Psychological Effects of: Light and Color

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Construction Process
Abstract

There are psychophysiological effects of space through the medium of light and color. The technique of shaping space begins by understanding how light and color in a designed environment can evoke the intended response. Light and color have an impact on our psyche. The construction of a “pop” art museum will be utilized to create a place and space for the contemplation of art and self. The aspects of light usage will be showcased as a reminder of time and changing seasons. The placement of the museum on the canal plot in downtown Indianapolis will improve its ambiance and create a “must visit” site. Theories from others on the subject of light and color will be explored. Also interpretations and analysis of architectural works will be embodied from significant contributors. The city of Indianapolis is under urban redevelopment. It seeks to utilize its opportunity to bring and keep people within the downtown area. The construction of a beautiful, eye catching “pop” art museum will do just that.
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The premise of my thesis is to explore the psychophysiological effects of space through the medium of light and color; more precisely light and colored light. Light and color adds dynamism to space and form, which enables the inhabitant to become more aware of the external surroundings. Light puts us in touch with the cosmos. Without controlled light through apertures, color, and filters, we as human beings loose our sense of time, change of season, and connection to the everyday. In essence we begin to live in a vacuum, only to see life through tunnel vision.

The technique of shaping space begins by understanding how light and color in a designed environment can evoke the intended emotional response. According to Tom Porter color connotations and biases are unique to the individual, but there are similarities among different cultures. Attitudes and responses toward colors originated from early learning processes. In essence this reaction is inborn from our primitive ancestors.

Colors have connotations or labels placed upon them that may be inherent in the visual impact of the color itself. For instance, red is considered a warm arousing color whereas blue is a cool color that is associated with isolation and sadness. The color green is a calming color and yellow equates to vitality, happiness, and knowledge.

White light embodies the entire spectrum of colors. Sir Issac Newton discovered that by bending light through a prism, thus reducing the speed of light, the spectrum becomes visible to the human eye. Louis Kahn refers to this visibility of matter, in the form of all things, as spent light.

A study conducted by P.C. Berry has proven that two spaces at the same temperature, but opposed in color, changes the perception of comfort in the inhabitant. The group in the red room felt uncomfortably warm and the group in the blue room felt uncomfortably cool. So, how and why does light and color have such an impact on our psyche and our perception of the space round us? How can these elements be used to create a positive experience?
Project: Description and Programme Outline

The project will be expressed in a “pop” art museum. The intent of the museum is to create a place and space for the contemplation of art and self. In essence, it is a museum of the everyday. It begins to translate aspects of “pop” art into constructed form. Light is then showcased as a reminder of time and change of season. The project is meant to integrate the characteristics of certain seasons as well as the everyday movement of the earth around the sun. Color is used to interpret the essence of the target season.

The galleries constitute the spaces for the art and the introspection spaces form the transition spaces, thus linking all spaces together in a meaningful way.

The canal is a beautiful point of interest in Indianapolis, so the project is also intended to produce a node of activity at this location. Adding additional beauty and cultivating a positive emotional response at the same time will illicit daily interest. The museum is a destination point on the canal. The museum is intended to be a catalyst in the strengthening of bonds to the sun and water.

Programme Outline:

<table>
<thead>
<tr>
<th>Location</th>
<th>Sq. Ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lobby</td>
<td></td>
</tr>
<tr>
<td>Reception Area</td>
<td></td>
</tr>
<tr>
<td>Information</td>
<td></td>
</tr>
<tr>
<td>Ticket Office</td>
<td></td>
</tr>
<tr>
<td>Coat Room</td>
<td></td>
</tr>
<tr>
<td>Galleries</td>
<td></td>
</tr>
<tr>
<td>Permanent Exhibits</td>
<td>2,000</td>
</tr>
<tr>
<td>Installation Exhibit</td>
<td>2,000</td>
</tr>
<tr>
<td>Traveling Exhibit</td>
<td>4,000</td>
</tr>
<tr>
<td>Photography Exhibit</td>
<td>3,000</td>
</tr>
<tr>
<td>Digital Media Exhibit</td>
<td>1,500</td>
</tr>
<tr>
<td>Sculptural Exhibit</td>
<td>3,500</td>
</tr>
<tr>
<td>Auditorium</td>
<td>3,000</td>
</tr>
<tr>
<td>Cafe</td>
<td>1,200</td>
</tr>
<tr>
<td>Library / Bookstore</td>
<td>5,000</td>
</tr>
<tr>
<td>Curator Offices</td>
<td>15,000</td>
</tr>
<tr>
<td>Public Restrooms</td>
<td></td>
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<tr>
<td>Shipping / Receiving</td>
<td></td>
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<tr>
<td>Storage</td>
<td></td>
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<tr>
<td>Mechanical</td>
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<tr>
<td>Ft.</td>
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</tbody>
</table>

Total Sq.: 77,900
Design Objectives: Methodologies and Schedule

The main goal of my thesis is to develop a way of thinking about the delineation of dynamic space and form in architecture. Research and a series of studies will be integral for the development of the "pop" art museum. These studies will manifest in many forms, such as writing, modeling, computer design, and photography. My research will explore theories of others on the subject of light and color. These studies will also embody interpretations and analysis of architectural works by Tadao Ando, Steven Holl, Louis Kahn, Richard Meier, and Tom Porter, as well as other significant contributors. The research will also include case studies and theories on the psychophysiologic effects of light and color, the effect of color on our perception of space, the cultural connotations of color, and complementary and color pair theories.

December: Final Proposal
   Preliminary Programme
   Topic Research
   Site Research

January: Conceptualization of Idea
   Idea Development
   Schematic Design
   Sitting Issues: Building location, Orientation, Sun Path, Day-Season

February: Begin Light and Color Explorations
   Implications to Design i.e. Impact
   Idea Development
   Begin Design Development

March: Design Development
   Detail Development

April: Finalize Design
   Notes For Publication

May: Produce Publication
   Graduation
The physical context is located in Indianapolis, Indiana. This city is the state capital and the 12th largest in the United States. Indianapolis boasts a population of 1,237,000. Downtown is a under an urban redevelopment plan that will continue into the millennium. It is a city that takes pride in a number of social and cultural events. These events include, sports, entertainment, theater, jazz fest, summer symphonies, Indy 500, Brick Yard 500, numerous cultural and religious events. The Downtown consists of a one mile square of dense urban development that makes up the core of the city. It is home to several museums, but very few are within walking distance from downtown. The Eiteljorg and the museum of art are the only two that are in comfortable walking distance from downtown or from the surrounding area. This urban layout creates an opportunity to bring and keep people within downtown area. The site is located on the Northwest corner of the urban core. The site has many attributes associated with it. For example: it is close to downtown and it is next to the best asset in Indianapolis, the canal. Indianapolis is not utilizing the canal to its fullest potential. That is, it is not a destination point, but merely a transition from point “A” to point “B”. The “pop” art museum is a definite enhancement to make the canal area a “must experience”. By celebrating this asset, Downtown will experience an enhanced quality of life.

Climate: Precipitation is distributed fairly evenly throughout the year. Warm to hot summers and cold winters are typically the norm, with late spring and early fall being the most pleasant seasons. Indianapolis has an average relative humidity of 70.1%, average annual rainfall of 40 inches, and average annual snow fall of 23 inches. Temperatures range from 26 degrees in January, 52 degrees in April, 75 degrees in July, to 55 degrees in October.

Indianapolis is increasingly becoming more culturally diversified. It is home to people of many different races, creeds, and colors. The city consists of 85% Whites, 14% African-Americans, .9% Hispanic, and .1% other nationalities. This diversity adds vitality to the city. The cross section of Indianapolis' population is further broken down into 47% male and 53% female, with age groups consisting of 26% under the age of 18, 10% ages 18-24, 19% ages 25-34, 15% ages 35-44, 10% ages 45-54, and 8% ages 55-64. The city consistently ranked as one of the cleanliest, safest places to live. It is also a comfortable place to run a business and raise a family.
“Light, whose beauty within darkness is as jewels that one might cup in one’s hands; light that, hollowing out darkness and piercing our bodies, blows life into ‘place.’”

Tadao Ando
Louis I. Kahn has a profound sense of putting together poured concrete with luxurious materials. These honorific materials include travertine, slate, and oak. These seemingly opposing materials fit together, as if they belong together. Kahn pairs the fitted finish of poured concrete and of travertine harmonize together, making them distinct. By being true to this material, concrete, Kahn captures time. Allowing the construction method to be seen in the finished material, Kahn embeds the construction time into the architecture. This is not only structural articulation, but constructional articulation, as well. He has a profound sensitivity to light. In the Kimbell Art Museum, natural light is emitted through slits in the structural vaults. The light is filtered and diffused, through metal screens that are perforated with thousands of tiny pin holes. The concrete and travertine surfaces are bathed in a silvery luminescence. Bringing light only through the tops of the vaults intensifies the three-dimensionality of the space. It also produces the perfect amount of natural light for the viewing of art work without being harmful. The Kimbell Art Museum is simple and austere, yet simultaneously rich and noble. The Kimbell Art Museum is truly Kahn's offering to light.

“All material in nature, the mountains and the streams and the air and we, are all made of Light which has been spent, and this crumpled mass called material casts a shadow, and the shadow belongs to Light.”

Louis I. Kahn
Chapel of St. Ignatius:  Steven Holl

Steven Holl has a profound way of interpreting light as a material. By investigating light in this manner, he has bequeathed light qualities characteristic to that of more tangible materials, thus giving it mass. In his investigations, light engages with color by exploring the projected light and reflected color theory. He also exploits the phenomenon of complementary color and color pair theories. For example, if one would stare at a blue triangle for a given amount of time and then focus on a white surface, a yellow triangle would be the after image, thus the complementary color of blue. Complementary colors or color pairs are a combination of two colors that excite each other forming a harmonic balance. His mixing of light and color through color fields and lenses is key in his creation of sacred/emotional space in the Chapel of St. Ignatius. His choice of color pair mixtures are symbolic with sun orientation. For instance, a yellow field combined with a blue lens gathers light from the East, for the alter space. The reciprocal, a blue field combined with a yellow lens gathers light from the West, creating a backdrop for the sanctuary. The “Bottles of Light” are spatially related to the program of Nave, Sanctuary, and Alter. His theme of complementary colors is consistent throughout the entire project. The Blessed Sacrament is set in an orange field complemented by a purple lens. While the Choir combines a green field with a red lens. The Reconciliation Chapel combines a purple field with an orange lens. Each “Bottle” is oriented to capture a specific light, thus an indication of time, day, month, and season. The chapel is a symbiosis of light and color.
The High Art Museum consists of four quadrants with one of them distinctly set apart from the whole. This separation of the atrium allows natural light to imbue the space and offers views of the city. The galleries can receive natural or artificial light depending on the requirements of the display. The entry into the building is symbolic of an extended gesture that reaches out into the street, therefore welcoming the passerby. Meier implemented the circulation ramp into the galleries in much the same way his predecessor, Frank Lloyd Wright designed the Guggenheim. The ramped circulation is encircled by the galleries, thus forming a fixed point of reference within the museum. Light entering into the museum, through its various apertures is consistent throughout. It is truly a place of aesthetic illumination. Meier mediates the scale of the interior by creating rooms within rooms to allow for more intimate viewing of smaller pieces of art.

The main goal of the museum is to encourage the discovery of new values and foster an appreciation of the museum's collection, as well as create a unique spatial experience. The use of white porcelain panels on the exterior enhances the surrounding nature of the site.
**Psychophysiological Effects and Connotations of Color**

We as human beings are inborn with ability to experience the environment. The human body is extremely sensitive to changes in light, color, heat, sound, touch, and airborne smells, but perception varies from person to person.

Frank Stella claims, "Light is Life."
Louise I. Kahn claims, "We are born of light."

Color is among the strongest stimuli we receive from the external world. Neuropsychology seeks to explain how the structures of the brain receive, interpret, and deal with information and regulate bodily processes. Obviously, the brain is a complex bundle of intricate nerve connections. Our brain is made up of several parts: cerebral cortex, cerebrum, thalamus, hypothalamus, pituitary gland, cerebellum, and lastly the reticular formation. "The reticular formation affects the entire nervous system state of preparedness" (Mahnke, 22). The central nervous system is affected by what we see visually and dictates how we respond emotionally.

There has been much research regarding how people respond to various visual effects. Both light and color can have dramatic effects on our moods and emotional well-being. The history of color proves that man initially had symbolism, mystery, and magic in mind. It was not used for free fancy in his investigations. Color as an expression of beauty by individual artists began in the Renaissance. Imagine the power given by the sun and a rainbow. It is no wonder the sun was worshiped. Color was used as a tool to maintain health by keeping elements of man in harmony with that of the gods and the universe. Color is used today less as a clinical healer than as an emotional healer, but not limited as such.

"Light and color are essential to all forms of life. Radiant energy, accepted through the eye or as it penetrates living tissue, stimulates glandular response, metabolism, hormone development, the entire autonomic system—respiration, heart action, and appetite." Faber Birren
Psycho-physiological effects and connotations of color

Research substantiates a distinct difference in psychological and physiological reactions to dominant color hues. Findings were as follows. (Combined from studies done by R. Gerard in 1957, M. R. Ali in 1972, and Jacobs and Hinstmyer in 1974).

Red light: Red was found to be arousing, increasing pulse and blood pressure and causing an unpleasant feeling of tightness in the throat. Red even produced headaches.

Yellow light: Produced a vibration within the core. Subjects felt the yellow to be "mighty" and "sun-like".

Violet-blue light: Blue is found to be restful with a calming effect, noted as pleasant and a good color for concentration.

Green light: This was a pleasant and agreeable color, more calming than other colors. Subjects found it to have "something compelling" and that it subjectively felt "moon-like" with wide radiation.

Colors definitely elicit a response and must be used in context and not applied through generalizations.

"Color and light can be used to give direction, to warn or call attention to an object or event, to modify or change a structure, to establish a desired environment, for sheer physical relief, or simply for pleasure and enjoyment."

Joseph Esherick
"Perception of color affects muscular tension, brain waves, heart rate, respiration and other functions of the autonomic nervous system, and certainly it arouses definite emotional and aesthetic responses."
Kurt Goldstien

**Case Study:**

Example of a Color Association Study.

The Study in the United States was conducted with several different groups between April 1991 to April 1993. Participants not only came from the U.S., but also from Canada, Australia, and Japan, and ranged in age from 25 to 60 years. The results are as follows:

<table>
<thead>
<tr>
<th>Term</th>
<th>Colors Chosen</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Love</td>
<td>Red, Red Violet</td>
<td>81%</td>
</tr>
<tr>
<td>Hatred</td>
<td>Black, Red</td>
<td>89.6%</td>
</tr>
<tr>
<td>Peace / Tranquility</td>
<td>Blue, Blue-Green, Green</td>
<td>93.6%</td>
</tr>
<tr>
<td>Mourning/Sorrow</td>
<td>Black, Grey</td>
<td>86%</td>
</tr>
<tr>
<td>Happy</td>
<td>Yellow, Orange</td>
<td>63%</td>
</tr>
<tr>
<td>Sacred</td>
<td>Orange, Yellow</td>
<td>50%</td>
</tr>
<tr>
<td>Life</td>
<td>Green</td>
<td>73%</td>
</tr>
<tr>
<td>Luminous</td>
<td>Yellow</td>
<td>65%</td>
</tr>
<tr>
<td>Noble</td>
<td>Blue, Blue-Violet, Violet</td>
<td>81%</td>
</tr>
</tbody>
</table>
Psychophysiological Effects and Connotations of Color

A System of Emotions: According to Robert Plutchik, emotions are to a great extent unconscious processes which cannot be classified to show a logical plan that connects various parts together. He has also identified eight behavioral patterns: Destruction, Reproduction, Incorporation, Orientation, Protection, Deprivation, Rejection, and Exploration. The behavioral patterns form the foundation for the following primary emotions:

Anger
Joy
Acceptance
Fear
Sorrow
Rejection
Expectancy

These primaries build four pairs of opposites:

Anger - Fear
Joy - Sorrow
Acceptance - Rejection
Surprise - Expectancy
Psychophysiological effects and connotations of color

These primary emotions appear in various intensities, listed in descending order from the strongest to the weakest.

Anger: rage, wrath, anger, annoyance, irritation
Fear: terror, fear, apprehension, timidity, diffidence
Joy: ecstasy, rapture, joy, happiness, pleasure
Sorrow: anguish, grief, sorrow, dejection, pensiveness
Acceptance: love, affection, fondness, acceptance, tolerance
Rejection: loathing, aversion, dislike, boredom, tiresome
Surprise: amazement, astonishment, surprise, strangeness, bewilderment
Expectancy: suspense, anticipation, expectancy, attentiveness, interest

The emotions outside the circle are created by a blending of primary emotions.

Notice that Plutchik has not always chosen to designate a primary emotion by its strongest intensity, but by the intensity in which it most commonly occurs. He also points out that in everyday life we generally experience mixed emotions, and not always pure primary emotions in their various intensities.
Psychophysiological effects and connotations of color

Early Morning
Luminous
Mighty
Sun-Like
Vital
Purity
Day Break
Happiness
Adoration
Acceptance
Cheering
Stimulates Intellect
Knowledge
Suicide

Research
Psychophysiological effects and connotations of color

Distinguished
Honor
Royalty
Noble
Grief
Subduing
Disgust
Loathing
Boredom
Restful
Calming
Pop art was born twice: first in England and second in and independently in New York. Is an American phenomenon that became current when Abstract Expressionism succeeded internationally. Upon introduction Pop art was instantly appealing to young people all over the world. They were enthusiastic to the implications of this direct idiom. The middle-aged group especially, but not limited to, recognized its formal validity. Though it seems an active rebellion in the art world it is based on “a tough, no-nonsense, no-preciosity, no refinement standard appropriate to the 1960’s” (Lippard, 10). For the individual artist the POP style was a way to capture personal artistic expression that would owe little to prevalent modes. Those artists in New York hit upon this style by accident, because they had not yet heard of their British counterparts. Pop art celebrates freedom of expression. “Hard-core pop art is essentially a product of America’s long finned, big-breasted, one-born-every-minute society, its advantages of being more involved with the future than with the past.
Andy Warhol was one of the most prominent figures in the Pop artists' community. He is most famous for his portrait of Marilyn Monroe. It is also considered his best work. "At first glance, the subject appears banal, the treatment vulgar, as though the artist sought the lowest common denominator in the visual resources at his command. The brazen colors scream for attention. The painting could serve as an image on a poster advertising a girlie show" (Rublowsky, 109). Warhol employs an immense order in the selection of and sensitivity for the subject or image to be reproduced. There is a certain esteem in the composition and his control of artless manner to which the subject is transferred onto the canvas. The background is orange which automatically pulls the image off the canvas. The portrait is then highlighted with bright colors that vividly draw out the hair, eyes, and lips. In essence, this is an abstraction of a commercialized woman. Through his artistic treatment, Warhol has represented a subtle boundary between art and craft. "She has been carefully manufactured, packaged, and sold like a can of soup" (Rublowsky, 110). Warhol's vice is to mechanically reproduce art without the artist even having to be present, thus by using the machine he expresses the machine.

"I tried doing them by hand, but I find it easier to use a screen. This way, I don't have to work on my objects at all. One of my assistants or anyone else, for that matter, can reproduce the design as well as I could."

Andy Warhol
define according to "copyday" ideas vs. things.

dawn

light:

night

light

canal

eavy

entry

sunset

light

daylight

noon

light
The first concept began by looking at light as a datum. This datum was the organizer, dividing the museum into two parts. The galleries composed one part and the support facilities the other. The datum then became not only the organizer, but the circulation as well. The galleries formed the urban edge, while the library, bookstore, and cafe opened out to the canal.
The second concept was a minimalistic approach. It began as an excavation of the site. A terracing effect formed the link from city to canal. The programmed spaces fronts the canal and the museum services were located toward the urban edge. This scheme has potential in creating dramatic light, as well as a showcase for art.
The third scheme investigated a labyrinthine form. The gallery and support spaces were ordered around a central atrium. This scheme had the most potential for capturing and making a gesture toward the sun. It also formally embodied the essence of pop art. The services faced the urban edge and the more commercial spaces interacted with the canal. The galleries created the connection between the top and bottom.
This model was an investigation of scheme three. I was interested in interpreting it as an expression to capture light. The gestures toward the sun manifested in the form of an extruded light scoop. This study captured the essence of the project. It also began to place more value on the urban edge, entry, and connection to the canal. In essence, it became the stepping stone to the next generation. Through a refinement process the study transformed into a workable solution. Essentially, the next study began to coordinate scale, proportion, circulation, space requirements, and site issues.
Refinement of Idea:

This model integrated the program, circulation, and site considerations. The pop art museum forms a link from the city to the canal. It forms a subtle urban edge, thus making a pleasant gesture to the corner of the site. This processional path leads the pedestrian to the main entry or the main entry can be bypassed for access to the canal walk. By providing access and a destination point, the canal becomes a node of activity. The form of the building divides the site into activity nodes and service nodes. The canal front and the South elevation create the activity nodes and the West elevation forms the service node.
The reflection pool serves a multiple purposes, it creates a quiet place of contemplation, a place to view art in the installation gallery, and extra space for events happening at the cafe and auditorium. The installation gallery is a triple height volume for the display of large art works. It also provides balconies at differing heights to view the work from many different angles. Wonderful views of the canal and city are also accomplished. In essence, it places the art directly on the canal, which draws people into the museum.
The light studies were created using a 4" cube. The cube could then be manipulated by inserting various apertures and color filters to achieve the desired effect. The boxes were then studied using summer and winter solstices or vernal and autumnal equinoxes. These solar diagrams were modeled physically and in form-Z to pinpoint the sun at specified times of the day. Each diagram was calculated during the most important times of the day. For instance, 9:00 am, noon, 3:00 pm, and 6:00 pm. This division allowed for a better understanding of the sun's position throughout the day. It also allowed for less interpolation. In essence, the times chosen are considered the peak times of the Pop art museum. Each light study focused on a particular slice of the sun.

Each light box was conceived on paper with an intuitive sense of how light would react within the space. Some results were expected and others were wonderfully unexpected. Although a few studies were done simply to see what may occur.
MARCH 21ST
VERNAL EQUINOX

8:00 AM  9:00 AM  10:00 AM  11:00 AM  12:00 PM
September 21st
Autumnal Equinox

1:00 PM
2:00 PM
3:00 PM
The Light Box

September 21st
Autumnal Equinox

9:00 AM 10:00 AM 11:00 AM 12:00 PM
June 21st
Summer Solstice

1:00 PM
3:00 PM
6:00 PM

1:00 PM
2:00 PM
THE LIGHT BOX 05:

JUNE 21ST
Summer Solstice

9:00 AM  10:00 AM  11:00 AM  12:00 PM  1:00 PM
The Light Box 06:

June 21st
Summer Solstice

7:00 AM  8:00 AM  9:00 AM  10:00 AM  11:00 AM
The galleries spaces where created with the ideas of Pop art in mind. Specifically, the ideas of Andy Warhol where used to capture today’s society of the everyday. In essence, babies are created in much the same manner as Pop art, in that the original artist, i.e. the parents, do not even have to be present to create this wonderful work of art.
The transition spaces form a personal introspective or contemplative space. Each space is directed to capture a specific season. The determining colors of a particular season create a specific emotional response. In short, the emotion of the season is captured. This one in particular is an interpretation of Summer.
The museum is approached from the corner of Senate and New York Avenue. This corner was viewed as the gateway to the site, which consists of art, personal reflection, and the canal. The participants can bypass the entry and gain access directly to the canal walk.

The Pop art museum is an everyday event. A reminder of the everyday things taken for granted, such as, the sun and the seasons.
The canal is viewed as a place of tremendous activity. The museum is the catalyst for such activities. It is an oasis, stopping point, place of reflection, and contemplation of self and art. This is the link to the canal that Indianapolis so desperately needs.

The installation space is a visual and physical connection to the canal walk. It allows for views of the art inside, and outside views of the surrounding city context.
Installation Gallery

Canal Entry to Museum
On the North side of the site the building divides the site. The first division forms a backdrop for the canal and the second nestles the services, thus masking them from view. The building also cantilevers out over the parking area forming a shelter for the cars.

South Elevation

Wall and Trees Masking Services
The reflection pond serves a multitude of activities. First it is a quiet solitude from the noise and confusion of the urban landscape. Second it provides extra space for cafe and auditorium. This feature is a must during after hour events.
The light scoops located on the roof are oriented to capture three specific seasons. The scoop on the upper right captures 9:00am light on the Winter Solstice. The scoop on the upper left captures 3:00pm light on the Autumnal Equinox. The lower light scoop is oriented to collect 9:00am light on the Vernal Equinox.
Looking back and reflecting on this project, it has truly been a unique experience. It has also been very rigorous at times. The key is to keep yourself going. The project on the surface my appear to be a failure, but after today I realize it was a success. A success because I was dealing with light, a complex issue, the added color, another complex issue, and if that was not enough to keep me tremendously busy, I added Pop art into the mixture. The project had different issues driving different aspects of the project. Light was the major driving force and color was secondary. Color was integrated into the transitional spaces to create the emotional responses between the galleries. They became introspective or contemplative spaces within the museum. Pop art can into the form of the building, looking at the it as a machine to light. However if the overall was not a complete success, the light studies are the start of a life long experiment.

I hope you have enjoyed this book and hopefully you can take something with you from it.


