

The background features several thin, angular lines in teal, yellow, and grey that intersect to form a series of geometric shapes, primarily triangles and polygons, across the entire page.

# Creating for CREATIVITY

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# CREATING FOR CREATIVITY

A Design Thesis Submitted to the Department of Architecture and Landscape  
Architecture of North Dakota State University

By

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In Partial Fulfillment of the Requirements for the Degree of  
Master of Architecture

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## Thesis Abstract

This thesis, Creating for Creativity, examines the impact an experience of an environment has on its inhabitant's creativity. The typology of this project is a 76,000 square foot art museum and creativity center located in downtown Bismarck, North Dakota. Stimulating experiences create opportunities for discovery and insight which can lead to the increase of one's creativity. Architecture can be used to help create those stimulating experiences that would encourage the human users to live in the physical world rather than the virtual world. This will be researched by using the concurrent transformative mixed method approach, combining qualitative and quantitative data to present a cohesive analysis.

**Keywords** *Creativity, Stimulating experience, Art museum, Design center, Bismarck, Senses, Discovery, Insight, Physical world*



## Problem Statement

How does the experience of an environment contribute to one's ability to be creative?

# STATEMENT OF INTENT

# Statement of Intent

## Project Typology

Art Museum and Design Center

## The Theoretical Premise / Unifying Idea

**Claim** Architecture has the potential to enhance the human user's creativity by providing stimulating environments that engage his or her senses.

**Actor** "Architecture creates and is created within, spatial contexts that allow actions to take place" (Jakobsen, 2012). Architecture becomes embedded with its place to create environments that people inhabit and experience.

**Action** Because architecture is something that people experience rather than merely observe, it has the potential to engage multiple senses of its users.

**Object** The creativity of an individual involves exceeding traditional ideas and proposing new ideas. New ideas are often sparked by new insight or discovery.

## Unifying Idea

Architecture must be integrated with its place to create a stimulating experience that will give its users opportunities for new insights and ideas.

## The Site

Bismarck, North Dakota

## Project Justification

Today, more people are engaged with the virtual world than the physical world. They look to the internet for new ideas rather than looking at what is right in front of them. Monotonous architecture has contributed to this withdrawal from the physical world. Even though the virtual world is a good source for new ideas, it is lacking the sensory experience of discovery. Architecture has the potential to bring people back to the physical world by creating a stimulating experience full of opportunities for discovery, which can lead to the enhancement of the user's creativity.

PROPOSAL

## Narrative

Art is the expression of a culture. It reveals a truth about a civilization, a certain group of people, or an individual in a way unlike any other. Emotions and expressions that cannot be described with words come out through art. Our artwork can reveal what we value in life and what we see as "beautiful."

Design is an expansion of art. It is art with an intended purpose. Designed objects are shaped by the way we live, but they also have the ability to shape the way we live. A design usually has a purpose beyond the present moment of creation. The act of designing takes ideas from the past to presently create something that will shape

the future. Designs can be used to create moments through human interaction. A designed chair is meant to be sat in. A designed website is meant to be interacted with.

Out of all types of designs, architecture is the type with the most human interaction. As something that is inhabited every day, architecture is something that we interact with daily. We live, move, and breath in architecture. A truth about our culture and about what we value is revealed through architecture. Before the Industrial Revolution, the art of architecture was focused on creating a beautiful and ornate place to inhabit. Architecture was viewed as a form of art. Architects tried to transcend the present notions to create something even more ornate and spectacular. With the rise of the Industrial Revolution, we started to place importance and value on the machine rather

than the craftsmanship. The automobile gained popularity, and because we were a society that valued the machine, architects and planners started to design for the machine. Cities became networks of streets and parking lots and the "art" in architecture was displaced.

With the rise of the automobile came the rise of the highway system. Many cities throughout the United States and throughout North Dakota were affected by the interstate system. With the interstate system, people were able to quickly pass around towns instead of slowly going through them. In Bismarck and Fargo, much of the downtown business suffered from the coming of the interstate. Business was moved from the downtown areas to the outskirts of town to cater to the interstate. Value was placed on efficiency over well-crafted and well-designed architecture. In turn, we ended up with buildings that were designed for the business and the consumer rather than the person and his or her experience.

Recently, however, people have begun to turn away from the consumer mentality that has so greatly dominated the United States. Some people are realizing the importance of great design and craftsmanship. In these recent years, the architecture of North

Dakota has greatly increased in quality of design. Business is moving back to the downtown areas and cities are regaining their identity as a place.

Even though the quality of architecture in North Dakota has been increasing, there is always room for improvement. An art museum and design center would create opportunities for people to learn about the importance of the art of design. Bismarck, the capital of North Dakota, is an ideal location for the center. It would help set the standard of design for the rest of North Dakota.

A design of high-quality will increase the standards of the ones yet to come. We look to our surrounding environments and experiences for inspiration. I am a painter, an artist, and a designer. When I paint I often recreate memorable moments in time. Other painters and artists may try to create new moments. Whether we recreate prior experiences or create new ones, our art is influenced by our experiences one way or another. It is architecture that shapes those aesthetic experiences. Through architecture, we can create beautiful experiences that will inspire others to design and be creative.

## User/Client Description

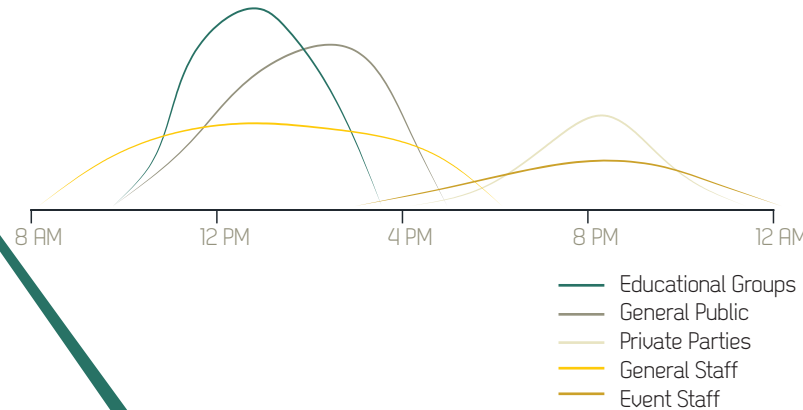


Figure 1-Usage of Space

### USERS

#### General Public

The general public will be able to visit the museum from 10 AM to 5 PM. These visitors will be a diverse group, ranging from the very young to the elderly. They could be from the community of Bismarck or surrounding communities, or they could be tourists of the area. The general public will go through the museum and design center at their own convenience.

#### Education Groups

The museum will provide opportunities for school groups or day cares to come learn about art and design. The students will primarily be elementary children, but could also include high school or even college students. Their visits will be much more structured compared to the general public. They will go through the museum on guided tours. The number of educational groups will peak during the early afternoon and will end before school gets out.

### Private Parties

Private Parties will have the option to rent out the facilities for events such as banquets or receptions. These events will mainly occur in the evening when the museum is closed to the general public. These parties will need special staff to accommodate them.

### STAFF

#### General Staff

The personnel who hold many different positions work together to make the museum run smoothly. The administration staff handles the general organization of the museum. Some of the positions held include the director of the museum, the human resources coordinator, and the receptionist. The communications staff mainly handles the marketing of the museum. The curatorial staff are in charge of overseeing the collections and exhibits. They will also be responsible for the educational groups. Other staff include the maintenance and custodial staff, the librarian, and cafe and gift shop workers.

#### Event Staff

Special staff will be needed to accommodate private parties. This staff includes but is not limited to event coordinators, caterers, and custodial workers.

#### Artist

The artist-in-residence will have 24-hour access to his or her studio. The time in which the artist is in the studio will differ day to day according to his or her individual schedule. The studio space will need to accommodate whatever medium the artist works in.

# Major Project Elements

## OBSERVING Gallery Spaces

The main components of an art and design museum are the gallery spaces – places for the users to observe the artwork.

The galleries will showcase the work of artists and architects, both world-renowned and local, as well as the work of students. The gallery spaces will include both permanent collection galleries and changing exhibition spaces.

There will also be an interactive gallery that will be ever changing as the users engage with the space.

The gallery spaces will extend to the outside with the outdoor sculptural garden. These gallery spaces are necessary to not only show current creativity, but to also encourage new creativity.

*Collection Gallery, Exhibition Gallery, Interactive Gallery, Outdoor Sculptural Garden, Shipping and Receiving Area, Storage, Restoration Workshop, Photo Documentation*

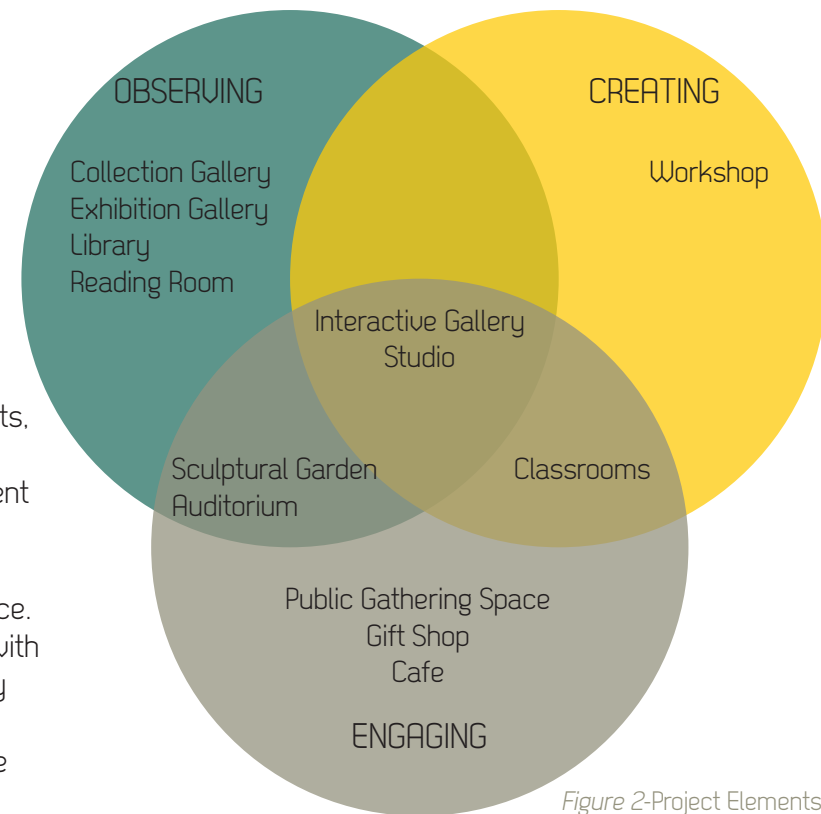


Figure 2-Project Elements

## Library

The library will provide a place to learn about art and design outside of the collections and current exhibitions. This library will provide resources to the users and the staff of the museum. A reading space will provide a place for education. It can be a place to learn individually or a place to learn as a group.

*Library, Reading Room*

## CREATING Classrooms

As the observers become inspired by the showcased art and design and the surrounding environment, they will need a place to grow in their creativity. Classrooms will provide an outlet for the observers' creativity. There will be a classroom for two-dimensional creating as well as one for three-dimensional creating.

## Studios

Studios will provide spaces for local artists to work to encourage creativity in the community. The public going through the museum will have the chance to see creativity in work at the artist's discretion. They will be able to see the process behind the final product.

## ENGAGING

### Auditorium

The auditorium will mainly be used for the showing of films. It could also be used for performances or a space for public meetings. It can be a place where the museum staff and artists can engage the public through presentations or forums.

### Public Gathering Space

A gathering space will be used for banquets and other events. This space and the other spaces that engage the public are necessary to promote creativity in the community.

### Other Public Spaces

Other public spaces include a gift shop and café.

## ADMINISTRATING

The needed spaces for administration include offices, a break room, meeting rooms, and a receptionist area.



## Site Information

The proposed site is located in the Midwest region. With much of the area covered in rolling plains, farming and agriculture thrives in the Midwest. Despite the region's strong emphasis on agriculture, the Midwest is a place where art and culture thrive. Some cities, such as Chicago or Minneapolis, are cities full of diversity.

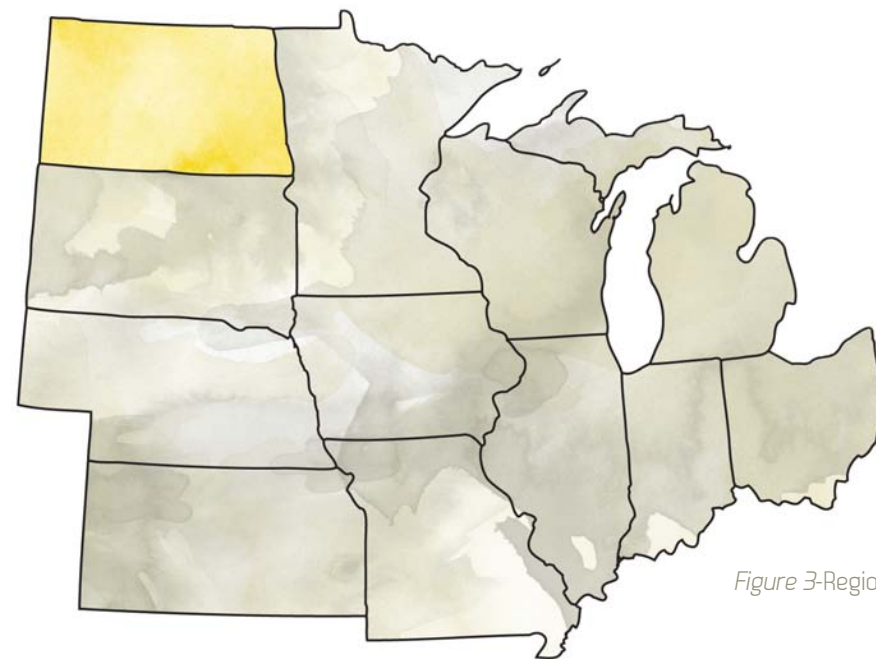


Figure 3-Region Map

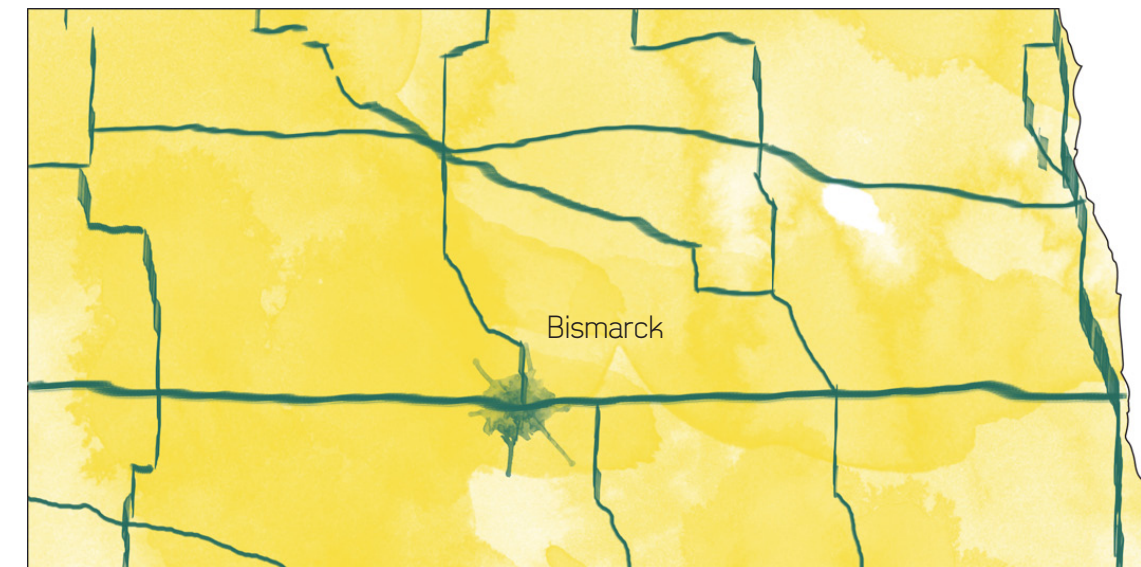


Figure 4-State Map

With the Northern Pacific Railway passing through it and the Missouri River running through it, Bismarck was once a transportation hub. Bismarck remains a crossroads for the state of North Dakota. Bismarck, the second largest city in the state, has a population of over 62,000 and is growing rapidly.

## Site Information



The proposed site is located in Downtown Bismarck. The first buildings in the downtown area were constructed in that area because of its proximity to the railroad. The downtown area has decayed somewhat with the decline of the railroad and the addition of the interstate along with other factors. Recently, there has been a push to revitalize downtown (Hoffman, 2012).

Figure 5-City Map



Figure 6-Landmark Image  
Courtesy of bismarccafe.com



Figure 7-Site Context Image  
Courtesy of bismarccafe.com



Figure 8-Landmark Image  
Courtesy of bismarccafe.com

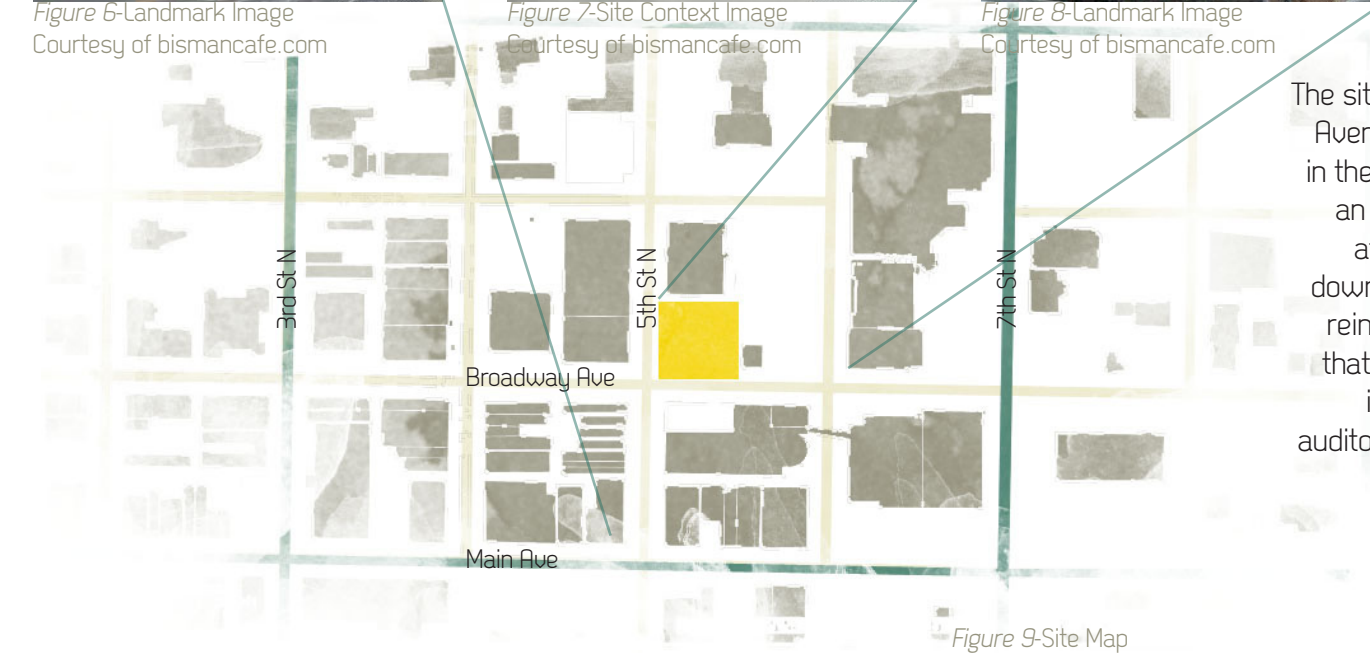


Figure 9-Site Map

The site is on the corner of Broadway Avenue and 5th Street. It is located in the downtown core zone. Placing an art museum and design center at this location will help with the downtown revitalization. It will help reinforce the art and social culture that already exists downtown with its proximity to the Belle Mehus auditorium and the historic Patterson Hotel building.

# Project Emphasis

## Unifying Idea

Architecture must be integrated with its place to create a stimulating experience that will give its users opportunities for new insights and ideas.

## Project Emphasis

This thesis will examine how architecture can be used and designed to intentionally enhance the creativity of its users. This will be examined by focusing on the following areas of research:

1. The *integration of architecture* into the surrounding environment will be examined to understand how one cohesive experience can be formed.
2. The *human senses* will be researched to understand how humans experience places or things.
3. The *psychology behind creativity* will be studied to understand why humans are creative and what sparks that creativity.

# Plan for Proceeding

## Definition of a Research Direction

Research will be conducted with a focus on the Theoretical Premise/Unifying Idea. Research will also be conducted to further understand the project typology, the historical context, the site through analysis, and programmatic requirements.

## Plan of Design Methodology

I will employ a mixed method approach to my research that includes both quantitative and qualitative analysis. This method will be conducted through a concurrent transformative strategy where both quantitative and qualitative data will be gathered concurrently. This strategy will be guided by the theoretical premise/unifying idea. The integration of the quantitative and qualitative data will occur at several stages throughout both the research phase and the design phase. The quantitative data will include statistical and scientific data. The statistical data will be obtained through an archival search and the scientific data will be obtained through instrumentation. The qualitative data will be gathered from direct observation, an archival search, and direct interviews. Graphic analysis and digital analysis will be employed throughout the process.

## Plan for Documenting the Design Process

The documentation will be compiled digitally. Any sketches or paintings will be scanned into the computer and physical models will be photographed at the various stages throughout the process. This compilation will be made digitally available to scholars in the North Dakota State University Libraries Architecture Collections.



## Work Plan

Project Documentation	89 days	1.14 - 5.16
Conceptual Analysis	9 days	1.14 - 1.24
Context Analysis	14 days	1.14 - 1.31
Spatial Analysis	15 days	1.20 - 2.7
Floor Plan Development	25 days	1.27 - 2.28
Section Development	13 days	1.29 - 2.14
Material Development	18 days	1.29 - 2.21
ECS Passive Analysis	10 days	2.3 - 2.14
Landscape and Site Development	25 days	2.3 - 3.7
Structural Development	20 days	2.3 - 2.28
ECS Active Analysis	13 days	2.10 - 2.26
Envelope Development	13 days	2.10 - 2.26
Detail and Spatial Development	20 days	2.10 - 3.7
Lighting Design	10 days	2.17 - 2.28
Acoustical Design	5 days	2.24 - 2.28
Midterm Reviews	5 days	3.10 - 3.14
Project Revisions	19 days	3.17 - 4.10
Graphic Presentation	19 days	3.31 - 4.24
Model Building	6 days	4.21 - 4.28
Presentation Preparation	5 days	4.24 - 4.30
Thesis Exhibit	3 days	4.28 - 4.30
Final Thesis Reviews	8 days	4.30 - 5.9

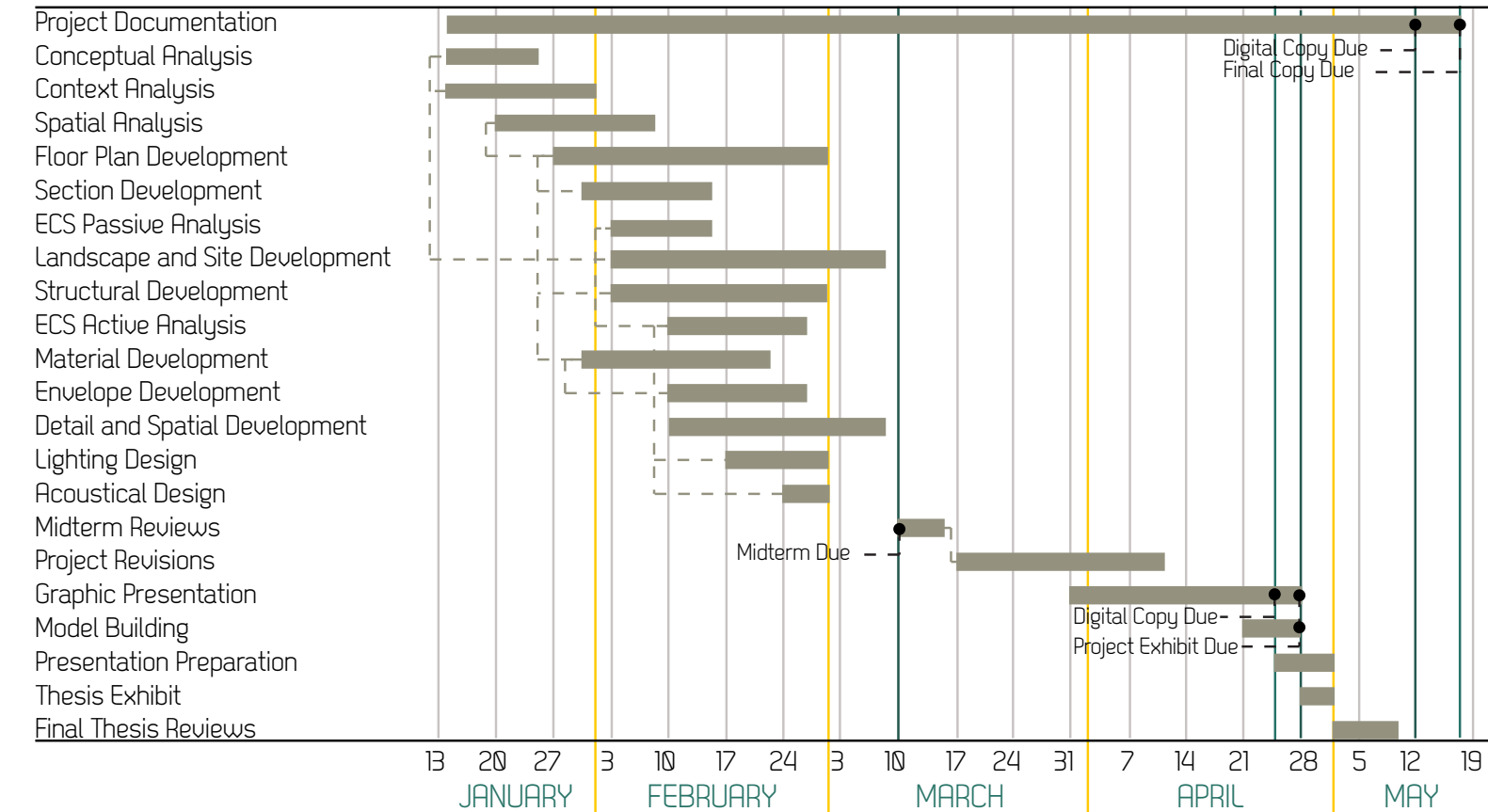


Table 1-Work Schedule

# Previous Studio Experience

## SECOND YEAR

Fall 2010

Darryl Booker  
Tea House \_\_\_\_\_ Fargo, ND  
Boat House \_\_\_\_\_ Minneapolis, MN

Spring 2011

Joan Vorderbruggen  
Montessori School \_\_\_\_\_ Fargo, ND  
Bird House  
Dwelling \_\_\_\_\_ Cripple Creek, CO

## THIRD YEAR

Fall 2011

Steve Martens  
Wildlife Interpretive Center \_\_\_\_\_ Marmarth, ND  
Masonry Guild \_\_\_\_\_ Hebron, ND

Spring 2012

Rhet Fiskness  
Presidential Library \_\_\_\_\_ Fargo, ND  
Visual Arts School \_\_\_\_\_ Bismarck, ND

## FOURTH YEAR

Fall 2012

Cindy Urness  
Mixed-Use High Rise \_\_\_\_\_ San Francisco, CA  
DLR Group Competition

Spring 2013

Don Faulkner, Frank Kratky  
School Master Plan \_\_\_\_\_ Ghana, Africa  
Marvin Windows Competition \_\_\_\_\_ Ghana, Africa  
Urban Installation \_\_\_\_\_ Fargo, ND

## FIFTH YEAR

Fall 2013

Mike Christenson  
Parasite \_\_\_\_\_ Kyoto, Japan

PROGRAM

## Research Results

Creativity is seen all around us, whether it is in art, science, or another field. Many artists are considered “creative” after creating a new piece of art unlike anything before it.

Scientists can be “creative” when they develop new ideas or solve problems by a new means. “Creative” is generally used to describe someone who has come up with something new. Creativity is “the ability to transcend traditional ideas, rules, patterns, relationships, or the like, and to create meaningful new ideas, forms, methods, interpretations, etc.” (Dictionary.com). But how does one get this ability to create something new and meaningful? Is it a gift that only some have or is it

an ability that everyone possesses to varying degrees? Is it something that can be enhanced? To understand creativity and whether or not it can be enhanced, we must first understand what affects creativity.

Creativity and the process behind it is something that people have been pondering for a long time. Some creative ideas arise out of chance or accidental discovery, while others arise by making new connections or associations based on past experiences. Many psychologists have developed different theories to understand creativity. Those different categories focus on different aspects of creativity labeled the four p’s of creativity: process, product, person, and place. The process theories look at the nature of the mental processes that occur when a person is thinking or acting creatively (Kozbelt, 2010). The theories that focus on the process include cognitive theories and stage and componential process theories. The theories that focus on the product are more objective-based. The downside to studying the product is that inferences are made about the process and person (Kozbelt, 2010). A lot of the early research on creativity has been focused on the person. Many people with creative potential have similar traits.

However, creativity does not depend solely on the person. The place or environment and the pressures of that environment have an effect on an individual’s creativity.

## PROCESS

Many different mental processes are involved during the creative processes. These mental processes happen in everyone, whether those occur many times during the day or only occasionally. In the documentary, *The Creative Brain: How Insight Works*, one person describes creativity as “the combination of ordinary mental processes combined in ways we hadn’t described before that somehow allows us to gain new insights and to generate new ideas” (Dart, 2013). One of these processes is the sudden moment of insight. Sometimes an idea seems to come out of nowhere. A light bulb seems to come on. It comes on so quickly that it seems to be accidental or by chance. In *The Creative Brain: How Insight Works*, the processes in our brains prior to and during those moments of insight were examined. Prior to those moments, the brain shuts down some of the visual information causing distraction. When a moment of insight occurs, the right brain

sparks. The dendrites or branches of a neuron are branched differently on the right side of the brain. They collect information from a broader source of input. This broader range allows them to make connections that might not be evident otherwise (Dart, 2013).

Another mental process involved in creativity is divergent thinking. Divergent thinking allows one to see things differently. During divergent thinking, communication pathways within the brain are activated or suppressed to allow novel thoughts to emerge (Dart, 2013). When one is engaged in convergent thinking, the pathway is efficient. Similar to an interstate, the goal is for a thought to get from point A to point B in the fastest and most efficient way possible. When one is engaged in divergent thinking, the pathway is slower and more meandering. Multiple pathways are involved, making it more likely for new ideas to collide.

## PEOPLE

Although everyone can be creative in one way or another, people who are considered more creative have certain similar personality traits. One of these personality traits is being open to experience. In a study done by Gregory Feist and Frank Barron, a sample of graduate student men was assessed in personality and creativity among other things. The men were assessed again 45 years later. The study found certain personality traits, including openness to experience, predicted the creativity of the individual (Feist & Barron, 1973).

Plasticity is a combination of openness to experience and extroversion. Those who show plasticity tend to “explore and engage flexibly with novelty” (Silvia, 2009). In a different study done by Paul Silvia and others, the plasticity and other traits were studied to find a link to the creativity of individuals. The researchers found that plasticity predicted “essentially every asset of creativity” whether it was by a large or small margin (Silvia, 2009). Although some other personality traits have a link to creativity, openness to experience clearly has the largest impact.

Another personality trait that has a link to creativity is self-directed learning readiness. After assessing participants on their level of self-directed learning readiness and their creativity, Cox found a strong correlation between the two. Those who have high levels of self-directed learning readiness tend to be able to adapt to different cultures (Cox, 2002). One can infer that a relationship exists between creativity and cultural adaptability. A creative person, one who often tends to be open to experience, is often able to adapt to new cultures. Although personality traits are inherent in each individual and cannot be changed fully, the

environment can be designed in a way that creates new experiences for those who are open to it.

## PLACE

The environment in which one lives has an impact on creativity. Everything that is part of the culture in which one resides, including the people, the community, and the time, affects the creative output of a person. In “Understanding Creativity - Person, Place, Product, and Process (Part 1)” Mihaly Csikszentmihalyi, a professor and creativity researcher says that the environment has more of an impact on the creative outcomes than the individual intent on creativity (Brunn, 2009).

Our culture has an effect on what we value and what we consider as “normal.” “The values and norms of our upbringing and current environment dictate whether we are encouraged or discouraged from being creative and whether our ideas or products are recognized as being creative” (Brunn, 2009). Creativity is often thought of as divergent from the norms. Intentionally diverting from the norms can increase creativity in other ways. In *The Creative Brain: How Insight Works* Doctor Simone Ritter did an

experiment in which she gave participants instructions on how to make a chocolate chip sandwich. Those instructions were different than the normal, conventional way of making a sandwich. After performing that task, the participants tended to be more creative (Dart, 2013). The environment can be designed in a way to encourage diverting from the norms. The environment can create new experiences that can help people think in new ways. Ritter did another experiment in which participants were in a virtual reality. In that virtual reality, some of the laws such as gravity that govern our world did not exist. For example, when the participant walked closer and closer to an object, the object perceptually stayed the same size instead of getting bigger. After experiencing this virtual reality, the participants were tested in divergent thinking. They were able to come up with more creative answers to the questions they were asked than prior to the experience (Dart, 2013). Although an actual environment cannot break away from the physical laws such as gravity, it can create new experiences in other ways that can potentially enhance creativity.

Another way in which the environment can enhance creativity is by providing a place to get away from the problem. In stage



theories on creativity, the process of creativity involves three different stages: a preparation stage, an incubation stage, and an illumination stage. In the preparation stage, the individual gathers information and defines the problem. In the incubation stage, the individual gets away from the problem. During the third stage, an insight occurs and the individual is able to solve the problem. Salk, the scientist who synthesized the polio vaccine, gained new insights after getting away from the problem by visiting Italy. Prior to his trip to Italy, he was working in a dark basement laboratory. By taking his mind off of the problem and getting a new experience, he made a breakthrough in his research (Anthes, 2009).

I personally have had similar experiences. Sometimes I get stuck on problems in my design work. If I work in the same place on the same thing for too long, I do not make any breakthroughs. However, if I take a break I often think of new ways to solve the problem. Sometimes those new ideas come through insights that happen while I am away from the problem, while others arise when I come back to the problem after taking some time away. Different environments help to take my mind and others' minds off of the problem.

Our thoughts, feelings, and behaviors are affected by the places which we inhabit. Aspects of the physical environment can influence creativity. Ceiling height, for example, has an impact on the way we think about a problem. Joan Meyers-Levy found that higher ceilings encourage people to think more freely. One hundred different people were assigned to rooms with either an eight-foot or a ten-foot ceiling height. In the rooms, they were asked to group sports from a list given to them into different categories of their choosing. Those in the room with the higher ceiling tended to come up with more

abstract categories, such as how "challenging" the sport was. The people in the room with the lower ceiling were more detail-oriented and concrete in their categories. They came up with categories such as the number of players on a team. The actual height of the ceiling, however, is less important than how one perceives the space. Meyers-Levy thinks that "you can get these effects just by manipulating the perception of space" (Anthes, 2009).

“Because of advances in neuroscience, we can begin measuring the effects of the environment at a finer level of detail than we have before. We can understand the environment better, we can understand our responses better, and we can correlate them to the outcomes. (Anthes, 2009).”

By understanding how we perceive and respond to an environment, we can design environments that foster desired outcomes such as creativity. We can design spaces in which one can solve a problem as well as spaces in which one can get away from the problem. Understanding how we can design those spaces starts with understanding how we perceive those spaces.

## PERCEPTION of ARCHITECTURE

Architecture and the environment we live engage all of our senses to create an embodied experience. Our experiences are integral to our being. "Sensory experiences become integrated through the body, or rather, in the very constitution of the body and the human mode of being (Pallasmaa, 2005, p. 40). These experiences become integrated by the combined use of our senses.

Through our senses, the experience of an environment is perceived and enters our memory. We often think of the sense of sight alone as the most important. Although it has been proven to be the most

important, it needs natural interaction with the other senses. "The problems arise from the isolation of the eye outside its natural interaction with other sense modalities, and from the elimination and suppression of other senses, which increasingly reduce and restrict the experience of the world into the sphere of vision" (Pallasmaa, 2005, p. 39).

In the digital age that we live in, the visual aspect of architecture is becoming more and more important as the other senses are being suppressed. We judge buildings, some that are on the other side of the world, by the two-dimensional image on our screens. By judging a building

from a two-dimensional image, we are missing out on the embodied experience of a building and we get an incomplete view of the building. An embodied experience engages all the senses and encourages the interaction of the senses.

Pallasmaa stated that "vision reveals what touch already knows" (p. 42). We can look at the world all that we want, but it is not until we touch the world that we become immersed in it. When we were young, we learned about the world by touching it. We would grab our toys and drop them only to pick them up again.

Young children are constantly reminded to not touch the artwork in a museum. As adults we still may have the urge to touch things, but we usually resist that urge because of the norms set by society. Touch is the only sense that gives a sensation of spatial depth. Touch "senses the weight, resistance, and three-dimensional shape (gestalt) of material bodies, and thus makes us aware that things extend away from us in all directions (Pallasmaa, 2005, p. 42). We learned how to see depth with vision by first experiencing the world through touch.

Experiencing the world through touch usually involves movement through the environment with our bodies. The exploration of our environment through movement is referred to as kinesthesia (CITE). Kinesthesia can be something as simple as the movement of the eyes or it can be a full-body experience. Architecture must take kinesthesia into account. The embodied experience of architecture involves movement through the environment. Multiple layers exist in an environment that can only be experienced through movement.

Prior to visiting a place, you may have an idea of what the place will be like, but until you visit it and move through the space, you cannot fully understand it. Before I visited Bergen, Norway I had seen pictures of it and had an understanding of it. I knew that it was by the sea, so I could guess what the experience of it would be like. When I actually visited it, I gained a new understanding and appreciation of Bergen. As I walked through the city, the smell of fish from the fish market wafted my way. The breeze from the sea blew in my direction as I got closer to the sea. The sound of people playing music on the streets increased and decreased as I walked by. The light was shining through the clouds late into the evening. I would have missed these layers of the experience had I not

walked through and experience the city. My different senses worked together to form an embodied experience.

How then can we design in a way that takes into account all of the senses? How can we design an experience rather than a static building? We must design with the surrounding environments. The surrounding environment will add layers to the experience of the architecture and the architecture will add to the experience of the surrounding environment to become one experience. "On one hand [architecture] concerns a relational process of responding to conditions and circumstances that are already present, and, on the other hand, it concerns the process of causing new conditions and circumstances to emerge and to be responded to" (Jakobsen, 2012).

We must also design with movement in mind. We already design for movement through the use of hallways and stairs, but people move through the whole building. They move through each room. In the Kiasma Museum of Contemporary Art, Steven Holl designed the circulation is integrated into the experience of the

museum and of the artwork in the museum. The circulation allows visitors to choose his or her own movement through space. He or she has the ability to stop along the way and move through the space at his or her own pace. "Open-ended casual circulation provokes moments of pause, reflection, and discovery" ("Kiasma, Museum of Contemporary Art," 2012). Each person is going to move through the space differently. Architecture can be designed in a way that allows each person to have his or her own experience.

Digital technology has affected the way we view architecture. It has made architecture a sight rather than an experience. Digital technology, however, is not

going to go away. We can use the digital technology we have to design an experience. The experience can start from the screen. We have the technology to create interactive websites that show architecture. Some websites let you look and walk around with a click of a button. Although this should not be a substitute for the real experience, it adds another layer through virtual movement and interaction.

The experience with digital technology can continue into the actual building. Digital technology can be integrated into a design of the space to make it interactive. For example, Connection is a bridge in Canada that changes with human movement through it. Vertical luminaires on the bridge change in geometry and color based on the movement through the space. The bridge becomes a "fluid entity that transmits the rhythm of the crowd to its surroundings" ("United Visual Artists – Canopy + Connection", 2013).

Designing spaces in a way that encourages interaction can result in an experience rather than a static space. Interaction with spaces allows us to use more than the

sense of sight. Interacting with spaces often involves movement through the space with our body. Our senses work together as we move through the space to form an embodied experience.

## Research Summary

Architecture has the ability to influence creativity by providing opportunities for new insights or discoveries through a stimulating experience. Architecture is integrated with other elements of an environment to make a place that people move through and discover through perception. This research first looked at creativity and the processes behind it. To understand how architecture can enhance creativity, it is important to first understand the mental processes behind it. Next, the research looked at how individual traits affect creativity. Some individuals are more inclined to have creative thoughts than others. The research then looked at the role of place in creativity. It

looked at how the environment and our experiences with the environment impact the way we think. Lastly, this research focused on the perception and experience of architecture. It looked at how an environment can engage us to produce an embodied experience.

“Creative thought” can be used to describe a wide array of thoughts. Many different mental processes can occur while “creative thought” is taking place. Divergent thinking is one of these mental processes that can be considered as thinking creatively. Divergent thinking can be influenced by our past experiences. Experiences that cause us to break away from the norms can increase our divergent thinking. Architecture can help form those new experiences.

Although personality traits are inherent and cannot be fully changed by the environment, it is important to understand the personality traits that correlate to creativity. One trait that strongly correlates with creativity is openness to experience. Those who are able to adapt to new experiences and are open to exploring and engaging new things or ideas are more likely to be creative. Although

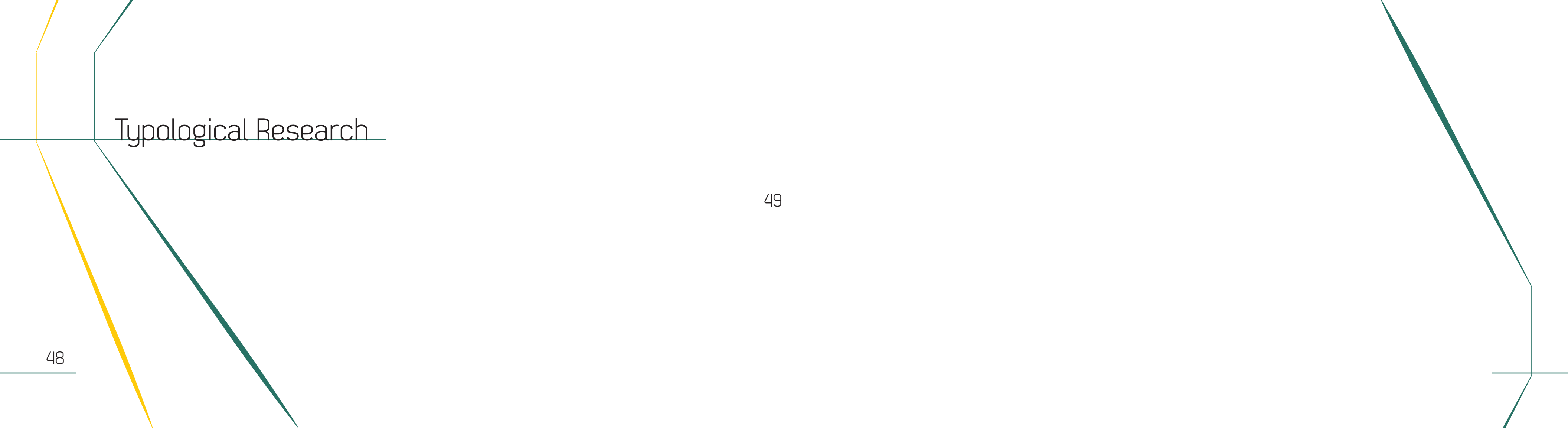
environments cannot make an individual opposed to new experiences less opposed, it can cater to those who are open by providing new and engaging experiences.

Place and the environment has an impact on the creative output of a person. The place and culture in which one resides defines what is considered “creative.” “Creativity” is often seen as diverging from the norms or standards which the place and culture set. A change in place or environment can often lead to breakthroughs or discoveries. New environments can help our brains make new connections that we could not see before. Those new connections can be made about something we see before our eyes or it can be more abstract. Out of the four main factors of creativity, place is the most applicable to the architecture field. Architecture is integrated into its surrounding context to provide the environment in which people experience.

Architecture is more than a visual work of art. It is an experience that engages multiple senses. It is something that people move through and experience with their body. It is something that people interact with and explore. The surrounding context of a particular piece of architecture is combined with the architecture itself to

create an embodied experience. The surrounding context adds multiple layers to the experience. Architecture can be designed with its surrounding context to create new experiences in which people can discover new things or ideas.

In conclusion, the research has found that past experiences and current experiences impact the way people think. Those experiences can be shaped through architecture. Those experiences can be designed to enhance the human user’s creativity. Those experience multiple senses as the human user moves through the space and interacts with the space. This movement and exploration through the space can give the user opportunities for discovery and insight.



Typological Research

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# Kiasma Museum of Contemporary Art

Architect	Steven Holl
Location	Helsinki, Finland
Size	136,525 ft <sup>2</sup> 38,700 ft <sup>2</sup> of gallery space 97,825 ft <sup>2</sup> of service and support facilities
Year Completed	1998
Distinguishing Characteristics	Mix of curved and rectilinear shapes, Casual, open-ended circulation, Distribution of natural light
Major Program Elements	Entry Atrium, Galleries, Offices, Cafe, Bookshop, Auditorium, Artist Workshop



Figure 10-Site Plan

Drawing courtesy of *Building Type Basics for Museums*

The Kiasma Museum of Contemporary Art, located in Helsinki, Finland, is a place where the city meets the landscape. "Kiasma" is a biological term for the intersection or crossing of optic nerves. Located in the heart of the city, the Kiasma curves to link Finlandia Hall to the north with the Parliament building to the west and the Helsinki station to the east, while engaging with the Toolo Bay and the northern landscape. The Toolo Bay extends right up to the Kiasma, forming an urban mirror. "With Kiasma, there is a hope to confirm that architecture, art, and culture are not separate disciplines, but are all integral parts of the city and landscape." (Vitale, 2009).



Figure 11-Exterior Perspective

Photo by Paul Warchol courtesy of [stevenholl.com](http://stevenholl.com)

As the place where the city meets the landscape, the Kiasma is much more than just an art museum. It is a place for community events such as dance and music programs or seminars. One of the major project elements is the 240-seat auditorium. The back elevation of the theater foyer is made of continuous glass. This continuous glass allows people passing by to see what is happening and to be drawn in. The cafe at ground level holds events such as poetry readings and is adaptable for other informal events.



Figure 12-Theater Foyer  
Photo by Jenni Nurminen courtesy of [www.kiasma.fi](http://www.kiasma.fi)



Figure 13-Café  
Photo by Pirje Mykkanen courtesy of [www.kiasma.fi](http://www.kiasma.fi)

The galleries are rectangular with the exception of one curved wall. The proportions of the galleries are based on the golden section. The galleries are meant to be silent, but not static backdrops to the artwork. The gallery rooms are differentiated through slight irregularity ("Kiasma, Museum of Contemporary Art," 2012).



Figure 14-Gallery Space  
Photo by Paul Warchol courtesy of [stevenholl.com](http://stevenholl.com)

The Kiasma Museum is made up of two intertwining masses. The curved mass is curved to capture sun, implicating the natural lines of nature and the landscape. The rectilinear mass is shaped by the rectilinear form of the city. An atrium is located in the middle of the two spaces. This atrium provides access to the cafe, bookshop, and auditorium.

Figure 15-Kiasma Massing

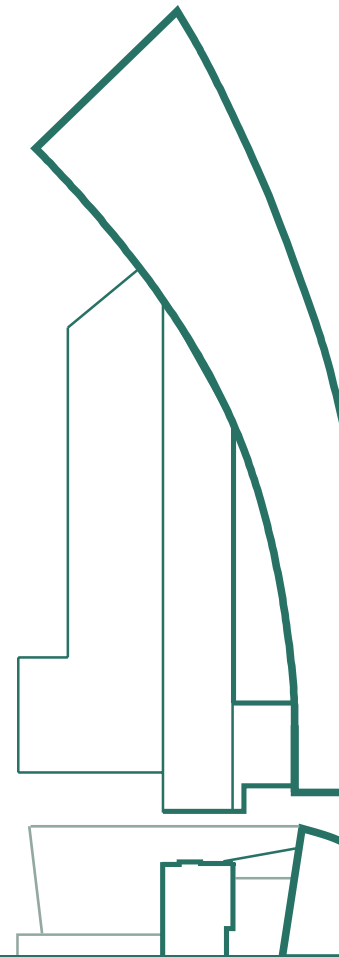


Figure 16-Kiasma Hierarchy



Figure 17-Kiasma Structure





# Daylighting and Geometry

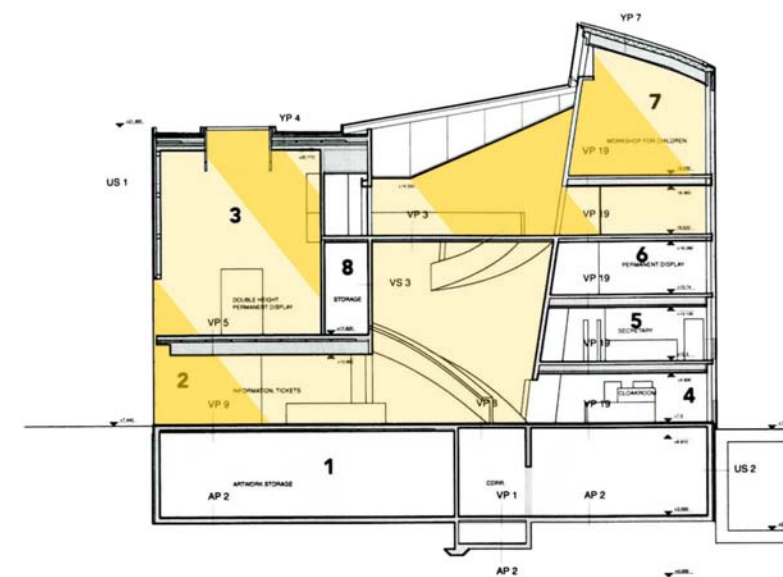


Figure 18-Kiasma Daylighting

As is the case for most art museums, light was an important part of the design. The natural lighting for this site, however, is unique in that the sun never gets above 51 degrees because of its northern location. The light is more so horizontal than vertical for much of the year. Holl was fascinated by this horizontal light and wanted to capture as much as possible. The western facade curves to mirror the path of the sun between 11:00 AM and 6:00 PM, the time when the museum is open. This curved facade captures and diffuses the light through “carefully oriented apertures to bring an optimum degree of natural light into the exhibition spaces” (“Architecture of Mind.”). The natural light is deflected into the central section to bring light to the lower galleries.

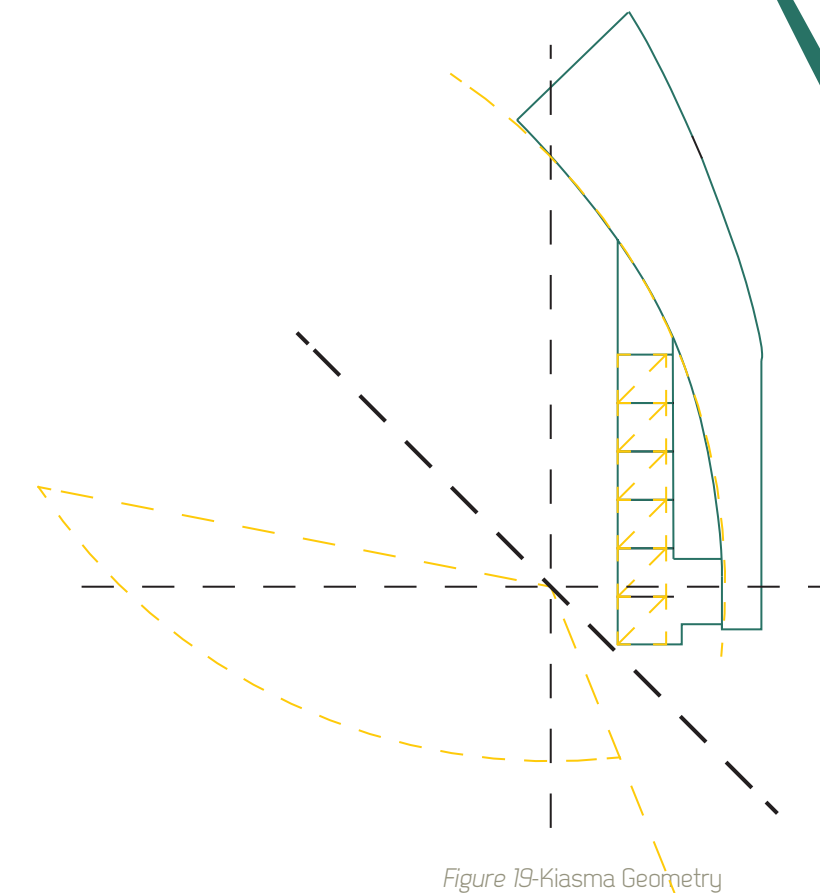


Figure 19-Kiasma Geometry

Figure 20-Kiasma Plan-to-Section

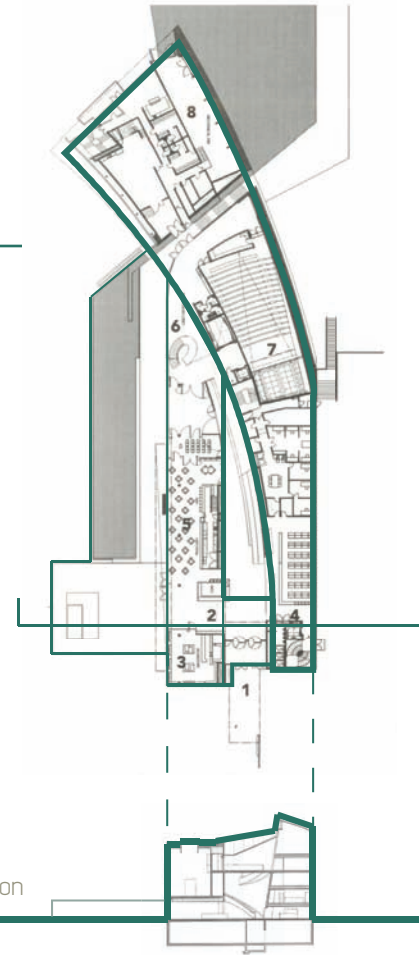


Figure 21-Atrium

Photo by Paul Warchol courtesy of stevenhall.com

The circulation of the Kiasma Art Museum has a casualness to it. The central atrium is the main route of circulation. The open-endedness of the atrium allows each visitor to choose his or her own route. Ramps and curved stairways located throughout the central atrium are wide enough to allow different paces. People are able to stop for a moment along the way if something catches their eye.

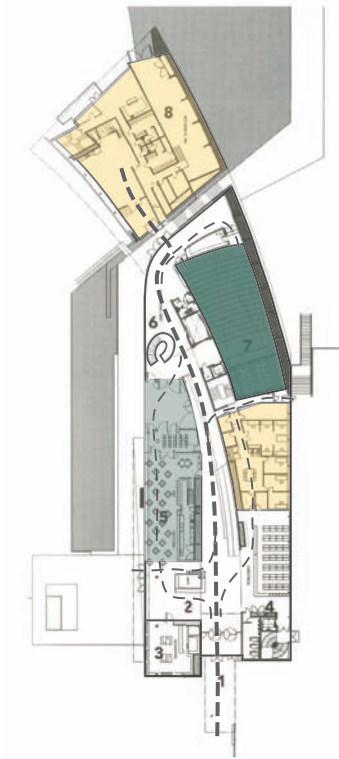


Figure 22-Kiasma Circulation

The design for the only contemporary art museum in Finland began as a design competition in 1992. Holl designed in a way that showed his understanding of the site and the unique conditions of it. The form of the building not only reacted to the built environment which surrounded the site, but also to the natural aspects of the site such as the light or the bay.

This case study is similar to the Modern Art Museum of Fort Worth in that they both are designed in a way to maximize natural light. Because art can be sensitive to sunlight, the light is diffused when entering the gallery.



Figure 23-Exterior Profile  
Photo by Ari Palm courtesy of [www.kiasma.fi](http://www.kiasma.fi)

The sunlight in Finland, however, is much different than the sunlight in Fort Worth. Holl was fascinated by the horizontal light and designed the building to deflect and diffuse the light at the proper angles.

Art galleries are often seen as the background for the art. This, however, does not make them static. The design galleries impact the way people view art. They are more than a static background. The galleries in combination with the art provide an experience. People walk through the museum at different paces and pause at different spaces. Holl has designed a museum that allows each person to experience it differently. He designed dynamic galleries that move people throughout the building. He has designed a museum that stimulates multiple senses and creates an embodied experience.



Figure 24-Circulation  
Courtesy of [stevenholl.com](http://stevenholl.com)

# Modern Art Museum of Fort Worth

Architect	Tadao Ando
Location	Fort Worth, Texas
Size	153,000 ft <sup>2</sup>
	53,000 ft <sup>2</sup> gallery spaces
	5,600 ft <sup>2</sup> education center
	94,400 ft <sup>2</sup> other services and support
Year Completed	2002
Distinguishing Characteristics	Simple geometric shapes, Y-shaped structural columns, Incorporation with natural elements
Major Program Elements	Galleries, Education Center, Auditorium, Restaurant

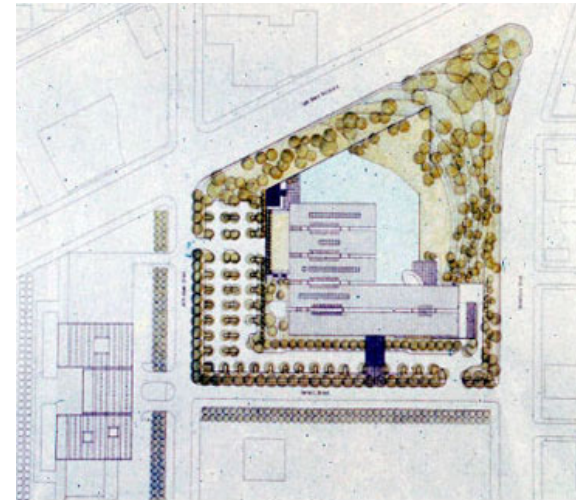


Figure 25-Site Plan  
Courtesy of Modern Art Museum via arcspace.com

The Modern Art Museum of Fort Worth, Texas is an elegantly designed museum by Tadao Ando that combines simple geometric shapes with the organic form of nature. Because of his eastern background, the incorporation of nature was important to Ando. The site is located in the Cultural District of Fort Worth and is in close proximity to other museums, such as the Kimbell Art Museum. Much of the eleven acres of land the site is on is landscaped. Although perceived as opposites, the natural landscaped site and the geometric building work together to complement and strengthen each other.



Figure 26-Exterior Perspective  
Photo by Liao Yusheng courtesy of archdaily.com



The Modern Art Museum of Fort Worth is more than a building. It is a place where people can come together and interact with each other. "Space will only have a life when people enter it. So the important role architecture can play, and that space plays within that architecture, is to encourage an interaction between people, between people and the ideas being presented in the paintings and sculpture, and most importantly between people themselves." (Sveiven, 2012) The open, simple plan puts the emphasis on what is happening inside the space rather than what defines the space.

Figure 27-Fort Worth Plan-to-Section

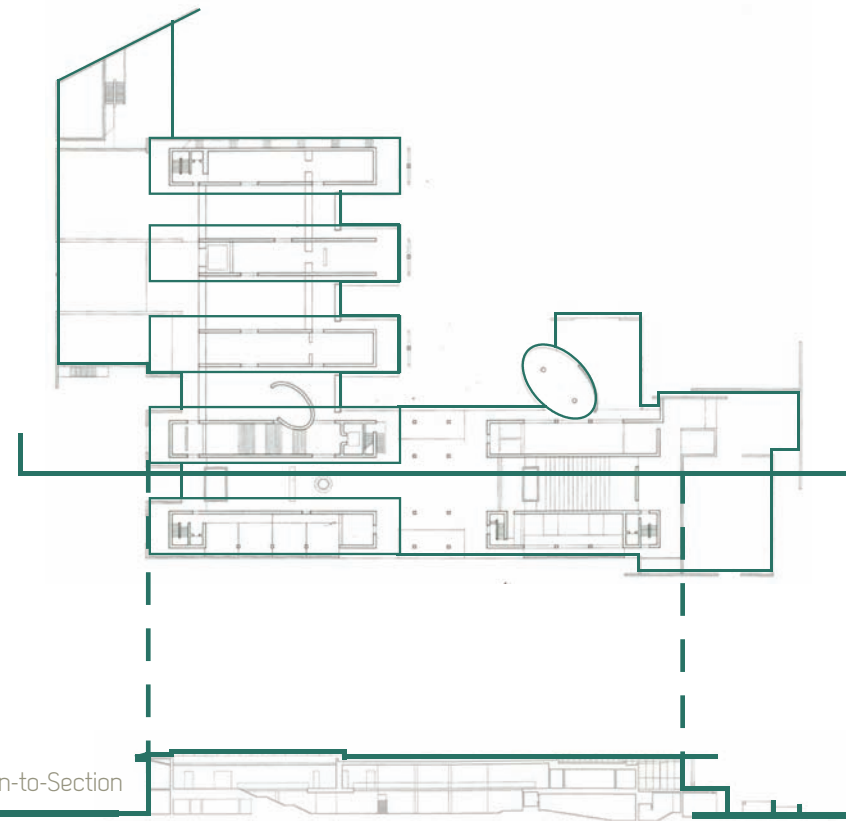


Figure 28-Fort Worth Circulation

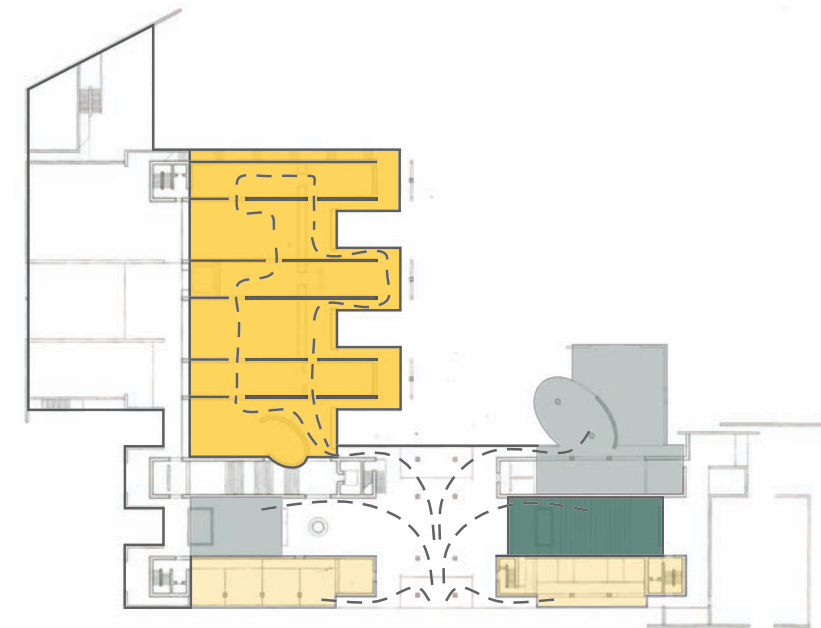
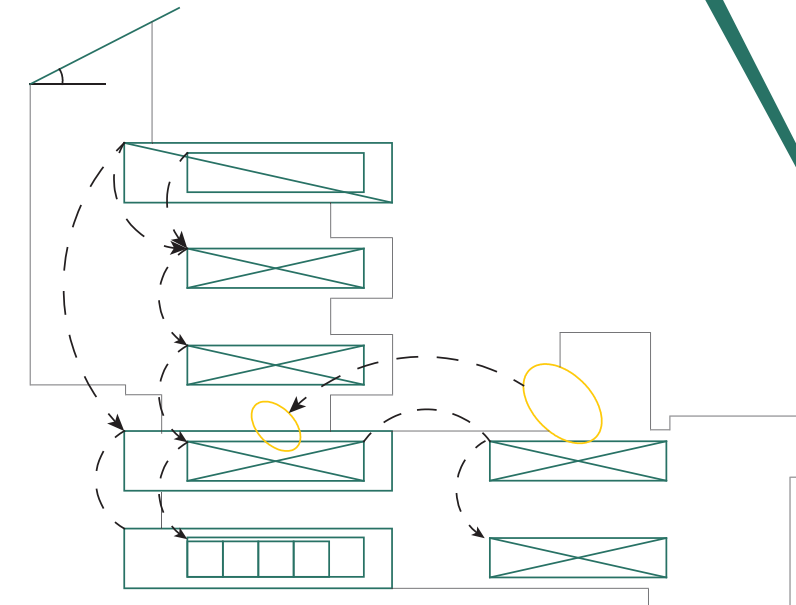


Figure 29-Fort Worth Geometry



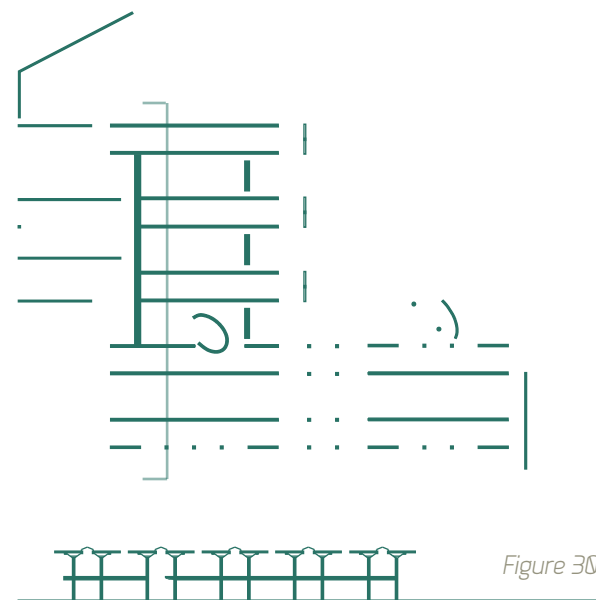


Figure 30-Fort Worth Structure

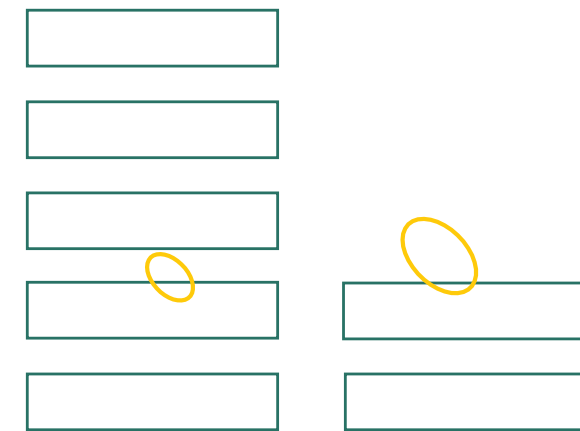


Figure 31-Fort Worth Repetitive-to-Unique

The galleries located in the rectangular units are surrounded by circulation enclosed in glass. Although the glass is a physical barrier, it is not a visual barrier. The outside becomes part of the experience of the inside. The glass is complemented by the pond that comes right up to the building. The building is reflected onto the ponds and at times appears as if it were floating on the water. These glass boxes are covered by cantilevered roofs.

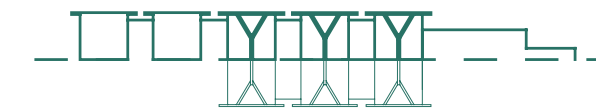


Figure 32-Fort Worth Symmetry-to-Balance



Figure 33-Reflecting Pond  
Photo by Liao Yusheng courtesy of  
archdaily.com

The cantilevered roofs that cover the galleries protect the artwork from the harsh Texas sun. These roofs are supported by Y-shaped columns. The cantilevered roofs introduce natural light into the galleries through skylights and clerestory windows. The light is filtered through a translucent membrane before entering the gallery spaces.



Figure 34-Exterior Perspective  
Photo by Liao Yusheng courtesy of archdaily.com



Figure 35-Fort Worth Hierarchy



Figure 36-Fort Worth Massing

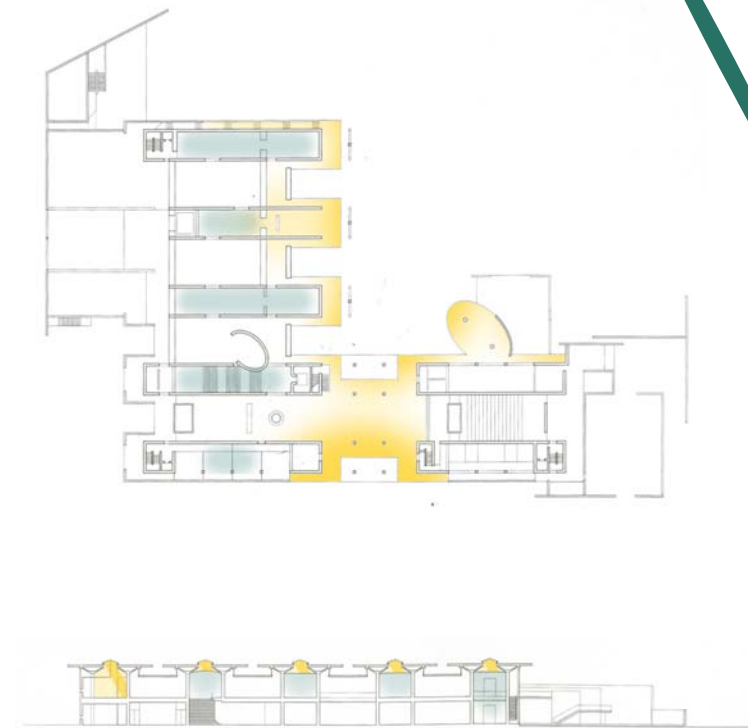


Figure 37-Fort Worth Daylighting

Ando used simple geometric shapes to form spaces in which people can interact with the artwork as well as with each other. Even though geometric shapes can be perceived as static, these shapes become dynamic as the light is filtered into the space. The light glass and heavy concrete used combine to create a building that is both protective of its artwork and inviting to passerbys.

This case study is similar to the Kiasma in that it incorporates rectilinear shapes with the organic influence of nature. This building differs, however, in that the

building is all geometric shapes. The organic shapes are integrated into the landscaping.

Ando places a heavy emphasis on the interaction between the visitors and the artwork, making it more about the experience than merely viewing the artwork. That experience has layers that come from both the inside and the outside.

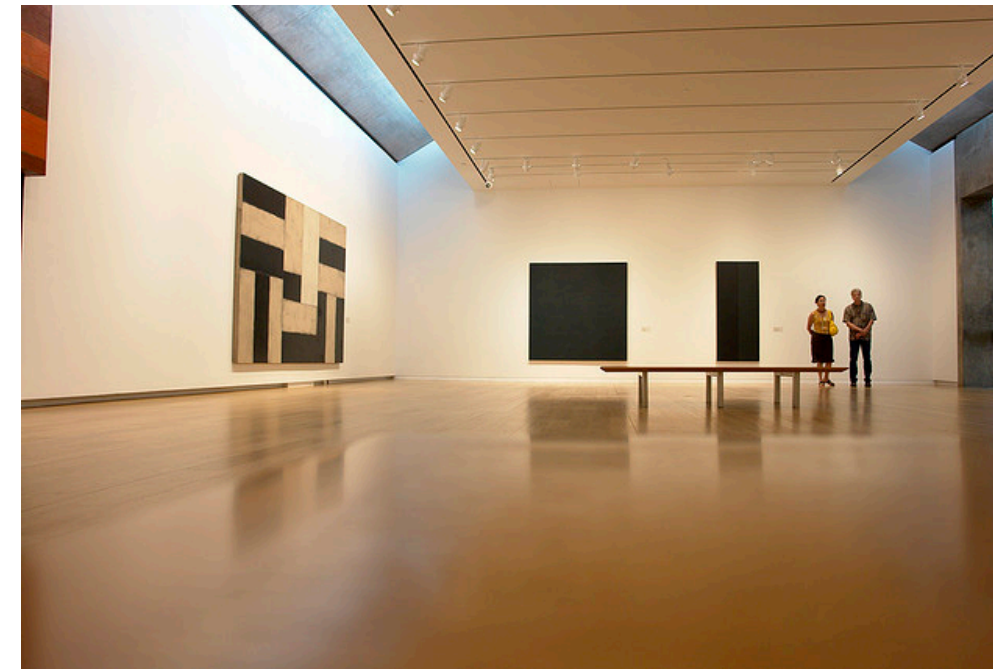


Figure 38-Gallery Space  
Photo by Timothy Woo courtesy of flickr.com



Figure 39-Night Perspective  
Photo by Liao Yusheng courtesy of archdaily.com



# Virginia Museum of Fine Arts

Architect	Rick Mather and SMBW Architects	
Location	Richmond, Virginia	
Size	165,000 ft <sup>2</sup>	40,000 ft <sup>2</sup> gallery space
Year Completed	2010	
Distinguishing Characteristics	Integration of old and new architecture; Large expanses of glass	
Major Program Elements	Atrium, Education Center, Galleries, Restaurant, Library, Sculpture Garden	



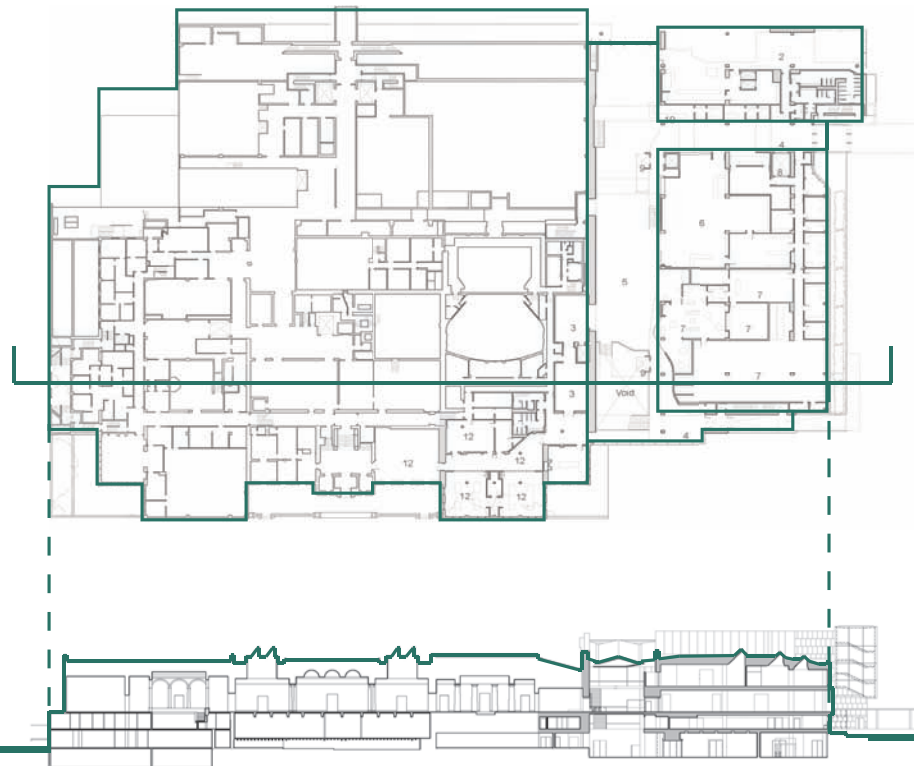
Figure 40-Aerial View  
Courtesy of Google Maps

The Virginia Museum of Fine Arts is a building that has changed and been added to throughout the years since its start in 1936. The latest expansion was designed by London-based architect, Rick Mather, in 2010. Mather connected his modern design with the Georgian-style existing building through the use of vistas along the circulation paths. It is located in the Museum District of Richmond, just south of the Virginia Historical Society. The main entrance to the building is located along North Boulevard.



Figure 41-Night Perspective  
Photo by Bilyana Dimitrova courtesy of Arch Record

Figure 42-UMFA Plan-to-Section



Older Wing

New Expansion

Figure 43-UMFA Massing

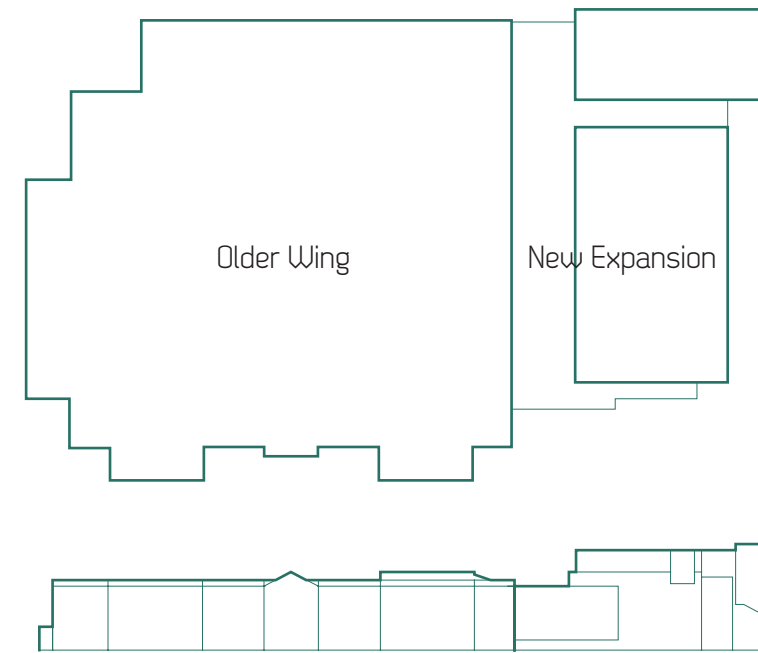


Figure 44-UMFA Structure

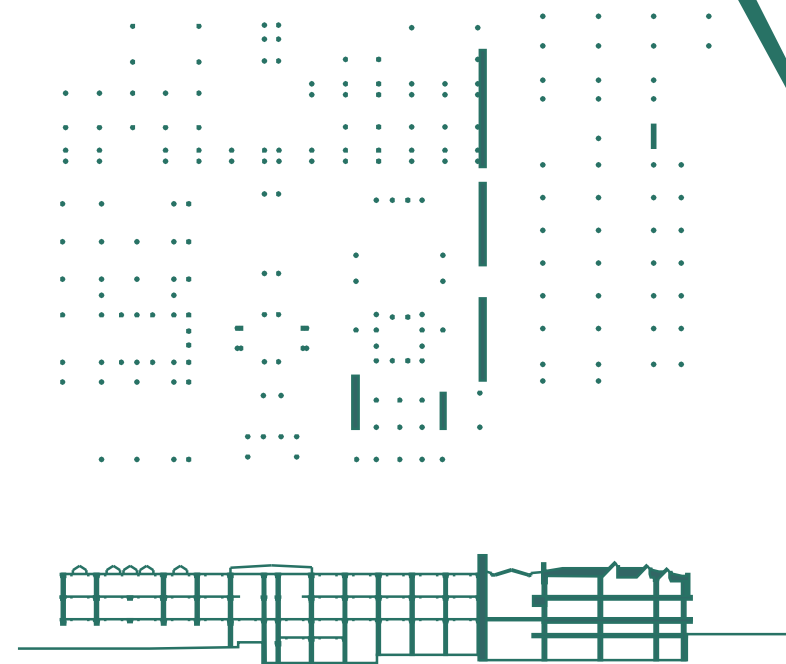




Figure 45-Gallery Space  
Courtesy of Dezeen.com

The atrium is a major part of the expansion. Labeled "Main Street", it is where the old and new meet. Five glass bridges located in the atrium link the old museum with the new expansion. Not only does it link the old with the new, but it also links the inside and outside through large expanses of glass. Those expanses connect the inside to the outside while inviting the outside people in who are passing by.



Figure 46-UMFA Hierarchy

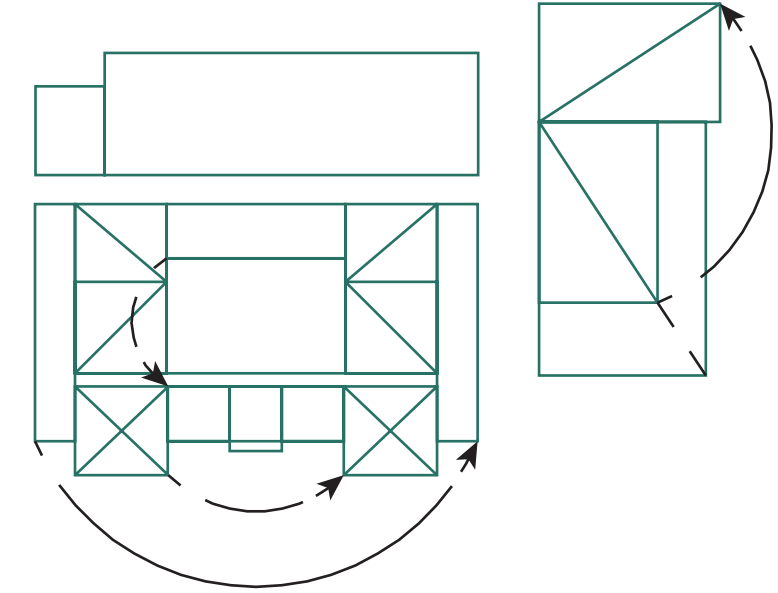


Figure 47-UMFA Geometry

# Daylighting

Natural light is most prevalent in the atrium. The natural light that pours into the atrium combines with the heavy use of glass and light color to give the atrium a light and airy feel. Northern light, the best kind of light for making artwork, is captured and used in the conservation room.



Figure 48-UMFA Daylighting

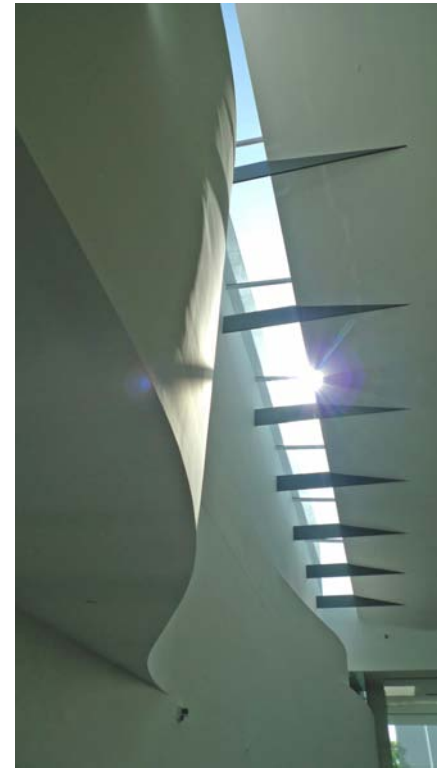
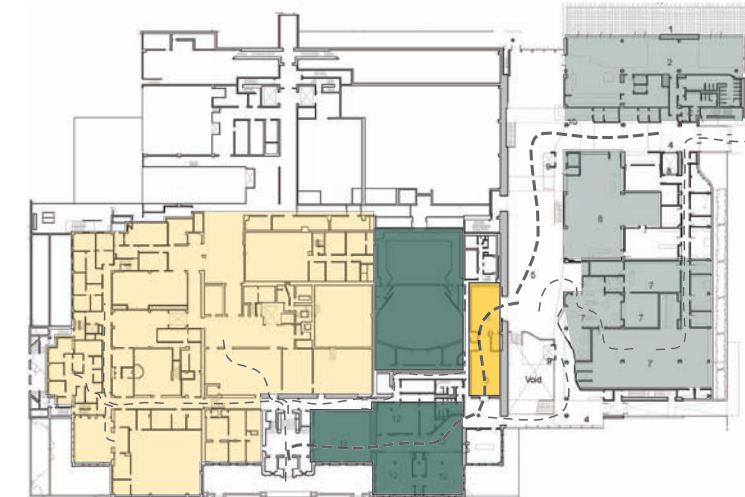


Figure 49-Atrium Perspective  
Photo by Tippy Tippens courtesy of Arch Daily



Ground Level



First Level

Figure 50-UMFA Circulation

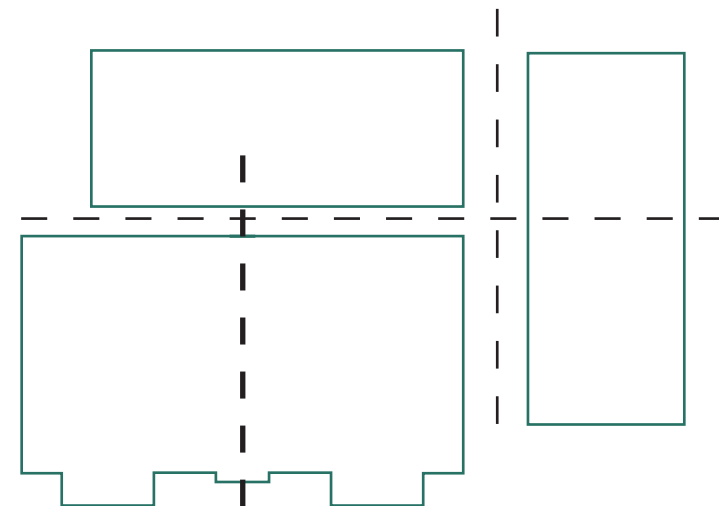


Figure 51-UMFA Symmetry-to-Balance

Mathers added onto the old wing of the Virginia Museum of Fine Arts without overpowering it. The new expansion seamlessly meets the old wing. Instead of looking to the past by replicating the old wing, Mathers designed for the present and brought a modern element to the museum. "Key to the spirit and success aesthetically of the McGlothlin Wing is how the building seamlessly connects with the museum grounds through large window openings" (Slippek, 2013).

This case study is similar to the Kiasma in the way that the central atrium captures natural light, connecting the outside elements with the inside. It uses large expansions of glass, similar to the Fort Worth Museum, to light up "Main Street." The circulation is more defined in the Virginia Museum of Fine Arts than in the other two case studies. The circulation is defined by the bridges which lead to vistas outside.

In the *Washington Post*, Philip Kennicott compares the details of the new expansion to a high-end spa. It is more than a place to look at artwork. It is an experience. It combines places for pleasure and relaxation, such as the library or restaurant, with the galleries to provide a place where people can rejuvenate and reflect. "Its success, as architecture, lies in how well it balances these terrestrial pleasures with the seriousness of its new galleries and how easily it connects with the existing buildings" (Kennicott, 2010).



## Typological Summary

The three case studies in this research are all art museums located in various places with different conditions set by their surrounding context. The three case studies strengthened the unifying idea in that they were integrated into their surrounding contexts to provide an experience for the visitors. The Kiasma Museum of Contemporary Art was integrated into its place conceptually by becoming the link between the city and the landscape. Both the Modern Art Museum of Fort Worth and the Virginia Museum of Fine Arts were connected visually to their surroundings through large views to the outside.

Although all of the museums different slightly in their programs, they shared many major program elements. All three case studies emphasized the importance of the experience in the museum. The elements worked together to form an experience. All three had a central area that connected different parts of the museum. The Kiasma and Virginia Museum of Fine Arts both have an atrium as that central place for connection. That central area in all three museums connected the galleries to a cafe and gift store. It also gave access to an auditorium in both the Kiasma and the Fort Worth Museum. These more public spaces were kept close to the main entrances, while the more private spaces were more dispersed throughout the building.

All three museums incorporated natural light into the designs. Because of the importance of using controlled light in museum, it is not too common to use natural light in the galleries. Both the Kiasma and the Fort Worth Museum used natural light in the galleries. Because the light was filtered before going into the gallery, it was controlled enough to work with the art. This use of natural light added a layer to the experience that changes from day to day. It brought in the outside. The galleries in all of the museums were protected from direct sunlight. The Kiasma Museum had a unique condition because of the horizontal light in Finland. Although Bismarck is not as far north as Helsinki, I can learn from the techniques Holl used and adapt them to fit the sunlight in Bismarck.

Each museum was not only affected by, but also affected the social and cultural context surrounding it. Both the Kiasma and the Fort Worth Museum are located in the cultural centers of their cities. The Virginia Museum of Fine Arts was in a more historical district. The new modern expansion connected the past with the present.

The three museums engage the visitors multiple senses, with an emphasis on the visual sense, making the visit to the museums an experience. The emphasis on circulation through the spaces shows the importance of experiencing the museum. The spaces behind and in between the artwork have become just as important as the artwork itself in the experience of the museum. These case studies have supported my unifying idea, "architecture must be integrated with its place to create a stimulating experience that will give its users opportunities for new insights and ideas."



## Historical Context

As art and culture, as well as the awareness of art and culture, have changed throughout the years, the buildings that showcase that art have changed. Some museums are built specifically as a place to hold art, while other museums started off as something else but have been adapted to fit the needs of an art museum. Art museums have been heavily influenced by the political and cultural context that surrounds them. They continue to change to adapt to the current time and culture.

## HISTORY OF ART MUSEUMS

Prior to the Renaissance era, most art was owned privately. The first public art museum was started in Rome during the Renaissance. The Capitoline Museum is the first public art museum, was started when Pope Sixtus IV donated a group of bronze statues to the city of Rome in 1471. These statues were arranged on Capitoline Hill, the center of ancient Roman religious life ("Foundations and First Acquisitions"). As the years passed, the number of statues on Capitoline Hill increased until 1654 when it expanded into the new building, Palazzo Nuovo. It was not until 1734 that the building was first opened to the public. As the center of the Renaissance, Italy became abundant with art. Other art museums opened up to the public during and after the Renaissance, including the Vatican Museum started in 1503 and the Uffizi Gallery Museum in 1769 in Florence.

Many of the early museum buildings did not start out as museums. The Uffizi Gallery, for example, started off as a building for the administrative and judiciary offices of

Florence ("History of Uffizi Gallery"). The Louvre in Paris, France started as a fortress built to protect the city in 1358. In 1364, the fortress started to transform into a royal residence. The Louvre became much more ornate and grandiose over the years to meet the wants and needs of the royalty. The building became a work of art. The Louvre was made into a museum during the French Revolution when the National Assembly declared it a place to gather all of the monuments of art and science. The Louvre opened its doors in 1793, free to the public with artists given priority ("History of the Louvre: From Château to Museum"). The Louvre has continued to expand and adapt as its collection grows.

The first public art museum opened in the United States is the Wadsworth Atheneum in Hartford Connecticut. It was founded in 1842 by Daniel Wadsworth. Wadsworth had wanted to establish a "Gallery of Fine Arts" but was persuaded to build an atheneum instead, a "cultural institution with a library, works of art and artifacts, devoted to history, literature, art and science" ("A Brief History of the Wadsworth Atheneum").

The design of the museums often reflected the artwork that it held. In museums such as the Vatican Museum or the Louvre, the artwork blended with the interior of the building and the building interior was a work of art. The walls and ceilings were elaborately painted in the same style as the artwork it held. When modern and contemporary art hit the scene, the design of museums greatly changed. Modern art was about deviating from the past conventions and trying something new, and the designs of new museums reflected this idea.

The Guggenheim Museum in New York was one of the first museum to break away from the classical style of architecture that dominated the older museums. Designed by Frank Lloyd Wright in 1945, it made a statement that "it was not the Metropolitan or the Frick or any other classical museum," because it was holding contemporary art (Francis, 2006). The Guggenheim Museum catalyzed a change in the design of art museums. Many museums now try to make a statement with the design. The architecture was seen as just as important as the art. The buildings became a masterpiece. "Since much museum building in

the last several decades has been for modern and contemporary collections, the whole approach to design has departed from traditional images" (Francis, 2006). This new approach to design can be seen in Gehry's Guggenheim Museum in Bilbao.



Figure 52-Capitoline Museum  
Courtesy of Romemuseums.webs.com



Figure 53-Guggenheim Museum of Bilbao  
Courtesy of www.guggenheim-bilbao.es

## MUSEUM POLITICS

Museums are centers of culture. They tell of a certain group's past through art and other artifacts. They define the values of our culture. With this power of defining our culture and the values of it, comes political power and political struggle. In *Museum Politics: Power Plays at the Exhibition*, Timothy W. Luke describes a blindness of the political struggles in mainstream political science and mainstream media. "Today museums are venues where many key cultural realities are first defined; and in this process of definition, the personal becomes political, and the political cannot be divided easily thereafter from the personal" (Luke, 2002, p. xiii). Because the values of a culture are important and personal, people are intent on having a say in what those values are. With different people having different opinions and interests, museums often find themselves in the middle of a cultural war.

Museums are cultural institutions for their own culture, as well as other cultures. Not only do museums find

themselves in the middle of national cultural wars, but they are sometimes in the middle of international disputes. Many museums hold art and artifacts from other countries. Those countries want to take back what they declare is their own. In 2010, a Chinese delegation was sent to the Metropolitan Museum of Art in New York and other museums to document every item in which they could seek restitution (Desnick, 2012). Although they have not done anything yet, this opportunity as well as other opportunities exist. Because of the value placed on the art and artifacts within the museum, the museum building itself is of high value.

The value put on the museum, especially in nineteenth and early twentieth century, gave it a sacredness. Art was seen as something done only by people who were highly-trained. Prior to the opening of the first public museums, the viewing of the art was only enjoyed by the few elite and galleries were owned by the rich. When art museums were open to the public, they were viewed as "outposts for the civilizing mission of that time's 'pedagogical state'" (Luke, 2002, p. xiv). During the nineteenth century, the

upper and middle classes of the Victorian era thought that museums could “cultivate the scientific outlook and cultural sensibilities needed by modern industrial democracies” (Luke, 2002, p. xiv). Museums were highly valued and were thought of as “secular cathedrals.”

The 1900s brought an onset of many different styles of art. Prior to the 1900s, most paintings and sculptures were realistic. In the twentieth century, people started to view art as a form of expression. It went from something that only the highly-trained could do to something

that anyone could use to express themselves. In 1934, John Dewey published *Art as Experience*. Dewey emphasized the importance of the process of making art. The real art is not the final objects, but the experience of making that art. This kind of thinking transferred to art museums. Art museums became more about the experience of the art than of the art itself. Many museums are changing from places where you observe to places where you interact. But has this quest for experience gone too far?

In *The New York Times*, Judith Dobrzynski makes the claim that “in the process of adapting, our cultural treasures are multitasking too much, becoming more alike, and shedding the very characteristics that made them so special — especially art museums” (2013). Museums have changed from “secular cathedrals” to an “art amusement park.” They have been commercialized and with that commercialization have lost meaning. In *The Washington Post*, Kennicott describes “the trend in museum design is to provide appealing spaces where one doesn’t have too worry too much about the expectations and disappointments of looking at art” (2010).

So how do we come back from going too far? Perhaps the answer lies in education. Education can garner a sense of appreciation for art. The education used in schools today is based on a discipline-based art education approach started by the Getty Center for Education in the Arts. This uses four different disciplines to study art: art history, art criticism, aesthetics, and studio. By having these four different disciplines, art education puts an importance on the history of art as well as the experience of making art in a studio. Most art museums, now, have opportunities for education. The Getty Museum, for example, “seeks to inspire all of our audiences to engage with our collection and exhibitions through programs and resources at the Getty Center and the Getty Villa” according to their website (“Education”). The museums are a place for education as well as inspiration. After the terrorist attack at the Boston Marathon, Thomas P. Campbell said, “Great museums are places of solace and inspiration, particularly when tragedy strikes a community” (Dobrzynski, 2013). Despite the political and social forces that surround museums, museums can become a place for reflection, inspiration, and growth.

## HISTORY OF DOWNTOWN BISMARCK

As Bismarck is developing and growing, the downtown area is being revitalized to become the center of activity and entertainment. An art museum, a place for reflection and inspiration, would reinforce this revitalization. Downtown Bismarck would once again become the center it used to be.

People first started to settle in Bismarck with the introduction of the Northern Pacific Railroad. In 1872 Edwinton, which would later become Bismarck in 1873, was established at the point where the railroad would eventually meet the Missouri River. Because of the economic conditions, the railroad did not cross the Missouri River until 1882. This delay in building the bridge to span the Missouri River contributed to the initial growth of Bismarck (Hoffman, 2009). Because of the discovery of gold in the Black Hills, many people would take the train to Bismarck before heading west to the Black Hills.

In 1883 Bismarck became the capital of the Dakota Territory. The first buildings in Bismarck were constructed out of wood. In August of 1898, a fire devastated the whole city of Bismarck. Most of the buildings in the city were affected by this fire one way or another. This fire, however, helped to modernize the city. "The fire of 1898 helped push Bismarck away from its frontier roots into a modernized city" (Hoffman, 2009). By 1910 the city had fully recovered from the fire. It had become a major center for business, healthcare, government, and education (Hoffman, 2009).

The McKenzie Hotel, a historical landmark in Bismarck, opened in 1911. This hotel which would eventually become the Patterson Hotel was the "most luxurious hotel between Minneapolis and Seattle" (Hoffman, 2009). The 1920s brought the coming of national retailers to downtown Bismarck. F. W. Woolworth, Montgomery Wards, and J. C. Penney all established stores in the downtown area.

Although Bismarck's major shopping remained downtown throughout the 1960s, the 1950s marked a changing retail trend as various shopping centers were established. The first major strike against downtown was the interstate. Interstate-94 was constructed in 1965. The major traffic passing through Bismarck would be redirected north of downtown Bismarck instead of passing through downtown, greatly affecting businesses in downtown Bismarck. "Although the interstate greatly contributed to the demise of Bismarck's downtown, nothing would affect it more than Kirkwood Mall" (Hoffman, 2009). Kirkwood Mall opened in 1971. The modern Kirkwood Mall as well as other shopping places and hotels took business away from downtown

Bismarck. Most of the buildings of downtown Bismarck were older buildings that could not meet the demands of the city. The downtown saw a decrease of activity until the 2000s.

In 1999 a Renaissance Zone program was established by the North Dakota Legislature to revitalize the downtown area. "The intent of the [Renaissance] Zone is to revitalize and redevelop the core of the community by providing specific tax incentives to encourage reinvestment in these properties (City of Bismarck Renaissance Zone Authority, 2012). In 2013 a study was started to visualize the future of the downtown area. This goal of this effort is to "transform the downtown area into a vibrant place where people want inspiration for future downtown projects. to live, work and be entertained" ("Study Purpose"). The leaders want to make downtown the core of the community. They want to make it a place where people can gather.

Because of the emergence of bars, restaurants, and one-of-a-kind shops, "downtown is a much different place than it was three or four years ago" (Holdman, 2012). People are

seeing the importance of making Bismarck unique and memorable. One of the goals of the Renaissance program is to "establish the Renaissance Zone as the center of business, life, government, and cultural opportunity for the Bismarck Region. Placing an art museum and creativity center in the Renaissance Zone would help strengthen this goal as well as serve as inspiration for future development.

# Goals for the Thesis Project

## ACADEMIC

My goal for the thesis project is to create a well thought out, complete project that demonstrates my ability to comprehensively solve problems or conflicting issues that should arise. This project should be a demonstration of everything I have learned throughout the years. Although one project cannot fully demonstrate every single thing I learned throughout the years, it should show my ability to use the knowledge I gained to design in a way that is beneficial to both the people inhabiting the building as well as the environment.

Even though this may be my last academic project, that does not mean that my learning is complete. My learning has just started and will continue for the rest of my life. I hope that through this project, I will continue to learn and gain new knowledge about architecture and design. My goal is to embrace the opportunity I have in the academic environment to gain new knowledge that could benefit me in the future. If any new ideas or challenges come up during the project, I hope to be open to those new ideas or challenges and to learn from them.

Another goal I have is to have a project that will be beneficial to future students. I hope that other students can look to my work for knowledge, ideas, or inspiration.

## PROFESSIONAL

My goal for this thesis project is to complete a project that demonstrates a variety of skills for future employers. As I transition into the professional field, this project should exemplify the knowledge and skills I have gained thus far. This project should be a stepping stone into the professional field. Through this project, I can prepare for the professional field by managing my time well and executing my project at the highest level of detail.

Communication is of utmost importance in the professional fields. One of my goals for this project to prepare for the professional field is to communicate my design effectively through both the graphic presentation and oral presentation. Through my presentations I hope to not only communicate with clarity, but also communicate with enthusiasm.

## PERSONAL

This thesis project combines two of my favorite things: architecture and art. I want my enthusiasm and excitement for this project to show through the work that I do. My goal of this thesis project, personally, is to explore my creativity. Through this thesis project I hope to boost my creativity for future architecture projects, as well as art projects. I want to have fun with this project and not be held back by any limits I have set for myself.

Lastly, I hope to create a project that I am truly proud of. My goal is to create a project that showcases my passion for design. I hope to have a design experience that adds to the excitement I already have for learning.



## Site Analysis

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## Site Narrative

With the constant sound of traffic increasing and decreasing and people coming and going, the sights and sounds of an urban area are located in downtown Bismarck. Many of the old buildings in the area hint at its blossoming past, while others are indicators of the present context. The Peacock Alley, for example, tells a tale of the history of the building. The style of the restaurant stays rooted in the past with its patterned carpet and its ceilings draped with fabric, while the social environment is suited to fit today with the sounds and interactions of the guests.

Another building that is rooted in its

beginnings is the Belle Mehus Auditorium. The Belle Mehus Auditorium, located east of the site, looks like any other building from the outside. Once you step inside, however, you find a hidden gem in downtown Bismarck full of ornate details. Sounds from the Bismarck-Mandan Symphony Orchestra can be heard coming from the auditorium. Events, such as concerts for the orchestra, enliven the streets of downtown Bismarck.

The site's central location makes it a place where people often walk by. During the day, many of the people walking by are walking to work. Although the number of people lingering on the site are not plentiful, the traces they have left are plentiful. The parking lot is full of vehicles. Footprints are left in the snow after a recent snowfall. Once in a while, you will hear the footsteps and the chatter of someone walking nearby. Shoppers head by on their way to the stores or restaurants near Main.

As the day changes to night, downtown Bismarck becomes the place to be. People dressed in formal attire pass on their way to the concert. Others are carrying instruments, as they are a part of the concert. Other people head to the

well-liked bars, such as the Toasted Frog or Peacock Alley. Sounds of music can be heard coming from the Belle Mehus and other places. People walking by are much more animated. Most are downtown for social events rather than for work.

Despite it being an urban site, it still has elements of nature. In the summer, the sound of leaves can be heard rustling in the wind. Trees provide areas of shade in times where the sun is beating down. Despite being somewhat protected from the wind, the wind still has the ability to bite in the winter. In the summer, people are seen in T-shirts and sunglasses casually walking from place to place, enjoying the summer heat. The winter, however, is a different story. Pedestrians are walking to their destination as quickly as possible to get out of the wind and the cold as soon as possible. The people who can be seen lingering outside for a while are the ones who are digging their car out of the snow. In the case of a snowstorm or blizzard, the streets are empty and desolate with only the snow plowers driving by.

The sounds of the train going by, the crescendo and decrescendo of the traffic, the rustling of the leaves and much more combine with the sight of people walking by, the sun shining down, and the historic buildings that surround it to make the site a place that engages multiple senses. Located in the center of the downtown core, the site is engaged in all of the activity that creates the downtown atmosphere. These qualitative characteristics combine with the quantitative characteristics to make it a great place for an art museum and creativity center. This art museum will be able to strengthen that already surrounds the site.

# Qualitative and Quantitative Analysis



Figure 54-Site Reconnaissance



Figure 55-Photo Grid  
Photos by Alicia Brackel



D



E



F



WEST

Figure 56-Photo Grid  
Photos by Alicia Brackel

G



H



I



Figure 57-Photo Grid  
Photos by Alicia Brackel

# Views

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VIEW 1



Figure 58-View onto Site

VIEW 2



Figure 59-View onto Site

VIEW 3



Figure 60-View onto Site

VIEW 4



Figure 61-View onto Site

VIEW 5



Figure 62-View onto Site  
All photos taken by Alicia Brackel

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Because of its location, most of the views from the site are of the surrounding streetscape. The best view on the site is from the southwest corner. It looks out to Fifth Avenue where the storefronts complete the block. The Patterson Hotel is located at the end of Fifth Avenue, where it meets Main Avenue.

## VIEW 6



Figure 63-View from Site

## HUMAN CHARACTERISTICS

As an urban site, this site has been heavily intervened by humans. Because it is a parking lot, not too many people spend time on the site. They drive here and walk somewhere nearby. The most time spent on this site is probably by people waiting for their cars to warm up in the winter. Quite a few people pass by the site, often walking to or from their cars parked nearby.

## SITE CHARACTERISTICS

Because the site is in the downtown core, it reflects that urban environment. The number of cars in the parking lot indicates that although not too many stay on the site, a lot of activity exists around the site. A few trees and bushes are planted on and around the site, making it a little more interesting than the average parking lot. The trees and vegetation planted around the site are healthy and growing.



Figure 64-Site Characteristics



Figure 65-Site Texture

All photos taken by Alicia Brackel

## BUILT FEATURES

The site is currently a parking lot owned by Sanford Health. The Sanford Broadway Clinic is located across the street to the south of the site. The City and County Office Building is to the north. Various companies occupy the line of buildings to the west. Koekkler's Jewelry is located next to the southeast corner of the site. A Parking lot seen on the east is currently being changed into a parking ramp.



Figure 66-Context Map  
Aerial Photograph courtesy of arcgis.com

## SOIL

The soil of the site is composed of Mandan silt loam. This soil drains easily and will not be prone to flooding. Mandan and similar soil make up 84 percent of the soil, while other minor components make up the remaining 16 percent.

Depth to restrictive feature: More than 80 inches

Depth to water table: More than 80 inches

Typical Profile:

0 to 20 inches: Silt loam

20 to 29 inches: Silt loam

29 to 47 inches: Silt loam

47 to 60 inches: Loam

(Natural Resources Conservation Service, 2012)

## UTILITIES

The electricity comes from Montana-Dakota Utilities Company. The company is based in Bismarck, with various electrical generating stations located across North Dakota, Montana, South Dakota, and Wyoming. The company strives to be sustainable and takes pride in being "good stewards of the land" ("Conservation"). The company has started to utilize sustainable methods for supplying energy, such as wind.

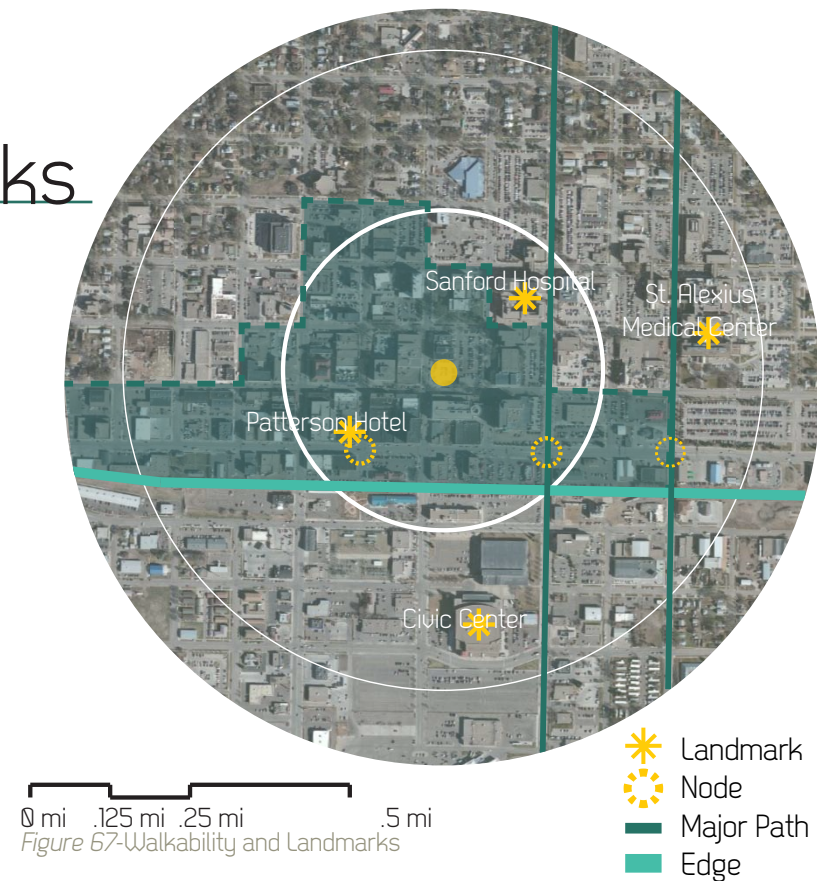
## DISTRESS

The biggest concern for distress on the site is the lack of activity in the downtown area. That, however, has improved greatly over the past couple of years and will continue to improve. As Bismarck is growing, the city is recognizing the importance of downtown and is continually looking for ways to improve it.

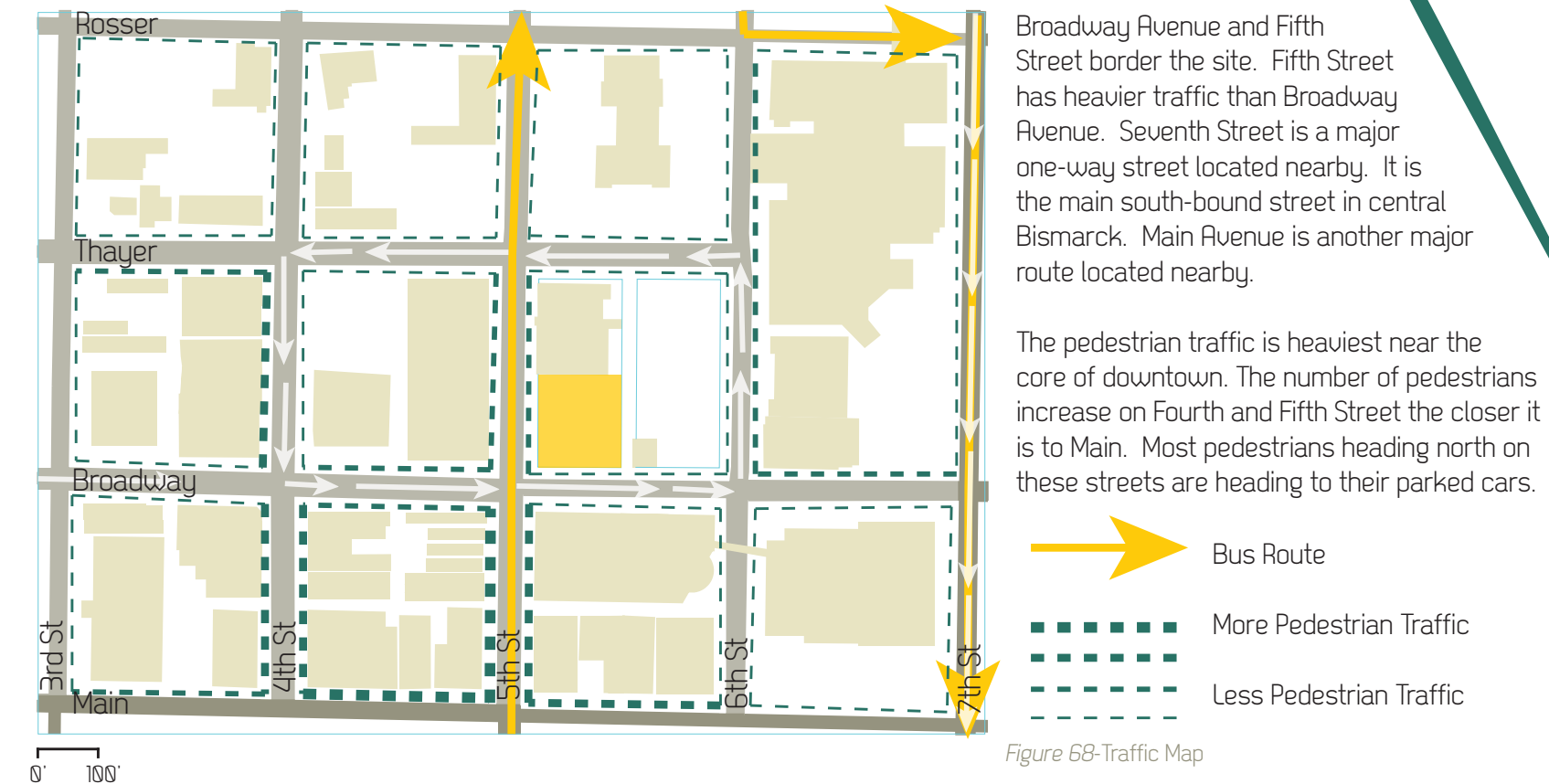


## Walkability and Landmarks

Bismarck has an overall walk score of 35 out of 100 according to walkscore.com. Because the site is located in the downtown core, however, the site walk score is 89 out of 100 (Walkscore.com), making it very walkable. It is close to many shops and restaurants, including Peacock Alley located in the famous Patterson Hotel. Other landmarks located nearby include the Civic Center and the two hospitals in Bismarck. Both the Peacock Alley and the Sanford Hospital are located within a .25-mile radius of the site, making them within walking distance. The Civic Center and St. Alexius Medical Center are within a .5-mile radius. The downtown core is bordered by a railroad on the south side.



## Traffic

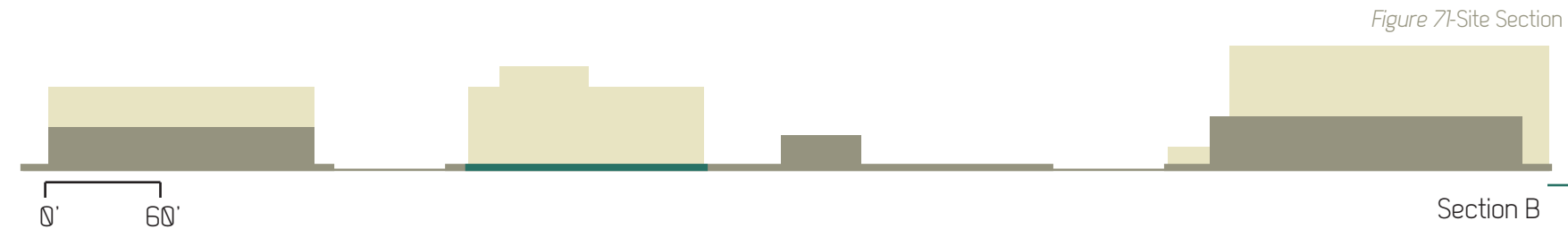
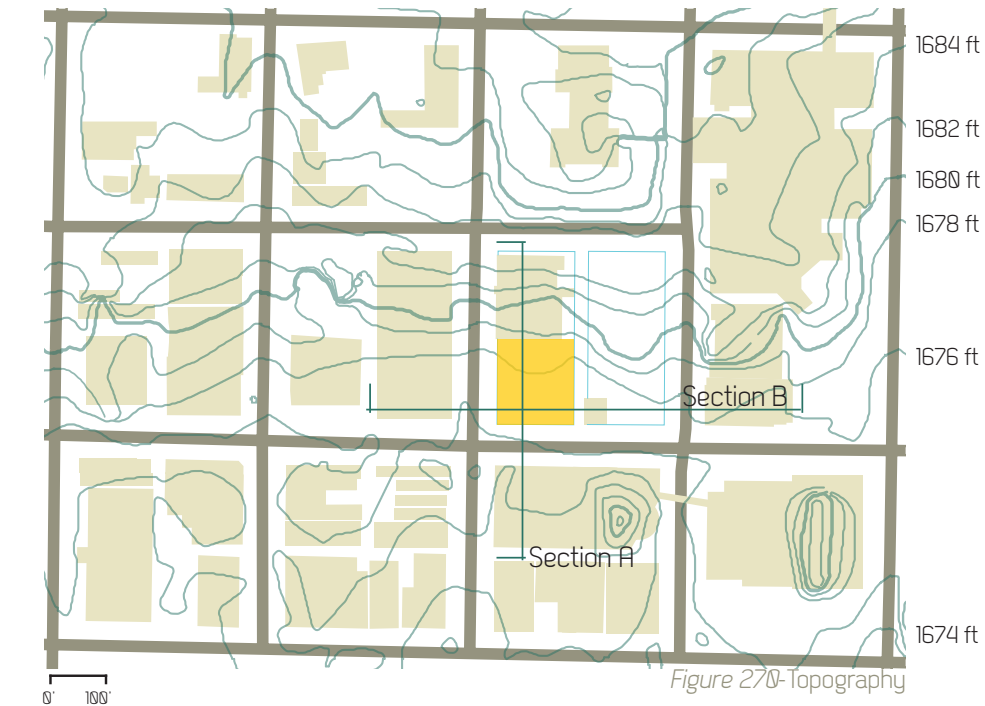
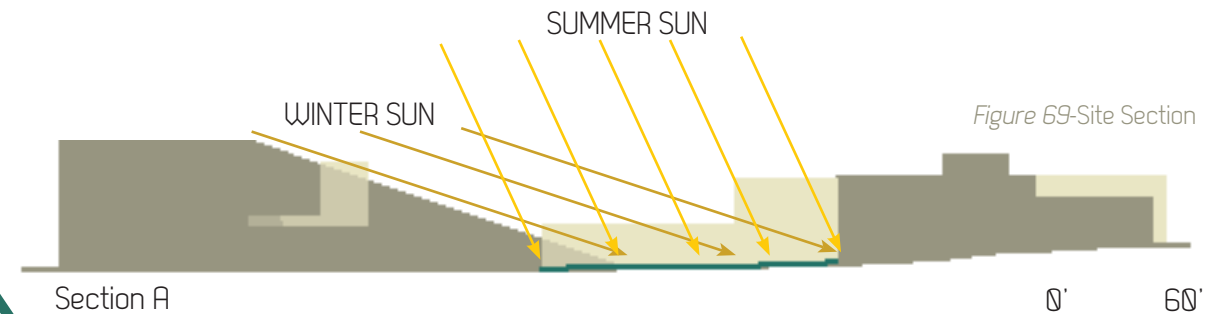


Broadway Avenue and Fifth Street border the site. Fifth Street has heavier traffic than Broadway Avenue. Seventh Street is a major one-way street located nearby. It is the main south-bound street in central Bismarck. Main Avenue is another major route located nearby.

The pedestrian traffic is heaviest near the core of downtown. The number of pedestrians increase on Fourth and Fifth Street the closer it is to Main. Most pedestrians heading north on these streets are heading to their parked cars.

# Topography

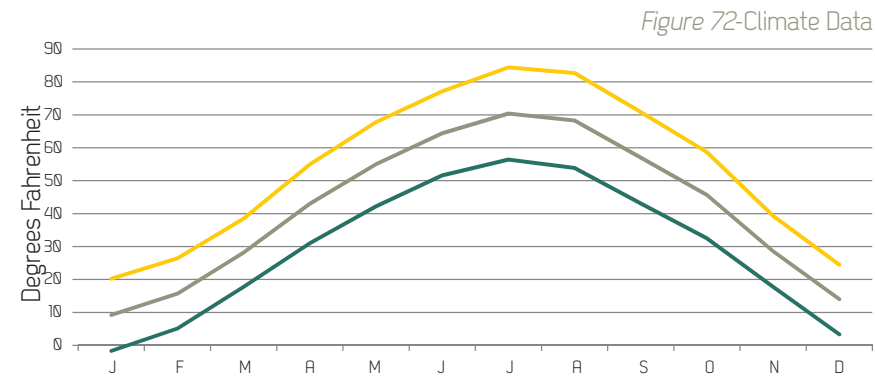
Bismarck, located on the east side of the Missouri River is surrounded by buttes. Although the city contains many hills, the site and the downtown core remain fairly flat. The slope of the site ranges from 2% to 4%. The slope increases as you head north on the site and beyond. Because the slope of the site is mainly under 4%, it will be perceived as flat. The site's average elevation is 1,676 ft above sea level.



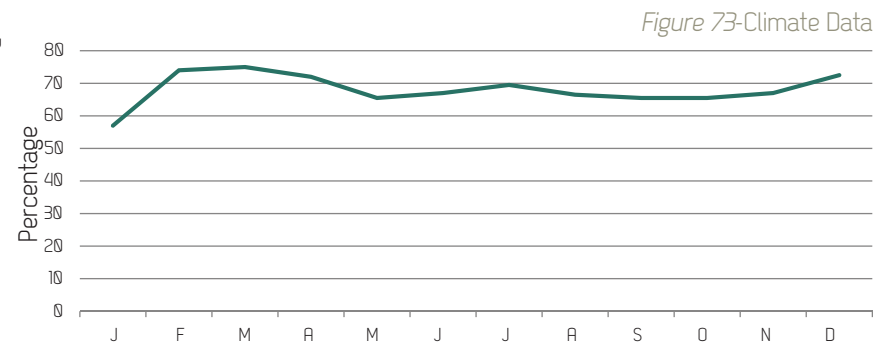
# Climate Data

## TEMPERATURE

— Average Temperature  
— Average Low  
— Average High



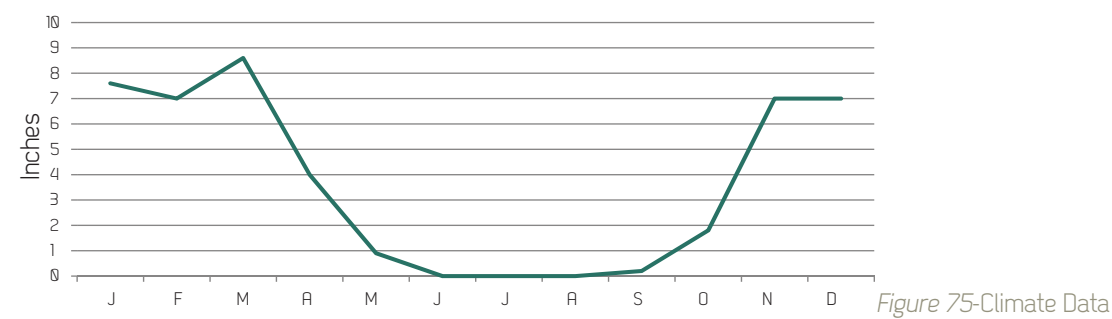
## RELATIVE HUMIDITY



## PRECIPITATION

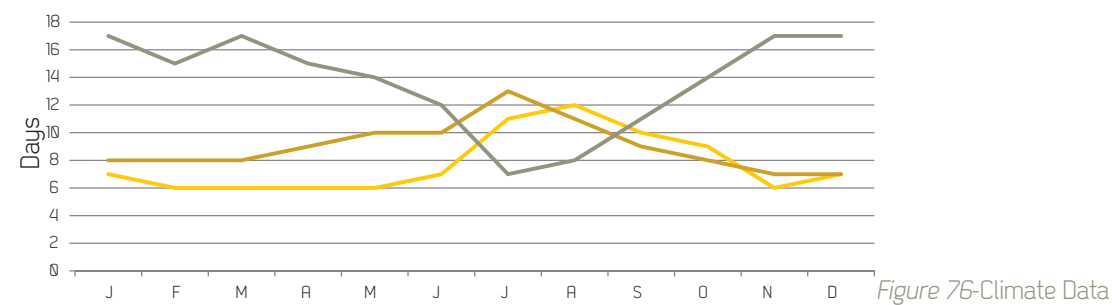


## SNOWFALL



## CLOUDINESS

— Cloudy  
— Partly Cloudy  
— Clear



# Wind Speed and Direction

114

Average Wind Speed (mph)

- 3 - 9
- 9 - 15
- 15 - 21
- 21 - 27
- >27

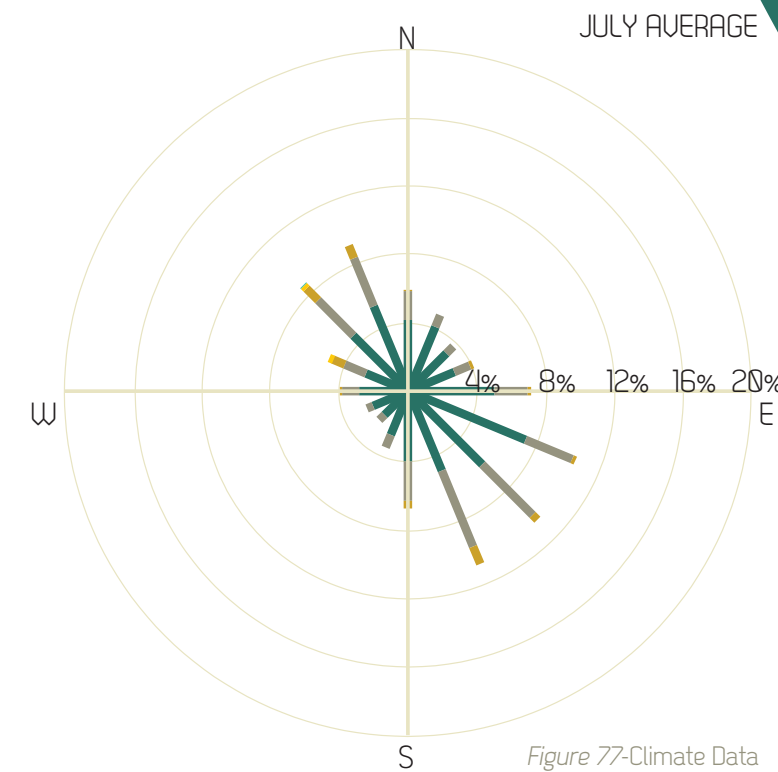
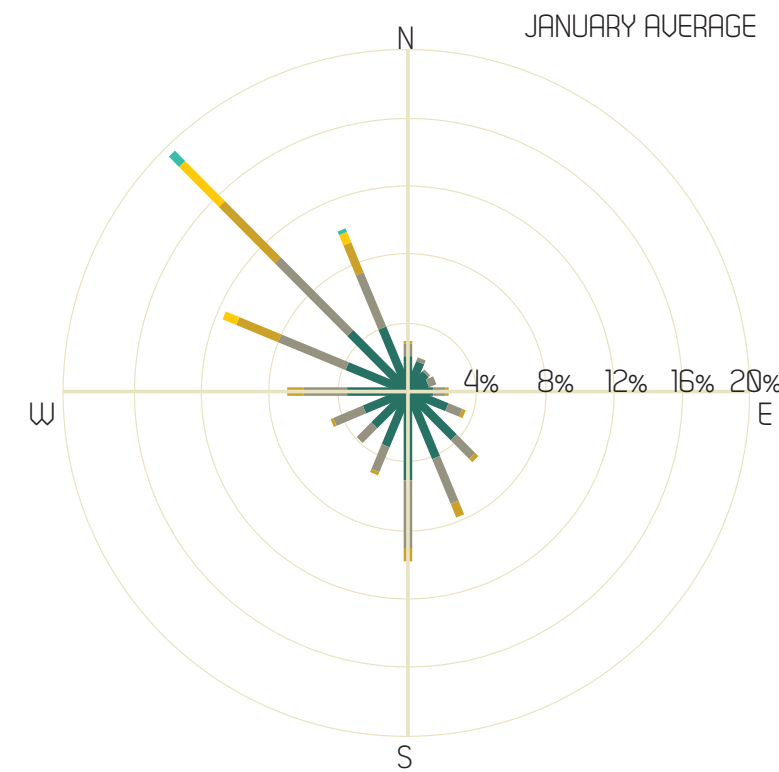
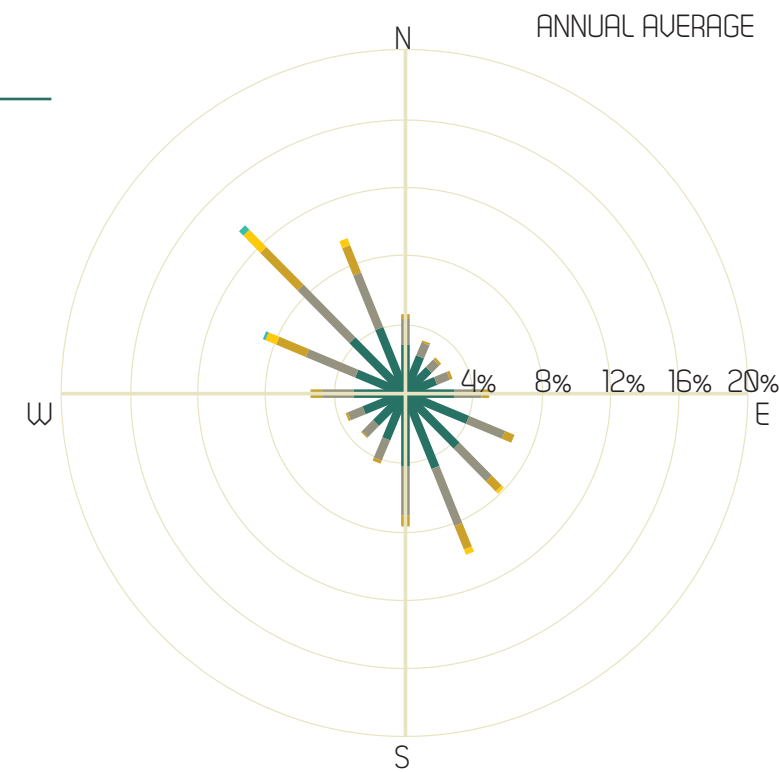


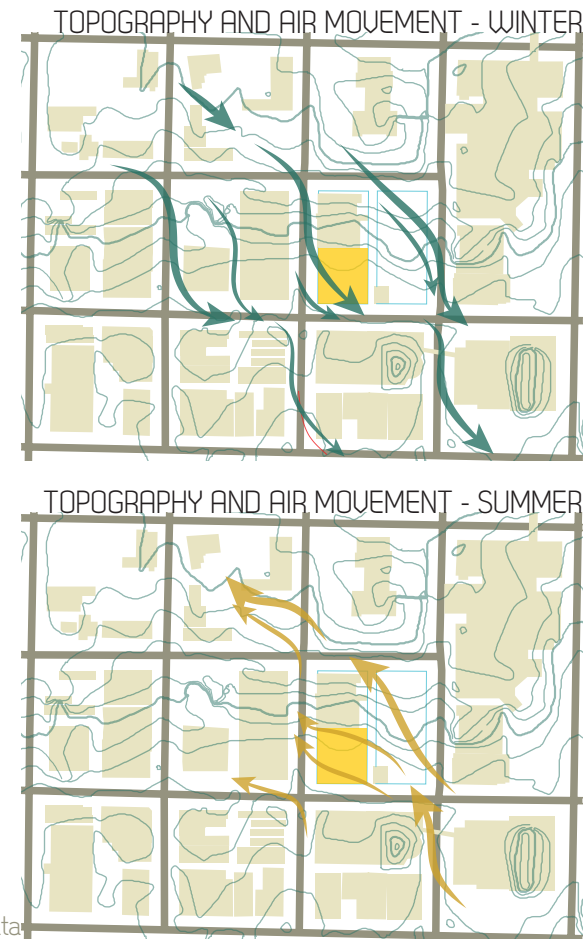
Figure 77-Climate Data

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Because of the open prairies in North Dakota and the lack of protection, the wind is a common characteristic in North Dakota. During the winter, the biting, cold wind mainly comes from the northwest, making the cold winter even colder. During the summer, the wind is mainly from the southeast, although it is common for it to come from other directions.

Because of its location in downtown Bismarck, the site is somewhat protected from the wind. The building to the north helps protect it from the cold winter winds. The east side of the site is more open, making the summer wind useful for ventilation.

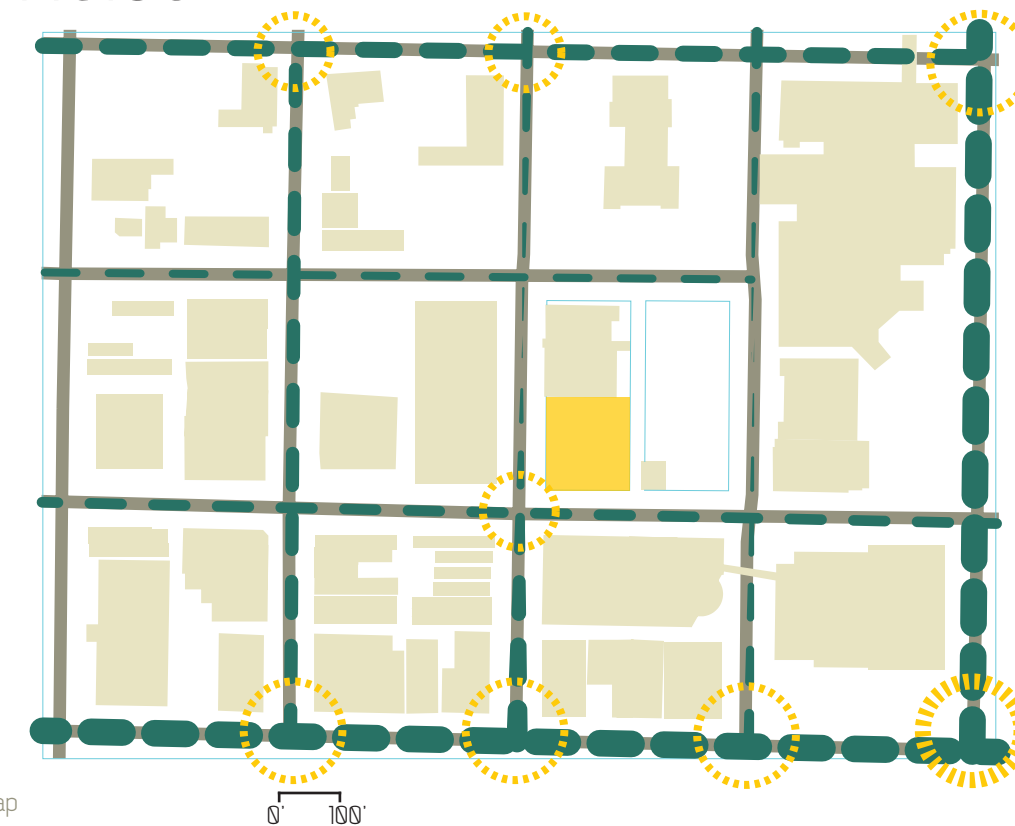
Figure 78 Climate Data



## Noise

Most of the noise comes from busy intersections, specifically along Main Avenue and 7th Street. A railroad that runs west-east is located just south of Main Avenue. It is another factor in the noise on the site.

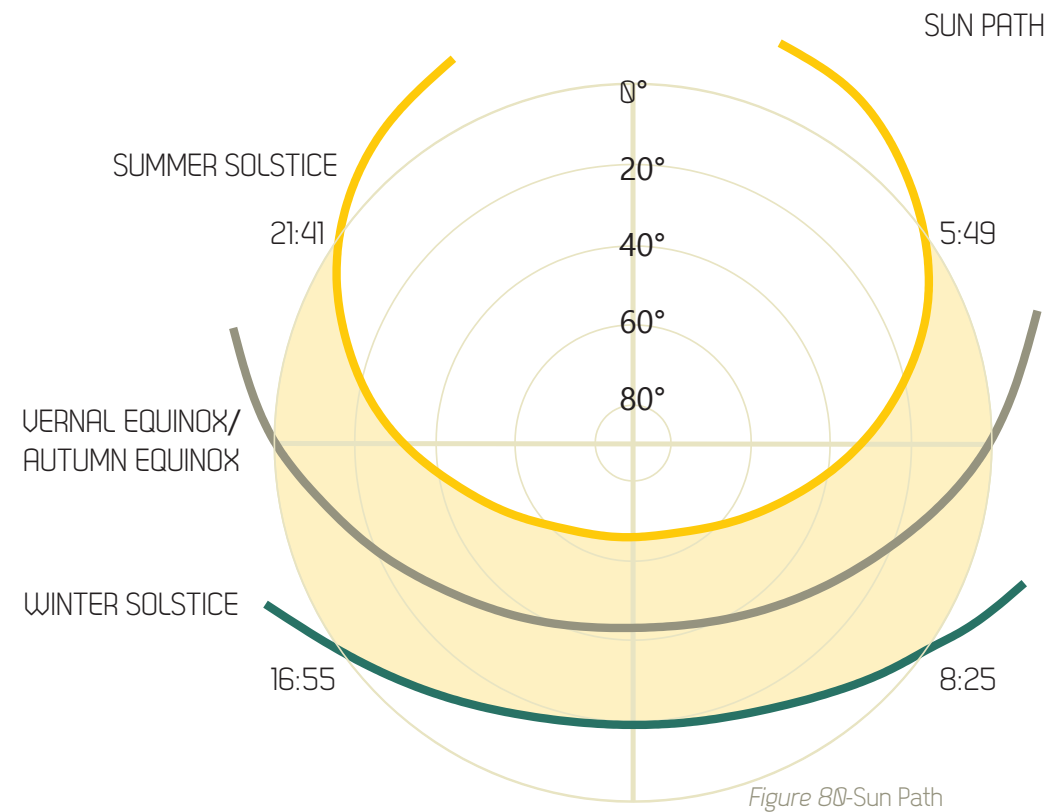
Figure 79 Noise Map





## Lighting

Despite being in an urban environment and being surrounded with buildings, the site gets plenty of light. It gets blocked somewhat during the winter from the building and parking garage to the south, but gets full sunlight at other times of the year. Unfortunately, the building to the north might hinder the northern light, the optimum kind of light for painting. The sunlight seems more intense during the summer because of the angle of the sun. The lighting quality differs with the time of day and season.



## SHADING

SUMMER SOLSTICE

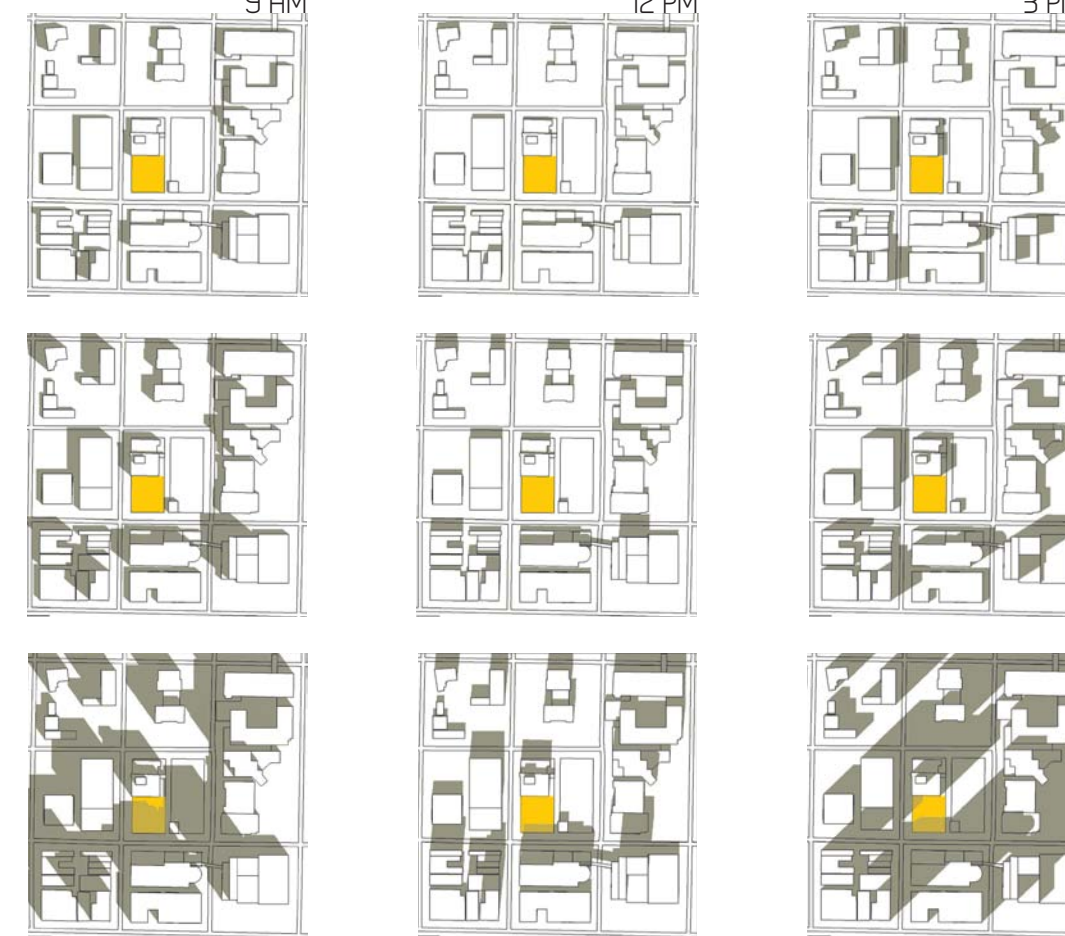
VERNAL EQUINOX/  
AUTUMN EQUINOX

WINTER SOLSTICE

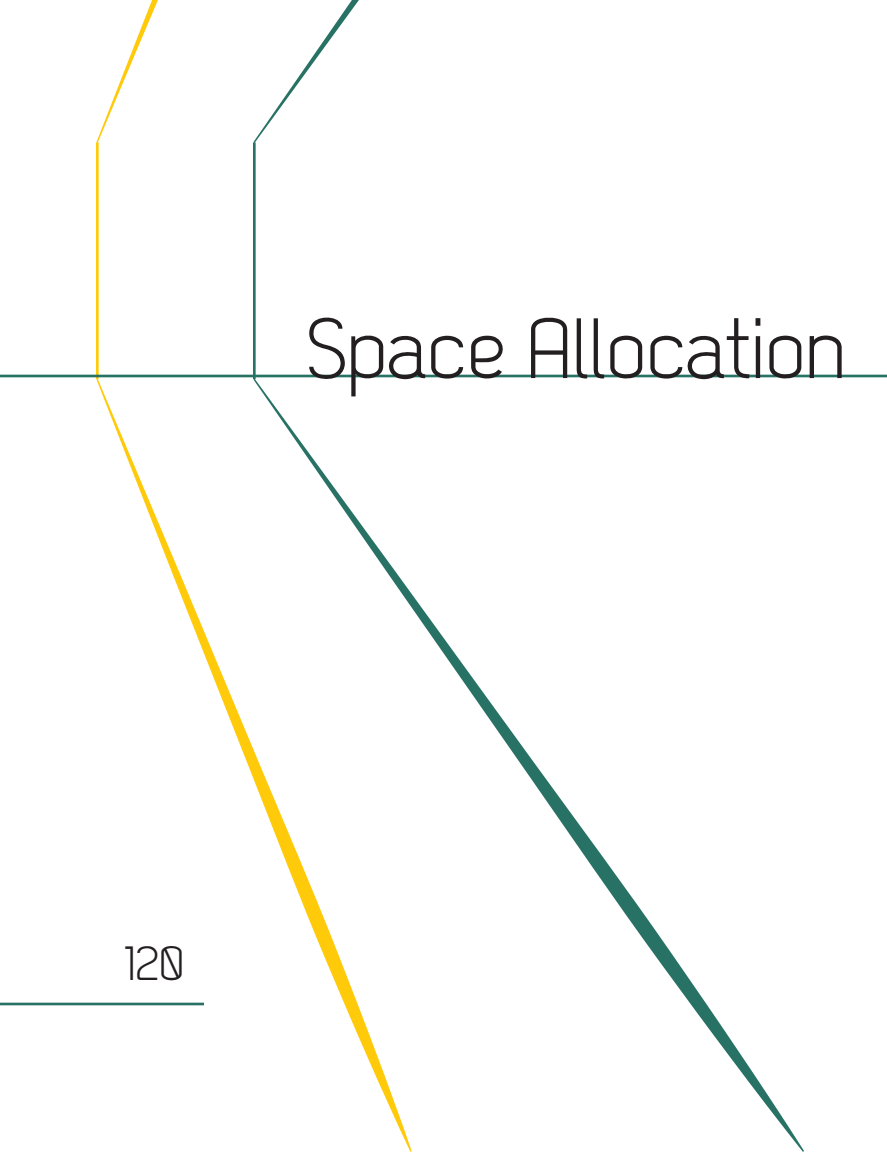
9 AM

12 PM

3 PM





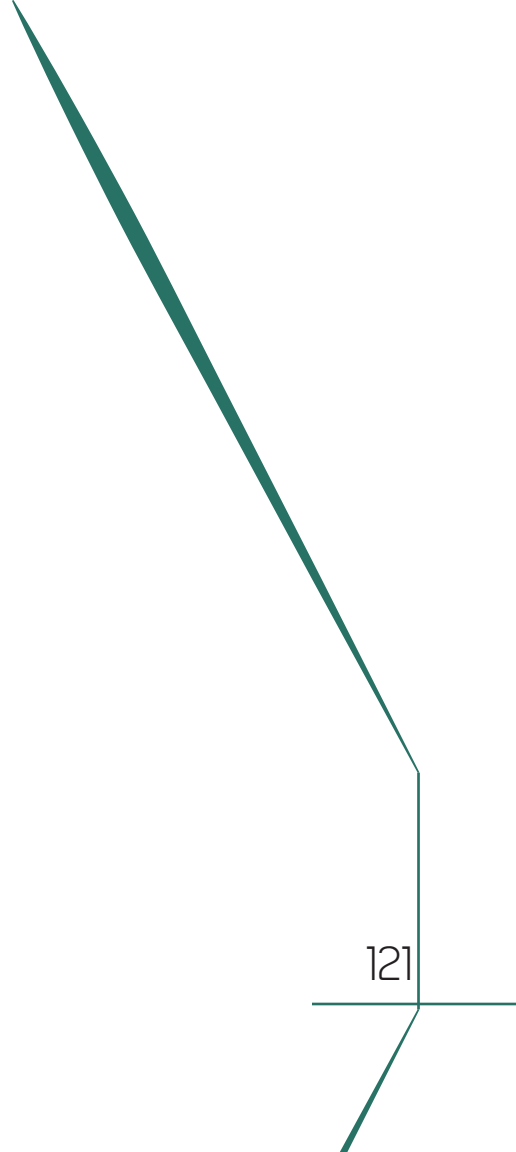


# Space Allocation

120

Gallery	20000
Collection	
Exhibition	
Interactive	
Library and Reading Room	2000
Studio Spaces	1800
Sculptural Garden	2000
Auditorium (150 seats)	1800
Atrium/Public Gathering Space	8000
Book store and gift shop	1750
Café and Food Prep	2200
Restoration and Conservation Workshop	1750
Storage	14000
Administration	2250
Offices	
Break Room	
Meeting Rooms	
Receiving/Loading Dock	2600
Education	5000
2d Classroom	
3d Classroom	
Conference Room	
Breakout Space	
Mechanical, Restrooms, Circulation	10850
Total	76,000 (sq ft)

121



# Interaction Matrix

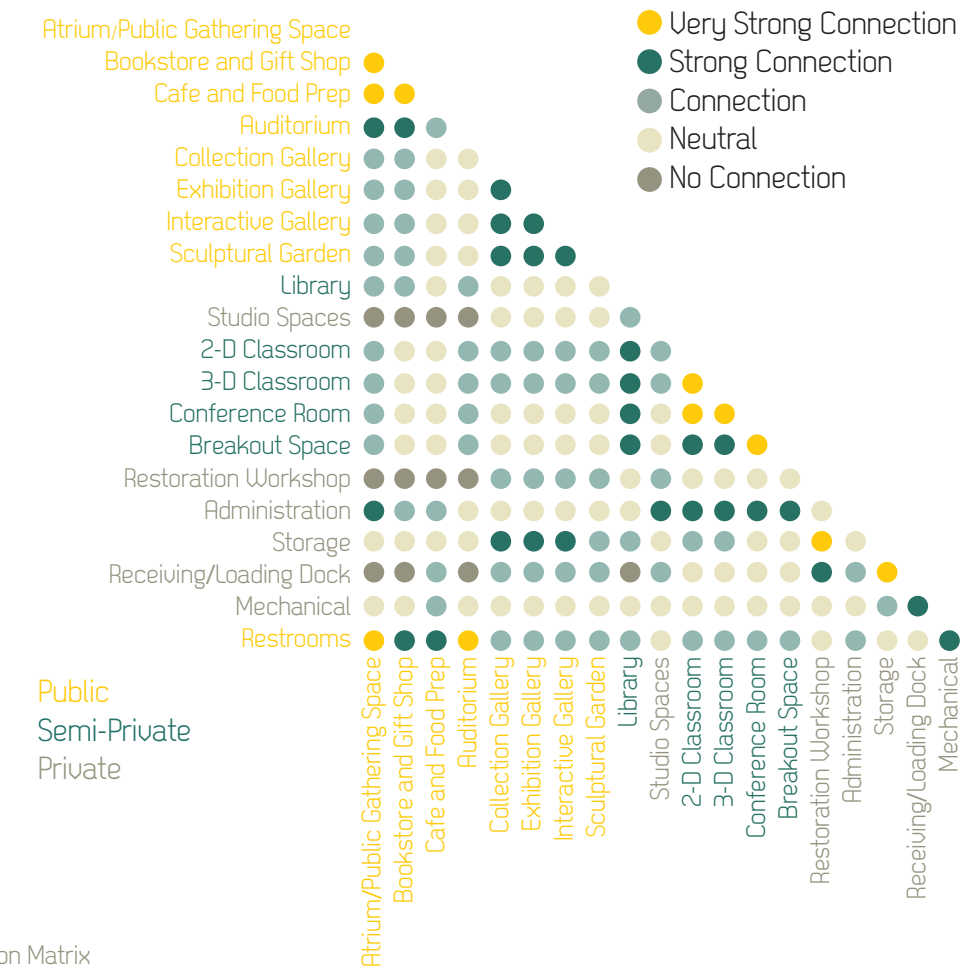


Figure 82-Interaction Matrix

# Interaction Net

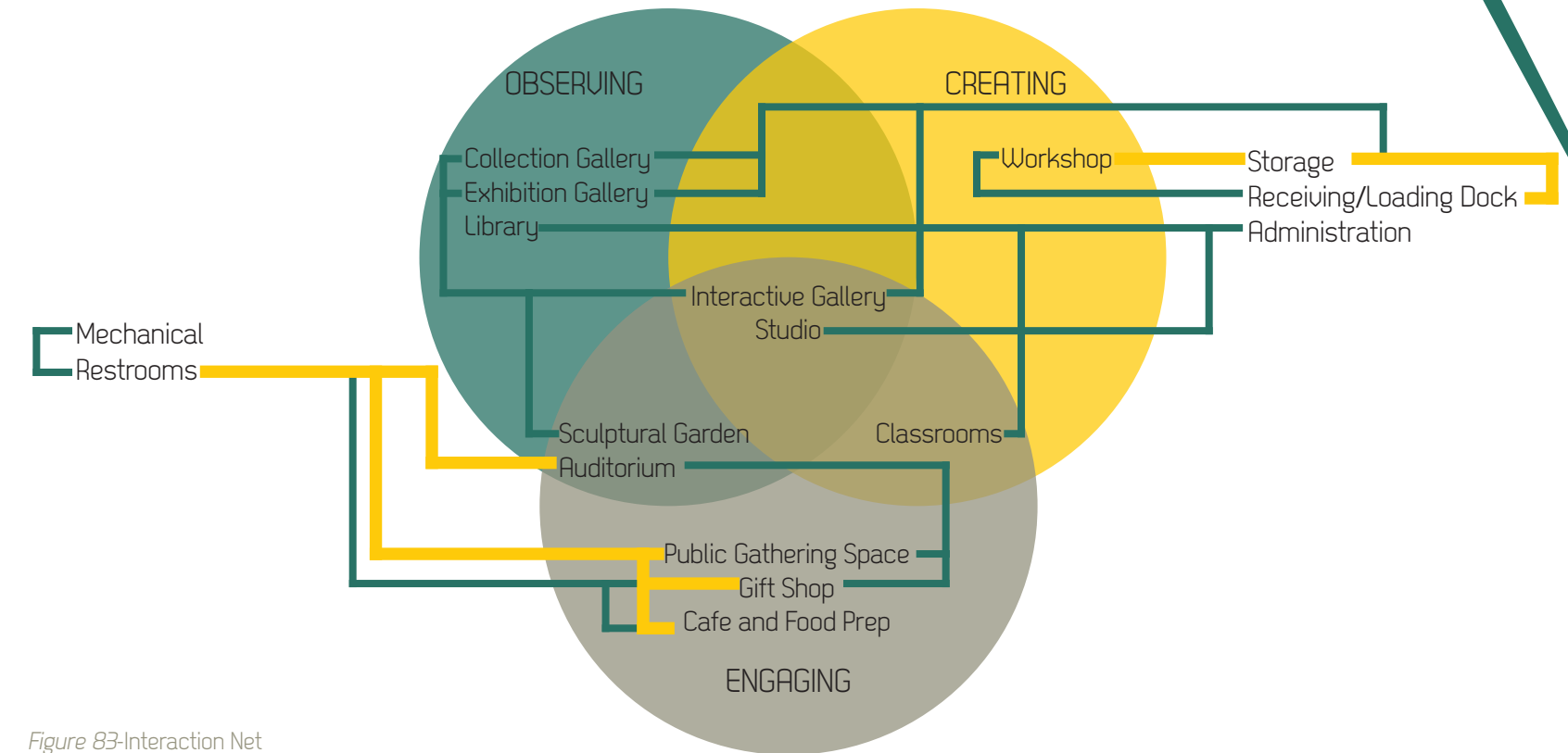
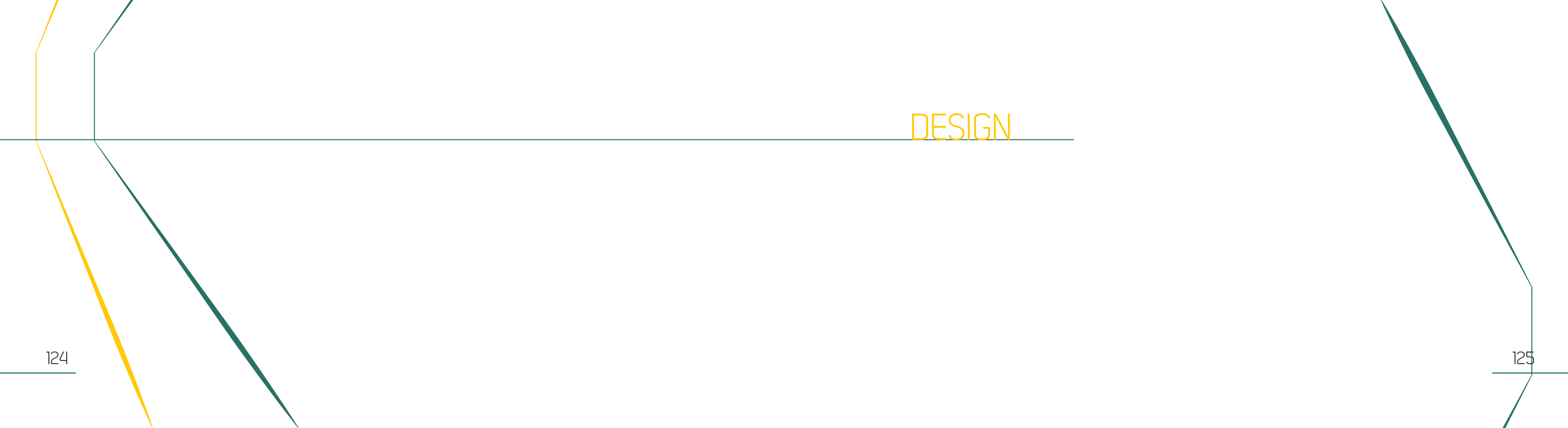


Figure 83-Interaction Net



DESIGN

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## Process

To get in the spirit of the project, I created this sculptural collage using different types of building materials. Because each side of the collage was different, there are opportunities for discovery with each turn. This sculptural collage would be a source of inspiration for the design of the art museum.

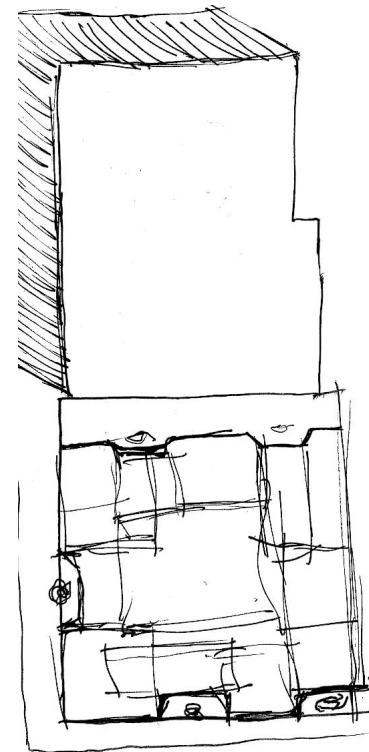




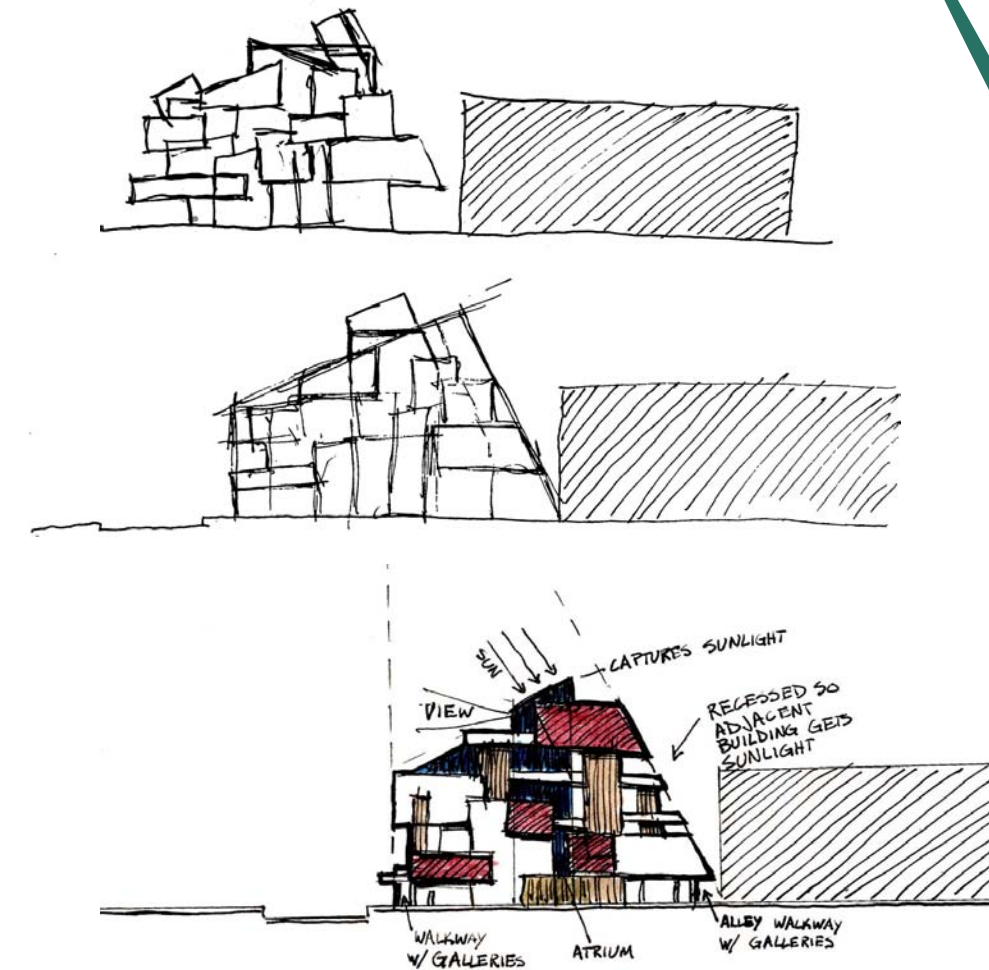
## Process



128

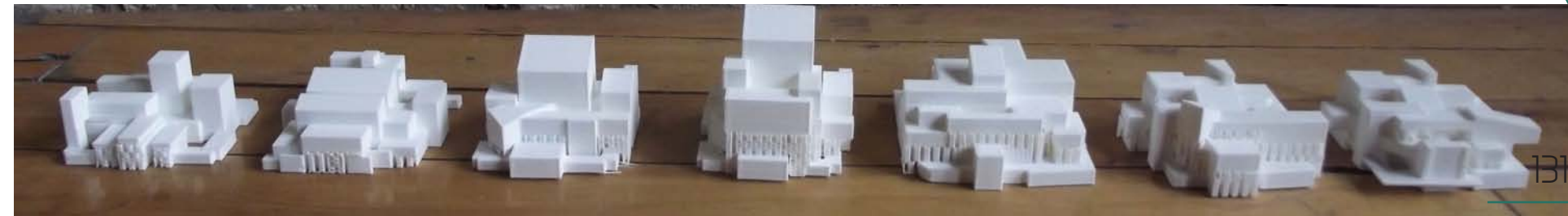
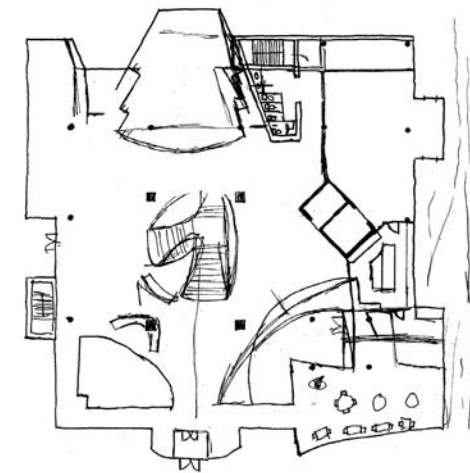
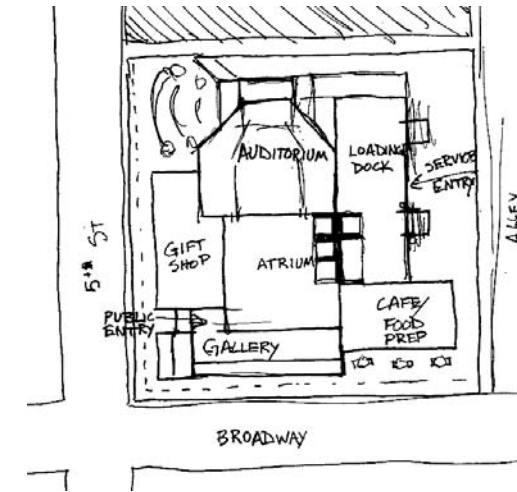


I started the design with an abstract collage of different experiences. As I developed the design, I refined and molded the design to become integrated with its surroundings.



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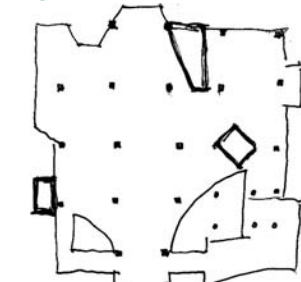
# Process



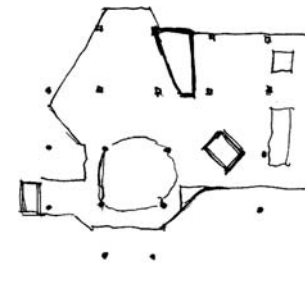


# Process

## Structure Process



First Floor



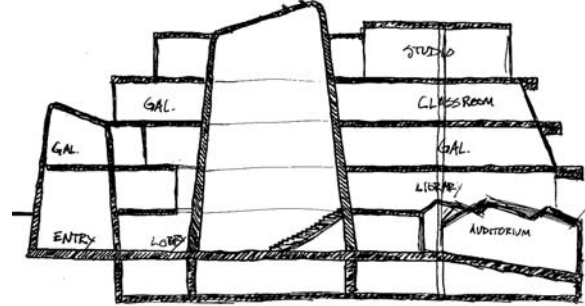
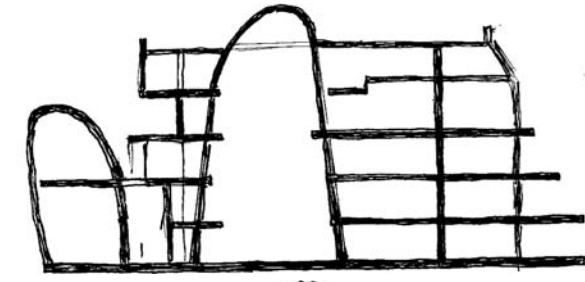
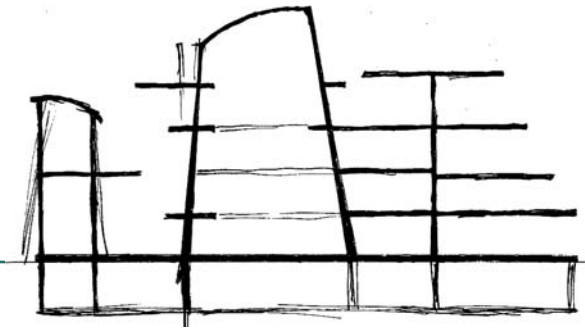
Second Floor



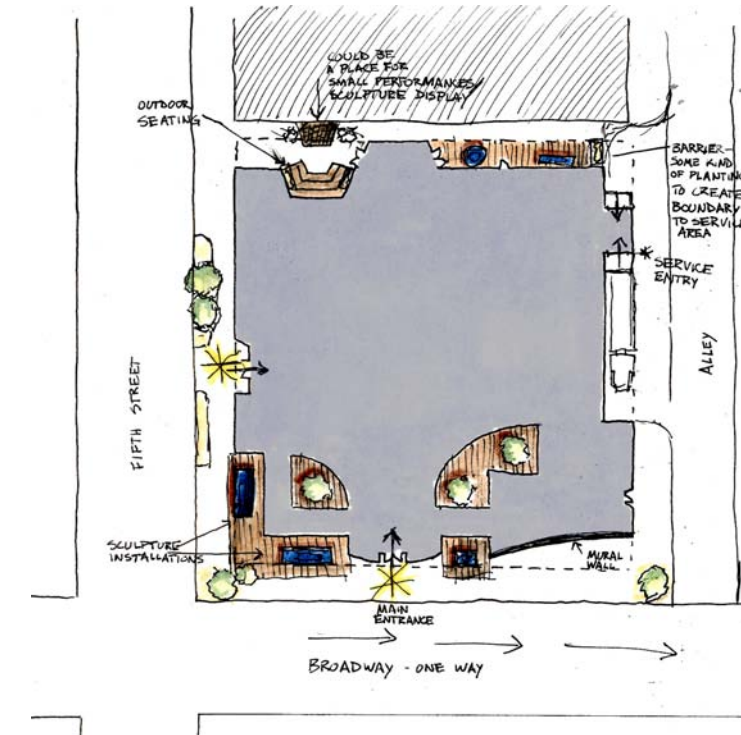
Third Floor



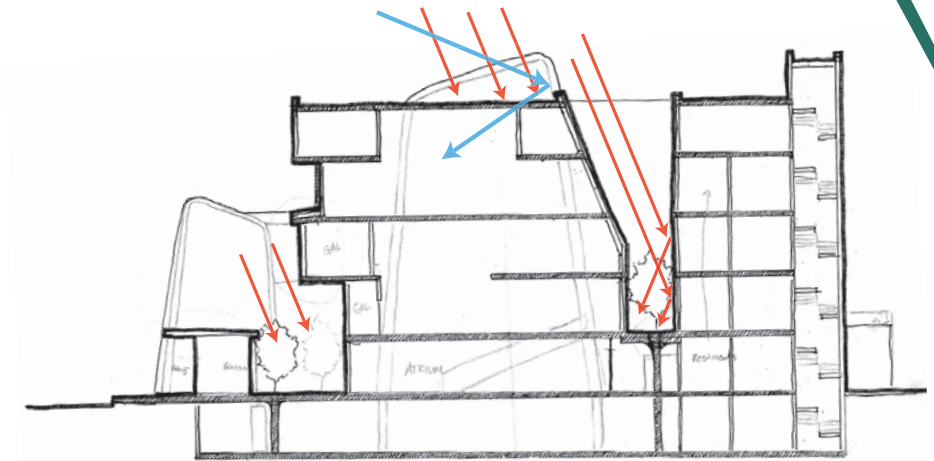
Fourth Floor



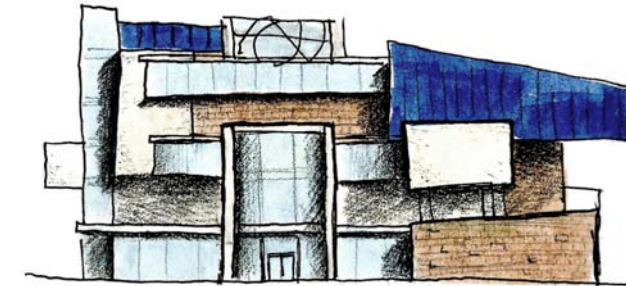
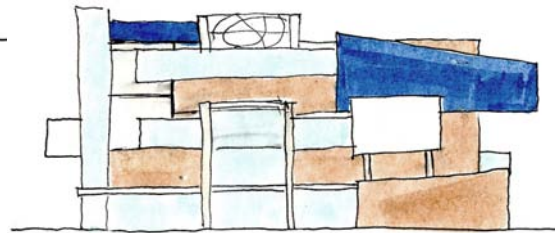
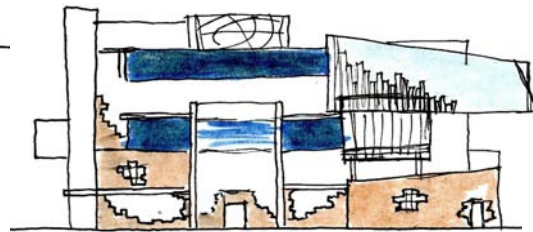
## Site Development



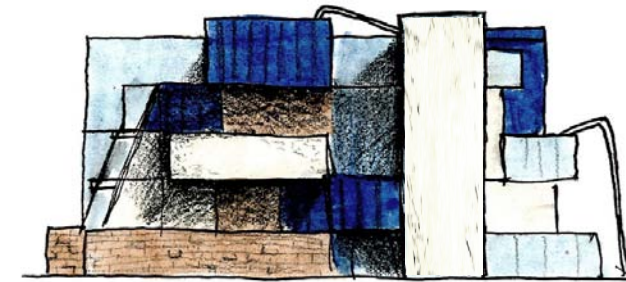
## Section Development



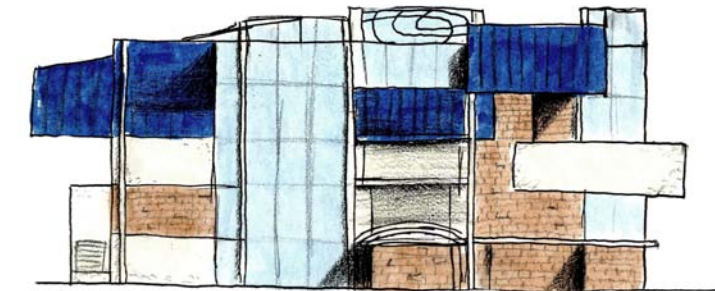
## Elevation Studies



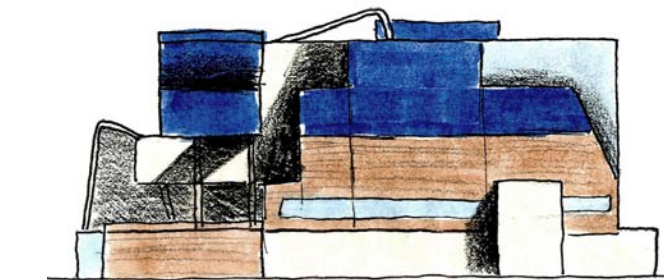
South



West

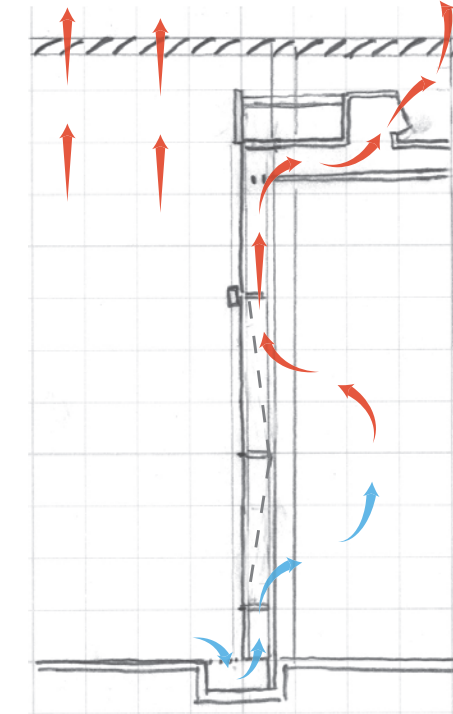
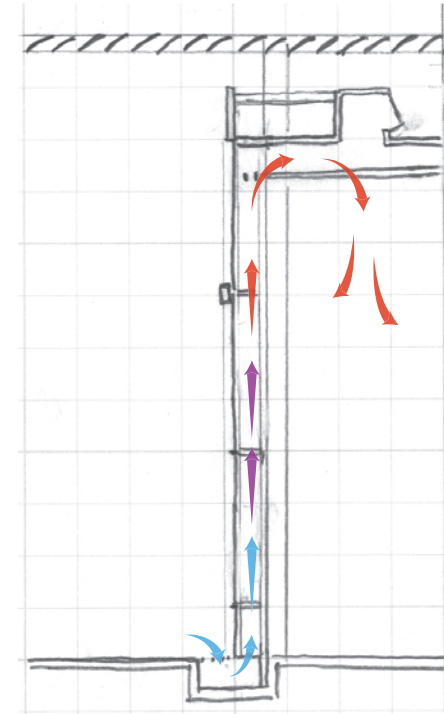
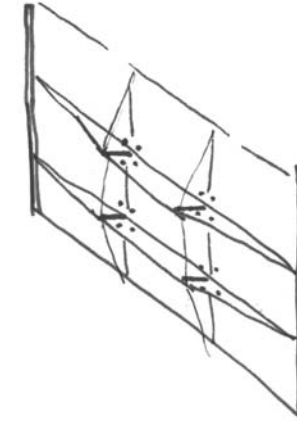
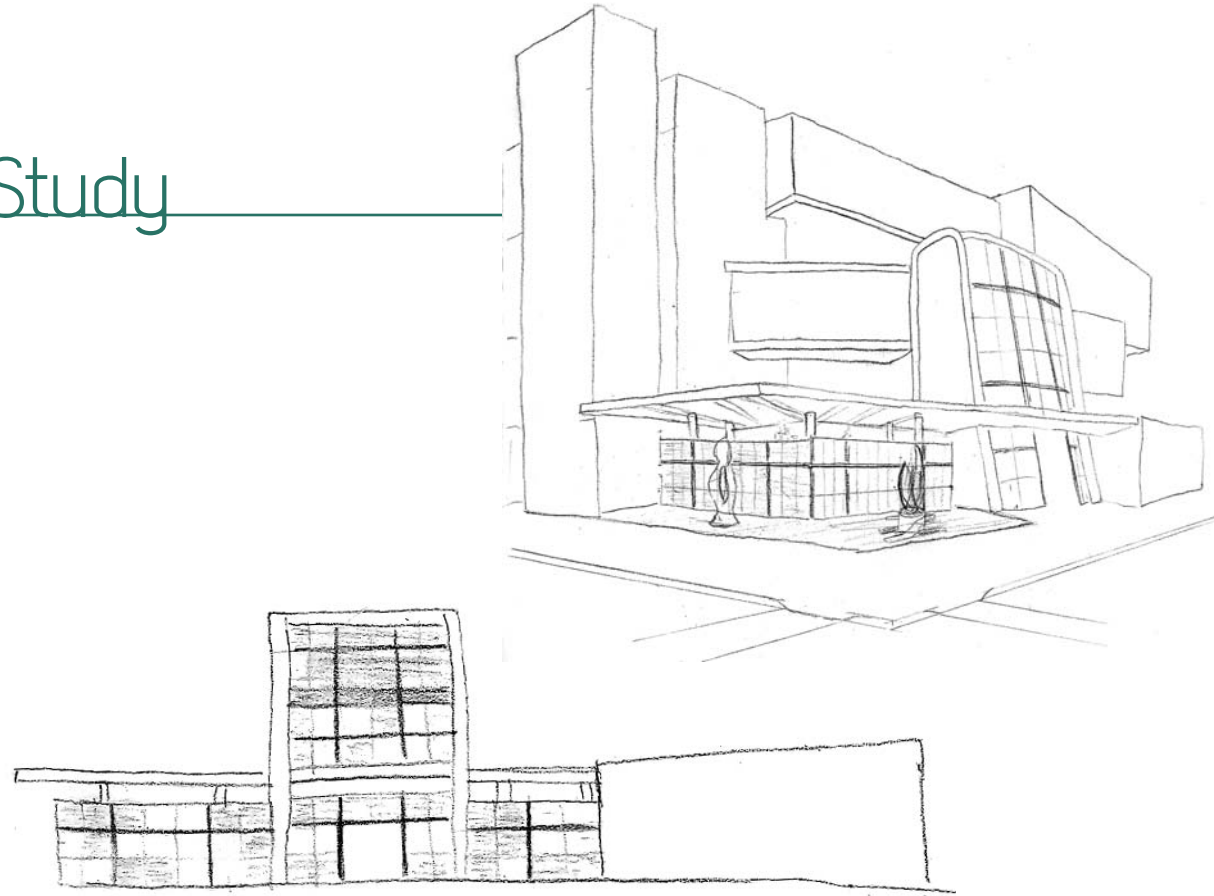


North



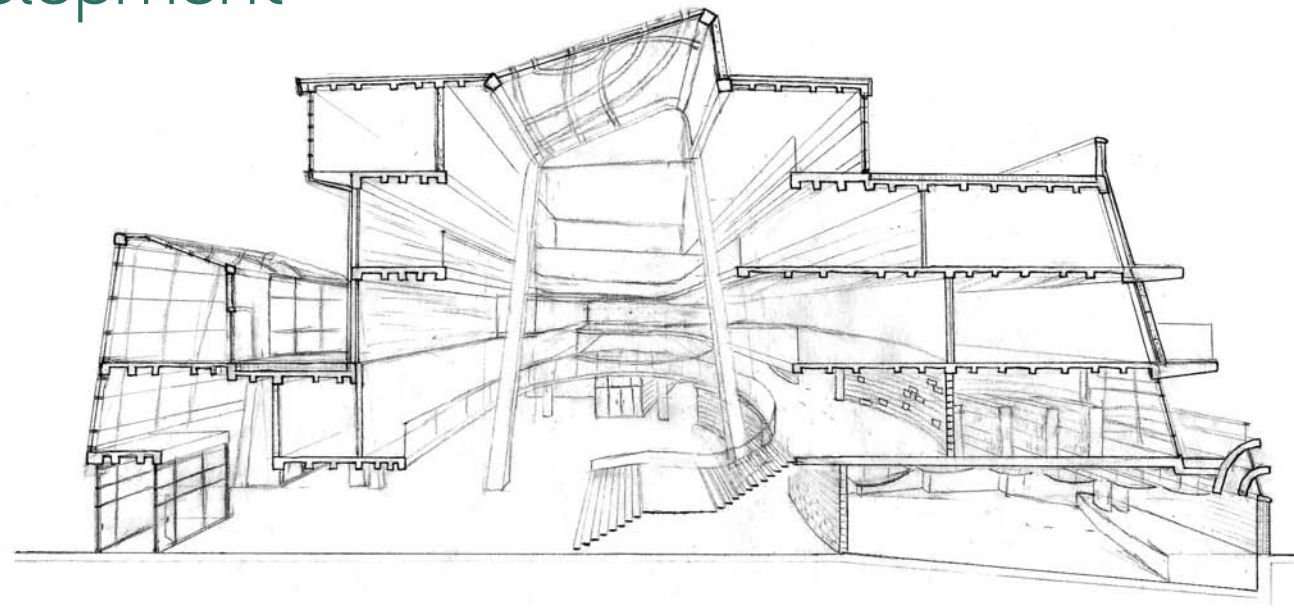
East

## Glass Facade Study

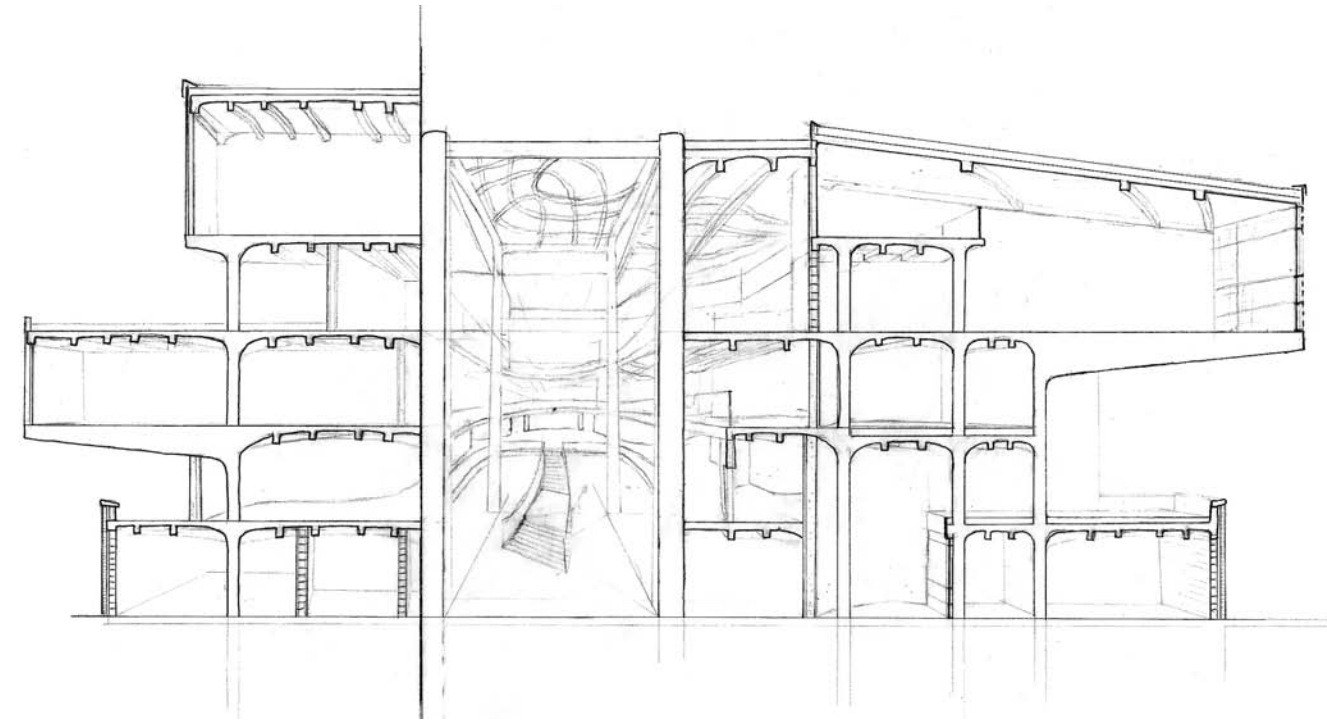




## Section Development



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## Final Design

"Creativity" is often seen as diverging from the norms or standards which the place and culture set. People's experiences are a major influence on their creativity. Creativity correlates with an openness to experience. Those who are able to adapt to new experiences and are open to exploring and engaging new things or ideas are more likely to be creative. Although environments cannot make an individual opposed to new experiences less opposed, it can cater to those who are open by providing new and engaging experiences.

This art museum is a collage of different experiences. Those different experiences are formed by different materials and different spaces. As people move through the building, they will get hints of other spaces to explore and discover. A bunch of different experiences throughout the building combine to form one experience. The different parts of this building combine with the surrounding environment to form one composition.



## Floor Plans

The gift shop faces Fifth Street. This location will help maintain the storefront look of Fifth Street.

One of the public entrances is located on Fifth Street. It has a drop-off zone for parents to drop off their children.

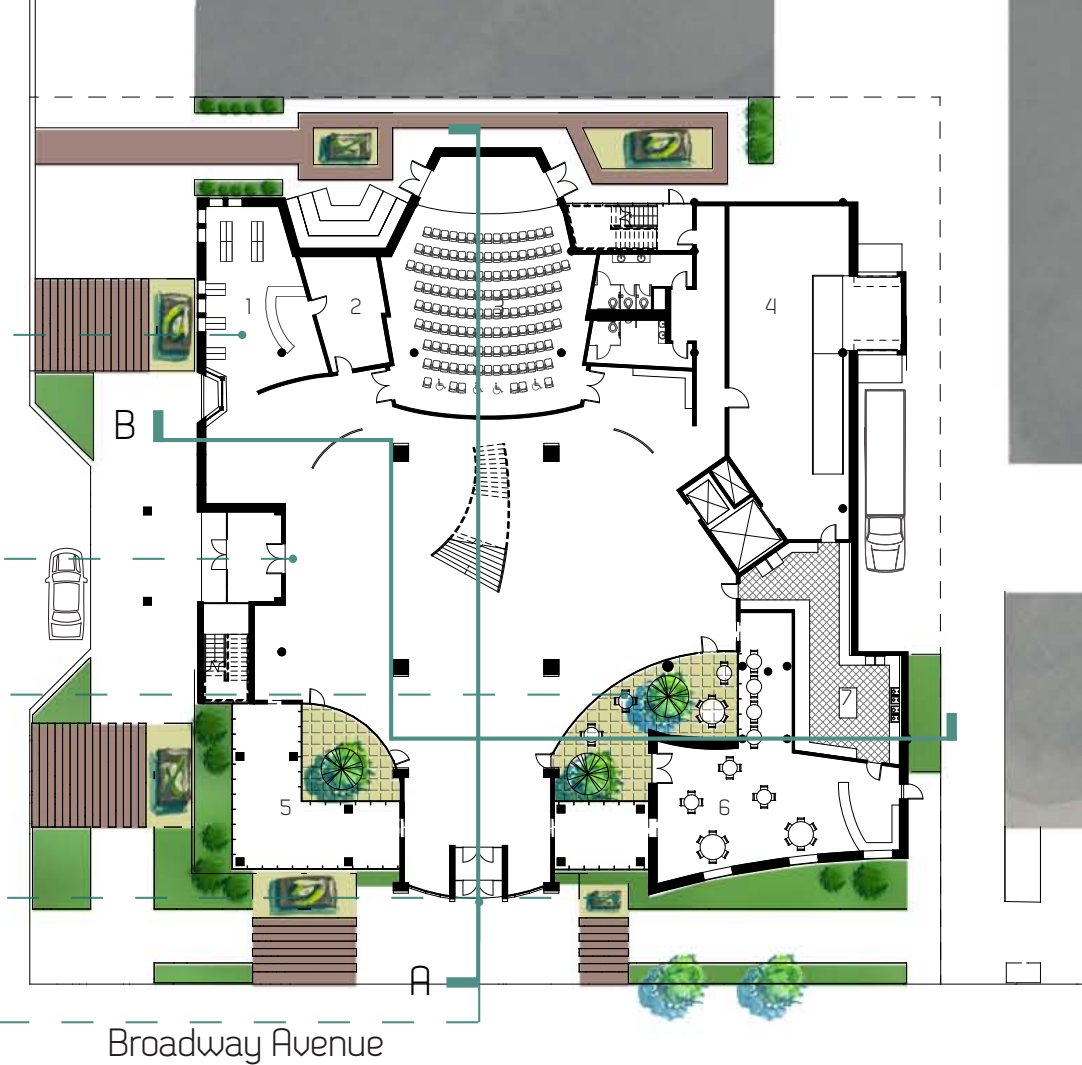
Outdoor spaces located throughout the building not only create new opportunities for insight, but also connect the inside with the outside.

Areas for displaying sculptural art are located around the building, creating little opportunities for discovery.

The main entrance is located on Broadway Avenue. This location will connect the Creativity Center with the Belle Mehus Auditorium, making it one large cultural complex.

Fifth Street

Broadway Avenue

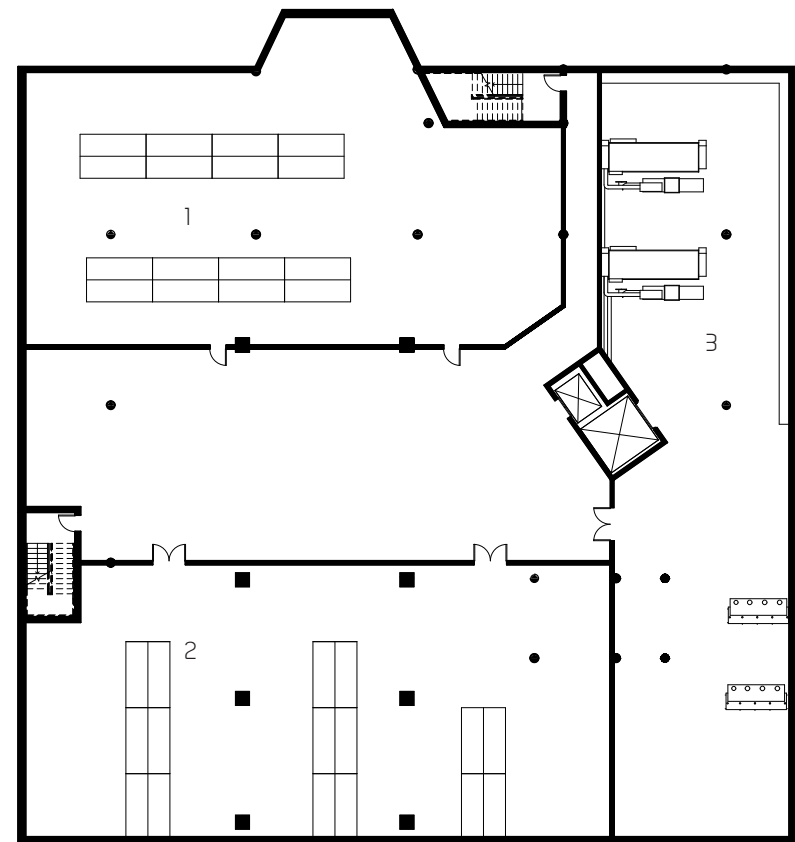


Ground Level

1. Gift Shop
2. Storage
3. Auditorium
4. Loading Dock
5. Gallery
6. Cafe
7. Kitchen







## Basement

- 1. Art Storage
- 2. Art Storage
- 3. Mechanical

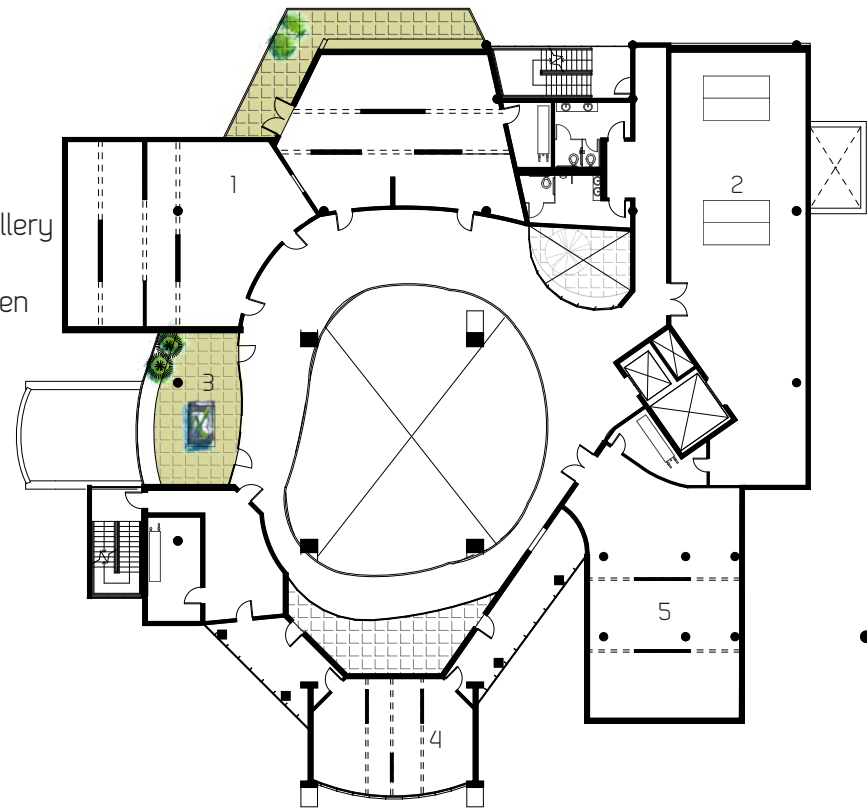


## Second Level

- 1. Reading Room
- 2. Library
- 3. Administration
- 4. Classroom
- 5. Gallery
- 6. Gallery

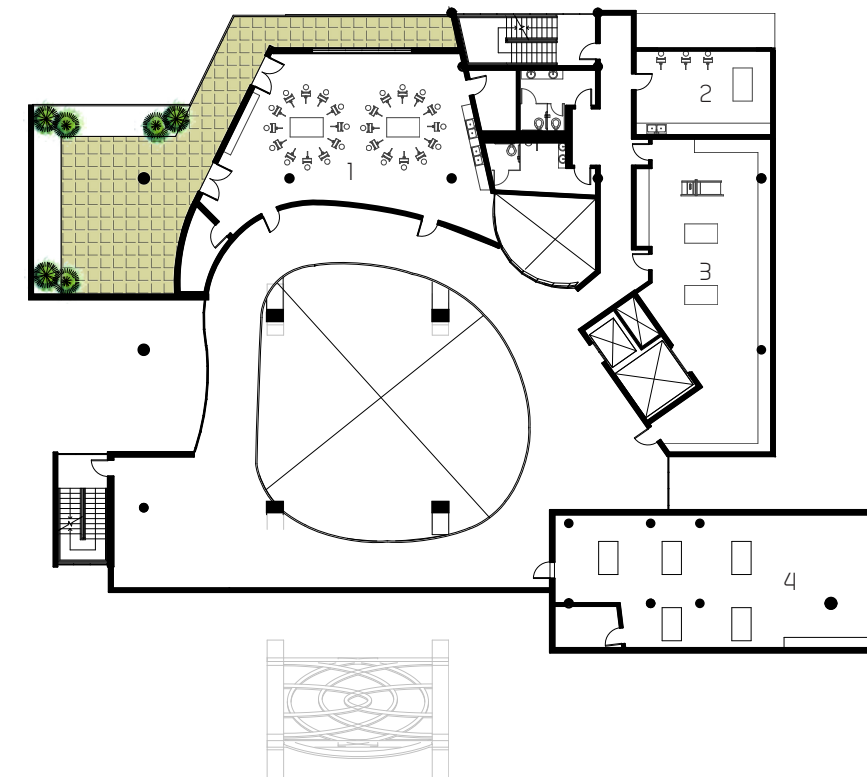
## Third Level

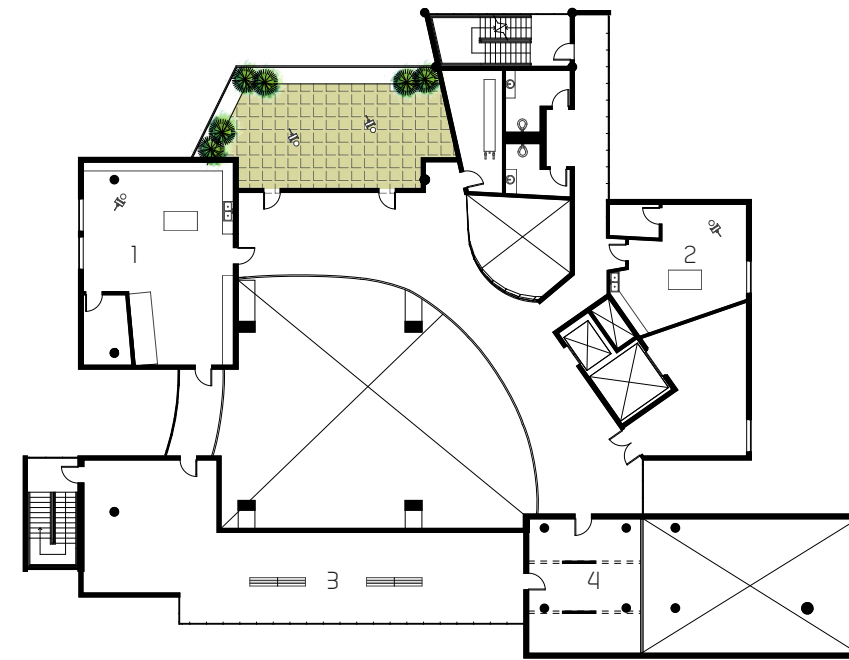
1. Permanent Collection Gallery
2. Art Storage
3. Outdoor Sculptural Garden
4. Exhibition Gallery
5. Permanent Collection Gallery



## Fourth Level

1. 2D Classroom
2. Restoration Workshop
3. Woodshop
4. 3D Classroom



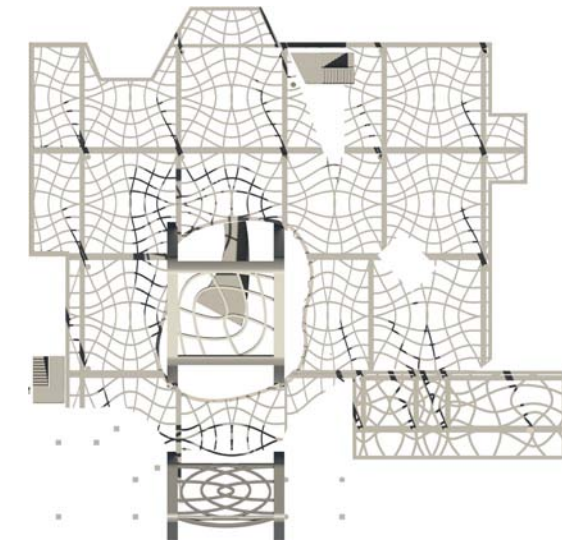
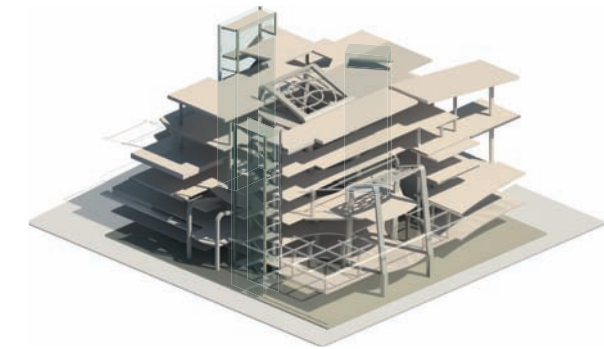


## Fifth Level

1. Artist Studio
2. Artist Studio
3. Student Gallery
4. Student Gallery

## Structure

In order to inspire creativity, the concrete superstructure diverges from the normal waffle slab structure. The grid lines are molded to follow isostatic stress lines. The resulting structure not only shows the plasticity of concrete, but it also has a meaning behind the form. The atrium form is structured in the same way. The mullions follow the stress lines and are formed to resist the strong northwest wind.



## Perspectives

### Alleyway

A pedestrian alleyway was developed between the Center of Creativity and the adjacent office building. It has seating that looks onto a sculpture. As a shared space between the two buildings, it would encourage interaction between the two. The area could also be used for small performances. The Center of Creativity has many balconies full of greenery overlooking this alleyway. Not only does this benefit the people in the art museum, but it also benefits the office building. The workers in the offices can look out and see greenery rather than just a building.



### Outdoor Sculptural Garden

The many outdoor spaces located throughout the building make up the museum's sculptural garden. By having it dispersed throughout the building, people must explore the whole building to view all of it. This gives the viewers opportunities to discover new places or new insights on their way.





## Gallery

One of the most important elements of an art museum is the gallery space. The Center of Creativity consists of galleries for professional artists as well as student galleries. This specific gallery is a student gallery that looks into the sculptural classroom. The view from this gallery is directed to the Belle Mehus Auditorium. The walls in this gallery and the other galleries are movable in order to adjust to the changing needs of the space.



## Classroom

A major element in the programming of the art museum is the incorporation of spaces where people can be creative through painting, drawing, sculpting, and other means. This classroom for painting and drawing faces north, giving the space indirect, controlled natural lighting. This is ideal for painting. The artificial lighting which consists of both track lighting and fluorescent lighting can be adapted to the current use. The classroom leads out onto an outdoor space that can be used for outdoor classes on nice days.





## Entry

The perspective of the main entrance (to the right) shows two of the sealed outdoor spaces. The outdoor spaces and the atrium not only connect the viewers with the outdoors, but they also give the building a light feeling to balance out the heaviness of the concrete structure. This open space can be used for special exhibitions, or other events.



## Site Overview

Much of the south facade is composed of glass to not only let light in, but to also invite people in. The transparency connects the inside with the green public space along Broadway.

Fifth Street

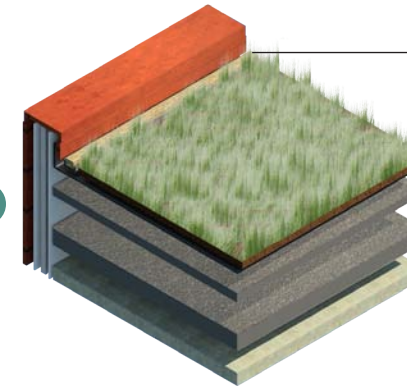
Broadway Avenue

A green space and plaza connect the art museum and auditorium. It combines soft and hard landscaping.

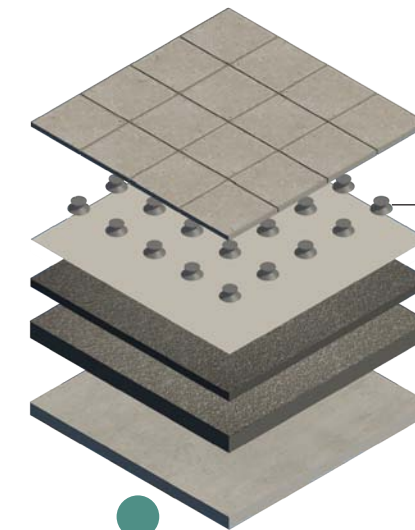
A cantilever looks to the Belle Mehus Auditorium to further solidify that cultural connection.

An area located to the east could be a site for expansion in the future. It would connect the existing art museum with the Belle Mehus Auditorium, making it one large cultural complex. Until it is needed for gallery and classroom space, it can become part of the green space.

## Roof Assembly



6" Band of gravel  
Mesh with growing medium  
Root control layer  
Roof membrane  
Sloped rigid insulation  
8" Rigid insulation  
6" Concrete deck



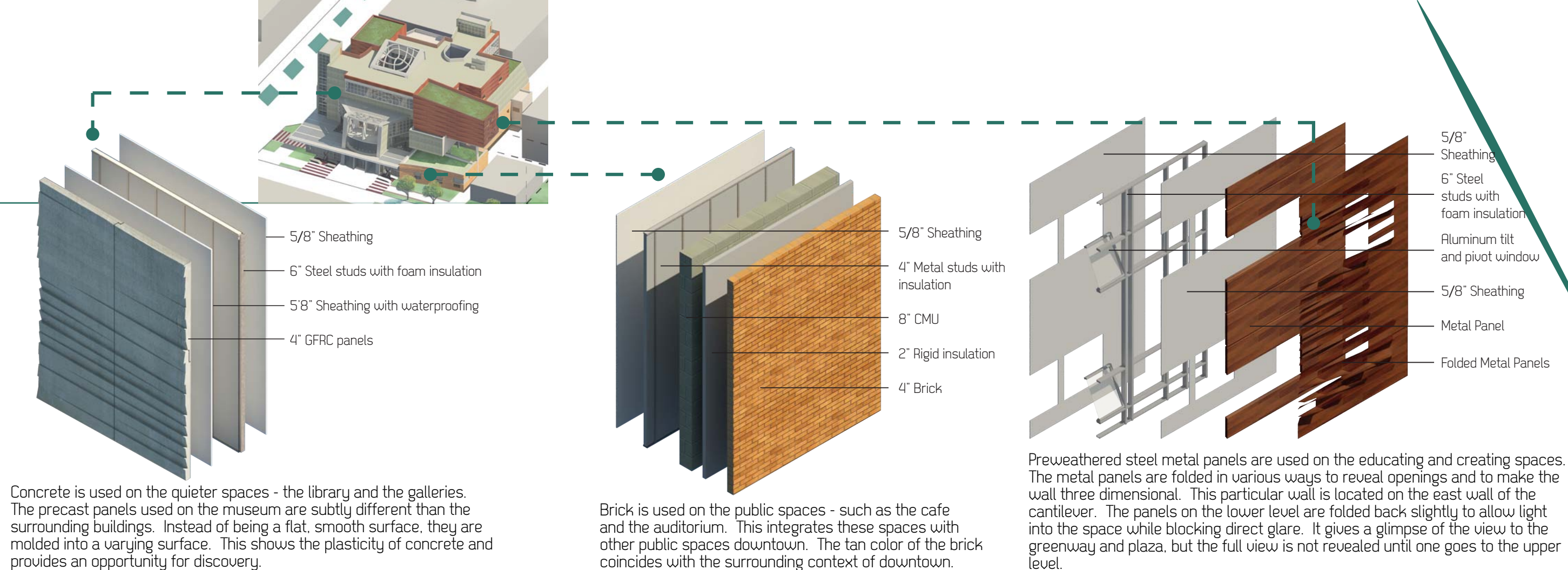
2" Concrete pavers  
Adjustable pedestals  
Roof membrane  
Sloped rigid insulation  
8" Rigid insulation  
6" Concrete deck



# Material Assembly

The materials used are common materials to the Bismarck area. The way in which they are represented are slightly different than the normal way, creating opportunities for insight. The assembly uses current technology to push the limits of the material, while enhancing the true nature of that material. The materials work together to form a collage. The different materials represent different functions of the spaces within.

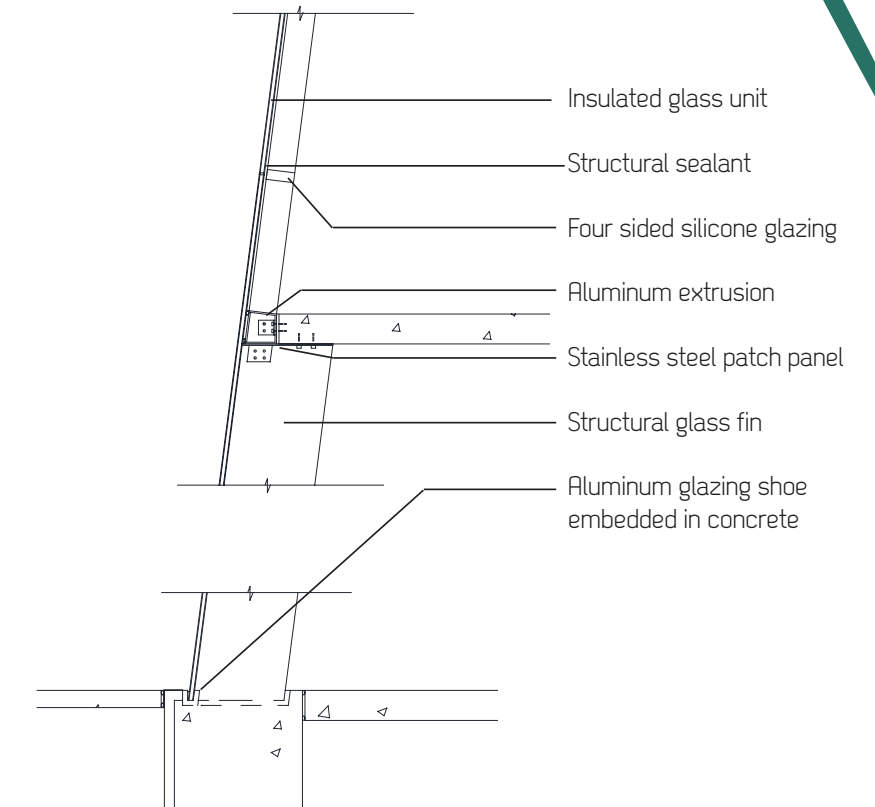
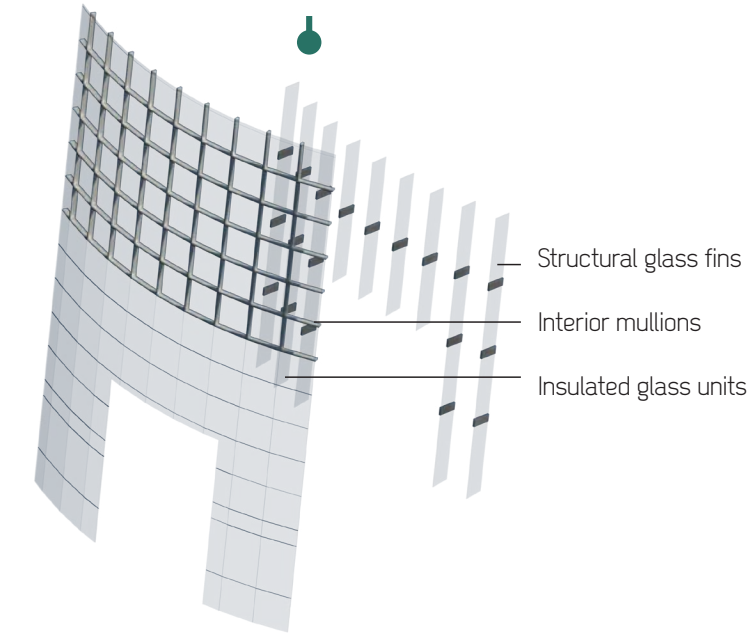
158



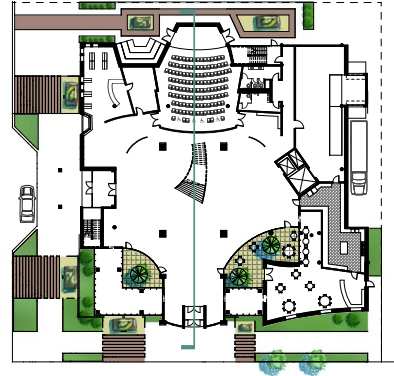
159

# Glass Assembly

The glass facades are composed of a grid. The glass panels vary in texture and opaqueness, forming a subtle collage. The base of the entrance uses glass fins to resist the lateral wind loads. Using glass fins gives the entrance an inviting transparency. The upper level has mullions only on the interior, giving the exterior a clean, sleek appearance.

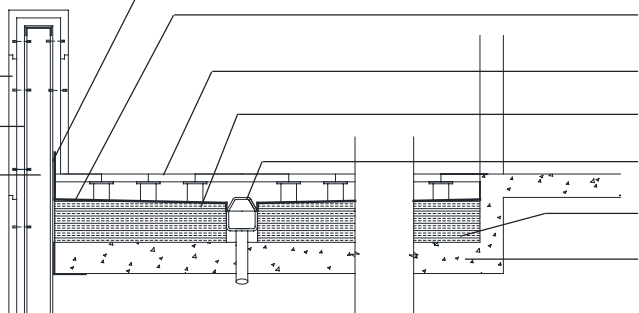


## Section Perspectives

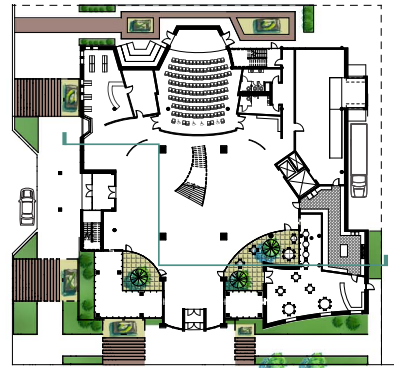




GFRC Panel  
Sheathing  
Steel studs  
with insulation



Flashing  
Roof membrane  
Concrete Pavers  
Sloped rigid insulation  
Deck drain  
Sloped rigid insulation  
Concrete deck



# Installation





## Reference List

- Anthes, E. (April 22, 2009). How room designs affect your work and mood. *Scientific American Mind*. Retrieved from <http://www.scientificamerican.com/article.cfm?id=building-around-the-mind>.
- Architecture of mind. (n.d.). Retrieved from <http://www.artbrain.org/chiasmic-crossing-tonustal/>.
- Beswick, D., Chuprina, L., Canipe, J., & Cox, B. (2002). Investigating self-directed learning in culture, Learning Styles, and Creativity. Retrieved from <http://files.eric.ed.gov/fulltext/ED473804.pdf>.
- A brief history of the Wadsworth Atheneum. Retrieved from <http://www.thewadsworth.org/about/history/>.
- Brunn, J. (2009). Understanding creativity - person, place, product and process (part 1). Retrieved from [http://ezinearticles.com/?Understanding-Creativity---Person,-Place,-Product-and-Process-\(Part-1\)&id=2625098](http://ezinearticles.com/?Understanding-Creativity---Person,-Place,-Product-and-Process-(Part-1)&id=2625098).
- City of Bismarck's Renaissance Zone Authority. (2012, June 12). Bismarck Renaissance Zone development plan. Retrieved from <http://www.bismarck.org/DocumentCenter/Home/View/4577>.
- Conservation. (n.d.). Retrieved from <http://www.montana-dakota.com/conservation>.

- creativity. (n.d.). Dictionary.com Unabridged. Retrieved from <http://dictionary.reference.com/browse/creativity>.
- Dart, K. (Director). (2013). The creative brain: How insight works [ Documentary ] . England: BBC. Retrieved from <http://www.youtube.com/watch?v=C2L0t-EN2Yo>.
- Desnick, J. (2012, July 10). War on a new front: Cultural heritage. *International Law*, 1(2). Retrieved from <http://yulr.org/war-on-a-new-front-cultural-heritage/>.
- Dobrznski, J. (2013, August 10). High culture goes hands-on. *The New York Times*. Retrieved from [http://www.nytimes.com/2013/08/11/opinion/sunday/high-culture-goes-hands-on.html?\\_r=0](http://www.nytimes.com/2013/08/11/opinion/sunday/high-culture-goes-hands-on.html?_r=0).
- Education. Retrieved from <http://www.getty.edu/education/>.
- Feist, G., & Barron, F. (1973). Predicting creativity from early to late adulthood: Intellect, potential, and personality. [ Abstract ] . *Journal of Research in Personality*, 37. Abstract retrieved from <http://www.sciencedirect.com/science/article/pii/S0092656602005366>.
- Foundations and first acquisitions. Retrieved from [http://en.museicapitolini.org/il\\_museo/storia\\_del\\_museo/fondazione\\_e\\_prime\\_acquisizioni#c](http://en.museicapitolini.org/il_museo/storia_del_museo/fondazione_e_prime_acquisizioni#c).
- Francis, R. (2006). The explosion of museum architecture. Retrieved from <http://www.globalprovince.com/museumarchitecture.htm>.
- History of the Louvre: From château to museum. Retrieved from <http://www.louvre.fr/en/history-louvre>.
- History of Uffizi Gallery. Retrieved from <http://www.uffizi.com/history-uffizi-gallery.asp>.
- Hoffman, R. (2009). The complete story of Bismarck North Dakota. Retrieved from <http://www.bismarckcafe.com/bismarckbook.pdf>.

- Hoffman, R. (2012). Downtown Bismarck business district. *BisMan Cafe*. Retrieved from <http://www.bismarckcafe.com/blogs/wiki/downtown-bismarck-business-district>.
- Holdman, J. (2012, February 25). Bismarck's downtown undergoing development. *The Bismarck Tribune*. Retrieved from [http://bismarcktribune.com/special-section/news/bismarck-s-downtown-undergoing-development/article\\_063ff468-5f7a-11e1-9c97-0019bb2963f4.html](http://bismarcktribune.com/special-section/news/bismarck-s-downtown-undergoing-development/article_063ff468-5f7a-11e1-9c97-0019bb2963f4.html).
- Jakobsen, A. (2012). Experience in-between architecture and context: The New Acropolis Museum, Athens. *Journal of Aesthetics & Culture*, 4. Retrieved from <http://www.aestheticsandculture.net/index.php/jac/article/view/18158>.
- Kennicott, P. (2010). Rick Mather's design elevates Richmond museum's dour 1930s architecture. *The Washington Post*. Retrieved from <http://www.washingtonpost.com/wp-dyn/content/article/2010/04/30/AR2010043001464.html>.
- Kiasma, museum of contemporary art (2012). Retrieved from <http://www.arcspace.com/features/steven-holl-architects/kiasma-museum-of-contemporary-art/>.
- Kozbelt, A., Beghetto, R., & Runco, M. (2010). Theories of creativity. *The Cambridge Handbook of Creativity* (pp. 20-47). New York: Cambridge University Press.
- Luke, Timothy W.. *Museum politics: power plays at the exhibition*. Minneapolis: University of Minnesota Press, 2002.
- Natural Resources Conservation Service. (2012, July 23). Retrieved from <http://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm>.
- Pallasmaa, J. (2005). *The eyes of the skin: Architecture and the senses*. Chichester, England: Wiley-Academy.

- Silvia, P. J., Nusbaum, E. C., Berg, C., Martin, C., & O'Conner, A. (December 2009). Openness to experience, plasticity, and creativity: Exploring lower-order, higher-order, and interactive effects. *Journal of Research in Personality*, 43. Retrieved from [http://libres.uncg.edu/ir/uncg/f/P\\_Silvia\\_Openess\\_in%20press.pdf](http://libres.uncg.edu/ir/uncg/f/P_Silvia_Openess_in%20press.pdf).
- Slipek, E. (2013). Virginia Museum of Fine Arts. Retrieved from <http://architecturerichmond.com/2013/03/30/virginia-museum-of-fine-arts/>.
- Study purpose. Retrieved from <http://www.downtownbismarckstudy.com/about/>.
- Sveiven, M. (2012). "Flashback: Modern art museum of Fort Worth." Retrieved from <http://www.archdaily.com/?p=213084>.
- United Visual Artists – Canopy + Connection (2013, April 18). Retrieved from <http://www.ikono.org/2013/04/united-visual-artists-canopy-connection/>.
- Uitale, A. (2009). Museum of contemporary art kiasma. Retrieved from <http://www.galinsky.com/buildings/kiasma/index.html>.

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Figure 84-Profile  
Photo by Jennifer Upcraft

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"The whole purpose of education is to turn mirrors into windows."  
-Sydney J. Harris