PLAYSPACE for ALL
Inclusive Wayfinding
by
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PLAYSPACE FOR ALL
Inclusive Wayfinding

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Abstract

Within the generic playground, an obsession with safety has stifled play. The common elements (the slide, swing, seesaw) have become prescribed to where it has abandoned a major aspect that is important for play as a means of development – curiosity. This thesis proposes a reconsideration of playspaces, which embodies ideals that encourage play through self-directed exploration, investigation, and risk.

The goal is to integrate these ideals of play and create a curious procession between the object and the path. Through the act of wayfinding, the risk of losing one’s way may lead to something equally rewarding. Therefore, the project relies on two gestures: the meandering path and the curious object as a landmark or goal to approach.

Through a series of paths, with no prescribed route or set sequence of approach, the playspace offers a maze of tactile environments. Thresholds along these paths at times form more intimate pockets of play as further distractions or challenges to encounter. Varying degrees of transparency mask and reveal curious objects on approach and serve as a means to both entice and distract. Changes in sloped surfaces and material each suggests different ways of play, encountering risk or engaging in tactile investigation.

Through exploration, investigation, and risk, each child can establish a sense of ownership and achievement as an individual or as a part of a larger cooperative as routes intersect and reveal larger play areas. Within a playground that contains no swings or slides, there is no right or wrong way to play, navigate, or explore. There is no prescribed path or sequence of how to play, what to play on, around, or with. Instead, the solution provides an abundance of visual, tactile, and auditory elements that suggest open exploration and investigation, regardless of ability.
Playspace for All
# Table of Contents

- **AN INTRODUCTION TO PLAY** .................................................. 11
- **PLAY + SPACE** ..................................................................... 25
- **PLAYING IT SAFE** ................................................................. 36
- **DESIGNING PLAY** ................................................................. 43
- **PLAY ABILITY** ....................................................................... 52
- **Pursuing Play** ...................................................................... 57
- **Site** ..................................................................................... 67
- **Proposal** ............................................................................... 73
- **Appendix** ............................................................................. 87
- **Bibliography** ........................................................................ 103
- **Image Credits** ..................................................................... 105
“Play is the highest form of research”

Albert Einstein
An Introduction to Play

Play is a process of experimentation. Through play we learn to interpret and experience the environment, understanding relationships in space, and develop social skills between each other. It is during play that children begin to engage and interact in the world. They develop the ability to navigate spaces, and the curiosity vital for optimal child development. The playground has become static and mostly disengaging to the impaired. An obsession toward safety has stifled our ability to play, while physical access is presented as adequate inclusive. As a program, they playground and its components have to be reconsidered to ensure all children have the benefits of play, and are allowed to play in a less prescribed – multi-sensory manner.
“Every child has the right to rest and leisure, to engage in play and recreational activities appropriate to the age of the child and to participate freely in cultural life and the arts.”

Article 31 - U.N. Convention on the Rights of the Child
DEVELOPMENT COMMUNITY
EDUCATION COLLECTIVE
COOPERATIVE INDIVIDUAL
COMPETITIVE INCLUSIVE
COGNITIVE SOCIAL
PHYSICAL PUBLIC

PLAY

EXPLORE
IMAGINE ADAPT
RISK EXPRESSION FREEDOM
EXPERIENCE MOVE CREATE
WONDER LEARN
"Play is older than culture.

Play is more than a mere physiological phenomenon or a psychological reflex. It goes beyond the confines of purely physical or purely biological activity. It is a significant function—that is to say, there is some sense to it. In play there is something "at play" which transcends the immediate needs of life and imparts meaning to the action.

All play means something."²

Prof. J. Huizinga

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² Huizinga, Johan. *Homo Ludens: A Study of the Play Element in Culture.*

An Introduction to Play
SELF-CHOOSEN AND SELF-DIRECTED
How to play | What to play | When to play | With whom to play

INTRINSICALLY MOTIVATED
Goals are experienced as part and parcel of the activity - subordinate to the means for achieving them

GUIDED - RULE BASED
Play is freely chosen activity, but not a free-form activity

IMAGINATIVE
Mental removal of oneself from the immediately present real world

CONSCIOUS
Play is conducted in an alert, active, but relatively non-stressed frame of mind.
"A range of voluntary, intrinsically motivated activities normally associated with recreational pleasure and enjoyment."

Catherine Garvey

"A free activity standing quite consciously outside 'ordinary' life as being 'not serious' but at the same time absorbing the player intensely and utterly. It is an activity connected with no material interest, and no profit can be gained by it. It proceeds within its own proper boundaries of time and space according to fixed rules and in an orderly manner."

Johan Huizinga

"Improvisation, composition, writing, painting, theater, invention, all creative acts are forms of play, the starting place of creativity in the human growth cycle, and one of the great primal life functions."

Stephen Nachmanovitch

"Activity that is: "desired" by the child, "always involves an imaginary situation," and "always involves rules" (which are in the minds of the players and may or may not be laid down in advance)."

Lev Vygotsky

"Behavior that is intrinsically motivated; focused on means rather than ends; distinct from exploratory behavior; non-literal (involves pretense), free from externally imposed rules; and actively (not just passively) engaged in by the players."

Kenneth Rubin

6. Vygotsky, L. S. The role of play in development.
TYPES OF PLAY

ATTUNEMENT PLAY
Establishing a connection

BODY PLAY
Self exploration of human body and movement

OBJECT PLAY
Physical manipulation and interaction with external items

SOCIAL PLAY
Collective and collaborative play

IMAGINATIVE PLAY
Creation of altered states of reality

STORYTELLING PLAY
Narratives of language and communication

CREATIVE PLAY
Inventive
GAME
STRUCTURED FORM OF PLAY, USUALLY UNDERTAKEN FOR ENJOYMENT AND SOMETIMES USED AS AN EDUCATIONAL TOOL.
IN MANY GAMES, THE OBJECTIVE IS TO WIN BY DEFEATING THE OTHER PLAYER OR PLAYERS OR BEING THE FIRST TO REACH A SPECIFIED GOAL, WHILE IN OTHERS, ROLE-PLAYING OR COOPERATION IS EMPHASIZED.

KEY COMPONENTS OF GAMES INCLUDE: GOALS, RULES, CHALLENGE, INTERACTION. MENTAL AND/OR PHYSICAL STIMULATION, DEVELOP PRACTICAL SKILLS, SERVE AS A FORM OF EXERCISE, OR PERFORM AN EDUCATIONAL, STIMULATION, OR PSYCHOLOGICAL ROLE.

Toy
SOMETHING TO PLAY WITH, ESPECIALLY AS INTENDED FOR USE BY A CHILD, USUALLY OF LITTLE IMPORTANCE OR VALUE.
PLAYING WITH TOYS IS SUPPOSED TO BE AN ENJOYABLE MEANS OF TRAINING YOUNG CHILDREN FOR LIFE IN SOCIETY. IT SERVES AS A TOOL TO LEARN, TO DISCOVER THEIR IDENTITY, DEVELOP PHYSICALLY, OBSERVE CAUSE AND EFFECT, EXPLORE RELATIONSHIPS, AND PRACTICE SKILLS.

Toys, like play itself, serve multiple purposes in both humans and animals. They provide entertainment while fulfilling an educational role. Toys enhance cognitive behavior and stimulate creativity. They aid in the development of physical and mental skills which are necessary in later life.

Puzzle
A PUZZLE IS A GAME, PROBLEM, OR TOY THAT TESTS INGENUITY OR KNOWLEDGE. IN A PUZZLE, ONE IS REQUIRED TO PROCESS SOLUTIONS IN A LOGICAL WAY.

SOLUTIONS OF PUZZLES OFTEN REQUIRE THE RECOGNITION OF PATTERNS AND THE CREATION OF A PARTICULAR KIND OF ORDER. FOR CHILDREN, PUZZLES CAN DEVELOP INDUCTIVE AND DEDUCTIVE REASONING SKILLS, ENCOURAGE INQUIRY AND DISCOVERY.
REASONS TO PLAY

Acknowledging play as important for all children as integral to their cognitive, social, physical, and emotional development resulted in its integration with learning. The standardization of education has led to a standardization of play, specifically playgrounds. Additionally, the playground as a space also has an important historical context as a mechanism of play infrastructure within the urban context, and through design politics it has become over-prescriptive. Drawing on theories of child psychology, playgrounds in the US are defined by structure, constant supervision, and approved equipment. Consequently typical playgrounds are geared towards specific age groups and abilities while neglecting others. This, coupled with Standards Based Reform has led to homogenization of what is acceptable as play, who is allowed to play, and what should be gained from play.

The notion of play can be open to interpretation. Historically, playground components emerged as objects not intended for a particular function, but instead to encourage and evoke different kinds of uses. To understand the evolution of the modern playground, as with any public space, is to investigate political emphasis on public safety. Furthermore, as a public space, playgrounds inherently involve standardization of the physical elements, issues of access, control, desired use, ownership and maintenance. The standards for playground design and construction are determined by the U.S. Consumer Product Safety Commission, therefore, any proposed playground must reside within an acceptable framework of regulations.

Generally, concerns about the physical conditions of playgrounds revolve around design of equipment, material selection, and manipulation of ground surfaces. Architecturally, this is where play can begin, where play can be defined. By conceptualizing play in terms of spatial perception and experience, we can begin to suggest spaces and physical elements that expand how a child can play by encouraging flexibility in terms of use. Non-prescriptive architectural elements can foster new, unexpected, or even unintended experiences through play. Creating play that is unexpected might result in awkward, frustrating, perhaps ugly architecture, but the architecture should reflect the purpose with curiosity. Architecture of the playground should be curious, experimental, and playful.
By understanding play as a right for all children, the failures of the standardized playground as a place of equal access and experiential opportunity will also be explored. As a counter to the hegemony of sight as an ability, the playground must become a multi-sensory experience. Mental mapping of spaces is essential for the development of all children and play provides efficient orientation and mobility skills. Although most of the information required for mental mapping is gathered through the visual channel, spatial exploration through non-visual sensory stimuli can become engaging experiences for all children, simultaneously enabling impaired children with crucial skills acquired through play. Play is essentially a combined product of motor, sensory and cognitive skills. The resulting playground can become a sensorium environment through the exploration or haptic, olfactory, and auditory elements of play, which will require as much attention as the traditional playground language of object and ground.
The history of playgrounds is tied to an emphasis on child development following the work of Frederick Froebel. His extension of play went beyond its value merely for physical or social development to emphasizing its impact on the total development of the child. Playgrounds were invented as a natural progression from the child’s early work experiences and Froebel’s notions of early adventures between a child and their surroundings—exploring caves and streams, climbing trees and mountains, and roaming the forests.

Many kindergartens and nursery schools in the United States followed Froebel’s tenets by adding playground apparatus, gardens, various toys for creative activity, and making free play tempered with direct instruction central in the educative process. In 1812 these ideas were first implemented in the US at the Latin School in Salem Massachusetts by gymnastic associations and created the first recognized instance of play at school. By the end of the 19th century, sand gardens were placed in Berlin and in the play yards of Boston as part of the Progressive Reform Movement.

Playgrounds provide a unique setting for children to engage in the process of play—a designed environment with the intent of development through experience and activity.

Psychologist Lev Vygotsky was a critical figure on relating play to both cognitive affective and psycmotor development. With imaginative play, a child learns to act in a cognitive, rather than an external visual realm by learning to rely on internal tendencies rather than imposed rules. By developing novel meanings of usual objects in play.

8. Wiggin, Kate D. *Froebel’s Occupations.*
9. Vygotsky, L. S. *The role of play in development.*
AN INTRODUCTION TO PLAY
SCHOOL PLAYGROUNDS
PARK PLAYGROUNDS
WILDERNESS PLAYGROUNDS
ZOO PLAYGROUNDS
ARBORETUM PLAYGROUNDS
CAMP PLAYGROUNDS
CASINO PLAYGROUNDS
CRUISE PLAYGROUNDS
STREET PLAYGROUNDS
ROOFTOP PLAYGROUNDS
LOOSE PARTS PLAYGROUNDS
CHECK-A-CHILD PLAYGROUNDS
IMAGINATION PLAYGROUNDS
ACCESSIBLE PLAYGROUNDS
INTERGENERATIONAL PLAYGROUNDS
NATURAL PLAYGROUNDS
ADVENTURE PLAYGROUNDS
STANDARDIZED PLAYGROUNDS
MODEL PLAYGROUNDS
INCLUSIVE PLAYGROUNDS
EMPPOWER PLAYGROUNDS
NOVELTY PLAYGROUNDS
MOBILE PLAYGROUNDS
TEMPORARY PLAYGROUNDS
OPEN PLAYGROUNDS
COMMERCIAL PLAYGROUNDS
Play + Space
"The little child employs itself for a long time merely by pouring water or sand from one vessel into another alternately, for building and forming with sand and earth, which precedes clay work, opportunities should be afforded even to the child of one year.

Even the baby then may safely be set in the sand pile, and can play with the rest at digging, and molding and burrowing, and pouring the grains in and out of the tin vessels."

Friedrich Froebel

10. Wiggin, Kate D. Froebel's Occupations.
Accompanying Friedrich Froebel's kindergarten movement, sand gardens of Germany represent the first organized insertion of children's play into public space - piles of sand in the public parks of Berlin where children played.

In 1885 the Boston Sand Gardens was the first supervised playground for children - built in by the Boston Women's Club.

Most commonly, the sand table took the form of a water-tight box about five by three feet, and at least a foot deep - set on short stout legs with rollers and filled with sand to within two inches of the top.
MODEL PLAYGROUNDS

1900

By mid 1910, with the playground idea spreading rapidly, the term “model playground” was first used in connection with Jane Addam’s Hull House playground in Chicago for both “big and little” children. These were the first organized and supervised playgrounds in America, creating the first serious play movement for young children in this country. Specific play equipment emerged. New types of swinging, climbing, and sliding apparatus now occupied playgrounds.

1912 Hiawatha Playground
In Playground Equipment experienced buyers demand durability, absolute safety, proven performance, long service. It is reasonable that only highest quality equipment will give you these vital features.

American APPROVED playground equipment meets every one of your requirements. Modern design . . . top quality materials . . . unexcelled workmanship . . . maximum safety . . . superior performance . . . these are but a few of many plus features you receive when you install American Approved Equipment.

WRITE TODAY for complete, fully illustrated catalogs. See why American has led the way for more than 35 years!

AMERICAN Playground Device Co.
ANDERSON, INDIANA
World's Largest Exclusive Manufacturers of Fine Outdoor Playground, Swimming Pool and Physical Fitness Equipment
The concept of a “junk playground” first proposed by Carl Theodor Sorensen, emerged in 1943. Children played in construction sites, garbage dumps and junk yards throughout war torn neighborhoods.

Under little of no supervision they explored and invented freely, inventing ways to use, make, build and invent. Junk playgrounds was only dependent on imagination, not specific prescribed elements.

Despite their strong reputation among developers, child users, and involved parents, the life of these playgrounds were short-lived in the US due to rising concerns with safety as the possibility for unscripted play also lead to the possibility for injury.
7-6-5-4-3-2-1-0-BLAST OFF
IN THE NEW MIRACLE
Space Ship
(MODEL XS-1)

and just imagine the excitement when the Miracle Space Ship lands on your playground! So realistically designed, this Miracle masterpiece would look right at home on a launch pad at Cape Kennedy... or on its way to the moon! The Miracle Space Ship measures a full 33' high from the concrete base to the tip of the nose cone. Safe, circular stairway of non-slip floor plate leads up to the platform ladder... Miracle's Wave Slide offers a quick, safe descent back to earth! Plan on a Miracle Space Ship for your playground now... the countdown can start the minute you mail the coupon on the next page.
NOVELTY PLAYGROUNDS
1950

In order to replace sand, slides, swings, and jungle gyms, designers created novelty, imaginative, or fantasy sculptures - rockets, vehicles, and historical pieces. Utilizing massive molded, concrete climbing forms with tunnel mazes and a labyrinth of shapes and spaces intended to exercise the imagination of children and encourage dramatic play.

Aesthetics and manufacture feasibility were emphasized in playground designs rather than child development needs. Features were often fixed, resistant to change, movement or actions by children.
Swings, slides, see-saws, superstructures
STANDARDIZED PLAYGROUNDS

1970

Standardizing playground equipment developed simultaneously with concerns about playground injuries, increasing lawsuits, and formation of task forces to prepare national standards for playground equipment safety, and reflected the design and redesign of manufactured playground equipment.

The enclosed, padded, constrained, low structures prevent the child from taking risks and developing a sense of mastery over his or her environment.
Playing it Safe

6-23 MONTHS

32” - Max Climbing Height
Ramps
Single file step ladders
Spiral slides < 360°
Rockers
Stairways
Swings with full bucket seats

2-5 YEARS

60” - Max Climbing Height
Ramps
Merry-go-Rounds
Single file step ladders
Spiral slides = 360°
Rockers
Stairways
Swings with bucket seats
Tire Swings

5-12 YEARS

60” - Max Climbing Height
Ramps
Climbers
Cable Walks
Seesaw
Merry-go-Rounds
Ladders
Overhead Rings
Spiral slides > 360°
Rockers
Stairways
Swings
Tire Swings
Track Rides
Poles
APPROPRIATE PLAY

By the 20th century playgrounds evolved to include specific equipment to encourage learning - wooden soldiers, tools, blocks, footballs, lumber, workbench, spoons, brooms, balls, sand boxes. However in 1906, the U.S. Bureau of Education Bulletin claimed that most public school play yards were hazardous, and unfit “for any advantage that has come to the school or the children.” It sparked the notion of prescribed play and equipment and by the 1950s, standardizing playground equipment developed due to concerns about playground injuries, and possible lawsuits.

ASTM STANDARDS

F1292 STANDARD SPECIFICATION FOR IMPACT ATTENUATION OF SURFACE SYSTEMS UNDER AND AROUND PLAYGROUND EQUIPMENT
F1487 STANDARD CONSUMER SAFETY PERFORMANCE SPECIFICATION FOR PLAYGROUND EQUIPMENT FOR PUBLIC USE
F1918 STANDARD SAFETY PERFORMANCE SPECIFICATION FOR SOFT CONTAINED PLAY EQUIPMENT.
F1951 STANDARD SPECIFICATION FOR DETERMINATION OF ACCESSIBILITY OF SURFACE SYSTEMS UNDER AND AROUND PLAYGROUND EQUIPMENT
F2075 STANDARD SPECIFICATION FOR ENGINEERED WOOD FIBER FOR USE AS A PLAYGROUND SAFETY SURFACE UNDER AND AROUND PLAYGROUND.
F2223 STANDARD GUIDE FOR ASTM STANDARDS ON PLAYGROUND SURFACING
F2373 STANDARD CONSUMER SAFETY PERFORMANCE SPECIFICATION FOR PUBLIC USE PLAY EQUIPMENT FOR CHILDREN 6 MONTHS THROUGH 23 MONTHS
F2479 STANDARD GUIDE FOR SPECIFICATION, PURCHASE, INSTALLATION AND MAINTENANCE OF Poured-IN-PLACE PLAYGROUND SURFACING
F2049 STANDARD GUIDE FOR FENCES/BARRIERS FOR PUBLIC, COMMERCIAL, and MULTI-FAMILY RESIDENTIAL USE OUTDOOR PLAY AREAS.
F1148 STANDARD CONSUMER SAFETY PERFORMANCE SPECIFICATION FOR HOME PLAYGROUND EQUIPMENT.
THE SAFETY OF EACH INDIVIDUAL PIECE OF PLAYGROUND EQUIPMENT AS WELL AS THE LAYOUT OF THE ENTIRE PLAY AREA SHOULD BE CONSIDERED WHEN DESIGNING OR EVALUATING A PLAYGROUND FOR SAFETY.

AGE-APPROPRIATE PLAYGROUND DESIGNS SHOULD ACCOMMODATE THESE DIFFERENCES WITH REGARD TO THE TYPE, SCALE, AND THE LAYOUT OF EQUIPMENT

200,000 - INJURIES ANNUALLY ON PUBLIC PLAYGROUNDS
50,000 - TO U.S. HOSPITAL EMERGENCY ROOMS BECAUSE OF INJURIES ON PLAYGROUND EQUIPMENT.

51% OF THE INJURIES HAPPENED ON PUBLIC PLAYGROUND EQUIPMENT

80% OF THE INJURIES OCCUR WHEN CHILDREN FALL FROM PLAY EQUIPMENT.

U.S. CONSUMER PRODUCT SAFETY COMMISSION’S (CPSC)
**Materiality of Safe**

The surfacing under and around playground equipment is the most important factor in reducing the likelihood of head injuries. The most widely used test method for evaluating the shock absorbing properties of a playground surfacing conducted through ASTM testing.

**Sand**
- Depth: 4 Inches
- Fall Height: 4 Feet

**Pea Gravel**
- Depth: 9 Inches
- Fall Height: 5 Feet

**Artificial Turf**
- Depth: 9 Inches
- Fall Height: 5 Feet

**Wood Chips**
- Depth: 9 Inches
- Fall Height: 10 Feet

**Shredded Rubber**
- Depth: 4-6 Inches
- Fall Height: 10 Feet

**Unitary Rubber**
- Depth: 4-6 Inches
- Fall Height: 10 Feet
“I am convinced that standardized playgrounds are dangerous, just in another way: When the distance between all the rungs in a climbing net or a ladder is exactly the same, the child has no need to concentrate on where he puts his feet. Standardization is dangerous because play becomes simplified and the child does not have to worry about his movements.”

Helle Nebelong

11. Nebelong, Helle. *Design on Play*
“Children’s play is characterized by spontaneity, freedom, creativity, discovery and joy.”

Louis Bowers
Designing Play

Giant Stride, location unknown, ca. 1910-1915 | Source: PreservationNation.org
Aldo van Eyck designed over 700-860 playgrounds across Amsterdam, forming a network of play and engagement that occupied abandoned lots in the post war city.

The playgrounds were consisted of three primarily elements – a sandpit, frames for climbing, and boundary elements (objects are not function specific but encourage use and movement).
The sandpit served as a fixed hearth of the playground, permanent in spacial location, yet it embodied flexibility through material. Elements around this center were all meant as a means of climbing, jumping, sitting on, running past – unscripted play with suggested boundaries. Through minimal geometry and minimal number of elements, the static playground left the type of play in the mind of the children who entered it.
Isamu Noguchi’s first playspace design – Play Mountain – was developed in 1933 and challenged the traditional image of a space for children. Designed as a sculpture from the earth, Play Mountain centered on a stepped ziggurat-like form that descended into a wide chute at the rear, curving around an amphitheater before arriving at a sloped pool at its foot.

Unlike the prescriptive furniture common to US playgrounds – the swings, slides, and seesaws – Noguchi’s landscapes were conceived to encourage improvisation and creative interaction. The components of a Noguchi’s playground may always be experienced by the children in multiple ways. Instead of directly suggesting a single act to be performed (sliding, climbing, swinging), these projects require kids to engage with a space, to explore and subvert it.
MoMA + Creative Playthings

1953 Play Sculpture Competition

Play Sculpture - a division of Creative Playthings - co-sponsored a nationwide play sculpture competition, organized with Parents Magazine and MoMA.

Play Sculptures were playground equipment designed by artists and industrial designers in an effort to expand and refresh ideas about playground planning. The exhibition opened in June 1954, featuring 360 models including life-size examples of the winning entries. The show formed part of the institution's influential promotion of modernist architecture, contemporary design and abstract art. Through exhibitions, educational programs and model houses in the museum's garden, good design was presented as a part of everyday life, and a meaningful childhood became linked to modern design, abstract educational toys and art education.
Play is for anyone any age anywhere everyone every age every where
Egon Moeller-Nielsen

Swedish sculptor Egon Möller-Nielsen's fiberglass helical slide, which Creative Playthings sold in America, was held up as a model for modern playground equipment that allowed for exercise and stimulated aesthetic fantasy. Unlike conventional playground slides, the round mountain-like structure with an internal ladder and a molded ridge for sliding was a large scale evocation of the free forms and enhanced safety that the company championed.

Moeller Nielsen's design became a signature of the company's aspirations to reform children's playgrounds. The Play Sculpture competition emphasized inventive sculptural designs that promised to stimulate children's imagination, exercise the body, and adhere to safety requirements.
a new dimension in playground planning!

Creative Playthings, Inc., pioneers in the development of play materials for early childhood education, now offers a complete playground planning, design and building service through its newly-formed Play Sculpture Division. On its staff are leading designers, sculptors, engineers, educators and landscape architects, including such well-known names as Isamu Noguchi, E. Moller-Nielsen (Sweden), Robert Winston, A. Vitali (Switzerland), etc.

The Play Sculpture Division is currently co-sponsoring—together with the Museum of Modern Art and Parents' Magazine—a nationwide Play Sculpture Competition.

Play Sculpture Division maintains a permanent display and resource center at 5 University Place, New York. You are cordially invited also to visit our exhibit at the forthcoming National Recreation Congress in Philadelphia.

We invite your inspection and inquiry.

Full descriptive literature will be sent you on request.

PLAY SCULPTURES DIVISION
CREATIVE PLAYTHINGS, INC., 5 UNIVERSITY PLACE

PLAY SCULPTURES CATALOG
1941

Designing Play 51
Play Ability

For Americans with disabilities, access means simply being able to use, enjoy, and participate in the many aspects of society, including work, commerce, and leisure activities. While removing architectural barriers may allow people with disabilities to circulate within and around a facility, other factors, such as transportation, affect their ability to fully participate in activities. Designers and other suppliers of services and goods need to provide equal access for all without undermining the needs of people with disabilities.
Providing equal access removes discrimination and protects human rights. An accessible built environment provides the opportunity for all people to fully participate in and contribute to their families, communities, and society. Equal access offers individuals the occasion to improve the quality of life and standard of living for themselves, their families, and other people in the world. Finally, providing equal access is required, to varying degrees, in order to meet applicable building codes, accessibility standards, and accessibility guidelines.
**Play_Ability**

*Smooth Surface*
Wheelchair Access and fall protection

*Ramp Access*
Path networks for wheelchair travel

*Acoustic Components*
Devices that make sound or music

*Visually-Impaired*
Features with Braille panels and textures

**Color Contrast**
Structures are painted in vivid shades of yellow, blue and red. Contrast with tan and black ground surfaces provide a sharp color distinction that allow students with limited vision to navigate through structures more independently.

**Sensory Play**
Variety of sensory inputs: Three large vertical xylophones give students a chance to create music. The instruments are strategically located between the play structure, swing set and carousel, making them audible landmarks for students to use when orienting themselves or traveling from one play area to the next.

**Textured Ground**
The playground’s rubberized surface is a dramatically different texture from the cement sidewalk and grassy field surrounding it, helping students who are blind or visually impaired to orient themselves as they approach or exit the playground.
BRADLEE PARK - PERKINS SCHOOL FOR THE BLIND

Opened in July 2015, the playground encourages students of all abilities to play, exercise and explore. Ramps and wheelchair-accessible equipment enable all students with physical access. Learning how to engage in unstructured play is especially important for students who are blind as they learn to adapt to new surroundings and situations.
Pursuing Play

The goal is to integrate these ideals of play and create a curious procession between the object and the path. Through the act of wayfinding, the risk of losing one's way may lead to something equally rewarding. Therefore, the project relies on two gestures: the meandering path and the curious object as a landmark or goal to approach.

Through a series of paths, with no prescribed route or set sequence of approach, the playspace offers a maze of tactile environments. Thresholds along these paths at times form more intimate pockets of play as further distractions or challenges to encounter. Varying degrees of transparency mask and reveal curious objects on approach and serve as a means to both entice and distract. Changes in sloped surfaces and material each suggests different ways of play, encountering risk or engaging in tactile investigation.
A PLAYGROUND SHOULD BE

SAFE
Provide a setting in which children can engage in constructive and responsible risk taking

VERSATILE
Children of different stages of development can adapt themselves to engage in play

DYNAMIC
Settings that can be physically modified by children to accommodate play needs

DESIGNED
Equipment and features that allow use based on interest and imagination

INCLUSIVE
Meet needs of individual children based on ability

SOCIAL
Facilitate interaction between occupants
COMPONENTS OF PLAY

THE CURIOUS OBJECT

JOHN BRIDGEMAN
ROBERT WINSTON
EGON MÖLLER-NIELSEN

THE SCULPTED LANDSCAPE

ISAMU NOGUCHI

THE OPEN FIELD AND ANCHOR

ALDO VAN EYKE
BERNARD TSCHUMI
ISAMU NOGUCHI

PLAYSPACE FOR ALL
Through a combination of built and natural elements, the playground should become a space to foster curiosity and cooperation to overcome acceptable risk. Each element or surface of the playground can with a specific trait in mind.
Cognitive Mapping and Exploration

Mental mapping of spaces is essential for the development of efficient orientation and mobility skills. Most of the information required for mental mapping is gathered through the visual channel. Blind people lack this crucial information, facing in consequence difficulties in mapping as well as navigating spaces. Mental mapping of spaces, and of the possible paths for navigating these spaces, is essential for the development of efficient orientation and mobility skills.

Spatial mapping and orientation skills should be supplied at two main levels: perceptual and conceptual. At the perceptual level, the deficiency in the visual channel should be compensated with information perceived via other senses. Touch and hearing become powerful information suppliers about known as well as unknown environments. In addition, haptic information appears to be essential for appropriate spatial performance.

Tactile refers to the sense of touch, while the broader haptic encompasses touch as well as kinesthetic information, or a sense of position, motion and force. For the blind, haptic information is commonly supplied by: the cane – for low-resolution scanning of the immediate surroundings; palms and fingers – for fine recognition of objects' form, texture and location; and the feet, regarding surface information. The auditory channel supplies complementary information about events, the presence of other people (or machines or animals) in the environment, or estimates of distances within a space.

The development of a multi-sensory virtual environment enabling blind people to learn about real-life spaces which they are about to navigate (for example, school, workplace, public buildings).

The Primacy of Touch

"The skin is the oldest and most sensitive of our organs, our first medium of communication, and the most efficient protector... Touch is the parent of our eyes, ears, nose, and mouth."

Ashley Montagu
“IF YOU WANT TO DO SOMETHING NICE FOR A CHILD, GIVE THEM AN ENVIRONMENT WHERE THEY CAN TOUCH THINGS AS MUCH AS THEY WANT.”

Buckminster Fuller,

The ‘sense of touch’ in humans comprises of two main sub-modalities: **Cutaneous** - sense receives sensory inputs from the receptors embedded in the skin  
**Kinesthetic** - sense receives sensory inputs from the receptors within muscles, tendons and joints.14

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Site: Play in the City
Plaza + Play

Playspace for All
PLAYSPACE FOR ALL
Proposal
POTENTIAL PATHS

Along a series of hard and soft boundaries, the routes within the play ground create an atmosphere of stimulation and distraction.

Visual, tactile and auditory elements can be used to navigate along specific paths. However as stimuli and paths overlap, the potential to meander increases.
**POCKETS OF PLAY**

Isolated pockets of play scattered within the playspace can function as moments of retreat and solitude in some instances, while others suggest a more physical form of play. The intimate spaces allow for moments of ownership though play.
**Curious Objects**

Larger collective space house these curious anomalies as anchor points within the meandering field. As vivid landmarks they can entice movement between each other.

Each object contains its own set of rules, risk, challenges and rewards. Some areas less accessible than others, climbable surfaces perforate the mass, new vantage points are exposed.

Each curious object is mean to be explored and discovered in its own way.
CODIFICATION OF CLUES

A codified rhythm provides for a tactile solutions throughout the playground.
Plaza at Play
SPORADIC SEQUENCES

With no prescribed way to play, the sequence of events that might occur remain in flux. Within each moment of play, another possibility lurks adjacently.
PLAYSPACE FOR ALL
Appendix: Supplementary Research
PLAY AND THE CITY

PLAYGROUNDS AROUND GREATER BOSTON


Playspace for All
**Visual Disability**

**Lack of Usable Sight**

Visual Disability or vision impairment is defined as having 20/40 or worse vision even after the application of available corrective means - glasses, contacts, medicine, or surgery. The lack of vision is severe enough to impair daily activities.

Source: National Federation of the Blind
**Blindness Among Children**

The number of non-institutionalized children, ages 4 through 20, all races, regardless of ethnicity, with all education levels in the United States who reported a visual disability in 2014 from the American Community Survey (ACS).

665,200

**Visual Disability**

61,739

**Legally Blind**

Legal blindness indicates that a person has a severe vision impairment with less than 20/200 vision in the better eye after best correction, or a field of vision of less than 20 degrees in the better eye.¹

The American Printing House for the Blind polls each state for data on the number of legally blind children (through age 21) enrolled in elementary and high school.

1. Centers for Disease Control and Prevention. "Blindness and Vision Impairment"
Historically sight has held dominance in how we construct, decipher, navigate and read the built environment. This ocularcentric attitude neglects to address the portion of the population who does not have the luxury of sight. Instead, ocularcentric architecture fosters alienation of those who depend on the sensorium of the built environment and its embedded stimuli. All built architecture is inherently multi-sensory. We experience them as we inhabit. Yet the narratives we experience remain sight dependent, and fail to engage everyone equally.

To fully understand the surrounding world, one requires input from each of the human senses. Embedded external stimuli from the built environment are read by the body at a variety of scales, with each sense describing different elements of the space. The hegemony of sight in design degrades the total experience, depriving the visually impaired a complete narrative of their surroundings.
Pallasmaa, dates ocularcentrism to classical Greek philosophy, linking the hierarchy of sight with the acquiring of knowledge. A stronger relationship between vision and architecture can also be seen in the use of perspectival representation during the Renaissance. Both Pallasmaa and Bruno Latour mention this development of visualization and the ability to convey visual knowledge through perspective drawing solidified architecture's dependence on vision. Architecture today, with the help of technology, has created a culture of knowledge and representation that separated the senses even more distinctly, where photographs, renderings and drawing provide visual information from a fixed idealized point. Even though physical three-dimensional models can contain haptic information, the documented, presented version remains a visual description and interpreted as such.

The critique of a visual bias in architecture has remained a relevant discussion in architectural theory concerning design and representation, yet the implications and consequences of the ocularcentric attitude of the discipline directly impacts the portion of the population who are neglected by ability. Codes and guidelines emerged following the Civil Right movement, yet these prescribed guidelines only address physical access, not equal access. When sight alone is engaged, certain occupants are alienated from anything other than physical access and the architecture becomes detached from the people it serves.
ATMOSPHERIC PLAY MASK AND REVEAL

Playspace for All
PLAY + LEARNING
HISTORICAL TIMELINE

1829 - The New England Asylum for the Blind opens in Wrentham, MA.

1837 - Louis Braille invents the braille system for reading and writing.

1842 - The National Braille Press begins publishing in Boston.

1854 - The American School for the Blind is founded in New York City.

1868 - The U.S. Congress mandates education for the blind.

1890 - The first public playground for the blind is established in New York City.

1895 - The National Association of the Deaf is founded.

1900 - The National Federation of the Blind is established.

1917 - The United States enters World War I, leading to increased funding for the blind.

1926 - The United Nations Declaration on Human Rights is adopted.

1939 - The United States enters World War II, leading to further development of services for the blind.

1954 - The Civil Rights Act is passed, including provisions for the education of the blind.

1964 - The National Organization for the Blind is founded.

1975 - The Education for All Handicapped Children Act is passed, requiring free and appropriate education for all children with disabilities, including blindness.

1980 - The Rehabilitation Act is amended to include employment and other rights for individuals with disabilities.

1990 - The Americans with Disabilities Act is passed, prohibiting discrimination on the basis of disability.

2000 - The National Center on Disabilities and Participation is established.

2010 - The Individuals with Disabilities Education Act is reauthorized, further expanding services for students with disabilities, including blindness.

2023 - The United States continues to lead in the development of technologies and services for individuals with disabilities, including those who are blind.
INCLUSIVE WAYFINDING

SENSE AND SURFACE

PLAYSPACE FOR ALL
Inclusive WayFiding
Manipulation of the Maze

Playable Structures
Sensorium and Deception

A sensorium is the sum of our perception, the sensation of experiences and the interpretation of stimuli imposed via our environment. The entire sensory apparatus of the body. Our five senses seem to operate independently, as five distinct modes of perceiving the world. In reality, however, they collaborate closely to enable the mind to better understand its surroundings.

John C. Lilly - Sensory Deprivation Masks - 1954
CONCEPT OF STRUCTURE
EXPLORING THE MAZE

The Ant
The Coral
The Hive
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