Using Shadow & Light to Illuminate History

and Enhance Architecture

Raun Anson Love

Professor Andrea Swartz/
thesis studio instructor

Professor Pam Harwood/
thesis advisor

Jeff Culp/
thesis consultant

Fifth-Year Architectural Thesis Spring 2005
## Table of Contents:

<table>
<thead>
<tr>
<th>Section</th>
<th>Pages</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>2-3</td>
</tr>
<tr>
<td>Background Premise</td>
<td>4-5</td>
</tr>
<tr>
<td>Issues and Positions</td>
<td>6-7</td>
</tr>
<tr>
<td>Presedent Research</td>
<td>8-10</td>
</tr>
<tr>
<td>Project Overview</td>
<td>11</td>
</tr>
<tr>
<td>Site Data</td>
<td>12-13</td>
</tr>
<tr>
<td>Building Program</td>
<td>14-15</td>
</tr>
<tr>
<td>Design Process</td>
<td>16-31</td>
</tr>
<tr>
<td>Final Product</td>
<td>32-43</td>
</tr>
<tr>
<td>Reflection</td>
<td>44</td>
</tr>
<tr>
<td>Bibliography</td>
<td>45</td>
</tr>
</tbody>
</table>

## Acknowledgements

I would first like to thank God for blessing me with the patience and the mental ability to persevere through seven years of the toughest but most rewarding years of my life.

Thanks to my family including my fiancé who gave me their undying support, prayers, and encouragement throughout my architectural education here at Ball State University.

Thanks to Andrea Swartz for always pushing to get the best work out of me and nurturing my ideas so that they can blossom and mature.

Thanks to Pam Harwood for your time, patience, and design advice that challenged me to see and understand my design from different perspectives.

Thanks to Jeff Culp for being around whenever I needed a good second opinion and for sharing your wealth of knowledge with me throughout the year.
Introduction

How people relate to buildings and how buildings relate to their settings are influenced by light and shadow. I believe that the differences we perceive between light and dark can embody meanings that exceed direct perception. Light and Shadow are the yin and yang of everything that is visible. Without these elements your eyes could not make out the features of your face, the texture of a stone wall, or the place you are in now. Light can not exist without dark and the dark can not exist without there being light, it is the balance and play of these elements which I believe gives strength to otherwise dull pieces of architecture.

This thesis started out focusing only on shadow but I found it increasingly difficult to isolate the phenomenon that shadow is without talking about light which is the very thing that gives it life. However it is my intent to celebrate the many qualities of shadow that by today go unnoticed and un-utilized. Shadows have the unique ability to signify because like light, they are a sensory phenomenon which is based on cultural interpretation. Through this thesis I have tried to find ways to harness the meanings on shadow and light, perceived by individuals, as a tool to enhance architecture. This thesis have give me the opportunity to experiment with how the literal and figurative elements of shadow can enrich the quality of architecture and also influence the individual’s perception of the space.
The structure in which my ideas and thoughts were tested in is an African American Cultural Center. Within this building I will use shadow and light to illuminate history by applying various magnitudes of these elements to coincide with historical events. The Cultural Center will make its home in just Indianapolis’s historic Indiana Avenue. The site of shares the same block with the famous Walker Theater and other different elements that add to the African American heritage of Indiana Avenue. Although the building will be located in a district that is known to celebrate the culture of African Americans the Cultural Museum will be a place where people from every walk of life can come to learn the history and future of one of the largest minority groups in the United States.

To research this topic I first found examples of architects who used the visual effects of light and shadow to enhance the experience of the users, in addition to manipulating the shadow (in certain context), to evoke somber emotions. I have also conducted various lighting and modeling studies as well as drawings to help me clarify and convey my idea. In addition to these research tools I sought information from books, periodicals, the internet, as well as personal interviews.
Background Premise

Having already known the many applications and qualities daylight has and how it has impacted the built and natural environment, I set out to see if shadow could play a similar role in the architecture. I first did this by asking two questions; how does architecture benefit from the natural presence of shadow, and how does shadow react to architecture.

Shadows are a constant part of architecture and anything that has form. As complex as the objects that manifest them, they intensify architecture and give the illusion of substance. Shadows, although a natural phenomenon, can take on a mysterious variety of forms. They transform the familiar image of the origin into something at times almost mysterious? With the stories they tell, shadows can create the ability to discern the spatial dimensions of buildings. For example, they continually move endlessly changing our perception of a space. When a building is introduced to the richness of shadow its masses seem to have more depth and its details and projections, which would regularly look flat bathed in light, are revealed more distinctly.

“The sun never knew how wonderful it was, until it fell on the wall of a building.” Louis Kahn.
In the world in which we live in today shadow is often treated as the rejected twin of daylight. In the buildings of the 20th century, brightness conquers the interior; in the ideal case it eliminates confined space and darkness. However at the same time the shadows get lost. The majority of buildings are designed to eliminate shadow, but when you do not consider shadow, you loose all of the unique qualities architecture can inherit when shadow is manipulated properly. It is only through light and shadow that architecture acquires shape, for light lends buildings its contours and shadow lends its depth. When attention is paid to shadow, designers can use the differences that they inscribe across the unvarying surfaces of building to animate its structure. Because shadows signify both repetition and difference, it reiterates the body that casts it, on this basis we can identify an object by the type of shadow it throws.

"On the threshold, the point where light and shadow cross, lies the sanctum of art [...] this is a treasury shadow." Louis Kahn

"By cutting off the light from this empty space they imparted to the world of shadows that formed there the quality of mystery and depth superior to that of any wall painting or ornament." Jun'ichiro Tanizaki
Issues & Positions

At the start of my thesis I began to explore the many literal uses of shadow and how they can be applied to enhance architecture. Shadows represent more than a reiteration of the body that casts it. For example, attributes of shadow can be used in architecture to add interest to an otherwise dull surface. If used properly a designer can position the objects within a building to cast their shadow in a decorative way across a wall or surface to create detail. This, however, is dependent upon the orientation of the light source. Shadow also has the ability to bring out the richness and natural beauty of existing building materials. The textures and depth of stone and concrete seem to become more pronounced when they are wrapped in shadow. Shadow when viewed as a substance is a dark figure that is cast upon a surface. This can be used by an architect the same way shade is used by a painter, as a tool or technique used to intensify a composition. In my last exploration with shadow I designed a chapel where I used the negative space that shadow formed to project cross images on the floor and on the walls of the different meeting rooms. The images on this page show the effects in which shadow created when light intercepted the objects.

To understand how shadow is perceived by others and to comprehend ways in which shadow and light can be used to illustrate history, I had to explore ways in which shadow is figuratively expressed.
Have you ever gone into the sanctuary of a cathedral and felt a sense of safety and protection in the shelter of the shadows? In contrast have you ever felt intimidated by the unknown darkness when walking down one of its dimly lit passages? We experience these feelings because our perception of shadow can spark various emotions based on how the shadow is read. The differences we perceive between light and dark embody meanings that exceed perception; it is the significance of shadow that I wish to capture and incorporate into my architecture to give it meaning.

When an architect pays attention to the way various degrees of shadow and light can make us feel, a room that is plane and emotionless can be transformed into a space of remembrance and reflection. I believe this can be achieved by first having a firm understanding of the design intent and what messages you want to convey. Secondly it is important to know what connections people make with shadows. Shadows are perceived differently based on culture. For example, some people signify shadow with past and future, repetition and difference, as well as threat and protection to name a few. It is also important to find ways to manipulate light to create the intended effects both inside and outside of the building.
Precedent Research

The Jewish Museum, Berlin
Germany 1998 by Daniel Libeskind

The Jewish Museum Berlin was Libeskind's first building project, and one of Berlin's most prominent landmarks. Libeskind used shadow here in a figurative sense to evoke emotion and enhance the experience of the users. Instead of showing graphic images of the Holocaust, he wanted the users who journey through the building to reflect on the event. Libeskind stated, "It is not about form, image or text, but about the experience, which is not to be stimulated. A building can awaken us to the fact that it has never been anything more that a huge question mark....I believe that this project joins Architecture to questions that are now relevant to all people." Shadows also form a functional purpose in this museum because they are used to draw one's attention into a space.

"The Holocaust was not just a brief interference of image and sound, but a turning point which changed everything, everything in Germany and everything for the Jews. Even as Jewish history continues and one searches for a brighter future, a shadow will remain in spite of all the brightness. I believe this is also clearly felt by all visitors to my museum"...Daniel Libeskind
National Underground Railroad Freedom Center, Cincinnati, OH

In order to find a similar building type in which I could get some spatial and exhibit ideas for the cultural center, I decided to visit the Freedom Center in Ohio. The freedom center houses a variety of exhibits and images that covers topics such as the Middle Passage, the institution of slavery, the rise of abolition and Underground Railroad, and the Civil War. The freedom center tried not to focus just on the oppression of slavery of the past, but they have exhibit spaces demonstrating the modern struggles that still exist in the world. Visitors of the center can view images of “Un-Freedom” and learn about contemporary slavery, genocide, tyranny, racism, and hunger.

The Freedom Center is where I began to get ideas about the façade of my building and what characteristics it would have. On the freedom center they used concrete panels and rough cut stone on the majority of the building. The color and texture of the materials gave the building a natural look and made it stand apart from the variety of existing architecture already housed in Cincinnati.
Precedent Research (continued)

Contemporary Arts Center, Cincinnati, Ohio by Zaha Hadid

This project is Ms. Hadid's first commission in the United States, her first public work, and the first major new American museum to be designed by a woman. Overall, this dynamic project mixes an unpredictable design with overriding contemporary art issues as well as community interaction.

Because the space is very compact, "your journey through the building must be more vertical than horizontal", according to Ms. Hadid. Conceived as bringing the city street into the building and then turning it up the back wall, the ground level transforms into a series of ramps that lead up to the galleries. From these ramps, openings are cut through the building's structural wall, offering unexpected views of the galleries. These volumes stack neatly together creating a jigsaw puzzle-like facade. I personally thought the staircase ramps were the most intriguing part of the building, because it not only served as a fictional element but as artwork itself.

The museum has been designed to house contemporary art with all its unpredictability. Unlike more traditional art museums with boxy galleries, the center's gallery space consists of a mixture of voids and solids that are derived from the stacked volumes.

Entry Lobby

View from the top landing looking down at the other staircases
Project Overview

The project that I chose to test and apply my ideas to is an African American Cultural Center. The goals for this project were: First, to show how the literal and figurative uses of shadow can be applied to enhance both the architecture and the user's experience. Second, to take the users on a journey through the past inside a progression of grand spaces in which some are dense and some are open, in order for them to gain a better understanding of the African American culture and its many influences. The third goal is to educate all users about the history and some of the issues that center on the black community, with the help of light and shadow.

The building will be a place for learning, reflection, and remembrance. In order to become well rounded members of society it is important to know and have a better understanding of the people around us. This building will host opportunities for the public to learn about the African American culture by illuminating events and issues that have shaped their past, present, and future. It will be similar in some ways to the Jewish Museum in Berlin, where the effects of shadow were used to illustrate the bleakness of the Holocaust. Like the Jewish Museum, the African American Cultural Center will not only serve as a cultural landmark but as a beacon for diversity.
Site Data

The site for my Thesis design was along Indiana Avenue in downtown Indianapolis, Indiana. The Indiana Avenue Cultural District encompasses the most historically rich commercial district for Indianapolis' African American Community. Indiana Avenue, a diagonal gateway to downtown Indianapolis, is known for history, music, restored neighborhoods and spirituality. "Indiana Avenue is a powerful version of the American dream through an African American lens. The Avenue is the historic African American commercial, entertainment, and worship center. Today's multi-cultural landscape is filled with enduring community landmarks, a burgeoning university campus, contemporary residences and a lush waterway. The rich cultural heritage comes to life on stage, in public art, museums, nearby art galleries, night life and in the church." The African American Cultural Center will be an addition to the Avenue's existing cultural venues making this developing area of Indianapolis even more alluring.
My goal through my Thesis design was to give back to the community around Indiana Avenue by improving its cultural identity, improving its attraction assets, improving upon place making characteristics, attracting interested and involved people, enhancing the history and architecture, and increasing its organizational capacity.

The Cultural Center would improve the existing cultural identity of the Avenue by concentrating on African American Achievements, heritage and music. The center will permanently showcase stories for its visitors and enrich regularly schedule entertainment/educational programming. The attraction assets of the avenue will benefit from the Cultural Center because it will house themed, destination food/entertainment options including a soul food restaurant and art galleries as well as retail. Also the history and architecture of the Avenue will be improved upon by adding a new landmark to the area. The African American Cultural Center is not meant to overshadow the Madam Walker Theater as a landmark but to re-activate it with regular musical and historical performances that showcase Madam Walker’s life story.

I thought it was important to place the commercial aspects of the Cultural Center along the edge of the avenue that way they can get the most public exposure and it will create the same density that the Madam Walker Theater and the Sigma Theta Tau building create towards the intersection of Indiana Avenue and Dr. Martin Luther King Blvd.
Building Program

The African American Cultural Center was designed to have two different zones, the commercial zone, which is located along the edge of the avenue, and the experience (museum) zone which begins from the parking lot and runs through the majority of the building. The reason why the building is zone in such a way is because I wanted the patrons to be able to use the building throughout various times of the day and also to separate the two unique functions of the building.

The commercial zone was designed to give back to the avenue and the community, this area will have longer operating hours than the museum and will characteristics that are similar to the other buildings aligning Indiana Avenue. Theses spaces include:

<table>
<thead>
<tr>
<th>Space</th>
<th>Square Feet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Soul Food Café</td>
<td>1,154</td>
</tr>
<tr>
<td>Entrance Lobby</td>
<td>851</td>
</tr>
<tr>
<td>Gift Shop</td>
<td>567</td>
</tr>
<tr>
<td>Mechanical Room</td>
<td>420</td>
</tr>
<tr>
<td>Male / Female Restroom</td>
<td>420</td>
</tr>
<tr>
<td>Public Art Gallery</td>
<td>1,447</td>
</tr>
<tr>
<td>Administration</td>
<td>860</td>
</tr>
<tr>
<td>Circulation</td>
<td>1,787</td>
</tr>
</tbody>
</table>
The Museum Zone, which is the heart of the building, was intended to provide the patrons with the experience of going through the history of African American Culture. This experience will be centered on three permanent exhibit spaces. The first permanent exhibit space which is accessed from the parking lot deals with African Kings and Queens / Egyptian culture, the second exhibit deals with Slavery / Civil Rights, and the last exhibit concerns African American Culture Today and Beyond. The Museum Zone contains one public element which is an outdoor performance space. Since the history of Indian Avenue is rich in music such as jazz and blues, I thought it would be appropriate to have an outdoor area where musicians can come and perform for the patrons within the building and the general public. The spaces within the experience zone include:

- **Permanent Exhibit Space (1)** 5,289 sq. ft.
- **Permanent Exhibit Space (2)** 11,312 sq. ft.
- **Permanent Exhibit Space (3)** 12,530 sq. ft.
- **Temporary Exhibit Space (1)** 1,450 sq. ft.
- **Temporary Exhibit Space (2)** 1,450 sq. ft.
- **Male / Female Restroom** 420 sq. ft.
- **Story Telling Space** 1,529 sq. ft.
- **Outdoor Performance Space** 4,697 sq. ft.
- **Circulation** 6,131 sq. ft.
Design Process

The theme of the African American Cultural Center is centered on its three Permanent Exhibit Spaces, each exhibit deals with an era in history where African American culture was deeply impacted. To illustrate the experience of African Americans throughout history, the light, shadow, ceiling heights and materials will alter to highlight and convey the experiences and emotions that Africans and African Americans felt during certain key parts of their history.

In the African Kings and Queens/ Egyptian Exhibit space I used big ceiling heights to indicate high and thriving points in African American history and civilization in general. In this space there will be lots of natural light and natural materials used to give it a very natural feel. The skylights and windows in this area are large to represent openness and possibilities. As you make your way toward the end of this exhibit the ceiling height will decline marking the beginning of the slave trade.
In the Slavery/Civil Rights Exhibit low ceiling heights will be used to indicate confinement and oppression. There is no natural light in this area to give it a very dark and uncomfortable feel; however shadow elements and other lighting effects will be created through artificial light. This space does not have a very natural feel to it, and will use many man made materials such as steel and concrete. As you reach the end of this area the ceiling height will increase and natural light will start to shine through marking the end of the civil rights movement and its achievements.

In the African American Culture Today and Beyond Exhibit the ceiling heights will start off low but steadily incline to represent how African American’s are improving in status and quality of life, but it is not to the point of total equality where it should be. A mixture of natural and artificial light will be used in this area. Skylights will increase in size as you approach the end allowing more light in, which will indicate how much brighter times have gotten between the end of the Civil Rights movement and today. This area will have a combination of natural and man made materials.
Design Process (continued)

The first design challenge I faced was how to create circulation and views from one to the next. I wanted the users to have clear views into each of the permanent exhibit halls so they can look into the past, and look to the future. I also wanted to create some kind of link between the avenue edge and the parking lot edge of the site.

The second design challenge I faced was how to take the user’s trough a linear procession of spaces without making a linear building. Since I had a long site I wanted to cover the edge along the Indiana Avenue in or to redefine it and create density. The shape of my building conformed to two massive walls which were positions to face the angle of the avenue and the direction of the southern facing sun. These two walls which ran through the site gave me an area in which to order my spaces around. The first permanent exhibit gallery which is the African Kings and Queens/ Egyptian area was to be facing south and extensively glazed to allow the maximum amount of natural light into the building.
Certain public areas such as the gift shop and the café would share its southern exposure and would be glazed so that the patrons from the parking lot could look in and see the functions of the building. The slavery exhibit was sunken into the earth to allow no natural light in, and since it is a subterranean level it did not follow the order of the spaces above so rigidly. The African American Culture today and beyond exhibit space was to be a place of celebration and reflection. In this area I wanted to introduce a water element so that people can reflect on the events that they just experienced.
Design Process
(continued)

In this design scheme I began to improve upon the layout of the spaces. The more commercial spaces such as the café, gift shop, etc. now align the Avenue street edge. This area of the building will receive public exposure from both Indian Avenue traffic and patrons walking along the Avenue. The experience zone, which houses the three permanent exhibit spaces, begins at the parking lot edge and continues throughout the remainder of the building. The massive walls are still used as a means to order the interior spaces and to serve some functional purposes. In this scheme the wall begins at a thirty foot height and descends to a height of fifteen feet near the slavery exhibit. As the wall raps around it will gradually increase in height, this is an attempt to bring the theme of high times and low times in history to the outside.

One unique aspect about this design scheme is the established link between the avenue entrance and the parking lot entrance. One can bridge across this catwalk that links the two entrances together and look down into the slavery exhibit. In this area I wanted the patrons to get a taste of the overall theme of the building without having to go through the entire procession. On this catwalk you can see the shadow patterns which create ornament along the interior wall. The Slavery/ Civil Rights exhibit in this scheme is now more prominent and is dug deep into the earth to further drive the idea of the decline of freedom and the darkness of the times.
Using Shadow & Light to Illuminate History and Enhance Architecture
Design Process (continued)

Through further exploration of my plan layout I aimed to improve upon circulation of the building and also egress. Program aspects such as placement of restrooms and mechanical rooms started to take a bigger role in my thought process. I also began to think of ways I could give the two massive walls more meaning than just an ordering element.

In the last scheme the wall began at a high elevation, descended and then rose back to a high elevation which is supposed to be an outward representation of the African American experience. In this scheme I decided to make it one continuing wall instead of two separate elements. This wall is the “wall of oppression”. Like the oppression of African Americans, it starts off strong and solid, because in the past oppression was a way of life, however as time goes on and you near the civil rights and into the world of today oppression is became more and more scarce among African Americans and other cultural groups throughout the world. Therefore the wall of oppression begins to break down more and more as it wraps around the building. As the wall breaks down it begins to reveal an outdoor performance area where the reflecting pool sits to bounce light into the African American Culture Today and Beyond Exhibit.
When a patron enters into the Cultural Center from the Parking Lot he/she has the option of purchasing a ticket and experiencing the unique exhibit spaces which are the heart of the building. They would start off in the African Kings and Queens Exhibit hall, which is faced south and wrap around the wall of oppression to descend into the depths of the building, which is the Slavery/ Civil Rights exhibit hall. The decent into the exhibit hall is a plunge of three stories down a grand staircase. At the bottom there will be interactive exhibits that teach the patrons about this particular era in history. The ascent back up and into the African American Culture Today and Beyond exhibit is done by a winding staircase. Observers from the Avenue will be able to see people rise from out of the ground and into the grand exhibit hall, which opens up into the outdoor performance area.
Design Process
(continued)

In order to come up with the best possible design for my first formal Thesis Review I decided to take a step back and figure out which elements of my current design was working and which ones were not. I returned to the original form of the building and adjusted room layouts to flow with my new form. I added two entrance lobbies, one for the parking lot entrance and the other for the avenue entrance. The catwalk bridges these to elements together and gives the user a peek of what types of unique features the building has.

Due to the massive walls changing shape in response to my orientation change the massing became smaller and that design element began to reach out and break down into the site. The African American Culture Today and Beyond exhibit change orientation and now faces east to receive more natural light. The exhibit opens up to a grander outdoor performance area where the reflecting pool will be located.
Design Process
(continued)

Adjacent to the African American Culture Today and Beyond exhibit is the soul food café which now has outdoor eating with a few of the outdoor performance area.

I started to explore different roof and structural schemes that add to the expression of the building and create interest through the shadow that it cast. I decided that for the portions of the building on the outsides of the walls the roof should be moved away. This way light can come in and hit the structural members attached to the bearing wall and cast shadow along the wall and the corridor.

In this scheme I began to think more about the materiality of the building. The material of the commercial spaces will match the same materials used in the others buildings along Indiana Avenue. The Material of the Experience portion of the building varies and will be used in such a way to not only add to the look of the façade but to aid in the users understanding of the era of African American history that they are passing through. In the African Kings and Queens Exhibit, I wanted to use a reflective material like polished marble to illustrate the brightness and richness of that particular era of history. As you rap around the wall the material surface changes from marble to ruff cut stone.
The ruff cut stone is used throughout the Slavery exhibit to convey how harsh the times were. Concrete panels are used in the African American Culture today and beyond exhibit because that was a material that I thought lied well between marble and stone.
Design Process (continued)
One of the most impacting statements made during my first formal thesis review was that I needed to either push the programming functions to the outside of the building or get rid of them all together. I did not want to get rid of any programmed spaces such as the soul food café and art gallery, because they were put there to give back to the community. In response to this issue I decided to separate this function from the main portion of the building, with a circulation corridor as the only thing bridging the two elements together. This allows the commercial spaces to serve more of an individual function.

The commercial portion of the building will have several different spaces each with its own entry and exit to give them individuality. The façade of the commercial portion of the Cultural Center will have canopies cantilevering above the doors, so that it shares similar entrance vocabulary with the Walker Theater. In separating the programming portions of the building from the experience portion it opened up more space to experiment with how shadow, light, materials, and the massing of materials can be manipulated to enhance the architectural experience.
Since the site is located in Indiana I wanted to make sure the Cultural Center could be fully utilized all year long, so I started to explore ways in which I could bring the reflecting pool indoors so when the weather is bad people can still have a place to sit and reflect upon the events that took place within African American history.
Design Process
(continued)

There are two lighting effects that I wanted to use in the African American Cultural Center to gain the patrons attention. The first lighting effect is inside the African Kings and Queens/Egyptian exhibit, as you travel along the grand hall the ceiling height starts to decline and the floor area starts to get narrower. At the end of the passage you turn the corner and start to descend into the Slavery Exhibit, at this point when you turn the corner you go from the brightness of the first permanent exhibit space to the abrupt darkness of the Slavery exhibit. I am trying to illustrate through shadow and light how during that time in history where the slave trade began, the lives of the people in bondage changed instantly.

The second lighting effect occurs at the end of the Slavery/Civil Rights exhibit where you begin your ascent back up from the bottom of society into the place African Americans are at today. In this area instead of coming out of the light into darkness, you are coming out of darkness into the light. The bottom floor of the Slavery/Civil Rights Exhibit is the darkest area of the building, as you climb up however more light comes through to illustrate how the times are getting brighter as time goes by.
One major issue that I had to deal with is ADA accessibility, mainly for the descent into the Slavery exhibit which had been previously done through a grand staircase that descends three stories. In order for people with disabilities to gain the same experience as others patrons I explored how I could incorporate a ramping system to get people from street level to the bottom of the Slavery exhibit without loosing any of the previous effect.
Final Product

The following are the presentation drawings from my second formal thesis review:

**Site Plan:** This drawing shows the African American Cultural Center and its location along Indiana Avenue. It also shows the site improvements that were made and how the shadow is cast from the buildings unto the ground below.

**First Floor Plan** and **Lower Level Plan:** These drawings show the layout of the spaces, the relative sizes and circulation within the building.

**First Floor** and **Lower Level Shadow Plans:** These drawings show my predictions on how the shadow and light will be displayed throughout the building.

**Elevation:** taken from the Avenue

**Elevation:** taken from the parking lot

**Building Section:** Longitudinal building section shows the inside of the Slavery Civil Rights exhibit and the African American Culture Today and Beyond exhibit.

**Building Sections:** These are drawings that show the inside composition of the building from various locations.
**Final Product**
(continued)
The following are images of the final model. In this model I tried to accurately depict not only the massing of the forms and the lighting effects inside the different spaces, but also the texture, and look of the materials that cover the two massive walls. In doing this, it gave the model a realistic feel and allowed people to further understand my ideas through it.

View of Main Entrance from Parking Lot

View inside of African Kings & Queens/ Egyptian Exhibit
View inside of African Kings & Queens/ Egyptian Exhibit

View going down ramp inside of Slavery / Civil Rights Exhibit

Using Shadow & Light to Illuminate History and Enhance Architecture
Overhead view of African American Cultural Center

Using Shadow & Light to Illuminate History and Enhance Architecture
Reflection

In conclusion, this thesis has been about the journey throughout African American History and how the many characteristics of light and shadow can be applied to enhance this journey. My thesis began with the intent to solely focus on shadow and its many overlooked uses, but ended up being not only an exploration about shadow but also light, materiality, and the procession through space. I learned that if a designer studies and applies the uses of light and shadow to a piece of architecture the results can be extraordinary. By adding light and shadow to the spaces within the African American Culture Center I was able to not only give the spaces another layer of detail, but also added meaning. I believe that if I had more time to study each individual permanent exhibit space separately and experiment with the lighting effects within them then the spaces would have been even more successful in conveying my ideas.

Through the evolution of my design I was able to not only resolve the indoor spaces but begin to design some exterior elements of the building also. All in all I think the African American Cultural Center will be a wonderful addition to the community and the city of Indianapolis, and will serve as a beacon of unity and diversity.
Bibliography

Websites:
http://www.greatbuildings.com

http://www.indy.gov

Books:


Pauly, Daniele. BARRAGAN Space and Shadow, Walls and Colour. BIRKHAUSER: 2002
