Collisionism Study II

Attempts are made to have interactive piece grow from the site. Hierarchy within the form is eliminated. The collision is addressed through removing the skin at the point of collision.
Collisionism Study III

A datum surface is introduced as the dominant compositional element. Refinement of linear pieces also occurs. Rhythm and repetition are studied as well as quality of space.
Collisionism Study IV

Refinement of the datum ribbon as an interactive piece with light is studied. The collision is articulated by means of the skylight element becoming linear, thus reducing the implied hierarchy of the central space. Entry is also addressed as a hint of the experiential space.
Planar Conceptual Study

The dominant spatial pieces are abstracted out of the form. This is a composition of elements.
Datum Study

Components are set within a plane in an arbitrary fashion. A colonnade of uniform height and rhythm becomes an orientation device.
Theater Elevation Study

Articulation of structural system. Scale lowered by the introduction of a dark color above ten feet. Structural beam defines perceived vertical surface. Panels create shallow pyramids to develop shadow patterns.

Support Space Study

A composition of forms and integration into the ordering rationale is studied.
Entry Study

Here traditional notions of entry, directionality and focus are studied.
Ordering Rationale Study

The vertical hierarchy within the realm of the entire complex is investigated. The ground plane manipulation, based on the ordering system, is also studied.
GRAPHIC ANALYSIS
Site Analysis

The following is a graphic analysis of some of the components of my design - at the site scale.
Building Analysis

The following is a graphic analysis of some of the components of my design - at the building scale.
Water collection/event system

a. Water tubes
b. Waterfall
c. Cooling fountains
Composition of primary shapes

a. Drop-off
b. Entry pavilion
c. Rotunda
d. Theater
e. Tower

f. Inward focused pavilion
g. Organism
Wind protection/event system

a. Turbine
b. Berms
c. Wind wall
Circulation system
Building/site datum

a. Colonnade
b. Wind pipes
Light elements

a. Light wall
b. Rotunda
c. Central skylight
d. Exhibit
e. Light exhibit space
EXPRESSION

One of the most difficult aspects of this thesis investigation was creating an architectural vocabulary which had some iconic meaning to children. Architectural expression generally falls between a "Disney World" imagery and a minimalist, brutalistic approach. "Children's" architecture often relies on the "Disney World" realism to elicit responses from children. At the other extreme, which I feel is far more dangerous, is the "who cares what the exterior looks like, children only care about the inside."

Using these as extremes, I had to decide where it was most appropriate for my architectural expression to fall. Since my thesis didn't focus solely on children, a new variable was introduced, which would have a definite impact. The next decision became which of the criteria should or would dominate the final vocabulary.

The ultimate goal was to combine all of these diverse influences into an architecture which would conjure up memories for adults as well as children.
The Town

The Town is not only with regional prominence in the Wabash area, it is also visually identifiable being the courthouse.

The introduction of as well is not visually establishing the courthouse by my tower.

The
The Tower

The tower element which was incorporated into this complex has great significance, not only within the site, but also at an urban and regional level. Occurring at the major bend, as the Wabash River passes through the Lafayette area, it has strong symbolic and visual prominence. West Lafayette, has no focus or identifiable symbol at this time. Lafayette, being the county seat, has the county courthouse, particularly its dome, as a focus. The intention of the tower element is to introduce a focal point for the exploratorium, as well as to the West Lafayette community. It is not intended to compete symbolically or visually with the courthouse, but rather to establish a dialogue. Conceptually, the courthouse becomes the symbol of authority, and my tower a symbol of whimsy or childhood.

The imagery became very important. I had to develop the tower in such a way that it had some meaning to children. The initial imagery I looked at was agricultural silos. Living in Indiana, these represented the most common vertical element children could identify. In order to have the tower become a dynamic element, a wind turbine is incorporated into the top. The turbine would generate power to operate floodlights set within the semi-circular enclosure. The blades of the turbine would refract the light to different degrees, depending on the velocity of the wind.

The traditional symmetry of tower imagery is respected to a point, but to add visual interest, an asymmetric was employed to contrast the symmetry.
SOUTH ELEVATION
Tower Study

This is an attempt to develop an iconic vocabulary as well as an articulated expression.
West issues

The two pavilions were to be heavy elements. Each pavilion was 240 feet high in one piece. The way the two pavilions in the water entry allow the water to flow back, back, back, back, back, back, back, back, back, back.
West Elevation

This elevation reveals the collision of the two polemic volumes which occurs in the experiential portion of the exploratorium. The pure pavilion form is dramatically contrasted by the high industrial appearance of the interactive piece. The west face is articulated in such a way that it blocks undesirable winter winds, yet allows summer breezes, cooled by moving over water elements, to enter the building. The entry sequence to the entire facility is also illustrated. The entry pavilion provides a visual base for the tower which lies beyond. The sequence actually begins a quarter of a mile back, since vehicles approach on axis to the tower.
North Elevation

This elevation is intended to abstract basic notions of shelter and enclosure. The imagery is linked to ideas of classical pavilions, where the defined space is inwardly focused. The crane element, which supports the entry bridge, is utilized as a hint of the experience which lies beyond. Since this elevation is exposed to undesirable forces, it maintains a very low profile through berming. This also allows the experience of entering the space to be much more dynamic, because the full extent of the interior space is never revealed on the exterior.

South

The art of the wall provides a focus of the...
South Elevation

This elevation reveals the full complexity of the experiential volume. The interactive wall weaves its way through the facade, providing a datum for the many complex elements of this elevation.

East Elevation

This elevation also illustrates the collision of opposing volumes. The east face has been articulated to reveal ideas of structural rhythm and expression. Windows, which frame structural columns, are alternated with windows for viewing from the entry ramp.
PATTERNS
Patterns

In order to understand how natural and human forces may affect an environment, it is critical to analyze a wide variety of abstract patterns. Each element, when isolated from others, allows a designer to understand potentials inherent in the context.
Figure/Ground

1. Study of mass and void
2. Illuminates city planning process
3. Identifies rhythms, mass, patterns and groupings
4. Density, enclosure, open space, voids.
5. Fabric definition
6. Insights to circulation paths
7. Spatial hierarchy within city
8. Urban spatial patterns:
   a. Movement
   b. Association
   c. Assembly
9. Destination points
10. Transition areas
11. Historical analysis - development movements
Street Patterns

1. Identifies paths
2. Indicates hierarchy of movement
3. Intensity of use
4. City geometry
5. Organizer patterns
6. Violations of established orders
7. Illuminates major axes
8. Defines rhythm and repetition or organizing system
Vegetation
1. Buffer zones
2. Wind shadows
3. Enclosure
4. Shadow patterns
5. Edge delineator

Water
1. Cooling potential
2. Activity zones
3. Spatial delineator
4. Dynamics of changing space
1. Clues to historical significance

2. Evolution of urban fabric

3. Organizational principles
DESIGN ISSUES
Design Methodology

The following is a listing of critical design issues which established a framework for implementing my thesis ideas. Each has different emphasis depending on the level and scale of design. Their respective listings do not imply a hierarchy.
Spatial Perception

Related to the ideas of "events" and how they are perceived.

1. Sense of place
   a. Enclosure
   b. Intimacy
   c. Character

2. Kinesthesia
   a. Path
   b. Focus
   c. Destination

3. Character
   a. Light
   b. Rhythm
   c. Theme
   d. Detail

4. Spatial Definition
   a. Mass
   b. Volume
   c. Figure/Ground
Building Component Zones

These zones provide the "medium" in which the events can occur.

1. The overhead: defined as the area above seven feet
2. The surround: floor line to seven feet
3. The ground plane
Design Principles

1. Simplicity through complexity - complex, divergent influences synthesized to result in clear, understandable order (Intangible)

2. Simplicity through simplicity - composition of simple shapes resulting in understandable order (Tangible)
Collisionism

Architectural decisions related to planer and volumetric collisions.

Building/Site Interaction and Dynamics
Light Exhibit

By studying the relationships between the sun's altitude and azimuth, it is possible to develop a system for display rotation. An element of given length will cast a shadow with a difference of six units between December 21st and June 21st. If this is then divided by two, we have the number of months in a year. Utilizing this premise, an aperture one unit high on a vertical surface will produce a pool of light two units long on December 21st and one quarter of a unit long on June 21st.

The information from the azimuth and altitude suggests that a six unit long parallelogram grid exists along each side. Using this as a tool would allow for someone to position exhibits according to the aperture that illuminates a given area.
Spatial Patterns

Interior and exterior spaces will fall into one of three categories:

1. Movement: connection between termini
2. Association: space which accommodates casual gathering and interaction of people
3. Assembly: formal geometries of human interaction

Hierarchy

1. Shape
2. Placement
3. Size
Perception

The events which are created can occur at various levels of consciousness.

1. Primary: A child can make a direct correlation between what he/she sees, hears or touches and what idea is being stated. The child will quickly become bored with such a space.

2. Secondary: Children are unable to make a direct correlation between what they perceive and the idea behind it. However, if curiosity is aroused, they will think about what they saw and will eventually understand it.

Rhythm/Repetition

1. Size
2. Shape
3. Detail

Datum

To give spaces the feeling of a system it is often necessary to think of a room as an organism.

Three -

1. Line
2. Form
3. Pattern

Axis

Zone -

understand 

1. View
2. View
3. Sun
Datum

To gain full understanding of individual spaces or the entire complex, some reference system is necessary. It is especially critical as an orientation device.

Three types of datum include:
1. Line of reference
2. Plane of reference
3. Field of reference

Axis

Zones or lines of influence are critical to understanding potentials for events based on:
1. View
2. Wind
3. Sun
PLAY AND CHILDREN

"Play is the way the child learns what no one can teach him. It is the way he explores and orients himself to the actual world of space and time, of things, animals, structures and people...play is a child's work."

L. K. Frank
Child play. The child plays in the next stage will play focus is on children. begins which to carry satisfactory play, begins of a game common goal.

There with play. development growth, a ability. outlet.

It is
Children progress through four stages of play. The first stage is called solitary and a child plays best alone or with an adult. In the next stage, known as parallel play, children will play alongside other children, but their focus is on the play medium, not the other children. The third stage, associative play, begins when interaction with others is necessary to carry out the play activity to complete satisfaction. The final stage, cooperative play, begins when children can follow the rules of a game and cooperate in their play for a common goal.

There are many important benefits associated with play. Beyond obvious ones, such as development of social skills and physical growth, a child advances his problem solving ability. Play can also serve as an emotional outlet.

It is generally accepted that there are five types of play areas. The first is the natural play area, the most basic space within the five types. It is a space full of life and continuously changing nature which cannot be found in any of the other four spaces. The primary play activity in this area is an exploration, discovery experience.

The "Open Space" is large like a plaza or square. Perhaps it would be better to call it a games field, as a large space is necessary for children to gather and play games.

The streets in which children meet other playmates are the linking network between various children's play spaces. In the case of this exploratorium, the issue of street is dealt with at a conceptual level. The street actually becomes the circulation system linking the diverse spaces together. It also serves as the datum (discussed later) for the experiences and events of the building.
The Adventure Space is full of disorder. Analogies to a construction site are commonly made about this space. Confusion is far more stimulating for a child’s creativity than a controlled, planned space.

The Hide Out, which is known only to children, is a place where they can meet secretly in groups. This space may be considered as a place where cooperation and the independent spirit is nurtured while developing a children’s community.

My exploratorium encompasses each of these at various levels of development. Obviously some of the spaces could only be dealt with at a conceptual level.
PASSIVE

PLAYHOUSE COMPLEX

ACTIVE

MUSICAL GONGS

SAND TABLE

CLIMB & SLIDE MOUNTAIN

WATER WHEEL

GIANT PLAYTHINGS

SPINNING BALL

Sketches from
"A Playground for All Children"
New York City. Dept. of City Planning
Reflection

Now that all is said and done, I am pleased with the solution of this project. My design process was extremely frustrating and unmanageable at times. Yet with each failing, I was actually gaining knowledge as to what this "thing" wanted to be.

It would be wrong to say that this building represents the finest possible design solution. That solution will never be. Since design is a never-ending cycle, I would be deceiving myself to say this design is complete. This was difficult to accept when I was still questioning aspects of my project even as I was completing my final drawings and models. Yet, I realized that if questions weren't arising, my design skills would stagnate. From this thesis I have learned a great deal, and realized even more how much there is to learn.

It is fitting that this project is the culmination of my academic career. In my mind it is the most ambitious project I have attempted. It addresses many of the issues which are important to me in architecture, and will serve as a foundation to build upon.

With this project I end my career as a student at Ball State, but I am only beginning my career as a student of architecture. For me, architecture is a fine art - an art which is exciting, dynamic and enlightening. As long as I remain an architect, I will continue to be a student of architecture...
"There are some things you don't even know you knew, until you're asked."

Ingerwood
WIND PATTERNS

SPRING

SUMMER

FALL

WINTER
Interior Design Criteria

1. Anchor spaces
2. Image
3. Flexibility
4. Colors
5. Materials
**Temperature**

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[Diagram of sunshine distribution]
Exterior Design Criteria

1. Parking
2. Accesss/egress
3. Paving
4. Lighting
**Temperature**

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Preliminary Space Summary

Orientation Lobby ........................................... 500 s.q.
Central Exhibit ............................................. 8000 s.q.
Wind Space .................................................... 1500 s.q.
Large Motor Space ........................................... 500 s.q.
Science Space ............................................... 1200 s.q.
Motion Space ................................................. 2000 s.q.
Color Space .................................................... 3000 s.q.
Shapes and Patterns ........................................ 1500 s.q.
Creation Space ............................................... 600 s.q.
Quiet Space .................................................... 500 s.q.
Green Space .................................................... 800 s.q.
Toy Library ..................................................... 1500 s.q.
Planetarium .................................................... 1000 s.q.
Auditorium ...................................................... 6000 s.q.
Dramatic Play .................................................. 1500 s.q.

Restaurant ..................................................... 5000 s.q.
Food Preparation ............................................. 1600 s.q.

Shipping/Receiving .......................................... 5000 s.q.
Mechanical ..................................................... 1000 s.q.
Preliminary Space Summary, cont.

Director's Office ........................................... 225 s.q.
Administrator's Office ..................................... 100 s.q.
Secretary/Receptionist ..................................... 100 s.q.
Meeting Room ............................................... 375 s.q.
Conference .................................................... 150 s.q.
Break Room .................................................... 200 s.q.
Medical Space ............................................... 100 s.q.