Cameron, Manager of Base Housing. They had the following comments to offer about play and play area design on Army bases.

- difficult to forecast long-range play needs because programs will fluctuate based on the needs of the community and their priorities

- some funds come from community maintenance for construction of new facilities

- Fort Bragg has a shortage of playgrounds; the self-help program has spent $31,800 for eight areas which represents about half the current need

- self-help facilities appear to be used more than other base playgrounds

- the base goal is to provide one play area for each 50 families

- a half-court basketball court should be a part of at least some of the self-help playgrounds; but its location should be away from houses especially if there is night lighting
- each housing area should have its own tennis court

- all play equipment comes from the G.S.A. catalogue

- Army bases are slightly different from civilian settings in that parents are directly accountable for their children's behavior, for example, children aren't allowed to stay alone in a house, a car, or an apartment

- the "turnkey" playgrounds all have a drainage problem; the concrete curb around the edge holds in both sand and rainwater and there are big puddles in them after every rainstorm

- rules prohibit changing the "turnkey" projects for three years, so they haven't tried to repair or enlarge them, or involve them in the self-help program

**ASSESSMENT**

"Turnkey" Playgrounds

The success of the "turnkey" project is the incentive it provides to the proposal maker to include play areas and play spaces in their proposals. Unfortunately, the play areas included appear to be simple combinations of catalog equipment that only emphasize large-muscle play. Those play areas that also include hard-surfaced play are an improvement although the location of those areas is more difficult because of the noise they create. In fact, there were complaints about the basketball area at one site because it was sited very close to the backyards of several housing units. Ironically, it would have been very easy on that site to locate the field much further away from the housing without getting dangerously close to a street if the site planner had made the isolation of basketball noise as a consideration.

Research done by several others, however—to be reported in the Criteria Document—points out that children, especially pre-teenagers, will not use ballgame areas if they are not central to housing. An example
of this was observed at Fort Bragg. At one play area observed, the basketball court was empty. Within sight of the court were four youths playing basketball at a private basket that had been put up at the street curb. When asked why they were playing in the street and weren't over at the court, the reply was that they were just fooling around and that they used the other court frequently but mostly for more serious play.

At another "turnkey" playground with a paved play area next to the equipment play area, some teenagers had erected a volleyball net. The ten of them were playing volleyball while about ten additional young children (5–7 years in age) were playing kickball in another open space.

Self-Help Play Areas

The biggest success of these areas appears to be their location. All but one of the four areas we saw were centralized to the backs of several houses making them especially appropriate for preschool children under supervision of parents.

When asked, each child could point to his or her house. On the other hand, these areas were not clearly linked to other types of play areas, and there was no evidence of various ballgames taking place near them. The lack of variety of equipment that was chosen was disappointing. When neighborhood groups did take the initiative to do something extra, the effort looked a little thin. The availability of a book like Paul Friedberg's Handcrafted Playgrounds: Designs You Can Build Yourself, a $5.95 paperback from Vintage Books, or one of the others to be recommended in our Abstracts Document, could stimulate and encourage would-be self-help designers and builders. The self-help program could also use a guide that recommended pieces of equipment, the number of pieces an area might require, the mixture of equipment for different age groups, and general site layout designs.
BASIC DATA

Client       United States Army
Address      Fort Hood, Texas 76544
Date         1976-1978
Users        Children of surrounding family housing
Size         "Turnkey" play areas, each 1,600-2,000 sq. ft.; neighborhood revitalization tot lots each 1,600-2,000 sq. ft.
Cost         Not available
People       Interviewed Several children
PROGRAM DESCRIPTION

Fort Hood has two ongoing programs that generate play areas among family housing. The first is the "turnkey" housing program which requires that play areas be a part of the development package submitted for consideration and review. The second is a part of a revitalization program for older housing areas. Currently the emphasis in the second program, because of space and the character of young Army families, has been on tot lots. Eleven tot-lot play areas will be constructed as part of the revitalization of Walker Village (569 units) which will create a ratio of one tot lot for every 50 families.

FACILITY DESCRIPTION

"Turnkey" Play Areas

The team visited several playgrounds in a "Turnkey" housing area called Comanche II. Each play area was sited in a similar way, in the open "public" green space behind the housing units, and with one exception each was composed of the same metal play equipment. The exception was a play area built out of concrete and timber. From most of the play areas it is possible to see one or more additional play areas.

The equipment typically included:

- sand area with concrete curb
- a tots' swing set
- a youth swing set
- a slide
- a merry-go-round
- arched climber
- a street light
If there was any organizing concept besides having a reasonably safe amount of space around each piece of equipment, it was that there is nothing important in the center.

Neighborhood Revitalization Tot Lots

The tot lot areas at the older housing area, Walker Village, were sited in the "community" backyard space between 10 to 15 units where "group" garages had previously been.

The most striking features of the tot-lot areas were the berms and timber-pole retaining walls that were used to define the play area.

The steel-pipe equipment provided included:

- seating
- a small youth swing set
- a merry-go-round
- a tots' slide
- a tots' climbing arch

OBSERVATIONS AND INTERVIEWS

OBSERVATIONS OF USE

The Comanche II housing area was visited at about 6:00 p.m. on a warm but not hot summer evening. The children reported that dinner time for most would be 7:00-7:30. Children were at all but one playground where the equipment was broken. In addition, there were children playing on the sidewalks and in the front yards of the houses. Children weren't observed in the backyards except at the play areas. At least twice as many children were along the streets than at the playgrounds.

The children at the playgrounds could point to their houses. Smaller children were accompanied by their parents or older brothers and sisters. Some of these children had their bikes.
COMMENTs FROM INTERVIEWS

The team interviewed several children at one of the "turnkey" playgrounds. The following summarizes their comments about play, playgrounds, and to some extent life on the base:

- All of the children had lived other places; they offered that this was the first place with a playground and that they liked it.

- Typical days for several of the children included scheduled activities like band practice and unstructured activities like "Tm"-ball (a kind of baseball game).

- When asked what they did last Saturday they responded with a variety of answers including going to Dallas, going fishing, and going bike riding.

- The group suggested that they play outside a lot.

- Several children mentioned playing in their carpports.

- When asked with whom they play, they most often commented that they play with the same children all the time.

- Places they go fairly frequently include to the park, to the field (between the houses), to the creek, and to the commissary to buy candy and records.

- When asked what is best about the "Turnkey" playgrounds, the most general answers were first the fields, and second the swings.

- When asked what would make the places better, the following suggestions were made most frequently: get rid of rocks, then have more grass, and have more slides and swings.

- Places they disliked included the junior-high school because "it gets broken into."

- The children talked about things "down by the creek."

- They bike, take the bus, or are driven frequently to the base swimming pools.
• Some of the older children ride their bikes off base; most don't. The most frequent destination is a small town, Coppers Cove, about five miles.

**ASSESSMENT**

Microclimate

The "Turnkey" play areas are all without trees and are very much in the open. Grass doesn't grow well in the sandy Texas soil and it is doubtful that it will ever be watered enough, if at all, to make it grow. Thus the logic of applying a Radburn-type green-belt plan to a Texas climate must be seriously questioned.

Adjacent Grassy Areas

The children interviewed were very aware that some of the play areas had better ball playing fields next to them than others. The quality and convenience of a ball playing area near the playground appears to be a basic criterion children use to evaluate the quality of the playground itself.

Network of Play

The children participate in a wide variety of play experiences, some of which take them on hikes or bike rides out of their immediate neighborhoods, others that bring them back almost on a daily basis to a particular playground for a combination of ball games and equipment play. Younger brothers and sisters often are required to tag along and areas that provide for a variety of age groups from preschoolers to young teens and accompanying adults would better serve their needs than the same variety isolated into their own areas.

Accessibility in the Neighborhoods

The ideal ratio of play-to-family housing was one play area for each 50 dwelling units. That ratio would make a play area visible from each house if the site planning was
handled properly. The only disadvantage in developing playgrounds based only on a ratio goal is that there is no incentive to make any one different from any other and no incentive to conceive of "specialties" for particular sites that might attract children from the whole base. Thus a network or a continuum of areas and activities rather than separate facilities isolated from each other would be an appropriate planning concept.
FORT LEWIS ARMY RESERVE PLAY AREAS

BASIC DATA

Client United States Army
Address Fort Lewis, WA 98433
Planner Directorate of Facilities Engineering/
      Fort Lewis
Date 1940s through 1970s; most playgrounds
      installed in the 1970s
Users Children, mostly preschooler and
      elementary school age of on-base
      personnel
Size A few scattered pieces of play equip-
      ment in 1 to 1-1/2 acre sites
Cost Not available
People Stan King, Family Housing Maintenance
      Interviewed Engineer
As at other bases visited, children's outdoor needs, and playgrounds as a part of the response to these needs, seem to have been an afterthought in planning family housing at Fort Lewis. There is no explicit program for children's play areas at Fort Lewis. Some play equipment was authorized for each family housing area by the Directorate of Facilities Engineering in the early 1970s, but little more is anticipated.

FACILITY DESCRIPTION

There are 10 distinct housing communities at Fort Lewis, 7 of them in the main family housing areas of South Fort Lewis. The planning strategy, firmly endorsed by the Commanding Officer and the planners in the Directorate of Facilities Engineering, is for mixed officers-enlisted housing and for strong community identities.
Housing areas are planned on a modified Radburn plan, with neighborhood semi-
enclosed park space behind housing, though the housing faces the streets
(see St. Francis Square). Most clusters of housing have some play equipment in
the park space. Equipment is of two kinds: metal catalogue-selected climbing-
swinging apparatus; and wood log climbing equipment, the latter mostly built by
weekend reservists.

Three of the housing areas have adjacent elementary schools with traditional metal
play equipment accessible to children at all times. There is also a preschool and
child care center on base, both with scattered play equipment (more extensive
at the preschool) but behind chain link fence.

There are a number of other outdoor areas and indoor recreation facilities on base,
including pools, baseball diamonds, one with stadium stands, a football field
and track with stands, many open spaces, bowling alley, amusement park, roller
skating rink, gymnasium, tennis and handball courts, and so on. Most of
these, however, are near the town center and not in the ten residential communities.
Finally, the base and the family housing areas in particular are ringed with woods, fields, and rolling topography. Many of the housing areas and some of the schools back on dense secondary growth, and there are large fir and oak trees throughout the residential areas.

**ASSESSMENT**

Though there are numerous recreation facilities at Fort Lewis for older children and adults, there is little specifically for preschoolers and elementary school age children, and what there is is not located near family housing.

By far the majority of younger children we saw outdoors were in the front yards, near the streets, or on house steps and porches. Relatively very few were seen in the designated play areas behind the housing, except when they were a captive audience as at the Child Care Center. Somewhat ironically, several families had their own play equipment inside a fenced backyard, even when there was additional equipment in the immediately adjacent common park. With regard to planning and design features which support child development, activity observed on designated play equipment was less varied and rich than that observed elsewhere in the residential areas, and involved less varied ages and cultural mixes than in the undesignated play spaces on the streets. For example, children were observed quietly floating boats and watching their reflections in pools of standing water, while others were playing dolls or house on the front door steps, and still others were playing quietly in the grass and soil under large trees. Meanwhile, no children were playing on the nearby metal play equipment.

Generally, more children were seen playing with features of the natural environment, and in front of dwelling units, than on designated playgrounds or playing fields. In one housing
area—Parkway, see drawing—"kid tracks" were seen in bushes near the housing. This little area of woods is a wonderful, varied area, rich in wildflowers, old fallen logs, and all sorts of places for imaginative and exploratory play, while the adjacent elementary school playground had metal swings, and slides. Although this observation fits other more carefully conducted studies (e.g., Brower and Williamson, 1974; Hart, 1973, 1974), it could either be attributed to time of day (this was fairly late afternoon), random occurrence (we were only there one day), or limitations of metal play equipment relative to front yards, porches, natural environments and other anonymous "undesignated" play spaces.

REFERENCES


FORT MEADE ARMY BASE PLAY AREAS

BASIC DATA

Client       United States Army
Address      Fort Meade, Maryland 20755
Size         6 pieces of equipment spread over 4000 sq.ft.
Cost         Partially donated

FACILITY DESCRIPTION

This area is at a major base recreation area and was a service project of a battalion. It consists of six pieces of log and galvanized steel pipe equipment sited in a grassy area about 50 yards from a ball field and 25 yards from a parking lot.

ASSESSMENT

The presumed goal for locating the playground near the ball field was to provide for diversions for younger children. The equipment and its arrangement looked more like a circular obstacle course than a playground, however. The picnic area across a good-sized pond would not be convenient for use. There was some evidence of use (the grass was worn away in spots) but not of heavy use. Nothing was done to designate an area for children.
OAKLAND ARMY BASE PLAY AREAS

BASIC DATA

Client: United States Army

Address: Oakland Army Base
          Oakland, California 94626

Engineer: Corps of Engineers

Date: Unknown

Users: Children of surrounding family housing

Size: Two playgrounds of ca. 1600 sq. ft. each on a 1/2 acre site

Cost: Unavailable

Diagram:

- Docks
- Harbor
- Warehouses
- Playgrounds
- Family Housing
- Nursery Services

No Scale
The Oakland Army Base is a military overseas shipping terminal which uses parts of the adjacent Port of Oakland wharves. Thus the base is primarily warehouses, train-to-dock transfer points, and truck unloading docks. Six blocks contain all the family housing and recreation for the 100 families on base. Of this, one street is lined on both sides by NCO family quarters, and one side of the next street is officers' family quarters, all barracks-style 2-story row housing.

The two playgrounds on the base are between the NCO and officers' housing.

The eastern one, and larger, is comprised of 8 pieces of scattered metal and concrete conventional play equipment (approximately 1600 sq. ft. in area) on a 1/2 acre site. The base of the area is asphalt and packed sand. Grass surrounds the site. There is also a 4600 sq. ft. Nursery playground across the street, but it is apparently vacant in non-nursery hours.

Equipment includes two metal swings, a curling slide, two sculptural concrete climbing devices, and other small metal climbing equipment. One park bench is nearby facing the area.

Other Child Recreation Areas

Casual observation, and questions to the Community Service officers, suggested there is very little for children to do on this base. Warehouses and wharves--always exciting to children elsewhere--are off-limits to children. There is an athletic field, but it is on the far side of a long, continuous public works building. There is a gym, but it is attached to the Officer's Club and is not used by unaccompanied children. There is a recreation center, but it is across a major road, and apparently unused by young children. There is no open space of any natural or even landscaped quality. The Nursery play yard is not used in non-nursery hours, and is dismal. The only place where children hang around is the teen youth center. Otherwise they hang around their houses, pick on each other, and generally have little to do other than watch TV.
As we saw only one child near either of the designated playgrounds, it is impossible to properly assess it. In fact, we didn't see many children at all in the family housing area.

Our only assessment, therefore, is on the basis of a prediction in comparison with other bases and civilian play areas, the research literature, and our interviews with the community services staff.

The two designated play spaces seemed terribly inadequate for creative and exploratory play for the same reasons as the Nursery play yard (see Oakland Army Base Nursery). Both had a few scattered pieces of unremitting metal and concrete sculptural elements over a dangerously hard surface.

This type of equipment has been found to support gross motor play, chasing games, some competition, isolated and parallel play, short attention spans, short holding power, and no adult-child or child-child cooperative interaction.

CONCLUSION

There seems to be a real lacking of anything creative or worthwhile from a developmental point of view for children to do on this base. How typical this may or may not be of other bases we cannot tell. The early years of a child's life are absolutely crucial for later success and happiness. Learning and development happen all the time, everywhere; the rate of development is most pronounced in the first four or five years, and next most pronounced during the elementary school years, but development can only happen when there are stimulating and challenging things for children to do—not only in school or day care—but all the time.

Environments suited for and stimulating to the developing child are a crying need on this Base—and likely others—and should receive a much, much higher priority than they presently do. This would necessitate considering all of children's needs during non-assigned time, and considering the totality of public open space and recreational facilities, not just isolated, designated "play" grounds.
ALAMEDA NAVAL AIR STATION PLAY AREAS

BASIC DATA

Client       Alameda Naval Air Station, USN
Address      NAS Alameda, California
Planners     Unknown
Users        Children of two separate housing areas: "Officer's Country," and enlisted/NCO family housing. No estimate of numbers or ages of children can be made.
Size         Various play equipment areas of ca. 100-200 sq. ft. of equipment on Radburn-type interior sites of ca. 3/4 acre in enlisted/NCO housing and on ca. 1/4 acre sites in Officer's housing
Cost         Not available
In the Officer's housing area, designated play areas were of conventional fixed-in place play equipment (swings, monkey bars, slides, climbing frames). They were sited at the ends of curving streets (residential cul-du-sac plan).

In the two more extensive enlisted/NCO housing areas, play areas were located in the center of modified Radburn-type housing clusters and were for the most part made up of conventional scattered apparatus. One area, however, had a large sand pit in which a "Lunar Lander" combination climbing, running, and sliding apparatus was situated. It covered approximately 600 sq. ft., had many levels, many access and egress points, and was made of brightly painted metal.

Except for Alameda, on all other military bases visited, we observed many more children in the streets, cul-du-sacs, driveways, near bushes, on sidewalks, etc., than near any designated play areas. At Alameda the balance was about even. In these informal places, children were observed playing in a number of different ways:

- playing kick ball (12 children)
- sitting by oneself at the base of a tree
- riding on big wheels (2 children together)
- working on cars in driveway
- bicycle and tricycle riding
- talking informally together
- lying in the sun talking intently (a group of three children of mixed ages)
On the "Lunar Lander," 12 children of the same rough age, of both sexes, and judged to be of Fillipino heritage were animatedly running, chasing each other, sliding, challenging each other, posing for photographs (inevitably), and generally having a boisterous fun time.

LESSONS

The "Lunar Lander" was clearly the most vital piece of play equipment seen at this base. This may be due to its large size, complexity, various heights, variety of activities it suggests, bright colors, soft sand surface underneath, and location near many children's residents.

The activities observed on the "Lunar Lander" were all of basically three types: large muscle activities, challenge, and verbal communication. The activities seen in informal places were of four types: large muscle activities, verbal communication, problem solving (cars), and quiet alone activity. The full range seems to need to be planned for in family housing areas, and in both designated play areas and informal areas accessible to children.
BOLLING AIR FORCE BASE FAMILY HOUSING PLAY AREAS

BASIC DATA

Client          United States Air Force

Address        Bolling Air Force Base
                Washington, D.C.  20332

Date           1977-1978

Users          Children of surrounding family housing areas

Size           2,000 sq. ft. and 500-1,000 sq. ft.

Cost           $14,300 equipment and installation; $7/sq. ft.

People Interviewed  Several children
PROGRAM DESCRIPTION

The two facilities observed at Bolling Air Force Base are directly associated with family housing areas. Both represent a concerted effort to develop play areas that aren't simply traditional steel equipment but also use wood-timber structures in an overall coordinated design of the whole play area.

FACILITY DESCRIPTION

One play area is at the corner of a family housing area and connected to it by a bike and pedestrian asphalt path. It is what is called a contemporary playground with variations of traditional equipment built of timbers rather than steel pipe. It is enclosed by a low fence of varying heights of "stepping stone posts" stuck into the ground. The fence defines both the area as a whole and several zones inside. The zones have sand floors.
The dominant feature of the structure is the wood-timber pyramidal tower with its tire swing, small slide, and platform areas. Other equipment includes jumping platforms and slung seat swings.

Another structure visited in family housing is much smaller although more clearly located as a landmark in the center of the open-space network of a new housing area. The play area contained a single wood structure made of several parts including a slide, platforms, and two "bridge-ladders." There were no swings.

OBSERVATIONS AND INTERVIEWS

One member of the team discussed the playground with two children playing on it, both boys, 11-1/2 and 13 years old. They come to the play structure almost everyday. They also go to the pool, to the bowling alley, to their play forts in the woods, and down by the Potomac (off limits) for fishing. They reported that there were about ten similar playlots around the base. They reported heavier use at 4 to 6 p.m. Both liked the wood better than the "metal" playgrounds and liked it better because it was new and close to home, but suggested that the facility could use a water fountain and trash cans.

The team observed a single child continuously riding his bike around the second play structure area. In ten minutes he stopped several times, but made no attempt to actually play on the equipment.

ASSESSMENT

Both the interview with the children and a brief observation of use leads to the following hypotheses:

- that children appreciate play areas built with timber equipment rather than galvanized steel pipe
that children come to play areas for quiet play or as a place to meet, talk, and wait as much as they do to use it for active play.

Children in the age group interviewed (11-13 years) have considerable mobility because they have bikes and, while they use them to extend their world, their "home base" for meeting can still be the neighborhood playground.
BIG TOYS INSTALLATIONS

COMPARATIVE INTRODUCTION

BASIC DATA

Client Various elementary schools, parks and recreation departments, and community groups in the San Francisco Bay Area

Address Four locations at the San Francisco Peninsula:

1. Holbrook-Palmer Park Playground
   Atherton, California (Big Toys, Inc.)

2. Henry Ford Elementary School Playground
   Redwood City, California (community-built)

3. Oak Knoll Elementary School Playground
   Menlo Park, California (community built)

4. Children's Health Council of the Mid-Peninsula Handicapped Children's Playground
   Palo Alto, California (Big Toys, Inc.)

Designer Jay Beckwith/Forestville, California

Manufacturer Big Toys, Inc. (1, 4), Northwest Design Products, Inc., Tacoma, Washington; others (2, 3) community.

Sizes Vary from a 460 sq. ft. structure on a 1600 sq. ft. structure on a 4200 sq. ft. site

Cost Vary from $2150 plus site development and free labor to $7000 plus site development and free labor

Materials Western Red Cedar logs, 5 1/2 to 8 in. diameter, drilled 1 ft. on center; 1 in. galvanized steel pipe; 16 gauge steel skides; 1/2 in. nylon climbing net; aluminum collar fittings; recycled tires; 8 in. of soft, loose sand underneath -- Big Toys. Locally-purchased lumber and hardware; Douglass Fir; medium-density overlay plywood -- others.

People Jay Beckwith
Interviewed Several children
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<th>Play Area</th>
<th>Date</th>
<th>Designer/Manufacturer</th>
<th>Size (sq ft)</th>
<th>Cost ($)</th>
<th>Cost/ft²</th>
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<td>Children's Health Council</td>
<td>1977</td>
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<td>Oak Knoll</td>
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**Averages**

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<td>4.5 $/ft²</td>
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a. Sizes are for the area of the installed play structure only.

b. Cost does not include site preparation, landscaping, or labor, the latter of which are provided free by the community and the former are provided by the sponsoring agency.

c. $4.50/sq. ft. for Big Toys; $2/sq. ft. at 1973 prices for community designed and built play structures.
BASIC DATA

Client City of Atherton, California
Designer Jay Beckwith/Forestville, California
Manufacturer Big Toys, Inc./Tacoma, Washington
Date 1978
Users Elementary school age children of upper-middle class neighborhood surrounding park
Size 460 sq. ft. structure on 1,600 sq. ft. site on edge of several acre park
Cost $2,150 plus site preparation and free parent's labor
## HENRY FORD ELEMENTARY SCHOOL PLAYGROUND

### BASIC DATA

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<th><strong>Client</strong></th>
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<td><strong>Designer</strong></td>
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<tr>
<td><strong>Users</strong></td>
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<tr>
<td><strong>Size</strong></td>
<td>Ca. 1,500 sq. ft. structure of Douglas Fir and medium-density overlay plywood on ca. 2,400 sq. ft. site on far corner of schoolground</td>
</tr>
<tr>
<td><strong>Cost</strong></td>
<td>$3,000 plus site preparation and free labour (6 months planning time plus 2 weekends for construction)</td>
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</tbody>
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# Basic Data

<table>
<thead>
<tr>
<th><strong>Client</strong></th>
<th>Oak Knoll Elementary School, Menlo Park, California</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Designer</strong></td>
<td>Jay Beckwith/ Forestville, California</td>
</tr>
<tr>
<td><strong>Date</strong></td>
<td>1974</td>
</tr>
<tr>
<td><strong>Users</strong></td>
<td>Elementary school children during recess (no access from neighborhood)</td>
</tr>
<tr>
<td><strong>Size</strong></td>
<td>1,500 sq. ft. structure on 2,400 sq. ft. site immediately adjacent to and down a slope from the elementary school</td>
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<tr>
<td><strong>Cost</strong></td>
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## BASIC DATA

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<thead>
<tr>
<th>Client</th>
<th>Children's Health Council of the Mid-Peninsula, Palo Alto, California</th>
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</thead>
<tbody>
<tr>
<td>Designer</td>
<td>Jay Beckwith/Forestville, California</td>
</tr>
<tr>
<td>Manufacturer</td>
<td>Big Toys, Inc./Tacoma, Washington</td>
</tr>
<tr>
<td>Date</td>
<td>1977</td>
</tr>
<tr>
<td>Users</td>
<td>Handicapped children of preschool age</td>
</tr>
<tr>
<td>Size</td>
<td>4,200 sq. ft. yard with several scattered pieces of &quot;Big Toys&quot; equipment</td>
</tr>
<tr>
<td>Cost</td>
<td>$7,000 of equipment</td>
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</table>
SITES FEATURED

Holbrook-Palmer Park Playground and Henry Ford Elementary School Playground

"Big Toys"-type playgrounds were the only manufactured, conventional type playgrounds included in our case study site visits.

The Holbrook-Palmer Park Playground (see first photograph above) is a standard "Big Toys" structure (#SB11 in their catalogue). The Henry Ford Elementary School Playground (second photograph) is an earlier one-off design predating when the designer, Jay Beckwith, joined Big Toys as their chief designer for school yard installations.

Big Toys are manufactured modular play structure component systems from which a client can select already designed structures (e.g., the SB-11) or may compose their own structure with design guidance from Beckwith and Big Toys.

Holbrook-Palmer features a wide slide, tunnel slide, slide pole, banister slide, climbing cargo net, climbing tires, steering wheel, and various ladders all leading up to or coming down from a central 4-1/2 ft. high platform. The organization is thus basically radial with activities leading not to other activities but to the sandbox base.

Materials are standard Big Toys materials as detailed above in Basic Data.

No parts are dynamic (save a slight bounce in the cargo net), and except for the sand, there are no loose parts.

The Western Red Cedar logs don't need preservation. For visual reasons, the steel, aluminum, and wood are all in their natural state.

None of the sites had any overhead lighting, water, or toilet facilities. Site development was very minimal.
No overall siting organization was evident. Holbrook-Palmer and the other standard Big Toys were either 2 or 3 pieces of equipment scattered in space, or 1 major piece isolated from other park or playground features. The structures are extremely vandal proof and are said to be quite safe (Manufacturer's Catalogue).

The organization of the Henry Ford Elementary School Playground is basically a lazy "S" with ends of activities leading to other activities. It features five 6 ft. circles of medium-density overlay plywood with climbing, swinging, and overhead hand-walking devices connecting the circles. At either end of the main form are two 4 ft. steel geodesic domes and other conventional playground equipment. The base is sand inside two 1 x 8 in. planks.

Materials are a combination of Douglas Fir, steel pipe, outdoor carpet, oil drums, stainless steel slides, and tires, etc. in various shapes, sizes, and alignments. The circles are brightly painted in sky blue and white. All wood and hardware were locally purchased.

OBSERVATIONS AND INTERVIEWS

It is impossible to give a fair and comprehensive assessment of these four Big Toys-type playgrounds for, despite a clear, warm Saturday afternoon, children were seen on only one of them, the specially-designed Henry Ford Playground.

The main activities seen at Henry Ford were gross-motor physical activities (climbing, running, chasing, swinging). No individual, quiet, small motor, or creative activities were observed. The mood was very lively, almost hyperactive.

All activity was confined to the main "S" structure; nothing happened in the sand or on the metal equipment.

Six children were informally interviewed at Henry Ford. Generally they said that though they played also at two other play-
grounds (on more conventional equipment), they considered this one the best as it was more fun and had more things you could do. They also mentioned having been at several other community places today (drugstore, streets, other playground, here), and that they would be leaving here soon.

ASSESSMENT

Jay Beckwith, the designer, considers that "Big Toys" supports physical learning and motor planning challenges, dynamic balance (jumping, swinging, etc.), and social interaction (fantasy play, group play, etc.) for infants through 11 year olds. He views the structures as stage sets for play. He suggested that cognitive play is not particularly promoted and supported by "Big Toys." or any other commercial equipment. It's very difficult, he says, because Big Toys is "an armature and without smaller, flexible, and loo lose elements, it's pretty dry." But the four elements of physical learning, dynamic balance, social interaction, and cognitive play are necessary, he thinks, for a truly successful play yard.

He also added that in his opinion, Big Toys and similar commercial equipment are best only in school settings, that they are not most successful in park settings unless in a very high density area or in combination with
other types of play experiences. "No environment will be complete," Beckwith maintains, "if people do not put something of themselves into it or allow the people who live in that space the power/control to change it."

They seem to be very active places, and thus the sand around would be a dangerous place for infants.

The play structures would seem to support physical motor activity, primarily of the gross-motor, large muscle, and balance kinds, and to encourage challenge and a low level of competition. Other social activities (like cooperation, quiet conversation, intimate, emotional situations), other fine motor activities, and creative-constructive and other primarily intellectual activities were not seen and it is difficult to imagine them being stimulated or facilitated by these structures. To reiterate, the Big Toys installations visited seem to be settings mainly for gross motor, balancing, and challenging activities.

The structures are vandal proof, have no special provisions for handicapped children, and seem fairly safe (e.g., the highest platform being 4 1/2 ft. and the base being loose sand).

CONCLUSION

These are nice, safe, vandal proof structures.

As they seem mainly to cater to motor challenge activities they should be sited near natural settings for shade and other play areas for variety.

The larger the facility and the more custom designed, the more use it seems to get. This may be for two reasons: (1) more perceptual variety and alternatives, i.e., less uniformity, more different sized and shaped elements and spaces; and (2) more things to do, both more variety and more in absolute numbers.

All these structures were community built or assembled, and this seems a major strength of them, especially the one-off Henry Ford Playground where the parents and teachers were involved with planning, design, and construction.
BROOKLYN CHILDREN'S MUSEUM

BASIC DATA

Client  Brooklyn Institute of Arts and Sciences
Address  145 Brooklyn Avenue at St. Marks Avenue
          Brooklyn, New York 11213
          (212)-735-4400
Director  Lloyd Hezekiah
Architect  Hardy Holzman Pfeiffer Associates/New York
Consultants  Edwin Schlossberg, Exhibition Conceptualization
              Goldreich Page & Thropp, Structural
              Hannaham & Johnson, Mechanical and Electrical
              Robert A. Hansen Assoc., Acoustical
Date  1975 (Formal Opening--1977)
Users  Children of all ages from New York's
       five boroughs
Size  30,000 sq. ft.
Cost  Building--$3,250,000  $141.7/sq. ft.
       Exhibit-- $1,000,000
References  A museum designed for the children of
           Brooklyn, Architectural Record, April 1972,
           151, 114-115.

           The Brooklyn children's museum and MUSE.
           in Educational Facilities Laboratories,
           Hands-On Museums. New York: Author,

           Esprit grows in Brooklyn. Progressive

           The Brooklyn Children's Museum. Brooklyn,
PROGRAM DESCRIPTION

The Brooklyn Children's Museum is a free, science-oriented museum based on the concept of participation with exhibits. This kind of museum is referred to as a "hands-on" museum. The program also includes frequent school group visits during the school year. It is the oldest children's museum in the world, and in 1977 opened a new building.

FACILITY DESCRIPTION

SITE

Sited in the heart of Brooklyn, it fills an old park and tries to recapture the lost space by being partially sunk into the ground with berms on its sides and a landscaped amphitheater on the roof.

The new facility replaces another facility called MUSE, also by the same architects. The MUSE facility was similar in program but its small size could be an appropriate model for a community of 30,000-50,000 people like the larger Army bases.

A contract is to be let in 1979 by the owner, the City of New York, for completion of site work.
CONCEPTUAL ORGANIZATION

The interior is divided into upper levels for exhibits and lower levels for workshops and support facilities. The terraced exhibition area is organized into six major topic areas for participatory learning:

- self awareness and identification
- fire, light, and steam
- water and hydraulics
- air, wind, and pressure
- earth, soils, and greenhouse
- cultural links and drama

The conceptual organization of the facility supports and attracts children both in the use of seductive features, like water play, and with the design of the overall facility, a series of stepped levels connected by plastic modules that can be climbed through. Large groups can be subdivided into more desirable small workshop groups that proceed from level to level and exhibit to exhibit.
Dramatization of Entry Sequence

The diagramatic plan shows the significance of the water tunnel as the element in the single large room that dominates the facility and that orients and organizes the user.

BUILDING SUBSYSTEMS

Structural Systems

The exterior container is poured-in-place concrete, the roof structure exposed steel, the interior floors heavy timber with exposed beams, and the exhibits areas an exposed, suspended pipe grid system. The structural system has a special track for flexibility in display and hanging things. The structural system also supports a play area and amphitheater on the roof.

Electrical System

Spaced outlets in the ceiling provide flexibility for organizing and changing exhibits.
Acoustical Features

Classroom spaces are provided on the lowest level in four separate areas. These types of activities do not occur on the exhibition levels.

The large open room is not particularly good for noise control. Noise from exhibits both enlivens the whole environment and distracts from concentration on specific activities. The water provides a general masking noise but the steam engine whistles, bangs, and horns easily rise above it. As summer or weekend entertainment, this is terrific; as environment for programmed school science class activities, it has proved inappropriately distracting.

Lighting

Fluorescent light is reflected off the ceiling with a small amount of down lighting sneaking through the reflector. The diffused light isn't as pleasant at the daylight that comes through the full height galvanized industrial sash at the lowest level. The project contains one skylight and one 40-foot-long clerestory window.

OTHER SPECIAL DESIGN FEATURES

Views

Offices have interior views into the big space.

Interior Design

The interior is a fair example of the architect's style of decorating. The mish-mash of garish colors and patterns isn't as provocative as it is in some of their later projects, but it is still exciting and fun for most visitors though disturbing to most architectural sensibilities.
Energy Conservation

The building is mostly underground and windowless except for one corner—an excellent beginning for an energy-saving facility. However, it is also a single large volume with a ceiling height of 15 to 20 feet for much of the facility, not a preferred concept for an energy-saving building.

Accomodations for the Handicapped

The ramp connects all the basic exhibit levels and a wall lift ramp provides access to the lowest museum level and the museum shop.

ASSESSMENT

The Brooklyn Children's Museum is an excellent example of a design where adults have focused on capturing the imagination and instincts of children. Like an adventure playground, it involves the child and has a mish-mash aesthetic that doesn't look serious enough or controlled and refined enough for most adults. Apparently—and more importantly—it works for the children.

The outside of the facility is not as successful. The berms are too steep to be able to handle the grass planted on them. The roof area is under utilized and is apparently unpopular in the neighborhood. Adventure playgrounds have learned to mask their different aesthetic by fences; the architects could have learned from these examples and decided to be "nicer" to the neighborhood by disguising its self-conscious messiness from the outside.

The visiting team expected the roof area to be directly linked to neighborhood paths and activities. Unfortunately, even with the berms, the roof is a roof, and is isolated by being up high, and is not integrated with its immediate neighborhood or park.
BUCHANAN SCHOOL PLAYGROUND

BASIC DATA

Client Vincent Astor Foundation and the Washington D.C. Board of Education

Address 13th and E Streets, S. E.
Washington, D. C.

Architect Pomerance & Breines/New York

Landscape Architect M. Paul Friedberg & Associates/New York

Date 1968

Users School children and adults in the neighboring community

Size


The playground double-functions as a playground for a public school and after school the playground becomes the domain of the community. The conceptual organization is a division into four main areas: small kiosk-like shops, a sunken basketball area, an overview area, and a sculptural play area. Clues are provided for both age group separation or separation by activity. Several large trees shade the site.

The sculptural play area is dominated by a series of stone-clad conical mounds with monkeybars between them and slides down them.

The surface materials are either very hard concrete or granite or soft sand. The furnishings, benches, pergolas, etc. were heavy stock timber but over several years of hard use had been vandalized and broken but not replaced or maintained. Broken glass and graffiti were also in evidence.

The playground is an enigma. There is obviously a need for a well-furnished playground to serve the school and the community but the appropriateness of this playground
for that purpose is not clear. There are major and minor complaints like the inappropriateness of the sand both because of real or imagined health problem, the real problems of broken glass, and heavy use and no maintenance. The kinds of play equipment provided and the slipperiness and harshness of the granite rocks on the mounds are problems. Unfortunately, the playground doesn't provide enough clear things to do and the children seen there are hard-pressed to figure out just how to play. If the concept of linked play is in effect here, it isn't clearly evident to the children. Tag according to locals is the dominant activity in the play area.

The partially sunken basketball court is clearly popular even with broken back boards and baskets. Its role as a double-functioning basketball-spray pool is very successful, according to those there.
The "shops" area looked more like a series of small jailhouses with wire grates, chain-linked windows, and padlocked doors than like a community amenity, but programs were operating out of the facility providing services and a place for marginal business. Clearly the shops don't look like the street market the designers imagined them to be.

Because of its central location, this facility serves several functions, which increases its overall use. Unfortunately, while the usage is clearly high, the needed maintenance that comes with high usage has been missing and the project looks older than its several years.

The zoning and mixing of activities and age groups in the playground is apparently successful as is the double-functioning of the basketball court and the spray pool. Nevertheless, the range of activities available in the playground area is too limited and the monkeybar arcs and the climbing steps don't serve a cross-section of the kids playing there.
CENTRAL PARK CONTEMPORARY PLAYGROUNDS

COMPARATIVE INTRODUCTION

BASIC DATA

Client
Parks, Recreation, and Cultural Affairs Administration, City of New York and Parents for Improved Playground, Inc.

Address
Five locations in Central Park, New York
1. Adler Central Park Play Area
   72nd Street and Fifth Avenue
2. Lauder Playground
   67th and Central Park West
3. Heckscher Playground
   59th Street and Central Park West
4. Metropolitan Museum Playground
   84th Street and Fifth Avenue
5. Central Park Community Playground
   100th Street and Central Park West

Sizes
Vary from 13,000 sq. ft. to 29,000 sq. ft.

Cost
Vary from $85,000 to $300,000 including all site preparation. Average around $9/sq. ft.

Interviewees
Several children and parents
Richard Dattner
Kenneth Ross
### Summary for Five Playgrounds in Central Park, New York

<table>
<thead>
<tr>
<th>Play Area</th>
<th>Date</th>
<th>Architect</th>
<th>Size</th>
<th>Cost</th>
<th>Cost $/ft²</th>
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<tr>
<td>LAUDER</td>
<td>1967</td>
<td>DATNER</td>
<td>13,000 ft²</td>
<td>$85,000</td>
<td>6.5 $/ft²</td>
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<tr>
<td>HECKSCHER</td>
<td>1968</td>
<td>DATNER</td>
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<td>250,000</td>
<td></td>
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<tr>
<td>ADLER</td>
<td>1970</td>
<td>DATNER</td>
<td>13,000 ft²</td>
<td>$120,000</td>
<td>9.5 $/ft²</td>
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<tr>
<td>METROPOLITAN</td>
<td>1972</td>
<td>DATNER</td>
<td>22,000 ft²</td>
<td>$300,000</td>
<td>13.6 $/ft²</td>
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<tr>
<td>CENTRAL PARK COMMUNITY</td>
<td>1972</td>
<td>ROSS, JACQUELINE AND RYAN</td>
<td>29,000 ft²</td>
<td>$165,000</td>
<td>5.6 $/ft²</td>
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</tbody>
</table>

**Averages 1967-72**
- 19,000 ft²
- $184,000
- 8.78 $/ft²

---

![Diagram of playground locations](image)
LAUDER PLAYGROUND

BASIC DATA

Client

Parks, Recreation, and Cultural Affairs Administration, City of New York

Address

67th and Central Park West

Architect

Richard Dattner, AIA/New York

Date

1967

Size

14,000 sq. ft.

Cost

$85,000 (not including fence or benches); $6/sq. ft.

References


This facility was the first in a series of "new" playgrounds for Central Park in New York. The facility is built inside an existing shell consisting of a fence and benches. The core replaces an older conventional play area that was furnished with slides, swings, play sculpture, etc.

FACILITY DESCRIPTION

SITE

The site is at the edge of Central Park, on a small rise of land. It is surrounded and populated by large mature trees. The only access is from the park side of the playground.

CONCEPTUAL ORGANIZATION

Conceptually, the play area is organized in four concentric zones, the center being the play activity area, surrounded by an edge, a hard-surfaced path, and with the observation benches and fence as the outer ring.

INDIVIDUAL SPACES

As shown in the photographs and the plan, the facility is a series of sculptural play devices constructed of durable materials.
The following activity areas were included in the original design:

- spashing pool
- climbing roof
- water channel
- boat
- climbing poles
- ampitheater
- tree houses
- tree pit
- fortress
- entrance tower
- mound within a mound
- tunnel
- slide
- paddling pools

Several items have been removed like the boat and some items have been added like the slides.

(The park has another play area for younger children just east toward the park entrance. This area was also designed by Richard Dattner. It is much smaller than the Lauder Play Area and contains more conventional play structures and equipment).

OBSERVATIONS AND INTERVIEWS

OBSERVATIONS OF USE

The research team visited the site several times on a sunny Sunday (Father's Day.) Early in the morning (10 a.m.) there were no users on the site. By noon there were a few children each with one or more adults. Most of the children observed were between 2 and 6 years of age. Adults were in all parts of the play area--in the sandy zone, next to the slides, sitting on edges--both as participants and observers.

ASSESSMENT

SITE

The site is different from other Central Park sites. Of the five playgrounds we
saw, it was the only one located on a hill. All the others were located in low areas, so as you approached them you looked "into" them, not "up" at them. This critic's subjective response is to think that playgrounds shouldn't be on tops of hills.

The site was heavily shaded, perhaps to some disadvantage on colder days.

EQUIPMENT

No movement--no moving or swinging equipment. The lack of swinging equipment seemed a severe deficiency when compared to the other playgrounds.

Relatively few choices of equipment which made the playground very similar to the small Tot Lot Playground next to it. In fact, no school age children were there perhaps because there was no large motor play equipment to initially attract them.

SAFETY

Safety problems were noticed in steps in the splashing pool (see sketch and photo).

GENERAL

- no provisions to be up off the ground (except in the tree house)
- not next to any ball playing areas. The feeling of isolation is not good. If the playground itself had more open space, it might feel better
- sand is nice (parent)
- no color--the lack of color was a real disappointment especially in comparison to the other Central Park playgrounds
- "What is perhaps missing is the loose building materials that could make the playground really creative." (About Dattner in Bengtsson (1970))
# HECKSCHER FOUNDATION PLAYGROUND

## BASIC DATA

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<td>Address</td>
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<td></td>
<td>New York, New York</td>
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<tr>
<td>Architect</td>
<td>Richard Dattner, AIA/New York</td>
</tr>
<tr>
<td>Date</td>
<td>1968</td>
</tr>
<tr>
<td>Cost</td>
<td>$250,000</td>
</tr>
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</table>
A large existing playground in Central Park that has been updated with several new facilities.

The new facilities at the playground include:

- major water play area
- contemporary play area
- new equipment for a traditional play area

The major features from the previous playground include:

- a pavillion (rest rooms)
- a large ball playing area
- a large (40' high) natural rock outcropping
- pieces of traditional play equipment
- a large paved play area

The water play area is the most unique feature of the playground and deserves special discussion.

CONCEPTUAL ORGANIZATION

The overall design concepts in the water play area were:

1. Zoning for distributing play.

2. Connection (symbolic and actual) of built play structures with the natural rock formation.

3. Continuity of water flow and related play areas.
While this playground is designed as a major feature in the major public park of one of the world's largest cities, it can serve as a prototype for much smaller places. Many of the elements are done with economy and any place that brings children and adults together at high densities (like a shopping center) could easily justify a water play area.

The major lessons that would apply to much smaller facilities include:

- water play in the sun is fun
- nozzels to spray water (intensity and direction controlled by the children)
- water trough (a river) for water play
- zoned activities for active and quiet water play, and for separation of younger from older children when desired
"Water is seductive," and the playground attracts many children to its four zones:

- sprinkler area (some nozzels are child controllable and directable)
- cascade area
- water flow play area
- quiet water play area

A major insight on the part of the designer is that it doesn't take much water to initiate and stimulate water play. Nozzles, many of which are movable and squirtable, spray water at the child or adult's whim. The cascade does use a lot more water and predictably it is only turned on for special occasions.

The configuration of the water play area, is a series of layers in the following order from inside to outside.

- children's (occasional adult) territory
- edge
- path
- observation area (adults and kids)
- security (fence)
- entry (only one or two playgrounds)

The origin of the water is on the natural rock from which it continues to flow through a system of elevated canals and cascades from one area to another. In addition, there are the independent areas for water nozzles.
### BASIC DATA

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<td>Address</td>
<td>71st Street and Fifth Avenue</td>
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<td></td>
<td>New York, N.Y.</td>
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<td>Architect</td>
<td>Richard Dattner, AIA/New York</td>
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<td>Date</td>
<td>1970</td>
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<tr>
<td>Users</td>
<td>Children ages, 2 to 8, parents, others</td>
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<tr>
<td>Size</td>
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<tr>
<td>Cost</td>
<td>$120,000. $9.2/sq. ft.</td>
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</table>
The facility was the third in a series of "new" playgrounds constructed in Central Park in New York. The facility is built inside an existing shell, consisting of a fence and benches, and replaces a conventional play area.
This facility is an important variation on Battner's earlier Lauder Playground (see above case study) and a comparison between the two will help clarify the characteristics of both.

- similar in overall zoning and configuration
- both sited at the edge of the park
- Adler introduces use of color
- Adler introduces moving things including a triple tire swing and a Tarzan rope
- Adler playthings are more obviously made out of wood
- the image at Adler of a playground populated with structures, whereas at Lauder the concrete stone mounds dominate
- the Adler Playground has a clear relationship to a ball playing area; Lauder does not
- both have popular tunnel-volcano-slide combinations
The 1-1/2 hours spent at the playground allowed the team to observe several patterns of use and to pose some hypotheses.

**Linked Play--Inside and Out**

The sequence of play of one group of children deserves record. The sequence:

**Arrival:** As a group with parents.

**1st:** Play on the swings (sufficient number of children did this to suggest that dramatic equipment or moving equipment is a touchstone)

**2nd:** Ropeswing

**3rd:** Play on the volcano-slide

**4th:** Play in the treehouse-slide; at each place as they went along, we heard, "Let's play Star Wars", etc.

**5th:** Water play at bubbler; **recontact** Dad

**6th:** Play in the open area near Dad

**7th:** Group deteriorates into some quiet play, plus bike riding and taunting of parents

**8th:** Group goes to play in field (30 minutes have gone by); they play various ballgames for 1 hour: (Several other children then came in, played and then went out to the playing field for their own ballgame or quiet play in the dirt, leading to the possible hypothesis that accessibility or linking to other play areas is a critical site development consideration.)
OTHER OBSERVATIONS OF USE

Other kinds of play observed included:

- Parent-child challenge play where the child tried to extend his or her ability to do something like the Tarzan Swing.

- Infants and very young children benefited from the clear definition of sand play spaces and the infants played happily in spaces that looked too tight for them and were not used by older children except as hiding spaces.

- We observed what seems to be a classical parent behavior of parent and child going to the park, where the parents read the New York Times on Sunday morning while the child plays; eventually the child gets bored and tries to enlist participation of the parent--most fail.

- Most parents sat on periphery but some entered the children's domains and helped or participated.

- Ages: most children were 2 to 8 years old.

COMMENTS

- Most users live nearby and walk; some drive but knew the place from formerly living in the area.

- Use varies according to age and stage in life cycle. The dominant activities:

  1-1/2 years: sand play
  2-1/2 years: slides and sand play
  3 to 3-1/2 years: swings, slides, and sand play

We observed 15 children at noon time; parents said there were frequently 75-100 at the playground at peak activity times.
The playground, although it had the same overall size and zoning as the Lauder Playground, appear to be a significant improvement both because of the design changes and additions listed above.

The equipment has held up well and one would not guess that it has been in constant use since 1970.
# METROPOLITAN MUSEUM PLAYGROUND NORTH

## BASIC DATA

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<td>Address</td>
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<tr>
<td>Architect</td>
<td>Richard Dattner, AIA/New York</td>
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<td>Size</td>
<td>22,000 sq. ft.</td>
</tr>
<tr>
<td>Cost</td>
<td>$300,000. $13.60/sq. ft.</td>
</tr>
</tbody>
</table>
The facility is one in a series of "new" playgrounds for Central Park in New York. The facility serves both the apartment community across the street from it and provides child-oriented space near the Metropolitan Museum presumably as a drop-off space for children who don't want to go inside or for after a museum visit.

The Metropolitan Museum Playground is similar in concept, zoning, color, and execution to the other Dattner-designed playgrounds, except for the inclusion of a tot-lot in its overall design, and the addition of more swinging equipment, such as a swinging bridge.

Like the others located near the edge of the park, it is relatively convenient to apartment dwellers, but it is the only facility that is highly visible and has its entrance directly off a main street. This seems to affect the personality of the playground, making its relation to Central Park incidental. It was the sunniest of the playgrounds visited in Central Park. Apparently a lot of trees got removed during construction.
Perceived Size

A change between this design and the other areas is the shape of the playground. The others are oblong while this one is more nearly circular. The effect of this difference is perceived size, at least for the adult. This playground even though it is larger by about 10,000 sq. ft. feels (and is) more concentrated.

Lack of Connection

The facility also appears to suffer from isolation. It is virtually surrounded by traffic on two of its three sides and isn't related either by proximity or visual connection to other park amenities, paths, playing fields, etc. The entrance on Fifth Avenue makes its location in the park incidental.
# CENTRAL PARK COMMUNITY PLAYGROUND

## BASIC DATA

| Client                  | Parents for Improved Playgrounds, Inc.  
|                        | 168 W. 100 Street, New York, New York |
| Address                | 100th Street and Central Park West, 
|                        | New York, New York                   |
| Architect              | Ross, Ryan, and Jacquette Architectural 
|                        | Associates/New York                  |
| Date                   | 1972                                 |
| Users                  | 100th Street neighborhood children and 
|                        | the general public                    |
| Size                   | 29,000 sq. ft.                       |
| Cost                   | $165,000; $6.60/sq. ft.               |
| People Interviewed     | Kenneth Ross                         |
PROGRAM DESCRIPTION

Of the five playgrounds visited in Central Park, this is the only playground whose design included active community input. Parents for Improved Playgrounds, Inc., and the architects—all of whom live within walking distance from the park—worked closely on the design development stage.

Due to active community participation and continuing support from the Lauder Foundation, this park has a summer program manned with CETA employees. The program includes directed sports, free lunches, arts and crafts, and other activities.

Modifications and additions to the equipment are also facilitated by the active participation of the community, according to Kenneth Ross, the architect. "The play area is actually a catalyst for a lot of community action and 'getting together' resulted in ventures such as establishing a community radio station," said Ross.

FACILITY DESCRIPTION

The playground is located at the west edge of Central Park at 100th Street, a major automobile entrance to the park. It sits in a hollow backed up to the northeast side of a hill and is surrounded by large mature trees. The entry is on the park side, not the streetside, and views from inside the park past the entry include playing fields and paths leading to other amenities.

The range of swinging and climbing equipment found at the other contemporary playgrounds was also found here, the biggest difference being in the boldness of the individual pieces.

A good example for such area is the tree house. This is a complex of structures that offers climbing, swinging and sliding experiences for the older children.
The complex consists of multiple-level platforms of natural wood, connected by a jungle bridge of ropes with cargo nets that hang directly below. Additional features of the tree house complex are a unique spiral slide similar to a department store package chute and fire poles. Attached to the tree house is the pulley-ride that provides the excitement of feet-off-the-ground transportation and is connected to the Tarzan swing at the far end of the play park.

The Tarzan ropes were taller and there were more of them. (Only one is still up, apparently with several ropes kids crash into one another rather than jumping the gap.) The tree house is higher and the bridges are higher than the other Central Park playgrounds.

Zoning is similar and given the drama of the other parts, areas for quiet play are important. One hypothesis might be that major highly populated contemporary playgrounds with lots of action equipment also need dull, ambiguous areas to match the needs of certain kids and the varying moods of others.
The water play area was in full use. Water play is basically "spray play" with the nozzles being child adjustable both in direction and quantity. Interestingly, the adjustments possible are not very great but they appear to bring tremendous satisfaction to the children using them.

A feature of this facility not found on the others is the bridge-causeway which bisects the site. It is fairly high above the sand below, offers a variety of ways to jump off and onto it, and apparently is both long enough and located so it doesn't connect with a "traffic race way" that would encourage running around.
Maintenance

This playground appeared to be the worst maintained of the five visited and a variety of pieces of equipment needed repair to put them back in use.

Graded Challenge

One of the successful aspects of this playground, and in contrast an aspect clearly missing from the oldest playground, Lauder, is a full continuum of varying challenges for children to "grow-into." This playground (and to some extent the Metropolitan Playground) offered many dramatic challenges.
COMPARATIVE ANALYSIS OF THE CENTRAL PARK
CONTEMPORARY PLAYGROUNDS

FACILITY DESCRIPTION

CONFIGURATION AND CONCEPTUAL ORGANIZATION

Most sites are organized in a pattern that can be described schematically as three concentric circles:

- the core—the main activity area
- a hard surfaced path—for circulation and wheeled toys
- the outer ring fence and benches—boundary control and a place for adults, rest and observation

Although this organization was inherited from the original, much older playgrounds on the same sites it was not perceived by the architects as a constraint.

The five playgrounds observed in Central Park fall into the category called "Contemporary Playgrounds." They have similarities to traditional, equipment-oriented playgrounds and have swings, climbing devices, slides, etc. They are different from most traditional playgrounds, however, in a number of ways.

- The playgrounds are landscaped with walls and mounds to define zones for different pieces of equipment and types of play.
- The equipment is either custom designed, with wood being the prime building material, or is selected from catalogues that emphasize wood play equipment.
- Water play is included in some way, and more inventive than just squirting people with the drinking fountain.
- Generally, the play areas are much larger, more intentionally designed, but only slightly more expensive per square foot than many catalogue-selected, manufacturer installed traditional playgrounds (especially...
considering that the latter do not involve site preparation or labor--see the "Big Toys" Case Study.

Several pieces of equipment not usually found in traditional playgrounds tend to show up over and over:

- Paved mounds for climbing and sliding
- Tree houses, platforms above the ground, and bridges
- "Tarzan" swinging ropes
- Group tire swings
- Stepping stones or step pyramids

**OBSERVATIONS AND INTERVIEWS**

The five play areas were visited and observed by the research team during a typical weekend summer day. The duration of the observation and the sample size in the case of interviews do not allow for authorization or generalizable findings. The following observations are, therefore, limited and probable causes should be further studied.

- The Lauder play area was observed as the least used area. When it was occupied, most of the users were of younger age, and almost without exception were accompanied by parents.

Possible causes for the under utilization of this area might be its static character (no moving things, and the water in water-play area being turned off).

- The Adler play area was used more heavily, especially towards noon time.

Being conceptually close to Lauder, the difference might possibly be attributed to the larger number of dynamic activities and less rigid and more colorful equipment; the difference might also be due to the different populations in the play area's immediate neighborhoods.
• The Metropolitan Museum play area and the Heckscher play area were moderately busy. The Heckscher specialized water play area was somewhat quiet considering the hot day and the time of the visit (3:30 p.m.).

• The Community Playground on 100th Street was the most crowded area.

Possible contributing factors are the dynamic character of the equipment (despite some disrepair), and the socio-economic status of the users, who might have greater dependency on outdoors and public facilities for recreation.

ASSESSMENT

The pattern of use observed on the Central Park Playgrounds is of some interest when it is juxtaposed to other studies of playground use (Rothenberg, Haywood, and Beasley, 1975; Clay, 1972) which suggest that playgrounds in general are used only 5% of children's total time out-of-doors. The implication is that anyone interested in children's play should examine how children use their time and plan to support other aspects of their time beyond the 5% that playgrounds represent.

On the other hand, percentage of time spent at playgrounds may not accurately reflect the importance of "Play Areas" or "Kids Places" in the children's overall developmental process. During the site visits in Central Park it was observed that the average visit lasted 15-20 minutes followed by as long or longer period of play in the field near the playground. This suggests three hypotheses:

1. That playgrounds at suburban Army Bases will probably look empty much of the time.

2. That short duration of use does not reflect the importance of the playground to the child. Even young children test their ability to break away from their families and assert themselves
as individuals. The playground is their territory away from their parents and provides a place to assert some independence. This assertion is not dependent on the the amount of time spent there.

3. The "play" that the play area generates includes play on the way to and from the area and play in the play fields next to it.

MAINTENANCE

While two of the playgrounds are over 10 years old and the newest is six years old, they basically do not show their age. Only the Lauder concrete work and some of the community-built parts of the 100th Street playground show the ravages of heavy use.

The choice of very large durable wooden structures and the mixture of paved and sand areas has apparently been appropriate, and if not easy to maintain, at least maintainable.

Of the facilities emphasizing color, Adler, Metropolitan and Heckscher still look bright. If they have been repainted, someone went to the bother of getting paints that were bright. Usually the colors used by maintenance people when repainting are very dull and show the effects of institutional standards.

CONCLUSIONS

APPROPRIATENESS TO ARMY BASES

The $300,000 cost for a 1/2 acre playground is startling, especially if one lives in a suburb and backyard swing sets appear to solve children's recreation needs. The Central Park area of Manhattan has a very high density and although many are adult families without children, the number of children within the vicinity of each park is very high. Since Army Bases don't fit this pattern, are these playgrounds a reasonable prototype for children's play at Army Bases?
The answer is yes in several ways. First, while the kind of expenditure they represent wouldn't be appropriate for family housing areas, there are places on bases where many people congregate. These include recreation and commercial areas. For instance, an ambitious playground design as the focus of a "mall" that connects the PX, Commercial Bank, and other commercial and recreational activities at Fort Meade, Bolling Air Force Base, or Fort Lewis would probably get enough children on bikes or shopping with parents, and enough special use for art shows, music, etc. to justify its use.

REFERENCES


## Basic Data

**Client**  
Ontario Place Corporation, Government of Ontario

**Address**  
955 Lakeshore Boulevard West  
Toronto, Ontario M6K 3B9  
(414)965-3737

**Director**  
Nevin McKeown, Manager of Site Operations

**Designer**  
Eric McMillan/Toronto

**Planner**  
Craig Zeidler Strong/Toronto

**Date**  
1972-74

**Users**  
The general public, children 4-14 years

**Size**  
2-1/2 acres in a 96 acre leisure park

**Cost**  
$770,000 (Canadian); $300,000/acre

**References**  
Canada's fun village: Ontario Place.  

**People Interviewed**  
Nevin McKeown, Manager

**Interviewed**  
Eric McMillan, Designer
Children's Village is one feature of Ontario Place, a permanent leisure park and exposition-entertainment facility for Toronto and the province of Ontario. Children's Village is an important facility attracting children and families on its own. There are two main areas, a water play area and a tent-like structure containing about 30 specially designed pieces of play apparatus called the land play area, including an area for pre-schoolers.

The concept behind the place is to attract children with a variety of pieces of experience, sensual, and large-muscle-oriented play equipment. The park charges admission ($2.50 for adults, $1.50 for unaccompanied children, and $.50 for accompanied children); all events are then free.

FACILITY DESCRIPTION

A mimeographed public relations release describes the facility as follows: "Children's Village, a two-acre playground which has attracted worldwide attention, is for children between the ages of 4 and 14 only. Opened July, 1972, it consists of two main areas. Landplay is a 40,000 sq. ft. activity area protected by a brilliant orange canopy. Hand Over Water, Punch Bag Forest, Moon Walk, and King of the Castle are just some of the activities that delight young-
sters. There is also a special play area just for pre-schoolers. This newly expanded area includes a "Jumping Jack", tube slides, swings, King of the Castle, and a playhouse. Waterplay, which opens each year in mid-June, is a 65,000 sq. ft. unique three-tiered funland offering more than 15 water games that magnify the glories of the water pistol, garden hose, and the old swimming hole. A giant bird-shaped walk-in dryer delights the children."

The following photographs document several of the major pieces of landplay and waterplay equipment.
Costs

The King of the Castle device cost $15,000 for the large one and $4,000 for the small one for preschoolers including fees. The overall Children's Village cost $300,000 an acre.

Popularity

The air mattress Walk in Space is the most popular single event, according to the Facility Manager, although the children clearly explore most of the equipment while they are there. The water play area is equally popular. The least popular is the maze.

Handicapped Access

Although the whole facility is designed to attract active, mobile children looking primarily for challenges, there were wheelchair visitors. Preplanned group and programmed use especially during the school year makes the facility available to special groups.
Clear Accomplishment Points and Graded Challenge

Many events have clear accomplishment points as their feature. Some require cooperation; others stimulate competitiveness. Symbols and imagery are deemphasized and all the activities are free.

There are bigger and smaller versions of most of the equipment (with tiny versions in the tots area) to facilitate a self-selection achievement gradient for children with different abilities.

The concept of repetition of similar challenges in play equipment makes self-selection and accomplishment via graded challenge and paced alternatives possible.

THE TENT

The tent canopy is a critical element even in Toronto both for shade and for temporary protection from summer rains and thunderstorms. It is large enough to allow most people to get in out of the rain. It also provides an overall image to a facility that could look like a jumble of very miscellaneous items.

ASSESSMENT

An Amenity for Cities and Large Communities

The 50 larger cities in the country should seriously consider similar facilities and program as a special focus of their regional park systems.

The concept could have wider appeal and may be applicable to smaller facilities associated with other attractions like shopping centers. In fact, a franchise of children's playgrounds for shopping centers is being developed. Small indoor facility based on the same ideas could be incorporated as part of shopping centers (Columbus, Indiana) and could easily be developed in conjunction with centralized commercial facilities like the PX, banks, etc., on military bases.
Equipment

The following is a list of comments and suggestions about designing and furnishing this kind of park.

- cargo nets should by nylon with fiberglass joints--other materials may be cheaper but they don't last, splinter, and are more expensive in the long run.

- wood chips should be placed over sand because the sand gets into the childrens' clothes and grinds both the finish and the actual equipment--wood chips soften with age.

Appeal of the Facility

Children's Village provides a very appealing and memorable experience for its visitors. It is sensitively done and has been thought-
ful in providing experiences for children and places for adults to view and enjoy the activities.

Entropy

If there is a problem, it centers on the tendency of places to lose their original punch as they get remodelled and maintained over time, and as other people, interested and concerned, have their impact on the program and facility. For example, a chain-link fence (with provisions for a barbed-wire top) now greets the approaching visitor from the main entrance. Is it an affordable and practical solution to a crowd control problem or is it a basic affront to the integrity of the whole facility and the intentions and success of its original designer?

Over time this vital and stylish place may become an old thing incapable of maintaining its vitality, newness, and attractiveness. Luckily, after six years it still has much of its original freshness.
BASIC DATA

Client       City of Seattle

Address      Atop Interstate 5 between Seneca and
             University Streets (Downtown)
             Seattle, Washington

Architect    Lawrence Halprin and Associates/San Francisco
             (now CHNM Associates);
             Angela Danadjieva, Project Designer;
             E. Byron McCulley, Project Manager

Date         July 4, 1976

Users        The children and adults of downtown Seattle
             and neighboring First Hill residential dis-
             trict

Size         5.4 acres

Cost         $3.5 million including all park features,
             3990 cu. yds. of concrete, fountains, and
             piping. $648,000/acre.

References   Green lid for I-5. Progressive Architecture,
             June 1977, 58(6), 86-87.

5.4-acre park straddles downtown Seattle
freeway. American Institute of Architects'
CONCEPTUAL ORGANIZATION

A 5.4-acre urban park spanning an 8-lane major interstate and commuting freeway in the downtown of Seattle. The park provides the city with a green network of play spaces, waterfalls, pools, gardens, trees, and lawns. The park curves across the freeway from the Park Plaza office building past several sets of high rise apartment blocks, to a residential area, First Hill, to the north-east.
Access

Access to the park is from four walk and stairway entrances on the downtown side and across an unplanned stretch of land from the residential district.

Central Focus

The central focus is a waterfall/cascade/canyon on the downtown side. Concrete formed into step for pools of water, for walkways through the waterfalls, and for informal seating has been sculpted into a major urban experience. A central, circular walkway leads to the bottom of a 33-ft. canyon where the sound and spray of water completely masks the noise and pollution of the freeway. Surrounding the canyon and other pools is a plaza of trees, gardens, and lawns creating many private places.

Vegetation was selected for pollution tolerance. Expensive, invisible piping delivers water for the falls and vegetation, delivers fertilizer, and insures proper drainage.

ASSESSMENT

This is a very successful urban water park, creating many opportunities and places for residents living in high density. The entire park, and especially the central water area, serves as a playground for young and old alike. Adults and older people are seen to sit on the ledges reading, eating, or just passing the time, while children frolic in the water, scale the canyon walls, and hide in areas of deep vegetation.

The central and most unusual design feature is certainly the "fountain" and its use. An oasis has been created in the center of a city. The trees and flowers are beautiful and enhance the unity of the park. The four or five major functional areas seem to attract slightly different people.

CONCLUSION

This park is marvelous for adults, teenagers, and elementary age children, but not especially for very small children. It is very re-
laxing, and does cut off the freeway noise. It contrasts well with the rest of the city in that it has a relaxed landscaping that meanders over a reasonable distance allowing people to not feel hemmed in. The terrain varies nicely and it is exquisitely detailed. The canyon, pools, waterfalls, and ambient noise provide a lively focal point. One can easily move away from this area to more restful spaces. It has at least 5 major "places" which give variety and interest to the scheme. It is exceptionally good landscape architecture.
HARBOURFRONT ADVENTURE AND CREATIVE PLAYGROUNDS

BASIC DATA

Client
Parks and Recreation Department, City of Toronto

Address
Harbourfront Park
Toronto, Ontario

Director
Michael Moffat

Landscape Architect
Bill Rock/Toronto

Date
1974

Users
Creative Play Area 11-6 yrs.
Adventure Play Area 6-16 yrs.

Size
Creative play area 1/2 acre
Adventure play area 1-1/2 acre
Open field and residual 2-1/2 acres

People
Bill Rock, Landscape Architect
Interviewed
Several children
Harbourfront Adventure Playground is one of about 25 child-built playgrounds in North America and was one of the first adventure playgrounds in Canada. It is typical of other adventure playgrounds in that it is a program with a director who supervises and encourages a variety of activities centered around the building or making of things, especially "houses." The philosophy is that it is important to let the children be in charge of how they use the playground. An adventure playground is a "fertile terrain" full of loose materials and opportunities for play. The children build their own structures. Water is provided. Access for a truck to deliver donated materials is important. Harbourfront Adventure Playground is atypical in that it is not located in direct proximity to a housing area and is somewhat isolated because it was first built as an experimental demonstration project on National parkland. Still, it has the regular play components associated with a loose material, building-oriented, work-yard playground.

The Creative Playground is the only one of its kind in North America. The philosophy is the same as for the Adventure Playground, but the children tend to be younger, and the materials are a modular set of blocks with which the children can build without tools.
The 4-1/2 acre site has three areas: an open playing field of about 2 acres, the two play areas, and residual areas.

The enclosed area of the Adventure Playground is about 1-1/2 acres, surrounded by a fence. Its overall configuration is an "L," with an elongated hill on the east side along the fence. Most construction activities occur along the periphery.

The Adventure Playground includes several sheds backed up against the wall for storage of lumber of various sizes. The yard had the appearance of a disorganized lumber yard. Of special note is this appearance, which is messy and apparently disorganized by adult, aesthetic tastes, but the children seem to never remark on this and enjoy the chaos. In addition, there are gardens and garden plots, old clothes for make-believe play, paint, etc., and space for fire play.

Adjacent to the north of the Adventure Playground is an open 1/2 acre Creative Playground. This is an area furnished for a creative play program, and includes hollow, modular building blocks, ladders, planks, and boxes, all of which can be moved by pre-school children, as well as various arts and crafts materials and equipment, a wading pool, a large storage building for the blocks and equipment, and a toilet.

OBSERVATIONS AND INTERVIEWS

COMMENTS FROM INTERVIEWS

From an interview with Bill Rock:

Funding Playleaders vs. Funding Equipment

Adventure playgrounds are difficult to develop as a part of a park system because the administrative preference of most park systems' administrators is to spend $20,000 on five pieces of equipment rather than on the salaries of 5-10 aides for the summer (a typical playleader budget for 5-10 aides would be $20,000 for three summer months or $2,000 per person).
Security

Adventure and creative playgrounds need security and containment from the very beginning. Otherwise, donated materials get stolen and strewn all over the area. They need to be in a contained area to control the risk of unauthorized and unsupervised use and minimize the aesthetic problems of their appearance. Children need to be able to feel assured that if they come back that their work will still be there. Thus the whole area should be enclosed to define a territory for the playground.

Location

The location of the Harbourfront play areas isn't really ideal for a community although it has operated successfully for four years as a national demonstration project. It is too isolated and should be much closer to housing.

Size

The 1-1/2 acres for the adventure play area enclosed by a fence and the 1/2 acre for the creative play area are good workable sizes for programs in an urban area.

Capital Investment/Operating Cost

The capital investment cost of adventure playgrounds is actually quite low. They need a fence, high quality tools (cheap tools are more expensive in the long run because they don't last), loose and donated materials that need to be picked up, a pick-up truck--all basic for an adventure playground.

The major operating cost is the salaries of the playleaders and their staff.
From an interview with a group of 6-12 year old children about Harbourfront Adventure Playground:

Good aspects of adventure playgrounds include that they are a good place:

- to be with friends
- to do active stuff—build stuff
- to spend a long time
- to use in winter as well as summer
- to do fire play and water play

in addition, friends cooperate and no one bosses you around
"The whole community is the kids' playground and not any one part. Kids even get bored with adventure playgrounds."

**OBSERVATIONS OF USE**

Kinds of play that should be "designed" for in an unobtrusive way include fire play, water and mud play, growing things, social play interaction and cooperation in building, gardening, dressing-up creative play, painting, and other "creative" opportunities.

An adventure playground even gets used in the winter and it has a special potential as a drop-in center and a meeting place from where children do other activities.

The fence is important for aesthetic reasons and performs as a visual block and a symbolic barrier and can be climbed easily over or under by children and adults.

The individual houses the children build have locks and secret entrances and children at Harbourfront regularly break into each other's houses while the others aren't there to get communal nails, hammers, supplies, etc. The houses are also torn down periodically to encourage a "fresh start" and allow new participants to come into the area.

**ASSESSMENT**

Harbourfront Adventure and Creative Playgrounds are used and appreciated facilities even though not optimally located. Adventure playgrounds elicit strong positive support from the children who use it exactly for the reasons some adults reject it--"fire, mud, messy . . . ours." Creative playgrounds offer the same opportunities without tools or fire but with all the other social, intellectual, and physical challenges for younger children.
HUNTINGTON BEACH ADVENTURE PLAYGROUND

BASIC DATA

Client   Department of Parks, Recreation, and Human Services
         City of Huntington Beach

Address  Gothard and Talbert Streets
         Huntington Beach, California  92648
         (714) 848-1794

Director Paul Burton

Date 1974

Users Children of upper-middle class neighborhoods, 6 to 17 yrs.; mostly white; 3:2 ratio boys to girls

Size 2-1/2 acres in an 11 acre quarry

Cost Not available

References


Come play in our yard. American Adventure Play Association Newsletter, Fall 1977, 1 (4), 5.


Catching on in the West...the adventure playground: it's a new kind of park. Sunset Magazine, October 1975, 88-89.

People interviewed

Paul Burton, Director
Sue Carper, Playleader
Several groups of children
History

Probably the best known adventure playground in North America, the Huntington Beach Adventure Playground, was developed after a lecture visit to the U.S. by Drummond Abernethy, the head of the Children and Youth Department of the National Playing Fields Association of England. It was conceived and developed by Bill Vance, the Supervisor of Recreation for the City of Huntington Beach, and later the founder and first president of the American Adventure Play Association.

Begun in 1974, it is one of the two longest continuously running adventure playgrounds in North America. (For an introduction to the concept of adventure playgrounds, see also the Irvine Adventure Playground case study.)

From the U.S. Adventure Playground Report of 1978: "Agency staff, noting that local children were spending an inordinate amount of time in a local, abandoned, city-owned gravel quarry, elected to staff the site, solicit raw materials for the children's use, and establish it as a local playground. 'The Pit', as it came to be known by local children, was immensely successful from the start. It has been the most popular playground in town."

PARTICIPANTS

The children who frequent the Huntington Beach Playground are mostly from upper-middle class suburban families, though some come from an immediately adjacent lower-middle class neighborhood. They are mostly white with some Hispanic and Oriental; between 6 and 17 with most being 8 to 12 or 13, in a ratio of 3:2 boys to girls.

The staff includes one director and two playleaders, with a minimum of two staff on the site at all times. Preference is for a male-female team. One playleader has a B.A. in recreation, but no formal training is required, though extensive informal experience with children is necessary.
Most children bike to the site from 1 to 2 miles away. Despite its longer distance from most Huntington Beach residential areas, attendance at the playground far exceeds that of conventional sites, the nearby park and tot lot, etc. Heavy media attention given the site attracts families from long distances who then spend entire days at the adventure playground.

The playground is open in the "winter" months from 3 to 5 p.m. on weekdays, and in the summer and on weekends year-round it is open from 11 a.m. to 6 p.m. Since California's Proposition 13, admission has had to be charged at $.50 a day or $15.00 for a summer pass, and efforts have been made to publicize the playground in local schools. To increase participation beyond the typical 100 to 200 children who use it in a day, the staff also plans to get teenagers involved as volunteer leaders, to begin evening teenage activities like music, to actively encourage more girls, and to get parents more involved with bigger construction projects.

PROGRAM PHILOSOPHY

The basic philosophy is to provide a rich, varied, exciting, and infinitely challenging setting, and to allow children to play as they wish. As they reach out for new things to do, or appear ready for new developmental challenges, the staff may help out, but there is a firm belief at Huntington Beach—in the tradition of Bill Vance, its first director—that children make their own opportunities and reach out for new challenges when and only when they are ready (this is completely consistent with the research and theory of Piaget) and that staff are only guides or older brothers and sisters, not leaders or "teachers." Respect for other people and respect for the natural environment are values held high, nevertheless.

The children consider that the most important aspects of the way things are run are the following:

- having a place of their own
- not having adults tell them what to do
- being in a natural environment
- learning how to work together, all ages working together, and girls doing the same as boys
Site and Overall Context

This adventure playground is located in an upper-middle class suburban city south of Los Angeles. It is sited in a portion of an abandoned sand and gravel quarry on the edge of the city. Ringed by woods, it is across from a concrete plant, metal yard, police firing range and city park (see photo.)

The playground occupies about 2-1/2 acres of the 11 acre former quarry, other parts of which have now been filled.

The embankment is steep and grass covered for the most part. It is ringed by a chain link fence. The pit is about 50 feet deep, effectively cutting off all views except from the entry. A parking lot for cars is at the top, but bikes are always taken down and parked near the leaders' house. A cozy gravel road winds to the bottom.
CONCEPTUAL ORGANIZATION

The edges of the site feature a steep bluff for climbing and sliding, and heavy foliage and some trees for climbing, exploring, and hiding. The center of the site is dominated by three interconnected bodies of water: a 2 to 3 feet deep swimming hole, a pond with various water plants, and a marsh with ducks, frogs, and a myriad of little creatures.

There is also a steep hill in the center of the site and heavy foliage between two of the ponds, together creating a varied and exciting topography.

A 2-1/2 story building was built by the older children with help from the playleaders. It multi-functions as the leaders' base of operations, as an indoor recreation center for the older pre-teenagers, and as a space for bad weather activities. It is centrally located, sturdy, and has a panoramic view of the entire site.

The specific layout of houses, forts, huts, gardens, rope swings, bridges, etc. changes with the children's desires, but some building always appears in the open flats, in the "bayous" between the ponds, on the hills, and in quiet hidden places in and around the ponds. The various areas are interconnected by a complicated series of paths. The site is so complex and there are so many things--both natural and child-made--that it would require weeks of visiting and playing to begin to see it all.
Portable bathrooms, fresh water, a telephone, and overhead lighting from the main house are provided. A full tool shed, first-aid kit, cooler, hot plate, etc. complete the equipment on the site. Material is donated and delivered by local community groups--construction firms, lumber wholesalers, service clubs, and private individuals; the director also has a van for picking up other necessities.
The main activities observed, all self-initiated, were:

- rafting in the water on cable spools
- playing in a boat, trying to get it to float, etc.
- daring each other to jump into the water after running down the hill with more and more speed
- some swimming (discouraged)
- pushing and play fighting at the water's edge
- getting hosed down
- swinging on the 25 ft. rope swing
- warming at the fire pit
- cooking hot dogs with complete dedication
- cooking shoes by mistake
- building houses and forts, or further fixing them up
- exploring water, marsh, and heavy vegetation areas
- sitting in or on houses and watching the boats go by
- quietly sitting by oneself, and so on

All activity was self-initiated. Most was in groups of 3 or 4, usually sex-segregated, though types of activities were not different between the sexes. The most highly
used areas seemed to be the swing, water, vicinity of the main house, the fire-pit, and the forts. Nothing was growing in the garden, and there was very little evidence of recent use of this area. The most highly used environmental features were the water, the loose building materials and tools, the rope, and the fire, in that order.

COMMENTS FROM INTERVIEWS

The children interviewed indicated a very wide range of things they especially liked about this playground, and mentioned how they used it differently from more conventional parks and playgrounds. For example, it was mentioned that they spent much more
time here (minimum of an hour at a time, after coming, even going home for an early dinner and then returning until closing time.) The water area, rope swing, exploring the bluffs, and building activities were clearly the favorite things to do.

Variety and richness of activities, and the possibilities of going into activities in great depth, losing themselves in play and in the environment, seemed to be the main virtues of this playground for the children.

Despite the fact that the playground is much further from residential areas than more conventional playgrounds, all children interviewed indicated playing at both, but clearly this was their favorite. They said the other playgrounds might not be used at all if they were further and this one closer to home.
Perceived Risk

The site is considered a "moderate risk" area by local officials, though interestingly it was a "major risk" when it was an unsupervised, abandoned quarry with a groundwater swimming hole. It has been reported that injury rates are lower or comparable than those at other conventional recreation facilities in the same city. A 1974 study did not find any differences in intermediate and major injuries between several conventional playgrounds and this adventure playground site, but did find a greater incidence of minor bumps and bruises (U.S. Adventure Playground Report, 1978.) Huntington Beach is apparently the only adventure playground in the U.S. which pays an additional premium for the adventure play site over a regular city insurance policy; this, however, is because of the nature of the site (steep bluffs, water) rather than the nature of the activities.
This is a superb playground, definitely deserving every bit of attention and praise it has received over the years. Without a doubt it is one of the best designated playgrounds in the country.

Despite our armchair familiarity with Huntington Beach from reading about it, seeing many slides of it, and hearing stories about it, we were quite unprepared for it. It was overwhelming. "Research" was impossible to conduct, there was just so much to take in. The activities were totally different from those we've seen in slides and heard about, and yet we had the distinct impression that everyday the activities are different from the previous day. Not that the place is at all frenetic or hyperactive, though it is very active and noisy. There is so much to do, the children are busy exploring and creating. The setting itself is rich and varied. It is a kaleidoscope of children, adults, water, sun, fresh air, loose parts, tools, varied topography, freedom and joy. It is a place where native creativity and the innate need to explore are fostered, where adaptation and change happen naturally, and where through it all, child development occurs spontaneously.
# Basic Data

**Client**  
Community Services Department  
Recreation Department  
City of Irvine

**Address**  
University Community Park  
1 Beech Tree Lane  
Irvine, California  
(714)754-3634

**Director**  
Steve Sims

**Landscape**  
AR&A Landscape Architects/Laguna Beach  
Ribera & Associates, Architects/Irvine

**Special Consultant**  
Paul Brady, Assistant City Manager/Irvine

**Date**  
1975

**Users**  
10-15 average at a time on weekdays,  
40-100 average on weekends, 6-13 years of age, average 8-9 years of age; 30% girls, 70% boys

**Cost**  
$56,000 as part of $995,000 comprehensive community park

**Acreage**  
2.4 acres in a 13 acre park; $23,300/acre

**References**  

**People Interviewed**  
Steve Sims, Director  
Several groups of children  
Bill Vance, Past-President American Adventure Play Association
PROGRAM DESCRIPTION

As described in a handout for parents and children:

"Adventure playgrounds are designed with an idea of providing children with an opportunity to construct their own playground using only their imaginations, some raw materials, and tools under adult supervision. This concept is just catching on in the United States, but has been popular in Europe for over thirty years. . . .

"The most popular activities are the construction of forts and shacks and a variety of climbing, swinging, and crawling activities. Also popular are the mud slide, overnight and cookout type activities."

PARTICIPANTS

On an average weekday after school, 10-15 children of elementary-school age visit the Irvine Adventure Playground. On weekends, 40-100 children attend depending on weather and other activities happening in the community. Ages range from 6 to 13; children below 6 must be accompanied by an older sibling. The average age is 8-9 years. The children are from upper-middle-class backgrounds and travel as much as 2 miles by bike or parent's car, though most come from a radius of 1 mile by bike. Almost all are white. Between 25 and 35% are girls. One estimate is that 47% are from single-parent families. A few handicapped children attend, and mix well, though there are no special programs for them.

The staff consists of a director, 2 to 3 playleaders at a time, plus volunteers (annual staff budget $15,000 to $20,000). The Director has a bachelor's degree and is a master's candidate in recreation. The playleaders are undergraduate students at the nearby University of California, Irvine. The playleaders' time is spent exclusively on the site with the children and locating materials over the phone; 50% of the Director's time is spent on public relations.
The playground is open from 10 a.m. to 5 p.m. in the summers and weekends and from 2:30 to 5 p.m. after school. All sessions are free activity sessions except for rare programmed activity times (like cook-outs).

HISTORY

The Irvine Adventure Playground was included as a part of the overall Irvine, California residential master plan on the initiative of a woman from the community. She made a presentation on adventure play to the Recreation Commission in January 1974, after which other adventure playgrounds, including the nearby Huntington Beach Adventure Playground, were visited by Commission members. They were very impressed with Huntington Beach, including finding that it was closed because of a liability problem and then reopened after one week due to community pressure. Public hearings on the Adventure Playground were held in Irvine in 1975, after which the Recreation Commission and the full Council approved the idea. Paul Brady, who was the Director of Community Services during the playground's inception and subsequent development, and now the Assistant City Manager, is credited with "spearheading efforts to avoid compromises in its philosophy." Throughout the year of planning and hearings, the community and the local government were very supportive.

PROGRAM PHILOSOPHY

As expressed by Steve Sims, the Director, the philosophy of the Irvine Adventure Playground is to provide a setting where children can structure their own activities and experiences. The staff only intervenes if particular children exceed their own abilities or do something which could be harmful to other children. Mr. Sims considers that an important part of their program is not getting too involved in the children's activities, though he and the playleaders are always available as resources or for advice and assistance. They believe that children learn from other children, and should be provided with a rich physical and social setting for exploration and creative activity.
SITE AND OVERALL CONTEXT

The Irvine Adventure Playground is part of a 13-acre comprehensive park in the new, specially-planned city of Irvine, California. As such, it is one of only three examples of a comprehensive play park on the British and Scandinavian models reported here (see also Children's Village in Ontario Place and the Mary B. Conner Children's Playground). Other facilities in the park include a branch library, ball diamonds and fields, tennis courts, handball courts, sand volleyball court, community building, a skateboard ramp, a toddler's play equipment area, nature garden and general open space, paths, and parking. The park is situated in the center of a fashionable upper-middle-class suburb 55 miles south of Los Angeles.

Photographs courtesy of Steve Sims.
The Irvine Adventure Playground experiences few disciplinary or fighting problems. Their philosophy on this issue is, first, to let the children work things out for themselves, and second, if necessary, to suggest, "Why don't we try this?" as a way of facilitating the resolution of conflicts. Only in a very few dire cases have they resorted to insisting of children writing an essay on why they shouldn't do a particular misdemeanor before allowing them back on the playground. Asked why there were so few disciplinary problems, Mr. Sims responded that children tend to help each other rather than compete with each other when the environment is rich enough, and that the particular environment of a successful adventure playground allows energy to be used for other pursuits.
The site of the Adventure Playground is a 2.4 acre bowl-shaped oval roughly 300 by 125 feet on the west side of the park. There is a difference of about 12 feet from the bottom of the bowl to the edges, with an 8 foot wooden slat fence surrounding the site. Parking, bicycle racks, and the branch library with washroom facilities and drinking water are immediately outside the gate to the north-east. The site is surrounded by modern, rustic, two-story houses in this prosperous and fashionable community. The height of the fence is such that no sight lines from any of the windows in the houses can see any part of the site, nor vice versa from the site. The play area is mostly exposed earth in the bottom of the bowl with some grass and ground cover on the upper edges. Large clusters of rocks, a few small trees and two concrete fire pits dot the site. A playleader's 14 x 17 ft. shack with a 12 ft. open porch (an old miner's shack) is the prime infrastructure; it has a telephone, electricity, fire extinguisher, refrigerator, first-aid kit, storage for materials, supplies, and records, and space for playleaders and 6-8 children to be inside, but no running water. It is located near the gate on a northern slope overlooking the entire site. Secondary, non-drink-
ing water outlets are on the west and south perimeters of the site. They were in the process of developing a water slide from a trench and plastic lining when we visited.

CONCEPTUAL ORGANIZATION

The site is made up of forts, parts of stage sets, kid-built swings and climbing ropes. There are no overall "design concepts", but most of the construction was near the gate, the rock piles in the bowl, and the fence on the north perimeter. A giant wood pile dominates the north-central flat area.
The playleaders hut was a 14 x 17 ft. wood post-and-beam structure with a 12 ft. open porch supported by telephone poles. Two end windows let natural light into a central room subdivided by furnishings into two spaces. The most used space was the open porch which protects people from all but the lowest-angle very-late-afternoon sun.

Individual children's forts ranged from one-sided Western-style stage sets (used for spontaneous dramatic play) through various degrees of "houses" built from partial sheets of plywood, flats, loose boards, tires, sheet metal, and various soft materials—all recycled materials. Most were one room, though some were two rooms and were lavishly furnished with cushions and chairs.

There were no washroom facilities and especially drinking water right on the site.
OBSERVATIONS OF USE

All children enter from the parking lot (the vertical slat fence being virtually unclimbable) then most go to the playleaders' hut, then to the rest of the site. Some children go directly to their forts. All children with bikes take them to their forts.

During our site visit, a day in the high 80s, the porch of the hut was used for shade and talking with one of the playleaders. The other playleader was working on the water slide and interacted with the children periodically, spontaneously, and as needed.

The primary activity of the children was self-initiated cooperative building in groups of 2 to 3 separated by sex. Most children were playing with other children—two girls were there for the first time and were seen to wonder aimlessly for a while. The spacing of the forts was partially random and partially influenced by the site, about 50% conforming to the topographical suggestions of rocks, water availability, fences, or telephone poles.

COMMENTS FROM INTERVIEWS

Two children interviewed indicated they could come to this playground or anywhere else in the community which didn't require crossing major traffic arteries. They could do anything they wished, "as long as they are clean by the time their mother gets home from work at 9:00 p.m." They also played on the swing set in another part of the park, but remarked that the "regular play area" was "OK, if you're lazy". They showed no interest in it really, while remarking that the adventure playground was the "best place." They also swam at a local pool, and liked that. The interview indicated that the adventure playground was their favorite place because they could build club houses or anything else they wanted and could do a variety of quiet and active things.
When shown the set of play area photographs, their favorite was the St. Francis Project Outdoor Learning Environment, which they thought looked like a "village" and that it had lots of places to play in, hide, etc. Their least favorite was the Jacob Riis Playground which they identified as slides and thought was "dull". The Notting Hill Adventure Playground photo was rated in the middle.

Other activities mentioned by the play-leaders, but not observed, were weekend camp-outs, evening cook-outs, water activity, fires, clean-ups at the end of each day, and a very little bit of gardening. Water is more used in the summers; fire in the winter.

Steve Sims, the Director, mentioned some things which would make the playground better:

- provision for a small pond in the bottom of the bowl--presently there is a drain and construction of a water slide was underway, but water play is so important and popular, especially in hot areas, that standing water would be appreciated

- several more large telephone poles in clusters to serve as stimulus and structure for building

- more animals, and integration with a 4-H club

- larger building, with a second activity room for arts and crafts or for groups to be alone

- more shade on site

- fresh drinking water and perhaps toilets (though toilets just outside the site was OK)

- two entry gates--one for people, one for materials

He was especially emphatic that more adventure-type playgrounds should be planned in Irvine in overall coordination with all parks and recreation activities. He recommended one adventure playground for each identifiable cluster of houses (ca. 2 mile diameter area). The present
close proximity to housing was seen as a plus, especially as this meant children did not have to cross major arterials, though adequate fencing from neighbors is then also a must.

Asked about the qualifications and training of playleaders, Mr. Sims suggested three critical qualities:

- ability to work with children
- knowledge of the adventure play philosophy of non-structured activity and the play-"leader" as facilitator
- knowledge of elements of the outdoors, of earth, construction, and general environmental awareness

No special training is necessary, and in fact, Bill Vance (also interviewed by phone), the founder and Past-President of the American Adventure Play Association, feels that most recreation or early childhood training is too structured for adventure play leadership unless the student goes to one of the colleges specializing in open education, the British primary model, or adventure play leadership.

ASSESSMENT

SPECIAL STRENGTHS AND WEAKNESSES

Other than the obvious popularity of the Irvine Adventure Playground for creative and building pursuits, one of its special strengths is its location in the center of a built up family housing area and as a part of an overall master plan for community recreation for all ages. A range of activities is provided for children and adults in the park, of which for children the adventure playground seems the most popular.

The site is a very strong feature of the Irvine Adventure Playground, and sets it apart from other adventure playgrounds in the country. No major thoroughfares have to be crossed for most children to reach it (radius - ca. 1 mile). The berm and re-
sulting bowl created by cut-and-fill make the site self-contained, private, and yet in very close proximity to housing.

A pair of programmatic features are important to the success of this playground—its very able and committed playleaders, and the strong community and local government support.

LESSONS

- need for adventure play areas as part of overall community park and recreation program

- advantages of location central to housing

- advantages of integration with a comprehensive play park for all ages

- advantages of cut-and-fill, berm-and-bowl site

- need for shade

- advantages of handsome vertical slat wooden fence to block lines of sight between housing and play area

- need for the playleaders' building to be large enough for storage, staff working space, quiet area, arts and crafts area, etc.

- only pre-construction necessary: grading, fence, building, water lines and drains, electricity and telephone hookups, possible toilets (if not any near)

- fence, telephone poles, rocks, etc. as stimulus for building and as base for structure

- two entries—-one for people, one for materials
CONCLUSION

This is an enjoyable facility for children and it teaches cooperation in building and games and provides many opportunities for creative play. Building seemed to be the primary child activity, and they liked it very much. The observable philosophy is live-and-let-live or leave the kids alone unless they ask for help or fight. Major constructions such as the water slide were staff activities that children could help out with. The playground could use more vegetation for shade at a number of locations throughout the site. Bathrooms and drinking water as well as visual screening are very important.

The Irvine Adventure Playground has been called the most successful adventure playground in the U.S. It is considered to have the best use of funds, the best integration with the neighborhood both physically and in terms of community support, and the best playleaders. It has become a regular tourist attraction for people visiting Irvine.
BASIC DATA

Client
Institute of Rehabilitation Medicine
New York University Medical Center

Address
400 East 34th Street
New York, N.Y.
(212) 679-3200, Ext. 3219

Director
Ronnie Gordon

Architect
Richard Dattner, AIA/New York

Consultant
Ronnie Gordon

Date
1972

Users
Severely and multihandicapped preschoolers

Size
5600 sq. ft.

Cost
$55,000. $12.50/sq. ft.

References

Gordon, R. The Design of a Pre-School Therapeutic Playground: An Outdoor Learning Laboratory--The Jessie Stanton Developmental Playground for Preschool Handicapped Children. New York: New York University Medical Center, Institute of Rehabilitation Medicine, 1972, Monograph # 47.
The program for the outdoor learning environment called for a setting that would allow and encourage young children with restricted mobility, reduced stamina, depressed motivation, and fear of failure to interact with more depth and vigor with people and objects, to derive satisfaction and a sense of self-worth, as well as to develop new skills and competencies from these interactions.

FACILITY DESCRIPTION

SITE

The outdoor learning areas is a fenced zone attached to a highrise building (a part of the Medical Center, New York University, on the east side of Manhattan). The site is shaded and visually buffered by a wood stockade fence from the adjacent heavily trafficked streets.

CONCEPTUAL ORGANIZATION

The playground is an elongated rectangle with four distinct activity areas aligned linearly, and connected by a peripheral asphalt track for wheelchairs.

Organizing Concepts

- Clear deliniations of activity areas to facilitate the ordering and organization of stimuli

- Varied experiences with natural materials and natural elements--sand, water, grass, etc.

- Increasingly more difficult tasks available

- Quiet, private nooks
Tree House and Bridge

This structure facilitates an assortment of increasingly more difficult approaches and exits for children with varying abilities and rates of locomotion.

Foam and Sand Pits

This area is designed to allow for selected play and experiential activities for children who are unable to walk or sit without support.

Sand and Water Tables

Water streaming from a water sluice through three water tables at graded heights allows children in wheelchairs to experience water play. Sand trays, similarly graded in height, are also available for non-wheelchair bound children.
The Hill and Hill Circle

A grass hill surrounding a tree is graded gently for crawlers as well as climbers.

ASSESSMENT

OVERALL DESIGN

This is a very specific design response to a brief but articulated program. The objectives--clear delimitation between activity spaces, graded challenge, and variety--are successfully met.

The overall appearance of the site is in marked contrast to the urban, concrete and asphalt background of the area. This is due to an effect of the trees, shrubs, and landscaping, and the stockade fence--an effective visual buffer.
The choice of materials is good, in that it responds to several requirements, e.g., variety of experiences, durability for extended outdoor use, and responses to special needs such as surfaces for mobility, wheeled stretchers or chairs.

Specific spaces seem to respond well to stated developmental and activity objectives. Very few items were observed as under-utilized, (an exception being the monorail, which was not assembled for use).

COMMENT

The facility is used by severely handicapped children as well as those recovering from operations. The staff to child ratio is almost one-to-one. While the facility would be attractive to non-handicapped children, and is more interesting than most conventional playgrounds, it lacks the dramatic challenges found in other contemporary playgrounds that attract many children. As a model it might be very appropriate for "quiet play" zoned into larger playgrounds.
MARY B. CONNOLLY CHILDREN'S PLAYGROUND

BASIC DATA

Client
Friends of Recreation and Parks, and the San Francisco Recreation and Parks Department

Address
Just north of Kezar Drive and Lincoln Way, Golden Gate Park, San Francisco

Landscape Architect
Michael Painter & Associates/San Francisco

Date
Original playground 1887; renovation 1978

Users
Infants through adults

Size
cia. 3-1/2 acres; 2-1/2 acres renovation

Cost
$394,000; $4/sq. ft. including landscaping

References
Honor Award, American Society of Landscape Architects. Landscape Architecture, July 1978, 68, 296-297.
PROGRAM DESCRIPTION

This playground was the first public children's playground in the United States, built in 1887. From initiative and funds from the Friends of Recreation and Parks (bequests and contributions), it was extensively renovated in 1978.

Originally the site was a large expanse of asphalt ringed with a boxwood hedge and a solid line of trees. What the landscape architect calls, "a row of horrible metal swings, spiral slide, and old cable car" dominated the center of the asphalt.

The program was developed by the landscape architect, except for the Friends request that the playground be "spectacular." The other main goals were to sustain children's interest, provide for imaginative and fantasy play, and provide physical challenges. Prevention of vandalism and safety were also of some concern and were reviewed very carefully over a six-month period by various arms of the city government.

FACILITY DESCRIPTION

This is a very large and spectacular playground in Golden Gate Park. It is the closest example visited to a comprehensive playground typical of northern Europe.

CONTEXT AND SITE

The playground is near the southeast corner of Golden Gate Park just north of the large University of California Medical Center, Kezar Stadium, and fairly dense, middle-income row housing.

The site is in a bit of a valley at the bottom of a very steep wooded hill through which paths and trails--kid tracks--lead to the playground. To the north and west
is the rest of the park, ball fields, picnic areas, and woods in close proximity. The playground area, however, is in a well-defined clearing, surrounded by bushes and trees. There are no fences or other built barriers.

CONCEPTUAL ORGANIZATION

The main playground is comprised of nine different activity areas joined together by a wide, flowing circulation walk.

- toddlers area 36 ft. in diameter, with very small climbing and sliding structure, sand, and benches and ledges for parents

- preschoolers area, 72 ft. in diameter, with a larger, higher wood platform structure, slides, steps, ladders, etc., and a short 4 ft. Tarzan swinging-jumping rope, all over a sand base
The predominant visual image is of complex, interconnecting wooden play structures on an extensive sand base connected by a free flowing asphalt path and surrounded by grass and space-defining woods.

OBSERVATIONS AND INTERVIEWS

OBSERVATIONS OF USE

This very interesting facility was a found playground, unknown to us before the trip, and actually only re-dedicated two months earlier. Unfortunately we visited late in the day. Even at that hour, several children from about 4 through 16 and some adults were playing. There were lots of remnants of use—many, many footprints in the sand, full trash baskets—evidence that this is a heavily used facility. The landscape architect claims that use jumped five-fold after renovation, and that sometimes there are hundreds of children at once, "so many you can't see the equipment any longer."
• older children's area called the South Play Area, by far the largest of the three, 160 ft. in diameter, with a wood platform climbing structure, four-(little) story tower, large tire bridges, nylon jump nets, wooden swinging bridges, large metal slides, suspended log roll, climbing structure made of 8 ft. diameter cable spools on end, and 42 ft. Tarzan rope from a 4 ft. platform to a sand jumping pit

• "Slide Mountain", an 18 ft. high bank of 14 parallel metal and concrete slides curving down the hill to the sand at the base of the South Play Area

• gymnastics equipment area

• barn and animal play area, consisting of a small barn and barnyard, directly adjacent to a pond where ducks swim

• carousel inside a neo-classic carousel building, originally installed just after the turn of the century

• the Sharon Building, a Romanesque Revival stone building originally designed as a Mothers' House for feeding and caring for children, presently vandalized by arson, and planned maybe as a new restaurant adjacent to the playground

• grass meadow and picnic area

Surrounding all the areas are many places for adults to sit, several drinking fountains, and the grass, bushes, and trees of the rest of the park.

EQUIPMENT

Each of the three main areas had specially designed wooden play equipment supplemented in part by brightly-painted metal catalogue equipment from Preminger Equipment. The wood was Western Red Cedar with galvanized steel pipes and chains, tires, etc.
As the animal play area was closed, the carousel being repaired, the shadows long, and the winds cool near the woods, the predominate activity seen was vociferous physical play on the three main structures, especially the largest most challenging and connected area, the South Play Area. Children were running, jumping, swinging, racing each other down the long parallel slides built into the hill, swinging and occasionally jumping from the 12 ft. Tarzan rope, and generally having a rousing good time.

Some parents watched from the convenient—though exposed—benches, while others actively played with (not just supervised) their children.

A few children were playing quietly in the sand on the sunny side of the infant/toddler's and preschoolers' structures.

This was one of only four playgrounds visited where we actually played at the playground while visiting it. The others were Children's Village at Ontario Place, Heckscher Playground in Central Park, and the Huntington Beach Adventure Playground.

ASSESSMENT

This is one of the very best pre-designed playgrounds visited on this case study trip. A number of qualities and features stand out as lessons for other facilities.

LESSONS

Comprehensive Playground

There are many advantages to a comprehensive playground where there are a wide variety of activities for children—-and adults—-to do, ranging from motor activities to quiet exploration to caring for animals or experiencing the wonder and majesty of an old-time carousel.
Developmentally-Appropriate Areas

Play areas with developmentally-appropriate, challenging things to do seem to lead to a natural self-selectivity of the child to his or her own level, and if properly separated by space and subtle material and level changes (sand to asphalt path back to sand) don't seem to need fences or other arbitrary devices to keep children apart. On the contrary, this allows a freer mixing of children of different ages and the freedom for a child to move from area to area as challenge or mood move him or her.

Siting

Siting is extremely important. This playground seemed partially successful in this regard in that the steep hill on one side and woods on the other are natural children's play areas, some micro-climate protection is provided by the same elements, and the playground is in a well-defined large space and yet obviously connected to other park activities. The old solid line of hedge and trees has given way to a modulated, partial edge with paths and framed sightlines to the rest of the park, but the playground might have meshed a bit more with the natural vegetation.

Child-Adult Play

Certain play equipment seems to allow and encourage parents to actively play with (not just supervise) their children. We do not know enough about this yet (there is some literature on the subject to be discussed in the criteria document) but one possible clue here is the adult-like challenges, and sizes of the largest play structure. The long, swaying, bobbing tire bridges are indeed difficult and fun to cross--the rolling log looked absolutely dangerous to an out-of-condition adult, and the 12 ft. Tarzan rope would bring heart palpitations and sweaty palms to the adult more than to the 12 year old child learned in these matters. The parallel slides were
observed to be a wonderful place for all members of a family—in one family observed, mother, father, and older child raced down the long slides, while their little toddler watched and cheered in glee from the grass embankment beside.

Flowing Circulation

The circulation path weaving among the different activity areas seems very successful as it is natural and thus unobtrusive, wide enough for adults to amble along while toddlers charge along on big wheels, interconnects all the areas and the rest of the park, and provides a natural edge to each of the individual activity areas.

Variety and Scale

The variety and scale of the play areas and their equipment is remarkable. The carousel is in a large rotunda and yet the scale of the myriad of animals, their details, and their gay painting is small and intimate. The animal shelter was scaled down, and yet not cute or such that would make an adult seem like a giant. The three main motor play areas varied from real infant/toddler scale to 12 ft. ropes and 4-story towers appropriate for older children and adults.

Safety

Though on the surface this playground might seem dangerous in comparison to other more conservative playgrounds and structures (high Tarzan rope, long concrete slides, long swaying tire bridges, etc.), various arms of the City reviewed everything carefully over a six-month period and requested only very minor changes, about half of which ironically were to remove certain rungs and bars from the manufactured equipment.
In fact, based on the experience of this playground and its very short time in operation, the landscape architect has designed and has in construction a second playground where the structures are even more daring and where the slides are larger and steeper so the children can get up more speed.

SUMMARY AND CONCLUSION

This is a large facility in San Francisco's Golden Gate Park. It has nine areas of different activities which seem to appeal to different age and interest groups, including an animal play area, a pond, and a beautiful merry-go-round. It is a city-wide facility, and it is well used. The play areas center on a major structure for older children—other equipment is graded for the child's level of development. Variety and scale are keys to its success. A child can move from one piece of equipment to another as interest and ability develop. Useful additions would be to provide adult activity spaces, a hard-surface play space for group games—dodgeball or basketball—and better mesh with the natural setting.

A major lesson for the Army may be that a large Army base may well be able to support a varied, well-developed, central play area which would indeed attract children, older siblings, and even adults from all over the base. Smaller play areas within easy access of housing could then be provided for more occasional use, for younger children, and as a part of the natural network of children's outdoor play behavior.
ST. FRANCIS SQUARE HOUSING DEVELOPMENT
PLAY AREAS

BASIC DATA

Client International Longshore Workers Union and the Pacific Maritime Association Pension Fund

Address Between Laguna and Webster Streets and Geary Boulevard and Ellis Street San Francisco, California

Architect Marquis & Stoller, AIA/San Francisco

Landscape Architect Lawrence Halprin & Associates/San Francisco

Date 1964

Users Children, mostly 6 to 11 years of age, and adults of the area

Size ca. 8 acres; 37 dwelling units/acre

Cost Not available


People Clare Cooper Marcus, Social Science
Interviewed Evaluator of St. Francis Square, Department of Landscape Architecture, University of California, Berkeley
PROGRAM DESCRIPTION

St. Francis Square was the only civilian family housing area visited as part of this study tour. It was selected because it has been systematically evaluated as regards children's play and use of open space and has received very high marks. Although we were unable to approach the rigor of those studies, we were very fortunate to have as our guide to the facility their author, Professor Clare Cooper Marcus, and much of this case study is based on her published and orally summarized evaluations.

FACILITY DESCRIPTION

CONCEPTUAL ORGANIZATION

St. Francis Square is a moderate-density, low-rise apartment development for families with children. It is racially and economically mixed, with middle income being the norm. The 300 units in three-story walk-up buildings are mostly two- and three-bedroom apartments. The buildings are grouped around three interior landscaped courts. Two streets were closed to form a superblock. Apartments face into the courtyards with parking and all vehicular circulation on the periphery. Completed in 1964, the development was sponsored by the Longshoremen's Union and is run as a tenant-owned cooperative with a full-time resident-manager and a board of directors elected by the occupants. It is the northern-most, and most racially and economically mixed, of a sequence of housing developments known as the Western Addition.

INDIVIDUAL SPACES

The northeast court, called Tichenor Square, is 120 ft. square, and the two others are about 180 by 50 ft. Narrower open green space and sidewalks wind between buildings and courts. The buildings are 35 ft. high, so the ratio of height to court widths varies from 1:2.8 to 1:8.
Each court has a central play structure, benches, grassy areas and flower gardens in different configurations, and is separated from apartments by a lawn, sidewalk, and solid slat fences. Upper-level apartments have balconies; lower ones have gardens behind the fences.
From all accounts, this is a very successful housing area in many different ways, including for children's indoor, outdoor, and transitional play needs. The research studies have shown, and our more casual observations give no reason to doubt, that children are by far the greatest users of the open space at St. Francis Square, and that there is a wide and varied range of things for them to do.

SPECIAL STRENGTHS

In contrast to many modified-Radburn plans studied since the 1920s, in contrast to studies done in several countries and with different racial groups, and in contrast to the military bases visited in this project (except Alameda Naval Air Station), considerably more children's play activity was seen on the interior open space courts. In the other studies and family housing on bases visited, children were more likely to be seen playing on streets, peripheral parking lots, cul-de-sacs, and garages than on the landscaped interiors of the block. Reasons for the reversal—and success—of St. Francis might be the following:

- Each court is well-defined and almost enclosed by buildings, thus making a mild micro-climate and well-defined group private "Yard".

- The size of the courts—all were of a human size and scale, maximum dimensions being 280 ft. long, with the most comfortable one being 160 x 180 ft.

- The ratio of height to openness is 1:2.8 to 1:8. In Tichenor Square, the building height to open space ratio is 1:5. This court appeared intuitively to us to be the best proportioned—not too narrow relative to height to appear constraining, and not too long relative to height to appear too open. Other environment-behavior research has shown that for adults the height to width and depth ratio is a critical variable influencing the perception of enclosure. A semi-formal student study
under Professor Cooper’s direction confirms what we observed, that of the three courts, Tichenor received by far the most child use.
- Units directionally face the inner open space (as well as having direct access to the street) and most balconies and living rooms are on the court side.

- Variety of settings and landscape elements in the courtyards. The courts are rich in variety, while the peripheral parking lots and sidewalks are flat, featureless asphalt surfaces generally barren of interest for children. Other studies have shown that variety and duration of children's focused play is related to the variety of settings and landscape elements available--spaces, grade changes, plant materials, surface types, and site furniture.

- Presence of vertical elements. Twenty percent of all play was observed by Cooper to involve some form of fixed vertical element--fences, benches, trees, platforms, garbage sheds, steps, and slopes--as well as the other variety of small spaces, changes in level, changes in surface, bushes, plantings, colors, textures, basketball hoop, overhead elements, etc.

- Courts included wide pathways and fairly extensive hard surface areas where 60% of all play was observed. Other studies have shown that a great deal of play takes place on hard surfaces; in studies where this play
happens on busy front streets there are no other hard surfaces available. At St. Francis, hard surfaces abound in mixture with variety and other things appealing to children—and they are in the interior open space.

- Magnet effect of centralized play structure. The equipment in the two northern squares was redesigned and built by parents, and is a magnet particularly for preschool and elementary school children. "Play focused around these two play areas," Cooper noted, "even though relatively few children actually used the equipment." The play structure in the third court was not central and it and the exposed school yard play structure were seldom used.

- Grass and berm near other more active play areas, and yet separated somewhat visually from them where quieter, shyer, or more tentative children could just sit, talk, lay in the sun, or watch the action.

- Informal play areas for preschoolers near the dwelling entrances, including sand, grass, and trike surfaces.

- Security of play areas from traffic and human dangers. Proportionally more children, especially in the infant-5 year age range play outdoors in the well defined and well over-
looked spaces of St. Francis Square then in many other housing areas, including other modified Radburn-plan areas. Parents perceive the St. Francis courts to be "defensible territories" and thus allow their children out more, and this may be due to narrow openings from the street, grade changes from the street, balconies, living areas, and "eyes" being on the interior courts, and an image of a well-cared for, well-loved group private "yard" in the midst of an intimate neighborhood. It is possible that the lack of defensible territory at the military bases visited, combined with open spaces being too large, houses facing on the streets, lack of interior hard surfaces, and lack of variety may account in large part for why so few children were seen in the interior open spaces and on boring, isolated pieces of play equipment.

LESSONS

Clare Cooper Marcus: "Designers should be aware that the whole neighborhood will be used for play and not just that portion designated 'play area' on the site plan."

Successful interior open spaces for children's play thus seem to have the following characteristics:
• well-defined open space

• small court-yard sized space, square or nearly square, and in the range of 150 to 200 ft. on a side

• ratio of building height to open space in the range of 1:5 to 1:8

• housing units opening to the interior off pathways, with gardens, balconies, and heavily used interior spaces like kitchens or work studios overlooking the courts, and with parking on the periphery

• variety of settings and landscape elements--spaces, grade changes, plant materials, surface types, site furniture, and, perhaps least important, play equipment

• variety of vertical elements not specifically designated as play areas--fences, bushes, benches, poles, lamp posts, trellises, garbage sheds, slopes

• wide pathways and other hard surfaces, undesignated for play, but where play will happen anyway

• centralized, visually focusing and challenging play structures provided as magnet around which play may focus

• grass and berm areas--retreat and breakaway--near center yet visually somewhat separated

• informal play areas with sand, water, grass, and trike areas near dwelling entrances

• defensible territory created by narrow openings from the street, grade changes from the street, and eyes on the interior open space
WASHINGTON ENVIRONMENTAL YARD

BASIC DATA

Client Washington Elementary School, Berkeley, California

Address 2300 Grove Street at Bancroft Avenue Berkeley, California 94203 (415)845-4536

Co-Directors Robin Moore and Herb Wong

Designer Robin Moore, Berkeley

Consultant Mary Jeffers, Environmental Education/Berkeley

Users During school hours, usually 25-30 K-3 students, plus both younger and older children during non-school times; 8-to-12-year-olds predominate with general community use

Date Planning started mid-1971, construction 1972

Size 1-1/2 acres, of which 1/2 acre is the Natural Resources Area

Cost $30,000, of which ca. $15,000 was for the natural resource area; less than $11/sq. ft.


People

Interviewed Robin Moore
Washington Environmental Yard is many things. It is a reclamation of an old underused asphalt playground. It is an experiment in neighborhood participation. It is an extension to a school--making environmental education integral to curriculum. It is three play areas master-planned together: a traditional ballgames area, a series of contemporary climbing, running, playground structures, and a natural resource area. The latter is the best known and has become synonymous with the name of the entire outdoor education area—Washington Environmental Yard.
The whole scheme, but especially the natural resources area, is the joint creation of Robin Moore, a Berkeley environmental designer, Herb Wong, the progressive principal of the school, and the children and parents of the neighborhood.

PROGRAM PHILOSOPHY

Washington Environmental Yard, and its central Natural Resources Area, is a multi-disciplinary approach to environmental education in an urban context. Children are exposed to living systems in a way which is not possible in a traditional city park or school playground, or for that matter, in a school which doesn't use an outdoor natural resource area as an integral part of the classroom. Washington Environmental Yard is an attempt to put back into the city and the school something which has been missing in urban curricula.

Washington Elementary School houses over 400 4 to 10 year olds (K-3). About 1/3 of the teachers use the Yard as a classroom resource on a day-to-day basis. Another 1/3 use the yard only occasionally.

In addition to school-related curricular uses of the Yard, children and adults are free to use it on weekends, evenings, etc. The gates are open 24 hours a day.

There are no written rules in its use. It is first a place for children--adult values came second. Rules arise from the values of the children. Wading in the water, for example, is most often discouraged by adults and children alike.

HISTORY

Participatory Planning Process

Washington Environmental Yard was initiated in 1971 as a neighborhood-school demonstration project of how an asphalt playground can be converted into an ecologically viable area for children's play. Curricular needs of a K-3 school, and the recreation and aesthetic needs of residents of the surrounding community were also important.
Funding for both the 1-1/2 acre area and the interrelated environmental education demonstration project has totalled about $174,000, of which approximately $30,000 has been spent on capital improvement and of this, about $15,000 on plant materials for the Yard.

Funding has come from diverse sources: a planning grant in 1971 from Educational Facilities Laboratories, donations from Chevron in the private sector, grants from the State of California Office of Environmental Education, and funds from the School Board of the Berkeley Unified School District.

Construction has been carried out by students from the University of California working with parents and children and with occasional paid assistance for heavy equipment.

The project began with informal planning for seven months in 1971. This included surveys of children in the school and of the neighborhood, working with parents and teachers, and community-school workshops.

In February of 1972, the first of a series of Community Yard Fests was held. The turning point for all people involved was "the greening of the yard" which was initiated at the 1972 Yard Fest when some children began to remove the asphalt.

Then followed a struggle for two years as funds were sought, as detailed planning strategies unfolded, and as the first plant communities began to take hold. (Adequate initial funding could have eliminated or drastically reduced this 2-year period.)

The project took off in 1975-76 when the aquatic system was introduced and final grading and planting were completed.

Natural Resource Management

Since the 1975-76 major plantings, activity has mainly revolved around natural resource management. During this 2-1/2 yr. nursery establishment phase, a number of resource management procedures were adopted, including:
- watering of certain trees and plants until their root systems had a chance to spread out
- pruning trees, to keep balance of the various communities while slower growing plants were taking hold, and to trim any lower weak branches damaged by too early climbing, etc.
- staking and tying up trees
- assisting the formation of paths by simple, rough fences, and the formation of meadows by interrupting some paths
- replanting certain species as more was learned about the conditions under which they would grow
- leaving a dark corner to grow over thickly and provide places where children could hide out
- clearing brush from near ponds to provide space for study and exploration of the pond ecosystem

Robin Moore did say that you could simply let a yard go and it would do its own thing, but that in order to develop a varied and rich set of eco-communities in a small space, it is necessary to practice resource management. In interview, the children obviously recognized and respected this management.

The Yard took three years to reach maturity. Now it is stronger then the children, and from it they have a new understanding and respect for natural ecosystems.

FACILITY DESCRIPTION

CONTEXT AND SITE

Washington Elementary School is in a culturally diverse middle and lower-middle income area of Berkeley, California. It is at the corner of two busy city arteries, and across the street from the City Hall and 5000+ student Berkeley High School.

The playground is on the south side of the school, in an "L"-shape. Originally master
planned to extend to the west by closing a small residential street and including a preschool play area in a series of alternating natural environments and more green areas for large-muscle play, the final area is 1-1/2 acres directly behind the school. Prior to 1971 this area was asphalt, with basketball hoops and baseball diamonds scattered here and there, and a 10 ft. chain link fence around it. A few trees lined the boulevards on the sides and dotted the backyards of houses to the southwest. Otherwise, the site was barren.

CONCEPTUAL ORGANIZATION

The entire Yard is made up of three distinct areas:

- asphalt ball games area, as before
- large muscle play area, a one-off design of large timbers ($7,500) comprised of a series of giant connected spools, a raised plantings area, a large climbing structure surrounding an approximately 10 ft. square cargo net, and a sand play area with swings for toddlers and preschoolers
- the natural resources area to the rear of the play structure area

Natural Resources Area

The natural resources area is comprised of a storage and preparation area near the gate, and six different plant communities, all con-
nected by a series of looping circulation paths of packed natural soil. There is a slight 2 to 3 ft. hill in the center, two ponds and a connecting stream on the western side, and an 18 in. rise on the eastern edge.

The six communities include the following:

- redwood community
- cool woodland pond community
- riparian waterside community
- fishing pond community
- chaparral hill community
- dry woodland grasses and wild flowers community

The most difficult area of technical design, Robin Moore said, was the aquatic system. It involves natural ponding, building up the soil to retain water, allowing enough
to seep into the edges to support natural riparian vegetation, and recycling water by pump.

The emphasis everywhere is on plants and conditions natural to the coastal region of California. Plants and trees were selected from common woodland, chaparral, and roadside varieties: woodland birch, redwood, California bay laurel, oak, Monterey pine, and white alder (the last an especially hardy riparian tree), and various wild flowers, grasses, and herbs in abundance.

The designer estimates that 135 species of plants now thrive on the Yard, where then once were only 6. (To "see" them all requires many visits.) Nearly 40 species of birds have been recorded by the children. A multitude of terrestrial and aquatic organisms have also made their home on the Yard, and are still being inventoried by the children.

OBSERVATIONS AND INTERVIEWS

The Yard is still mostly a self-help neighborhood and school participatory project; parents still plant things rather than hire a landscape contractor. This process, the
designer feels, reinforces neighborhood participation as a community development strategy.

A large range of behaviors have been noted on the Yard: exploring, biking on the paths, picnicking, fishing, make-believe weddings, quiet sitting and talking, rafting in the pond, and set-up experiments by teachers or special CETA environmental education teacher's aides. The children also talk of hide-and-seek games, hanging out, sitting around in the evenings, crawling through the bushes, playing in the "river," the dirt, trees, and sand, and watching frogs in the bushes. Parents even talk of the joyful opportunities for their children to pick berries, to just lie and look at a bug, or to lay back in the sun and dream.

The children strongly feel that the natural resource area is the best part of the overall Washington Environmental Yard. It's "unusual" they say, "it makes you feel you're in a special place."
Destructiveness

"Destructiveness," Robin Moore points out, is an adult term and normally is judged in terms of adult values. Some ancillary destruction does occur, he says, like bouncing up and down on a young small branch, but deliberate vandalism has been extremely rare, e.g., even the incidence of initials cut into trees is rare.

ASSessment

Washington Environmental Yard is a cool oasis in the middle of a busy city and the middle of a hot asphalt jungle. The sound of the water and of the trees partially masks the sounds of the city.

The water is shallow and thus not dangerous. The pump seems to be assuring clear, fresh water, with no evidence of stagnation.

The looping circulation assures no dead ends where children might plow into fragile vegetation. It also provides natural edges to help differentiate the three major ecosystems--chaparral hill, woodlands, and water marshlands--and variations.

As noted, intentional vandalism is very low. There is a camouflaged fence around the site and only one entry to the natural resource area, but Robin Moore does not consider branch breaking, leaf collecting, and fishing vandalism. He protects the trees until they can survive on their own (2 to 3 years).

Though design for the handicapped was not a primary consideration; children in wheelchairs or on crutches could likely get around the packed dirt paths and even could be helped by the present railings.

A special strength of the Yard is the process by which it was planned, built, and now maintained. Parents, children, teachers, the principal, Herb Wong, university students, occasional visitors from all over the country, and Robin Moore worked together on all phases. The community apparently gained confidence from this process that
self-help projects are a viable—if lengthy—way to cope in an overly bureaucratic modern world.

Another special strength is of course the opportunities which the Yard provides for extending the classroom to natural areas. We saw examples of teachers asking students to put colors down on paper and then go to the Yard and find things which most closely resembled their color, of teachers using the ponds to have the children collect samples and then analyze them on the Yard or in the classroom, of children preparing seeds in the greenhouse and then, when strong, planting them, and a myriad of other uses.

This is not the type of "landscape architecture" which either the newer urban-oriented landscape architects, nor the older traditional landscape designers have learned. Robin Moore: "Many landscape architects have preconceptions which are unrelated to creating a landscape for children under these circumstances." His guidance—beyond professional degrees—comes from the study of how natural systems work, e.g., Muir Woods and the Berkeley Hills.

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

Many city and suburban children have no real understanding of natural processes. Washington Environmental Yard gives back some of these experiences to childhood.
INTERVIEW WITH JAY BECKWITH

In addition to discussing the "Big Toys" Installations visited, we also interviewed Jay Beckwith about his general ideas for children's play.

Jay Beckwith is an independent designer and Chief Designer for Big Toys/Northwest Design Products, Incorporated. His background includes studies in art, physics, and early childhood education (at Pacific Oaks College). Before joining Big Toys he designed and helped to build 182 school and community playgrounds in the San Francisco Bay Area.

GOALS FOR PLAYGROUNDS

Beckwith considers there are four main goals for playgrounds:

- physical learning and motor challenge
- dynamic balance
- social interaction
- cognitive play

He considers the fourth the hardest to achieve, and offered that without loose parts, dynamic elements, and possibilities for change, "Big Toys" are rather "dry" in this regard.

Play Activities

Beckwith suggests that a variety of play functions are needed in a play area, and that the amount of use is a function of number of play opportunities. He doesn't think that any pre-built structure can give children as much as they can get in a free situation. "If you have a house (a park)," he says, "and you put some furniture in it (play equipment), you still don't have a home (quality play experience). It still needs people (play leaders?), connections, loose parts, interest, and changing stimulation."
Safety

Beckwith considers this to be a major issue in the minds not so much of parents as administrators who are concerned with liability, and thus that it is perhaps the major stumbling block to truly successful play schemes.

His experience is that it is increasingly difficult to get one-off designs approved, not because they are more dangerous than what exists (and are much less dangerous than metal equipment over asphalt), but because they are new. The more deviations from standard solutions, he adds, the more concerns are expressed about safety, liability, and waivers from families for damages. He estimates, however, that the number of accidents/child hour of use on specially designed playgrounds is less than the number of accidents/child hour on bathroom doors in schools.

He suggested (but we forgot to ask the source) that it is "fairly well established" that injuries are not primarily a function of the apparatus itself, or its heights, but of the use patterns of the children, and this can be controlled through good design (e.g., zoning of different ages and types of incompatible activities).
Marilyn Rothenberg is an environmental psychology researcher of child-environment relations, specializing on playground and child care centers. She holds a Ph.D. in environmental psychology and currently is a playground consultant for Children's Television Workshop.

In a telephone interview, she stressed the following three points about environments for children's play:

- Play spaces should be special places not duplicating what already exists in a community, rather they should complement the natural play spaces of childhood by providing for current needs—and they should be special. Though recognizing the value of open free space for children (in contrast to only thinking about labelled, constrained space), she feels that special play spaces are very appropriate and valuable for children. Her ideal models were special events play spaces, like Captain Kid's World in Sea World, San Diego, and Children's Village in Ontario Place, Toronto (see Children's Village Case Study).

- Play spaces should recognize the importance of social interaction among children and provide opportunities and challenges the successful completion of which necessitates social interaction. It is also important, she felt, to provide areas for being alone or in small groups.

- Play spaces should provide stage sets for fantasy.
INTRODUCTION

While the criteria for children's play areas on military bases will be developed more fully in the Criteria Document several recommendations and conclusions can be drawn based on the site inspections. This section of the travel report attempts to identify some of the significant patterns and lessons learned on the inspection trip. Each issue is introduced by a title or topic statement followed by a review of observations and facts that lead to a conclusion or recommendation.

VARIETY OF PLAY PROGRAMS

Military

At all the military bases visited, we saw basically one type of playground; what we and others call "traditional" or "conventional" playgrounds. These are characterized by fixed-in-place play equipment selected from catalogues, usually by administrators, and installed according to manufacturer's recommendations. The older traditional equipment was metal—galvanized steel pipe—while the newer traditional type of equipment mixes wood with metal. Pieces in other materials may be included (e.g., the Oakland Army Base's concrete turtle). Equipment may have dynamic parts like swings or a merry-go-round. The equipment tends to be scattered around on its site.

Military base play areas, whether associated with a school (like Ft. Lewis) a recreation center (Ft. Meade), family housing (Ft. Hood, Alameda, etc.) or child care centers (all sites) were exclusively of the traditional metal or metal and wood play structures.

Some bases did have excellent natural play areas for children like fields, and woods with varied topography (Ft. Hood, Ft. Bragg, Ft. Lewis) but many bases are not as blessed. Children who do have access to natural sites are, for a variety of reasons, advised to stay away from them.
At all bases 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 a pattern also found in other research.

Civilian Sites

At the 19 civilian playgrounds studied and at the 15 civilian child care facilities studied a wide range of play programs were found, including:

- conventional playgrounds (e.g., Big Toys Installations)
- contemporary playgrounds (e.g., Five Central Park Contemporary playgrounds)
- playgrounds especially for the handicapped (e.g., Jessie Stanton Developmental Playground)
- special events playgrounds (e.g., Children's Village in Ontario Place)
- adventure playgrounds (e.g., Huntington Beach Adventure Playground)
- child care center play yards with animals, gardens, outdoor art, exploratory play, quiet play, etc., (e.g., Pacific Oaks College Children's School)
- natural resource/environmental awareness playgrounds (e.g., Washington Environmental Yard)
- hands-on special learning environments (e.g., Brooklyn Children's Museum)
- comprehensive play parks (e.g., Irvine California's University Park including the Irvine Adventure Playground, or the Mary B. Connolly Children's Playground)
- play networks in housing areas (e.g., St. Francis Square Housing Development)

As summarized in the case studies, several of the above types of playgrounds are especially popular with children and staff. These same playgrounds had the most developmental value too.
RECOMMENDATIONS

- On military bases provide a full range of types of developmentally-appropriate play areas as suggested by the above list.

- In programming types of play areas, consider social, intellectual, and physical developmental needs.

- Provide comprehensive play parks and networks of play in family housing areas which link together several types of play experiences.

- Provide a variety of linked experiences (Networks of play) within a one mile radius of each home. (A one mile radius is the average home range of young children with bicycles).

- Include adult play areas in comprehensive play areas.

- Include an adventure play area in a comprehensive play park for family housing areas (adventure play areas serve a two mile radius).

- Associated with or very close to elementary schools and child care centers, provide a natural play area or "Environmental Yard." Or where appropriate, implement conservation zoning practices to insure the preservation of natural eco-systems which could be (or are spontaneously being) used for play and environmental awareness.

- Consider as part of a community library or recreation center the possibility of a modest hands-on children's museum.

- Consider a centralized special playground near commercial centers (see discussion in "Central Park Comparative Analysis").

Issue for Discussion

We have recommended varieties of playgrounds and play areas that are outside the experience of most children, parents, and base master planners.
Since people deserve to have choices, it would be inappropriate to require all the types of play or even any single type. Still, it is easy to predict that without personal experiences with these various types of play areas, only the most familiar and easiest will get built. We firmly believe that a variety of play areas should be built. In other words, the issue we see is: How to make people aware of the possibilities, alternatives, costs and benefits of different kinds of play.

CHILD'S PLAY AS A LOST SOUL

MILITARY

We were told that there were five possible ways of getting play "equipment" for Army bases:

- turnkey program (see Fort Hood)
- self-help program (see Fort Hood)
- non-appropriated funds and maintenance funds through the family housing office (see Fort Lewis)
- reserve unit or a battalion looking for a service project to build (see Fort Meade)
- child care center attempting to use limited funds for outdoor equipment or requesting assistance from local facilities engineers (see Oakland Army Base)

Judging from the state of children's outdoor recreational environments on all bases, none of these methods are very successful. The turnkey incentive program may have the most potential.

Results of interviews at several bases (e.g., with a Family Housing planner at Fort Lewis) suggested that the root of the problem may be that children's outdoor recreation needs fall "through the cracks" between different offices,--and that they are a low priority issue on everybody's list.
CIVILIAN SITES

"The child's right to play" is also a low priority issue in the civilian world. Civilian playgrounds are supported and funded in a variety of ways.

- sponsorship by a city-wide parks and recreation department (this includes the expensive playgrounds in Central Park, New York, and in Golden Gate Park, San Francisco, and the much less expensive playgrounds at Huntington Beach and Irvine)

- financial backing by a foundation (e.g., Hechscher, Adler, Lauder, Mary B. Connolly)

- community self-help (Big Toys, Washington Environmental Yard)

- sponsorship by an elementary school district (Big Toys, Buchanan School Playground, Washington Environmental Yard)

- private donations (Mary B. Connolly Washington Environmental Yard)

- state and other government grants (Washington Environmental Yard)

- municipal backing and then user entry fees (Children's Village in Ontario Place, and maybe Huntington Beach Adventure Playground)

Though there are several models here worth pursuing, the fact still remains that children's needs are allotted as little as 3% of a large housing budget while as many as 50% of the residents may be children!

RECOMMENDATION

- There is a definite need for a designated children's outdoor recreation advocate on each base, a person knowledgeable about child/environment relations who is charged with the responsibility of advocating for children's needs, coordinating programming and planning efforts, and stimulating new actions. This role and this person should likely be in a branch which has planning, recreation, and or child
development expertise. The office should have its own budget for use in implementation.

ISSUE FOR DECISION

- Who should be the advocate for play on each base, and in what office should he or she be housed?

DISTRIBUTION AND CATCHMENT AREAS

MILITARY SITES

Military designated play areas were predominantly in the green space of modified Radburn-type plans or associated with elementary schools and child care centers.

A goal at Fort Hood and Fort Bragg is to have 1 tot-lot playground (i.e., a set of traditional play equipment for preschool age children) for every 50 housing units (i.e., approximately 1 for every 100 children) which for a base the size of Fort Hood would mean close to 100 tot lots.

Another large base, Fort Lewis (ca. 60,000 residents) had only 30 designated places in family housing areas, each with a few pieces of equipment (see the Fort Lewis housing area map), plus 5 school playgrounds.

CIVILIAN SITES

Developmentally-based standards on recommendations for the number of play areas a community should have are hard to come by. No one interviewed was able to make a sound general argument on this. (The Southeastern Wisconsin Regional Planning Commission suggests 22,000 sq. ft./1000 people with a minimum size per play area of 10,000 sq. ft. While 1/500 people is much greater than the 1/190 (1/50 families) suggested on Army bases the figures are for regional planning and not the more dense "planned unit development" that the family housing areas on the various bases more clearly resemble.)
However at the adventure playgrounds, the Directors felt strongly that adventure playgrounds should both be integrated completely into a city-wide recreation programs, and that there could be an adventure playground every two-miles on center so no child would have to go more than a mile by bike to the playground. If many children don't have bikes, even a mile may be too far to go.

ISSUE FOR DECISION

- Considerably more attention needs to be given to the issue of the distribution of different types of play spaces and to predicting the appropriate catchment area for the various types of play areas.

STAFFING PLAYGROUNDS

MILITARY

No military playgrounds had any sort of specialized recreation staff or play-leaders, except for teachers on "recess duty," coaches on ballfields, or caregivers with their children at child care centers.

CIVILIAN

All three adventure playgrounds had 2 to 3 staff members with responsibility for the grounds and the children. The positions included a head playleader or director and 1 to 2 assistants. Washington Environmental Yard had a specially hired CETA employee, the designer, and the environmental educator/school principle as the main staff. The "Yard" is used as an integral part of the curriculum of the School.

Operating expenses for an adventure playground (drawing children from a 1 mile radius in a medium-density suburban area) including both salaries and other operating expenses were estimated to be $20,000 a year. This figure is considerably less even when projected over five years than the cost of the contemporary equipment oriented playgrounds in New York City.
Playgrounds without staff are a relatively new phenomena. Until the 50's, many playgrounds in this country had at least 1/2-time staff. Summer play programs at schools still are staffed. But more playgrounds are unstaffed and follow the Germanic tradition of playgrounds as locations for gymnastics oriented equipment.

The British and Scandinavian playground traditions are different. They treat the outdoors as a setting (not unlike indoor settings) for child-staff interaction and development. There is an emerging trend back to valuing and using playleaders in some types of playgrounds. These include adventure playgrounds, natural resource playgrounds and hands-on museums.

CONCLUSION

• The success of an adventure playground is dependent on staffing, and on the quality of staffing. Adult contact and stimulation is also valuable in other types of play areas.

RECOMMENDATION

• We think it is important for the costs associated with staffing child play be assigned to a specific jurisdiction at each military unit.

PROGRAMS FOR REVITALIZATION AND COMMUNITY PARTICIPATION

MILITARY AND CIVILIAN

Playgrounds are used in both military and civilian settings as a part of revitalization programs for older neighborhoods. Two such programs were observed at military bases.

• Ft. Hood--revitalization

• Ft. Bragg--self-help/revitalization
Unfortunately the play equipment actually installed at the two bases consists mostly of conventional play equipment. Still, the playgrounds are a highly visible and real issue around which to mobilize and organize people. Presumably an organized group that has had success with one issue, a playground, can tackle other less concrete issues with equal success.

RECOMMENDATIONS

- play areas are an excellent part of an overall self-help or revitalization program

- play areas that are a part of self-help and revitalization programs should include other play concepts, issues, and facilities than just installing conventional play equipment.

- self-help play areas should fit into a network of play

PLACES FOR ADULTS/OLDER CHILDREN

MILITARY AND CIVILIAN

Adults were present at many of the playgrounds visited although less frequently at play areas in military family housing areas than in urban areas. Typically there was a shortage of places for adults to sit in the play areas in the "turnkey" housing areas.

RECOMMENDATION

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.
MILITARY AND CIVILIAN

While water and water play was not a part of any military play area visited it was a large ingredient in almost all of the civilian play areas. The power of water as an element of play was observed everywhere it was available including indoor play at several child care centers.

RECOMMENDATION

- Water play should be a part of play areas in family housing areas.
- Water play should be a part of play and outdoor activity areas at child care facilities.

IMPORTANCE OF TURNKEY-TYPE INCENTIVE PROGRAMS

MILITARY AND CIVILIAN

The requirement in "turnkey" housing proposals to include play areas has clearly been responsible for the availability of play experiences and the ambience of the neighborhood at housing areas on several bases. While no civilian play areas were the result of incentive programs, New York City has had excellent success with incentive zoning for office, commercial and urban design projects.

One problem was observed at Ft. Bragg which may be typical elsewhere. The Comanche II housing area benefits from having play areas. Comanche III does not have play areas even though they were a part of the "turnkey" submissions. They were eliminated as a cost saving feature.

RECOMMENDATION

If playgrounds are to be evaluated as a criteria of proposal selection, regulations should be written so they cannot be categorically eliminated to save cost later on.
MILITARY

Almost none of the play areas in family housing areas included any special provision for ball play. There were neither good grassy areas for football, soccer, baseball, kickball, etc., nor were there paved areas for streetball play like four square, kickball, basketball, jacks, etc. The children interviewed at the bases were keenly aware of the quality of grassy areas if there were any, especially if they were rocky.

CIVILIAN

Many of the civilian facilities had hard play areas.
- Lauder
- Central Park Community
- Harbourfront Adventure Playground
- Irvine Adventure Playground
- Mary B. Connolly Playground
- St. Francis Square

RECOMMENDATION

That play areas in family housing areas should include places for ball play. There should be both grassy fields and hard surfaced ball play areas.

LAYOUT OF "TURNKEY" FAMILY HOUSING AREAS

MILITARY

The general pattern of layout observed in the newer "Turnkey" family housing areas is a modified Radburn plan (Urban Land Institute, 1960). Key elements of a classic Radburn plan are compared to "turnkey" projects in the following chart.
<table>
<thead>
<tr>
<th>ISSUE</th>
<th>RADBURN</th>
<th>&quot;TURNKEY&quot; PROJECTS</th>
<th>NOTES</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Single purpose roads</td>
<td>yes</td>
<td>variation</td>
<td>Instead of single purpose roads military bases have a hierarchical road system with prime, collector, neighborhood collector and cul-de-sacs. Some older housing areas at Ft. Bragg don't fit the hierarchical pattern and they have traffic flow and accident problems.</td>
</tr>
<tr>
<td>3. Complete separation of purpose roads (especially pedestrian and vehicular)</td>
<td>yes</td>
<td>no</td>
<td>Some children must cross collector streets in residential areas to reach other areas. Some overpasses are available (Ft. Hood) which connect activities otherwise separated by a trunk road from the family housing area.</td>
</tr>
<tr>
<td>4. House &quot;turn-ed&quot; around</td>
<td>yes</td>
<td>partial</td>
<td>Typically the houses at military bases had a traditional &quot;front&quot; on the neighborhood collector street. However, the backyards are heavily used as outdoor rooms and those yards are contiguous to the open space. Bases with housing with &quot;significant backs&quot; include, Ft. Hood, Ft. Lewis, Bolling Air Force Base, Ft. Meade, and Alameda Naval Air Station.</td>
</tr>
<tr>
<td>5. Park as a backbone of continuous parks</td>
<td>yes</td>
<td>usually</td>
<td>The &quot;park like&quot; quality of the public space at the &quot;backs&quot; of the units isn't always apparent on army installations.</td>
</tr>
</tbody>
</table>
CONCLUSION

- The modified Radburn plan for family housing areas is a reasonable and workable pattern especially in providing space for play and connections between play areas. But it should be modified to meet different climatic conditions, and can be sized much smaller if linked together (St. Francis Square).

- The size of family housing play areas can be much smaller, and the boundaries and links between areas can be much clearer (see discussion of St. Francis Square).

COSTS

GENERAL FINDINGS

A $30,000 neighborhood play area like the one in Bolling's family housing area has a lot of positive impact on both kids and their parents. The kids identify with it and use it and the parents enjoy the idea of having it as an amenity.

Large impressive contemporary play areas capable of handling 100-200 children like those in Central Park can easily cost $200,000 to $300,000.

Less expensive play areas can also have impact. But even a few pieces of the most traditional metal equipment or the newer timber equipment can cost $3,000-$4,000 before installation.

Both expensive and inexpensive play areas can fail if they don't fulfil the basic criteria of good playgrounds.

Adventure playgrounds cost $20,000-$30,000 an acre plus yearly play leadership costs of about $20,000.
The following chart lists the various types of playgrounds visited by the site inspection team and juxtaposes that list with a list of the basic developmental areas of children. The dots represent the relative ability of any particular type of playground to support and contribute to an area of development. While all types of play could happen in each type of playground the size of the dots show what is dominant for each.

- clear/emphasis
- some
- occasionally
- negative
<table>
<thead>
<tr>
<th>Physical</th>
<th>Physical</th>
<th>Quiet</th>
<th>Programmed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Large</td>
<td>Small</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muscle</td>
<td>Muscle</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TYPES OF PLAYGROUNDS</th>
<th>TYPES OF PLAY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cognitive</strong></td>
<td><strong>Social</strong></td>
</tr>
<tr>
<td>1. Immediate Neighborhood &quot;back and frontyard&quot;</td>
<td>0</td>
</tr>
<tr>
<td>2. Traditional Equipment Playgrounds (Turnkey and Ft. Hood)</td>
<td>0</td>
</tr>
<tr>
<td>3. Contemporary Equipment Playgrounds (Bolling A.F.S., Central Park Playgrounds)</td>
<td>0</td>
</tr>
<tr>
<td>4. Natural Play Areas (Washington Environment Yard)</td>
<td>0</td>
</tr>
<tr>
<td>5. Hands-on Museums (Brooklyn Children's Museum)</td>
<td>0</td>
</tr>
<tr>
<td>6. Adventure Playgrounds (Harbourfront, Irvine, Huntington Beach)</td>
<td>0</td>
</tr>
<tr>
<td>7. Comprehensive Playgrounds (Irvine, Mary B. Connolly)</td>
<td>0</td>
</tr>
</tbody>
</table>