Light is revealed through architecture
and architecture through light

THE SPIRIT
OF
LIGHT

MAY 1993
MAGDALENA SMAGALA
THE SPIRIT OF LIGHT

BACHELOR OF ARCHITECTURE DEGREE
THESIS DESIGN

COLLEGE OF ARCHITECTURE
AND PLANNING
BALL STATE UNIVERSITY

DANIEL DOZ
--- DESIGN STUDIO PROFESSOR

CARLOS CASUSCELLI
--- THESIS CRITIC

JENELLE SMAGALA
--- THESIS CONSULTANT

MAY 1993
MAGDALENA SMAGALA

copyright © 1993 by Magdalena Smagala
page:
1  TITLE PAGE
2  CREDIT PAGE
3  CONTENTS
4-9 HISTORICAL BACKGROUND
10 "THE CREATOR"
11-12 INTRODUCTION
13 "ACQUAINTED WITH THE NIGHT"
14-17 COLOR
18 "SUN AND SHADOW"
19-22 FORM
23 "CHANGE"
24-25 TIME
26 "REFLECTION"
27-28 TEXTURE
29 "DROWNING"
30-47 THESIS DESIGN
48-49 BIBLIOGRAPHY
50 "MAN-MAKING"
To start at the beginning, the beauty of Egyptian, Chaldean, Greek, and Oriental art arose not out of esthetics alone but out of religion and superstition. When one realizes that practically every surviving archaeological record of ancient times is a temple or tomb - not an office building, state capital, library, museum, school, or home - one may appreciate that religious thought and expression ruled the day. It is in religion where man included his philosophy and science. The great principles of nature and the vital forces of the universe were personified by gods and goddesses. The sun was the principle of good, master of sky and earth, sustaining all life and controlling the universe. To the Egyptian it was Osiris, to the Chaldean - Bel, to the Greek - Adonis and Apollo. God was the supreme figure associated with light. The golden ornaments of priests and the crowns of kings referred to the sun.

In Egypt yellow and gold were tokens of the sun. The color of man was red which is still visible on the face of the Sphinx. Green, the brilliant color used at Karnak, represented the eternity of nature. Purple was the hue of earth. Blue, like the heavens, was sacred to justice.

Egyptian amulets, vignettes, coffin decorations, the rubrics of manuscripts, temples, sculptural ornaments, painting - all had purposes. They were designed to symbolize the Mysteries, to invoke the favor of the gods, to seek victory over nature, affliction, plaque, drought, and death, to serve life first last, and always. Where the modern artist speaks of the intrinsic beauty of color and its ability to thrill the emotions there the Egyptian was primarily concerned with a language of color that was precise rather than vague in its meaning. That was a time when all buildings were designed around a single, fixed light source, the sun. The difference between great architecture and mere building could be measured to a large degree by the skill with which that source was used. The spaces, and the details in them, were determined largely by the opening sizes restricted by the structural spanning capabilities.
fully open lotus
"bell" capital
(response to light?)

pierced slabs of
stone filter light
down

small light slits
don

closed lotus
"bud" capital
(response to dark?)
In the Orient this same use of color prevailed. Gods were identified by hues. In India Brahma was yellow; Siva the destroyer was black. Yellow was likewise sacred to Buddha and to Confucius. Green was sacred to Mohammed and is still worn in the turban of the Moslem who has made a pilgrimage to Mecca.

Architecturally, however, most color symbolism came from the study of astrology. Great temples were dedicated to the gods of the heavens and designated in color to symbolize the seven planets. Throughout Asia color, architecture, and design answered to the Mysteries. Everything had meaning thus the walls of Peking are red, symbolic of the south, the sun, happiness. The roofs are yellow, symbolic of the earth. Art was created out of belief. But the important thing has been lost in the modern oriental culture - a sense of the depth and richness of darkness.

Chinese, Hindu, Chaldean, and Egyptian learning was the basis of Greek and Roman culture. Naturally the color traditions and mastery of light of these earlier civilizations crossed the Mediterranean to dwell on the continent up north. The old gods were given new names. Athena, wise in the arts of peace and war, was adorned with a yellow robe. Red was sacred to Ceres and to Dionysus and so on.

Sculpture in Greece comprised the fashioning of gods and goddesses who lived and breathed and even vanished from one place to appear in another. Once again colors were significantly applied, blue to symbolize earth, red for fire, green for water, and yellow for air. The colonnades and porticos became apparent and as the Romans developed the arch, walls became increasingly thinner to invite the pleasant rays of light drastically increasing the illumination level.

As paganism died in Western countries, to be replaced by Christianity, color began to lose its importance. Yet not entirely. Cabalism spoke of a trinity of blue, yellow, and red. The philosophic notion of life, birth, and death, of past, present, and future, of dawn, day, and dusk, gave way to a new theology.
Erechtheion

Propylaea

Parthenon

oriented to receive morning sunlight
Now there was God the Father, Creator of the World, whose hue was blue to symbolize heaven and the spirit of man.

When classicism was reborn, Greek revivals spread across the western world - and America - like an epidemic. In America (and in England) the simple beauty of the Georgian style was abandoned in favor of forests of Greek and Roman columns. Every state built its capitol to resemble Greek temples. American architecture has become quite austere and with the influence of the Bauhaus, natural materials like stone and concrete were featured. The influences of the Industrial Revolution are highly visible in the present cities clustered with the skyscrapers. A man has progressed tremendously in the field of technology providing limitless eluminated spaces and loosing himself in them.

At present time, architects are limitless in their possibilities for imaginative lighting of their creations, but only a few of them realize it. Most modern buildings would provide far superior interior environments for their occupants if they had been consciously designed from the inside out. If perception-based lighting design is once again to assume its proper place as a formgiver for architecture, it will not be because of the availability of cheaper glass, the introduction of more efficient light sources, or the generation of more sophisticated computer programs for calculating light levels. Innovations in each of these fields, applied indiscriminately, have already made significant contributions to the pervasive role of lighting as a destroyer of form. Technology is powerless in producing a good luminous environment if the reasons and spirit are not there. Concepts, not hardware, are the missing ingredients in the inventional approach to the design of the luminous environment.

To design well lit spaces, the designer needs to understand clearly the primary design tool. To succeed, the architects must learn the principles and processes of visual perception and light itself.
If there were no objects,
we would never know what light is.

If there was no light,
we would never appreciate
the beauty of the objects.

If there was no sun,
days would become nights.

If there was no life,
the purpose of the sun would fade.

If there was no light,
architecture would have
no shape and beauty.

Celebrate the creator.
Celebrate light.
Light has always been recognized as one of the most powerful formgivers available to the designers, yet only a few of them have used its potential. Many perceptive architects have frequently felt that all was not well, but most have been unable to describe precisely what is wrong with the environments they dislike and what is right with the ones they love. Even those who understand and can specify the qualities which make for a good luminous environment usually encounter constant resistance from single-minded engineers, misguided clients, and well-meaning public officials with whom they must work.

If perception-based lighting design is once again to assume its proper place as a formgiver for architecture, it will be because the designer realizes that light has the ability to alter the psychology of spaces and all elements creating them.

If the perception process, the nature of people's needs for visual information, and the characteristics of a good luminous environment are clearly understood, the need for new design criteria and a new design process becomes equally clear. Hopefully "light design" will eventually play a greater role in every architect's concept. The design of human environments is the design of human sensory experience. All visual design is also lighting design, and the sooner this is acknowledged in the design process, the more successful the architects will be in achieving the desired psychology of spaces.
I have been one acquainted with the night.
I have walked out in rain and back in rain.
I have outwalked the furthest city light.

I have looked down the saddest city lane.
I have passed by the watchman on his beat
And dropped my eyes, unwilling to explain.

I have stood still and stopped the sound of feet
When far away an interrupted cry
Came over houses from another street,

But not to call me back or say good-by;
And further still at an unearthly height,
One luminary clock against the sky

Proclaimed the time was neither wrong nor right.
I have been one acquainted with the night.

---Robert Frost
One of the great aspects of light is that it reveals the spectrum of colors which subconsciously add to the psychology of the spaces. Our perception of color occurs as a vibration of energy in the form of light radiations within the visible spectrum. A change in the quality or strength of a light source results in either a loss or alteration of color. A color sensation may be received directly from a light source such as the billboard lights or through a stained glass window, but more often it can be experienced as a reflection of light from a pigmented surface. The medium of pigment in both situations has an integral role in the transformation of white light into the colors that we see.

Pigments have the special capacity to reflect or conduct vibrations from the spectrum. White pigment will reflect the whole spectral range, while a red-colored pigment can only reflect the particular vibration that is inherent in its substance. A red surface that receives white light will reflect only the red portion of the spectrum leaving a reddish shadow-like pattern on the adjacent planes or objects. When a white light shines through a red-pigmented gelatin, only the red vibrations pass through. The other hue vibrations carried by the white light are in a manner absorbed by the red pigment substance.

Opaque surface color is a common and dominant factor in our visual perception of objects - such as paper, wood, stone, or cloth - are examples that communicate an impression of surface color under ordinary conditions of viewing.

An optimum impression of surface color is given from light reflected in a diffused manner from dull-surfaced objects, and surface colors are perceived on solid objects that possess a clearly defined surface character.

Next to the described technical aspects of color spectrum, there are the less evident, psychological ones which evoke a variety of feelings within each person.

The mesmerizing and spiritually soothing atmosphere of the churches is frequently achieved through
the use of blue or purple hues of the stain glass. Those cool colors are calm and frequently represented with the static form of a circle. Many researches indicate that the hues of blue, purple or pink lower a person's blood pressure level and slow down the heart beat rate. All those colors are ideal for creating spaces of peaceful, relaxing atmosphere like the church, prison, or a plaza because of their abilities to soothe the human mind.

Yellow, orange and red, on the other hand, are on the opposite side of the color spectrum. Yellow, the color of honor and loyalty, has the highest visibility level. It is the most dynamic hue usually seen in a form of a triangle like the "yield" road signs. All of these three vibrant colors bring out the energy from within the people. Bright, lively colors rise the heart beat rate and blood pressure and are frequently used in spaces of entertainment providing a high level of visual stimuli.

Each hue of the color spectrum evokes a specific feeling and is a powerful tool in the designer's hands. Not only does it create a warmth and coldness within the human soul, but also dictates an ordering system to the observer and defines each space as a separate entity. The mind subdivides spaces by the colors it perceives first and then notices the forms behind the hues. This phenomenon is clearly evident when one studies the differences between a picture taken with a color film and a same one taken with the black-and-white film. The contrast is amazing. The eye tends to be dawn to the vibrant colors in the color version, while in the black-and-white one the overall composition becomes more emphasized.

The power of color brought out by the light is tremendous and needs not to be underestimated by the architect. It may be of great help if used wisely. But first, the designer must fully understand the effects created with the manipulation on light and color and the reasons laying behind them. No genius can create a magnificent space if he envisions the result and the final effects without fully understanding their backgrounds and causes.
"The real impact of any work is the extent to which it unifies contrasting notions - the opposite points of view ... unifies, not compromises.

The easy method of meeting problems if the feeble compromise. The solution for black and white is gray - that is the easy way, but not satisfying.

Sun and shadow does not mean a cloudy sky. The need for black and the need for white still exists."

--- Marcel Breuer
Light gives objects existence as objects and connects space and form. A beam of light isolated within architectural space lingers on the surfaces of objects and evokes shadows from the background. As light varies in intensity with the shifting of time and changes of season, the appearances of objects are altered. But light does not become objectified and is not itself given form until it is isolated and accepted by physical objects.

Light attains significance within the relations among objects. In the instant when one of those fluid relations is fixed, all relations are determined. An instant of light is simultaneously the instant of that light's own extinguishing. At this boundary between the light and dark, the individual object is articulated and given shape.

Many designers and architects have developed the ability to visualize shapes and forms as if they existed in open space. They are able to use their imaginations to create a sense of space that gives reality to what the eye sees. They are also aware that a conception that has looked very good "on paper" has suffered when constructed in the reality of the world itself. That is because many of the designs are originally conceived without reference to the environment and its lighting conditions. Although most of the designers and architects are aware of the general qualities of light, most often they perceive differences associated with the material of surface characteristics of objects. They need to realize that the shadows are part of the objects to which they belong if not additional individual objects themselves. It is the contrast between the two that defines forms. By lighting an object from opposite sides, we can reduce levels of contrast and make the object almost disappear. The perception of form is weakened as contrast in the visual field is lessened.

In general, the architects tend to overlook their designs to make sure they fulfill the required illumination levels. They tend to forget, though, that the entire space need not to be uniformly lit. Only few areas require intense light. If the architect would pay
more attention to the functional aspects of design and concentrated on improving the human environments he creates, the contrast between the bright, and dark areas and an object would add interest, more mystery and a greater sense of form. The studies conducted at the Lighting Design Showroom in Indianapolis clearly reveal the variety of options one has in lighting an interior space such as the kitchen or a dining room. The light being the only factor that varies, changes the entire space and presents a completely different character to the human perception. In some instances the objects within the dining room become the focal point and in others the space becomes defined as a volume. In the case of the kitchen, the mass of the cabinets and the texture of the walls is altered. The various lighting conditions, at times, make the objects in the kitchen appear heavy and massive and, at other instances, light and floating. Task and defused lighting used in conjunction may create endless illuminating combinations. The options are limitless and seldom specified by the architect himself. It is not enough to merely define a space with physical forms evolving from plans and elevations. Nor is a project complete when designed in a vacuum without any consideration of lighting conditions. The designer must let his imagination carry him one step further into the forms of light and shadow.

In Zen Buddhist thought, space is said to come into being at the boundary where material things vanish. Light certainly provides such a space. Any designer realizing the abilities of light certainly is on the road to success for forms created by the light are of greater value, strength and spirit than those defined by physical materials. When one walks through the space defined by a shadow, he or she becomes part of it. The moving body miraculously becomes washed with the darkness and becomes part of the existing forms. The spaces created by the light and shadow go beyond the physical appearance. They touch the human mind psychologically and spiritually.
"Artificial light is a static light . . . where natural light is a light of mood.

And sometimes the room gets dark - why not? - and sometimes you must get close to look at it, and come another day, you see, to see it in another mood - a different time . . . to see the mood natural might give, or the seasons of the year, which have other moods."

--- Louis I. Kahn
The world around us is constantly changing. Autonomous events and processes produce changes in the environment over which we have no control. The cool light emitted during the sunrise creates a totally different atmosphere than the warm rays of the sunset. As the illumination levels change throughout the day, month, and year, so do the objects embodied within them. As time passes by, the new shadow patterns are created and architecture presents itself in a completely different fashion. The angle at which the light casts its rays onto the objects becomes very significant. Objects appear flat and massive when illuminated from the front. When the light rays come from the sides, perpendicular to the line of vision, the volumes become more transparent, structural and three-dimensional. The designer has the opportunity to control and use those ever changing conditions to his advantage by manipulating various opening sizes, shapes and materials. The studies conducted during the research show that narrow and thick window openings impose the most limits on the light rays entering a space. The only direct sun rays allowed to enter are the ones positioned perpendicular to the opening (mid-day, if facing South). Another conclusion drawn from the study is the importance of the material type through which the light is sent through. For example, the third and fourth opening from the left covered with a semi-translucent material casts an uniformly defused light which is not influenced by the angle at which the rays come in contact with it. While the patterns defined by the rays penetrating the clear glass openings change with time, those created by the diffused light, characteristic of the semi-translucent materials, remain constant.

When the study is taken one step further into the three-dimensional forms and spaces of architecture, the results prove the point. Throughout the day, the atmosphere of each space changes dramatically.

The designer or architect must learn to predict the difference time makes. The beauty of light is that it is dynamic and ever-changing. No two lighting conditions are the same - the key to success: control.
Shimmering waves
Drawing patterns
Across the ceiling
Superb reflections
With no life
Of their own.

Is life
Only the glimpse
Of a reflection
Of a shimmering
Wave?

---Kim H. Fong
The surface characteristics of forms in design may be natural or specially treated to create smooth, rough, mat, glossy, and other tactile qualities. Whether actual, invented, or simulated, the textile and light-reflective qualities of a surface are transformed by the manipulation of design materials and elements. Visual texture serves as another form of contrast in our visual field. We respond both to the amount and kind of light that surfaces and objects reflect and also to the way in which the light is reflected. The terms usually used to describe the character of a visual texture are adapted from the sense of touch - rough, smooth, hard, soft, etc. Other words related to this idea have a visual metaphor - dull, shiny, opaque, transparent, metallic, iridescent, etc. Highly reflective materials have little if any intrinsic value of their own. Dull metal surfaces and semi-gloss paints, on the other hand, exhibit characteristics of both mat and partly glossy finishes. The behavior of shade, shadow, and reflection on these hybrid materials can be analyzed through the isolation of their separate value characteristics and their unification to observe their patterns. The many patterns of texture are a result of the structure of the surface of things and the light that is reflected. No matter what degree of texture a surface may have, in the absence of light there is nothing for the eye to detect. Therefore textures will change in relation to the strength of the light source and the angle at which the light contacts the textured surface. A single textured surface, rough or smooth, reflective or dull, can have many variations in its appearance through changes in the strength, concentration or diffusion and position of the light source. The shown studies reflect those variations fairly clearly. The squares on the texture panel may appear very three-dimensional in one lighting condition or flat and bare in other. The textures may be simulated by projecting an image on a plane, smooth object giving it a rougher look and feel. When designing spaces, the architect needs to pay attention to the direction and relative concentration of the illumination to control texture perception.
One day
In a dark pit
I saw a light.
I didn't touch it
For fear it would burn.

I closed my eyes
To what I had seen
For fear it would
Take away the sight I
Had gained in the darkness

When I finally dared
To open my eyes
The light had gone out
And my life . . .

Will someone please
Turn on the light!

---Kim H. Fong
As a conclusion of the long research and exploration of the influences of light on the outcome of each space and its design, one must test the acquired knowledge by utilizing it in a design of its own.

The spaces that tend to ignore the aspects of light the most are those of the urban environment. Due to the increase density of the population and increasing height of the buildings in the downtown areas of large cities, the architects began neglecting the value of light. We often overlook the great role that light plays in our everyday lives. Here are some examples of human needs that are accommodated by the light:

- the need for orientation
- the need for contact with sunlight
- the need for focus on activities
- the need for definition and personalization of territory
- the need for visual stimuli or information
- the need of belonging

The challenge of the thesis design is to bring the spirit of light into an urban space such as the Daley Plaza located downtown Chicago, Illinois. The workers and other people using the downtown area lack a soothing place in which they have an opportunity to relax and get away from the everyday stress and problems. Therefore, by developing the chosen site, a tranquilizing atmosphere is provided during the day and an attractive, exciting one during the night hours.
Daley Plaza, named after the mayor - Robert Daley, is an entire city block of the downtown area of Chicago stretching over an area of 435' x 375'. The encompassing one-way streets are: Washington St. located to the South, Dearborn St. to the East, Randolph St. to the North, and Clark St. to the West. The created vehicular traffic moves in the counter clockwise direction all around the site, while the main pedestrian circulation moves in a diagonal manner between the South-East corner and the South-West corner of the Civic Center Building located on the North side of the plaza. This all-glazed building of 31 stories 647 feet in height, designed by one of Mies' most gifted pupils, Jacques C. Brownson, is the main feature of the site taking up a total area of 150' x 270'. This Cor-Ten steel structure contains 120 court rooms with offices and ancillary rooms and also a cafeteria.

On the plaza itself the combination of art and architecture is expressed through the striking sculpture, a cubistic interpretation of a woman's head by Pablo Picasso, made of the same Cor-Ten steel as the Civic Center. A fountain placed West of the sculpture brings a piece of nature into the harsh environment of the downtown and an eternal flame commemorates the soldiers of Korea and Vietnam.

Buildings to the South, casting most of their shadows onto the plaza during the lunch time hours, are a modern church and a bank/office building. A little nook created by the two edifices contains an abstract Miro sculpture, and, is filled at night with a blue glow filtering out of the church stain glass windows.

The entire West side of the Daley Plaza is defined by the eight story historical City Hall building, while the subway and bus stops are located across Dearborn St. to the East of the site.

The uniform lighting conditions of the Daley Plaza are enriched with the sunlight reflecting from the State of Illinois Building North-West of the site creating special effects.
**Concept:**

The main idea of the final thesis proposal is to develop a design which explores and puts to the test all the previously researched aspects of light. By cleverly placing elements and enriching the Daley Plaza environment, one will become more conscious of the pleasures of light as well as its constant presence and change.

**Conceptual Model**

There are two sides to the design, one being the day time concept represented by a strong straight line, and the other being the night time interpretation of light abstracted with the sweeping curve.

A straight directional line of the day time concept represents how a human eye perceives a beam of light. All the areas evolving from the curve will be calm and soothing emphasizing on peoples feelings and emotional states and providing a sensual place for the workers taking a break for lunch and trying to relax.

A curved piece is representative of the scientific knowledge of man. As we well know, light does not travel in a straight line. It becomes curved due to the magnetic pull of other bodies. Therefore, the semi-circle becomes well lit during the night hours and provides the intellectual, educational needs of man.

**Study Model #1**

The concept of the straight line intersecting the curve and creating a mixture of private and public spaces is applied to the site itself. The straight line addressing the pedestrian circulation becomes the testing grounds and at the same time a display of ways the sunrays interact with the different materials, thicknesses, and opening shapes. The curved piece representing the educational and technical aspects of light is very light structured, elegant and transparent during the day becoming a secondary element on the plaza. During the night, though, the curved piece is eluminated becoming dominant and encompassing the Picasso sculpture. A well-defined sub-space is created for the fountain and the Picasso sculpture.
Study Model #2

The notion of the intersecting line and curve is explored in a different dimension. The elements are studied in section as opposed to the previous study in plan. The spaces become defined by the shadows cast by the trellises and other elements hovering overhead. The sense of enclosure is not created with the use of surrounding solid element but with the massless creations of light. The trellis also serves as a transitional piece between the grand scale of the Civic Center Building and a man. The study is successful in emphasizing the importance of the Picasso sculpture, but is too powerful towards the building. The trellis work smothered the edifice and competes with its powerful statement.

Study Model #3

The trellis is represented in a fragmented form to give the building more breathing room and take away the overpowering effect it created in the previous study. A variety of transparent materials are incorporated within the trellis work to subdivide the spaces created below with a multitude of different shadows.

The pedestrians passing through the site are protected from possible bad weather and are forced to walk through the variety of shadow patterns as opposed to experiencing them by observing from the side.

Another issue is raised referring to the Miro sculpture across Washington Street. The sweeping curves make a notion towards Miro's work of art unifying the two sculptures and utilizing the abandoned area across the street.

The design forces the pedestrians as well as the drivers to relate to the plaza in a more active way and provides a variety of public spaces for the vendors and private ones for the workers eating lunch and relaxing. The success of the design is counterbalanced with its faults. The elements provide limitless exploration grounds for space definition but at the same time clutter the site.
Study Model #4

The design elements are organized in a less dense manner and explore more new ways of creating semi-enclosed spaces. The curve becomes a delicate steel pipe with thin cotton strings visually and physically connecting them with the ground. This curved transparent wall disappears during the day and becomes highly visible at night when each string is lit from underneath.

Considering a variety of weather conditions, a design needs to respond to an overcast day when shadows do not exist and the presence of light is lost. By actually drawing the shadows on the plaza the users are eluded and subconsciously create the light source in their minds. The painted shadows also serve as a media to bring out the phenomenon of light as a constantly changing element.

At this point, the significance of the flame is brought to the designers attention and begins to be addressed with the new forms.

Study Model #5

The two forms, the straight line and the curve, intersect elegantly and merge into one. The created "sculptural" element works well within itself, but at the same time it fails at the connection with the Chicago Civic Center building. The angle at which the forms are erected works well with the pedestrian circulation and takes full advantage of the direct light of the sunset and the reflected beams from the State of Illinois building illustrated on page 31.

The private area, located on the Northern half of the site, is fully enclosed by the building, Picasso sculpture, and the newly introduced curved element. A mixture of translucent, solid, massive, and light materials is incorporated into the design to maximize the possibilities and variations of spaces defined by the light hitting them at various times of the day and night.

The relationship between the two forms and the square shape of the fountain needs to develop and create a sense of one.
The final design proposal combines all the issues addressed in the study models during the process phase and the knowledge gained during the research/experimentation period. Two additional layers of organizing systems are added to the study model exploration.

First, the entire design layout is based on the existing grid. An additional tree is planted on the North-West side of the Daley Plaza following the pattern of the previous two and creating a gateway for the pedestrians. The smaller squares create a dynamic movement to further reflect the motion of the pedestrians. The rectilinear form of the plaza fountain is suggested by the grid-like trellis which is composed of 5' x 5' squares just like the existing grid of the plaza.

Second, color is added to further explore the lighting conditions, visual effects, and psychological influences on the users. The less vibrant color, blue, is used to define and separate from the rest the calm, soothing, get-away space, as well as suggest a connection between the Daley Plaza and the area with the Miro sculpture bathed in the blue light coming through the stain glass windows of the church. The lively and dynamic colors of yellow and red make up the public spaces and reflect the night life of Chicago.

The half translucent and half masonry curved piece acts as a stage for the Picasso sculpture. During the night hours, the wall receives multitude of projected textures brightening the “stage” area and reversing the effects of day and night. All the pieces emphasize the forms of objects during the day and show off a variety of textures during the night. This reversal of what would actually happen brings a new dimension to the human conscience. The curved piece terminates at the eternal flame and an inground nook for the workers to eat lunch in and bonds the two together. The area under the trellis is part of the relaxing scheme and is designed to calm all the senses. The light bouncing off of the reflective, yet not uniform, surface of water casts intrinsic patterns of the walls while the bright colors reflect in the building facade.
In conclusion, a designer or an architect must realize the importance and significance light has in our everyday lives.

The documented thesis research and final project are a brief summary of the knowledge and awareness gained. Hopefully the studies and the project itself will succeed in opening other architects' eyes to the most influential variable in the design field - light.

The five months spent on testing theories and learning how to use light as a design tool made me more perceptive and sensitive to the way man experiences constantly changing spaces.


VIDEOS:
We are all blind until we see
That in the human plan
Nothing is worth the making if
It does not make the man.

Why build these cities glorious
If man unbuilted goes?
In vain we build the work, unless
The builder also grows.

---Edwin Markham