



The Sacred Qualities of the Mundane

Using Music and Architecture
to Achieve Harmony in the Workplace

Fg. i



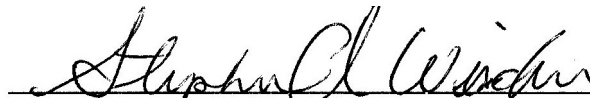
Fg. ii

The Sacred Qualities of the Mundane
Using Music and Architecture to Achieve Harmony in the Workplace

A design thesis submitted to the
Department of Architecture and Landscape Architecture
of North Dakota State University

By:
David P. Walbolt

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


Primary Thesis Advisor


Thesis Committee Chair

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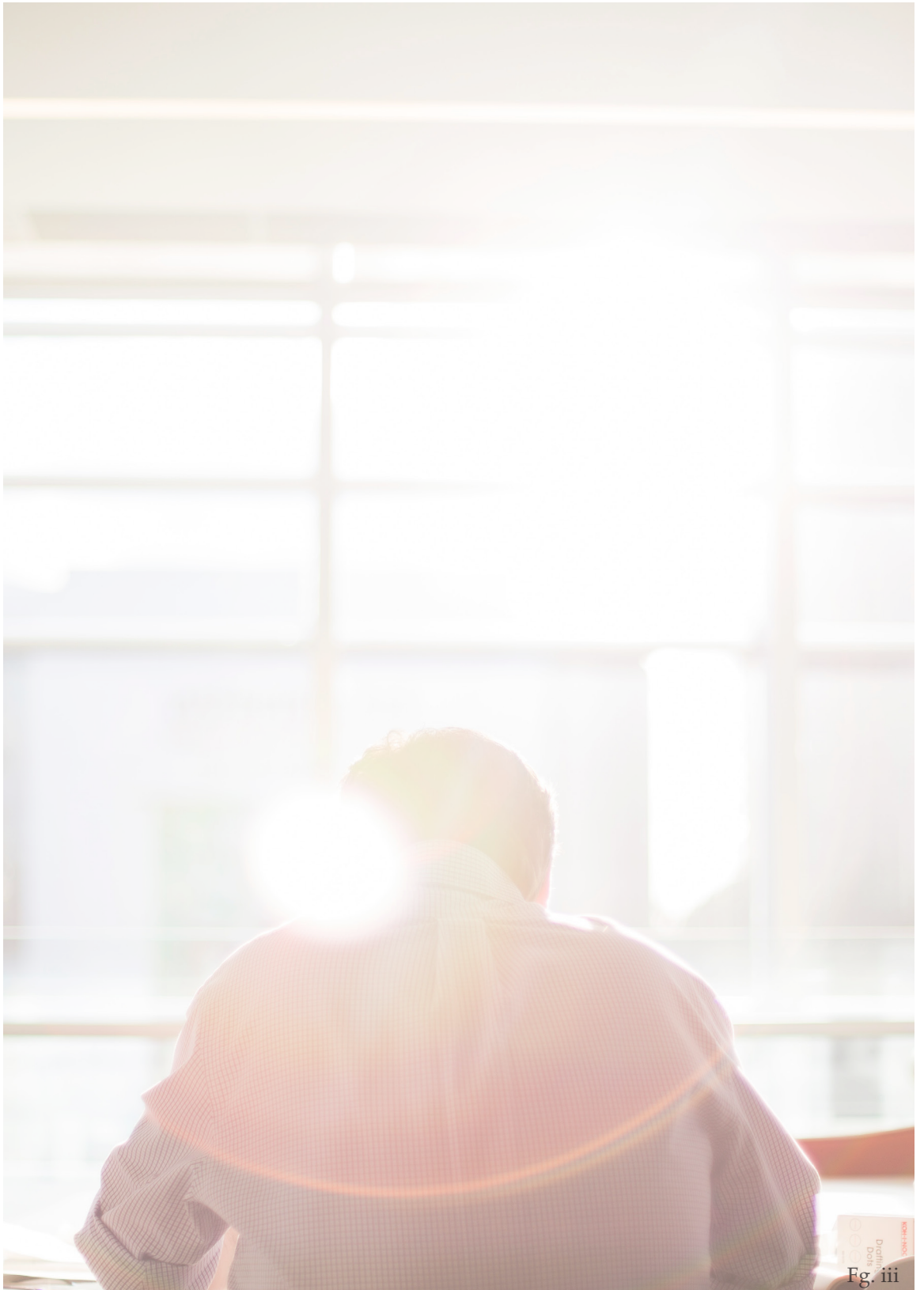


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Abstract

This thesis project is intended to critique the daily ritual we fall into as humans. We wake up, go to work, come home and to do it all again tomorrow. How can we design the workplace to be a space that makes you want to be there? Through the metaphor of music and a symphony orchestra, this thesis investigates achieving a harmony in the workplace. One that promotes a sense of community and belonging and works to restore our natural rhythms as humans.



Fig. 11.1

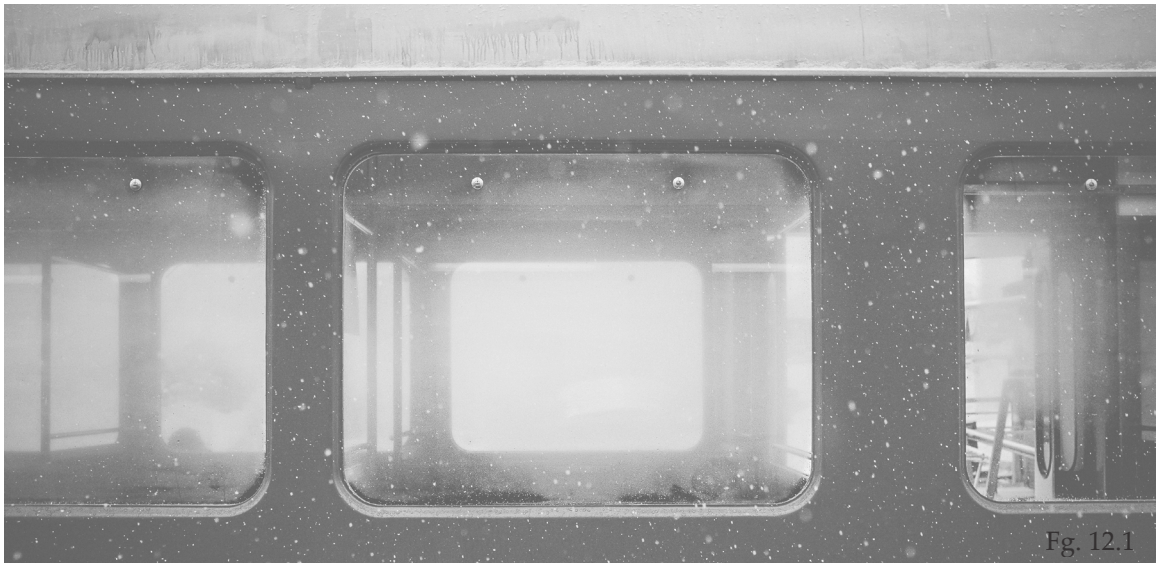


Fig. 12.1

Narrative

My thesis is intended to critique the daily ritualistic dance we fall into. We wake up, go to work, come home, and do it all again tomorrow. We fall into a rhythm that is different from our natural circadian rhythms as humans. How can we make the work place an atmosphere that encourages a sense of community and belonging that restores our natural human rhythms and gives us a sense of purpose and belonging?

Music and architecture have been linked together for thousands of years. When music was able to be translated into scores, architecture was translated to drawings. Gioseffo Zarlino, an Italian music theorist, defines harmony as being “a diversity of moving parts and consonances, brought together with variety.” The intention of my architecture is to use the musical metaphor of a symphony orchestra in comparison to the unity of a company. Each piece of the orchestra has their own key role to the overall experience of harmony in the orchestra. They are separate, yet connected. By creating spaces that allow for community and belonging to happen, there becomes an overall harmony throughout the building. “A diversity of moving parts and consonances, brought together with variety.”

Project Typology

The typology of this project is most closely related to a corporate headquarters/campus. Office design trends have changed throughout the years. From the open plan layout of the Industrial Revolution to the mobile coffee shop office, but what is the future like for office design? How can we design something that is not just a repetition of the past, but something that is revolutionary and inspires us?



Fig. 15.1

Googleplex

Location: Mountain View, CA

Typology: Corporate Campus, Office

Size: 3,100,000 sq. ft.

Architect: Clive Wilkinson Architects



Fig. 16.1

Summary

The Googleplex is the largest campus that Google owns. It is located in the Silicon Valley area of California. This area is home to many big time tech companies and start-ups such as Facebook, Apple, and Google. This area is very competitive in the work field trying to attract the smartest tech people in the world to work for your company.

Why it is Successful

Google is one of the most successful companies in the world. The Googleplex campus reflects this in many different ways. It is designed to have community lunches. By making the lunch tables longer rather than breaking them into groups, it encourages interaction. Google also has a design mentality of “diner booths vs. conference rooms.” This is the idea that Google tries to create casual collisions in the work environment. As David Radcliffe, Google’s scout for Google offices, says, “You can’t schedule innovation, you can’t schedule idea generation and so when we think our facilities around the world we’re really looking for little opportunities for engineers or for creative people to come together.” Google buildings are designed to spark creativity, play and collaboration. There are niche’s throughout the buildings to allow for accidental encounters. These encounters are meant to be long enough to be productive, but short enough to make the employee feel inefficient in their work schedule. This time frame is about two to three minutes.

Why it is Unique

What makes the Googleplex so unique is that it looks more like a playground than it does an office. There are bean bag chairs spread out. They have seven fitness centers, a bowling alley, a volleyball court, and many more amenities.

Samsung Headquarters

Location: San Jose, CA

Typology: Corporate Headquarters, Office, Campus

Size: 1,100,000 sq. ft.

Architect: nbbj



Summary

The Samsung Headquarters was completed in 2015. Similar to the Googleplex, this building is located in the tech-savvy area of Silicon Valley. The office building is comprised of two, ten story towers. The towers are essentially two story buildings stacked on top of one another. These two story buildings sandwich green spaces between them. These green spaces are filled with open-air gardens, interactive spaces, and many different recreational options. The idea behind these green spaces is to introduce the natural environment into the office.

Why it is Successful

There are many successful design aspects of the Samsung Headquarters. The building is designed for a cultural shift of the work environment which helps create a community of collaboration and creativity. A large part of the successfulness to this design are the open air green spaces. These spaces encourage employees to take a break from the cubicle, collaborate with co-workers, and actively engage in the environment in which they work.

Why it is Unique

Located in the Silicon Valley, Samsung must compete with powerhouses such as Google, Apple, and Facebook to have a unique campus for their employee's. Samsung embraces their uniqueness with the incorporation of the "green floors." Rather than having one, central green space for everyone to collaborate, there are multiple stories of these green spaces stacked on top of the office buildings. This allows for people of different office buildings to collaborate with each other throughout the day to share a cup of coffee, have a simple conversation, or talk about work idea's outside of the typical work environment.

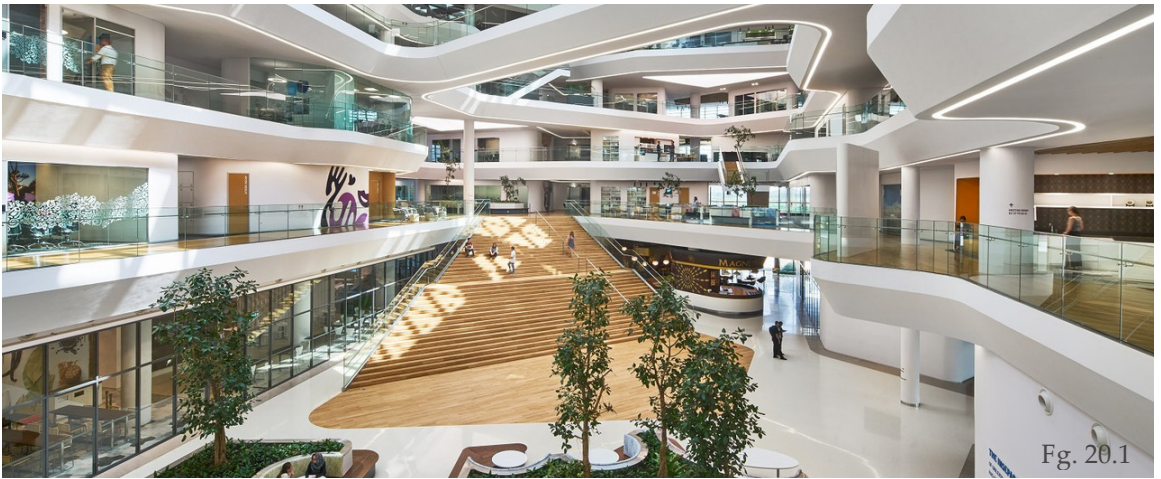
Unilever Headquarters

Location: Jakarta, Indonesia

Typology: Corporate Headquarters, Office

Size: 165,600 sq. ft.

Architect: Aedas



Fg. 20.1



Fg. 20.2

Summary

The Unilever headquarters is located in Jakarta, Indonesia. It was completed in June of 2017 by Aedas. It is located in the BSD Green Office Park, the first green office district in Indonesia. This new complex allows employee's from four different offices work and operate under the same roof. The building design is driven with the intent to aid the spirit of community, collaboration, engagement and agility.

Why it is Successful

The building is designed with main intent of giving a sense of community and place to the Unilever employee's. There are no enclosed offices allowing the best possible views and access to natural light. The enclosed meeting rooms revolve around the core. The design is focused on giving group and individual work different zones in order to conduce collaboration while simultaneously maintaining a level of privacy. There is a central, light filled atrium that doubles as a large event space. Surrounding this atrium are ammenities for employee's that include a mosque, dining space, day care center, fitness center, and more. This headquarters also provides indoor and outdoor green spaces. There are also larger, landscaped deck's and rooftops that allow guests and employee's to connect with nature and step away from the desk.

Why it is Unique

This headquarters building is very unique because of its basis from the local Indonesian culture. The building layout is based from a traditional Indonesian village plan. There is a square, main roads, and streets which help to create a stronger sense of community. The community spaces in this building are well connected to encourage interaction between employee's and to embrace the diversity of the company. Local Indonesian fabrics, timber, and different forms of imagery from Indonesia are used throughout the design to create a stronger sense of place. This corporate headquarters incorporates three key pieces to Indonesain culture - community, diversity, and nature.

Anytime Fitness Headquarters

Location: Woodbury, MN

Typology: Corporate Headquarters, Office

Size: 80,000 sq. ft.

Architect: BWBR



Summary

Recently opening in Woodbury, MN, this case study is much more local. I chose this case study because of the similar location and typology of the building to my design. The Anytime Fitness headquarters was built to accommodate the rapid growth the Anytime Fitness brand is having. The design is a direct reflection of the company as well as the company's values.

Why it is Successful

The Anytime Fitness headquarters has become a huge success for the company. The large, atrium commons allows for employees, guests, and franchisees to collaborate and share their passion for wellness and positively impact others. The office corridors are wide, allowing for breakout spaces and spontaneous interactions. The workstations for staff are very diverse, giving insight into Anytime Fitness's strong, team atmosphere. The interior glass rooms provide for a quiet space to work, while still feeling connected with the rest of the staff. There are many outdoor patios that offer views of the neighboring wetlands. The selection of site was very important to this project. It is located near a large trail system giving employees the opportunity to explore and take nature breaks as needed. Because of the midwest climate, there are also opportunities to stay active while staying inside as well. The headquarters includes treadmill desks and an on-site fitness center.

Why it is Unique

This headquarters building is unique because it is a direct reflection of the company's values and employees. The minute you walk in the door you are reminded of Anytime Fitness' core values - "people, purpose, profit and play." Because this is a health and wellness company, the top floor is known as the "soul" floor where the executive branches are located. The second floor is the "mind" floor and the entry level is "muscle."



Research Takeaways

Googleplex

Google is a very successful company and there are many reasons behind this. What I think is the strongest part to the design of the Googleplex is the use of small breakout spaces that encourage daily interaction between employees. They also incorporate community lunches with long tables to give employees a chance to interact with many different faces during the lunch break.

Samsung Headquarters

The new Samsung headquarters is competing with many different tech companies in the Silicon Valley so they must have something to attract employees to work for them. The strongest design aspect to the Samsung headquarters is the indoor-outdoor green spaces that are wedged between the office floors. This gives the employees a chance to connect with nature and get away from the desk environment. It also allows for a public space for employees to interact with each other.



Fig. 25.1

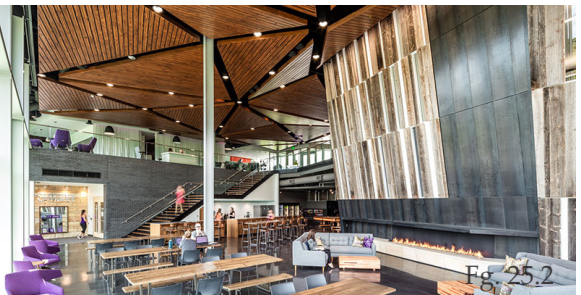


Fig. 25.2

Unilever Headquarters

What I can take away from the design of the Unilever headquarters building is the effort to give a sense of place. The design philosophy is based off of a traditional Indonesian village. Giving your employees a sense of place can provide them with a feeling of community and belonging. This plays a large role in a humans overall health and well-being.

Anytime Fitness Headquarters

The Anytime Fitness headquarters has many successful design aspects to it. What really makes this design unique to others is that the design really reflects the company's values and beliefs. Being a fitness company, the design does everything it can do to encourage a healthy lifestyle. The different levels of the building are related to different area's of the body. The site is connected to many different walking and biking paths to encourage employees to get out and stay active during the work day. Anytime Fitness believes that an active and healthy employee leads to better productivity in the work place.



Major Project Elements

Lobby

This is one of the most important spaces for potential clients and visitors. It can aid in giving a first impression of the company. It is also what employees will see when they arrive to work. This can be very influential on a person's mood to start the day.

Office Space

These spaces allow enough privacy and flexibility for the employee to be most efficient in doing their job.

Cafeteria

A community cafeteria is important in creating community lunches which can help provide a sense of belonging and involvement.

Community/Flex Space

The community and flex space is used to hold larger or company wide events. It is also an area where employees can go take a break from work to get some quiet time or talk with other colleagues.



Fig. 27.1



Fig. 27.2



Fig. 27.3

Indoor/Outdoor Plaza and Gardens

Biophilic design can be very influential on one's health and well-being. Giving employees a connection between work and the natural environment can improve productivity and overall health.

Music Hall

The central music hall allows for the celebration of local musicians and artists. Music is able to be played in the central atrium to reverberate throughout the entire building.

Wellness Center

A wellness center can become a space to be offered to employees in order to encourage overall health and well-being. In this area will be a workout facility, nutritionist, spa, and other amenities.

Breakout Spaces

Based upon case study research, breakout spaces can be very effective for encouraging small, day-to-day interactions which can help productivity and overall well-being.

Client/User Description

Thrivent Financial is a not-for-profit Fortune 500 company. Their purpose is to create financial strategies to be wise with money and live generously for Christians. Thrivent provides life insurance, annuities, mutual funds and guidance from financial representatives around the nation. Thrivent Financial has a unique way of blending generosity, faith and finances to allow their members to thrive. They support programs that help to support stronger communities, churches, and families.

Thrivent Financial strongly values giving back to the community and supporting one another through service and finances. In 2015, Thrivent and its members raised and donated \$203.9 million for causes chosen by the Thrivent members. They were also able to attain over 9 million volunteer hours for programs in the communities of members.

This company values their

relationships. Their mission statement says they will live balanced and generous lives. Their purpose is to serve their members and society by guiding them to be smart with their money and “live generously.”

Users of the new Thrivent Financial headquarters will be the employees, guests, and potential clients of Thrivent Financial. Employees at Thrivent range from the ages of 22-67. Clients or potential visitors could include a wide range of factors to consider. Thrivent provides advice for college funds and ranging to retirement packages and everything in between. The location of the new headquarters is adjacent to the Hennepin County Medical Center. Thrivent is meant to serve and therefore this new headquarters could include a public outdoor space for hospital patients and guests to enjoy to get away from the claustrophobic hospital environment.



THRIVENT
FINANCIAL®

Fig. 29.1



Fig. 30.1

Project Site

Thrivent Financial currently has a primary headquarters building in Minneapolis, Minnesota and a smaller, secondary headquarters located in Appleton, Wisconsin. The current Minneapolis headquarters is 525,000 square feet. The company is looking to sell the existing building to Hennipen County. In a statement made by the current CFO, Randy Boushek, "The potential sale of our current building creates the opportunity to develop

a long-term option that can support the future needs of the organization, reduce disruption to our workforce, and allow us to continue to be an important part of the development of East Town." The parking lot adjacent to the existing headquarters building is looking to be bought by a parking company and developed into a parking structure with 750 spaces as well as mixed retail and 87 residential units.



The proposed site for the new headquarters is in Minneapolis, MN. It is a block to the east of the existing headquarters building. The property is a parking lot owned by Thrivent and is bordered by 6th St. S and 7th St. S to the North and South respectively. To the East and West, the parking lot

is bordered by Portland Ave S and 5th Ave. S, respectively. The site is one block to the west of Hennepin County Medical Center and two blocks to the west of the new US Bank Stadium. This new headquarters building aims to be a large part in the development of East Town.



Fig. 32.1

Project Emphasis

Social

The social aspect plays a large part in one's happiness and well-being. The project will be designed to give the users a sense of community and belonging.

Emotional

The emotions a user of this building will feel play a large role in the design. Emotional is one of the seven dimensions of wellness. Emotions are what can make someone want to be at work. They can also influence someone's productivity in a positive or negative way.



Fig. 32.2



Music

Music and architecture have been linked since day one. When music was written as scores, architecture was put into drawings. If music can bring people together as a community, why can't architecture?

Natural Lighting

Given the project site in the midwest, the winters can become long and dark, leading to Seasonal Affective Disorder. Giving the users the adequate amount of natural light will be very important in the design.

Summary

My project emphasis will be achieving a harmony throughout the workplace through the metaphor of music. By giving users a space that encourages community, interaction, and a sense of belonging there is a natural harmony that can occur within the building. "A diversity of moving parts and consonances, brought together with variety."

Thesis Goals

Project

Design a space that can be conducive to achieving harmony in the workplace.

- Create a strong sense of community
- Create a sense of purpose and belonging
- Encourage interaction with others

Personal

Challenge myself to utilize different resources in completing this thesis project to broaden my understanding of architecture, the BIM process, and to design and focus on something I have a passion for.

Professional

To intellectually challenge myself to become a better professional. By making this thesis culturally and historically relevant and to push the boundaries of what is possible in the world of design.

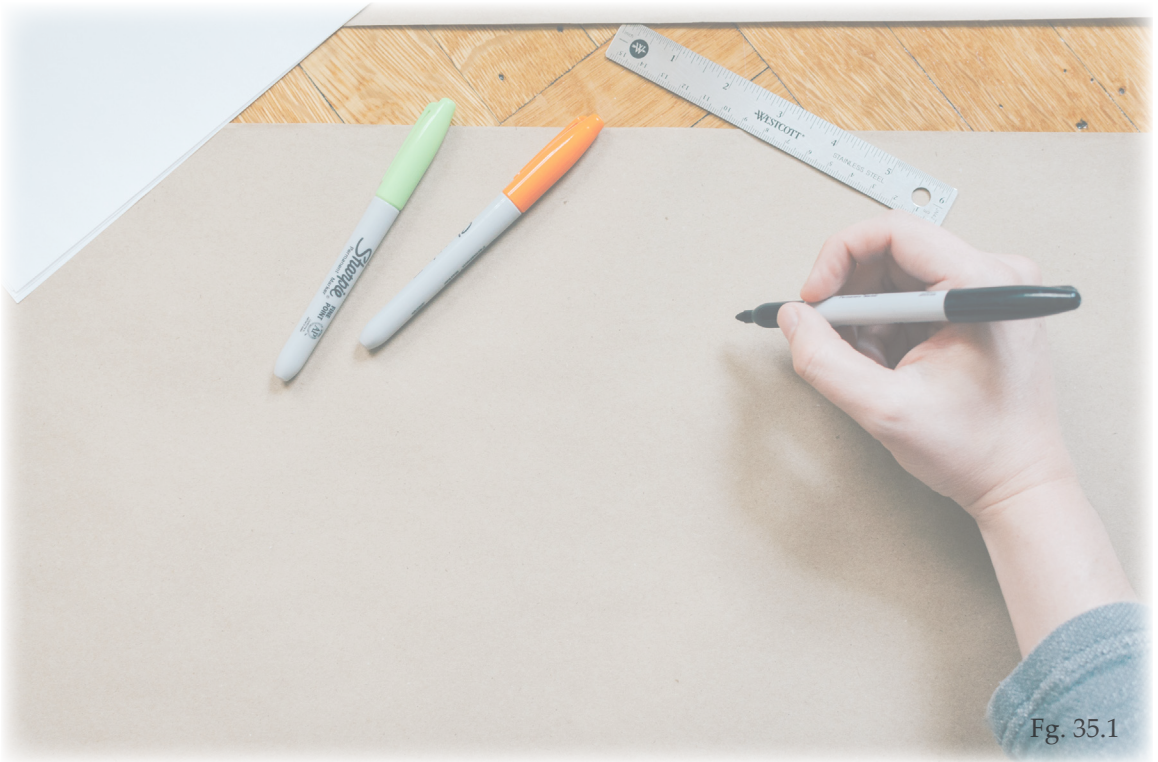


Fig. 35.1



Plan for Proceeding

Research Direction

In order to properly attempt to solve this thesis question, there will need to be plenty of research conducted as well as defining certain terms to make the project as clear as possible. Research will include contextual studies and what makes those buildings successful as an office space. Other research will be conducted on what can make a human productive in a work environment and how the environment can affect their overall health and well-being. Specific items to be defined for this project will be defining what overall health and well-being consist of as well as a clear meaning of what it is to be productive.

Design Methodology

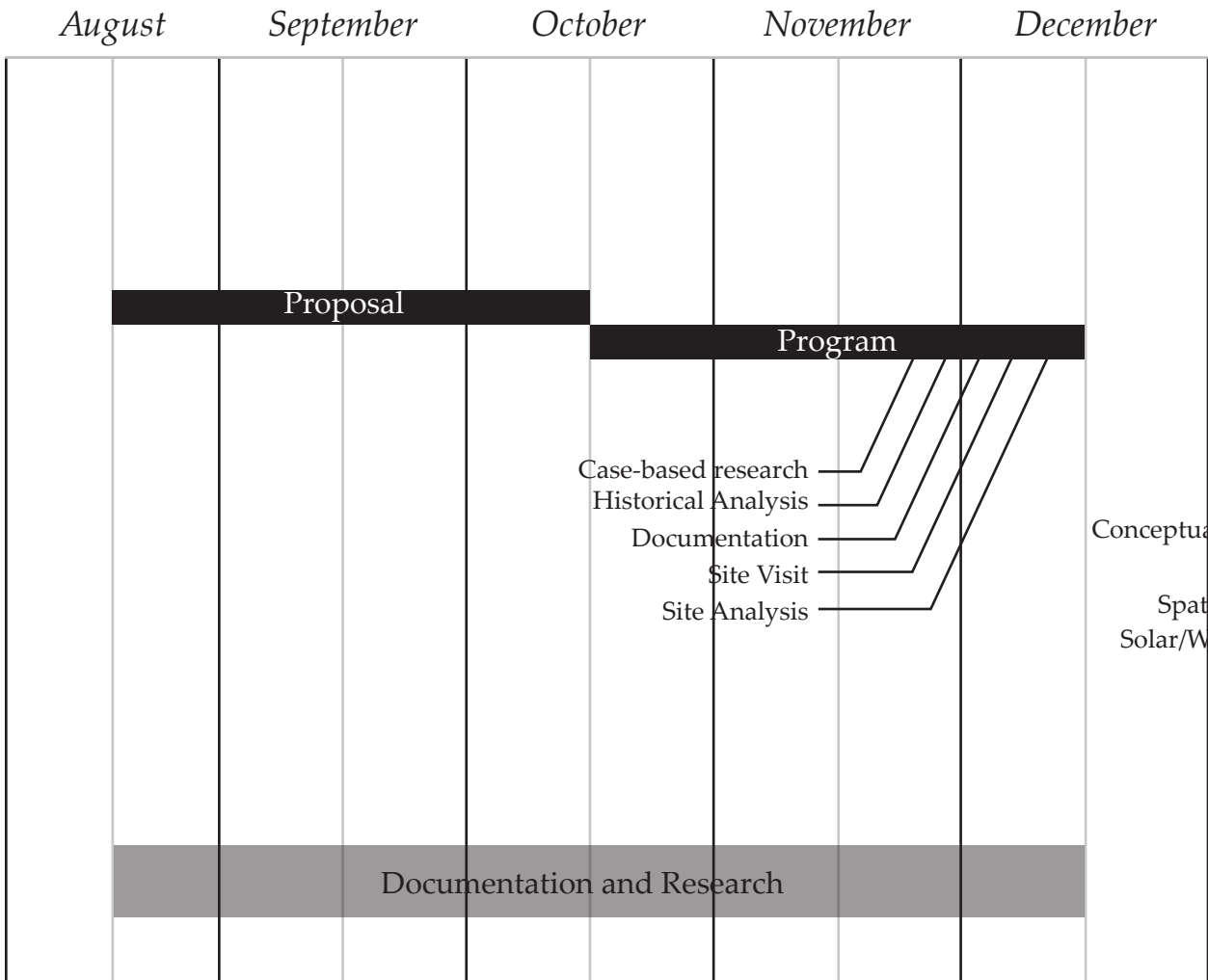
The design methods for this thesis start with the very basics and begin to build upon each other until the end product is a holistic, conclusive design. This thesis project will begin with research on the topic of human health and well-being in the office environment. The research will be done through analysis of different graphics and statistics. There will also be research and analysis of successful office buildings from around the world and some that are local and more closely related to the thesis project. Using this research I will be able to create a parti in which my project design will be based upon. There should be an explanation for every design decision made through out the process.



Fig. 37.1

Documentation of the Design Process

Documentation of a design can be just as important as the final result itself. Every design decision should have a reason behind it and it is important to document how the end solution is reached. For the thesis project, I intend to document the process through sketches, diagrams, presentations, BIM renderings, site analysis, and physical models. The most important design influences along the way will be displayed in the final project presentation to strengthen the design and the reason it is designed the way it is.



Project Schedule

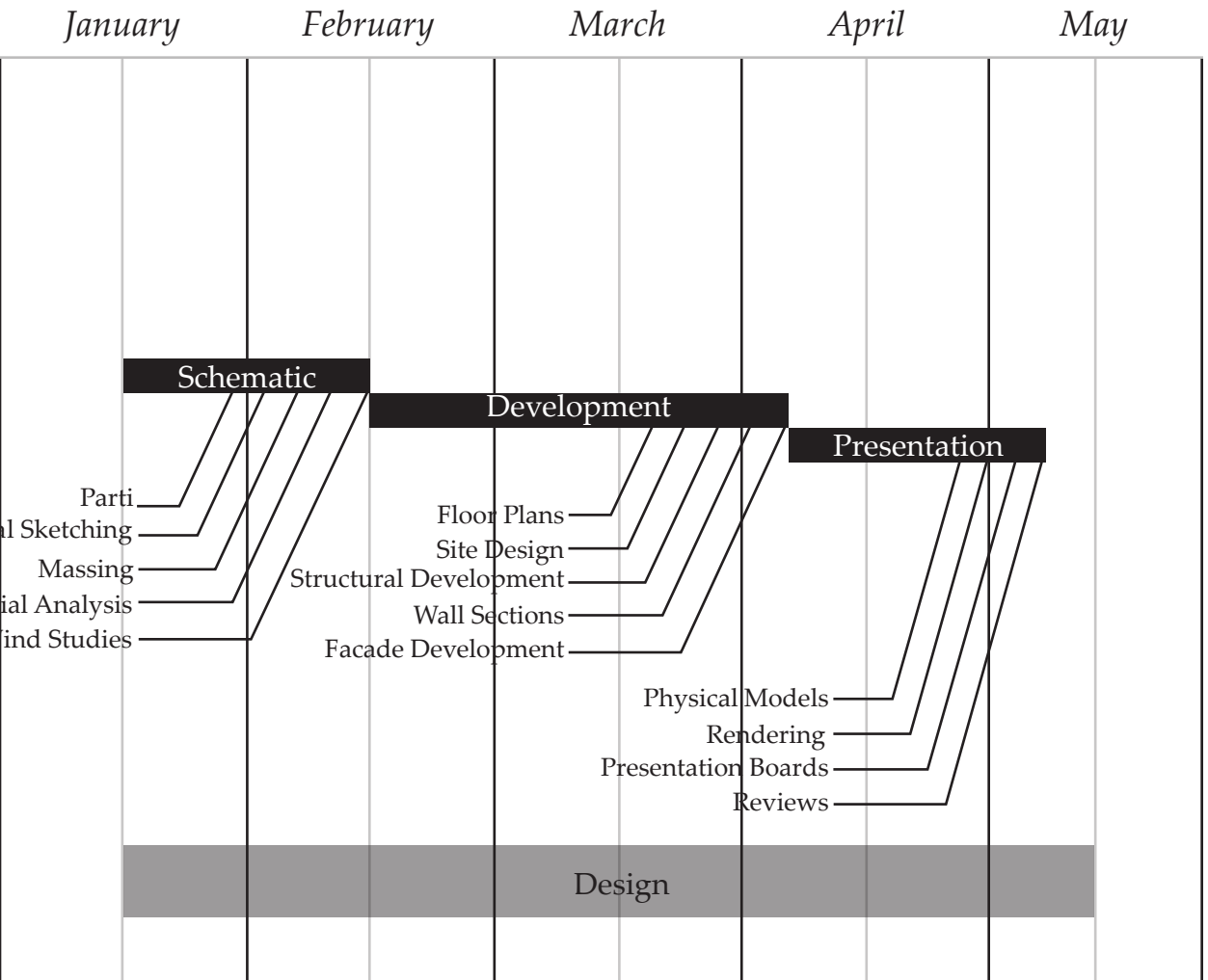


Fig. 39.1



Design Program

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Fig. 41.1

Research

As technology has evolved, architecture and design has become less reliant on the natural environment and has begun to lean more towards the man-made environment. More specifically, the invention of the air conditioner and the fluorescent light bulb have taken us away from our need to connect with nature. With the invention of the air conditioner, we have lost the “need” for natural ventilation. The fluorescent light bulb has given us sufficient enough lighting to pass building codes and provide a minimum amount of light to do our activities. What we do not realize is that these building codes are simply put in place for energy reasons. The air conditioner and fluorescent light bulb do not give the human sufficient enough outdoor air and natural lighting to accommodate our needs. With these design standards, architects have now been designing buildings with deeper floor plates and a minimum floor to ceiling height to cut down on heating and cooling costs and maximize building occupancy.

In Minnesota, most full time workers will go to work in the morning when it is dark outside. By the time they are finished working, it is dark again. This can go on for four to five months, typically around November through March. The only exposure to natural light these people can get is when they are at work. This can be very tough at a lot of offices that do not have sufficient enough windows or have large, open floor plans, making it very dark in the center of the rooms. For a standard office, code requires between 300-500 lux in most spaces (Boubekri, Shishegar, & Khama, 2016). These numbers are far below a humans need for light exposure. Studies have shown that proper daylighting and exposure can improve productivity. Office workers with more daylight exposure in the office environment were found to have better sleep cycles, more physical activity, and a higher quality of life than office workers with less daylight exposure (Boubekri, Shishegar, & Khama, 2016).



Fig. 43.1

The Circadian Rhythm

Humans have an unrecognized need to connect with nature on a daily occurrence. Exposure to natural light has been proven to be associated with many health benefits. Lack of adequate exposure can lead to potential problems. A human's sleep and daily routines and activities are controlled by the brain. This is known as your circadian rhythm. The most important factor of your circadian rhythm is light (Sleep Drive and Your Body Clock). Exposure to light in the morning hours produces two hormones: serotonin and cortisol. These hormones control our body's alertness and energy. Longer exposure to darkness or lower lit areas can result in the production of melatonin. Melatonin is the hormone that causes sleepiness and drowsiness. Our body needs both serotonin and melatonin to produce a function circadian rhythm. In order to maintain a consistent circadian rhythm, our brain and body needs the right amount of light exposure at the right times of day (Sleep Drive and Your Body Clock).



Fig. 44.1

Seasonal Affective Disorder

A consistent disruption to one's circadian rhythm can lead to Seasonal Affective Disorder (SAD). This is more commonly known as seasonal depression. Seasonal depression is very common during the winter months. More specifically, it is common in the northern regions of the world where there is far less light during the daytime hours. For example, SAD is estimated to affect roughly 1% of residents in Florida and as many as 10% in Alaska (Seasonal Affective Disorder, 2017). It is estimated that 10% to 20% of recurring depression cases follow a seasonal pattern. Nationwide, 6% of Americans suffer from SAD and about 14% of Americans suffer from a more mild case of the depression (Seasonal Affective Disorder, 2017). Phototherapy is a very common treatment of SAD. Exposure to bright light is a very efficient way of getting the body to produce serotonin. Light intensity and exposure time are the two ingredients for phototherapy. Studies have shown that illuminance levels of 2,500 lux to 10,000 lux are most effective for SAD sufferers. An overcast day around noon time will produce around 1,000 lux to 2,000 lux. A sunny day in Minnesota during the summer months can produce anywhere from 20,000 lux in the shade to over 100,000 lux (Days of Sunshine Per Year in Minnesota, 2017).

Another factor to Seasonal Affective Disorder is a lack of vitamin D. Vitamin D speeds up the process of calcium deposition in our bones and teeth. Sufficient vitamin D can reduce the risk of heart failure as well as reduce the risk of cardiac hypertrophy (Boubekri, Shishegar, & Khama, 2016). These failures can lead to heart attacks. Vitamin D is found in very few foods. It is predominately absorbed through everyday exposure to sunlight. More specifically, it must be direct exposure. It is near impossible for the human skin to absorb vitamin D through clothing. Direct skin exposure is the best way to get your vitamin D. It is proven that most hospital patients who are there for long stays and elderly folks are typically vitamin deficient, due to their lack of natural light exposure.



Fig. 45.1

Designing for SAD

How can we as designers combat Seasonal Affective Disorder? During the winter months, people tend to see very little sunlight because they are inside at work all day long. The office environment is a great place to tackle this depression that affects many. We as designers can bring more natural light and ventilation into our buildings, giving users the correct amount of lumens and exposure time they need for a more healthy and consistent circadian rhythm. Giving users of the spaces areas to sit and work that feature lots of natural lighting is one way to do this. Terraces that offer views and direct contact with sunlight can give the user access to the right amounts of vitamin D and natural lighting one needs (Boubekri, Shishegar, & Khama, 2016).

Architectural Philosophy and Harmony

Mood constitutes how we find ourselves in the world. “Mood” or *Stimmung*, according to Martin Heidegger, makes a substantial contribution to the sense that we have of belonging to a world. Without an appreciation that things can matter, one could not encounter anything as threatening or useful. This is where mood comes in. Moods constitute the range of ways in which things are able to matter to us, micro and macrocosm’s, and are thus essential to a sense of the kinds of significant possibility that the world can offer up for us. Moods are all around us and we experience them everyday. Having a mood is said to be responsible for the “being-in” aspect of “being in the world,” or being present. If things were completely nullified of mattering, we could not relate to them in any way and, therefore, would not have a sense of being there, amongst them.

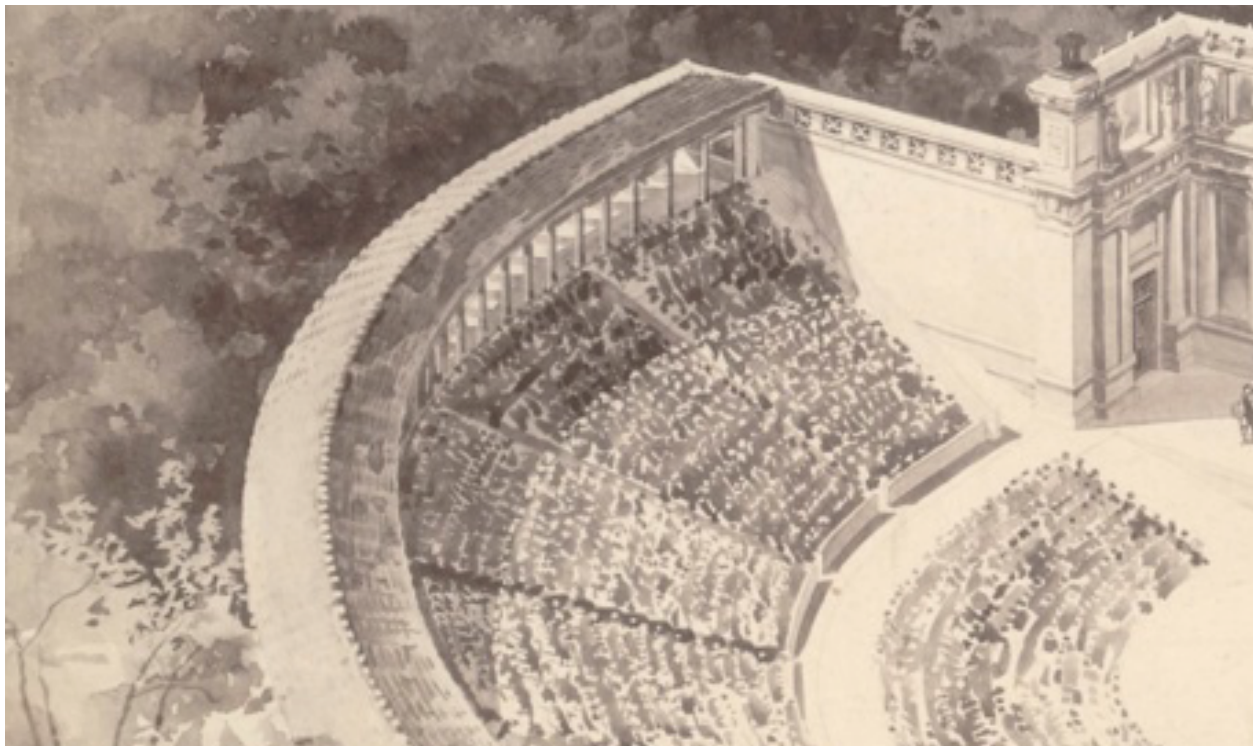
It is clear that the physical places where we act are of the utmost importance for our well-being. That is why this thesis project is intended to design a corporate headquarters building in Minneapolis, MN. Thrivent Financial currently has plans to sell their existing headquarters building across the street and build on

the project site, a new headquarters. This is a great opportunity to design something that is not just a repetition of something of the past, but to design something that opens new views to what is possible in creating a harmony within the office setting. The average full-time working adult spends 48 hours a week in the office. The intent of the design is to create an atmosphere and harmony that creates a sense of purpose in the space they are working in, the community they belong to, and restores our rhythms and broken daily rituals. The average travel time to work in the United States is about 25 minutes. Again, as Martin Heidegger states “Under normal circumstances, we feel well when we are at home. However, as soon as we venture out into our “developing” or postindustrial cities, or we jump in the car for a commute, our emotional state changes.” Furthermore, It is the “architect’s job to make you feel at home in the city, to intensify your sense of purpose and belonging in public, through the institutions that framed daily life. Indeed, this was the part of life that truly mattered, as it involved our social body, our being with others that reflected back a sense of purpose through our actions.”



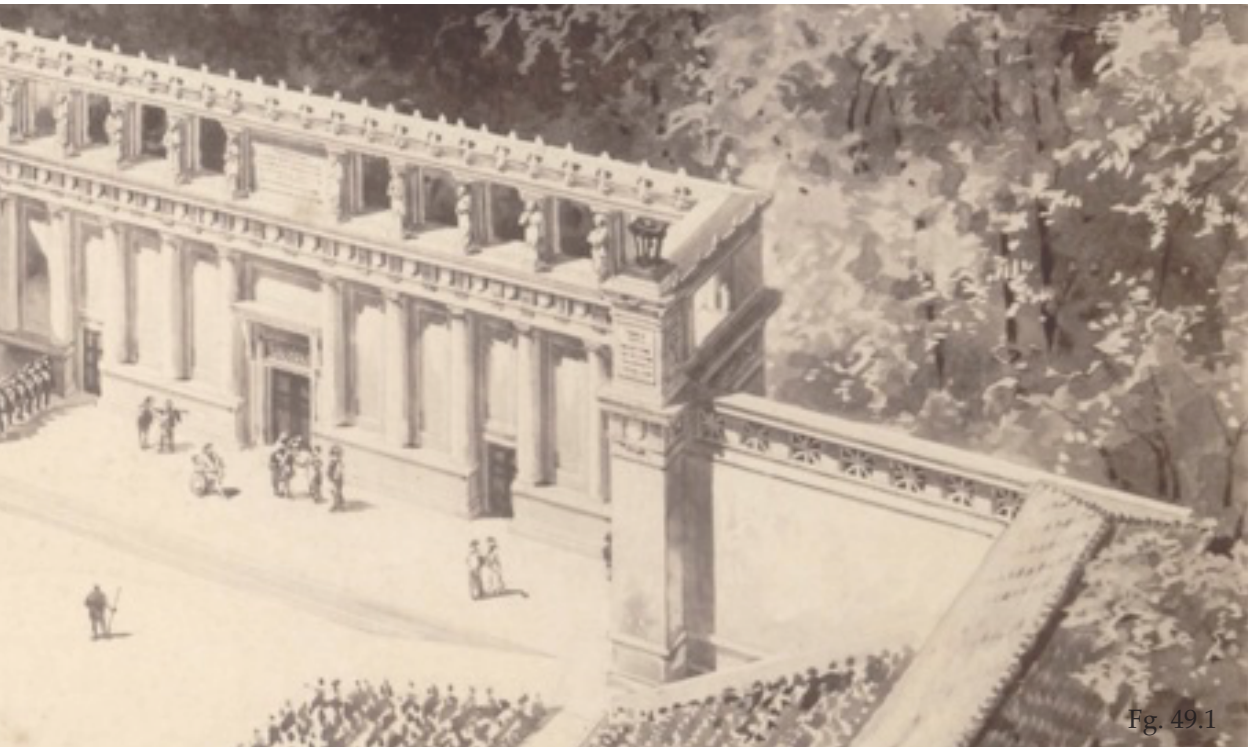
Fig. 47.1

According to Michael Spitzer in “Metaphor and Musical Thought,” “Harmony” is the most loaded term in baroque thought, denoting much more than just a technical musical category. We can identify five levels of harmony: the compositional, the theoretical, the cosmological, the scientific, and the metaphorical. The last represents in many ways, a return to the first, compositional level, but it is now commuted to an imaginary model. This dynamic of circular return is itself part of the “rhythm” of harmony as expressed in the many harmonic cycles of the universe: the orbit of the planets, the oscillation of a string, the return of a spirit to God. Gioseffo Zarlino, an Italian musical theorist and composer during the Renaissance defines harmony as “a diversity of moving parts and consonances, brought together with variety.”



Rhythm and harmony are found all around us in this world. They help describe human beings and their place in this world. This is also known as a macrocosm, how we find ourselves through external happenings. Alberto Perez-Gomez argues in his writings of "Chora: The Space of Architectural Representation" that "external reality, or nature, was so thoroughly articulated through myth as a cultural construction that there was a homology between the "mountain" and the "pyramid," between the tholos and the cave. Yet these acts of ritual construction were part of an a priori order, they were affirmations of the 'given' – indeed a gift – through a propitiatory action in the infinite thickness of the present, rather than product-oriented projects. He goes on

to talk about the Greek Theatre saying, "The dramas were most likely played not on the stage but in the orchestra. The chorus, the group of dancing and singing men often in charge of lamenting destiny, was always at the center of the action. Romans believed that events that combined poetry, music, and dance in their architectural frame were to have a cathartic effect. Mimesis, in relation to the chorus, "signified not imitation but rather the expression of feelings and the manifestation of experiences through movement, musical harmonies, and the rhythms of speech. Prior to Greek theaters, rituals enabled man to propitiate the external world. Greek theaters now allowed man to propitiate the external world through the realm of art.



According to Perez “This becomes a place for seeing, where a distant contemplation of the epiphany would have the same cathartic effect on the observer as was accomplished previously through active, embodied participation in the ritual. This of course creates a theoretical distance which enabled a participation in the wholeness of the universe through rational understanding. A distance, connection, and even macrocosm is now achievable through rational understanding. Martin Heidegger claims in his essay of “Building Dwelling Thinking” that “Even when we relate ourselves to those things that are not in our immediate reach, we are staying with the things themselves. We do not represent distant things merely in our mind so that only mental representations of distant things

run through our minds and heads as substitutes for the things.” It is precisely this that makes the designs of the Greek and Roman amphitheatres so important. The architect must apply his knowledge of “harmony”. It is here that Vitruvius introduces musical modes and intervals, followed by tetrachords and a discussion of the sounding bronze vessels to be placed under the seats. The plan of the theater is designed with intention of the image of the sky. It begins with a circle and is followed by four equilateral triangles, similar to how astrologers do for the twelve signs of the zodiac “when they are making computations from the musical harmony of the stars.” “It is here that architecture happens, revealing an order that is both spatial and temporal.



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Project Justification

When music was translated into scores, architecture was translated into drawings. Music and architecture have been related since the beginning of time through mathematics, ratios, patterns, rhythms, etc. It is one of the greatest metaphors in history. This thesis intends to use the metaphor of music and translate it into the architecture to achieve a sense of harmony.

This project is important to me because myself, similar with many others in the Midwest suffer from Seasonal Affective Disorder. Going to work in the dark and coming home in the dark can be very detrimental to people's physical and mental health. It is important for me to do this project at this stage of my academic development because it is achieving a holistic design, encompassing everything I have learned throughout my education. It is important for my professional development because I am about to enter the work force and finding an office setting that fits should be very important to selecting the right job for you. I will learn many different things through research about office design, mental health, and biophilic design. The project is important for the profession because the way we work nowadays is different than even five years ago. With the exponential development of technology, our office settings are changing year after year. The project is important for academics because biophilic design is a newer topic and the more research we do, the more we can learn about it. Biophilic design I feel is not implemented enough into modern architecture. The project is justified economically because Thrivent Financial already wants to build a new headquarters and has it in their current budget. I can justify the funds because the city of Minneapolis wants to buy Thrivent's existing headquarters and revamp it into a mixed-use building.



Fig. 53.1

The project is very important in its social context. The project site is located in a developing area of Minneapolis. This area is currently thought of as “run-down” and in need of revamping. Adding a new headquarters for a company, along with public spaces that can interconnect with public transit could really work to revamp this area of town. My project and research topic were chosen because SAD is something I feel we can help combat as architects in building design. The reason I am doing this project is because I have a passion for helping people and a passion for learning about mental health. I have seen many people suffer from Seasonal Affective Disorder and I would like to help remedy this using architecture and design.

Historical, Social, and Physical Context

History

Humans have worked and had jobs since the beginning of time. It is how our society functions. As time and humans have evolved, so has the way we work. Dating back to ancient Roman times, each person had a role in society. Performing a duty and being compensated for their tasks. This is how one would provide for their family. Today in 2017, this method still holds true, however, due to technology and other outside impacts, our jobs and duties have changed. Office design in particular took a drastic change with the industrial revolution in the early 1900's. Before the invention of steel and the design possibilities we could achieve with steel, we were very limited to the size of office buildings and floor plans.

The history of office and office design dates back to ancient Rome. The term office comes from the Roman Latin phrase, officium, or bureau. A bureau is a formal position.

More modern offices can be dated back to the 18th century. East India Company was one of the largest companies of it's time. East India Company was used to further establish Britains presence overseas. Their headquarters was built in 1729 and hosted thousands of employees inside. Similar to the Romans, the East India Company found that centralized administration was very successful. Having all administrative parts located in one building was efficient for making executive decisions.

With the erection of the world's

first skyscraper, the Home Insurance building, began the highrise office design. One of the most famous highrise designs was the Oriel Chambers in Liverpool. The Oriel Chambers is known to be the first "skyscraper" in the UK at five stories tall. It is the first building ever to feature a metal-framed curtain wall. This allowed for optimized lighting in the interior spaces. As land prices went up, so did the buildings. We started building up rather than out in bigger cities such as Chicago and New York. Offices have now begun to change in layout due to inventions such as electric lighting, allowing for there to be less windows and gas lamps. The invention of the typewriter, calculator, and telephone changed the ways and places we could work.

Then in 1900 came the Taylorist Office design. The design follows the concept of the assembly line. Keeping everyone located in a central, open-air room, it was thought to move work quickly and more efficiently between departments. After the Great Depression came the Streamlined Office. Similar to the Taylorist design, it too featured an open layout plan. However, workers were left without views to the outside and instead, bright, artificial light. The thought behind this being that it would eliminate all distractions for a more efficient worker.

Following the Streamlined Office, we began designing the Open Office plans. These offices were typically designed as curtain wall facades to try and achieve maximum daylighting on the interior spaces. With the invention of air-conditioning and the fluorescent light, it gave corporations potential to place workers wherever they needed them most in the office. Virtually no outdoor contact was achieved through these design methods.

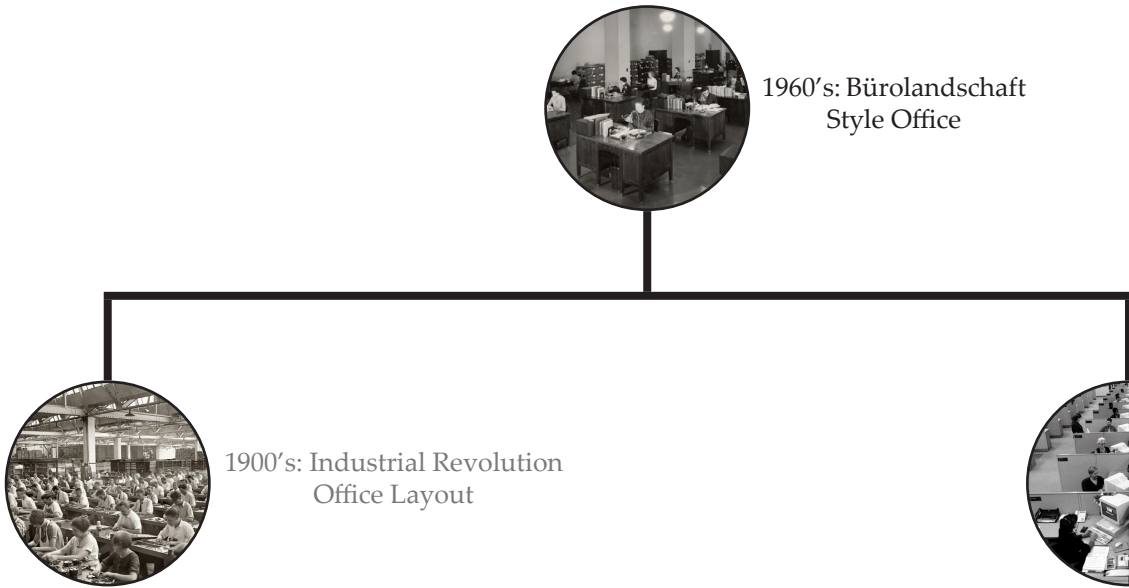
In the 1960's came the Bürolandschaft layout. This consisted of an open floor plan with organic shapes. Letting furniture and partitions be scattered and not structured. This allowed workers in similar departments work near each other with more interaction. This design came post World War II and evolved in Europe. The design is intended to encourage all levels of

management to work together, rather than creating hierarchy with private, corporate offices.

Some did not feel as though they had to the privacy to concentrate and get their work done properly and efficiently with this open plan. Following this came the development of the "cube farm." The cubicle design seemed to be much taller than anticipated. It virtually cut out all natural light and air that would typically reach these spaces. It seemed as though corporations did not care much for the health and wellness of their employee's. They wanted to cram as many people into as little space as possible in order to make maximum profit.

As technology has progressed, so has the way we work. With the invention of the laptop and wireless internet came the rise of the mobile office in the early 2000's. Employee's became able to work away from the office. People still work like this today, however, employee's have started to move back into the traditional office.

From 2010 on came the rise of the biophilic office design. These designs are aimed to achieve maximum daylighting and connect humans with their impulsive need for nature. Incorporating vegetation, sheets of glazing to optimize views to the outdoors, and biomimicry are a few ways architects have achieved biophilic office design.



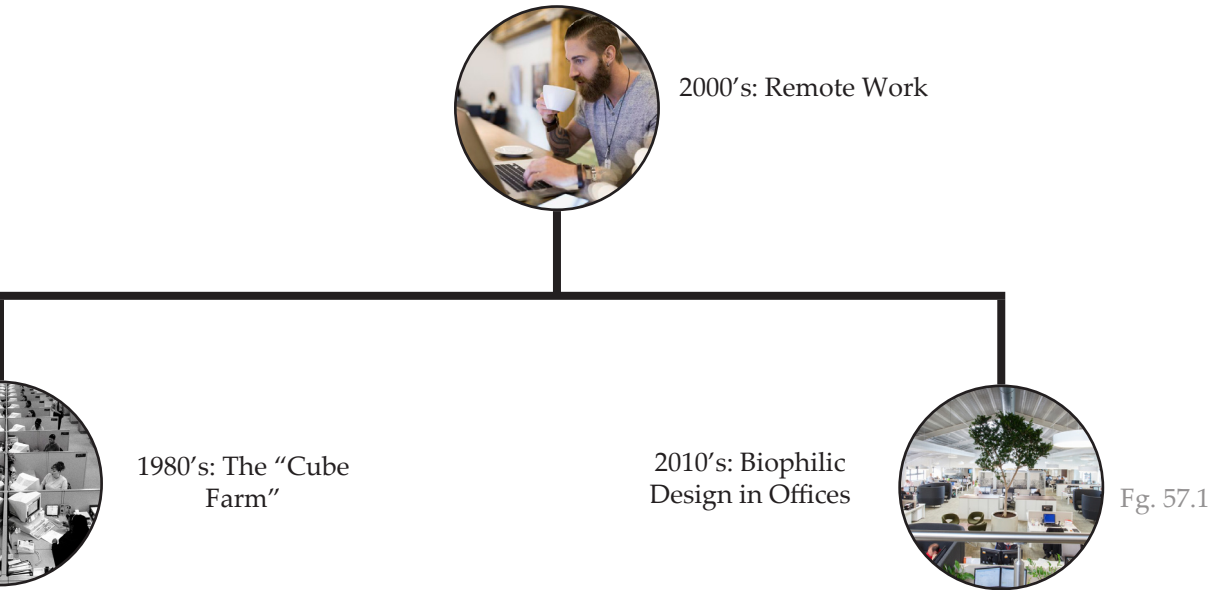
Office Design in the Past Century

1900's:

The early 1900's was a time of industrial revolution. The invention of steel and the ability to make buildings wider and taller. The use of steel allowed for larger spans, creating an open plan layout for the office environment.

1960's:

The 1960's became a very political time. Bürolandschaft means office landscape in German. It started in the early 1950's after World War II. The layout encourages all staff to sit together on one open floor plan to discourage a non-hierarchical work environment that encourages community and collaboration. These designs were typically made up of irregular, geometrical shapes to enhance an equitable work environment.



1980's:

The 1980's is when the "cube farm" took over. Offices still had an open layout, but wanted to bring back privacy for employees. This was to give privacy as well as personal space. The cubicle is beginning to be shunned away as we move towards more progressive designs that allow for more views and collaboration between employees.

2000's

With technology came the laptop and wireless internet. This allows companies to be very flexible and versatile with their employees and where they work. The coffee shop craze began. Employees can take their work remotely, anywhere they can access wireless internet. People began going to coffee shops where it is both a quiet place to work as well as a place to interact with others outside of the company.

2010's

The latest in office design has become the incorporation of biophilic design and collaboration. New office designs encourage a sense of community, daily interactions with other employees, and overall health and well-being with employees. Incorporating green design into the office space has been proven to improve productivity, performance, and health. Biophilic design leads to healthier environments by connecting humans with nature and each other throughout the day.



Fig. 58.1

Social and Cultural Context

Moving forward to the 20th century, Le Corbusier thought of architecture and music as both, being a question of measure. Sounds can be transmitted into writing only if one considers two conditions: they are divided into sections and they are measured. Le Corbusier says that measures used in various civilizations of Antiquity referenced a single standard, in which the unit used was always related to the human body. All measures are based on man. And like music, architecture is space and time. He says “Architecture is not a synchronic phenomenon but a successive one, made up of pictures adding themselves one to the other, following each other in time and space, like music.”

This is where architecture has gone wrong in the past. The development of technology has led designers to produce the best image for a magazine cover. It has flattened architecture to one sense. Similarly, music cannot be experienced simply as sheet music. It is a composition. The way you experience music is true music. Through sight of the musician, through sound and feeling of the composition, this is how we truly experience music. Understanding and experiencing architecture no longer uses all of our senses, it is reduced down to just a visual perception, a one-hit wonder image. Synesthetics in architecture is the idea of unifying all human senses to experience architecture.



As Juhani Pallamaa writes in "The Architecture of the Seven Senses," "The eye is the sense of separation and distance whereas touch is the sense of nearness, intimacy, and affection." The way we as humans interact with, experience, and remember a space is through a culmination of all our senses, not just sight. Zarlino's definition of harmony is "a diversity of moving parts and consonances, brought together with variety." By this we could argue that all of our senses being activated together to experience architecture can create a harmony within the architecture.

As Michael Spitzer writes in "Metaphor and Musical Thought," "Harmony is in all things the most beautiful, and is to be perceived everywhere, in heaven and on earth, just as in the three in one God, the maker and origin of all Creation itself, as well as in the choir of good spirits and holy angels, in the Macrocosm, the heavenly bodies, elements, meteors, metals and precious stones, in the

plants and beasts of the earth, no less than in the microcosm or Man."

One great example of harmony in music is a symphony orchestra. An orchestra has many moving parts, each part very different from the other. Stringed instruments, woodwinds, percussion. Within each of these categories are more individual parts. Violins, cello's, basoon's, bass drums. Each individual section of the orchestra has a different role. Different notes, different rhythms, different sheet music. When each part plays together at the right time by direction of the conductor, it creates an indescribable atmosphere, a harmony, a diversity of moving parts and consonances, brought together with variety. An office setting is much like a symphony orchestra. Different sections of the office doing different tasks. When working together, there is a harmony created, a master composition. The architect becomes the composer of the space in which harmony can exist.



Fg. 60.1

Similar to musical harmony and rhythms, nature also provides harmony through its rhythms. The rise and fall of the sun, the phases of the moon, tidal changes, seasonal changes, and many more. These rhythms also affect our rhythms as humans, creating a harmony, relating the human macro and microcosms. This is known as our circadian rhythm. These natural rhythms guide our energy, moods, and sleep. When people wake up without an alarm saying they have an “internal clock” it is their circadian rhythm that does this. These circadian rhythms begin with our primal tendencies and needs. Waking up with the sun and sleeping with the moon. A disruption to this “harmony”, or circadian rhythm can affect our mood, energy levels, and sleep. Someone may experience Seasonal Affective Disorder, weight gain, depression, slower thinking, and many other physiological and behavioral changes.

Seasonal Affective Disorder in our Society



Fig. 61.1



Fig. 61.2

Seasonal Affective Disorder is a type of depression that affects roughly 14% of Americans in some way and affects 6% of Americans in a more serious condition. In the United Kingdom, it is estimated that one in three people suffer from SAD (Seasonal Affective Disorder, 2017). Here in Minnesota, roughly 1 in every 10 people suffers from SAD. Although more prominent in the northern regions of the world, Seasonal Affective Disorder can affect anyone. It is a large issue in our society that is often over shadowed by other mental diseases and disorders. In order to combat SAD, people have tried many different methods. Some working better than others. The number one way to try and combat Seasonal Affective Disorder is by using a light box for about 30 minutes a day (Seasonal Affective Disorder, 2017). Light therapy is supposed to give your body the exposure to natural light

that it needs to regulate its circadian rhythm. Without this light, your body begins to produce more melatonin than it should, causing sleepiness and depression. For some people, SAD can take over their lives during the winter months. For this, there is the option of anti-depressants. It sounds very harsh to give out drugs if there are other possible ways to remedy this form of depression. This thesis is aimed at a person's place of occupation. An average full-time worker is working for 47 hours a week. They go to work when it is dark and they come home when it is dark. To help combat SAD, this design is intended to get these people the right amount of exposure to daylight while at work to help regulate a more stable circadian rhythm. This will help eliminate the need for anti-depressants and other methods to ease the effects of Seasonal Affective Disorder.

Physical

The project site is located in Minneapolis, Minnesota. Seasonal Affective Disorder affects nearly one in ten Minnesotan's. The project site was picked for a few reasons. One, they are already planning to build a new Thrivent Financial Headquarters on the site. Two, Minneapolis is a very forward thinking and sustainable city. And the third reason the project site was picked is because many Minnesotan's suffer from Seasonal Affective Disorder due to their geographic location. Minnesota experiences long, dark and cold winters. A sunny day is defined as a day where cloud cover is 30% or less during the daytime. A partly sunny day is between 40%-70% cloud coverage. Minneapolis averages 95 sunny days a year, and 101 partly sunny days a year for a total of 196 days with sun. The national average for days with sun is 208 (Days of Sunshine Per Year in Minnesota, 2017). This number can be very deceptive, however. It seems as though Minneapolis only suffers 12 days less sun than the average. What is not accounted for is the number of partly sunny and overcast days we experience. This lack of sunshine in the winter time is in correlation with the number of sufferers of Seasonal Affective Disorder.



Fig. 62.1

The new Thrivent Financial headquarters is proposed for what is considered East Town. It is located half a mile walking distance from many popular attractions and historical sites. Some of these include but are not limited to, the Stone Arch Bridge, the Guthrie Theater, US Bank Stadium, the IDS Center and the Minneapolis Public Library.

The site will attract many passerby's with the new installation of US Bank Stadium. Here is home to the Minnesota Vikings and many large concerts and events. The site is within two blocks of the stadium and the new Elliot Park. Located just across the parking lot of the project site is a lot recently bought by the city of Minneapolis and sold to Interstate Parking Co. They have plans to build this site into a 750-space parking ramp with retail space and 87 housing units. This area of town is developing quickly and a landmark headquarters for Thrivent Financial can provide the area with some stability and security.



Fig. 63.1

In the recent years, Minneapolis has really begun to develop their public transit system. The light rail is the newest form of transportation. The light rail has been connected with not only downtown Minneapolis and St. Paul, but with suburbs as well. It encourages people to take public transit to Vikings games, concerts, work, and many other downtown attractions. Minneapolis also features the "Park and Ride." A bus service that connects the entire metro area. You are able to park your car at any of the given locations and catch a bus to your destination. The Twin Cities area is also one of the most bike-friendly cities in the United States. Bike paths connect all of the lakes in the downtown area. Offering city getaways in parks, bike rides along the river, and gorgeous lake scenes, the Minneapolis-St.Paul area has it all.



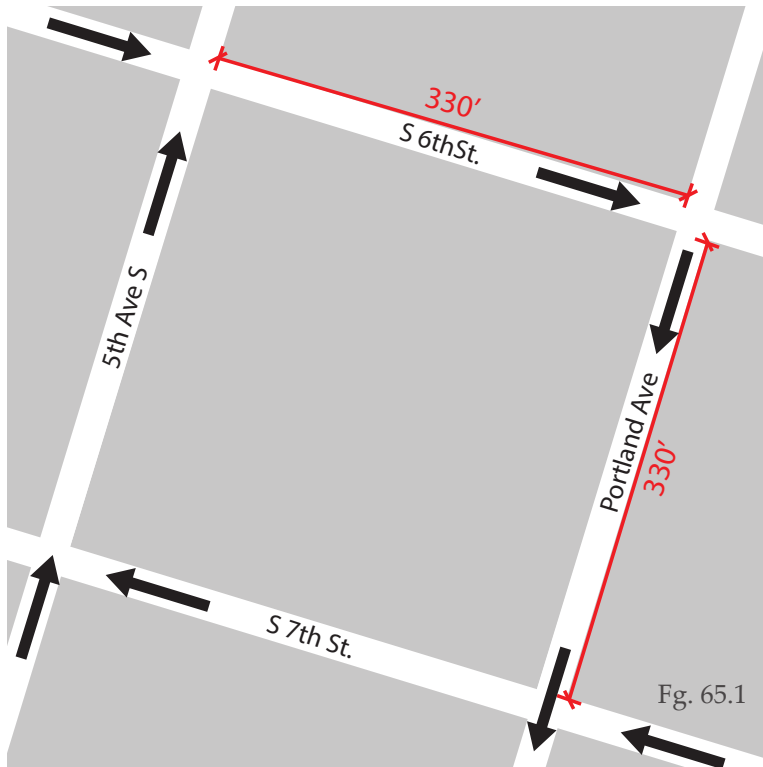
Fig. 63.2



Eg. 64.1

Site Analysis

Upon first arrival to the site, I experienced a sense of emptiness and abandonment. The day of the site visit, October 30, 2017 was a gloomy, overcast day. Very typical for this time of year in Minnesota. The parking lot was vacant and in much need of a makeover. It is made of cracked concrete, weeds growing all over, and very uneven. While at the site, you get the sense that this site has potential to be a great space. It is located in a developing area of town. The site is located a block to the east of the existing Thrivent Financial headquarters building. The property is a parking lot owned by Thrivent and is bordered by 6th St. S and & 7th St. S to the North and South respectively. To the East and West, the parking lot is bordered by Portland Ave S and 5th Ave. S, respectively. The site is one block to the west of Hennepin County Medical Center and two blocks to the west of the new US Bank Stadium. This new headquarters building aims to be a large part in the development of East Town.



The project site is a 330'x330' city block that currently exists as a parking lot. There are 10' wide sidewalks on all four borders of the site. This allows pedestrian access from all sides. Minneapolis streets are set up as one way streets. Every other street is a one way going north/south and east/west.



Minneapolis Public Library



The Commons Public Park

Capella University



IDS Center



Proposed Project Site



The Armory Museum

The project site is located near many historical and cultural landmarks. The IDS Center is arguably the most iconic tower in the Minneapolis skyline. It is also the tallest. The tower was designed by Philip Johnson and was completed in 1972. Hennepin County Medical Center is the original Minneapolis city hospital since 1887. It is widely know for its trauma units. The hospital spans over 5 city blocks. It is currently under construction for a new outpatient center. It is anticipated to be completed in 2018.



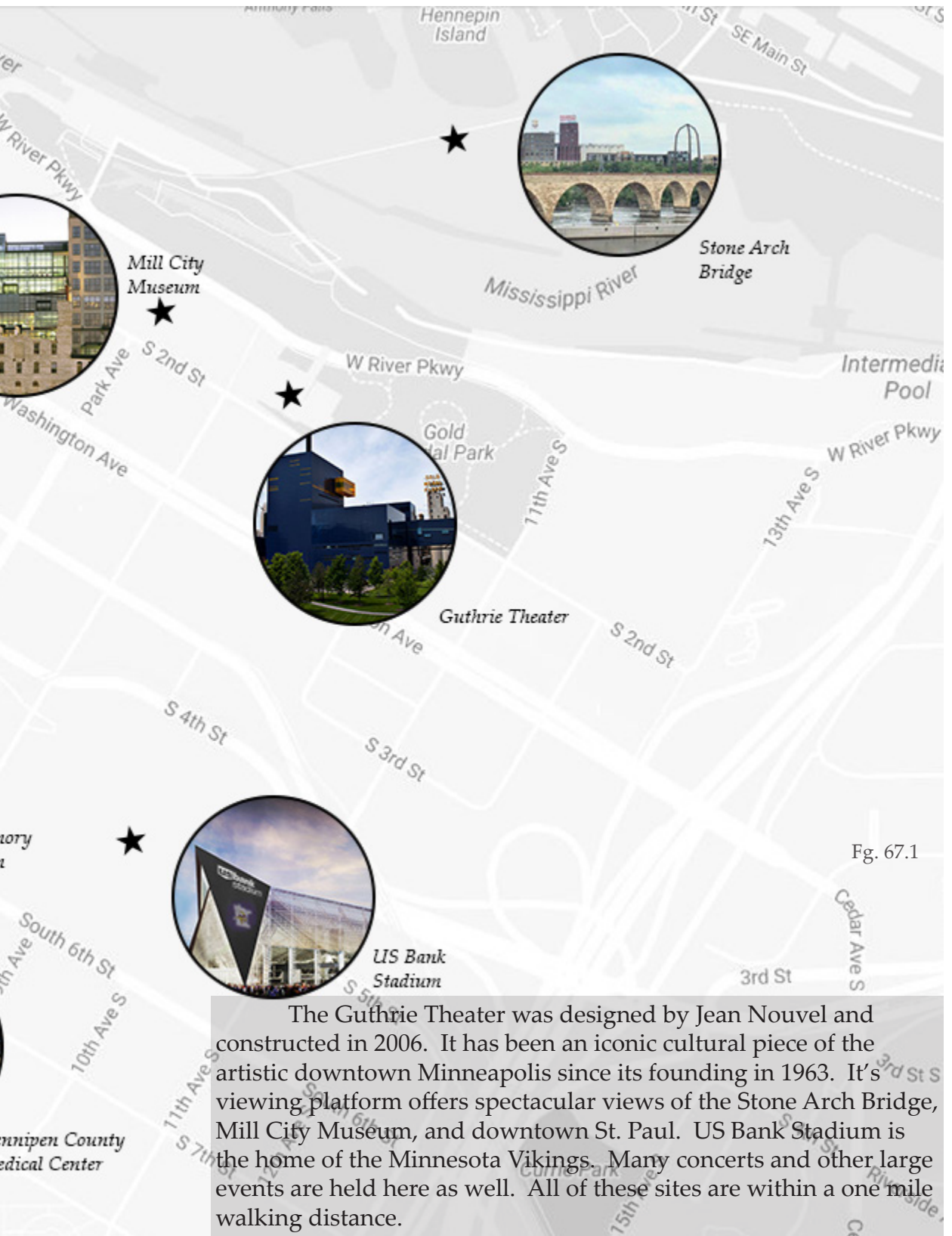


Fig. 67.1

The Guthrie Theater was designed by Jean Nouvel and constructed in 2006. It has been an iconic cultural piece of the artistic downtown Minneapolis since its founding in 1963. It's viewing platform offers spectacular views of the Stone Arch Bridge, Mill City Museum, and downtown St. Paul. US Bank Stadium is the home of the Minnesota Vikings. Many concerts and other large events are held here as well. All of these sites are within a one mile walking distance.

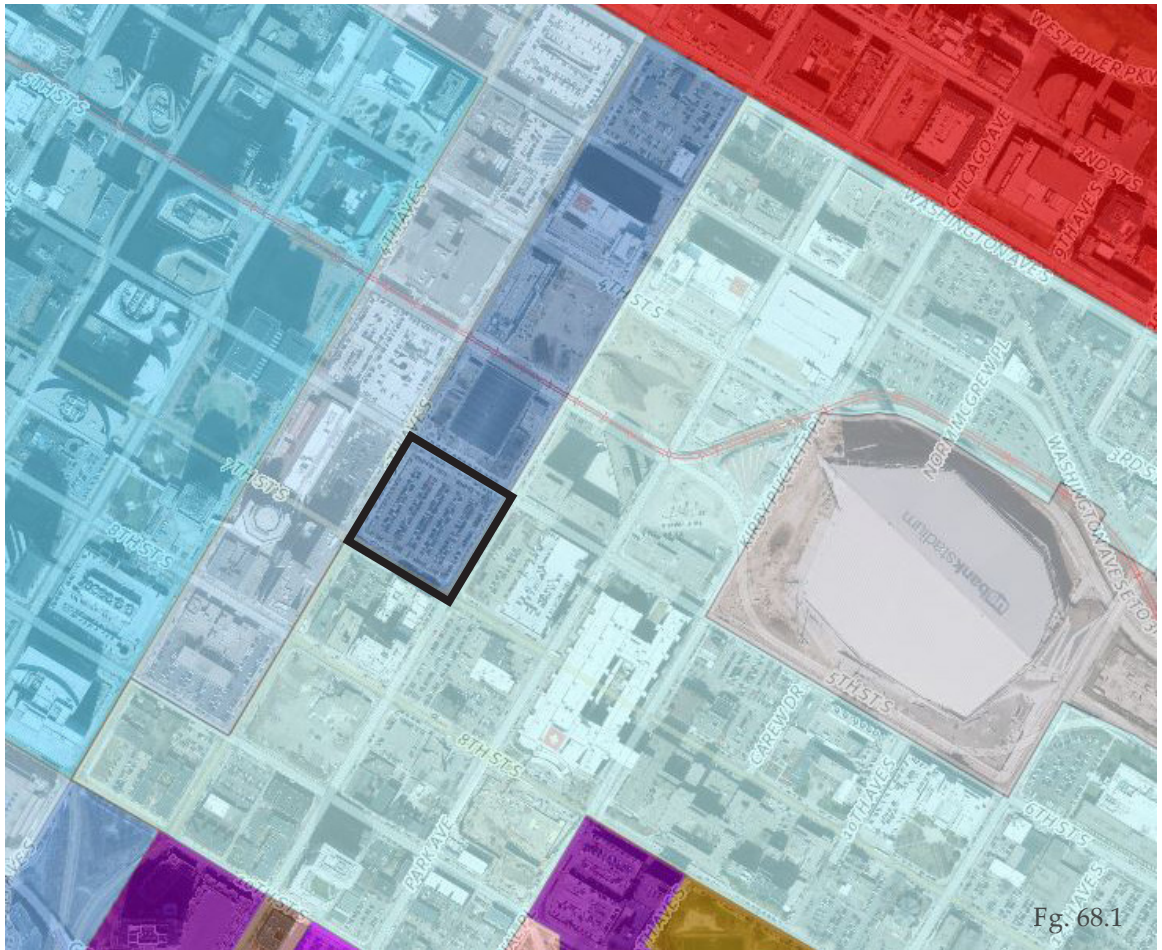


Fig. 68.1

- Community Activity Center District
- Multiple-family District
- Institutional Office Residence District
- Light Industrial District
- Downtown Service District
- Downtown Business District

Zoning

The project site is zoned by the city of Minneapolis to be in section B4S-2. This means that the project site is part of the downtown service district. The downtown service district is “established to provide an environment that promotes the development of mixed-use neighborhoods in a higher density, transit and pedestrian oriented, urban environment with a wide range of retail and office activities and high density residential uses and hotels.” The East Town is a developing area of Minneapolis and this headquarters aims to be a large part in the advancement of the area.



Fig. 69.1

The project site is in a great location for public transportation. Because it is located adjacent to the hospital and US Bank Stadium, there are many bus stops as well as light rail stations. Each light rail station, US Bank Stadium and Government Plaza are within two blocks of the site. From these stations, you can get anywhere in the Twin Cities. There are also a few bike rental stations near by. To increase the projects sustainability rating, an additional bike share station will be added to the site. This also encourages employees to use the bikes to either to get and from work, or take them out during the daytime for a break.



Fig. 69.2

Site Views

Sunlight coming into the building is a very important part of the design, but so are the views out. Views out of the building are what connect us as humans to the area around us. Views are what give us a sense of place, belonging, and community. The project site is located in a great area of downtown Minneapolis for some spectacular views. You get views of the downtown skyline and views of the new, magnificent, US Bank Stadium.

To the West

The views directly to the west of the site are some of the better views from the site. From here you are able to see part of the downtown skyline including some of the most iconic buildings in Minneapolis



Fig. 70.1





Fig. 71.1

To the East

Off to the east is the newly completed US Bank Stadium. This is a very iconic piece to the downtown of Minneapolis. It attracts millions of guests per year for Vikings football games, concerts, and other big events.



To the North

North of the site offers a more monolithic style of architecture. These are more government buildings and parking ramps. The Armory, directly north of the site is a historical landmark. Now it is used to host concerts, events, and public art galleries.



Fig. 72.1



To the South

The south side of the side does not offer much in the way of spectacular views. It is a more developing area of town. However, this could be a good opportunity to bridge the gap between an area of downtown that is undergoing change, and one that needs it.

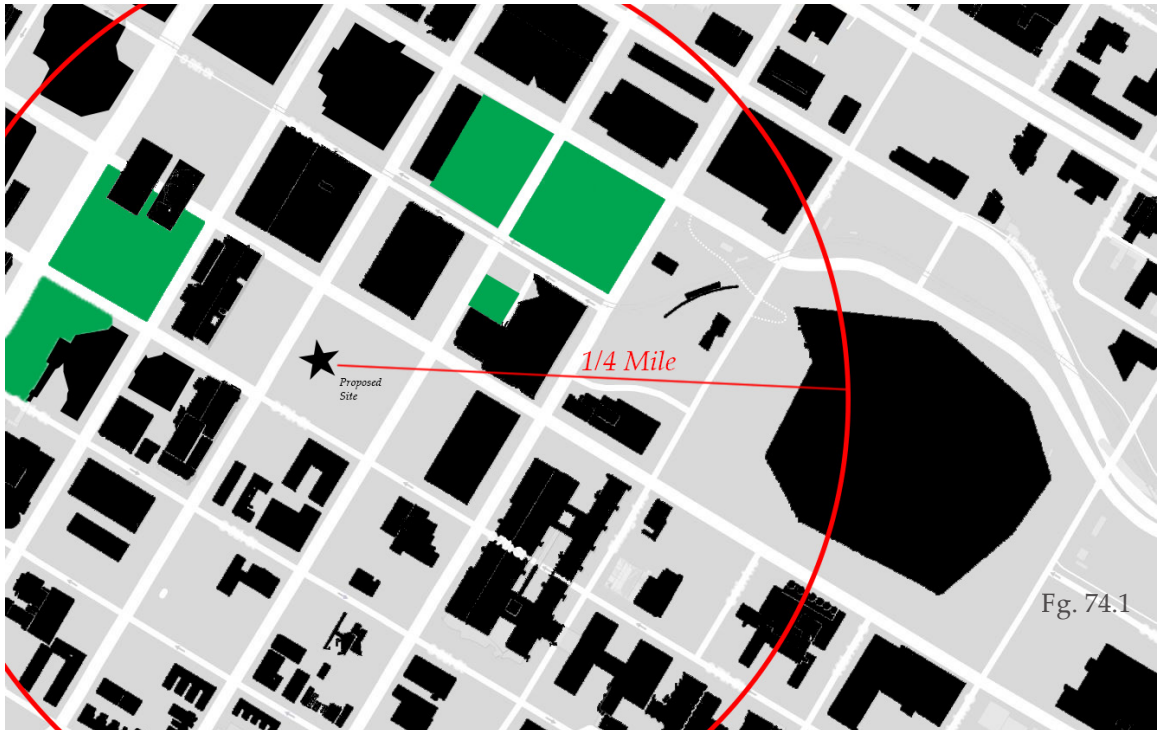


Fig. 73.1



Nearby Green Spaces

There is very little public green space near the project site. In fact, within a quarter mile radius there is less than 20,000 square feet. This number seems a lot larger than it is when you take into consideration that a Minneapolis city block is roughly 9,000 square feet. With Thrivent Financial’s motto to serve the community and the theory of biophilic design, it only seems fitting that the project design includes green spaces that the entire public can enjoy. This would also be helpful for guests and patients at Hennipen County Medical Center. They would be able to get out of the hospital and enjoy a connection with nature within the city.



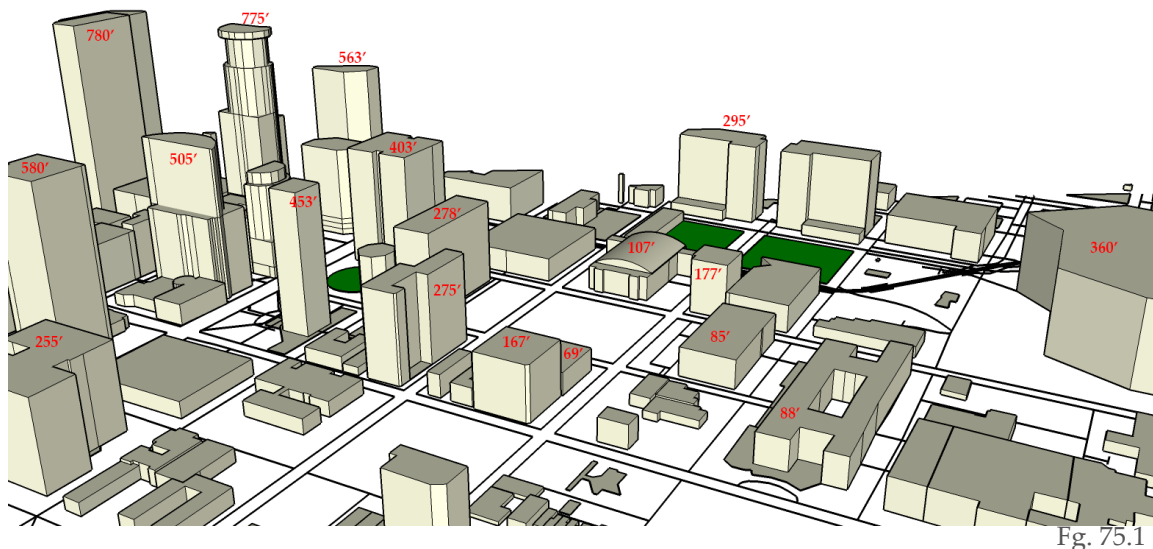
Building Codes for the Downtown Service District

General Provisions

The downtown districts are established to provide a range of retail, entertainment, office, employment, residential, institutional and governmental activities of citywide and regional significance. The regulations recognize the unique qualities of downtown as the business and cultural center of the region, as a community of high-density residential choices, and as a place where the combined environment attracts businesses, workers, shoppers, visitors, tourists, and residents.

FAR

The maximum floor area ratio for non-residential in the downtown service district is 4.0. This means that because the site is 90,000 sq. ft, I am allowed to build up to 360,000 sq. ft. of usable space.



This diagram provides the building heights for surrounding areas of the project site. Similar to most cities, the buildings get taller towards the city center and begin to taper off the further out you go. The current Thrivent Financial building, located to the North and West of the site rises 278 feet. However, its footprint only takes up roughly 50% of the city block.

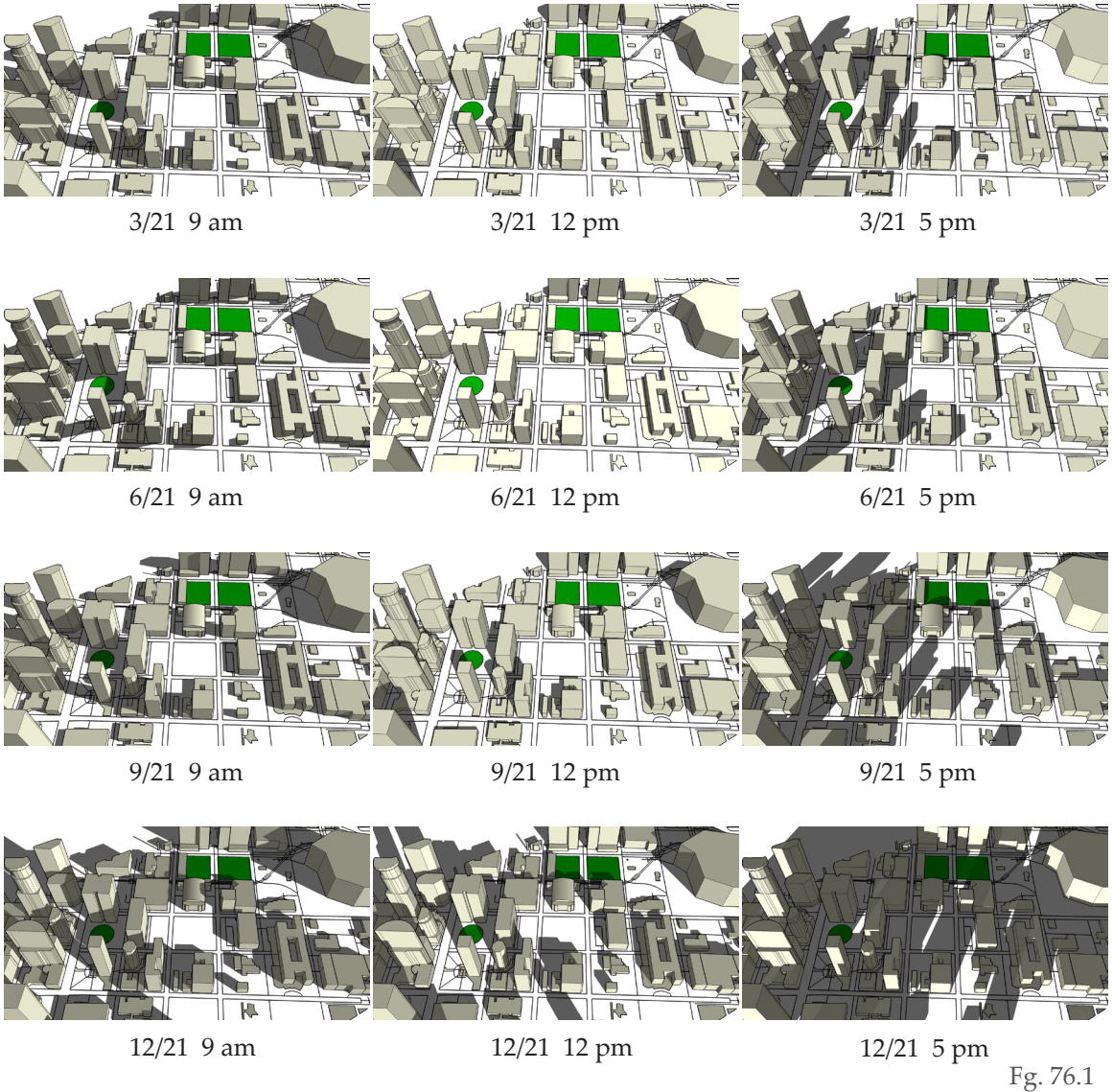


Fig. 76.1

Each of these images was taken at 9 am, noon, and 5 pm. The analysis is done on the Spring and Fall Equinox and the Summer and Winter Solstice. The project design is intended to achieve maximum solar gain throughout the typical work hours to benefit the employees. By comparing sun and shade diagrams, we are able to see the spots that receive the most sunlight throughout the year.



This diagram above is an overlay of the Spring and Fall equinox and the Summer and Winter solstice at noon. From this diagram we are able to see which areas of the site are covered most by shade given from the surrounding buildings. At noon time, we are able to achieve a lot of sunlight exposure due to the shorter buildings to the south. However, in the diagram below taken at 5 pm, we see that the sun exposure is far less because of the taller downtown buildings directly to the west of the site.





Fig. 78.1

An overlay of all shade patterns on the site. We can see here that the most commonly shaded area of the site throughout the year is in the southwest corner. This is in large part because of the taller buildings to the west. The best place to receive sun seems to be on the northern half of the site. Ways to capture this sunlight would be to build up and setback from the southern side of the site.

Wind Analysis



[MSP] MINNEAPOLIS
Windrose Plot [All Year]
Period of Record: 01 Jan 1970 - 06 Oct 2017

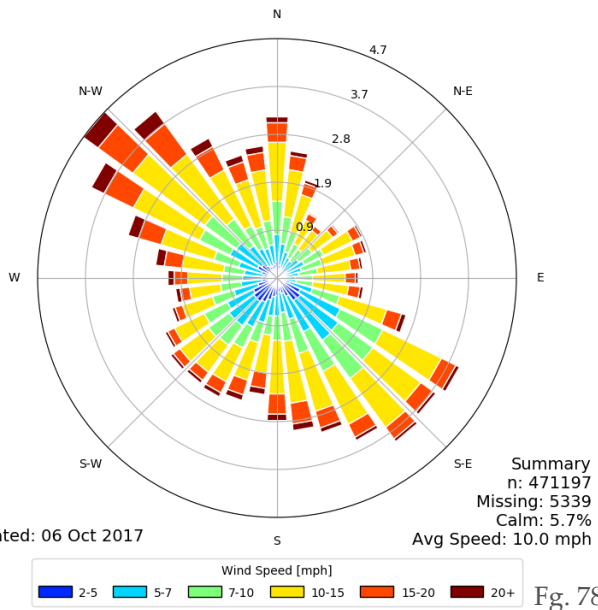


Fig. 78.2

Wind roses can tell you many things about a regions wind patterns and average speeds. This wind rose is for the Minneapolis region. We can see that year round there is an average wind speed of 10 mph. This is pretty good for harvesting natural air flow and incorporating it into the project design. We also see that wind typically comes out of the southeast and the northwest, the stronger winds out of the northwest.

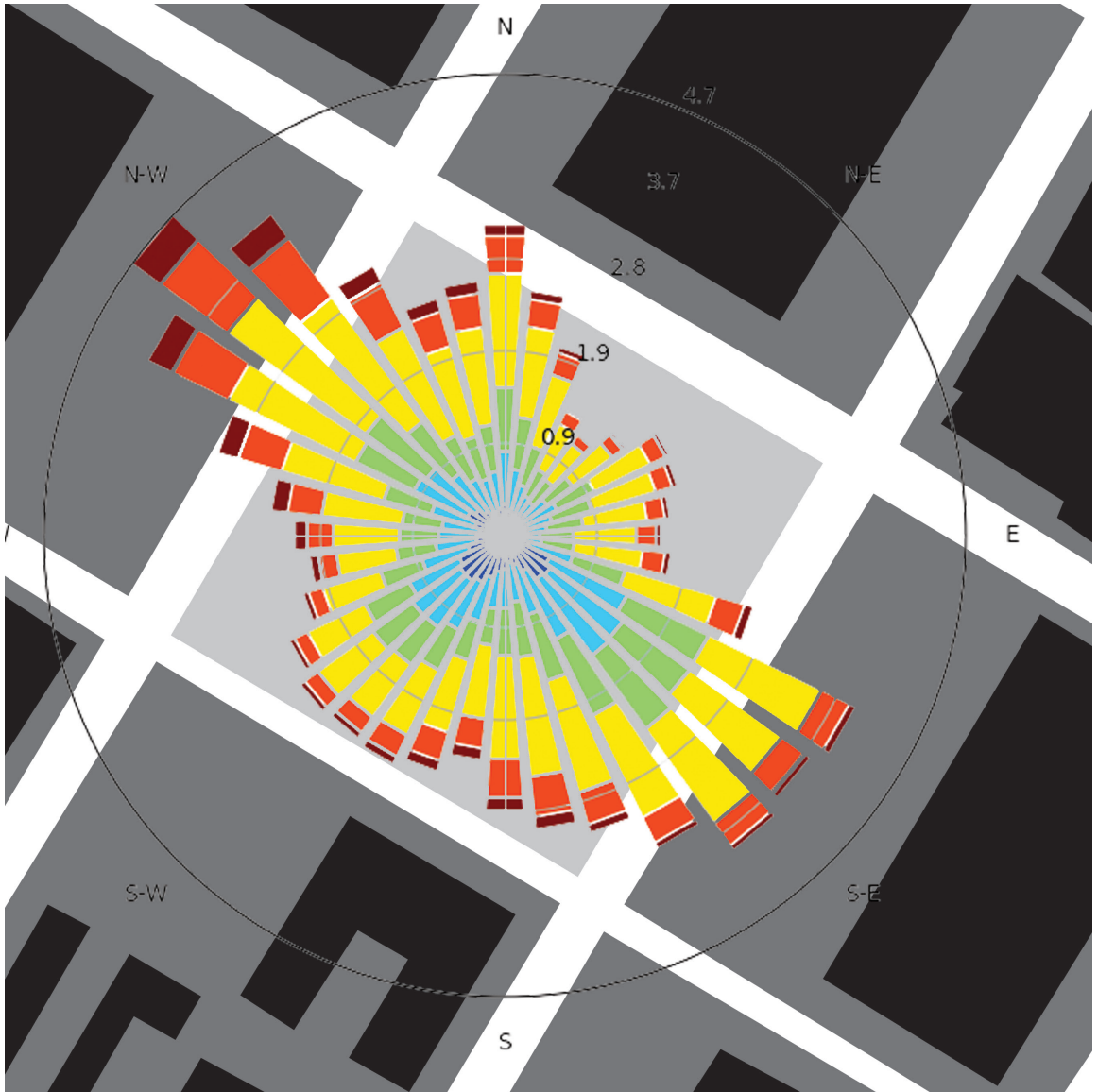


Fig. 79.1

This is how the wind rose looks on the project site. Because of the site's orientation, most of the winter northwest winds are blocked by the larger buildings of downtown. However, this can cause a strong wind tunnel on the ground levels. Stronger and colder winter winds will want to be considered in the design process for thermal penetration. The lower building height to the southeast will allow for more exposure to the warmer summer winds. This will allow the opportunity to naturally ventilate the building during the summer months.

Spatial Programming

Spatial programming is a very essential part to the design process. Spatial programming can vary so widely from office to office depending on size, company needs, company culture and beliefs, and many other factors. By doing research on the current Thrivent Financial headquarters in Minneapolis and the current spaces they have, I am able to draw conclusions as to what they need still and maybe what can be added to make the work environment more enjoyable. I have also done outside research as to what works for other companies and what does not.



Fig. 81.1

Public Spaces

Public spaces are an important aspect to the design. These are spaces that not only employees and workers within the building can interact with, but they are also spaces that the public can interact with. These spaces are often the only spaces that the public may see of the building. In the project design, these public spaces are but not limited to the lobby, a main atrium and indoor garden, a flex space that may be used for events, presentations, etc, a cafeteria, and outdoor plaza's and gardens.

Semi-Public Spaces

Semi-public spaces are spaces that are usually intended for a semi-private use, but is open to any employee through card access. These spaces include the open office plan layout, collaboration spaces within these work areas, and a workout facility for all employees of the building.

Private Spaces

Private spaces are intended to be used exactly as they sound, in private. These are spaces within the work environment where some of the more productive work can be done. These private spaces are meant to offer privacy in larger areas. Private spaces may also be where valuable information is stored and you want to restrict access to these areas. The private spaces in this project design include conference rooms, private offices for administration workers, a kitchen, breakout spaces, restrooms, janitorial closets, storage rooms, a filing room, mechanical and a computer server room.

Public Spaces			
Space	Number of Units	Sq. Footage per Unit	Total Square Footage of Spaces
Lobby	1	5,000	5,000
Atrium/Indoor Garden	1	5,000	5,000
Flex Space	1	2,500	2,500
Cafeteria	1	7,000	7,000
Outdoor Plaza/Gardens	2	10,000	20,000
Total Square Footage			39,500
Semi-Public Spaces			
Open Office Space	1,000	150	150,000
Collaboration Space	15	150	2,250
Workout Facility	1	10,000	10,000
Total Square Footage			162,250
Private Spaces			
Conference Room	3	500	1,500
Private Office	20	300	6,000
Kitchen	1	1,500	1,500
Breakout Spaces	15	150	2,250
Restrooms	8	300	2,400
Janitorial	2	300	600
Storage	4	225	900
Filing	1	1,000	1,000
Server Room	1	1,000	1,000
Mechanical	1	5,000	5,000
Total Square Footage			22,150
Total Building Square Footage			223,900

Fig. 83.1



Performance Criteria

Harmony through Movement

In order for there to be a reunion, there must be a split. The building design will involve the constant movement of it's users. Always passing each other creating these constant connections not only visually, but audially as well. Through these connections, the ability to acheive a harmony throughout the design becomes possible.

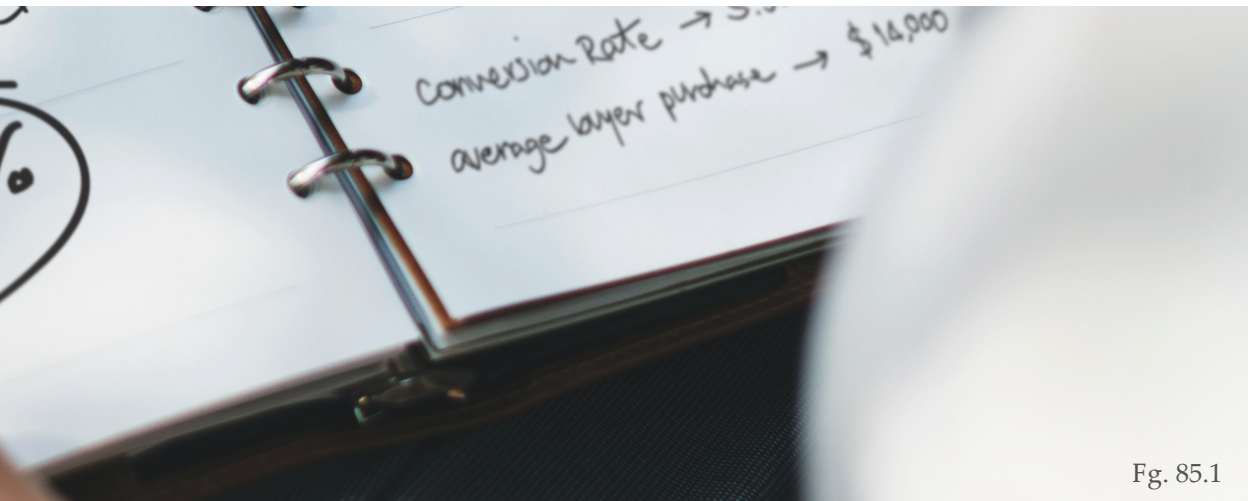


Fig. 85.1

Behavioral Performance

By doing preliminary research on successful office design from Google and other large corporations, we are able to see that they do a very good job at getting people to interact almost “accidentally.” The plan is designed to have people bump into each other and start spontaneous conversation that may spark work related ideas.

Space Allocation

The spacial needs of the new Thrivent Financial headquarters will be similar to that of their existing headquarters. I have researched that they have approximately 1,000 employees working there at a time. At an office average of 150 sq. ft. per employee, this factors out to be 150,000 sq. ft. total in just office space. Each space allocation needs to account for 1,000 employees occupying the building at all peak work hours, 9am to 5pm.

Psychological Impact

Psychological impact is a large part of my design. The entire design must aid in combatting Seasonal Affective Disorder. This is a mental disorder similar to depression. I will experiment with biophilic design, biomimicry of a forest and its environment, and bringing in natural light to determine how these factors can affect one's mental health. It has been proven that exposure to around 8,000-10,000 lux can help regulate one's circadian rhythm.

Environmental Impact

The project site is located in downtown Minneapolis, near US Bank Stadium. There is a lot of concrete and structure around the area. With the addition of US Bank Stadium, they are trying to bring more green spaces to the area, making it a public space. My design will tie into this theme and create public spaces nearby public transit to encourage a softer footprint on the area. The project design is intended to maximize daylighting and harvest natural energy to have as little of an impact on the environment as possible.

Code Compliance

The project design will meet all design and zoning codes for the project site. While codes are not always the most interesting part of the design, they are one of the most important. Because of the scale of the building and the number of employees that work at Thrivent Financial, the building will be designed to meet all ADA codes, making sure that the building is accessible by all.



Fg. 87.1

The Artefact

We go through our daily lives ritualistically. We wake up, go to work, come home to sleep and do it again tomorrow. The office setting should be a place we look forward to going, one that makes the individual feel as though they belong, it should bring us together, and most of all, it should encourage interaction between it's people.

The artifact shown is a representation of this ritual of our "daily dance." People come from different backgrounds, neighborhoods, and lifestyles but are all working under the same roof as a community. This artifact displays everyone participating in their "daily dance." But what is this dance producing? The mood set with the music and lights focused only on the boards amplify the monotony and depressing mood that these daily rhythms we get into can feel like. As the participants walk around the circle, they are unsure of what they are doing. It does not appear as though it is functioning properly. The dance is producing something scattered, broken, and dysfunctional. There is disruption in our lives from this cycle we fall into, a disruption to our rhythm. In order for a reunion to occur, there must be a split. By letting the pendulum go, it falls into its natural pattern due to the laws of physics. This pattern unites all the brokenness in our daily dance. It reaches out to all communities and neighborhoods. The pendulum in this case could be compared to the setting in which we work. A way to bring us all together as a community, to improve our ritualistic daily dance, and to restore our rhythm.



Fig. 88.1



Fig. 89.1



Fig. 89.2



Fig. 89.3





Fig. 91.1

Process Models

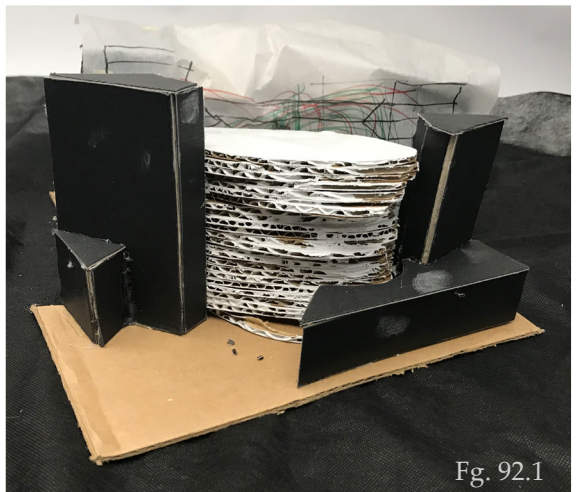
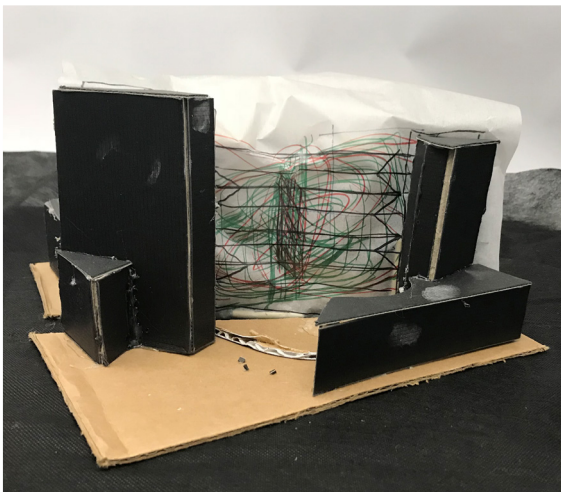


Fig. 92.1

Initial Atrium and Form Study

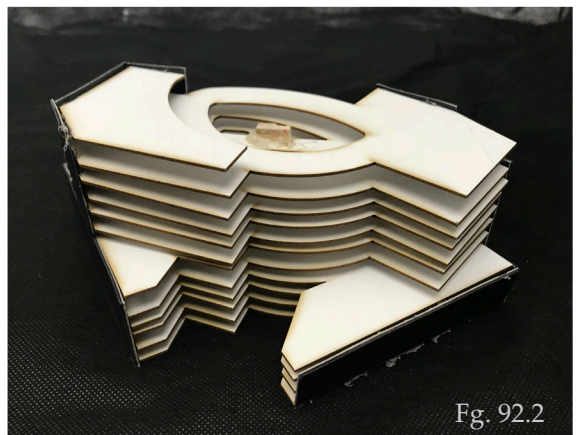
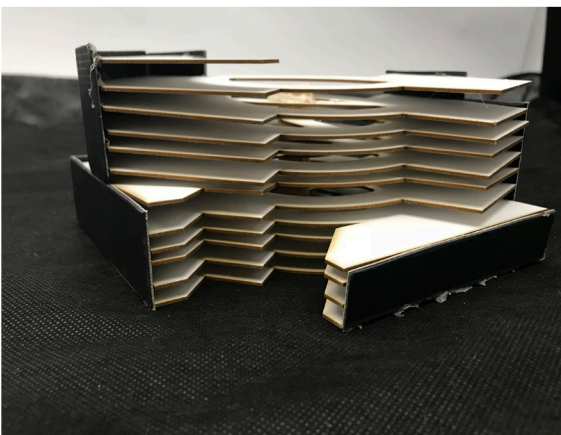
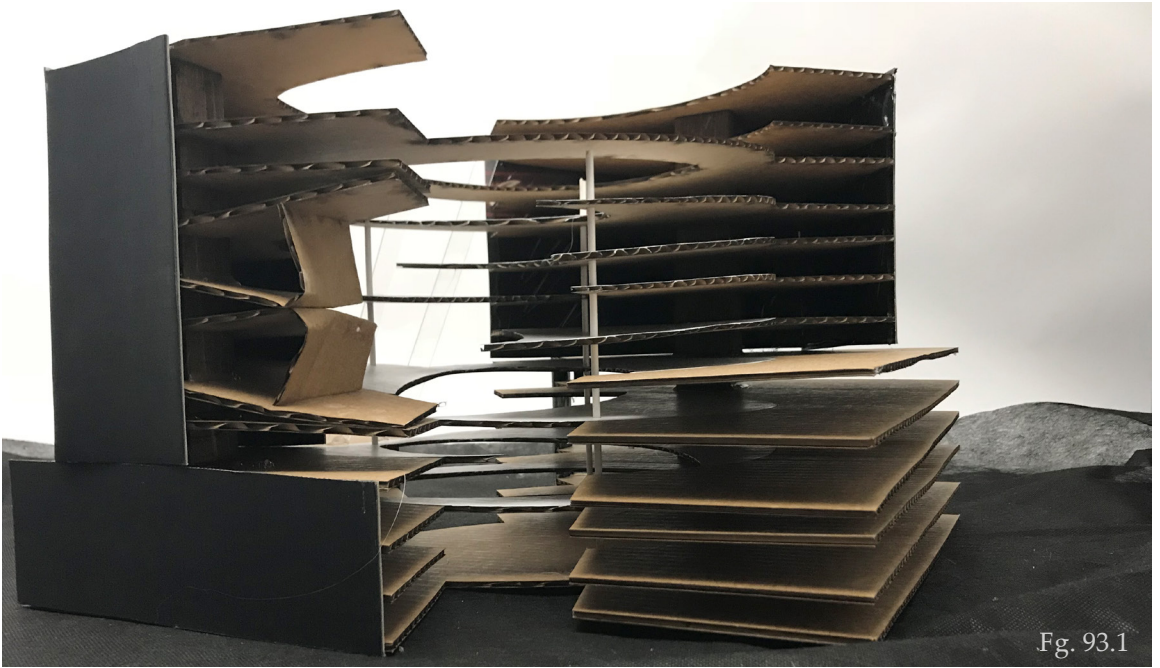
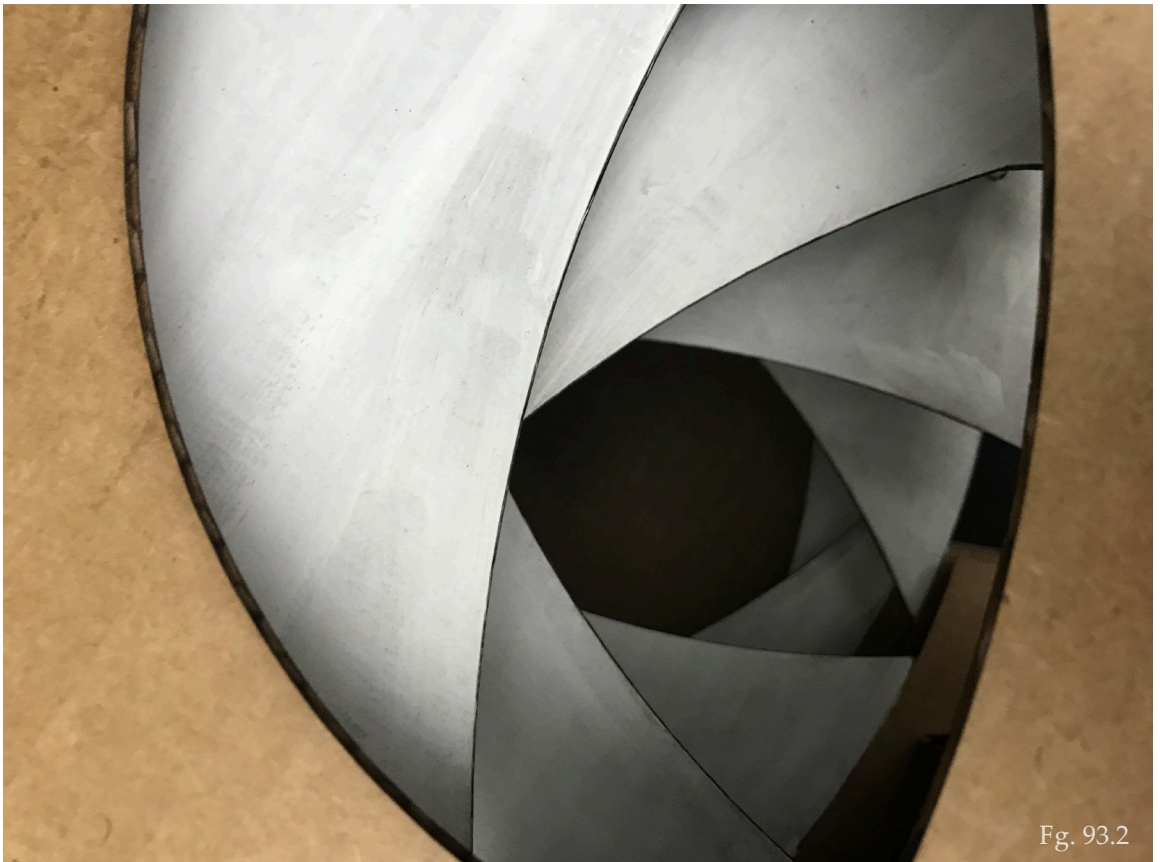


Fig. 92.2



Fg. 93.1

Further Developed Atrium and Form



Fg. 93.2

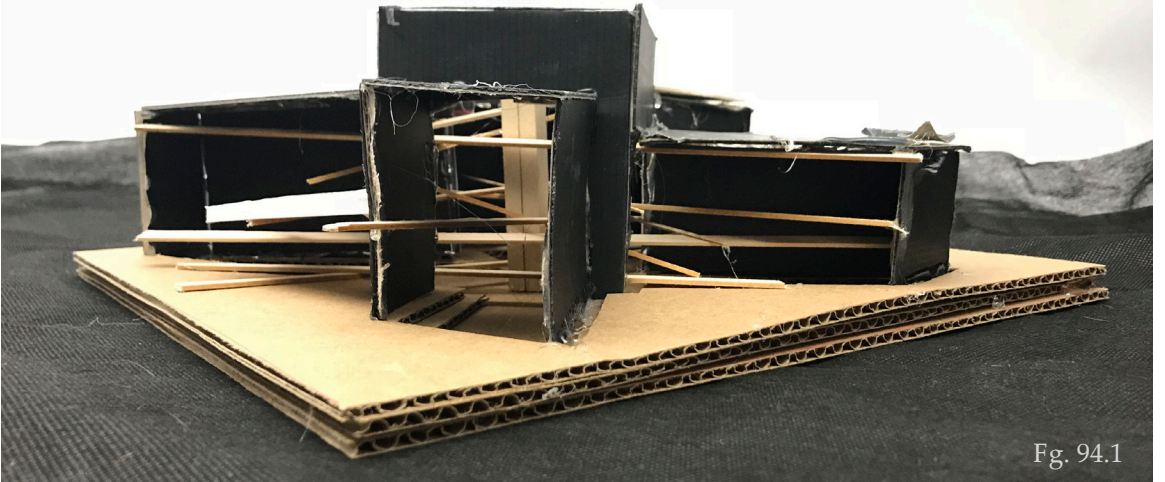


Fig. 94.1

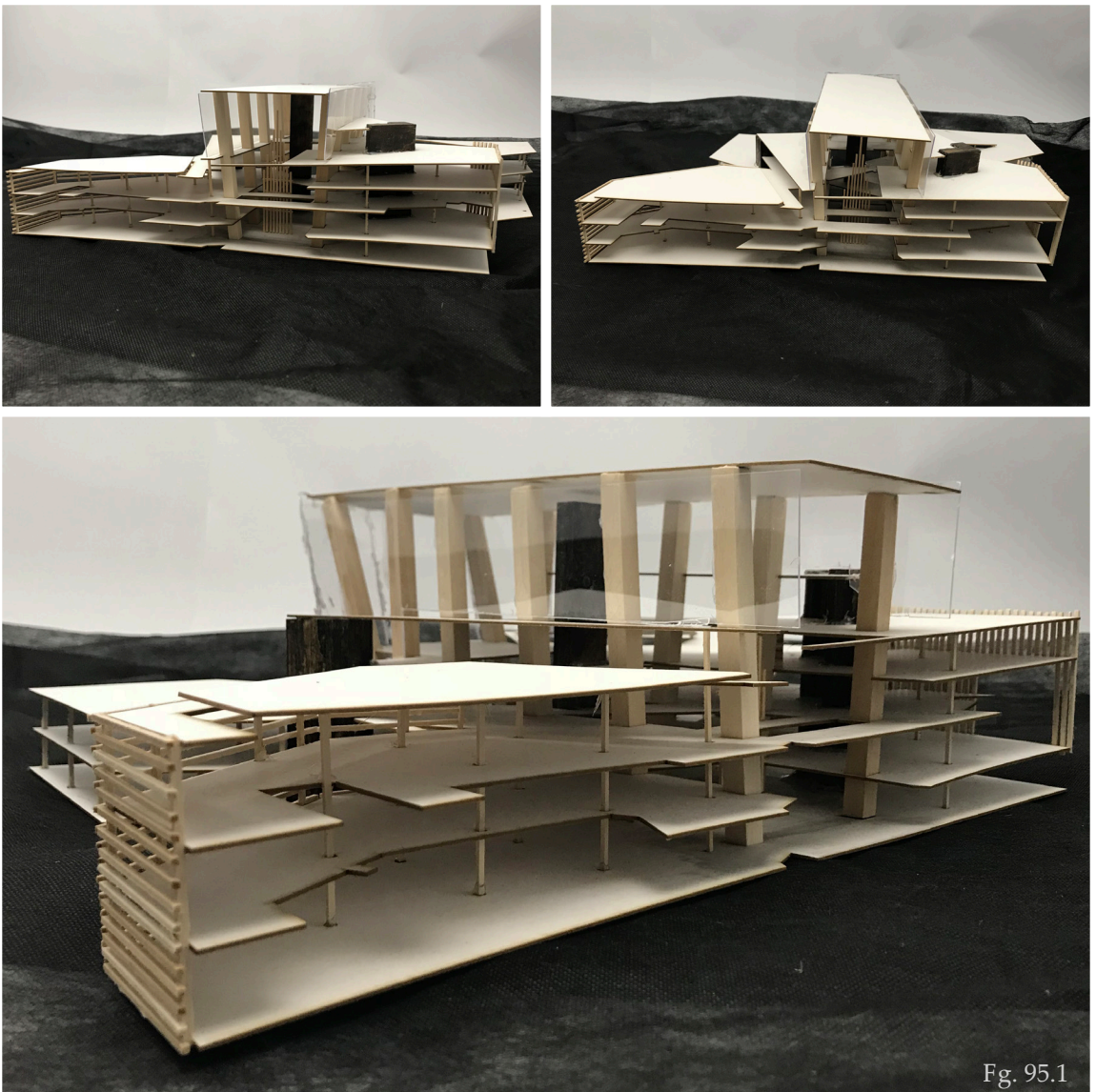
Circulation Study

Final Form in Site Context



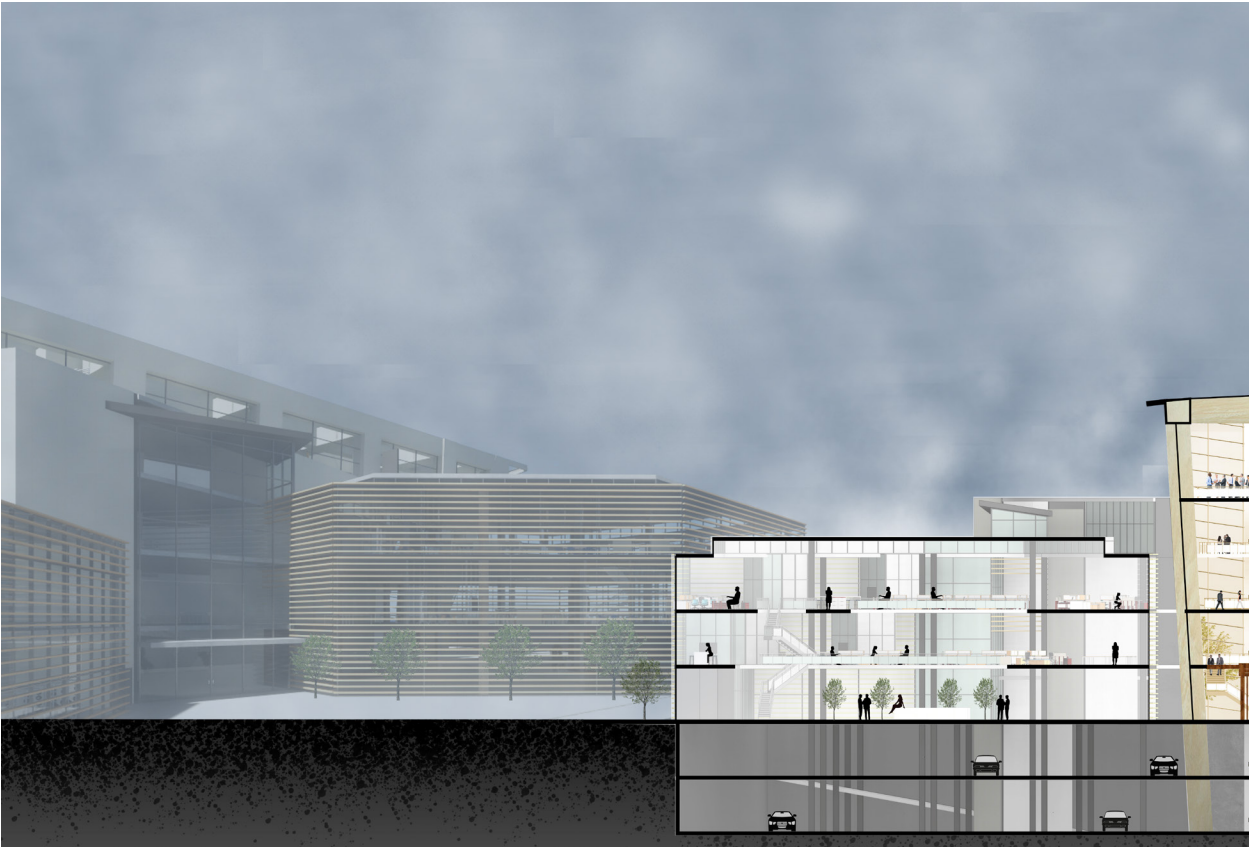
Fig. 94.2

Final Model



Fg. 95.1

The Design



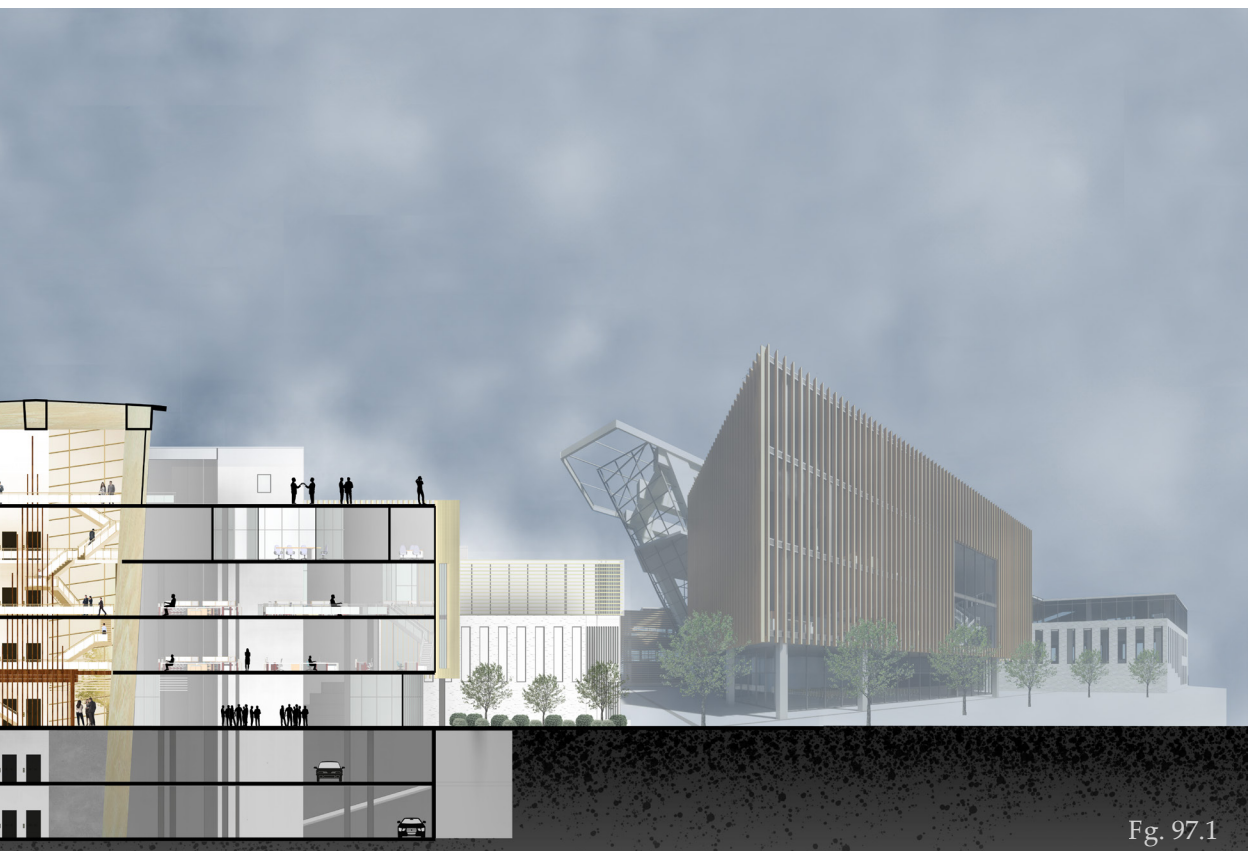


Fig. 97.1

Project Program

Green Roof • • •

Atrium • • •

Executive Branch • • •

Finance Branch • • •

Insurance Branch • • •

Community Outreach Branch • • •

Community Center • • •

Cafeteria • • •

Fitness Center • • •

Underground Parking • • •

Underground Parking • • •

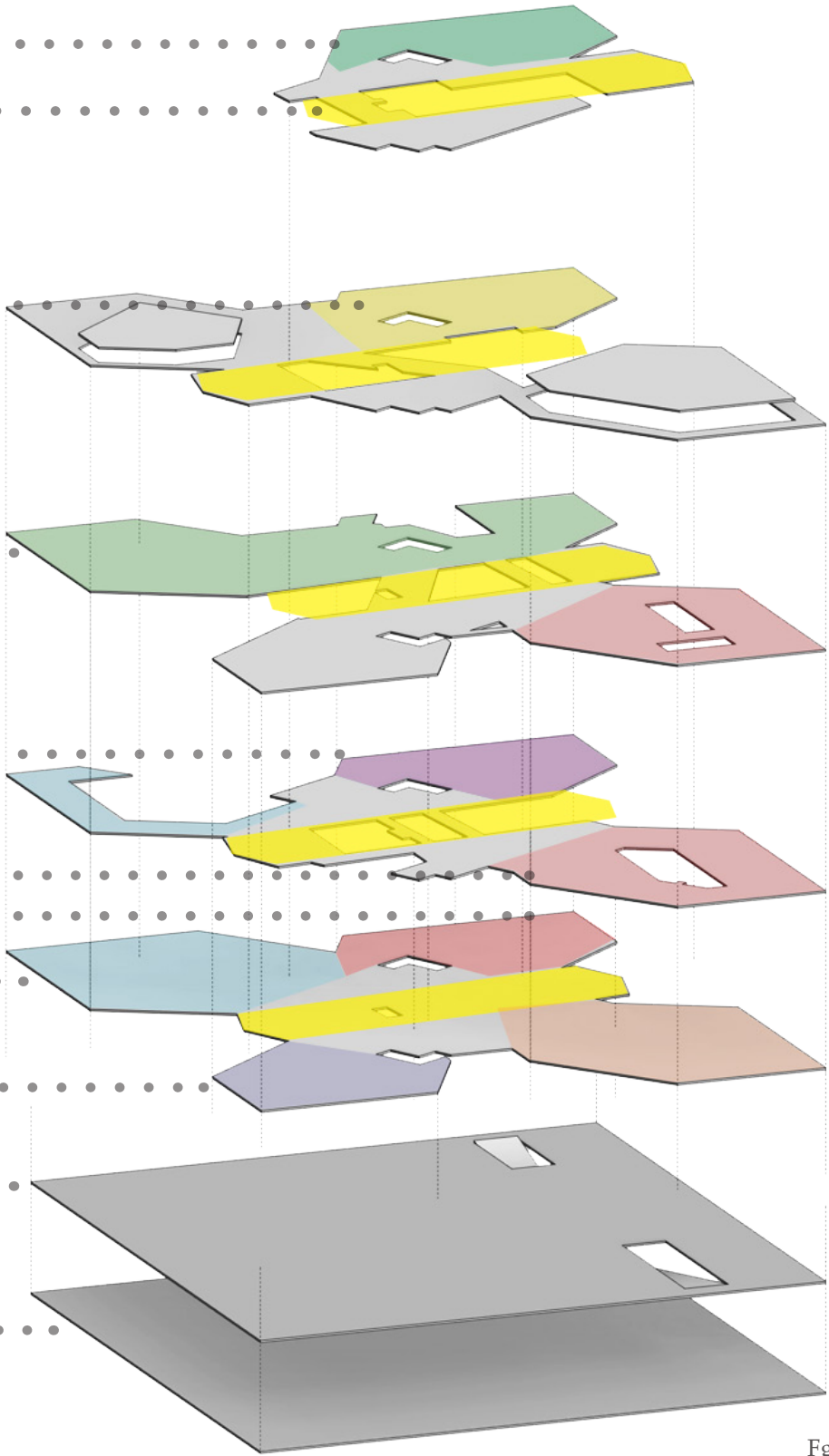


Fig. 99.1

The program of the design is focused around recognizing our broken daily rhythm community and belonging. Through a large central atrium, comparable to the strong do floor. The connections in the atrium are not only visual, but audial as well. By seeing of parts of the symphony orchestra, you are able to relate to them without even verbally int with others in the building. Similar to the strong down beat of music and the large atrium working areas of the building, Thrivent Financial employs four major branches: the execu



ms as humans and trying to restore this rhythm and harmony through a strong sense of
ownbeat in music, people are able to interact with other people in the company on every
her people moving around on different floors, different areas of the company, different
eracting. You immediately feel a sense of community and belonging by connecting
m, each branch of the company is like a piece of the symphony orchestra. For the
utive, the financial, the outreach, and the insurance.



Fg. 101.1

The Executive Branch

The leaders of the company, the rule makers, the ones that everyone attunes to, the oboe. In a symphony orchestra, all instruments tune to the oboe. The oboe is known for having a “clear and penetrating voice.” The executive branch sits above, signifying hierarchy. Yet it still remains connected to the rest of the building by intersecting with the open atrium in the center. This provides for a sense of power, but not a sense of separation. A feeling that the executives are still a part of the symphony orchestra, just as important as each and every other section.



The Insurance Branch

The insurance branch, known for being safe, secure, and trustworthy is that of the percussion section of the orchestra. The percussion section is the rock to the entire orchestra, without the percussion keeping beat, the entire symphony would fall apart.



The Outreach Branch

The outreach branch, given a positive reputation for being involved in the community and doing good for others is the stringed instruments. Violin's and viola's often play the lighter, more joyful tones of the orchestra. They are the sounds that are predominately heard in the crowd. These sounds reach out to the community of Minneapolis and they reverberate back inward.



Fig. 103.1

The Financial Branch

The financial branch, often associated with money, wealth and power, similar to that of the brass section of the orchestra. The brass section hosts the loud, powerful, yet precise instruments. Capable of leading the orchestra or bringing them down, this section is responsible for keeping beat and playing boldly and powerfully.



Fig. 103.2

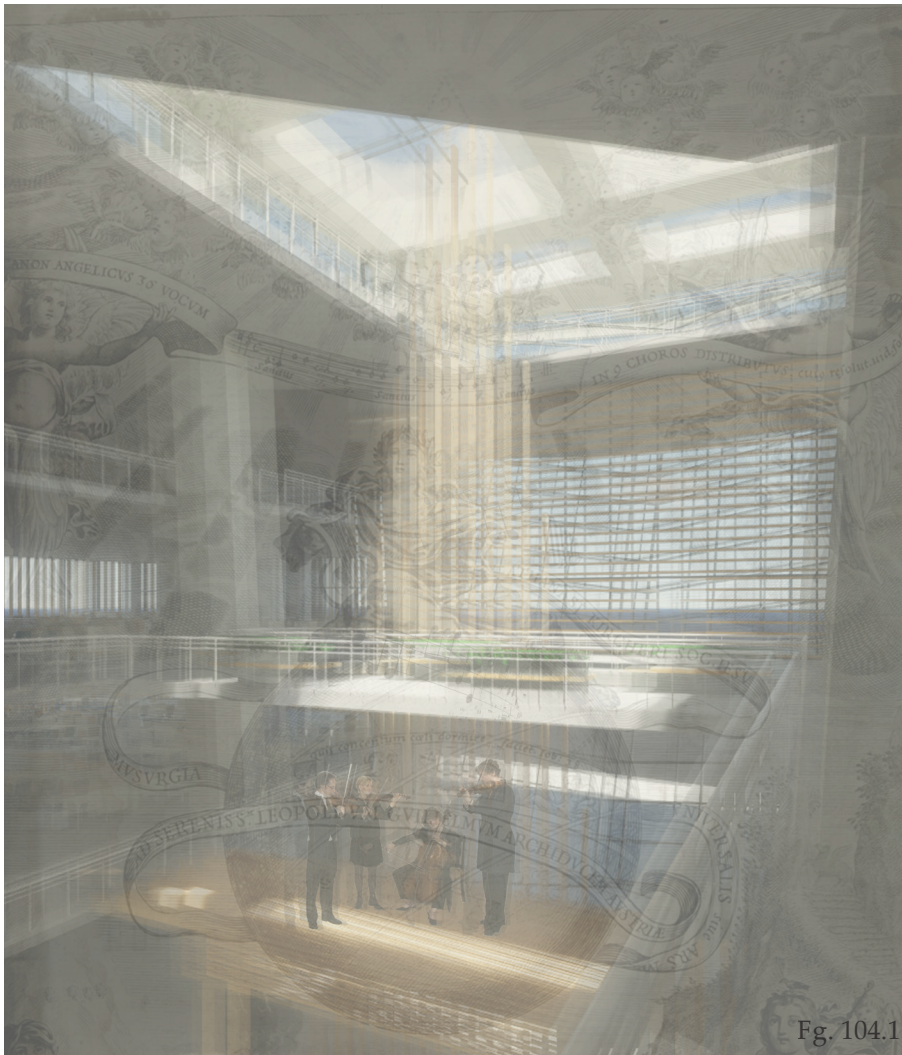
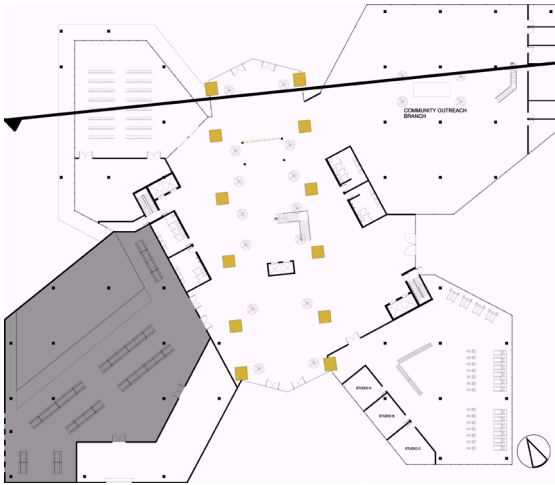
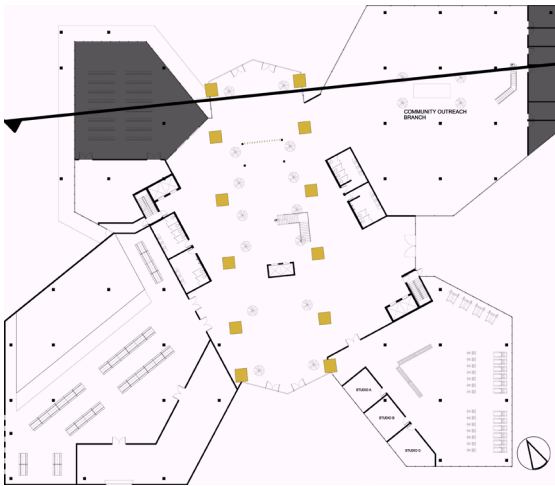
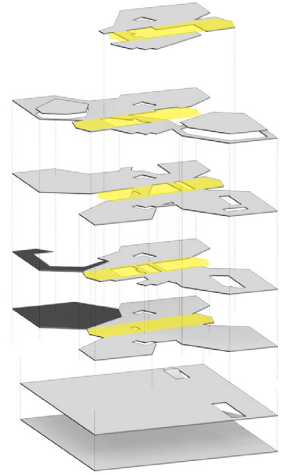


Fig. 104.1

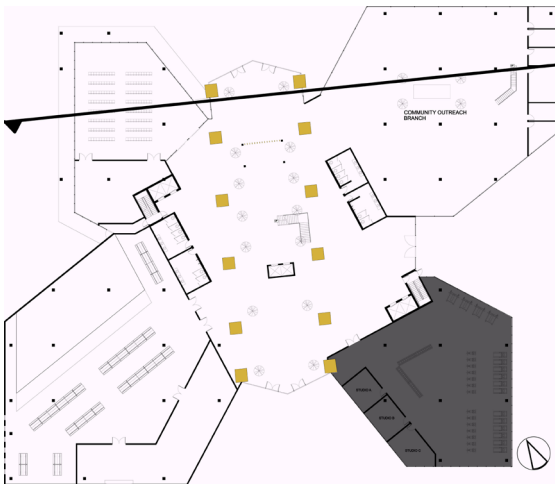
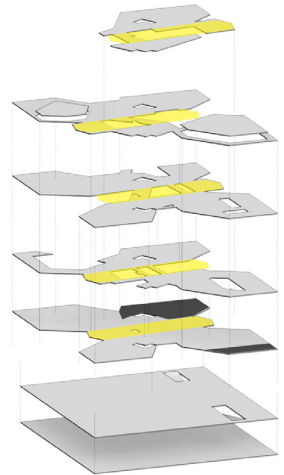
The design also features a cafeteria for both community and employee's. This gives an opportunity for employee's to serve in a community soup kitchen. A way to reach out, and give back. Classroom and education space to offer finance, music, health and many other classes to the community. A fitness center to promote physical health and wellness. A performance space to celebrate the local culture of music and art in Minneapolis and the surrounding Minnesota regions. This performance space is located at the center of the atrium, highlighting the importance of music and community. This building is much more than just a corporate office building. It is a building that works to celebrate the mundane rituals of going to work. It is a place to restore our natural rhythms as humans, and it is a place to promote community and belonging. This building is a diversity of moving parts and consonances, brought together with variety.



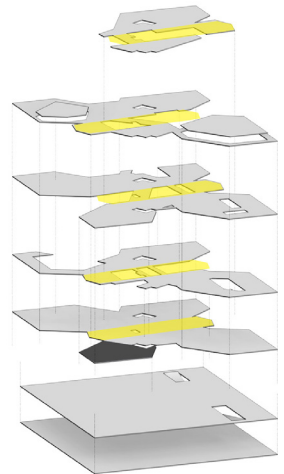
Community Cafeteria
Fig. 105.1

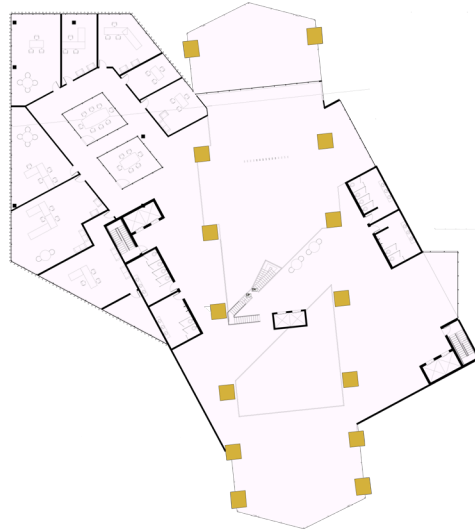


Educational Classrooms
Fig. 105.2

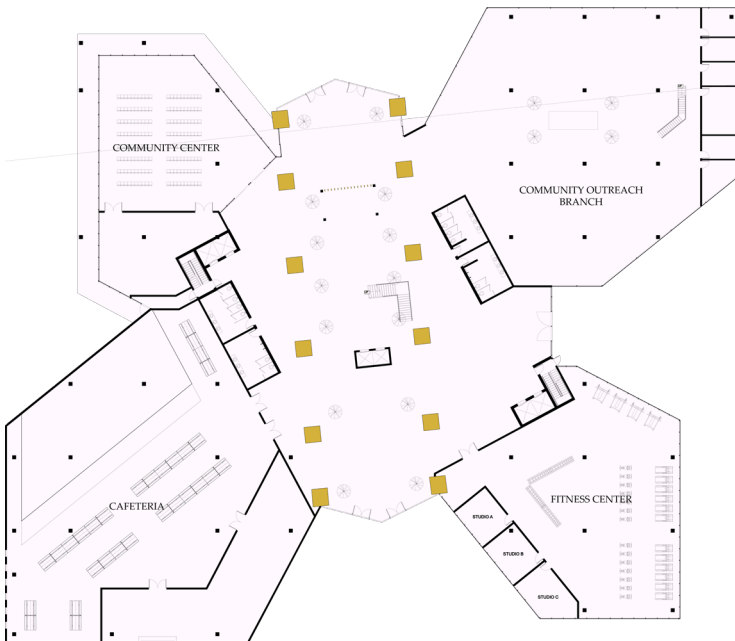


Fitness Center
Fig. 105.3

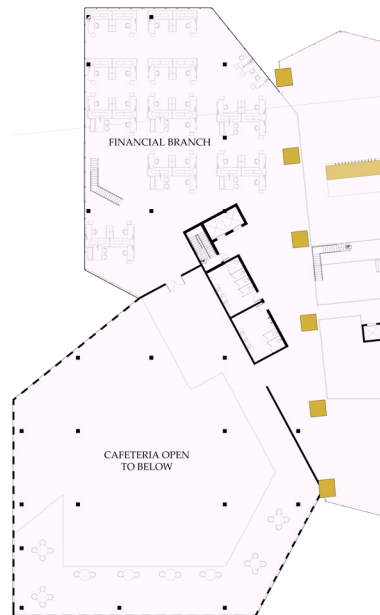




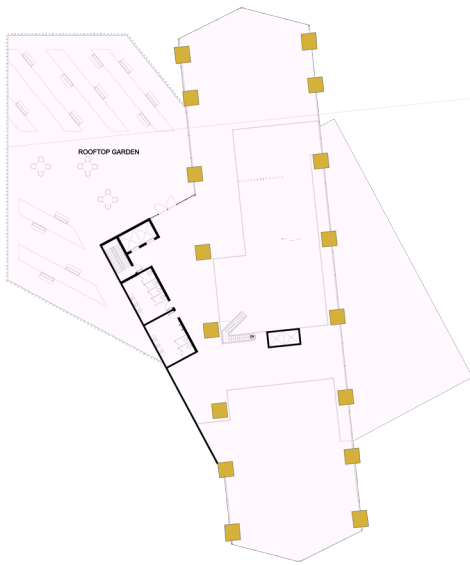
Level 4 Plan



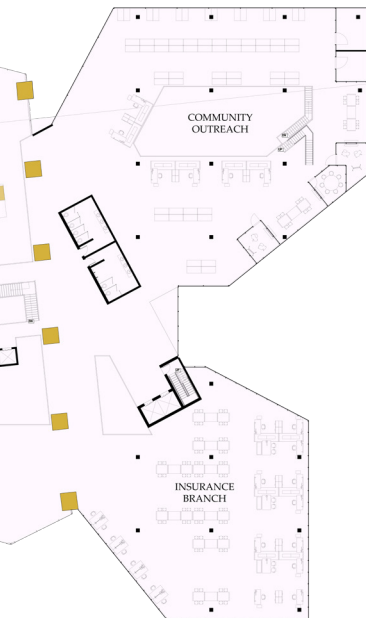
Level 1 Plan



Level



Level 5 Plan



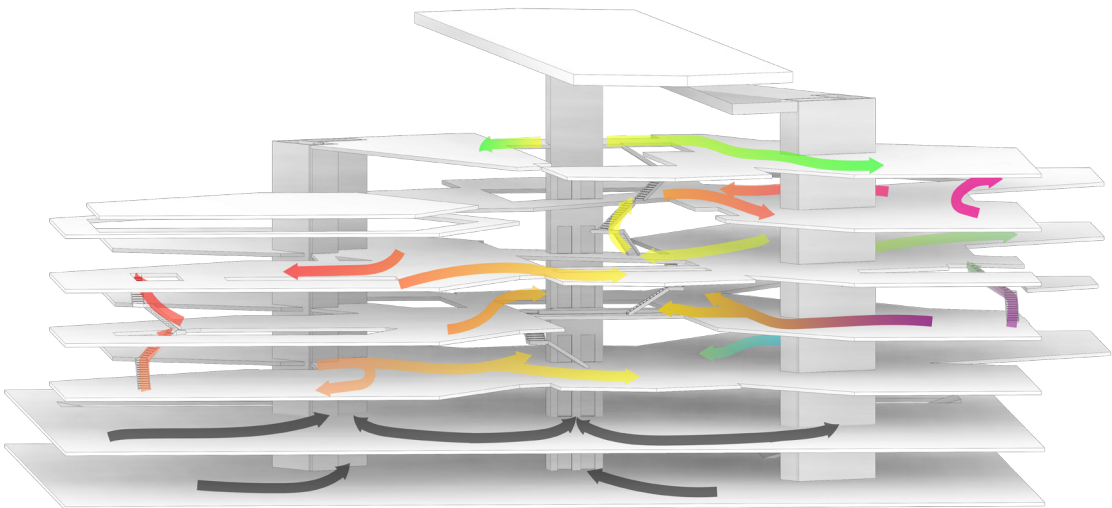
Level 2 Plan



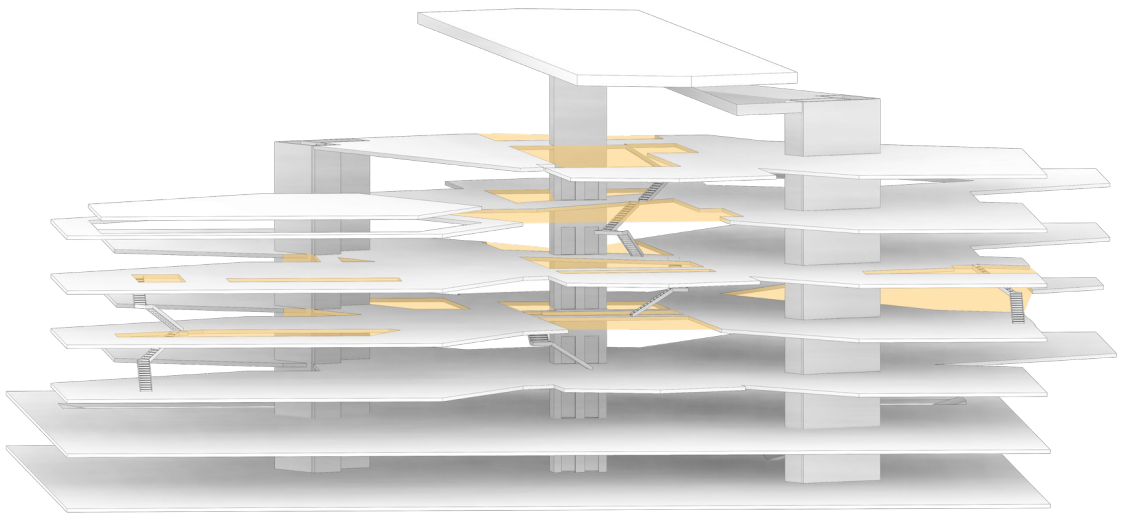
Level 3 Plan

Harmony Through Movement

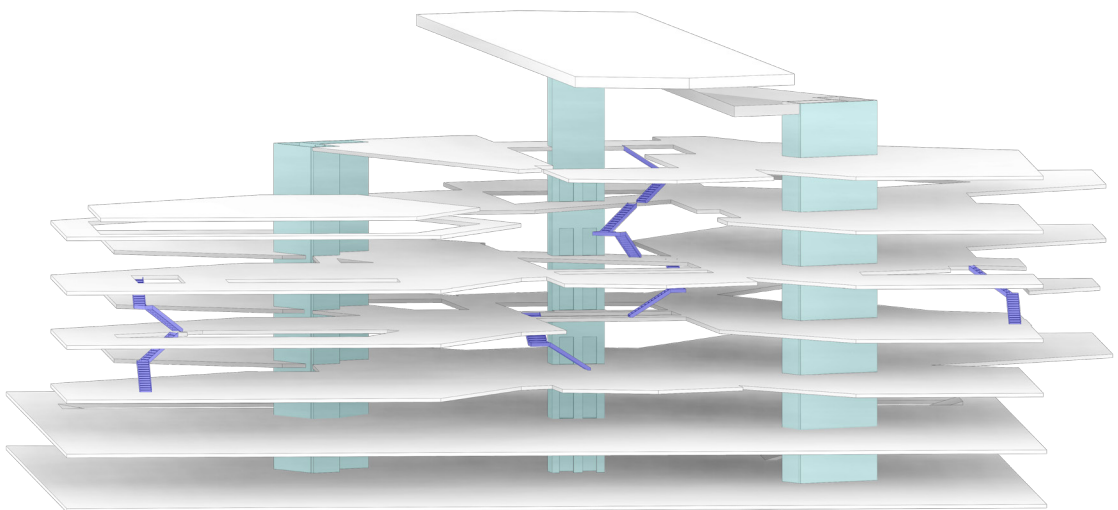
The way the building is designed is to encourage movement of its users to create a harmony and sense of community within. The more communal spaces are located at the center of the building in the larger atrium. Throughout the day, people are constantly moving back and forth between departments. Each time they move they are passing through this area of community, allowing for them to create casual conversation with passerbys. The movement of people in the building is similar to that of human lungs, constantly expanding and contracting. Smaller atrium spaces throughout the branches of the company allow for smaller communities to be created within the larger whole of the company. Wherever someone is located in this building, they are offered with views of other people within the company as well as the city and community of Minneapolis that they are a part of.



Movement of People In and Out



Atrium Space Open to Below



Vertical Circulation

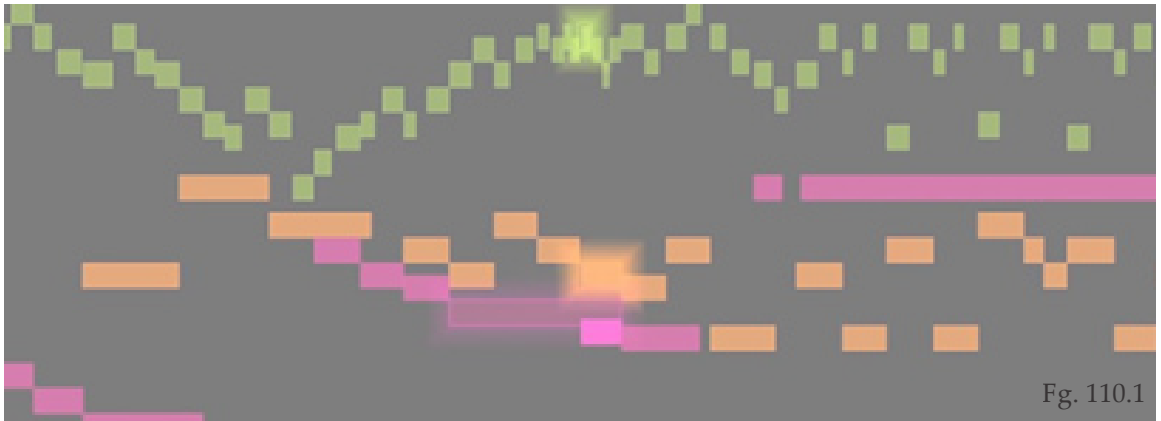


Fig. 110.1

Baroque Fugue Color-coded



Harmony Through Structure

A fugue in music is a compositional technique in which two or more voices, built and recurs frequently in the course of the composition. It was in the Baroque era that one of the most famous composers of fugues in the Baroque time period. Bach writes a fugue, this more, here is a fugue that is translated and color coded into something visual. This is the sand is a visual representation of how the dancers interpret the song. The Baroque fugue is a different color. Each color plays their own individual part, but they are playing in conjunction of moving parts and consonances, brought together with variety." There are strong down separate, yet connected.

Similar to Baroque fugues, "Separate, yet connected" and "a diversity of moving parts" to implement into my architecture. This relates out to the macrocosm of the world and be connected on one planet under one sky through communities. We are exactly "a diversity of moving parts" intends to bring people together under one roof in the office environment. Through a large atrium interact with other people in the company on every floor. The connections in the atrium across different floors, different areas of the company, different parts of the symphony orchestra create a sense of community and belonging by connecting with others in the building.



Fig. 111.2

on a theme, is introduced at the beginning in imitation (repetition at different pitches) the writing of fugues became very central in compositions. Johann Sebastian Bach was a master of the fugue for every key of music and pieces them together in these writings. To understand this concept is very similar to my artefact in that the artefact attempts to play the music and the fugue shown here in Bach's G minor, is made up of many different parts, each assigned a different color and function with each other. This creates an overall harmony to the piece, "a diversity of rhythms and beats where these notes come together to form one harmonious tone. Each color is

different parts and consonances, brought together with variety" are the exact concepts I intend to bring back to the microcosm of man. We are all humans. We are all separate, yet we are all part of a whole. "A diversity of moving parts and consonances, brought together with variety." My architecture features a large central atrium, comparable to the strong downbeat in music, people are able to move through it. These spaces are not only visual, but aural as well. By seeing other people moving around on different levels, you are able to relate to them without even verbally interacting. You immediately feel

The Story of Alison Reed: How the new Thrivent Financial Building Affects Her Daily Life

Alison wakes up each morning at 5:30. She has a 45 minute commute to work to the new Thrivent Financial headquarters. She pulls into the underground parking ramp and enters the central elevators. The elevators open directly into the central atrium that is flooded with the eastern sunrise. The sun highlights the strong, downbeat structure of the atrium and performance space, reminding Alison why she enjoys coming to work each and every day. It becomes a place to be celebrated rather than dreaded.



As the day goes by, the sun and shade cast different moods throughout the building. As some split left and some split right, she heads to her desk, passing many others on the way. The design of this building encourages the movement of its users through space, just as music moves its listeners. Users move out to the exterior, and fall back to the central atrium. It becomes a rhythmic cycle.

As Alison sits at her desk for the morning, the window louvers provide shade and shadow that provide a feel like musical chords being laid across the desks. The low light in the morning in these work spaces are intended to mimic our rhythms as humans.





Fig. 113.1

As the sun rises, our energy levels begin to rise. As the 10 o'clock hour rolls around, Alison begins to crave her morning cup of coffee. She gets up from her desk and heads towards the communal spaces in the atrium.

At 10 am, the sun has begun to move overhead and penetrates into the central atrium from above. As the sun changes, the mood changes in the building because of the architecture. The sun now floods the central spaces at the time when people tend to be out of their desk most, lunch time. Users of the space are able to get much needed exposure to sunlight, especially in the long, dark winter months of Minnesota. People begin moving from the outer branches of the company to the central atrium. The passing of employee's encourages

interaction, promoting a sense of community. They are all working under one roof as a team, a symphony orchestra. Each person has their own vital role to the company.

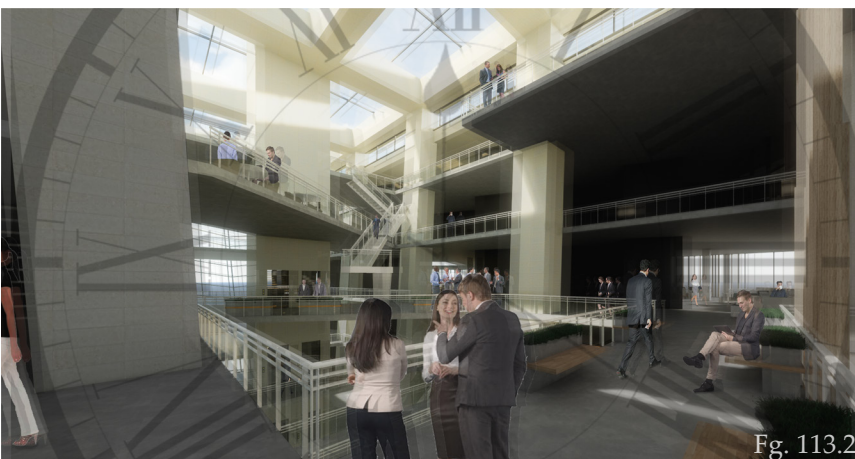


Fig. 113.2

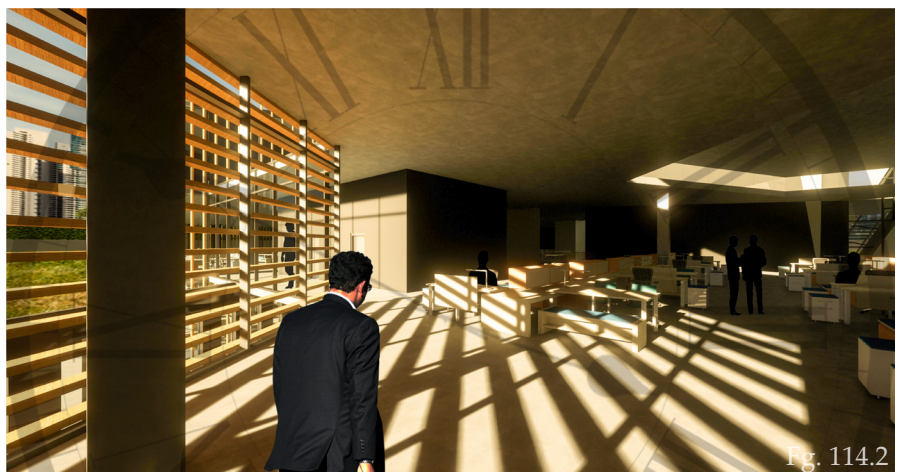
Alison has moved back in through the atrium and up to the top floor. Here again, the architecture encourages movement similar to the lungs of the human body. Expanding out and retracting back in. Up and down, out and in. Here is where employee's are able to take breaks, eat lunch, have small conferences, or enjoy views of the city from the rooftop garden. For Alison, the rooftop garden is a way for her to get away from her desk and get some fresh air. The rooftop garden is a rejuvenation period for her, allowing her to do yoga and reset her mind.



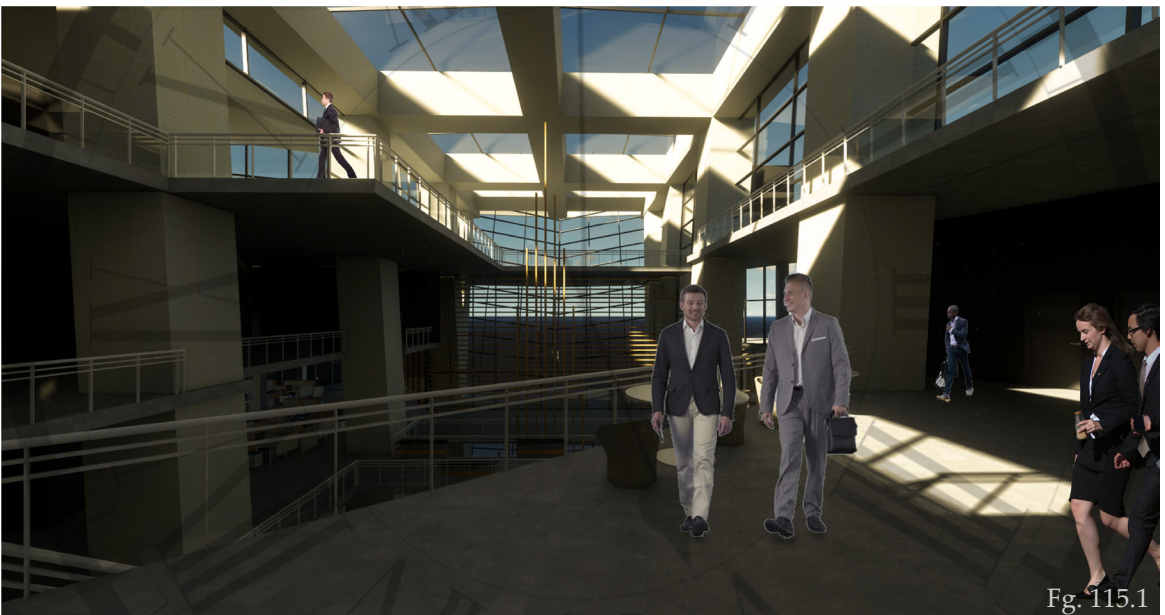
Up here she is also able to talk with Richard, an employee from the finance branch that works on the other side of the building from Alison.

I will now take you through the story of Richard as he moves back to his desk in the financial branch on the west side of the building for the afternoon. As the sun changes throughout the day, the feeling through the building changes with it. A variety of vertical and horizontal louvers on the west side of the building lay a pattern of light and shadow across the working employee's desks. These louvres mimic and shift the morning chords on the east side of the building. These chords of light and shadow are felt throughout the building.

They lay across many different layers of the building making you feel separate, yet connected. As the day gets longer, people begin to grow tired. These shade patterns are felt by all.



As the 5 o'clock hour rolls around, it is time for Richard to go home. On his way to the atrium, he passes many of his fellow co-workers, his community. He enters back into the central atrium where employees from all branches have gathered to take the elevator down to the parking ramp to exit the building and head home.



Fg. 115.1

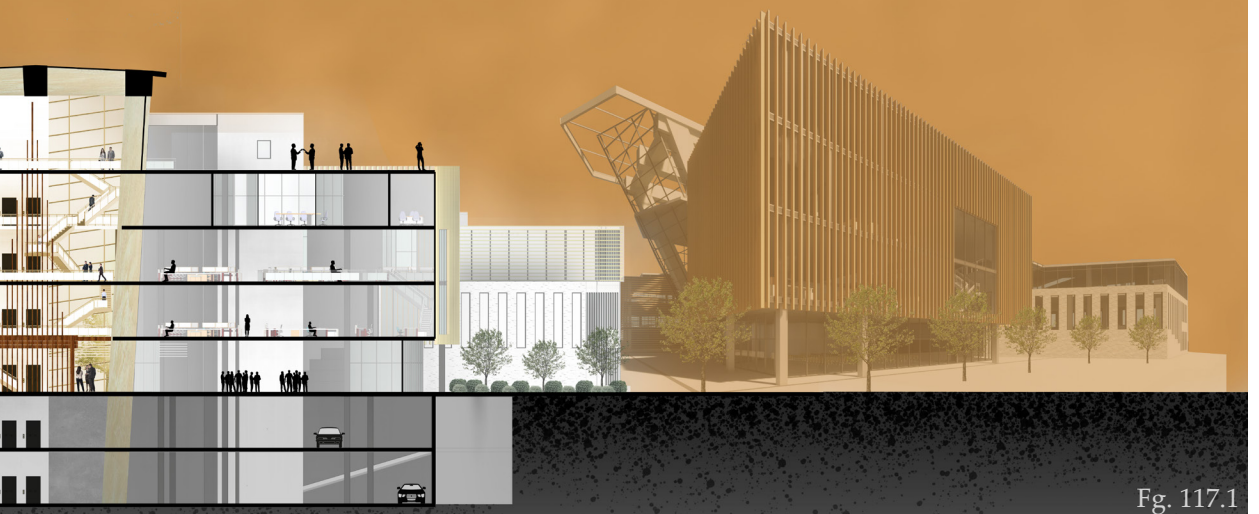
There are cycles found all around us in this world, the orbit of the planets, the change of seasons, the composition of a song, the return of a spirit to god. The last part of the cycle represents a return to the first. Through the architecture of this building, there is a cycle. People come and go, the sun rises and falls, the shadows change throughout the day. There becomes a rhythm and harmony to this building. A diversity of moving parts and consonances, brought together with variety.

“A diversity of moving parts and consona



nces, brought together with variety.”

Gioseffo Zarlino



Fg. 117.1

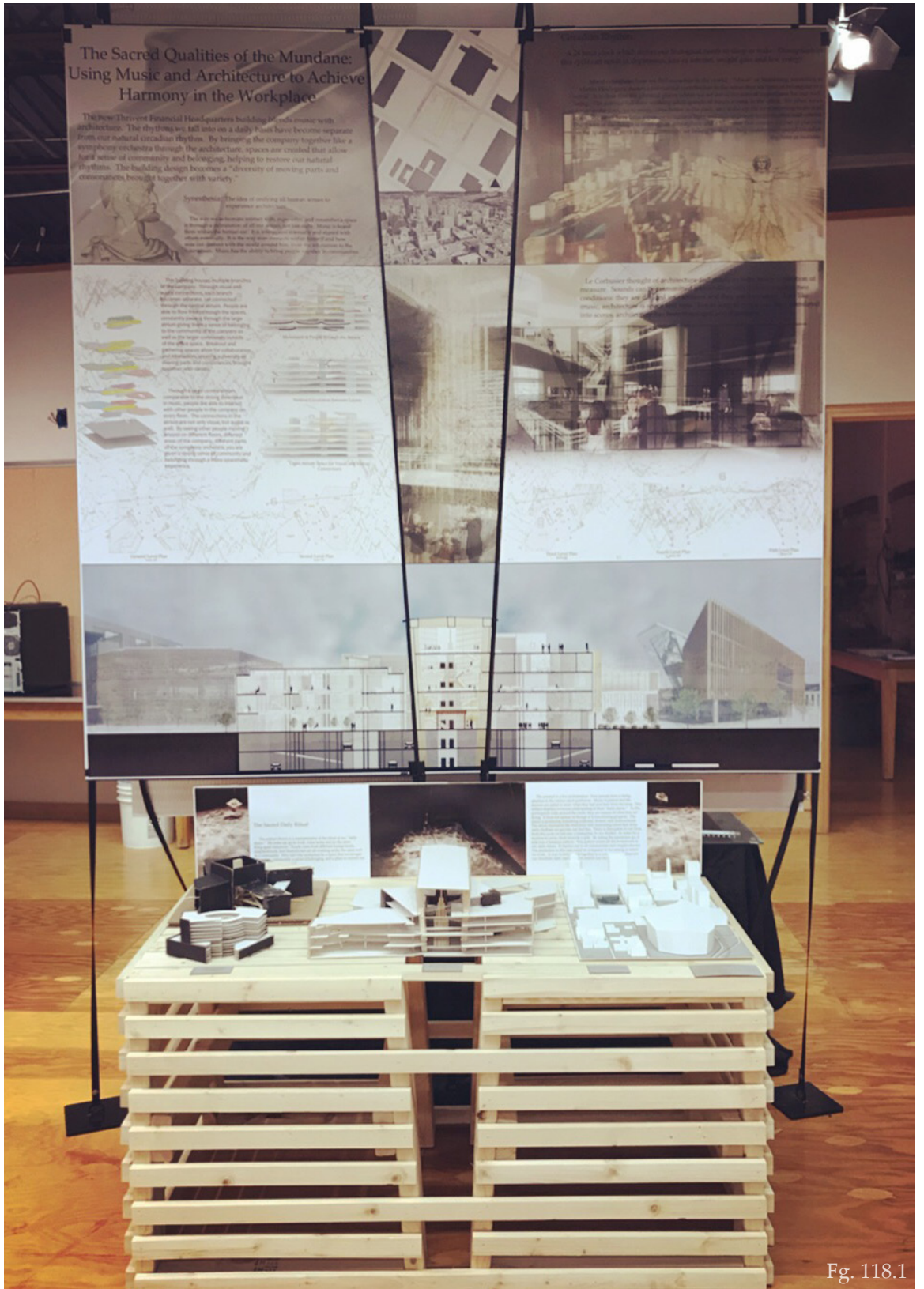


Fig. 118.1



Fig. 119.1

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Previous Studio Experience

2nd Year

Fall 2014: Professor Cindy Urness

Tea House – Fargo, ND

Minneapolis Boat House – Minneapolis, MN

Spring 2015: Professor Joan Vorderbruggen

Montessori School – Fargo, ND

A House for the Birds – Fargo, ND

Small Dwelling – Cripple Creek, CO

3rd Year

Fall 2015: Professor Ronald Ramsey

Cat Mausoleum – Buenos Aires, Argentina

Shaker Barn Preservation – Mount Lebanon, NY

Synagogue – Fargo, ND

Spring 2016: Professor David Crutchfield

Steel Recycling Office Building – Fargo, ND

Miami Breeze Hotel – South Beach, Miami, FL

4th Year

Fall 2016: Dr. Bakr Aly Ahmed

High Rise – Senior Capstone – San Francisco, CA

Spring 2016: Dr. Paul Gleye

Term Abroad – Redevelopment of Downtown Brussels –
Brussels, Belgium

5th Year

Fall 2017: Professor Mark Barnhouse

Wetlands Research Facility – Hawley, MN

Spring 2018: Professor Steven Wischer

Thesis Studio



Fig. 126.1

David Pechauer Walbolt
763-898-8756
david.walbolt@gmail.com
11732 Mississippi Dr. Champlin, MN 55316

