cHildRen iN tHe dEsIGN ProCesS
the participation, imagination and creation of "ARTscape"

Shantelle R. Fiechter
Architectural Thesis

April 26, 1996
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Architectural Thesis

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pReFace

The foundation for this project stems from my desire to reexamine the design process not only for myself, but for what I saw to be the most creative, imaginative and free-spirited architects of the future... the children. From these, I was reminded of how different spaces affected me as a child, how I grew to believe in my own abilities outside of a world that tried to convince me otherwise, and how I dreamed of visions that were so real, that I set out to discover before I doubted.

I hope that this thesis will challenge others to reach out and pull the community and the children more into the processes in which we as architects face everyday. How else can we make them understand our positions, our ideas, and our goals unless we are first willing to understand theirs?

We complain that the traditional profession is falling away. My reaction is... get out there and let them know what we are about. This does not mean that we must hold weekly town meetings on what an architect does. Of course not. It means that we must have a willingness to become more sensitive and interactive with our clients so we can milk the very best solutions out of them.

I chose to work with children because I see a lack of understanding on how much they can really offer in the design process. As we are designing more child-sensitive environments in the future, we must begin this process of working with the users of these places... the children. It goes beyond environmental education. It is the essence of what our services our intended to do... provide working solutions.
acKnoWledGeMenTs

First and foremost, I thank God for the gifts of leadership and a passion for discovery. Also, I am grateful to my family and my dearest companion, James Morris, who have encouraged me to remain sane, confident, and to have fun all the way through!

Thanks also to the following for their support:

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Mrs. Watson, elementary music teacher
Mrs. Keebler, elementary art teacher
Mrs. Wittstein, dance and vocal director
Fitzgerald Family & Kamp Fitzgerald kids
Robert Cohen, child psychologist

...and all of the children that have helped me to define "ARTscape."
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The question. Who will speak for the children?

The answer: ... the children.

Children explain and build their concepts as I observe.

abstract

As the architectural profession begins to take a renewed focus on developing more successful child sensitive environments, architects become highly responsible for understanding how children perceive the environment. The problem that arises is that we as designers try to carry our unexamined, and many times ignorant beliefs and assumptions about how children actually interact within the environment so that our plans and designs become unsuccessful blueprints of our own pragmatic and theoretical knowledge. In reaction to this problem, the question becomes, "Who will speak for the children?" My answer, as obvious as it may seem, is the children.

The focus of my research and experiments for this thesis-involving children in the design process - was based on my direct interaction and development of an after-school "architecture club" for third, fourth and fifth graders of West View Elementary School in Muncie, IN. Within this eleven week workshop consisting of two hour sessions on Tuesdays and Thursdays, I introduced these children to the design process as well as involved them in making design decisions about the project in which I chose to explore, "ARTscape."

"ARTscape" is a children's arts complex which serves to encourage children to discover, express, explore, and creatively learn about the five basic arts: drama, art, music, dance, reading/writing. The derived program for the "ARTscape," which the children changed dramatically from my early assumptions, involved an instructive dance studio, a dance exploration studio called "The Trampoline/Velcro Room," an "Active Arts Gallery," an art studio with "Trash sculpture" and "Body Art," an "Arts Atrium" containing a gigantic "light organ," a music studio with a video/audio recording lab, an "Arts library"
with media stations, an "Open Arts Theatre" with a concessions area and lounge, and other supportive spaces for restrooms and mechanical systems. Outdoor spaces were also programmed but will be covered in further detail along with the facility's program in the chapters Week 4: what happens outside?, and Week 9: let's look at "ARTscape."

As we went through this process together, I was able to understand their interpretations of what they believed the "ARTscape" to be, which was my major objective. It was exciting for me to see how their ideas became my concepts, their play blocks became my structure, their drawings became my details, and their dreams became . . . my dreams.

The "Architecture Club" exploring a concept for "ARTscape."

. . . and their dreams became . . . my dreams.
DESIGNING WITH COMMUNITY PARTICIPATION
COMMUNITY DEVELOPMENT SERIES
HENRY SANOFF

Building Community
A Third World Case Book
edited by Bertha Turner
BCB/HFB

TAKING PART
A Workshop Approach to Collective
Creativity
Lawrence Halprin and Jim Burns

COMMUNITY ARCHITECTURE
How People Are Creating Their Own
Buildings
Nick Watts and Charles Kavanaugh

Introduction
the bAckGrounD for my pOsItioN

As stated in his State of the Union address in 1993, President Clinton stressed, "Perhaps the most fundamental change our new direction offers is its focus on the future and its investment which I seek in our children." It has been realized that our society is experiencing the result of America’s baby boomers producing a boom of their own. According to recent U.S. Census statistics, 4.1 million children were born in the early 1990’s, almost as many as the 4.3 million born between 1956-57, the peak of the postwar baby boom. The April 1993 issue of Architecture remarked, "...the profession is being challenged to develop new solutions for quality child environments...and make-do design approaches of the past will no longer suffice." Architect Richard J. Passantino, president of LEA/Passantino & Baviers, which specializes in child-related projects, stated, "It's one of the most important issues that architects face."

Tony Torrice, a renowned interior designer with a background in child psychology and the founder of Living & Learning Environments, remarked, "I always try to co-design with as many individual children as I can. Working on their level, I try to see the world from their eyes. Children are naturally curious...Once children realize they can influence their surroundings, they develop the positive feelings that are essential to mastering their world." Even with Torrice's great success, the importance of the idea to involve children in the process of design and decision-making has yet to be realized by most of the architectural profession.

As conscientious designers, we have established and are well aware of the issues that concern us in the development of quality child environments. As identified in the 1994 conference "Patterns for Head Start Facilities: Designing Quality Environments for Young Children and Families," held at the New Jersey Institute of Technology School of Architecture, ideal child environments are inviting and secure; encourage self-expression as well as autonomy; instill both personal and social responsibility; crafted and scaled to the perceptions of children; flexible and responsive to the changing needs of children; interactive and responsive to the natural world; and functional for the whole community. These issues are all very important; but again, the question designer's must consider is where do the children's perspective come into play and how can participatory design methods help reveal their concerns?

The theory here is that participatory design is based on the idea that "people affected by design decisions should be involved in the process of making the decisions." I believe that it is a design tool that can not only provide the architect with a better understanding of how the users actually perceive the facility, but it can also give them the ability to include the users as participants in the design. In reaction to this, I decided that if I was going to research how to design successful child-sensitive environments, I was going to find a way to involve the children in the process of making the decisions for the project.

For the past two years, my interests in studying "creative learning environments" for children have lead me to this thesis topic to actually test the effects that children may have on my design process and design decisions. The summer before my thesis year, a partner and I developed and directed a "day-care camp" program for over 20 children that focused on keeping children excited about learning through creative games and the arts. After I had observed its success and the positive reactions from parents, I knew that I wanted to undertake this experiment for my thesis.

I believe that children can benefit in so many ways from interaction with environmental designers. By allowing the children to participate in the process, they began to understand the value of making good environmental decision. They also made connections between their role play with building blocks and drawing to the actual responsibilities of an architect within the design process. In the same way, the architect gains invaluable information about the children's needs. Naturally, the process equals the learning.
mEthoDoLOoGy

As was mentioned earlier, the basis of this study began by seeking out the participants. The first step was to define the age group I wanted to involve. This is where Mrs. Dixie Reed of West View Elementary became involved.

As I discussed my intentions for the project with Mrs. Reed, she advised me to work with students anywhere from the third grade through the fifth grade because they were at a level of understanding that would allow me to relate the issues I wanted to present. It was here that I decided to use the children involved in Mrs. Reed's after-school latchkey program, Creative Child Care, for my workshop. I then developed an eleven week schedule for my design process (see page 10) and translated it into a design curriculum for the children. Thus, the "Architecture Club" began.

... in most cultures, adults provide some kind of toy model of everyday objects for children, or children improvise them for themselves, and children from an early age can be observed delighting in organizing and moving toys, and in repeatedly changing perspectives.

- C. Spencer and Z. Darvizeh
Child psychologists
THe pRoJeCT

The proposed project that was used to involve the children in the design process was the development of "ARTscape," an exploratory arts facility for children. My intentions for this project were to provide an educational and recreational facility in which the children could discover the arts for themselves outside of the regular "school environment." However, to better understand the project, I also had the children program their own definitions and the functions of the five arts: drama, art, music, dance, and reading/writing, which are covered in more detail in later chapters.

From here, I introduced the site where ARTscape was to be created, the White River State Park of downtown Indianapolis. In order to make better design decisions concerning the site and the facility, I focused the first few weeks of the workshop towards designing a masterplan for the White River Park in conjunction with the ARTscape spaces. Through programming and explorations of interior and exterior spaces by means of drawing and building models, a masterplan was developed. From the masterplan, the children chose to look particularly at the area by the river were we spent the remaining weeks of the workshop focusing on the design for the ARTscape building. Again, these processes are discussed further in their related chapters.

In creating the masterplan for the park, I wanted the children to see that even though the "ARTscape" may begin with spaces that celebrate children within the arts, it may grow to extend into the IUPUI campus and down Washington Street toward the Circle Center to celebrate the whole community within the arts. This could help them to understand some of the urban connections that could be made within the design.

The scope of spaces within "ARTscape" would directly relate to the children's definitions of the five categories of the arts and the functions that support them as mentioned before. In order to successfully encourage community involvement between the Zoo and the White River State Park, the "ARTscape" project would work to integrate outdoor and indoor environments that could become a series or a chain of spaces that link within the White River Park, across the Washington Street Bridge, and into the Zoo. "ARTscape" could function to draw the community from the Zoo into the Park as well as become the basis of an urban connection between the Zoo, the White River Park, and the downtown center of Indianapolis.

STIMULATING IMAGINATIONS to EXPRESS the DREAMS that MOVE us to CREATE and IMITATE the SIGHTS, the SOUNDS, the SMELLS, the TASTE, and the FEEL that only the ARTS can UNMASK in the FANTASIES of our CHILDHOOD.
A student explores stair details with blocks.
The class consisted of an equal ratio of very creative boys and girls between the ages of 8-10. The average size of the class was anywhere from 12-16 students, varying with what students were available that day.

After the introductory day, we meet every Tuesday and Thursday after school for eleven weeks. The students were extremely excited about the project and actually found it hard to believe that they were the only ones that had been chosen for such a fun workshop. I found that many were knowledgeable as to what an architect was, but they did not necessarily understand what an architect does.

Upon the question of what an architect does, I heard everything from "draw and construct buildings" to "tearing buildings down." However, I heard nothing about the process of how the architect makes those decisions. Can you imagine what would happen if these children grew up believing that the only good an architect served was to "draw, build, and tear down buildings?" I may be stretching this point, but I do see how the lack of a required design curriculum in our educational systems may be one of the reasons why the community is unable to see the advantages of architectural services. In reaction to this, I hope that this class would serve as a possible spark that would encourage others to develop similar design workshops that could work to "demystify" the role of the architect to the community and the children.

By simply involving them in the design process, these children have gained a better view of what an architect does; and in return, they have given me, the architect, a better understanding of how they, the users, viewed the ARTscape. With this, the class served as a two-way learning experience for all of the parties involved.

As we went along, I saw confidence build, creativity stimulated, and perceptive abilities heightened. It may be a small number, but I am glad to say that I believe these students will grow to better understand the work of architects, and maybe some will even become architects. However, the purpose of this project was not just to educate future designers, it was to reveal to future lawyers, doctors, teachers and business owners that architects do have the ability to make a difference in the development of the environment, and that they are willing to work with the communities that use these environments.

"The design process will always retain a subjective, judgmental element. When the process works well, the result is a space with an intangible, delightful presence... our experiences with children have convinced us of the importance of that goal."

- Carol Simon Weinstein
  Thomas G. David
  authors of "Spaces for Children"
The objectives for involving these children in the design process for the "ARTscape" are as follows.

1. **To reexamine the design process.** What different approaches do children take in the design process? Is there something they do that I could try to incorporate in the design process?

2. **To understand how children perceive space through the design process.** How or what do they draw? What issues concern them, and what are their interests?

3. **To provide environmental education through an active learning design curriculum.**

4. **To see how my design methods and assumptions change through my interaction with the children.** How do I view the project differently than when I first started?

5. **To prove the benefits of involving children in the design process.** How is the designer impacted? How are the children impacted?

*Let not young souls be smothered out before They do quaint deeds and fully flaunt their pride. It is the world's one crime its babes grow dull, Its poor are ox-like, limp and leaden-eyed.*

*Not that they starve, but starve so dreamlessly, Not that they sow, but that they seldom reap, Not that they serve, but have no gods to serve, Not that they die, but that they die like sheep.*

-Vachel Lindsay
The curriculum for this workshop was simply the outline for the design process for the development of a White River State Park masterplan proposal integrating the spaces for the development of ARTscape. I will remind the reader that this curriculum was my experiment for both teaching the students about the process itself as well as involving them in the actual design decisions.

As this curriculum was designed to specifically work towards the objectives previously mentioned, it is not by any means a set formula for a standard design curriculum. In fact, I would encourage that every teacher or designer that wishes to develop any type of design workshop work to organize a completely different curriculum outline that follows their specific teaching goals - whether it be for designing; constructing; or even repairing.

As the workshop progressed, I can say that these students actually helped me to shape the curriculum when it quickly became obvious to me as to what was working and what was, as the students say, "boring."

By openly working with me through their actions and statements, the students taught me how to be understanding of their ideas and sensitive to their interests over mine. It is this type of interactive relationship that should result from any successful curriculum.

The schedule diagrammed on the right breaks down the design process and a brief description of the issues that we covered on a weekly basis in the workshop. Every week, even though it may be outlined with a particular focus, involved explorations in expressing ideas through our discussions, drawings and model building. The remaining chapters within this book will discuss each week in further detail so that the entire process of interaction between the designer and the children can be better understood.

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<td>week 11</td>
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Introduce the children to the basic elements of architecture. Activities relating general shapes to familiar forms within the environment. Imitating space through drawings, building blocks and diagrams.

Defining the five arts: drama, art, music, dance, and reading/writing. Defining the functions of the arts: rehearsal, performance, nature, gathering & recreation. Discuss/explore differences and relations.

Discuss & analyze site issues: context, major features (water, buildings, paths, landscape, etc.), traffic patterns, sun, views (good & bad), access and approach.

Program exterior activities for the arts and their functions. Discuss and analyze spaces within the site for these events. What natural features, if any, do they involve?

Explore program design through familiar building materials: blocks & legos. Further explorations at higher level of spacial detail through unfamiliar building materials: marshmallows & sticks (framing).

Explore program design through drawing. Explore different types of drawing representations: diagram, elevation, plan, section, and basic (not technical, but animated) three-dimensional pictures.

Combine the program explorations with the site issues to look at spacial relationships between the 5 different arts and their functions. How do they work together or apart?

Use the study of spacial relationships to establish three different concepts for a masterplan proposal for the Park and the ARTscape. Chose one plan and build a conceptual masterplan model.

Focus on a certain area within the masterplan to further develop the ARTscape facility. Program & design the spaces within ARTscape through activities involving the arts. (music, dancing, drawing, etc.)

Look at final concepts. Further development through drawing & building block teams for large-scale explorations. Bring my drawings and explorations into the class to get their reactions and input.

Show final design drawings and model. Have children imitate the model and drawings through their own interpretations. Present the explorations to professors and parents at West View.
week 1: shape, form and space
acTiviTieS inTroDucinG aRchiTecTure

The introductory week was used to help me gain a feel for the children's understanding of the basic elements of architecture and the role of the architect. My first activity was to help make the children identify familiar shapes and forms and relate them to what they observe in the built environment every day.

We drew the shapes and gave each of them a color identification. The children were then asked to cut the shapes out and put them together to form any kind of architecture they wanted to represent. I found that many children put the shapes together to form elevation studies; yet, some used the shapes to diagram or outline the floor plans of familiar settings, such as their homes or the school.

We then continued this form study with colored building blocks. The blocks also identified a standard of shapes, and this time the children were asked to build familiar settings. I was amazed to see that the explorations addressed many of the basic fundamentals of architecture: repetition, symmetry, landmark, approach, etc.

A skyscraper. Notice how this student used colors and forms to show how the base of this structure scaled down as it grew taller.

representation of Egyptian pyramids. Use of repetition and perspective approach noticeable.
My observations were that many of the children were at first very general in their definitions of architecture and the role of an architect until they started making their own connections between the shapes and the forms they saw around them. It was like a light that clicked on as they experimented with the structures and imitated their surroundings.

I also saw that it became easier for them to draw their architectural representations when they were able to first break down the forms shape by shape. Shapes that came together on the paper became architecture, and familiar spaces that seemed too large for them to understand became tangible.

creating space

Sketch and notes of the children's representation of an art gallery entry.
Third grade interpretation of skateboarding as "dance."

Week 2: programming the arts

Saeko Gima
deFinNing tHe fiVe aRts

The focus of the second week was to begin the first steps in establishing a program for the ARTscape. I decided to break down the arts into five categories: drama, art, music, dance, and reading/writing. From there, we entered into discussions for defining each art. Through their definitions, they were able to "brainstorm" for different types of spaces that might support these definitions. Imaginations went wild! Even though I may have laughed as some of the outrageous ideas surfaced, I quickly began to ask myself, "why not?"

Throughout our discussions, my assumptions of what a "dance" or "art" studio should be were dramatically altered by the perceptions of the children. Dancing was no longer ballet, tap or jazz. It was rollerblading, bungee-jumping and trampoline flips. Familiar painting classes were challenged to integrate "body art" - drawing and painting done with dance movements. (i.e., splatter paint, drawing with toes, coloring with fingers and feet.) They even went as far to suggest certain resources that were to be used in the sculpture workshops - recycled trash!

The following are the general definitions of the "arts" that the children gave before we discussed the program:

Drama is the expression of all aspects and stages of life.
Visual arts express life through things that we can see and touch.
Dance is the celebration of movement.
Music is the celebration of sounds.
Reading & Writing express life through words and inner thoughts.

With these definitions in mind, the children were free to explore their interpretations of all the different types of spaces that could represent the arts. However, before I was ready to discuss the program with the children, I decided that we should take a look at another side of the arts. What about the things that allow the arts to take place? What events are important to us in celebrating the arts? In other words, what are the functions of the arts?

fuNcTionS oF tHe aRts

Together with the children, I was able to define five general categories that we thought were essential in celebrating the arts: performance, rehearsal, gathering, recreation and nature. The following are the definitions that we gave for the functions of the arts:

Performance is the expression of the arts through some complete action that is observed by one or more people.
Rehearsal works to correct the acts of expressing the arts.
Gathering is the coming together of two or more people to observe or discuss the arts and the actions that express the arts.
Recreation refreshes the body or mind freely through the amusement and enjoyment of the arts expressed.
Nature is a teacher of how the arts can be expressed.

fiVe aRts and fiVe seNsEs

From my own research, it was made aware to me that a good design will always work to make connections between the spaces provided and the five senses of children. Carol Weinstein wrote in her book, Spaces for Children, "Moderate variations in sensory stimulation help maintain optimal levels of mental and physical alertness and foster feelings of comfort and playful attitudes toward events and materials." I believe that this type of sensory stimulation is extremely important in the design of any facility that functions to explore the expression of the arts. Each of the arts that we defined relate differently to children because they create a multitude of sensory events individually or in combination. With this in mind, I was able to produce the formula below as an excellent tool in considering every space for the "ARTscape" program. (see page 41 for more details.) The following are examples:

Stimulator + Art = Design Criteria
Colors that dance = moving lights
Vibrations that sing = "hands-on" instrument exhibits
In this experiment, I asked the children to help me break down the five categories that will be represented in "ARTscape." Then they integrated art, their senses, and the environment into a chart that would help them to understand what art teaches us about our environment and vice versa.

<table>
<thead>
<tr>
<th>ART</th>
<th>SEE-TOUCH-TASTE-SMELL</th>
<th>THE SUN PAINTS ON THE SIDEWALK.</th>
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<tbody>
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<td>DANCE</td>
<td>SEE-TOUCH</td>
<td>THE RAIN DANCES ON THE WATER.</td>
</tr>
<tr>
<td>MUSIC</td>
<td>SEE-TOUCH-HEAR</td>
<td>THE WIND SINGS. THE THUNDER PLAYS.</td>
</tr>
<tr>
<td>DRAMA</td>
<td>SEE-TOUCH-HEAR</td>
<td>THE TREES ACT OUT THE SEASONS.</td>
</tr>
<tr>
<td>WRITING/READING</td>
<td>SEE-TOUCH-HEAR</td>
<td>MY FEET WRITE NAMES IN THE SNOW.</td>
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"We cannot define beauty any more satisfactorily than we can define the arts. Yet most of us can recognize it when we see or hear it, and the more we experience it, the more sensitive we become to art's appeal."

- Ernest L. Boyer
  (Pres. Carnegie Foundation for Advancement in Teaching)
week 3: looking at the site

View of White River State Park looking south. Site on left, Washington St. Bridge - middle.
White River State Park

The site chosen for "ARTscape" is located in the downtown center of Indianapolis, IN at the White River State Park. Indiana's White River State Park is an urban park well on its way to becoming a composite of educational, science and technology, and cultural attractions -- center stage of a linear greenway in Indianapolis which will reclaim the river as an asset. Its vision is to offer the community opportunities to celebrate the "Spirit of Indiana" through discovery and recreation. The site's opportunities offer a perfect setting for the development of "ARTscape" because the White River State Park shares the same goals to reach out into the community and draw a wide variety of interaction in all activities including the arts.

A major development with a focus on excellence, the park hub involves 250+ acres to be constructed in stages and straddling the east and west banks of the White River as it bends through the near west-side of downtown Indianapolis. Presently, the site offers a wide variety of opportunities in recreation and cultural experiences through the Indianapolis Zoo, the Eiteljorg Museum, and a future IMAX theater. Its neighbors include a growing university - - Indiana University/ Purdue University at Indianapolis; the Circle Center Mall; the expanding Indiana Convention Center and RCA Dome; the Indiana State Government Center; and a future baseball stadium for the Indianapolis Indians.

Being centrally located, the park can be accessed by several surrounding communities, families and children. Its landscape and context offer many avenues for education and community awareness. The most important link is the direct access to the Zoo which is made by the Washington Street Bridge. The development of the bridge provides a safe and exciting passage between the activities of the Zoo, the Park, and "ARTscape." The children even entertained the idea of including the animals in the art events. Along with these features, the children will feel invited and encouraged to be exposed to the arts. Together with the Park, "ARTscape" will strengthen the vision for educational and recreational opportunities for the community.
Future IMAX Theatre.


Eiteljorg Museum.

Context drawing of White River Park by fourth grade child. Notice that the "ARTscape" building is represented with a $ sign. The child may be reacting to his increased understanding of how much goes into a building after being involved in the programming and design.
aNaIYsis

To introduce the children to the site, I brought in a series of aerial photographs, maps, and pictures of every building and major landscape feature within the park as shown previously. I was amazed to see how quickly they were able to establish an understanding of the site layout and the connections within the park. A few of the children had been to the Zoo before and were somewhat familiar to the White River Park because they remembered seeing the gigantic smoke stack on the Indiana Power Plant.

We started our analysis by first looking at how different buildings related to our site. Obviously, the children were wanting a better connection between the Zoo and the site. However, connections to the new baseball stadium, the RCA dome and the Future IMAX were also very important.

Urban connections of site with Zoo, RCA Dome, IUPUI, Government Center, Circle Center Mall, and downtown.
As the children became more familiar with the site, we discussed other issues such as landscape, paths, traffic patterns, sun and views. It was found that existing landscape in the Park is close to nonexistent. Some trees exist on the grounds directly around the Eiteljorg museum, the pump house, and a few are scattered at the park entrance and around the power plant.

The only obvious path is the old Washington Street and bridge. In an earlier study, I took two children out onto the site to walk around. Their reaction was that the bridge was too long and boring. It was evident that their perceptions of distance were based on the fact that there was a long distance between the activity of the Zoo to the activity of the park. If landscaping or other visual stimuli were added to the bridge, it might break down the scale to where the children could relate to it activity by activity.

There is essentially no traffic within the park since the Washington Street is only open to pedestrians. Car access to the park is presently made off the new route of Washington Street, east of the park, and from NIFFS at IUPUI, which is directly northwest of the power plant. Presently, pedestrian access can be made from the Zoo by crossing the bridge, from the sidewalks south of the Eiteljorg museum, and from IUPUI through the NIFFS parking lot.

White River State Park. Existing buildings and landscape. Circles represent the three major areas where connections are important. "ARTscape" will be the middle connection between the Zoo, bridge and the Park.

Access Diagram

1. Washington/Maryland Sheets
2. Missouri/Nest Streets

Location Key: Parking
Site Analysis from the children's reactions of the site. Some of the comments made were as follows: Where's the entry to the park? There's nothing here but a lot of dead grass. Is there anything over there? (Standing at Zoo looking across the bridge) That building looks like it has some kind of disease. Is it haunted? (Reaction to the old grain house.) Obviously, their perceptions are affected by the visual stimuli or lack thereof - landmarks, pleasant aesthetics, quality landscaping, etc.- all of which the park desperately needs.
aNaLySis...

The major features of the site that the children considered to be important where the river and the canal. They were mainly bothered by the lack of interaction with the river. They also desired that the canal, which is presently proposed to terminate in front of the old grain building, be extended even further to connect to the entry of the "ARTscape."

Together, we visualized the canal as providing a "waterway path" for pedestrians to enter by paddle boat into the "ARTscape." From their reactions of this analysis, I was able to draw some underlying concepts for the "ARTscape" site - its connection to the riverfront and its approach from the IMAX via the canal and a canal walk.

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Child's layout of the Park. Shown are existing buildings, a proposal for a rollerblading path, and the canal extension into the site. The "happy face" represents the celebrated termination of the canal into a lagoon.
Analysis...
week 4: what happens outside?

*Fourth grade drawing of an exterior landscape with connecting sidewalks.*
**eXteRior pRoGraMMiNg**

After we had spent a week looking at the site issues, I wanted to focus on outdoor spaces that the children wanted to involve within the "ARTscape." I feel that there has been a lack of consideration among designers in developing quality "outdoor" environments for children even more so than "indoor" environments. Carol Weinstein, a developmental psychologist, stated, "Natural things have three qualities that are unique: their unending diversity, the fact that they are not created by people, and their feelings of timelessness." With this in mind, the class began to look at different activities that we could program that would encourage "outdoor art experiences."

As we considered the arts and their functions, we developed an "exterior program" for the ARTscape. The spaces that are being proposed are as follows:

- **Amphitheater and stage** for outdoor performances. Natural grass seating so it can be used as a picnic and recreational area as well. Stage will have a sculptural backdrop.

- **Sand Sculpture Pit** for sand play and sculptural explorations.

- **Lagoon for "water art"** - dancing, creating sounds, and "splash art." Will be the terminal point for the canal extension and will incorporate the stage for the amphitheater.

- **Rollerblading path** will twist, turn and dance throughout the park. Will be separate from normal pedestrian path and will include ramps and jumps for "rollerblade dancers."

- "**ARTscape" courtyard** will be an open area where artists can paint or chalk draw on the concrete while the public can observe. It will also include a "paintbrush forest" - an animated forest of 12' tall paintbrushes.

Early sketch showing relationship between natural amphitheater, stage, rollerblading path, lagoon and pedestrian path

"**ARTscape" terraces** will be incorporated as public gathering spaces for entertainment, eating, observing, or simply relaxing by the riverfront.

A **Sculpture garden** for public display of "trash art" and other sculptural explorations. Will also be available as a "quiet space" for reading and writing outside.

**Canal walk** extension will make a pedestrian connection between the proposed ending of the canal (just south of the old grain building) and the "ARTscape" building on the east bank of the White River.
eXteRior pRoGraMmiNg . . .

From my observations and research, I found that children learn from the environment through three different techniques:

1. **ACTIVITIES.** Events that stimulate their five senses.

2. **COGNITIVE MAPPING.** Physical and social mapping through observation of point vs. path, distance, scale, proportion, color, texture, and the people they relate to within or around the space.

3. **PLACE IDENTITY.** Freedom to express their individuality.

In considering the program for both the interior and exterior environments of ARTscape, these three techniques are important to keep in mind throughout the design process. We have talked about the relationship of the five arts to the five senses. The ability of the children to differentiate the spaces through cognitive mapping is demonstrated by the specific "names" that they established for the exterior spaces in the program. Like color labeling, this helps them to connect and relate one space to the next. In the same way, the inclusion of sand and water areas, which are elements that allow the children to manipulate and interact with the physical environment, demonstrate their need for place identity. These spaces provide different elements that stimulate active learning and individual development.

*Canal walk extending from future IMAX. Notice rollerblading path with "jump wall" adjacent to pedestrian path. Visual separation by keyboard flooring pattern of rollerblading path and square patterns of the pedestrian path. Dancing sculpture figures become "light holders."*
week 5: how can we build it?

Building block exploration.
deSigN eXploraTioNs thRouGh builDinG

This week focused on building conceptual models to explore the different “arts” spaces. The first thing I discovered was that many of the children actually constructed “built diagrams” or even specific details within a certain space before they looked at the overall form of the structure. This approach intrigued me because I usually develop a conceptual model that focuses on an overall massing study, and then it works its way into the study of the interior details.

Their approach actually challenged me to reexamine my own methods of how I explore space through models. With this, I began to work with the students by building . . . backwards.

At first, the children looked at different spaces by using familiar construction materials - blocks and legos. As they were becoming comfortable with exploring various spaces through the blocks, I decided to push their construction abilities even further by introducing them to more unfamiliar building materials.

Sketch of a child’s building block interpretation of a stage/fountain design.

This student refers to his drawing of an art gallery to build with legos.
marshmallows and toothpicks?

Build out of marshmallows and toothpicks? ... "No way!!" That was the children's immediate reaction. However, as soon as I constructed a cube by connecting the ends of the toothpicks with marshmallows, they were ready for the challenge.

I began this experiment by dividing the class into five different "construction teams," each representing one of the "arts." Each team was asked to discuss the spaces they wanted to create to represent their "art" program in model form. From there, the team worked together to create their own criteria and construct their individual models.

As construction began, they soon found that they had to make more decisions beyond the program they had established - mainly, the structural integrity of their forms. Through a repeated process of building and collapsing structures, I saw that many began to use two toothpicks to create stronger columns instead of one. (Primitive form of composite columns.) As the structure would slowly begin to lean, someone would call out to another team member to quickly construct a support while the other temporarily balanced the weight with his or her fingers. Their teamwork helped them to adjust their design with every cautious step. Before they had realized it, they had been through their first structures class!

Once the teams were finished, I challenged them to yet another dilemma - combining their different "art" spaces into one structure. As all the models were placed on the table, I began to hear them...
marshmallows and toothpicks?

discuss their separate solutions for their "arts" program. It was like a community coming together to find a way to successfully integrate all the "loose parts" of the area into one plan. This type of interaction is what makes participatory design so unique because the palette of solutions is always varied.

As they pieced the forms together, they began to see how equal proportions became a necessity in making connections that worked. Models that did not connect as easily were adjusted according to the structural proportion that was being established.

When the whole composition was completed, I asked them where the entry was and why they chose it in that location. Every child had a different opinion and justified it with an "adventure story" of how one might enter and travel through the building.

As each one explained their "journey," they began to distinguish between major spaces and supportive spaces; circulation vs. gathering spaces; public vs. private spaces; and so on. They quickly found that the focus of a building can mean a variety of things as well. Some children looked at focus as the highest point in the building; yet, some saw it as the lowest part of the structure. The biggest space did not necessarily mean the "center" either. Most of the children considered the smaller spaces as personal or even "quiet" areas.

As the children stepped back to look at the overall construction, they were amazed. The process had brought forth a lot of good teamwork and carefully thought-out solutions.
week 6: what does it look like?

Drawing explorations.
deSiGn eXploRaTionS tHrouGh dRawiNg

In the same way that constructing models helped the children process design solutions, I wanted to see how they would represent their ideas through their drawings. Again, the class was divided into teams representing the five arts. As new teams were formed, new ideas for the program for their "art" spaces were also recreated. However, each child was this time free to express their own interpretations of the team's program through their individual drawing methods.

The most interesting thing that I observed of children's drawings is their ability to represent so many different views and ideas in one picture. They are not bothered by a picture that moves from plan to elevation to section in one pen stroke. In fact, I found myself trying to design with this "multi-level" drawing technique to represent several ideas in one picture. It is not always easy! However, I discovered that it is a great way to develop a design by considering all dimensions simultaneously in one drawing. (Refer to final drawings for examples of this technique.)

Children are also excellent at highlighting what is important to them through their drawings. They do this by either drawing a certain feature at a different or usually larger scale than the rest of the objects relating to it. Also, when they are interested in a particular element, they will use color to accent that feature. Even as adults, we use color to highlight in a similar way; however, drawing at overblown proportions and "animated" scales is not used as often as it could be. When I wanted to present certain ideas to the class, I tried to use this "animated" technique as well. Many times, the children were able to pull more information out of my "animated" drawings than I could see for myself. Their imaginations allowed for one idea to spill into another.

Notice how the perimeter of this room is represented in plan with the entries on each side; however, the interior of this perimeter is actually an elevation of the room showing "hanging boxes" from the ceiling and various "stepping" levels for play adventure.

This drawing is a section of a music room. The student uses floating notes to represent sound coming from the speaker.
week 7: what goes where?

Spatial diagram of an art room formed out of building blocks.
sPatiAI reLaTionShiPs

After the children had some experience with exploring different programmatic ideas about the separate "art" spaces, the next step was to start combining the spaces into workable relationships.

Instead of exploring the arts individually, we began to connect spaces that supported each other and discussed how they related. I began by creating a series of different "space" combinations within the five "arts:" dance + music; drama + dance + art; reading/writing + drama, etc. I then gave each child a different combination to diagram either by drawing or by modeling.

I quickly noticed how the students related similar environments to the "mapping" out of their spatial diagrams in their drawings. Many drawings were closely related to school plans. Others seemed to revolve around a particular element, such as a staircase. (A staircase being a familiar sign at the entry of most homes.)

In reaction to this, I think the students are challenged to create more interesting spatial relationships when they model spaces instead of drawing them. I found that more creativity and spatial exploration resulted from the students identifying certain blocks as different features and moving them into different compositions. There was more freedom to change decisions when they realized that something was not working. Unlike a drawing, they are less committed to the decisions with the placement of one block.
sPatiAl reLaTionShiPs . . .

I am glad that we did this exercise before we had established the final "ARTscape" program because a variety of new solutions and ideas came from every "arts" combination. The most difficult part was deciding which solution worked the best and which combinations were more exciting. The final program decisions for the "ARTscape" are represented in "week 9" of this book.

These children have been more successful in exploring spatial relationships through modeling this music and dance space. At the bottom, they have created entries that represent "music" tunnels were different sounds are heard as one enters the space. With the blocks, they also explore patterns and forms.
three masterplan concepts developed for the White River Park.

week 8: putting it together
conceptual masterplan

The final phase, before we focused on developing the "ARTrscape," was to combine the children's understanding of the site issues and the spatial relationships of the "arts" into a conceptual masterplan for the White River State Park.

We started as a group in establishing the major issues concerning the site that we wanted to address in the masterplan proposals.

1. Bridge connection. A need for a redevelopment of the Washington St. Bridge to establish a pleasant connection between the Zoo & the rest of the Park.

2. Park connection. A need for a pedestrian link between the "ARTrscape," IUPUI, and the future IMAX.

3. River connection. A need for user interaction with the river through a redevelopment of the floodwall on the east bank.

This is a conceptual masterplan proposed by one of the teams. The black areas represent new development. In this scheme, the ARTrscape is represented by the star. The striped path represents a rollerblading path that goes through "underwater tunnels" and around the site. A facility for "Arts & Animals" is proposed by the Zoo. A "Putt-putt" is proposed south of the paper factory. Two landmark towers are proposed along the existing Washington St. corridor with a open grass field for recreation between them. A lagoon is proposed at the entry of the Park just south of the future IMAX.
4. **Urban scale connections.** A need for a pedestrian link between the future baseball stadium immediately southeast of the site as well as a "welcoming" entry at the far east point of the Park that invites the people and activities of the downtown center.

5. **Main gathering space** connecting all of the different facilities; the Eiteljorg, IMAX, and the ARTscape; and their activities.

After these issues were discussed, three different "planning" teams were developed for the creation of three different masterplan proposals.

Each team presented their proposal to the class, and the "positives" and "negatives" of each proposal were discussed. After all of the teams had voiced their decisions, we regrouped as a class to combine the positives of each proposal into one final masterplan.

In addition to our proposal, I had the children create a conceptual masterplan model to represent our solutions. The masterplan is represented in "week 11" of this book with the final drawings.

*Early sketches exploring a "dancing rollerblading" path as a connection for the ARTscape to the entry of the Park.*

*The Architecture Club developing a conceptual masterplan model out of their favorite building materials . . . marshmallows and toothpicks.*
week 9: let's focus on "ARTscape"

Early concept for "ARTscape" site development.
pRoGraMMinG aRTscaPe

Through a complete process of programming the "arts," analyzing the site, programming exterior "arts" spaces, exploring design concepts and spatial relationships, and establishing a masterplan for the site development, the children were ready to look specifically at the ARTscape building.

In order to keep this building at an appropriate size, we had to make some tight decisions on the spaces we wanted to include. The following gives a brief description of each space, the character of the space, and the activities within the space that the children wanted to represent. Even though square footages were considered in the design, I have chosen to omit them from this program because I feel that it is not relevant at this stage within the project - which focuses on reexamining the design process.

Visual arts studio. This studio will be an open workshop that will offer a variety of creative art workshops everyday. Examples of creative workshops: "Body Art" is the creation of art by painting, drawing, or coloring with one's entire body; "Trash Sculpture" is the exploration of three dimensional forms with recycled trash.

The arts studio will open up into the sculpture garden which will publicly display the children's work. The garden is to be a more natural and quiet space for observing and for reading and writing in the natural environment. It shall be separated from the other major outdoor activities.
An "Active Arts gallery" will connect the upper story of the dance building and will extend as an observation deck over the visual art studio. The gallery will represent the children's work, but it will also contain "hands-on" exhibits throughout the corridor.

The gallery is an extension of the exterior rollerblading path which begins in front of the power plant and twists and turns up to the outdoor amphitheater. From here, it ramps upward around the grass seating into the second story of the dance building.

As it enters the building, it overlooks the instructional dance studio below. The dance studio, like the art studio, will offer a variety of creative dance workshops everyday. Above the dance studio will be the "trampoline/velcro" dance studio. In the center of the space is a large trampoline for creative dance explorations. Light projectors will capture the silhouettes of the dancer's moves on the adjacent walls for the observers. One wall will be completely covered with velcro to explore the difference between "fixed" and "free" movement. Supportive spaces and an elevator are also provided in the dance building.

In front of the dance building will be the ARTscape courtyard. It will contain the "paintbrush forest" - an animated landscape where creative artists can chalk draw on the concrete - and a large "sand sculpture pit" for sand molding explorations.

As the "active arts gallery" extends into the main building, it will enter into the large "light organ" atrium. A lyrical staircase will spiral down to the ground level of the atrium floor. At the bottom of the stairs, a large keyboard - which reacts to being stepped on - will shoot shafts of light up through the organ pipes - each one representing a different "light note."

The atrium will open up into the music gallery where different instrument exhibits will be displayed for "hands-on" learning. Adjacent to the gallery will be a large music room that will be tiered for choir and band rehearsals. Inside this space will also be a music/video recording studio for the study of sound and video production.

Further down the gallery corridor will be an "arts library" that will contain "arts" literature for public use. The library will also contain computer labstations for computer explorations within the arts.

The upper and lower outdoor terraces will be used for public gathering, eating, and interaction with the river. The lower terrace will open up into the "open room" theatre below ground level. The theatre space will change with every play that it takes on because the actual set will become the whole room - as it is with theatre in the round. The audience then becomes apart of the set. Concessions and supportive spaces will also be included both upstairs and downstairs.

*Process sketch looking at the idea of a "trampoline dancing" room. Ceiling below becomes the "bouncing mesh" of the trampolines above.*
week 10: developing "ARTscape"

Architecture Club challenged to explore "ARTscape" at a larger scale with blocks.
pRoCess deSigN

The last week was used to combine all of our drawing and building experiments to further develop the ARTscape program. I brought in my drawing explorations and models and shared them with the students. Together, we discussed and developed the concepts that helped me to create the layout and design for the ARTscape.

The following represents a few process sketches and models that were used in our discussions of the program.

*Conceptual model focusing on the detail of the interactive music gallery. Drums become steps and hiding places. A large drum becomes apart of the wall.*
pLayFul sCheMatiCs

LIGHT ORGAN & STAIRS.

Children construct the rollerblading path that leads up to the ARTscape building.

"GIANT" INSTRUMENTS

"DRUM" WALL
Model. Aerial view of ARTscape.

week 11: check it out
fiNaL dRaWinGs

The final week of the Architecture Club was my opportunity to share the final decisions that were made for the ARTscape. The children were very excited and were amazed to see their ideas and concepts take form.

On the last day, we set up a gallery and presented the drawings and the model to my thesis review board and some of the children's parents. Even during the review, the children were very responsive to the questions that were asked and were quite confident in their statements about the architecture. Overall, the parents were very supportive and were thankful that their children had the opportunity to gain such a neat experience.

The following pages contain the ARTscape drawings and the model. The decisions made establish a character for the spaces and represent the process of this project; therefore, the ARTscape facility itself was presented at a schematic stage where further decisions of structure, exact square footage, and details can be made.

*Animated perspective of the approach to the ARTscape from the IMAX.*
Concept

Site Focus - Ground Level
1" = 25'

DOWNTOWN

RIVER

PARK

ZOO

PARK
"Artscape" Courtyard
Sculpture Garden
Gallery Section
1/2"=1'-0"
ARTscape Model

Aerial View. Washington St. Bridge to the south.

Aerial View looking northwest.
ARTscape Model

View of sculpture garden from IUPUI. Looking southwest.

View looking southeast.

View from Zoo. Looking northeast.

View looking north.
Closing Statements

Overall, with the help of the children, I believe that this project was successful in all of the stated objectives mentioned earlier. My reactions are as follows:

In reexamining the design process, I have found that the children have turned my way of approaching a project, whether it be through models or drawings, inside and out. Through my observations, I found that children tend to design the details of the space first before they even begin to program the activities of the space. This has helped me to break out of a "regular" pattern within my own process of beginning with a set program, the "big picture," and working towards the details at the end of the process. It has become even more relevant to me how important it is for designers to always keep reworking their process all of the time. Just like children, your imagination increases as you are challenged by the different avenues that you consider.

By involving the children in the design process, I have learned that children perceive space through the activities that stimulate their senses; through their ability to relate one space to another in their development of cognitive mapping; and through their understanding of place identity. In reaction to this, I have developed a heightened awareness of space that connects from the indoor to the outdoor through all aspects of design - planning, building, and landscape. In order for me to give them an understanding of the project first, it forced me to consider all of these aspects equally throughout the process. This is why I found it to be very beneficial to look at developing a masterplan first, even though I knew the location and focus for the "ARTscape" facility. Again, it helped me to be sensitive to the urban connections that surrounded and affected my design.

In providing environmental education, I found that the children gained a better appreciation for the responsibility that goes into the design for a "built environment." Their ability to draw solutions from their own explorations also gave them more confidence in expressing their individual opinions through their own interpretations.

I now have a hope that there is a group of about twenty students, who now have a better understanding of the role of an architect and the design process, that will probably be more willing to work with an architect or even pursue the field in their future careers. However, it is more important that these children have simply developed an increased ability to be stewards of the environment.

The children have also influenced my design methods and assumptions through their "fresh" interpretation of the program, both interior and exterior. As I have stated before, designers must be willing to "wipe the design palette" clean with every project. In other words, they can not approach every project in the same way using the same standards and similar programs. I can honestly say that this project would not have produced the same results without the involvement of the children because I probably would not have interpreted the "arts" in the same light as they presented it to me.

In reaction to all of these observations, I am confident that interacting with children in the design process is beneficial to all of the parties involved. The only thing that is necessary is a willingness on the part of the designer to commit a certain amount of quality time and sensitivity to carefully observe and listen to the children. It is a process in itself to understand the way children relate their feelings and opinions. Therefore, I believe it must take a process to fully understand their needs.

Again, I hope that this project will encourage others to reexamine their own process. I am very grateful for the opportunity to work with these children throughout this design because I know it has given me a better understanding of how important user participation is in making good design decisions. It is this understanding that will continue to improve my commitment to a quality environment throughout my career.
bibLioGraPhy


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