

ART IN ARCHITECTURE

A Design Thesis Submitted to the
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of North Dakota State University

By

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Table of Contents

Abstract:	1
Problem Statement:	2
Statement of Intent:	3
The Narrative:	6
The User/ Client Description:	7
The Major Project Elements:	8
Site Information:	9
Project Emphasis:	11
Plan for Proceeding:	12
Previous Studio Experiiece:	13
Program Document:	14
Theoretical premis Research:	15
Case Studies:	25
Historical Context of Thesis:	43
Goals for Thesis:	51
Site Characteristics:	53
Program:	65
Design Process:	67
Final Design:	82
Sources Cited:	87
Personal Contact:	88

Abstract

The fine arts can be viewed as divine marker to a cultural identity. As a non-essential activity to the survival of man, arts are infused with all of the free thought of the contemporary. More specifically, theatre is a direct correlation between the arts, architecture, and the human body; making a direct connection between culture and the built form. Even as cultural evolution transcends generations the link between arts and architecture will be finite.

Grand Forks, North Dakota has an ever-expanding culture of arts. Rapid growth brings the possibility of great change and has the potential to spark new ideas. This being said, Grand Forks is the ideal location for an investigation of arts, architecture and cultural identity, manifested in a 1,000 seat theater.

The problem Statement:

How do the arts and architecture meet and coherently define a culture?

STATEMENT OF INTENT

Statement of Intent:

Typology: Space for Performing Arts

The Claim: The performing arts practiced in a society can be considered the defining direction of a cultural evolution, subsequently leading to architectural form and serving as a clear reference of that time.

Premises:

A community artist(s) can be seen as creating a cultural identity.

Even the earliest archeological evidence shows a desire for humans to express themselves through art and built forms.

The culture is a direct reflection of the ideas and philosophies a society believes. This establishes an unbreakable bond between the art and architecture created and the way culture as a whole is viewed.

The subsequent evolution leads to an architectural form that serves as a clear reference of that time.

Conclusion: The culture of a society is not only driven by performing arts and architecture, but also reflects its intentions back in a reciprocal relationship.

Manner of Justification: As is the nature of evolution, the cultural identity will be ever-changing, and ever-changing will be the performing arts and architecture serving as a marker of the change.

THE PROPOSAL

The Narrative

The fine arts can be viewed as a divine marker to a cultural identity. As a non-essential activity to the survival of man, arts are infused with all of the free thought of the contemporary.

Art is the outward expression of one's inner thoughts and psyche; but when set in collaboration with other contemporary expressions a common identity can be found. This congealing of individual ideas can only be traced to a common disposition shared by all creating. This connection can be traced back to the simplest element: the individual artist. This inherent bond empowers artist to define culture.

People desire to express themselves. The unknown factor is in what manifestation; some paint, sculpt, create, others speak, abstain, or emote. I myself chose theatre and it is through performing that I have become who I am today. It started as a passion to perform but the evolved into a desire to construct to be seen. This connection in my past is what I attribute my architectural connection.

Examining the parts of the whole, one looks to the artist to dictate culture. Art is on a whole unified, but individually so varied; a more conclusive marker must be derived. Architecture fills the void left between individual artist and overriding cultural identity. So through this connection, amazing opportunities arise when art and architecture meet.

Using architecture as a medium, lines can be drawn between cultural identity and art. It is in this manner that architecture, art, and culture is linked indefinitely. It is my intent to examine how fine arts through architecture define a culture of any society. More specifically, what happens when art and architecture combine in one building?

User/ Client Description

The theatre will be owned and operated by the Grand Forks Public School district and will be adjacent to Red River High School. The space will have mixed users flexing in capacity during the school calendar, but will be adaptable to the needs of the district as a whole. The primary users are as follows:

School Students:

Red River High School is home to over 1200 students during any given school year. Due to the proximity to the school and ownership of the district the students will be the primary uses. Not all students will use the theatre often but all will use it in differing circumstances. The primary function will be an active theatre department comprising of classes, productions, and clubs. Unlike the school the theatre will also experience use during the summer with the Summer Performing Arts Program (SPA) established in 1987. The program includes more than 1100 students spread across the district with a focus on Red River High School.

Peak Usage:

Peak times are hard to accurately describe based on the wide and varied nature of use. During the day the space serves as a classroom for the school, accommodating 25 students or less per structured hour. At night the building can sit unoccupied, have rehearsal, or a performance; this expands occupancy from 0 to capacity. Summers are no different and can vary even more with the diverse schedule of SPA.

Parking:

Parking number is a non-issue for the facility. The school is equipped to deal with a student body of 1200+ auto-centric high school students. The new issue is directing the flow. Layout and paths all lead to major school entrances.

Special Needs:

Most students attending and using the facility are able bodied; the same cannot be said for the population attending. All spaces will be designed for all accessibility levels but special attention will be giving to the ever-aging attending population.

Major Project Elements

The project typology is a space for performing arts, but with special attention needed for the connection to a school. The spaces not only have to function as a theater but also as an educational facility.

Theater:

The theater has a capacity nearing 1000 patrons but has to be flexible to accommodate smaller crowds, such as classes. There is a large demand for flexibility and expandability as theater technology is starting to near the evolution speed of technology. The space must still be an incorporated facility that is home to performances of all types all year round.

Lobby:

The lobby is the first and last thing that patrons to the space see. It is important to shelter and welcome people but provide structure and organization. It has a large demand on function as people enter, acquire tickets, and locate seats.

Scene Shop:

There is a demand on a theatre to transport the audience to a different place with every production. This is a unique order that most buildings do not face. The problem of transporting the audience falls to the scene shop to create the setting to complete the show.

Storage:

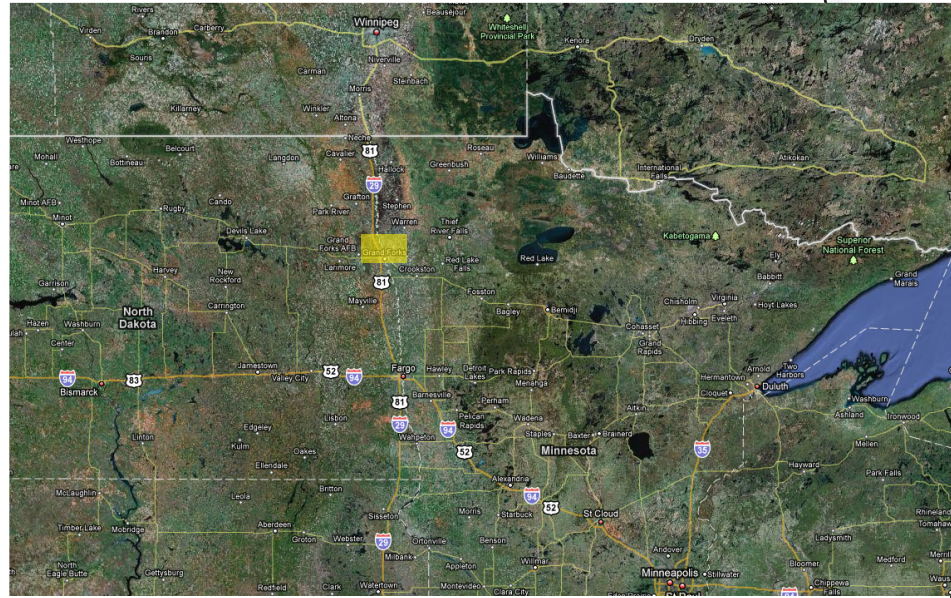
Many of the properties built in the scene shop or purchased for the production are saved on location. The properties storage has to be large enough to hold all acquired materials but organized enough to function as a three dimensional file cabinet for all items inside.

Classrooms:

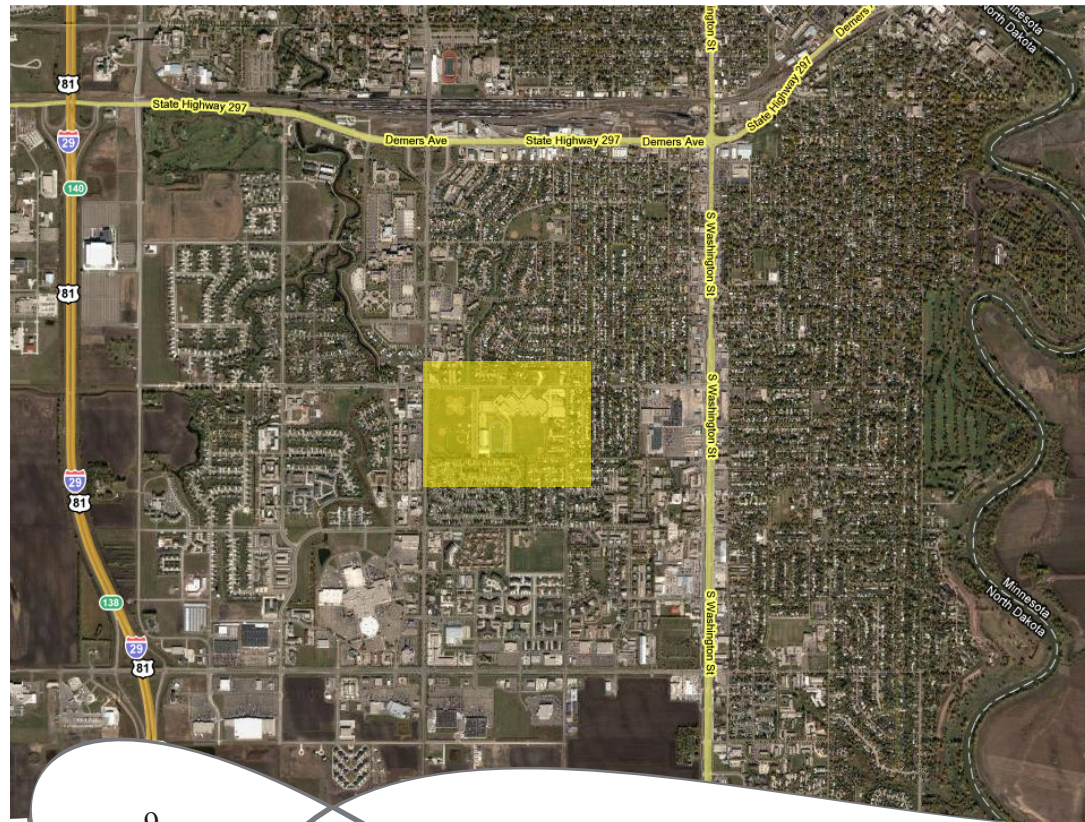
The theater is adjoining a High School and the demand for more classroom space is at a premium. With urbanization in full swing the population moving to large cities continues to grow. This influx has taxed the school with tighter quarters that are expanded rarely, if ever.

Site Information

The site is located in Grand Forks, ND. The city lies on the Red River of the North, the border between North Dakota and Minnesota.

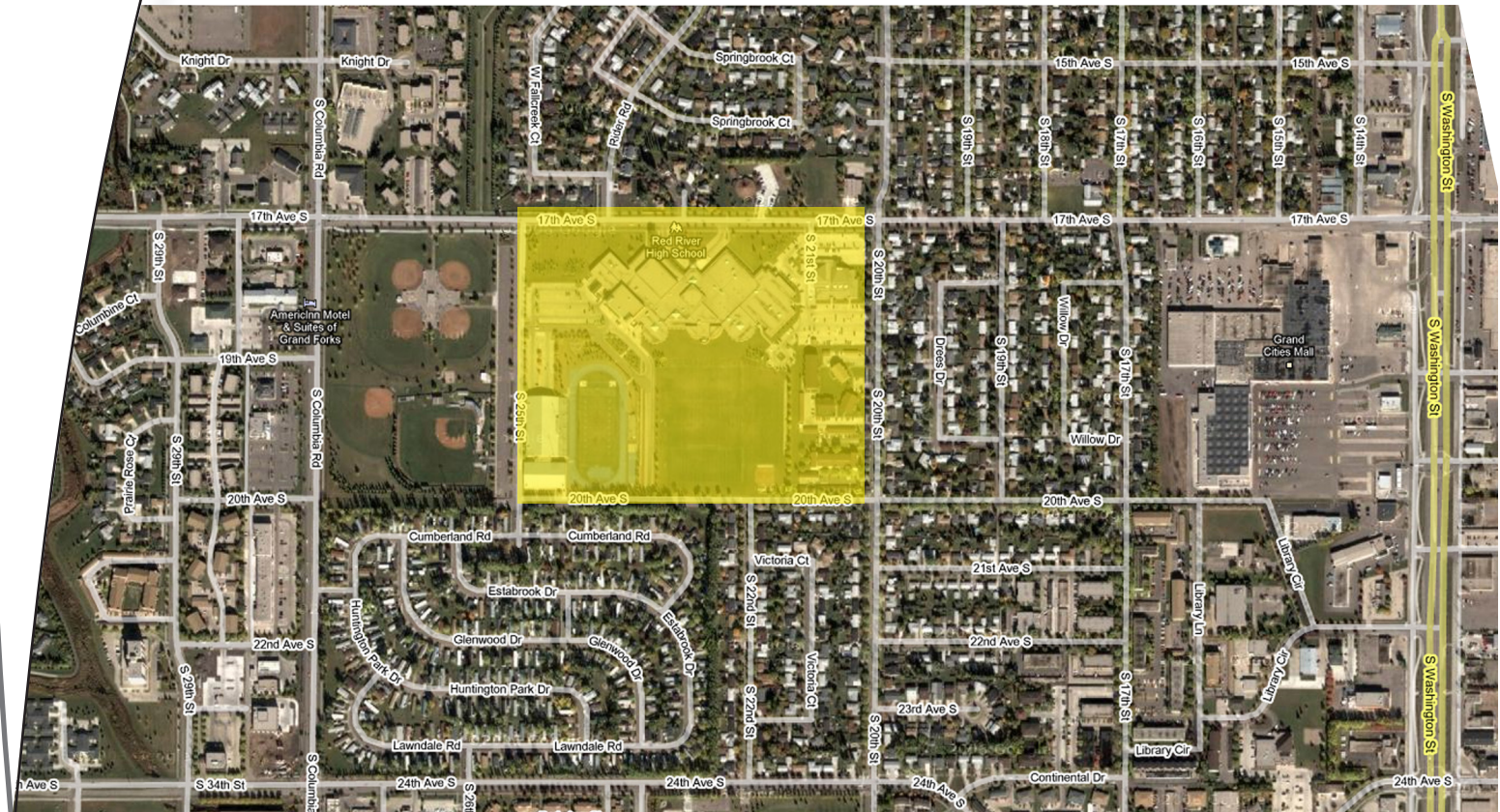


Red River High School is the central southwest portion of the city. It is surrounded by almost strictly residential zoning.



Site Information

This site interests me for numerous reasons. First, it was here that I had my love for theater fostered. Second, there is a large demand for a new performing space located adjacent to the high school.



One of the largest problems posed by the site is the school itself. The building, the ground, the community, all have grown in around the site to the current existing conditions.

Project Emphasis

The master's thesis will focus on the connection between the arts and architecture and how the two ideas can be looked at as a cultural reference. The focus will be more particularly on how arts and architecture meet in a single space, both defining the building function but also the building form.

Alternatively a focus will be given on how the built form influences inhabitation. Not only in how people feel, but what their impressions are when entering and leaving. Interest in design must not be limited to psychological feelings; health and well being are also part of an overall personal feeling.

The focus will also investigate how our cultural identity is indexed by what we build and what forms are constructed. Looking at how people build space to reflect their climate, disposition, and world view can reveal a deeper understanding of the people as a whole.

Plan for Proceeding

Research for this thesis will be conducted in diverse areas to avoid a bias view. Areas of research will include but are not limited to: unifying idea, typology, sustainable building, cultural identity, site analysis and program requirements.

A mixed method approach will be used when gathering data for analysis. Methods will include qualitative and quantitative interpretations. Extensive research will be conducted and will have data from interviews, books, journals, periodical, case studies, and web sources. Information gained will be imperative when transitioning into preliminary design for my thesis. Further data will be collected first-hand during site visits.

Writing, sketches, models, and thoughts will be used to define a design solution. Documentation will be done every two weeks and archived digitally to ensure of proper records. A time motion camera will be placed about my work space to track the growth in drawings, models, and design solutions in a condensed real-time video.

Previous Studio Experience

Fall 2006

Darryl Booker

+Tea House- Fargo, ND

+Mississippi River Rowing Clubhouse- Minneapolis, MN

+Mountain Dwelling- Rocky Mountains, CO

Spring 2007

Joan Vorderbruggen

+Montessori School- Moorhead, MN

+Downtown Dance Studio- Fargo, ND

Fall 2007

Cindy Urness

+Center for Excellence- Grand Forks, ND

+Cranbrook Academy- Bloomfield Hills, MI

Spring 2008

Steve Martins

+Children's Museum- Fargo, ND

+Downtown Mixed Use- Fargo, ND

Fall 2008

Bakr Mourad Aly Ahmed

+High Rise- San Francisco, CA

Spring 2009

Steven Wischer

Barcelona Study Abroad

+Hotel and Train Station- Barcelona, Spain

Fall 2009

Regin Schwaen

+Hotel- Fargo, ND

Spring 2009

Mark Barnhouse

+Thesis- Grand Forks, ND

Second Year

Third Year

Fourth Year

Fifth Year

Program Document

Theoretical Premis and Unifying Idea Research

Art, Architecture, Culture: these tangible but often indescribable entities are created by society. Much weight is placed on their definitions but as a whole people often struggle to put parameters on these words. Although separate entities they are bound in an unbreakable bond by their inherent codependent nature. The culture as created by a given society is defined by the art, architecture, sculpture, dance, and other creative fields; however, in an ironic cruelty the culture creates the very creative institutions that define it. This created culture changes as the views and dispositions of a society change with the passage of time. This very change is what can be observed, and because of the linkage between creative institutions and culture these observations are recorded in art and architecture.

The artistic community as a sum is not greater than the parts, but rather equal. The community as a whole may define culture, but the artist as an individual is responsible for his or her direction. This empowerment of the individual gives a singular creator the authority to form a portion of culture. Aagaard-Mogensen (1976) uses words from Hamlet to bridge art to culture, "Hamlet, more acutely, recognized a remarkable feature of reflecting surfaces, namely that they show us what we could not otherwise perceive- our own face and form- and so art, insofar as it is mirror like, reveals us to ourselves" (p. 9) This concept of art being and revealing us to ourselves establishes a duality between art and people. Culture is a distinct creation of a society of people. Without the society to interpret culture is nonexistent. Society as a whole is large, but is still made up of individuals. This

connection of art to people starts with an individual as a reflector of art and works to the whole of society.

Culture being the direct creation of a society is affected by individual art and artists.

The concept of an art and the individual creating it is not a new and novel concept. In archeological terms art has taught the contemporary most of what we know about history.

Herbert (1937) "No kind of human activity is so permanent as the plastic arts. And nothing that survives from the past is so valuable as a clue to the history of civilization. For many thousands of years our knowledge of the customs and beliefs of mankind is derived from surviving works of art, and it is only comparatively recently in the history of the world that the written record comes to our aid." (p. xi)

Before the advent of text and recorded language, people spoke through art. Communicative art was vast and wide-spread and could be interpreted in many ways. Simple hand gestures were performances, the essential parts of modern performing arts were present. The performer was communicating through art to the audience of one or many.

Using a theater as a means for talking about performance art Aagaard-Mogensen, (1976) says: "There is a long tradition or continuing institution of the theater having its origins in ancient Greek Religion and other Greek institutions. That tradition has run very thin at times and perhaps even ceased to exist altogether during some periods, only to be reborn out of its memory and the need for art. ... What has remained constant with its own identity throughout its history is the theater itself as an established way of doing and behaving. This institutionalized behavior

occurs on both sides of the footlights: both the players and the audience are involved and go to make up the institution of the theater. The roles of the actors and the audience are defined by the traditions of the theater. What the author, management, and players present is art, and it is art because it is presented within the theaterworld framework. Plays are written to have a place in the theater system and they exist as plays. That is, as art, within that system.” (p. 21-22)

Performing art could be looked at as the most important form of art. The basis of teaching is a performer/ audience relationship. Knowledge passed down is done with this simple but crucial type of art. ”Theater is a rich and instructive illustration of the institutional nature of art” (Aagaard-Mogensen, 1976, p. 22). The institution of the theater is the most powerful form of art and definer of culture.

Sense of place was marked by art: a painting, a structure, an object. Long after any personified footprints have disappeared the art of ancestors’ remains.

Arnuaad,L (1941) illustrates art and architectures permanence with a city: “A city is a product of civilization, as old as civilization itself. It is also a record of civilization. For by its form and content it gives evidence of the kind and degree of culture developed by its inhabitants, it is a natural aggregation, as is a herd or a flock; but it is also a work of art. For it is the expression of man’s highest creative powers. It is a focal point to which men gather to worship, to govern, to study, to practice their crafts, and to trade. There the raw materials produced in the countryside are converted into objects of utility or of art.” (p.

63)

A city is an exemplary example of art’s ability to outlive the artist. Greek and Roman structures are still standing to this day and will continue to for generations to come. Architecture from the past stands as an outlet for creative powers. These structures of antiquity are still teaching the future as markers of that civilization and society.

The remnant art of past cultural generations are still communicating to posterity, anyone who sees it can interpret; but the initial communication may fall on deaf ears. Without the proper cultural context to view art the initial meaning is lost in translation. “Only relative to some cultural traditions- normally continuous and congruent from society to society, but not always- can anything be identified as a work of art. “(Aagaard-Mogensen, 1976, p. 36) This isn’t to say the art is lost to time like culture; on the contrary, new possibilities are opened when viewing through a different cultural context. This simple test of time speaks volumes to the legacy art, architecture, and culture leave behind.

The art, architecture, and culture created by a society must be viewed as a whole. This is evident in the context of historical art. To contemporaries outside of the original cultural context meaning is lost. “But to locate or specify something as a work of art thus embodied requires as well reference to the artistic and appreciative traditions of a given culture.” (Aagaard-Mogensen, 1976, p. 36) The relationship of art and culture is further reinforced when using culture as a lens for viewing. The disjuncture between these concepts destroys any cohesion that had been achieved by the society.

Aagaard-Mogensen (1976) speaks of the separation

between art and culture: When you say 'art and culture' it often appears as if some important conjunction is posed. A conjunction between two things which one must make immense efforts to grasp in merely the slightest way. Actually this customary separation may have hindered valuable thinking. ... rather than art being independently contributing to the human culture, it conversely is constituted culturally. (p. 7)

A better understanding of art and culture can be achieved by combining the subject matter and examining how they are influenced by the other. When viewing the whole it is clearer how the 'important conjunction' works. Aagaard-Mogensen is proposing not a linear relationship between art and culture but rather a reciprocal relationship with the two working in harmony.

This dyad of art and culture can be expanded to triad including architecture. Arnuaad, L(1941) explains architecture as an expression of man's highest creative powers. Buildings are the focal point of society, establishing a place for man to gather, to worship, to govern, to study, to practice their crafts, to trade, and to exist. Through technology, raw materials are converted into objects of utility and art. (Arnuaad, L. 1941, p.63) Using this standard as a reference, a trinity can be established: art, architecture, and culture. This three-part system can be likened to a stool. A three legged stool will sit on any uneven surface, but in the instance one leg becomes too long, and or short, the stool no longer functions. In the same manner if one leg is removed the stool is dysfunctional. This functional bond applies to art, architecture, and culture too.

An unbreakable link is established in the way the

triad exists and is propagated. The indexing elements of art and architecture serve as physical manifestations of culture. Without these physical artifacts culture would be exactly as Aagaard-Mogensen (1976) labels a concept: "which one must make immense efforts to grasp in merely the slightest way." (p.7) This indescribable object that is culture is not only identified but also categorized by art and architecture. Reconsidering art, architecture, and culture as a whole culture cannot become forgotten. Although art and architecture create culture through their existence, their meaning would be lost without the societal perspective culture offers. It is through each other that art, architecture, and culture persist.

Attention should be given to architecture for the artistic properties it poses. If a link can be established between art and architecture it is possible to use architecture alone as an artifact for examining culture. "If architecture is language, as a sculptural language it exists on the level of a gestural articulation of expression." (Sewing, 2004, p. 8) Gestural articulations of expression establish a new means for looking at architecture and the built form. Not only looking at architecture as a means for habitation but as Arnuaad, L (1941) says, "mans highest creative expression." (Arnuaad, L, 1941, p.63) This highest creative expression is a new sculptural language that has been established in architecture. It has a direct relationship to art and the way that man expresses himself through established institutions. These architectural expressions of any form start as a concept; this concept may differ depending on the situational context in which design exists; the end result is an artifact of creative powers that can be considered architecture.

Sweing, W (2004) talks about the conception of architecture: "Nevertheless, what is technically

possible must first be intended and imagined. Culturally, socially and psychologically, the sculptural impetus that can be found in architectural history from Babylon right up to the baroque always precedes the question of its technical realization. (p. 6)

The remnants found in architecture history start to reveal the culture of the creating society. The architectural history is a clear example of power of architecture as an artistic element of culture. Much can be interpreted of a society with architecture present. Sweing, W (2004) talks about the power architecture has when it is also considered art. The sculptural impetus of architecture history is coherent with a language of architecture as art. The historical ramifications from Babylon to present illustrate the power of architecture on culture. (Sweing, W, 2004, p.6)

Architecture as art is not limited to just antiquities of cultures past. Rather, architecture, once conceived, has an inherent sculptural and artistic quality. "Sculpturality is a property that much architecture possesses, but that does not always have to be the essential aim of the design process." (Sewing, W. 2004, p. 6) Purely utilitarian architecture with no artistic aim inherits sculptural properties just by the nature of architecture of itself. Architecture, sculpture, and art are born together as one in a built structure. Architecture in this sense holds great power. It is a great power to inform and educate. "A city is a product of civilization, as old as civilization itself. It is also a record of civilization. For by its form and content it gives evidence of the kind and degree of culture developed by its inhabitants." (Arnud, L, 1941, p. 63) This is how culture is viewed through architecture; it alone will teach posterity about our culture.

Architecture has one apparent shortcoming when creating culture: "architecture is not architecture until it is realized as a building. A modern architect who can obtain no financial support for their buildings are thwarted at the outset and cannot accomplish anything by paper abstractions." (Burchard. J, 1941, p. 60) By the nature of architecture's artistic quality it doesn't exist until built. This poses a large problem when using architecture as a culture index. If it is not built how does it define culture? Answers can be found in architecture that was constructed. Architecture that has reached fruition has been deemed by society an acceptable demonstration of the culture. This check and balance insures that architecture is a pure sampling of culture.

Architecture is an ideal index for comparing different civilizations and cultural beliefs to one another. The permanent record has been laid out in an objective manner with material immortality to time. Due to the inspection of built architecture it is a perfect cultural highlight. It is possible to compare difference in two building styles while examining the same element of construction; this direct comparison of one to one is ideal for noting differences between cultural movements. Moreover, architectural creations are in some form is predisposition of man. By nature, man is a builder and has used this creative power to bring to existence structures and in turn cities. These historical markers have stood the test of time to be indicators of culture. The inherent nature of architecture as an art moreover make it an ideal representation of culture, keeping in mind the trinity of art in architecture and culture.

Theoretical Premis and Unifying Idea Conclusion

Art and architecture become through an understanding of culture. Yet it is a great struggle when asked to describe culture; it seems to be a concept that eludes definition. The problem is culture cannot be defined alone; it is a culmination of societal creations. Art and architectures, as creations of people, can be used to understand culture. It is in a unity that art and architecture define the culture. These tangible objects can be used to help appreciate; for it is through this relationship that meaning and understanding can be defined.

Objects and actions of people create their identity. This embodied individuality is a distinct reflection of the creator. "Hamlet, more acutely, recognized a remarkable feature of reflecting surfaces, namely that they show us what we could not otherwise perceive- our own face and form- and so art, insofar as it is mirror like, reveals us to ourselves." (Aagaard-mogensen, 1976, p.9) It is through this process the whole is understood. The reflective nature of art means that parts the creator is visible within the creation. Take this reflection of an individual artist and object and distribute it across a society and a culture is created. The identity embodied within the people is reveled.

Perhaps the most import and most basic form of art is performing art. Daily this art from is being expressed; the fundamentals lie in communication. The roots of performing illustrate the basic properties of this art genre: the performer and the audience. It is this countless repetition that familiarity is born. This subtle knowing of the performing art makes it the easily interpreted by society.

Connections can be drawn between art and architecture. Yes it could be said that architecture is an art of necessity,

but still an art nonetheless. The creative drive and need for expression leads to physical manifestations; it is through the objects that similarities can be found. "it [architecture] is also a work of art. For it is the expression of man's highest creative powers. It is a focal point to which men gather to worship, to govern, to study, to practice their crafts, and to trade." (Arnuaad, L, 1941, p.63)

Art and architecture has permanence unaffected by mortality. Long after the creator has faded the created is still there. A visit to a local museum illustrates the history of art. Through this history possibilities open to offer a view of the likeness in which it was created. This glimpse of the creator is an isolated look at the culture of the contemporaries. A city can be used as an example of art that outlives the artist. As architecture is built art, every structure serves as a reference to culture. When considered as a whole culture is created through architecture.

The understanding and appreciation of culture is being lost on contemporaries. The cultural awareness of this century is fading into non-existence. But the cognition of culture will not be remedied by the creation of more artifacts. This deluge instead clouds the already misunderstood culture. Rather, understanding is achieved through education; performing art can be used as a translator that the whole of society understand. The education of society in art and architecture can reignite people's passion for culture.

Guthrie Theater Minneapolis, MN

The Guthrie Theater has been relocated to its new industrial home in the heart of the mill district on the Mississippi. In June of 2006 the Guthrie Theater moved out of its original 1963 home in uptown Minneapolis, MN to the waterfront of the Mississippi River. The new space designed by French architect Jean Nouvel holds three theaters in its 285,000 square foot blue aluminum shell.

Sir Tyrone Guthrie founded his theater in 1963 and commissioned local architect Ralph Rapson to design his pioneering thrust stage. Guthrie disliked the tradition proscenium theater that offered a picture viewing experience to the audience. He would proclaim “the aim of our performances in not to create an illusion but to present a ritual of sufficient interest to hold the attention of, even to delight, an adult audience” (Young, 1973, p.) According to the Guthrie website the Wurtele Thrust stage opened on May 7, 1963 with a production of Hamlet to an audience of 1441. (2006) Since that first performance the Guthrie theater survived through a 43 year career in its original home.

In 2006 under the supervision of Joe Dowling, artistic director at the Guthrie, the Guthrie opened its doors at its new facility. “Joe Dowling had a vision for a new three-theater center that would allow the institution an expanded ability to perform a wider range of plays and to engage the public and educational organizations in a stronger way.” (Guthrie,



2006) With the design help of Jean Nouvel this three-theater idea would come true. The design of the original Wurtele thrust stage was copied for reconstruction at the new location. Dowling wanted to add a proscenium theater. The division between audience and actor would “get beyond the limitation of the thrust stage”, he proclaimed in an interview. A black box theater is the last type to complete the new performing art center.

The building stands as a ten-story fortress to performing arts. “Though the theater had obtained a 900 foot long site, Nouvel shocked Dowling by proposing to mound up the 285,000 square foot building to a 10 story height at the sites western end.” (Russell, J. 2006



p. 111) This monument to movement is clad in a deep blue aluminum cladding. This apparently seamless cladding fades into the prairie night sky. The only indication of the building comes from the zippers, butter tinted black box lobby, and openings punched into the endless bridge. These unique portals offer glimpses of activity as people mingle amid the two story lobbies.

One of the most distinguishable features of the Guthrie Theater is the 'endless bridge'. Russell, J explains the 178 foot cantilever extends a two story lobby out to the riverfront in an ingenious connection with the Mississippi. (p. 108) Although the appendage has no bearing on any of the three theaters it helps to complete the complex as an iconic cultural center. The lobbies contained within help

draw patrons to the shows currently on the playbill and foster communication about the arts. The 'endless bridge' promises to enchant with a dramatic statement that will have permanence in memory.

The new Guthrie complex responds to its context with great dexterity. The industrial fortress echoes in manufacturing shapes of the adjacent mill district. The height stops only short of the historic mill city museum located to the west. This diminished stature almost bows to the history of the explosive museum. The brilliant yellow zippers declaring the names of actors in the productions reminded Nouvel of smokestacks of American industry.



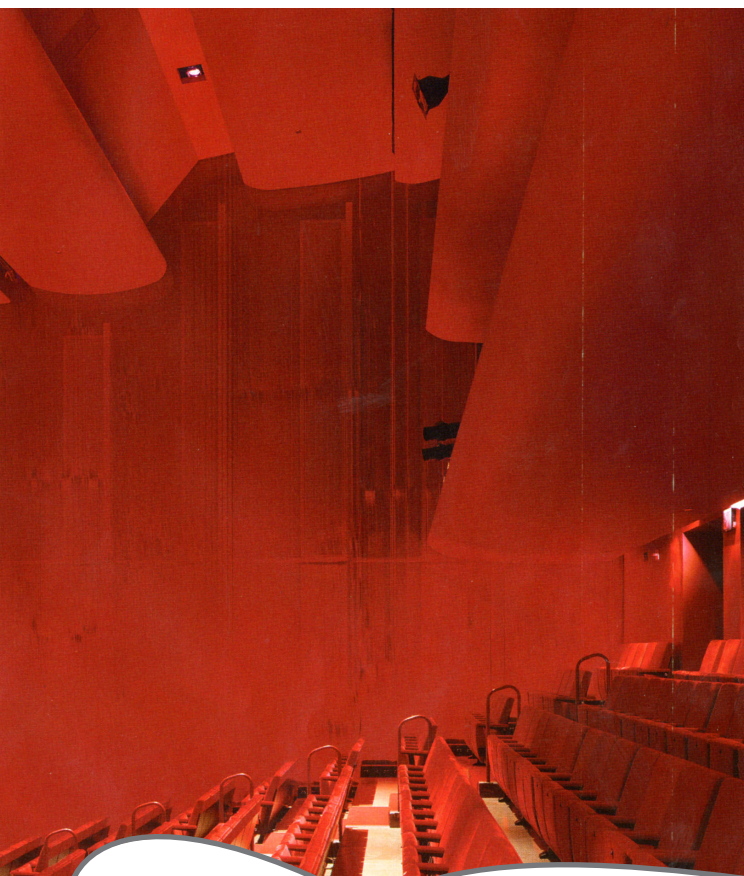
The Guthrie Theater offers an exceptional look into theater dynamics. The three stages located in one building offer a wonderful compare and contrast opportunity with all of the making of a controlled scientific experiment. The only element that changes from one theater to the next is the typology itself. The three stages at the Guthrie are the Wurtele Thrust, McGuire Proscenium, and Dowling Studio.

The Wurtele thrust stage is an almost identical copy of the original Guthrie Theater. According to Russell, J (2006) It now holds 200 fewer seats; seat subtraction allows for better sightlines and more legroom. The thrust-style stage is a relatively newly revived addition to the theater tradition. Although pioneered by the Greek the more popular proscenium theater has dominated much of western history. The thrust offers a few large advantages over a proscenium theater. The largest and most notable difference is the closeness between the audience and the performers. There is



a narrow margin separating the action from the audience. In the case of the thrust at the Guthrie the action can even come from the audience. There are two vomitoriums located in the audience where actors can enter or exit. Often with a thrust overhead fly space is negated and scenery is placed more on the stage. Scenery can also be one of the largest drawbacks. With audience members in sometimes 180 degrees or more around the thrust actors must continually mind their back. If an actor becomes complacent to this they might be showing the audience their back most of the performance. Although the audience has improved sight lines to the stage it is also extremely easy for props or scenery to obstruct the view of the action. Seat for seat the thrust stage will offer a very different and more intimate show than a proscenium.

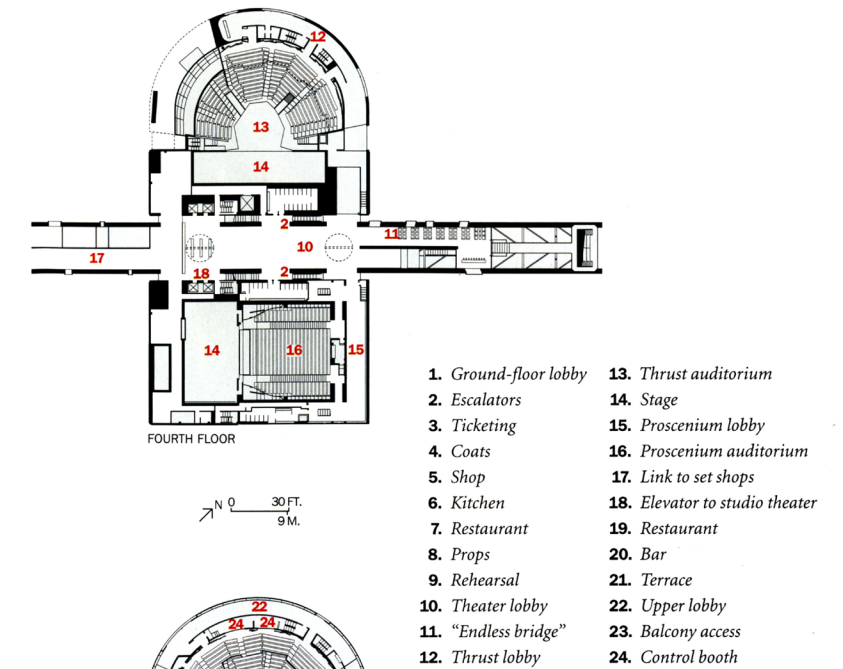
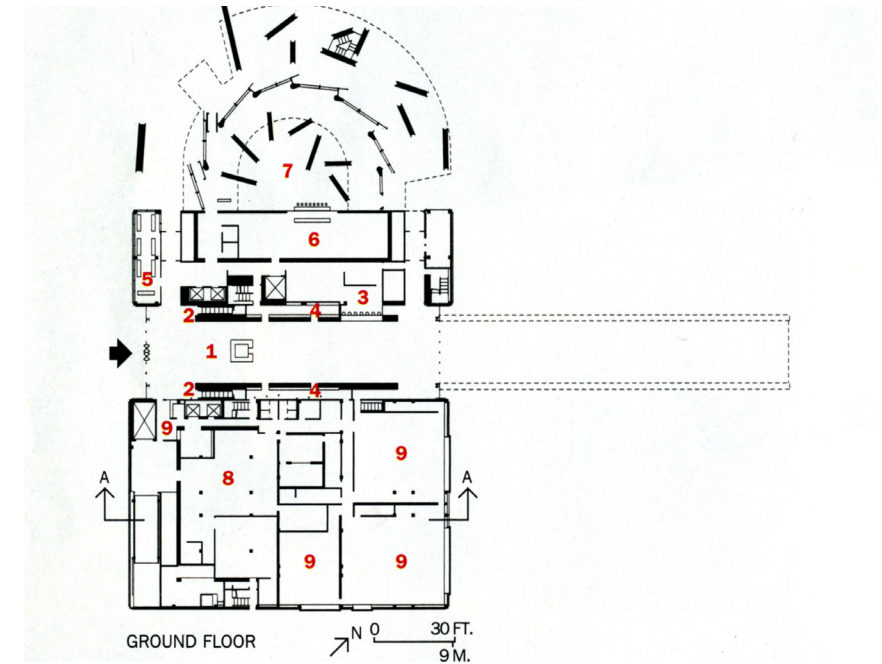
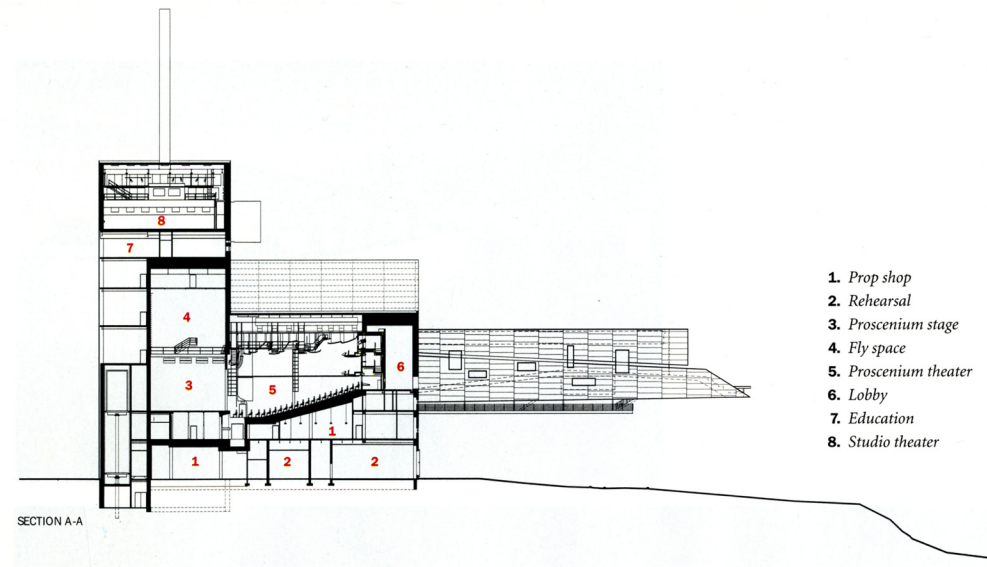
The McGuire Proscenium is a 700 seat new addition to the Guthrie repertoire. One noticeable thing about the proscenium theater is the brilliant red bathing the room. Russell, J. (2006) says "Nouvel unleashes a more conventional theatricality by bathing the room in red light, including the veils of shining metal mesh that line the walls." (p. 117) The proscenium is thought of as a performing classic. This type of stage has been replicated many times throughout history. There have been slight variations to



the shape and layout of the audience and isles but the integrity of a proscenium is still present. Connections could even be drawn to many liturgical buildings. The alter and nave serve as a perfect pair, audience and actor. The proscenium is a performing staple and makes a fine addition to the Guthrie performing complex.

The last space for performing in the Guthrie is the Dowling Studio, or Black Box Theater. This smaller space is located on floor 8 of the Guthrie adjoining the its bathing yellow lobby. The lobby offers spectacular views of the Minneapolis skyline from yellow tinted windows. The lobby and studio can be joined by opening large overhead doors to usher in patrons. The Black Box is the new kid on the performing block. It has come about as performing has moved more indoors and become more experimental. The only fixed element are the six sides inclosing space. This extreme flexibility allows for any sort of audience/actor relationship. Black boxes are often seen in a theater in the round configuration or an irregular stage shape. The

Dowling studio rounds out the capabilities of the Guthrie complex to be an all encompassing space for performing art.



Festival Concert Hall Fargo, ND

The Festival Concert Hall is located on the campus of North Dakota State University. It is adjoined to the Reineke Fine Arts Center. The hall was built in 1981 and is a 1000 seat auditorium. It hosts many local ensembles including all NDSU music ensembles, the F-M Symphony, the F-M Opera. It also serves as a larger assembly space for North Dakota State University. The Festival Concert Hall shows the diversity of an academically affiliated performing space.

The groundwork for the Reineke Fine Arts Center was starting in 1897. The building like many other campus buildings has gone through many renovations and additions.

According to the NDSU Webmaster: In 1897, Festival Hall, originally known as the Drill Hall or Armory, was completed. It was 40x96 feet and cost approximately \$1,500. The building was constructed of wood with a brick foundation. In addition to the drilling of the cadets, it was used as a gymnasium and for college dances. In 1900 an addition measuring 40x40 feet was added. By 1908 the building was again enlarged and rearranged. (2009)

In 1981 the Festival Concert Hall and Reineke Fine Arts Center came to the look they are today. The 1,000 seat Festival Concert Hall was built but under much conflict. In a personal interview with Luther Fragodt December 7, 2009, manager of Festival Concert Hall, the conflicts were made apparent. The NDSU theater department was hoping to see a larger theater added to the campus. The current theater is growing small and is used as a lecture bowl for general education classes. The theater department was hoping for a dedicated theater

to be built. The music department showed great dismay for this plan. They showed great interest for strictly musical performances, vocal and instrumental.

The music department wanted to see the space be strictly a recital hall with a fixed acoustical shell. (2009) The two departments came to a resolution and the Festival Concert Hall was born. It is neither a full theater or recital hall but rather a bastard child of the two.

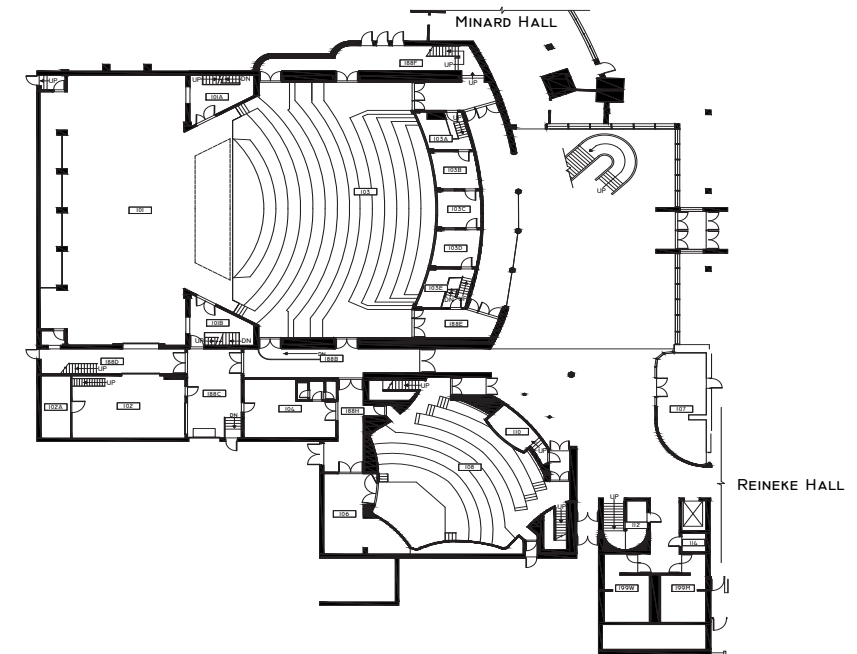
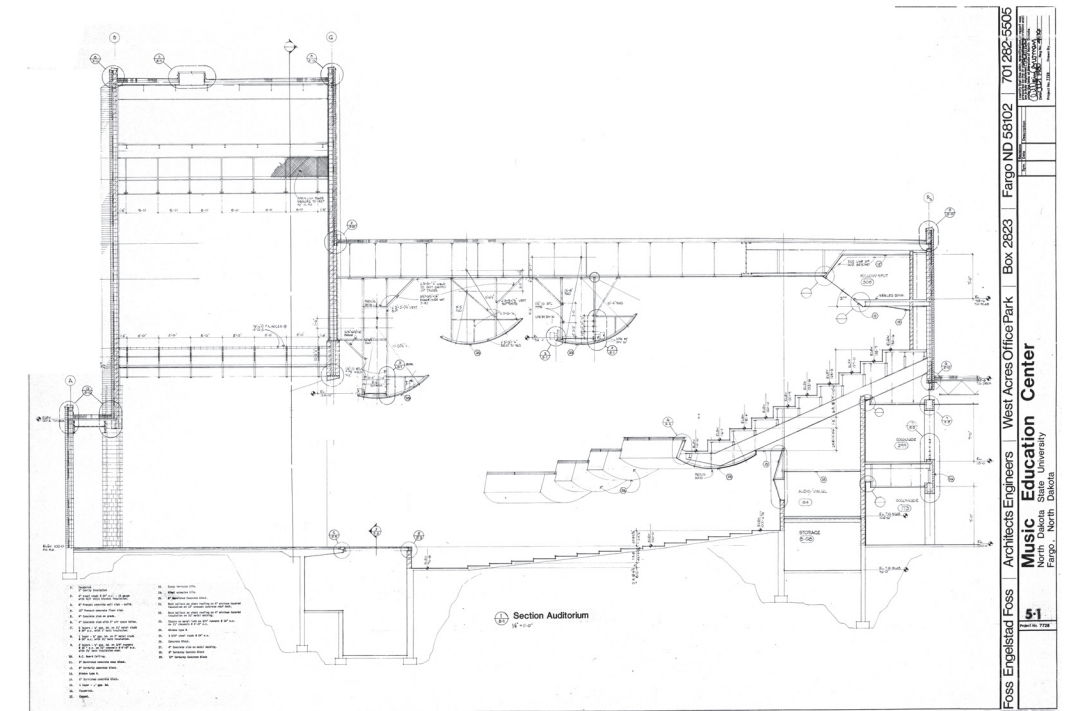
The Festival Concert hall has the basic elements for performing art, audience and actor/ performer. According to Luther Fragodt it is lacking essential elements to be a full theater, "it has a pit, but not a hydraulic pit; It is used to access storage under the stage and audience. The theater is also missing a fly loft. It has the space but for some reason was never built. " (Luther Fragodt personal interview December 7, 2009) The lacking elements is a result of the turmoil during design and construction.

Shortcomings of the Festival Concert Hall are not the purpose of examination. The study is to celebrate the successes of space. The stage is a proscenium opening with a forestage, and the audience is a wedge. This is a common variation seen with proscenium stages. It allows for greater sightlines and more seating. The organization of audience space is the true success of this building. The entrance procession starts with a barrel-vaulted vestibule located in the center of a symmetrical entry elevation. This vestibule opens into a large lobby. This is made possible in part to the collegiate setting. This grand space is the lobby for the hall but also a thoroughfare for students.

The flow of patrons is simple and concise. The entrances to the main auditorium floor are located on either

side in the rear. The balcony entrances are located in the same proximity just up one floor. The second floor can be accessed by a grand staircase in the lobby or stairs in the joining Reineke center. There is a balcony surrounding the open lobby to allow for people watching or conversations between patrons. The ease of entrance and exit allows for a hastened seating for people unfamiliar with the hall. This concept is ideal when dealing with an extremely diverse crowd of people that could be attending an academic performance. This ease of use makes the first-time user feel comfortable in their surroundings.

The success of the Festival Concert Hall at North Dakota State comes not from the stage but from the audience. The way the audience is greeted and shown to their seats is optimal for a patron attending for the first and possibly last time. This great success shows hospitality to the audience in attendance.



Theater for Dance Unbuilt Project

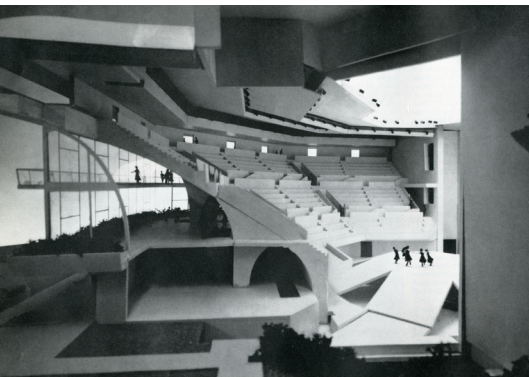
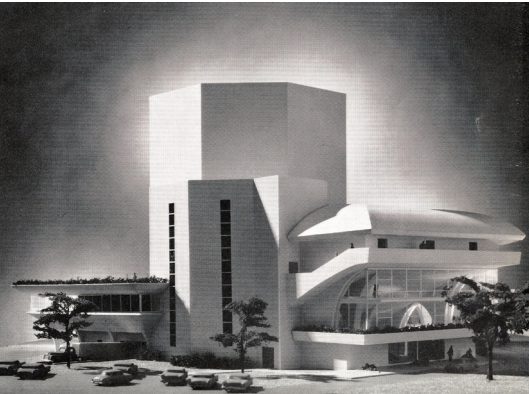
A Theater for Dance exists only as abstracted ideas and paper drawing. It is a collaborative ideal theater for dance designed and illustrated by Barrie Barstow Greenbie with collaboration from choreographer, Elizabeth Harris. This theater was designed to hold 1,100 patrons in an all encompassing dance performance.

The Theater for Dance poses an interesting case, an ideal setting. This theater being designed but never built is able to fully explore every avenue of dance and art. It is a perfect example of what a space purely for dance would look like. The ideas of Elizabeth Harris and Barrie Greenbie have created an octagonal alter for dance.

Greenbie attempts to address not only patrons experience watching the performance but an experience as a whole.

Greenbie, B. (1962) has a philosophy about the experience of an audience member: Just as the theater performance is only the visible peak of a great superstructure of preparatory activity, so also is it only the focal point of a process for the audience that includes anticipation, psychological preparation, socializing, and relaxation during intermissions. (p. 45)

This focus on not only the performance but all leading up to, during, and after can be seen in Greenbie's dedication to the patron spaces. This distinction comes from his view of theater. There is a distinction between what Greenbie, B. (1962) calls "the objective world of external life, and the

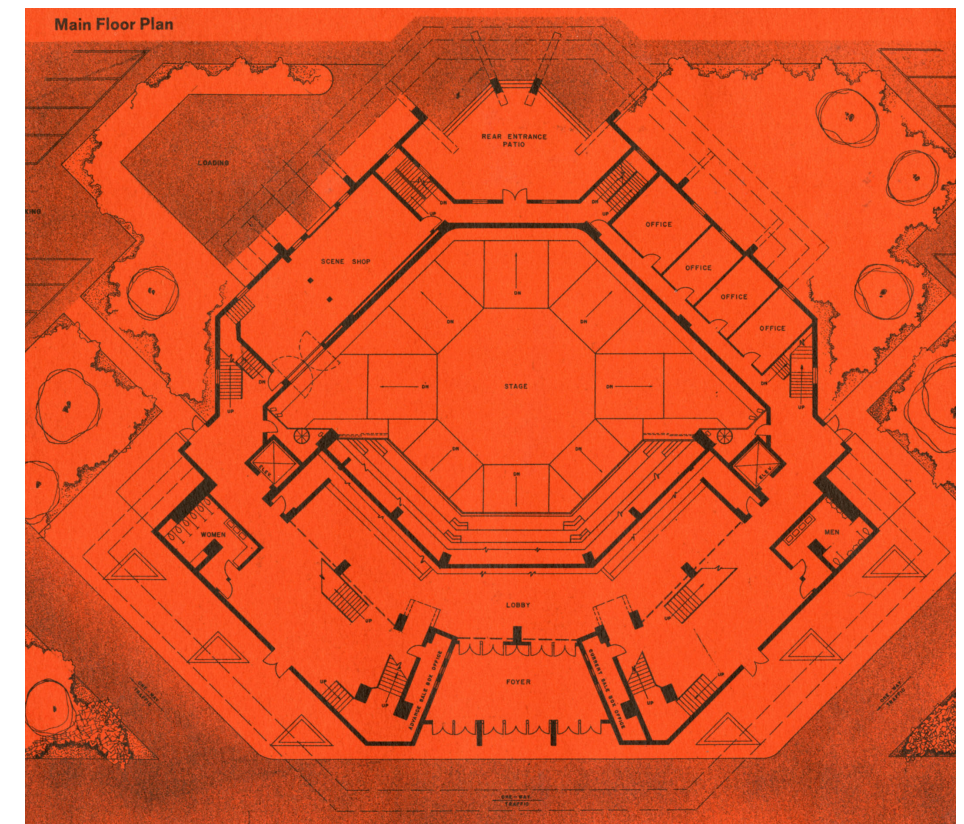
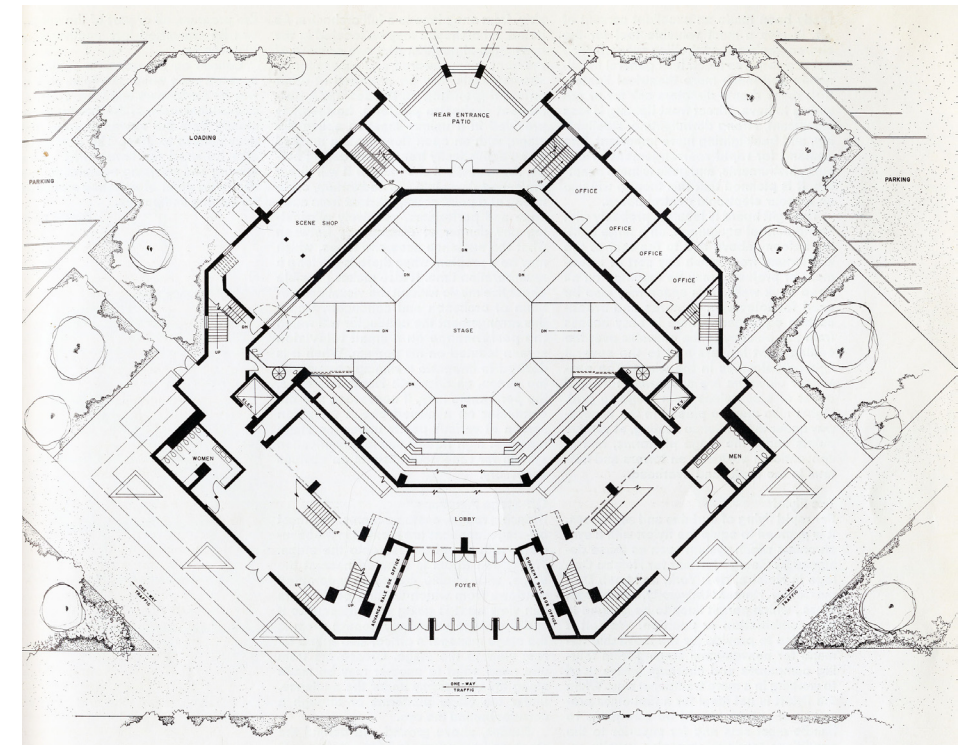
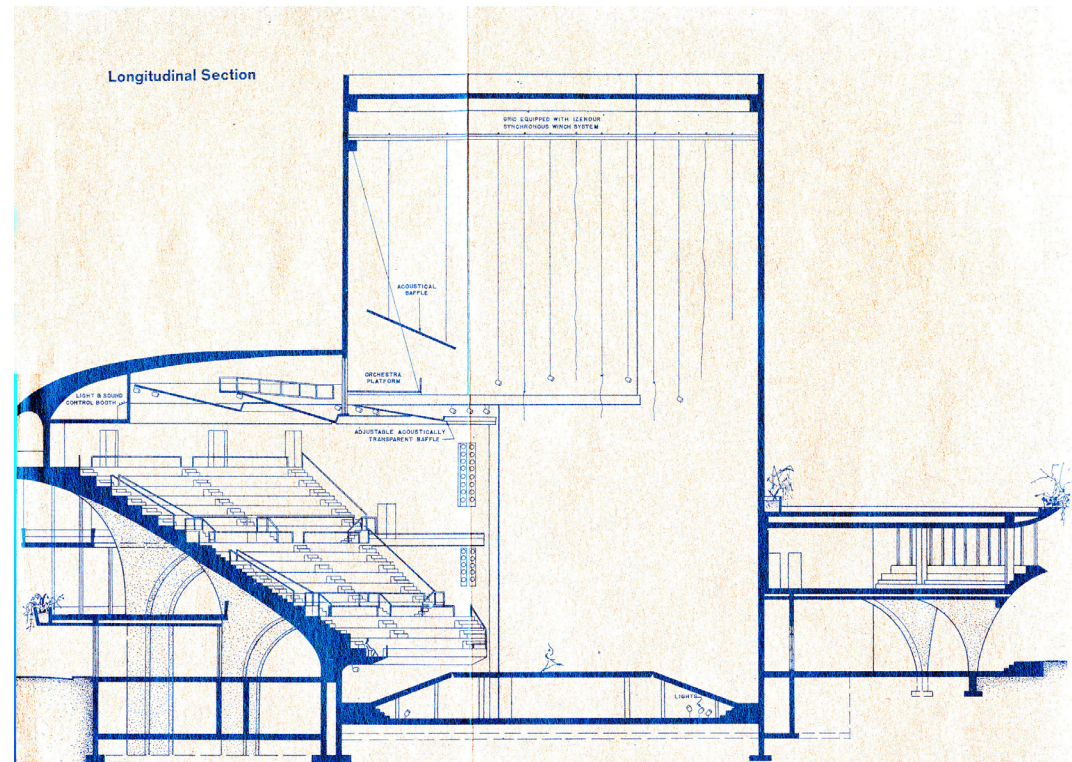


internal world of subjective imagination." (p.45) The audience lounges look outward and offer perspective of the created world of theater. Looking in toward the stage reveals the world of imagination.

The Theater for Dance could be looked at as a thrust in the round. The theater is not purely a thrust, but with seating on only three sides of the octagon, it is also not a theater in the round either. A hybrid between the two has been contrived to place the dance as the optimal focus. The octagonal stage would be raised with rakes approaching it from all eight sides. The difference in height allows great flexibility for the choreographer to suggest vertical movement. Greenbie, B. (1962) has this to say of a flat stage: "On a flat stage all vertical movement, however, is limited to the choreographer's ability to suggest it by the form the movement takes, and by the muscle power of the performer's legs." (p. 48) This octagon also instills an immense focus for the audience allowing them to easily follow along. The raked approaches are all adjustable with hydraulics and can be manipulated to a flat stage.

One of the distinct characteristics of the audience is the vertical proximity to the stage. A proscenium stage often has the stage higher than most of the audience. A thrust often starts at stage-level and ascends. The Theater for Dance does something all together different. The stage is set much lower than the audience. Greenbie, B. address the reasons for this alteration: "This is particularly important for dance, where it is necessary to see the whole figure of the performer, including the feet, as well as to see the whole pattern of movement on the floor." (p. 48) This need to see the entire performer was the reasoning for lifting the audience to a 'sport arena' height.

The Theater for Dance still contains features to qualify it for other forms or performing art. The theater would be built with a full fly loft. This allows for rapid changing of curtains and set pieces. This added feature allows the ability to fly in different sets of curtains to shrink the 88-foot full stage down to 60 or 40 feet. The Theater for Dance is a space for dance but has the necessary equipment to accommodate all performing art.



Summary of Case Studies

A broader understanding of a center for performing arts can be extracted when looking at these cases. Conclusions can be drawn between location, size, function, and existence; the differences can be observed, noted, and perhaps disregarded attributing them isolated instances. Similarities are where essential elements lie. If concepts are able to bridge unique cases they must be identified as essentials.

The most essential element is a pairing; the audience and performer. This duo must exist for there to be performing art. The pairing of the two can differ slightly but the balance must be there. The relationship of the two is what makes the different performing art cases unique. The Guthrie Theater can be used as an example. The Thrust stage brings the audience closer to the performer. This relationship can be felt by not only the audience but also the performer; the audience now envelopes the stage on three sides. This proximity brings new awareness to the performance. The proscenium sets an imagined barricade between the pair. This picture frame isolation sets a relationship but a mostly one-way symbiosis. The black box is fairly unpredictable. With great flexibility comes great surprise. The more intimate setting often sees the audience becoming part of the performance. This is allowed due to the nature of interaction between the actor, set, and audience. The ambiguity can lead to obscurity; this is often why black boxes are last to be used. Regardless of the proximity the alliance exists between audience and performer.

Another striking similarity emerges: circulation space for the audience. Not only in an essential means for relocation, but in a much grander scale. This grand space

often encompasses many functions of the library: box office, coat check, lobby, restrooms, gift shop, entrance, restaurant, and bar. All of these elements, if present, exist in this conglomerate of spaces. This grouping of functions serves as a mingling space for patrons, but perhaps more importantly serves as a barrier. There is a barrier between the reality of life and the whimsical expressions offered of performing art. The one theater that makes an exception is the Guthrie Theater. There is a large picture window that offers a glimpse into the fictitious world created. This view is however skewed perception by the deep blue tint. This refraction offers a small buffer between reality and fabrications. However it is inhabited this lobby space must be present.

One of the most striking and unnoticed similarities was symmetry, pure and simple unaltered lateral symmetry. This mirroring starts on the stage but continues into the audience and often the lobby and farther. This symmetry may be one of the more difficult properties to identify. It may be taken for granted or perhaps is indistinguishable when traveling alone the mirror line. It is possible that when traveling through one side of the lobby and auditorium a sense of symmetry is lost. But more plausible is focus. An inherent focus on the stage leaves one looking primarily at the stage. This intense gaze may distract from the symmetry being identified. The one stage to break this lateral reflection is the Guthrie Wurtele Thrust. The one redeeming quality is the subtlety of differentiation. It may not be by a large measurable distance, but it is unsymmetrical nonetheless.

These basic elements are sculpted into different forms to make a space unique. They are essential elements to the art of performing. Initial concepts should start and grow out

Historical Context of Thesis

Performing arts, as a direct subset of art, is an extremely important and ancient organization steeped in tradition. This institution of art has its roots in Greek and Roman civilizations. Through the ages performing art has changed audiences, changed looks, and changed history. Despite the constant of change one thing has remained steadfast: theater as art!

The history of theater and performing arts is clear and can be traced back to the Greek and Roman. One only has to browse through any architectural history book. Sutton, I. (1999) talks about Greek and Roman theaters in his architectural history book *Western Architecture* "The theaters, which were also religious buildings, occupied sloping sites, with the auditorium hollowed out of a hillside... Roman theaters followed Greek models fairly closely, though they did not rely on sloping sites but were built up on arches." (p. 16,20) Sutton's first reference is to Greek theaters; the second to Roman. As time passes the theater changes owners. This change in ownership does not refer to changes in physical deeds or properties, but rather the culture in which theater exists.

Aagaard-Mogensen, 1976 talks about the cultural placement of theater from the past: "There is a long tradition or continuing institution of the theater having its origins in ancient Greek Religion and other Greek institutions. That tradition has run very thin at times and perhaps even ceased to exist altogether during some periods, only to be reborn out of its memory and the need for art. The institutions associated with the theater have varied form time to time: in the beginning it was Greek religion and the Greek state, in medieval

times, the church more recently, private business and the state (national theater)." (p. 21)

There is an undeniable presence of theater throughout history. Ambiguities don't come from theater's history but rather its composition.

Performing arts and theater can be looked at as two equal parts, audience and performer; for without one the other cannot exist. There is a symbiotic relationship between the parts and the whole of theater. Richard Southern desires to "get at the heart of what Theatre really is". To understand this he uses a metaphor of peeling an onion. When all of the extraneous theater is removed, scenery, tech, stage, curtains, he finds, "Remove these and there will probably fall apart two separate pieces, leaving nothing inside; those two pieces would be the Player and the Audience." (Southern R, 1961, p. 21) The magic of theater and performing arts is the dialog between these two groups of people.

There is one aspect of theater that distinguishes it as a unique form of art. It stems from the way the English language uses the word 'theater'.

McAuley, G. (1999) uses the Oxford dictionary to prove this point: the theater is both a place and an art form: 'an edifice specially adapted to dramatic representations' and 'dramatic performances as a branch of art' indeed, theatre is perhaps the only art form in which the name given to the place where the artistic event occurs, or where the art object is displayed, is the same as that of the art form itself. (p. 1)

This distinct homonym establishes theater and the performing arts as unique forms of art. It also ties back to earlier discussions of art and architecture. This double definition

creates meaning for the art of performing and the art of the space, theater.

Theater in the sense of place and artwork is in crisis. Current society has lost view of culture and how to obtain it. Peter Gelb, Metropolitan Opera general Manager, said in his interview with the Newsroom “I’m not trying to pretend that opera is a populous fair, it’s not it is a high art. But opera as a high art form still should be accessible and understandable by broadest possible intelligent audience.” (Koromvokis, L. (Producer). 2009, December 7) Peter Gelb may have been speaking directly to opera, but this problem is faced by all performing arts and music education.

The PBS broadcast Koromvokis, L. (Producer). (2009, December 7) interviewed Renee Fleming, lead female singer at the Metropolitan Opera in New York, examines possible causes of the crisis: The biggest problem we face, there are a couple, is exposure, as schools have cut back on music education, as main stream media cut back on exposure to those of us who have more niche genres. It has become increasingly impossible for people to become educated. It wasn’t that long ago that an upwardly mobile person in our society felt that the road to that was through culture and education, including opera, exactly, music!

This is a problem faced not only by professionals in the performing industry but by society as a whole. Our cultural identity is in jeopardy of being dismissed. This diagnosis by MET is not fatal; it is cured through education in the arts and music.

The Grand Forks Public School District offers nationally recognized music education. In the last years

the district has continued to show excellence with large enrollment numbers in musical ensembles and performing arts classes. In 1987 the Summer Performing Arts Program (hereinafter referred to as SPA) had its first year of students. The district and educator have not looked back since then; with the Grand Forks Communities’ love and support for music and performing arts the education continues to be outstanding.

The Grand Forks Public School is recognized as one of America’s best music education districts. The publication of Burack J. (2007) shows the city of Grand Forks was proudly nominated to the American Music Conference’s top 100 communities for music education for the eighth year in a row. (2007)

Burack J. (2007) also talks about results from the top 100 communities award: According to the results of the eighth annual “Best 100 Communities for Music Education” survey, repeat recipients of this prestigious distinction cite increased enrollment in and funding for school music programs. While music education has been linked to higher SAT scores, math grades and future success in life, the survey also found that many students hailing from a ‘Best 100’ community have continued their musical pursuits professionally as educators, or playing for renowned symphonies, opera houses, orchestras and on Broadway. Several former students have even become acclaimed recording artists, including Outkast, Bob Seeger, Iggy Pop, Tanya Tucker and Isaac Hayes. (2007)

Although Grand Forks may still be waiting for their acclaimed recording artist, they are not waiting for great education. The quality instruction that the students receive is not being

contested. This can be seen district wide with swelling enrolment in SPA!

Excellent music education is not limited to just Grand Forks, but the Summer Performing Arts Company is. The SPA program was started in 1987 and according and approximation by Peterson, A. (2009) the program has enrolled over 13,000 students in the 22 years of the program. SPA is an eight-week summer arts program available for students in the elementary, middle and high schools of Grand Forks. Staff participate from the Grand Forks Public Schools, University of North Dakota, and around the country. Students learn in a variety of experiences through the arts. SPA students produce several theatrical performances and a variety of concerts and recitals. Classes are offered in a variety of areas: vocal and instrumental ensembles, visual arts, vocal and instrumental lessons, and technology. Students also earn credits toward graduation for their participation. (2009) Over the 22 year of SPA's existence the program has totaled staggering statistics according to Peterson, A. (2009):

Impact on students:

- Approximately 7,402 students have participated in the Elementary SPA program from 1987-2009.
- These figures, combined with student lesson totals and the Grand Cities Children's Choir, give an approximate number of 13,759 students that have participated in the program from 1987-2009.
- To show how the program has grown, in 1988, SPA had 30 participants and 13 staff members. In 2008 there were 1,108 students and 60 staff members.
- A student who participates in the SPA program from Kindergarten or first grade until he/she graduates from high school will spend the equivalent of an entire school year with the program!

Impact on the community:

- SPA has given over 356 public performances to over 119,800 audience members!
- When adding up staff members per year, there have been 964 staff members of the SPA program.
- Of these 964 staff members, 486 were alumni of the SPA program.

SPA has won several awards for its accomplishments, including:

- Nelson-Miller Award, SPA/GCCC Volunteers (2006)
- Grand Forks Public Schools ~ Top 100 U.S. Communities for Music Education (1999-2006)
- Kennedy Center Partners in Education Team Member (1999-2006)
- Wal-Mart Teacher of the Year (Melanie Popejoy) (2004)
- Wal-Mart Teacher of the Year (Dean Opp) (2003)
- North Dakota Governor's Award for the Arts w/ GFPS (2002)
- Awarded a Partnership in a Local Mentoring Grant (2000)
- North Dakota Governor's Award for the Arts (1999)
- Community Spirit Award -- Keep the Faith (1998)
- Mayor's Award for the Arts -- Keep the Faith (1997)

(2009) With a staggering number of over 1,100 students giving time out of their summer vacation to participate there is an undeniable success story with SPA. The growth and statistics from The Summer Performing Arts Program illustrate their own success.

The great successes in the Grand Forks Public School

District and SPA means music and performing arts are going well and all is fine. Well yes, the education is fine, but there are problem that come with great success. The SPA program, continuing to swell every summer, spans 2 high schools, 2 middle schools, and numerous elementary schools throughout the district. These diversified locations change year to year based on availability of schools during the summer and locations of registering students. This annual changing

of location leads to problems associated with coordinating staff, resources, and students.

Larger number of enrolling students brings additional audience members that want to see performances. Great community support has established a loyal audience that attends performances in addition to family members of new students. Facilities often reach capacity and people have to be turned away from shows for lack of space. A simple solution arises: offer more performances. The dilemma queried

is equally as simple. As young student performers adding shows in is not a possibility due to student's abilities to do multiple performances in succession. Fatigue and vocal injury can occur and severely decrease the quality of performance for the students. Extending the timeline of the already tight two-month timeline cuts further into student's already short summer break.

The growth period experienced has led to one deduction: facilities. The Grand Forks Public School District is in dire need of a new space for performing arts. According to Brad Sherwood, choral director at Red River High School, new facilities are long overdue, "The school district hasn't



STUDETIN IN THE SPA PROGRAM (1999): Brad Sherwood photographer

done anything for the performing arts since they built the central theater in 1937." (B. Sherwood, personal communication, December 8, 2009) The Central theater Brad speaks of is in one of the other Grand Forks schools. The 'theater' built in 1967 at Red River High School was designed and constructed as modular classrooms. This budding educational concept of the 1970's was short-lived and rather ineffective. The result is a demeaned 'theater' left in the wake. A true new space for the performing arts is needed in the Grand Forks Public School District.

Art and culture is in danger of extinction by lack of education. This is a problem to be cured by education at an early age. Grand Forks Public Schools have a great program now, but this triumph by no means allows for mediocrity. Without constant revival and upkeep the education will become stagnant and suffer. This failure of education is what Renee Fleming was warning about, a road to being upward mobile in our society is through culture and education in music.

Goals for Thesis

Academic:

Academically speaking, thesis is the culmination of my degree from NDSU. It has been an obstacle and goal since I first entered into this institution. I have witnessed five classes participate in this ritualistic gauntlet; now it is my turn. With every passing year I have become more aware of what lies ahead. My first year I acknowledged, my second I was in awe, my third anticipated, fourth I feared. My fifth year I completed. All the years of thesis I have learned, critiqued, appreciated.

For now it is my turn to take part in this passing of the architectural classes. I have gathered my knowledge and know it is time for me to prove I can be an architect. This thesis is just the doorway into practice.

Professional:

Thesis is a transition between school and practice. Completing this project and earning a degree is the first step to proving my competence in practice. Thesis will be the most comprehensive and time consuming project I have completed. I know it is only a small portion of the detail that is waiting for me with issuing construction documents. It is my hope that this will be my first theater of many. I have a desire to continue to design and construct performance spaces as my love for the arts continues to grow through education and appreciation of an art form as old as art itself. I also have a high expectation that my thesis will open up opportunities for employment. As economic times make finding work difficult I hope my thesis clears a path to employment.

Personal:

I hold a strong belief that theater brought me to where I am today. I credit my knowledge, skills and personality to things learned in theater. This is my small tribute to the institution that has given me so much. More specifically I am giving back to the theater and department that has been such a large part of my life. I am going to strive to honor such a great institution and form of art.

Site Characteristics Red River High School Grand Forks, ND

The area occupied by Red River High School could be viewed as a prairie in the suburban plain. The public school district and park board own nearly half of the ¼ section of the city. This large expanse of space opens up out of the suburban context giving breathing room to the practice of education. The school and surrounding buildings have had additions numerous times to bring them to the state they are currently seen in. The site of interest is located on the south side of the school in what are currently football practice fields.

The views from the site are rather limited. To the north stands Red River. This large brick obstacle stands up to 20 feet high in some places, the lower sections are still far too high for sight. This brick wall creates a figurative backdrop opening to the rest of the site. The west side has a chain-link fence that runs the length of the site and the adjacent track. The fence was long ago consumed by vines and now is rather obstructive to views. This band of brush blocks sight of pedestrians on the other side but still let the buildings peak over the top. The fence provides a pseudo horizon reshaping that side of the site. The south opens to a trailer court. Views of the low homes are offset by towering trees that run along the street. This provides a duality between the stout and stalky. The east side of the site rounds out with apartments. The views stop at the back side of garages and repetitive windows. The numerous complexes are offset just enough to stop views from reaching the next street. The corners of the site are the only places views can be slightly extended before hitting more residential development.



IMAGE 1: LOOKING NORTH



IMAGE 2: LOOKING EAST



IMAGE 3 : LOOKING SOUTH

IMAGE 4: LOOKING WEST



The original school was built in 1967 and had one addition in 1992. This addition added much of the building around the existing structure. The forms visible from the site were built with the addition.

The symmetrical band and choir room tower above the rest of the school, but break nicely to window on either side. The other structures lie outside of the site but are still notable. The Cushman Field track peaks out from behind its fenced-in façade. The trailer homes on the south are varied but from a distance fade to similarity. The apartments on the east have turned their back to the public school. Garages have been built forming a short wall against the school property.

The sunlight that reaches the area is superb. Being that the site is on the south in the middle of three football fields the light has an unobstructed path. The Apartments on the east and track on the west cast long shadows at dusk and dawn. During the winter when the sun is lower the tall trees on the road can cast shadows on the far end of the site. At night the light dynamics change dramatically. The large open expanse of field turns into a black hole in the city. The school, if occupied, spreads artificial light out of the curtain wall that looks to the south. This doesn't provide much usable light but illuminates the figures in the windows to the far end of the school property. If there is a game at Cushman field

IMAGE 5: LOOKING SOUTHWEST



the lights spill light pollution far beyond the fence. The city road, 20th Ave S., at the southern end of the site is poorly illuminated with street light.

The vegetation on the site is sparse and barren. The practice fields are covered in well-maintained and watered grass. Trees have been planted along the streets and most are starting to reach maturity. There is a cluster of evergreen trees with a few deciduous in a small mound toward the northwest. The northeast also has its small plantings, there is a cluster of trees and natural prairie grasses.

The water that reaches the site is often of human cause. The field is watered often to keep it green for sports; there is also a water trough set up to the north when sports teams practice. The building has HVAC equipment walled off on the exterior of the building, this condensates heavily during the summer and runs off into a sewer. Natural rainfall, if in moderation, is absorbed into the soil. With how extremely flat the site is water runoff, or more specifically the lack there of, is an issue in extreme precipitation.

Wind can be extreme on the site. Stronger and faster winds than typically felt in a suburban site are present here. The large open expanse allows for winds to increase in strength and speed. The increase in velocity and strength is felt when the wind is coming from any direction. The openness of the field is a burden and a blessing. The school offers minimal shelters the northern most extremes of the site but then causes eddies where wind rolls off of the roof.

The overwhelming mark of human intervention is the football fields. Every spring and summer the field is painted with new 10 yard lines marking the return of high school



IMAGE 6: HVAC RUNOFF

IMAGE 7: EGRESS AND RHYTHM



sports. This is taken in context with the overwhelming suburban context, already affected greatly by human hand.

Distress on the public school ground is kept to a minimum. Maintenance is done very well; anything broken is fixed, painted, or replaced. Distress off of the school property is out of the control of the district. Residence turnover in the trailer court leads to vacant lots. This isn't a frequent occurrence but is seen.

IMAGE 8: FOOTBALL FIELD



Site Information Red River High School Grand Forks, ND

The figure-ground shows essential paths and open and closed relationships. Main roads can be identified. The road directly to the north of Red River is 17th ave s. to the east is 20th st s. and the west Columbia Road. The openness of the practice fields can now be seen. The figure ground shows the suburban 'prairie' created by the absence of any building. Placing a building into the open field will help to fill some of the void in the Grand Forks City fabric.



extreme flat makes it difficult to see past even the lowest obstacles. A fence around Cushman Field blocks views to the west. The south is blocked by the trailer court; the east by apartments. Taller built objects can be viewed over the patchwork urban landscape.

IMAGE 8: FOOTBALL FIELD



The vehicular traffic is located primarily to the parking lots. There is high traffic prior and post school hours when students are arriving. 'Bad' driving habits of teens have led to speed bumps being installed on the school roads. Traffic on 17th Ave S. is fairly moderate. It is a local collector and experiences moderate traffic.

IMAGE 8: FOOTBALL FIELD



Pedestrian traffic is similar to vehicular, in the sense of timeframe. There is a large influx of students and staff at during the school day. Weekends fluctuate with the different activities going on at the school. Pedestrian traffic, non-school related, tends to stay on the perimeter of the site. This traffic tends to be local residents walking pets or exercising. Pedestrians stay mostly on the sidewalk or paving. This is due in large nature to vehicles; pedestrians are simply walking to vehicles.

IMAGE 8: FOOTBALL FIELD



Vegetation is all but native. The maintained turf is watered and cut to be the optimal length. Trees around the site have been planted, mostly in a linear fashion. Growing conditions are favorable but any new vegetation must take root and compete with the watered turf.

Topography and Grand Forks conjures up comical images of oxymorons. Grand Forks has limited typography located along the Red River. Most of the city exists within ten feet of elevation. The area of Red River High School has three feet of contour change. There areas of greater change, three foot, are landscaped mounds found on the site. The rest of the site exists within one foot of elevation change. Precipitation is absorbed into the ground when saturated excess pools. Pavement is graded and drained into sewers.

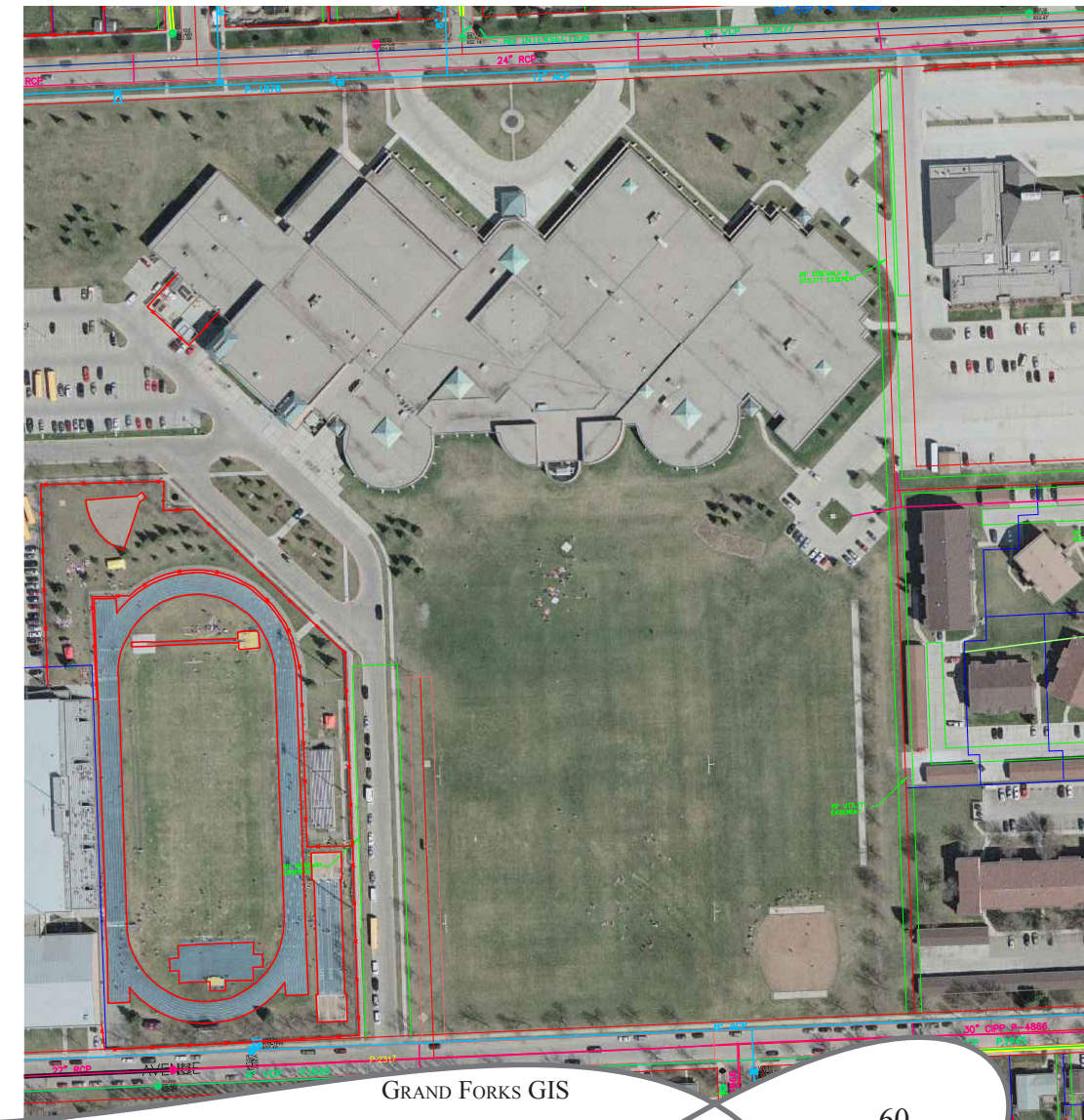
Grand Forks Public School owns the entire lot Red River sits on. Cushman field adjacent to the school is also owned by the district. The hockey arena that completes the



GRAND FORKS GIS

block is owned by the park district. Lot lines can be noted in red. Road outlines and centerlines are marked with a salmon but can also be clearly seen by the aerial photo. Topology is also noted; the eggshell contour running around the school is 835 feet above sea level. Other contours are in cyan and are few and far between. Primary contour changes are cause by paving; noticeable patterns follow parking and sidewalks. Trees are marked with green dots and can also be seen on the photo.

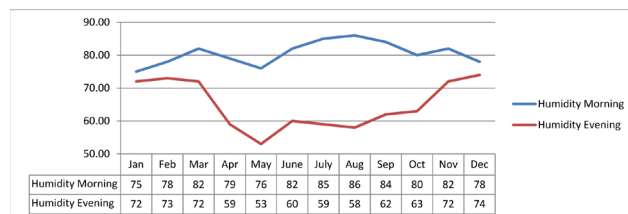
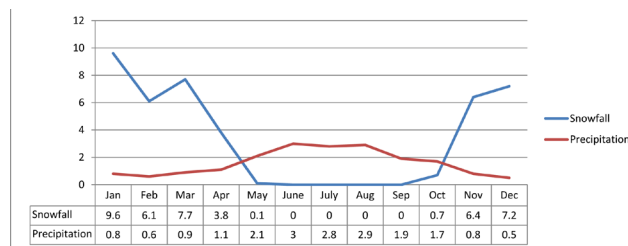
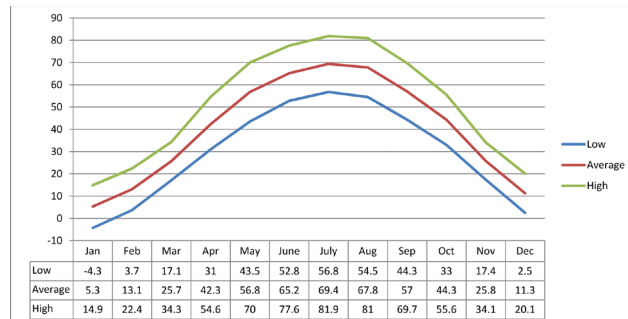
The utility map is far more barren. Utilities can be noted mainly in the streets. Sanitary and storm sewers run in the street colored blue and pink respectively. The water main is just off of the street marked in a cyan. There is a small utility easement on the far east side of the property marked in green. Fences have been noted in red. A fence is a notable feature for pedestrians; they limit travel and vision.



GRAND FORKS GIS

One of the most notable elements of Grand Forks is the winter weather. City data (2009) notes 3 'awards' Grand Forks has received for its weather:

- #1 on the list of "Top 101 cities with the lowest daily low temperatures (population 50,000+)"
- #1 on the list of "Top 101 cities with the coldest winters (population 50,000+)"
- #1 on the list of "Top 101 cities with the largest temperature differences during a year (population 50,000+)"



DATA FROM CITY DATA

The difference in temperature is due to the extremely cold winters with relatively hot winters. The geographical location puts Grand Forks less than 100 miles from the geographical center of North America. This extreme proximity means the weather is heavily affected by fronts and the jet stream.

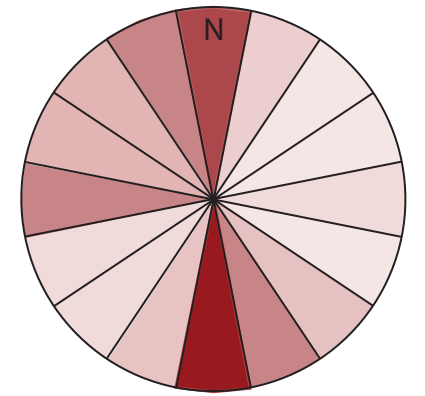
Humidity and precipitation show no notable extremities. Snowfall accounts for a little less than half of total precipitation. Snowfall levels are much larger than precipitation due to the fact the one inch of snowfall does not equate to one inch of precipitation. The cold weather affects the quality of snow; it is very fine and dry.

The soil at Red River High School shares its characteristics with much of the river valley. According to the United States Department of Agriculture the soil is a silty clay loam. There is a slope of 0 to 1 percent. This low slope with very poor water absorption leads to drainage problems. The water table is anywhere from 18 to 42 inches below grade. The soil has a limited bearing capacity but with proper foundations construction is possible.

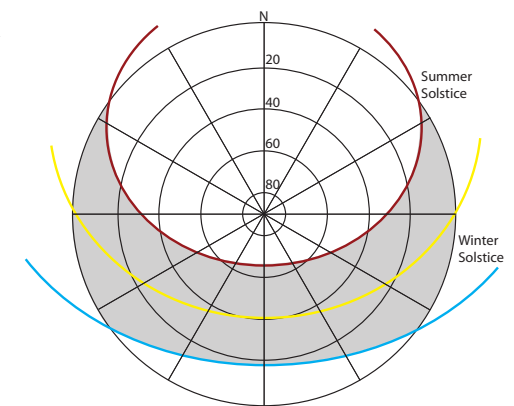
The utilities are located primarily on the exterior of the site. Any addition to the high school will tie into existing facilities. The location for an addition clear of any buried utilities.

The wind direction is primarily out of the north and south. The wind rose is read by interpreting the tonal strength. The deeper the color is the larger proportion of wind coming out of that direction. The extreme flatness of the Red River Valley is partially responsible for the high wind speeds. Grand Forks County is unofficially the highest concentration of shelter belts in the world. This only reinforces the Jeffersonian Grid seen in the area.

The latitude of Grand Forks, 47° 56', dictates the sun angle. The sun angle at noon can differ as much as 40° between winter and summer solstice. This large difference can be employed to passively heat a building during the summer. Low sun angles and deciduous trees can work in combination to provide optimal thermal gain or block.



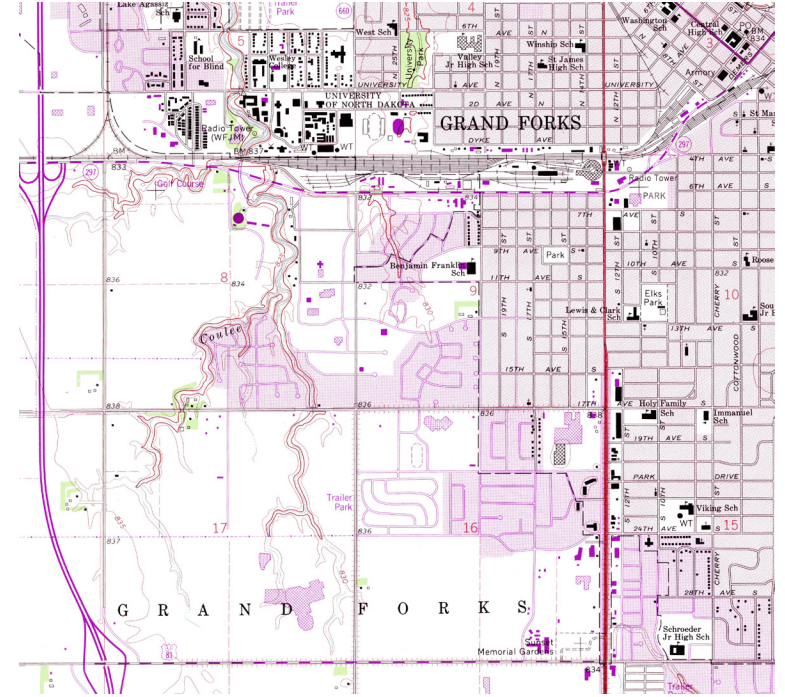
DATA FROM CITY DATA





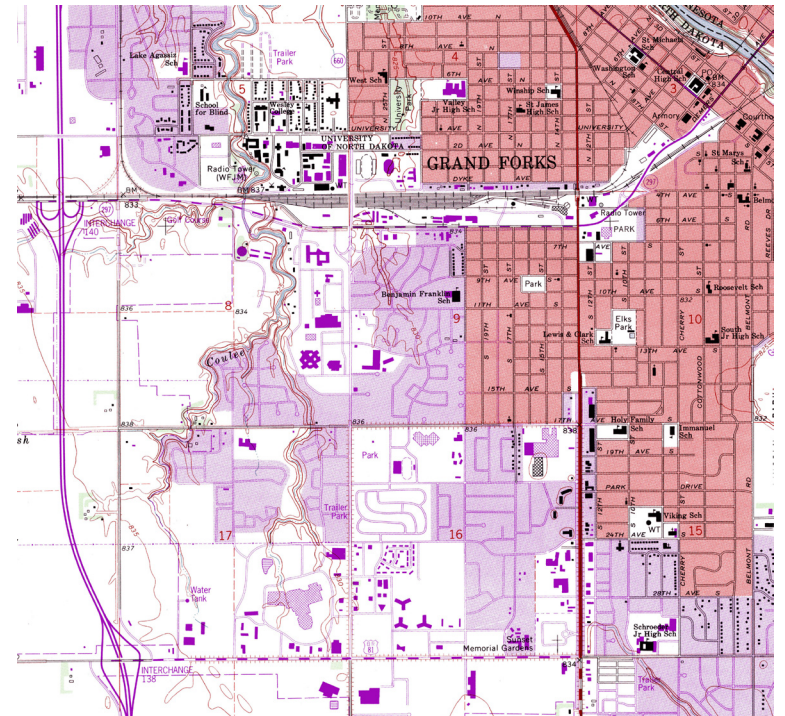
GRAND FORKS GIS

Growth Of Grand Forks



1976
1992

Dates of map



Programing

Site Specifications

Lot Size- 1,494,452 S.F

Existing Structures: Red River High School, Cushman Field

Public Spaces

Lobby	10 S.F per person x 1,000	10,000 S.F.
Restrooms	400 S.F. x 2	800 S.F.
Box Office		400 S.F.
Entry		100 S.F.
Total		11,300 S.F.

Performance Space

Audience	10 S.F. per person x 1,000	10,000 S.F.
Stage		2,400 S.F.
Backstage		600 S.F.
Sidestage	300 S.F. x 2	600 S.F.
Circulation	10%	1,360 S.F.
Total		14,960 S.F.

Support

Dressing Rooms	600 S.F. x 2	1,200 S.F.
Scene Shop		2,000 S.F.
Paint Shop		1,000 S.F.
Costume Shop		1,000 S.F.
Receiving		750 S.F.
Properties Storage		3,000 S.F.
Costume Storage		1,000 S.F.
Offices	200 S.F. x 5	1,000 S.F.
Circulation	15%	1,095 S.F.
Total		12,045 S.F.

Technical

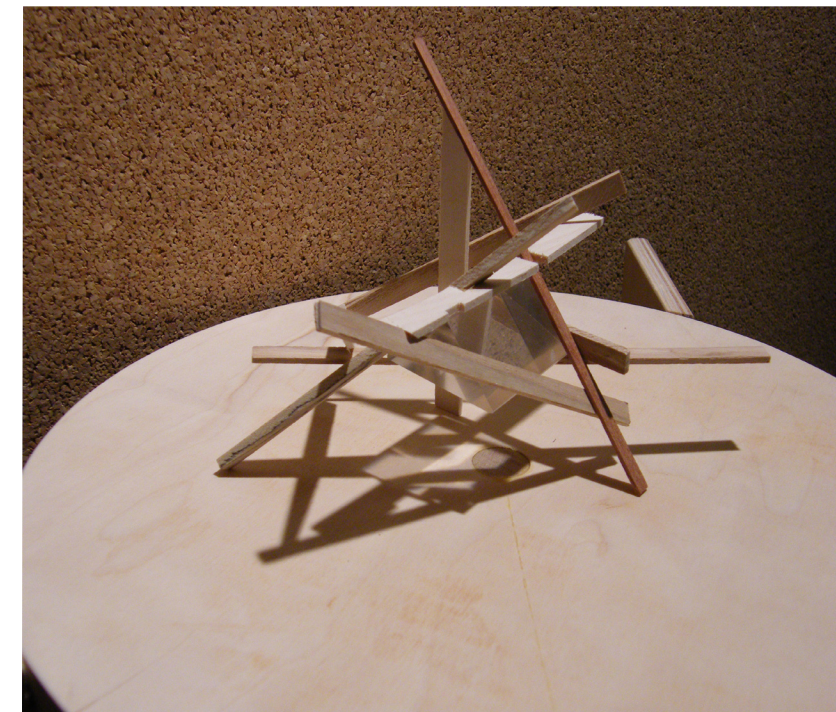
Light Controls		200 S.F.
Sound Controls		200 S.F.
Spot Booth		500 S.F.
Video		500 S.F.
Catwalks	Above Audience	(1000 S.F.)
Fly Rail		200 S.F.
Electrical Closet		200 S.F.
Total		1,800 S.F.

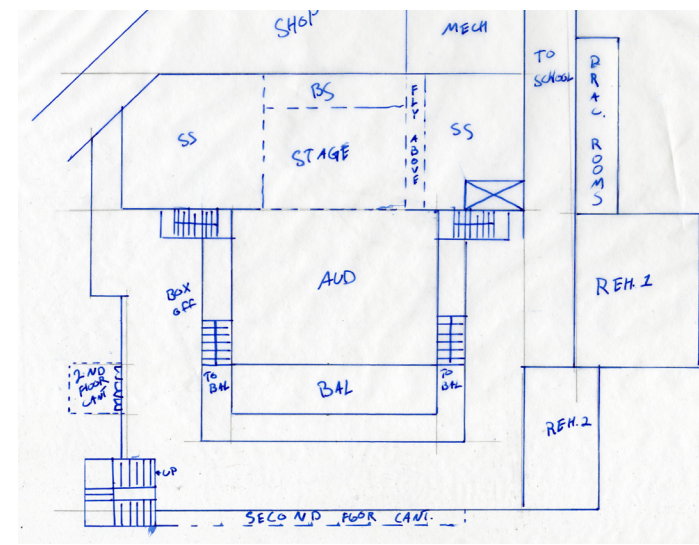
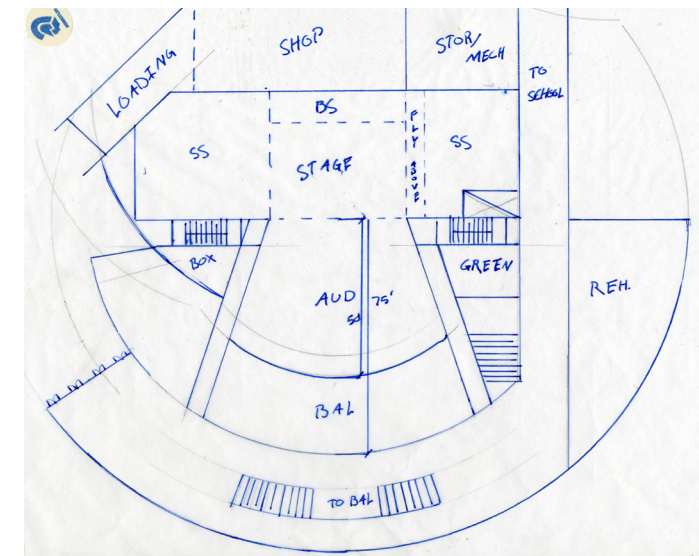
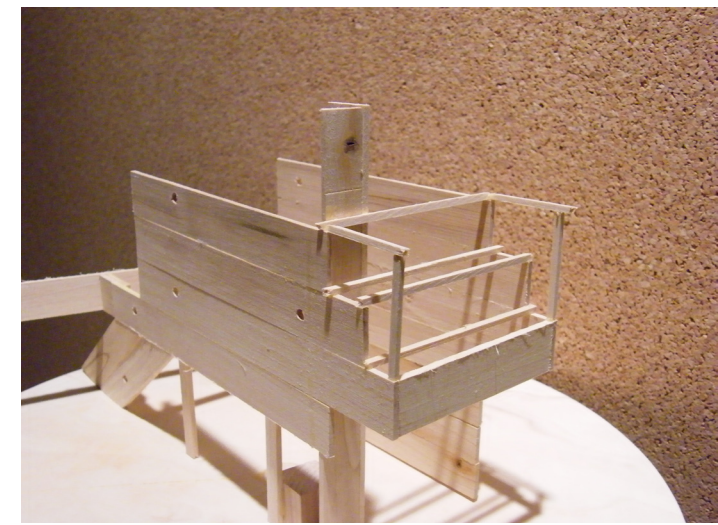
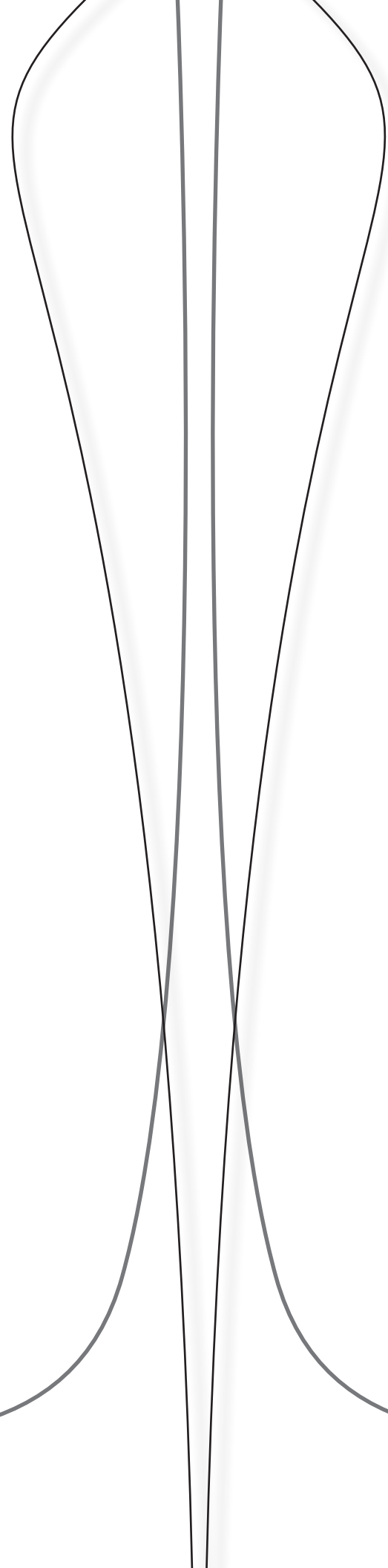
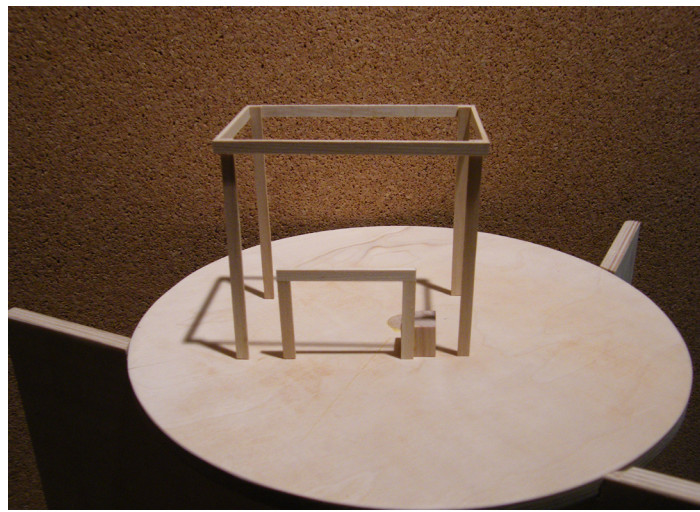
Total 40,105 S.F.

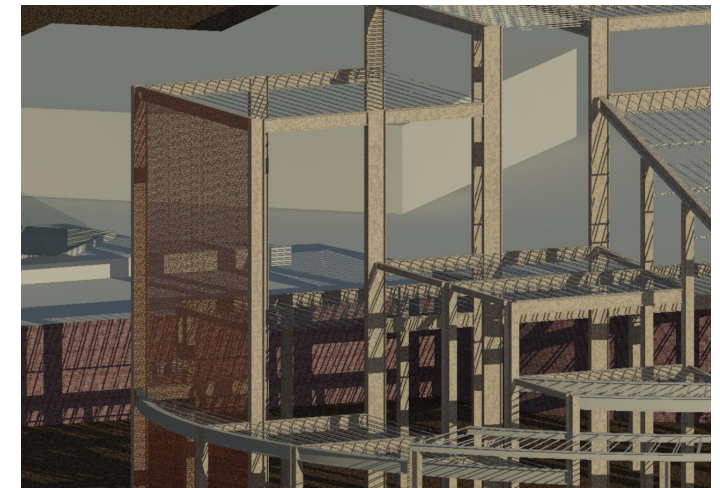
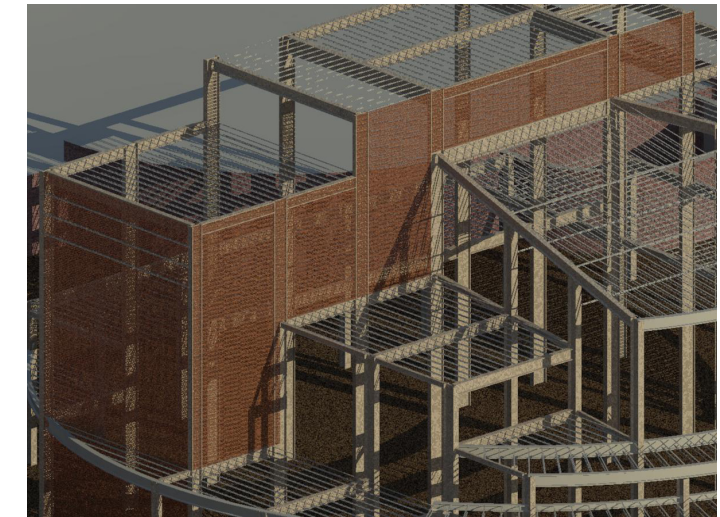
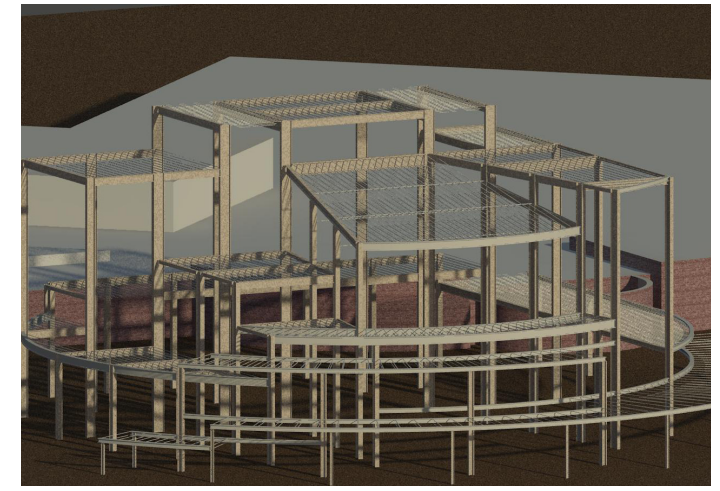
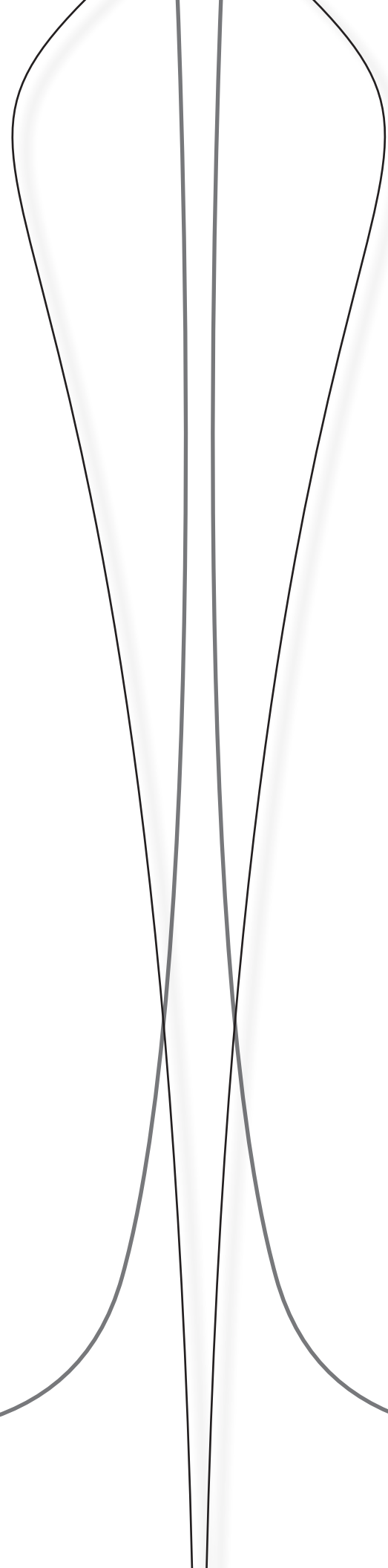
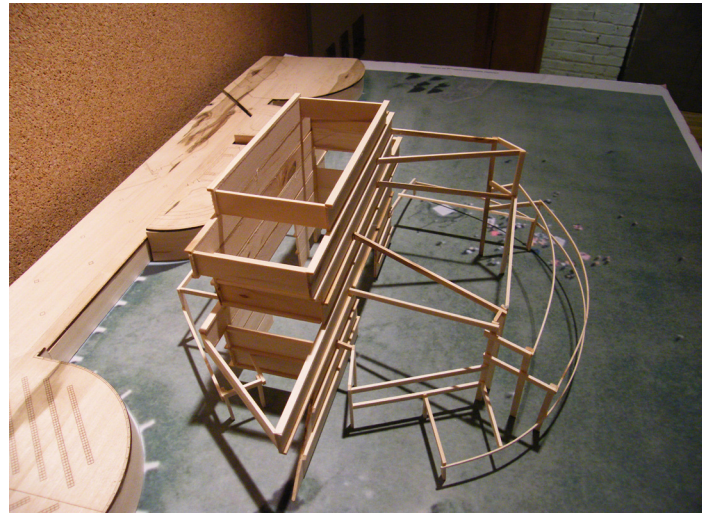
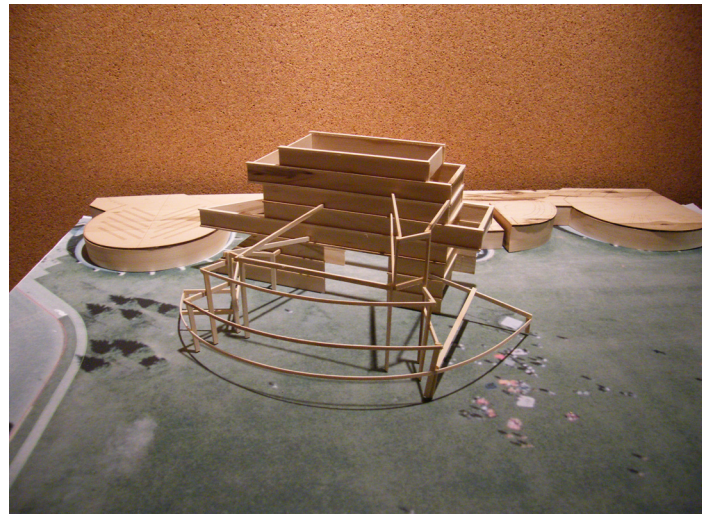
Mechanical 10% 4,000 S.F.

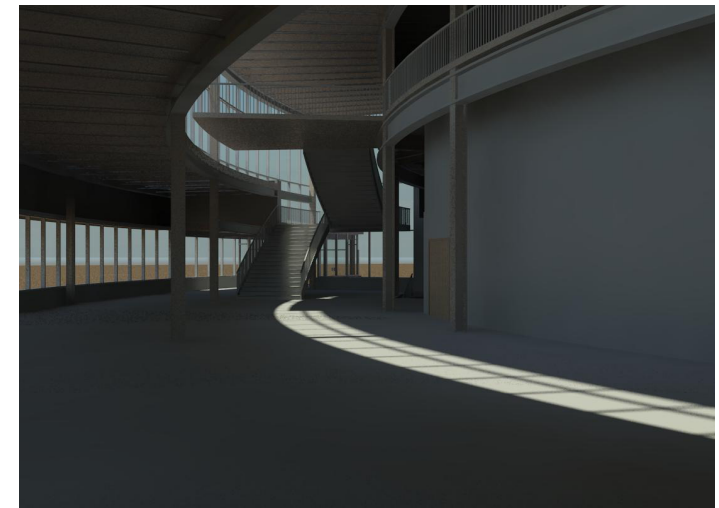
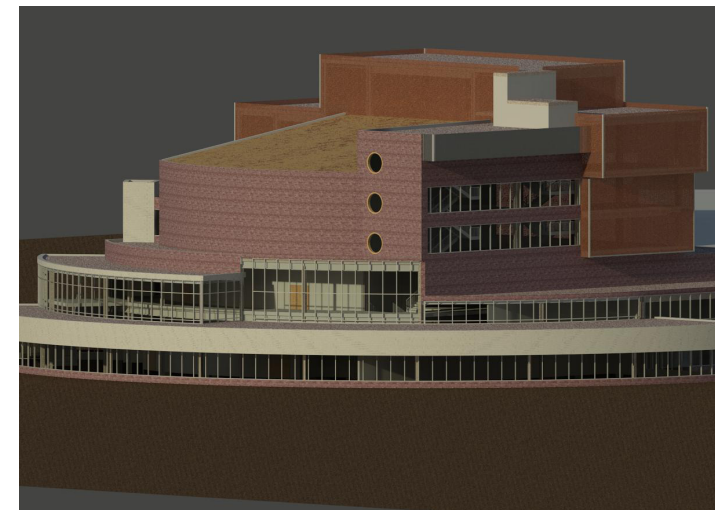
Total 44,105 S.F.

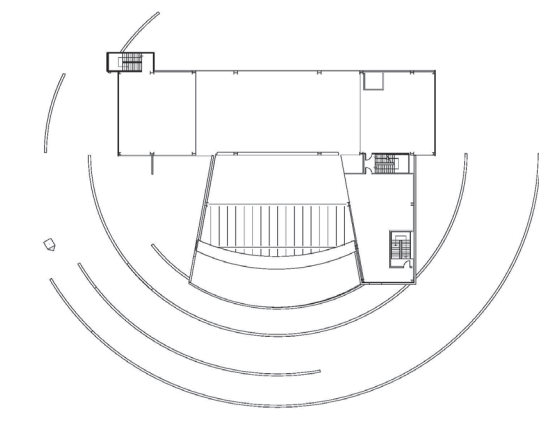
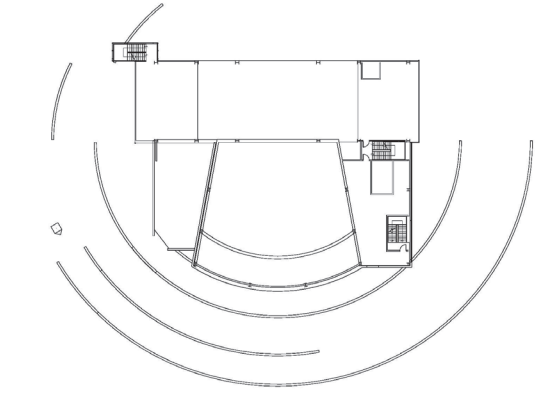
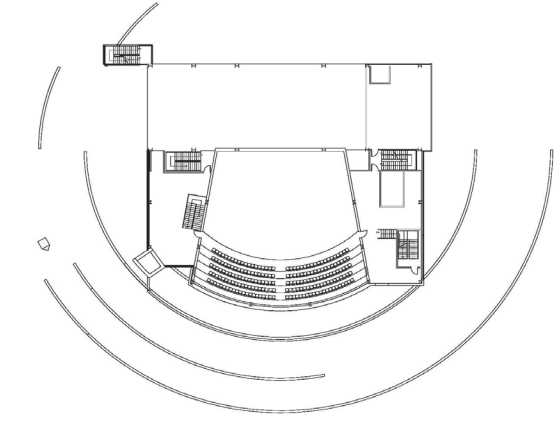
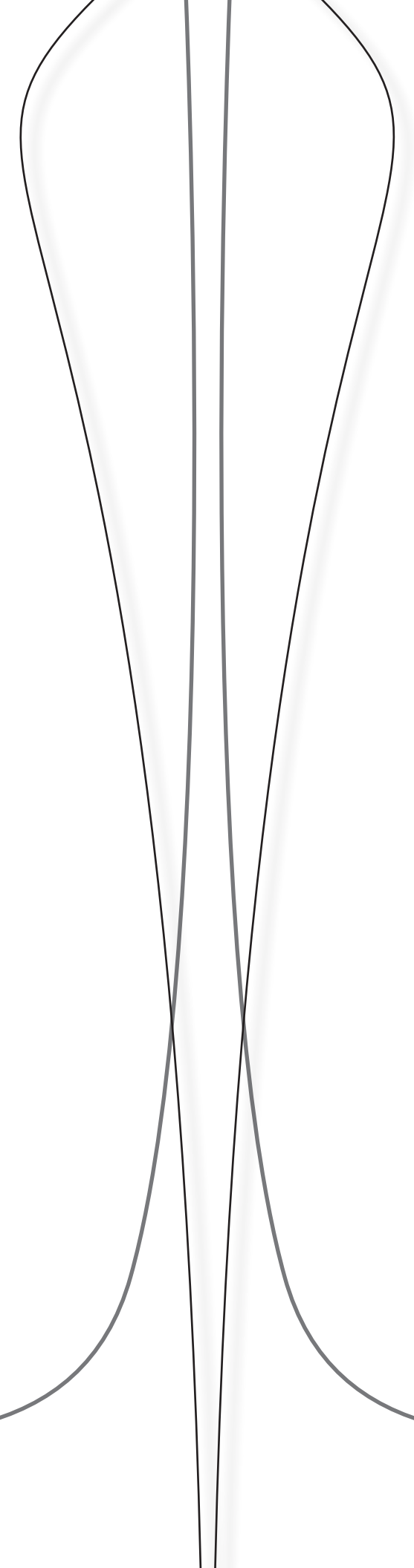
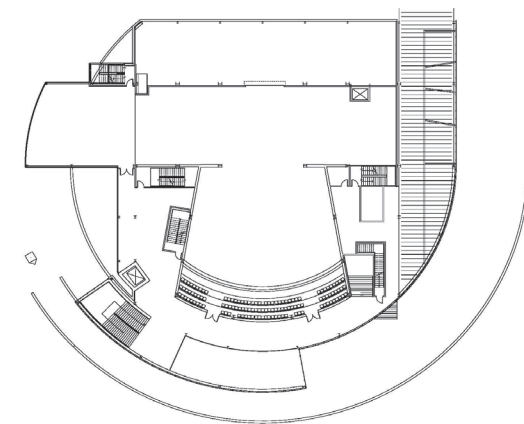
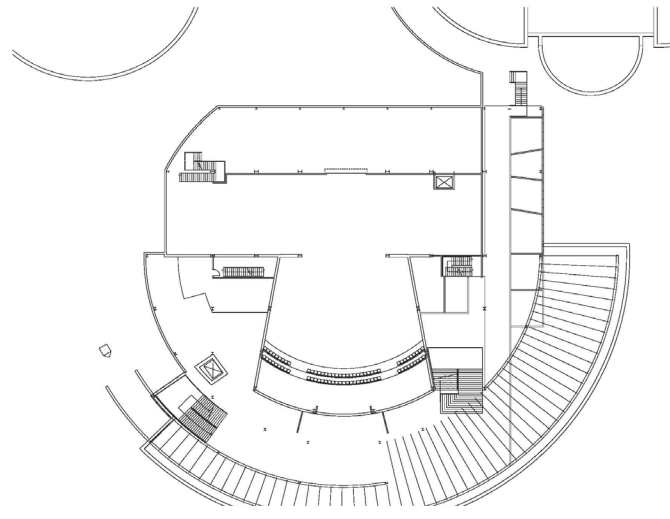
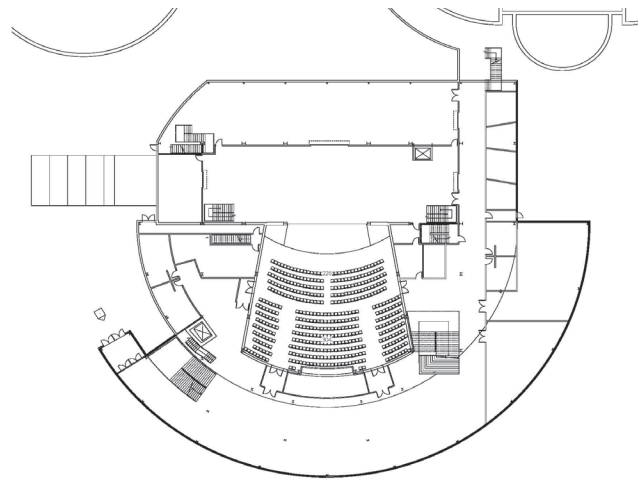
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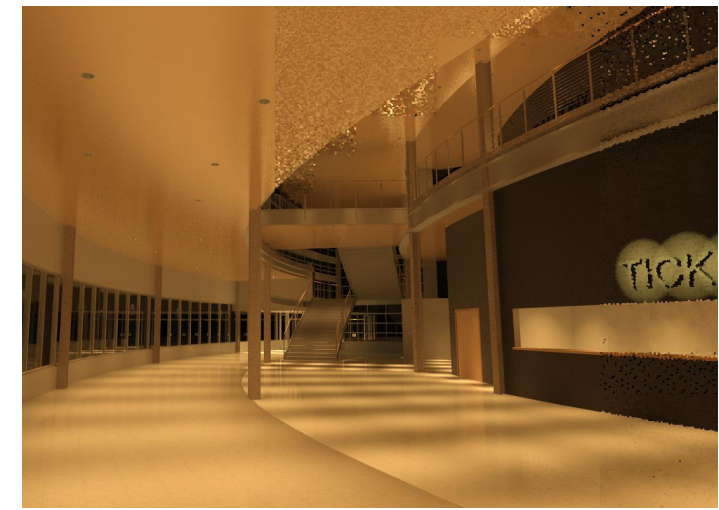
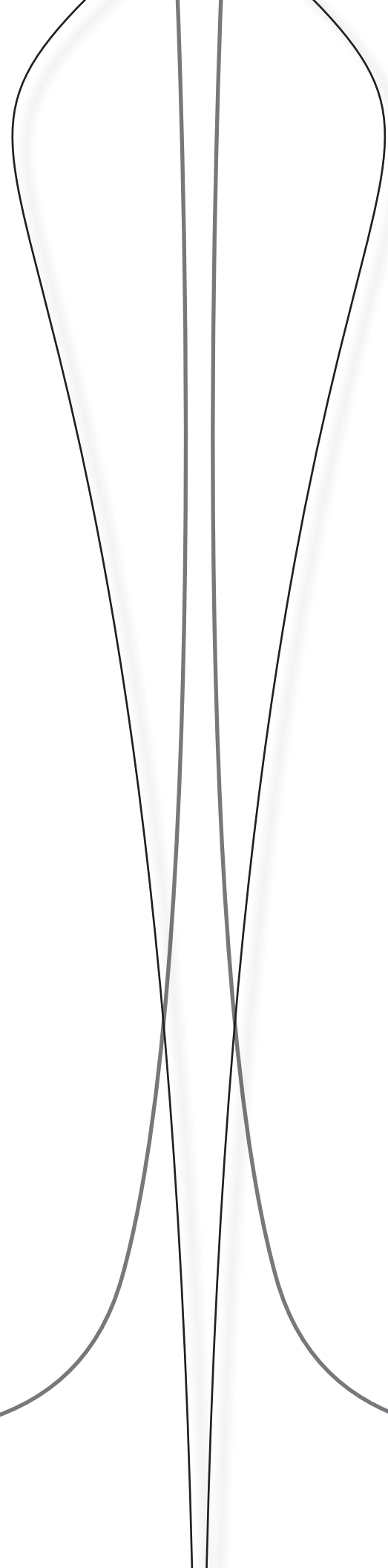
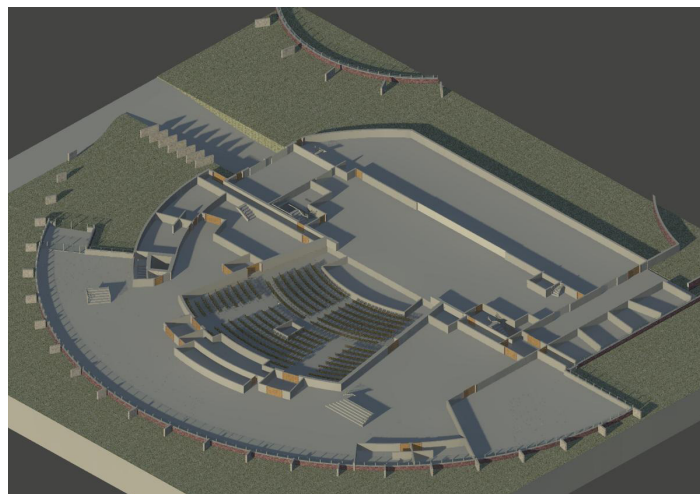
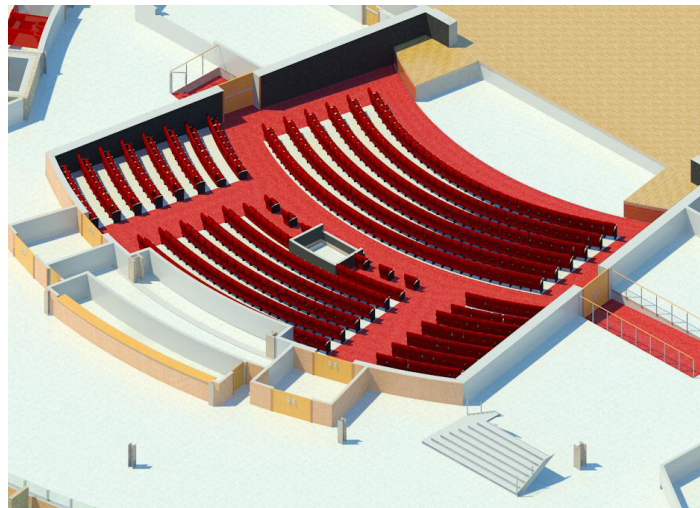
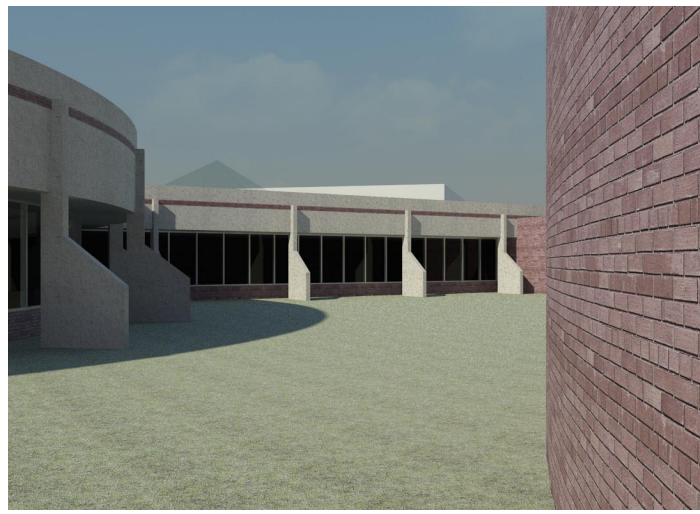


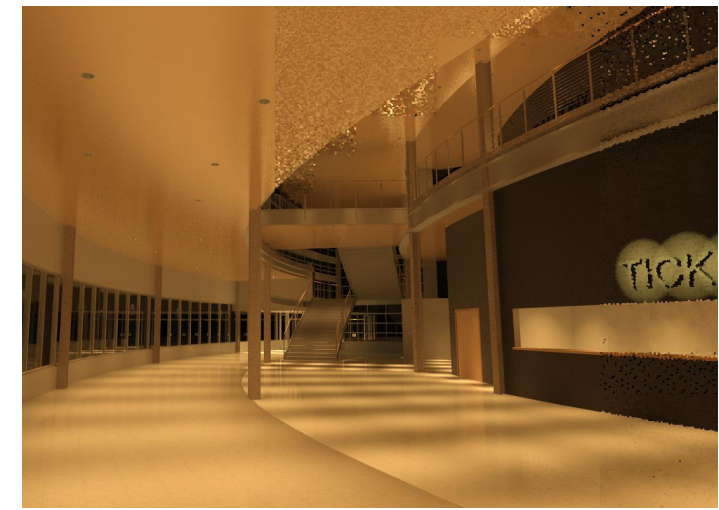
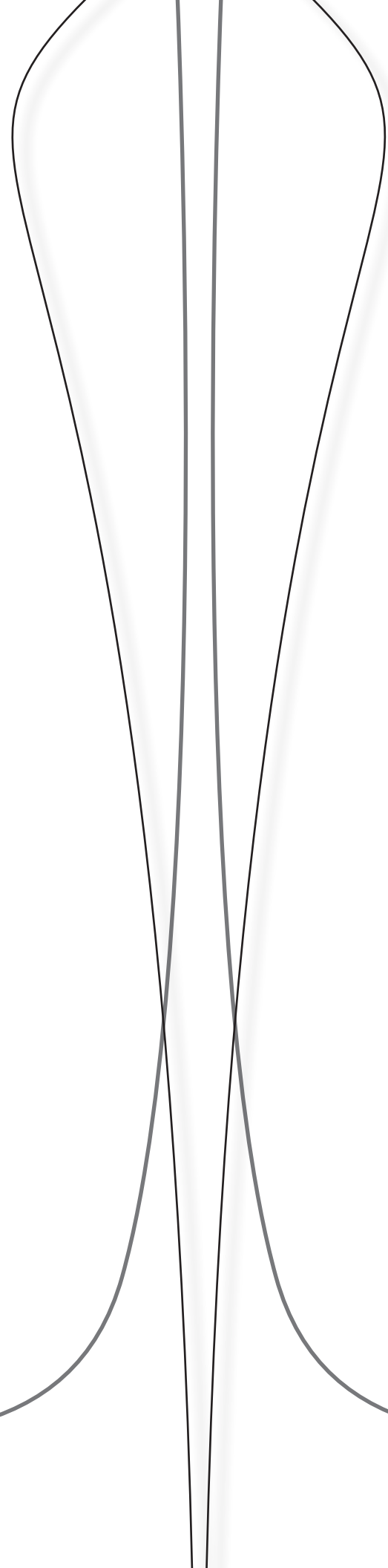
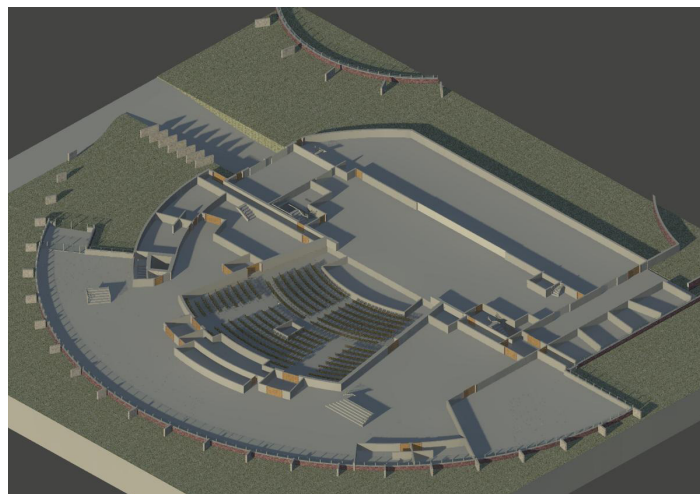
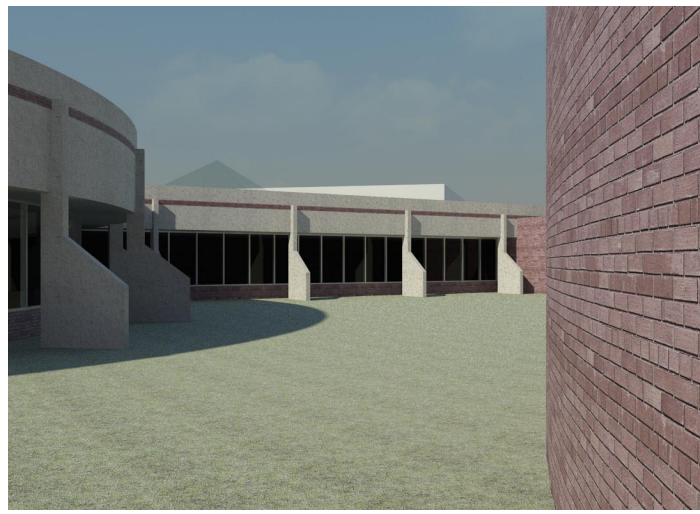






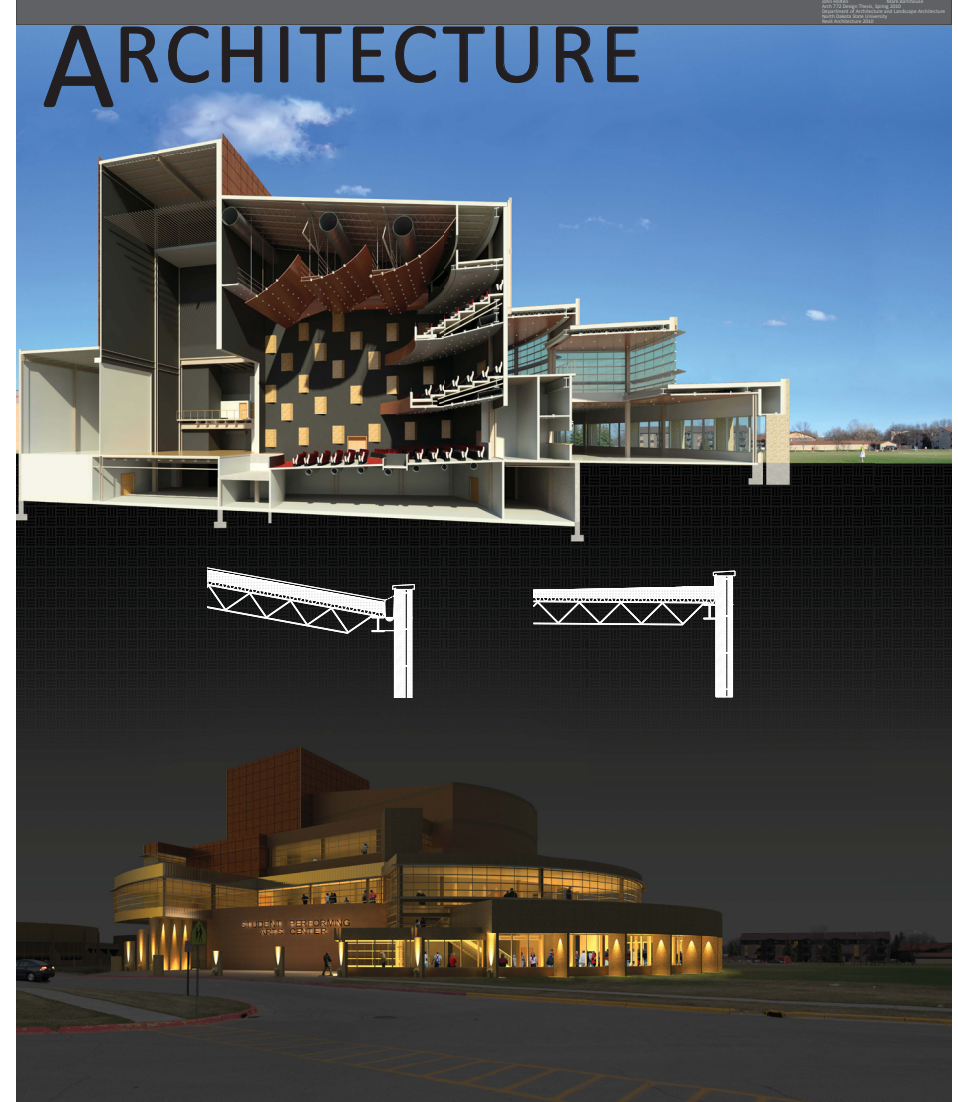
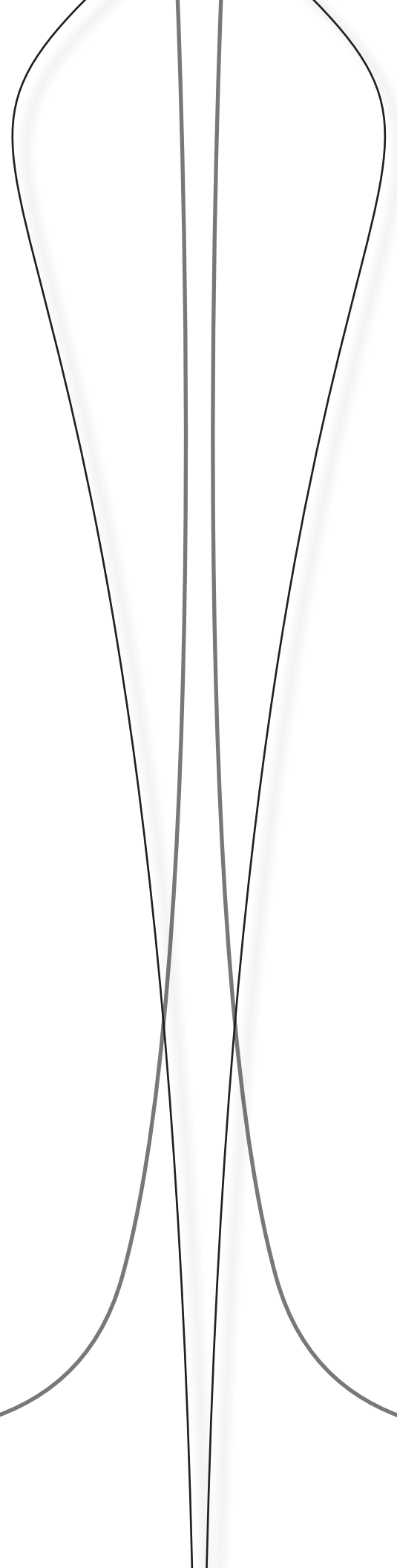
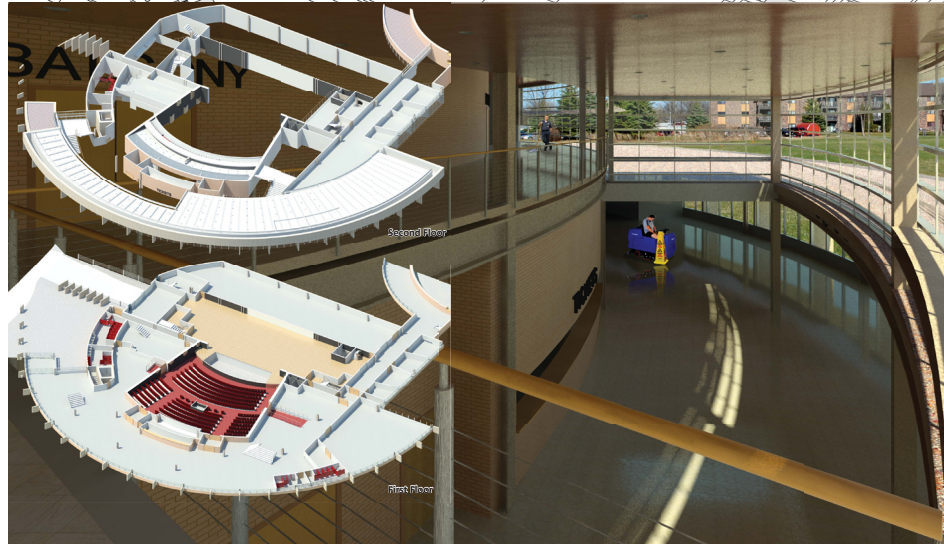
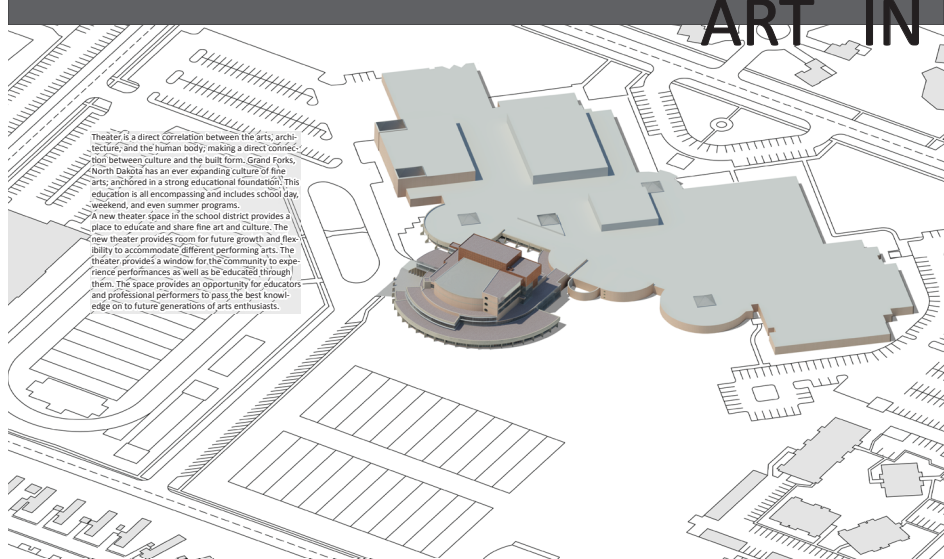
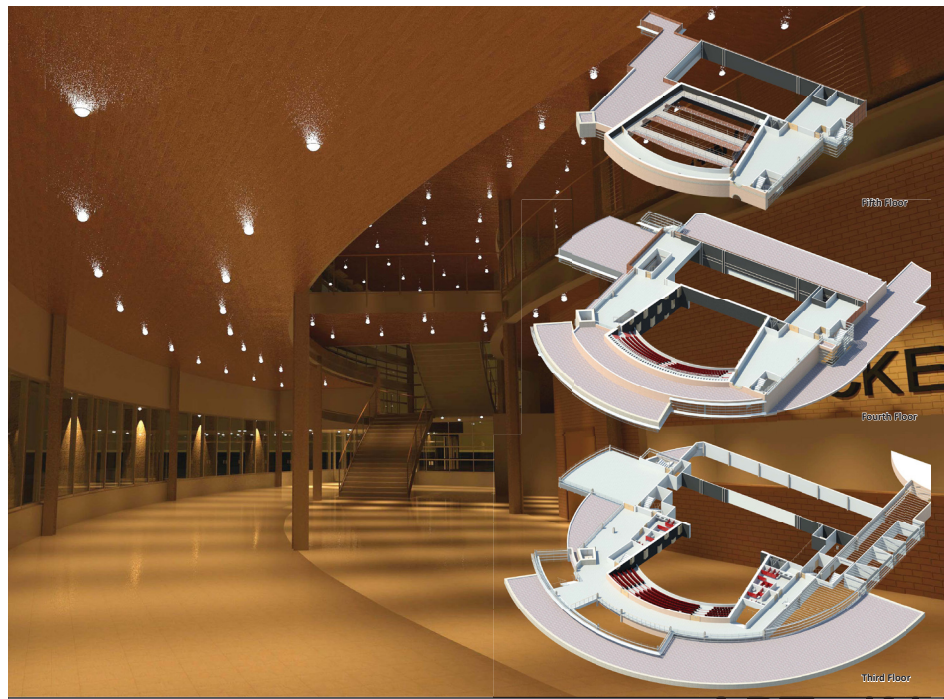


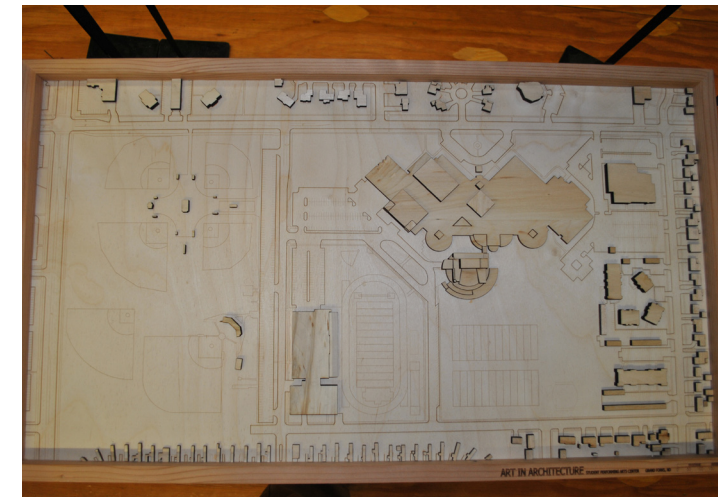






FINAL DESIGN





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“It is through my education at NDSU that I have relearned how to look at and think about Architecture. It was here that I started, and in this book that I finish.”

