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ARCHITECTURE FOR FUTURE USERS

A CHILDRENS MUSEUM ABOUT ARCHITECTURE

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DEPARTMENT OF ARCHITECTURE
COLLEGE OF ARCHITECTURE AND PLANNING
BALL STATE UNIVERSITY

PAUL PUZZELLO

ARCHITECTURE
FOR FUTURE
USERS

A CHILDRENS MUSEUM ABOUT ARCHITECTURE

Bachelor of Architecture Degree Program
Thesis Design

Thesis Design Committee

Arthur Schaller - Professor of Architecture - Studio Critic

Robert J. Koester - Professor of Architecture - Thesis Critic

Kenton Hall - Professor of Art - Thesis Critic

c Paul Puzzello 1992
DEDICATION

Thanks and love to Mom and Dad for your unlimited support, both tangible and intangible.

To Tom and Fred for the inspiration in my early years.

Most of all, to my wonderful fiancee' Catherine, whose unconditional love, sacrifice, and support got me through the worst. This is our year babe! I love you very much.
ACKNOWLEDGEMENTS

I would like to extend my appreciation and respect to the citizens of South Bend, Indiana. Without their commitment to better their environment in the urban context, without their commitment to keeping culture alive, and their commitment to preservation, the wonderful site for which I have studied for this project would not exist.
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Paul Puzzello / Thesis Brochure / May 1992

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- END OF BROCHURE -
As students of environmental design, architects are educated in the language, poetics, and rhetoric concerning space and building design. They are taught sensitivity to context, and to materials through creative design and construction methods. Unfortunately, as practitioners, most architects deal with clients that are uninformed about these ideas. The profession therefore suffers in many ways. The first thing is, client-architect relations are not as fruitful as they could be. Even the most talented architects that are in tune to a client's needs would benefit from a client that was in tune to his or her own needs. The architect himself, is he master of his profession? Is he merely a contributor to the steady stream of thoughtless approaches to built work that clutter our environment? Many people, both in and out of the design profession, blame each other. Some say there are not enough adventurous clients who would be willing to take on "daring" designs. Excuses such as "low budgets" seem to be commonplace in mundane design work.

There are many contributors to bad environmental design, and the truth is, we are all to blame. Even if one is a talented, creative, design professional, how has that designer really shown the public at large about the positive impact good environmental design can deliver? Good environmental design, or architectural design specifically, can portray more than strong corporate images. We spend most of our lives in habitable structures designed and built by man. We should all be more than educated about architecture, we should be nurtured as we mature.

Nurturing the masses at the child level is the approach taken for this thesis project. This means to create a site specific facility in the form of a children's museum. This facility would not only expose children to technical and programmatic issues concerning building, but stimulate and foster the enigmatic creativity that all children possess. This creativity would be manifested in many forms: sculpturing, painting, drawing, and in expression through drama theater. In addition, children would have the opportunity to just have the chance to explore, experience, and to communicate and interact with others outside of school.

As adults, after experiencing this facility in their hometown as children, they would be better users of architecture. Through this association of memory people would be more keenly aware of built space around them. The more creatively talented, after being
nurtured at a younger age, would grow up to be better designers. These nurtured adults will ultimately be more in tune to the built environment and would also better communicate as architect and client if ever put in that position. In an essay written by British architect, Richard Rogers, he writes:

"...The quality of our built environment is abysmal. Roundabouts instead of piazzas, tower blocks standing in car parks instead of parks, ring roads, concrete glass boxes of the post-war years do not testify to the fallacies of an aesthetic philosophy or the inhumanity of Britain’s architects. They represent something far more real and disturbing; the fact that one of the most important aspects of our public life—its architecture—has been sacrificed to short-term public economies and to private profit. The architectural crisis that has received so much attention of late will not be resolved, if it is resolved at all, by the exorcism of some ghostly dogma called Modernism, but by a revolution in the importance of public rather than private values, to spaces and experiences shared in common rather than personal interest pursued in isolation, to mankind rather than the individual.

...Until government becomes seriously involved in giving direction, rampant profiteering and petty political rivalry will rule and ruin our cities. Beautiful cities have always been the result in enlightened patronage by those in power, working with the creative talents of the day. The great parks, majestic avenues, and public squares, will not suddenly appear."

This project does not ponder the idea of beauty in our cities as a novelty, but something that is a sociological crisis. It wants to raise the awareness. If we are to remain sane, if we are not to create waste, then a new understanding must take place. This thesis starts to address this issue of public involvement in architecture.
INTRODUCTION / DESCRIPTION

Site

The following 2 pages are aerial photographs of the site. The plan north arrow is indicated on the left of the smaller photographs of the site. The aerial photograph on page 3 has the walking path indicated in pink marker. The smaller photograph on page 3 shows detail of the concrete piers. On page 4, the smaller photograph is a view looking southwest.
The children's museum will be run by a director who will head three departments: a curator, teaching staff, and maintenance and security. Teaching staff will consist of visiting faculty in various backgrounds from art and environmental design, to building technology consultants that will assist curators in exhibitions. Maintenance and security personnel will branch off and follow a chain of management.

In addition to the active faculty there is an additional need for support staff that consist of a secretary/receptionist, and gallery and exhibition set-up crews.
PROGRAM: Space Requirements

Entry / Lobby / Exhibition

USERS:
People entering and exiting the building, information booth with attendant, janitorial.

ACTIVITIES:
Entering and exiting the building, standing and conversation, transitions to different exhibit areas and classrooms. Certain functions and gatherings will happen also with ability to extend out of doors.

EQUIPMENT:
Planters, possible benches for seating, information booth with seating for attendant, signage for area locations, and drinking fountain. The information booth will contain communication equipment such as surveillance camera screens and phone / intercom system hardware.

FURNITURE:
Movable benches and planters, rolling desk chair for information attendant.

TIME OF USE:
Daytime access with posted hours for other than faculty use. Keyed access by certain faculty only, after daytime hours. Time of use will extend into the weekend. There will be no need for the children to enter the building after hours since all exercises will be during the day unless special arrangements have been made. The exhibition section of the building will be lockable, but access is public because of the thru-way created by the trail that the building is tied to. Therefore that section of the building will be accessible 24 hours a day.

THERMAL:
Keep this space in comfort range (70 - 80 degrees F) during the cold season. Strategically located ventilation both with operable windows or with mechanical means to deliver proper air exchange. Proper control of air temperature will be maintained with air lock system. Ability to open atrium space to outdoors will happen with operable indoor-outdoor separation for weather and occasions that permit. Heat gain from the sun through glass conduction will be dealt with by the use of shading devices and special glass.
PROGRAM: Space Requirements

Entry / Lobby / Exhibition

ACOUSTIC:
Effort to block out street noise.

LIGHTING:
General lighting with spots in certain locations to accent signage or special exhibit. Architectural accent lighting. Wall and floor outlets for maintenance equipment. Most of the daytime lighting will be handled by natural light.

SQUARE FOOTAGE:
Approx. 3000 sq. ft.

DESIGN CRITERIA:
The entry / lobby / atrium space will be on the main floor and connect entry with certain transition areas such as elevators and stairs. It will also act as a welcome center for visitors and lead them to various exhibits and features. An information booth will be situated at the center to make sure it is seen and to help visitors with orientation. In addition to the vertical transportation, flanking this entry will be the gift shop, theater, snack shop, and support spaces like bathrooms.

Intention is made to flood this area with natural light through expressive architectural means and to give the space an exciting visual appeal and to articulate the technology of reducing heat gain. The floor material will handle large amounts of foot traffic and be easily cleaned and waxed to hold its finish.

The space will also accommodate gatherings and small functions, and in the event of nice weather, be able to be opened to an outdoor area to extend the space, and to allow fresh air to enter.

Exposed structure from above shall allow banners and special exhibits to be suspended from it.

In addition to providing a transition area, this space will also house exhibitions of children's work done in the facility.
PROGRAM: Space Requirements

Gift Shop

USERS:
Visitors to the museum, attendant / cashier, and janitorial.

ACTIVITIES:
Purchasing of various items related to the museum contents and philosophy. Items would range from posters, art supplies, books and trinkets.

EQUIPMENT:
Shelving, both freestanding and wall mounted. In some areas, bottom cabinetry to instantly surplus stock if needed. In addition to glass display case, other item specific display equipment will be necessary. For the cashier area: cash register, storage cupboards and drawers, with some lockable storage. Communication equipment such as intercom and phone will be at cashier area.

FURNITURE:
Described above as various cabinetry.

TIME OF USE:
During regular museum hours. After hours access will be done with key. Since gift shop will be a separate area, a lockable gate or door can be used to secure shop at night or after hours.

THERMAL:
Temperature will be kept in comfort range (70 - 80 degrees F). Humidity will be carefully controlled because of merchandise. Proper air circulation will be maintained at a certain air exchange per hour.

ACOUSTIC:
Separation from outdoor street noise.

LIGHTING:
General and specific, consisting of both natural and artificial. Certain areas would need spot lighting for display purposes. Outlets for maintenance equipment will be provided. Accent illumination may also enhance architectural features of the space.

SQUARE FOOTAGE:
Approx. 700 sq. ft.
PROGRAM: Space Requirements

Gift Shop

DESIGN CRITERIA:
The space will be inviting and not compete with, but compliment, the merchandise. The gift shop will be adjacent to the atrium space so that visitors will see it as they enter and exit the building. Floor treatment will be an acoustic material, such as carpeting to help give a softer feel.
PROGRAM: Space Requirements

Gallery

USERS:
Children who participate in the studio and classroom workshops and their instructors, in addition, visitors to the museum. Additional support staff like janitorial and exhibit set-up crews.

ACTIVITIES:
Exhibition of children's work. Grouped classroom discussions of work displayed.

EQUIPMENT:
Exhibition panels that can be temporarily taken down and reinstalled. The panels will have a takable surface. Various sized bases to support models or three dimensional work. Floor and wall system that can be hydraulically raised or lowered in different areas to accommodate different exhibits desired. Lockable gate to secure after hours.

FURNITURE:
Movable bench seating to observe children’s work. Planters.

TIME OF USE:
During regular daytime museum and workshop hours.

THERMAL:
Temperature will be kept at comfort level (70 - 80 degrees F). Non-drafty air movement is important for exhibited work stability.

ACOUSTIC:
(Nothing specified in this category)

LIGHTING:
General lighting will be used after hours for security. During exhibition hours, very specific lighting accent and spot lighting will be needed in specific areas. Therefore accent light should be very flexible to accommodate
different needs. Other needs would include ability to control intensity and color. Light source would not just be restricted to the ceiling, but come from the floor and walls as well.

SQUARE FOOTAGE:
Approx. 900 sq. ft.

DESIGN CRITERIA:
The intent of the gallery design is to incorporate the ultimate in flexibility and control of how pieces can be exhibited. The floors and walls will be controlled by hydraulic lifts that can position areas in the gallery to any desired height and angle. Ability will also be to open gallery to the outdoors to create an indoor-outdoor exhibit.
PROGRAM: Space Requirements

Theater

 USERS:
Children that put on musicals, plays, and skits. Audience of 150 people that include faculty and visitors. Stage to accommodate approx. 20 musicians. Janitorial and set-up crews. Other users will be featured lecturers.

 ACTIVITIES:
Singing concerts, plays, and skits put on by the children who participate in the museum programs. In addition other uses will include films and regular guest lecturers for both children and the faculty. The theater space may also be rented out during periods of non-use. Finally, video taping capabilities.

 EQUIPMENT:
A screen that can be lowered and raised when needed, a full time on stage piano to accommodate rehearsals and recitals. Storage area for stage equipment, seating and risers. Various sized risers. An in-house PA system complete with microphones and rack system for lecturing and general amplification purposes when needed. Various specialized lighting equipment and location for storage. Room will need to be provided above the stage to raise and lower backdrops and scenery. Certain areas of the stage will have hydraulic lifts for stage effects. Finally, a large projection TV mounted on the ceiling that makes use of the projection screen explained above, for video media.

 FURNITURE:
In addition to some of the equipment mentioned above, folding chairs for most of the functions held.

 TIME OF USE:
Space will be open at all times with the ability to secure the entry when necessary.

 THERMAL:
Proper air circulation and exchange is critical when theater is full of people. Proper gauging of thermal comfort zone is important because of heat gain through crowded theater.

 ACOUSTIC:
Sound separation from outside noise is critical. It is also critical, of course, that the sound from the stage be able
PROGRAM: Space Requirement

Theater

to reach the audience through the geometry of the ceiling to
avoid dependance on electronic amplification.

LIGHTING:
Stage lighting is to be as critical as programmed in gallery
space, with an infinite amount of different possibilities
with regard to color, intensity, and location. Lighting
will need to be controlled from a master console during
performances with some spot lighting to have separate
control to follow figures on stage. In addition to specific
accent and spot lighting for the stage, general house
lighting will be used during non-performance times.

SQUARE FOOTAGE:
Stage - Approx. 600 sq. ft
Theater - Approx. 1200 sq. ft.

DESIGN CRITERIA:
The entry to the theater will be located flanking off of the
lobby / atrium space so that large amounts of people can be
handled without having them wander through museum. Theater
could be dealt with by putting it in the round, however
because of the complex mixed use of the this space and
trying to accommodate all the different demands, it will be
conventional insofar as the location of the stage. Seating
will be made possible by folding chairs if desired, but
mostly, depending on function seating will be on the floor.

Walls on the right and left side will be capable of hanging
additional projection screens and in addition, accommodate
presentation media. Entire theater enclosure will be
designed acoustically for good resonation of stage sound.
Flanking the theater will be a audio/video room for storage
of slide projectors, film projectors, and VCR's.
PROGRAM: Space Requirements

Experiential

USERS:
Visitors to the museum, faculty, set-up crews, children as part of the visitors, and janitorial staff.

ACTIVITIES:
Children that make use of the exhibits, and explore all the learning devices. In addition to permanent exhibits, the general exhibition space will accommodate traveling exhibits as well.

EQUIPMENT:
(similar to gallery explained above)
In addition, most equipment will be exhibit specific.

FURNITURE:
(similar to gallery explained above)

TIME OF USE:
Museum daytime hours.

THERMAL:
(similar to gallery explained above)

ACOUSTIC:
Separation from rest of the museum because of noise created by children using exhibits.

LIGHTING:
(similar to gallery explained above)

SQUARE FOOTAGE:
Approx 5000 sq. ft.

DESIGN CRITERIA:
The exhibition space is designed the same as the gallery space, however, the experiential space will be a bit larger in square footage. This space is expansive, with a tall overhead plane to fit the sometimes large displays that will be put there. In addition to freestanding pieces, things will also be able to be suspended from above. Floor material will accommodate large amounts of foot traffic.

Access from the outdoors will be provided both for people and for vehicles for large displays, or be easily accessible from freight elevator.
PROGRAM: Space Requirement

Studio

USERS:
  Participating children and faculty.

ACTIVITIES:
Work on various art projects and general discussion. Art
work will vary from painting and other 2D work, to
sculpting, modeling, and molding with various media.

EQUIPMENT:
Task lighting fixtures. Potter's wheel. 10 easels.
Microwave oven and small refrigerator.

FURNITURE:
4' x 8' tables, 20 chairs for children, instructors table
(4' x 4'). Storage cabinet, hand washing sink with counter
area and upper storage cabinets.

TIME OF USE:
Regular daytime museum hours.

THERMAL:
Temperature should remain in the comfort zone (70 - 80
degrees F) depending on the humidity. Windows should be
operable to allow ventilation when needed. Non drafty air
movement, but still maintain proper exchange.

ACOUSTIC:
Proper wall separation in between classrooms so as to not
let noise from children transfer into other classrooms where
discussion might be happening.

LIGHTING
General overhead lighting at 175-200 footcandles.

SQUARE FOOTAGE:
Approx. 700 sq. ft. ea.
PROGRAM: Space Requirements

Studio

DESIGN CRITERIA:

Classroom / studio spaces will have free-standing furniture to allow for movement if necessary. Floor material will be material that will endure many media spills daily and be cleaned and re-cleaned. Movement to the outdoors is important as in the other spaces, weather permitting. Access to the outdoors will be made either by a simple 3'-0" door or by opening the entire wall.

Space should be well lit by both natural and artificial means. Expansive glass will also allow for outdoor views.
The site is located along the Saint Joseph River in downtown South Bend, Indiana. The downtown skyline is to the west of the site, and the river is to the east. The building will sit on an existing series of concrete, vertical slabs, 15' high x 30' long and 2' thick. The slabs or piers run in a linear progression with the lengths facing each other. The buildings overall form will be dictated by these piers so one side will face the river and the other will face the downtown skyline. Both sides will take advantage of the views that exist, especially across the river. Proper protection from heat gain will need to happen at the south and southwest portion of the building.

The site is also a connector for a walking path that exists in the area. The building must not violate the progression of this path, but enhance it. Access to this path must not terminate.

Provide additional dock areas for fishing and docking for small boats and river crafts for tours.
COST ESTIMATION (post design)

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*Estimated Cost is in January 1992 dollars
Research started as a site search. Many different inherent things could happen at the site, so choosing one was not real critical, however one thing was required, that it be an urban location. While visiting my hometown of South Bend, Indiana over Christmas break, it gave me the inclination to search in the best metropolis I knew, CHICAGO. As I was planning my trip, the weather was getting bad which gave me the sinking feeling that Chicago was out of my grasp for a thesis site. Time was diminishing before I had to get back to Muncie. While driving towards downtown South Bend to run some errands one day, I drove over a bridge which carries Colfax Ave. a street which runs right beside our cultural mecca, Century Center. Also adjacent to this bridge I was crossing, was a series of concrete, planer supports that use to carry an old factory which had long been dynamited. The supports have since been carrying a walking bridge that has been turned into a small park next to the Century Center. This lead me to the perfect idea for a site. These concrete piers were a part of, and were adjacent to, some of the very things I needed around this childrens museum facility. Other things that intrigued me was the nature of the concrete in its stage of deterioration. In addition, the manner in which the piers were arranged, their repetition, was interesting.

The site has many organizing elements. In some ways it hurt the final outcome of the design because of this restrictive nature of being very linear. However, with something as experiential as this facility, the only way in which it can be experienced is in a linear fashion, with things unfolding.

A programmatic issue that dealt with the design is the fact that the facility could not interrupt the existing pathway. At the same time, the facility, or parts of the facility, must be locked.
As design was in its schematic phase, research wasn't really spent reading too much. Instead, I chose to do more intangible investigation. I spoke with many people and asked them to think back to when they were a child, what sorts of things did they enjoy? What places did they frequently visit? What did they do there? What made the place special? Was it a place to escape? Was it a place to have fun? Most of the answers and images that were portrayed were that of places near water, places that were enclosed or high in a tree. Sometimes just out camping in the backyard was a fond memory.

Many special memories as a child go along with something built or assembled. Things like a go-cart, snow fort, or a treehouse seem to stand out in most peoples mind. Other memories that extend farther back into childhood, play that involves more primitive interaction with self-made habitable spaces, include cardboard boxes, even hiding under the covers with a flashlight. This association with memory was something I knew I had to grasp in the design of the facility.

One memory that's still in my mind was a time my brother and I strung a blanket cover between our beds, creating this enclosure. We had to have some sort light so we used the lamp on our nightstand. We took off the shade, put it in our space, and it gave us all the light we needed. We found a hole burned in the mattress of one of the beds that the lamp bulb was too close to. We could have easily started a fire because of our neglect. That hole was a continuous reminder of just how enclosed that space was!

After all this interaction with people and their retrospect, including my own (which was probably my best resource), I knew what kinds of things should be happening at this place for children. After all, this facility should be a place where children will want to visit again and again.

In addition to the factors talked about, I found a list of factors that helped me define certain characteristics of the design that invite children:

1. An environment having a circulating function which is

2. comfortably safe and having a sufficient variation with

3. symbolic space, and site, also having
4. a section where children may experience dizziness and

5. a short-cut

6. open spaces larger and small

7. a general environmental structure being "porous" (being able to move through and around, filter)
Further research culminated into visitations to various children's museums in this area. The one I got the most from was obviously in Indianapolis. Many people told me that I could get great information from children if I talked to them one on one and ask them their likes and dislikes. This would probably be true, but I gained much by being a passive observer, watching children at play, looking at subjective things and taking notes, than by having them verbally telling me likes and dislikes.

The children's museum in Indianapolis was a wealth of information. I visited the museum on a busy Sunday so that I could be assured of what was popular, and what was not. Although my project was much more specialized than the children's museum in Indianapolis, many things are very usable. Some things I found were: children love to crawl into spaces that are scaled to their size. They like to investigate and discover. They ask a lot of questions. Children seem disinterested with things like building little things with small modular pieces, but would rather assemble objects they can crawl into or ride. They had more fun hearing the sound a button made when pressed than to listen to the narrative that followed.

One thing that really intrigued me was this room that was filled with interactive play structures and games. This room took up about 2500 sq. ft. and it was jammed with kids using it. As a matter of fact, museum personnel were stationed at its entry point to turn kids and their families away because of fire codes.

Another place that showed me how kids love interactive, experiential play structures was in South Bend where much has been done in one of the local parks. Many people got together, donating money and time, to build a wonderful play structure. Its maze-like tunnels and mini treehouses, swings and slides get so much use that at any given daylight hour the place is packed with kids. These kinds of experiences are a positive thing in terms of enclosure.
BODY: Project Design Solution

In Terms Of Urban Context

The site, as stated in Methodologies, is situated on a meandering pedestrian walkway, running along the river, that constitutes a circuit of about 2 miles. This path connects and passes through many key landmarks in the redeveloped downtown. In addition to being a fitness trail, the path is very picturesque at certain zones and one discovers many niches along the way.

One of the parks that are along its perimeter is Howard Park. Howard Park is a moderately wooded park right on the river. It has many places to play, with greenspaces, and swings, in addition to hosting annual cultural events and art shows. In addition, Howard Park boasts a seasonal, recreational ice-rink that also hosts hockey events for area high schools.

Another landmark on the circuit is the pride of South Bend, The East Race. This raceway formerly provided power to many of the industries that once mushroomed along the river bank. (One of those being on this thesis site). The raceway was filled in about 50 years ago, but has since been dug out again for re-use. In 1984, the raceway was dug out, lined with concrete, and in addition to being a beautiful place to walk around and visit, it has become a great recreational spot for kayaking. If you're so inclined, $1 will rent you an inner tube that will take you down the raceway also. The East Race is also an international local for competition in kayak races, and is designed with obstacles for that purpose. The East Race is one of very few in this country. It is used by many children in the area in the summertime.

The site for this project is situated right over this path, which adds to one of the things that make this site work, its accessibility.
BODY: Project Design Solution

In Terms Of Site

The local of the site is bounded by several interesting features which aided in its selection. Century Center, which is located just southwest of the site, is a multi-use cultural / community center which hosts many different events from high school proms and banquets to automotive shows. In addition, Century Center holds art classes for adults and children and has an extensive art gallery. The Century Center, which was designed by Phillip Johnson, is a city icon which continues to be a pride of the downtown.

The site is bounded by two streets that look down onto the site. St. Joseph Street to the north, and the Colfax Street Bridge to the north. St. Joseph Street, also Business US31, is a gateway to the downtown from the south and runs one way north. People from out of town arrive downtown on this street, so people visiting the museum would have an easy time locating the museum. Colfax is a two way street that comes from neighborhoods and schools to the east. An offramp, which is diagrammed on one of the site photos, would stem from the east side of the river at the beginning of this bridge to the left. This offramp would create a four way intersection at Niles Ave. and Colfax, just East of the bridge at Howard Park.

This offramp is the access to museum parking. The parking garage would be carved out of from underneath St. Joseph street and be connected to an underground tunnel that leads to the museum elevators. (See plan underneath main floor plan).

Part of the site design is the location of two greenspaces that are situated at both end of the concrete piers. The north greenspace will contain play structures and the like. The south greenspace, which exists as a paved park, will have tree plantings that reinforce the axially of the building and act as a transition to the exterior. The paver bricks that exist on that island will be torn up a replaced with sod to provide additional greenspace.

Being along the river, the facility provides two areas where the water can be approached. One area at the midpoint of the line of the building, stairs descend to a boat launch platform that provides boat rides on the river. The other location is near the entry point at the lower entry point of the building. This area is a long, existing fishing dock.
In Terms Of Site - (continued)

The large, expansive brick wall that is adjacent to the site on Century Center will be painted white at a certain location, and used as a screen for projecting images of the children's finished artwork as a sort of extension of the exhibition space. Motorists that drive over the Colfax bridge will have a clear view of these images. This idea adds to the incentive to doing work there. Imagine getting your artwork projected on a billboard size wall! Imagine that in a child's mind and the excitement, and self-pride it would create.

VIEW OF SITE LOOKING SOUTHWEST
FROM COLFAK STREET BRIDGE
In Terms Of Structure

The physical structure of the building is one of the key elements in its expression. It is meant to be walked among and through. As can be seen in the plan, some of the massive columns are punched in order to walk through it and experience the structure and its mass. The structure also reinforces the idea of a filtering space where things are layered, both in the vertical and horizontal direction. The structure of the design is one of the things that raise question. "Why is that positioned in that manner?" "How is that shape better in that situation than another?" In the tower portion, the structure is organized according to an expression of its weight. The reinforced concrete being on the bottom, the steel, triangulated columns in the middle, and the treehouse structure on the roof, built of wood members is the lightest.

The tower structure, and the structure throughout, give an implication of a tree, with haunches and the tapering of the tower. The floors cantilever from central columns or "trunks". In the exhibition space, the floors are suspended off of a cantilevered beam from its central column. The massive columns are then socketed into the soil by a series of pyles.
In Terms Of Scale

There are particular areas that must be reserved and accommodate children in relation to scale. In the tower, as one progresses upward, the ceiling heights get progressively smaller. If one is ascending up the inner stairwell at the tower, there are 4' high doors that would be noticed at intermediate landings. These doors lead to 4' high spaces that a child may enter and experience. These spaces are fitted with scopes that can be viewed through to get private, individual views to either the outdoors or the inner structure of the building. (See cross section of tower). Throughout the building, there are many varying heights. This variation stimulates comparison of different scales.
The tower contains the bulk of the facility. At the subterranean level, is located one of the entry points explained earlier. This entry, which comes from the parking garage tunnel, takes you up in the elevators, through the ground, up to the main level, or any other level in the tower. The main level of the tower contains office space for the director, curator, etc.. The second through fourth levels house studio space where children work with various media. The fifth floor is a computer lab that the children would have access to explore the computer station and its possibilities for use. The rest of the floors are reserved for experiential play structures and building technological exhibitions. These floors would be flexible for different uses.

The roof of the tower is accessible. The wood structure is intended for treehouse building. Wood members could be positioned in its grid to assemble many different configurations. Wood would be provided. In addition, the roof is an incredible vantage point.

The long, two story form that violates, and stabs the side of the main exhibition space is reserved for traveling exhibits. This ominous form adds a sense of mystery and inquiry as to its contents so visitation is irresistible. The traveling exhibit space was inspired as sort of a missile with a payload to show from another place. It is foreign to the regular exhibition space, as are its contents. In addition, the form points to the waterfalls up the river, thus creating framed views when inside.

The main exhibition hall on the south end of the building, is where childrens work will be exhibited. Exhibition will be on both the first and second levels. Cladding at this area will be transparent to allow for natural lighting to flood space and to allow for views across the river to the east. The space can also be viewed into from the outside as a functional articulation of what is being shown.

The theater is used for putting on plays, for guest speakers, films and presentations. It is entered at the main level. Support spaces include storage off of the stage level. (See floor plan of level underneath main level).
The building is moved through and entered by a series of ramps that carry people to the main level. Entry at the water level that pierces the concrete piers ascends up a ramp to the main level two ways. There must be two ways because the exhibition space can be accessed 24 hours a day as a sort of public atrium, so as to not violate the circulation of the existing path. At an intermediate point on ascension to the main level on this ramp, a U-turn can be made to get to the main level where the tower can be accessed, in addition to the cafe. This zone must be locked after hours, so it has a separate entry.

Another entry at the north end of the building exists that bridges over the greenspace. This entry is directly over the one previously described, and enters at the main level. An entry that was described earlier was that which arrives from the parking garage tunnel and ascends by elevator through the ground, to the main level and any floor in the tower. There is one more entry that is located on the south end of the building on the main level, off of the exhibition space.
Floating in the river are sculptors of various architectural icons that are intended to spark question (see sketches). These sculptures are to be seen by people out on boat rides. They also act as a sort of transition to the museum.

The tower is wrapped in an architectural fabric that is rigid and formed into panels to give it insulative qualities. This cladding is not opaque but translucent to flood the spaces within with natural light. Another functional aspect of this fabric-like cladding is to be a blanket, and actually keep the building warm by creating a plenum space between it, and the building itself for the furnaces located below the half spaces in the tower. (See tower building section). The symbolism of this blanket, of course, stems from the notion of childrens fetishes about being under blankets and creating spaces with them. The fabric idea extends to the deck above the cafe. The graceful, zoolmorphic forms hold up the fabric canopy to create shaded zones.

Another symbolism of the artistic nature of the facility is the large wall between the theater and the exhibition space. This large wall can be an annual project by which the participants can collectively design and paint an image or a series of images. This large billboard-like painting is along the ramp that ascends into the exhibition area. The entire wall will also be seen from inside the building because the entire face of the building that faces that wall is glass. (See model photos)
BODY: Project Design Solution

In Terms Of Mechanical

The mechanical system is broken down into 4 zones. Zone 1 is the tower’s upper floors covered by the mechanical equipment located in the 4' high spaces below the children’s rooms. Zone 2 is the right end of the main plan that covers the cafe/gift shop, atrium, and offices. The mechanical room for zone 2 is located on the landing of the main ramp heading to the exhibition space. Zone 3 is the left end of the floor plan, it covers both upper and lower floors of the exhibition halls. Zone 3 also covers the sandbox area located on the upper lefthand of the main floor plan. The mechanical room for zone 3 is directly below the traveling exhibit space below the main floor. Zone 4 is the theater which is handled by equipment located in the adjacent spaces off to stage left.

With the location near the river there an opportunity for the use of hydro-thermal heating and cooling. Especially cooling, since the river is quite deep at the midpoint. Heating and cooling is a concern because of all the expansive glass. At the upper lefthand portion of the plan, adjacent to the sandbox, there is a double layered heat sink glass wall that will reduce some heat gain at that location. That is a southwest exposed wall.

See floor plans and sections for mechanical room locations.
This entire scheme are, as you have read tied together with a lot of different concepts and organizing elements. The overall form and organizing factor of the plan was linear by virtue of the linear form of the plan. The fact that views couldn’t be obstructed to the Century Center wall projection screen necessitated the compacting of spaces to the right on the plan into the tower. In addition, a tower had to exist at some location because of the importance of vantage points. These specific designed vantage points exist both on the roof and in the half spaces through the viewers.

The whole scheme wasn’t designed to be cohesive in style, but eclectic, so as to be more experiential. Many dualities exist such as eclecticism, order and disorder, and violation etc. In other architectural situations some of these conflicts might not have been appropriate, but due to the nature of what we’re dealing with, a child’s mind, how could this design be anything but whimsical.

The vision of this project is not one of creating emotions through space, but a design that responds and has meaning, one that has expression and an affinity for artistic sensibilities.
ENDNOTES

1 Richard Rogers, "A Case For Modern Architecture,"  
RIBA JOURNAL March 1990 : 35,36

2 Man Senda, "Hamamatsu Science Museum For Children,"  
THE JAPAN ARCHITECT January 1987 : 46-9

VIEW OF EDGES OF SITE LOOKING  
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"We can either withdraw into an inner world hoping to find support in nostalgia or face up to and try to solve what is a social, technical and cultural crisis. This apocalyptic change requires as part of a new global understanding a radical architectural response."

-Richard Rogers
STUDY MODELS
STUDY MODELS
STUDY MODELS
STUDY MODELS
FINAL MODEL