

Restore



Casey Tabert

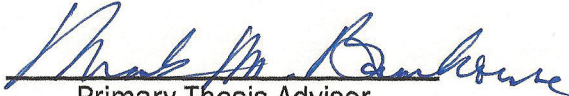
Restore

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

By

Casey Tabert

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


Primary Thesis Advisor


Thesis Committee Chair

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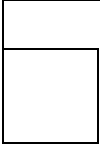


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Restore

This thesis project, titled *Restore*, critically analyzes how an architectural experience can have psychological healing effects on service members and their families who have been affected by the repercussions of war and deployment. The guided idea behind this claim is, “In order for positive change to occur, it is important to provide a facility where the emotional and psychological effects of architectural experience are researched, understood, and implemented. The result of this experience will improve the quality of life and restore a sense of belonging in service members and their families.” The justification for this project is, “People are affected everyday by traumatic events such as war. Service members who are returning from war find themselves in a very difficult situation. They are left to deal with many things mentally, physically, and emotionally.”

The typology is a veteran support facility located in St Cloud, Minnesota, for service members returning from deployment and for their families. This facility provides temporary housing for transitional service members and their families while they get the help they need to restore them to a healthy civilian lifestyle.

Research will be done using a mixed method approach. Qualitative data will be collected through periodical and archival research, site visits, and direct interviews. Quantitative data will be collected through archival research. These two types of data will be continually integrated throughout the stages of the research process to ensure comprehensive examination of the premises.

Total Square Footage: 27,000 sq ft

Keywords:

restore

healing

transition

war

quality of life

service members

Statement of Intent

In what ways can healing be achieved through architectural experience?

Project Typology

Veteran support facility for service members returning from war and their families

Claim under investigation

Architectural experience can influence a positive change in service members and their families, who have been affected by the repercussions of war and deployment.

Supporting Premises

Architectural experience can have lasting effects on the way people live and interact with each other and their surroundings. The proper design of architectural spaces can evoke feelings of safety and belonging in service members who are in transition back into civilian life.

Positive change can be influenced by experience. An understanding of emotions experienced by service members and their families as well as the psychological effects of architecture are necessary for change to be effective.

Through experience in properly designed spaces, service members can achieve a higher quality of life and restore a sense of belonging. National Center for Post-Traumatic Stress Disorder and Walter Reed Army Medical Center (2004) found that including families in the experience can reduce long-term problems and aid in support.

Theoretical Premise/Unifying Idea

In order for positive change to occur, it is important to provide a facility where the emotional and psychological effects of architectural experience are researched, understood, and implemented. The result of this experience will improve the quality of life and restore a sense of belonging in service members and their families.

Project Justification

People are affected every day by traumatic events such as war. Service members who are returning from war find themselves in a very difficult situation. They are left to deal with many issues mentally, physically, and emotionally. This design will provide a transitional facility for service members returning from war and for their families.



Proposal

In what ways can architectural experience have psychological healing effects on service members and their families, who have been affected by the repercussions of war and deployment? The idea under investigation is that in order for positive change to occur, it is important to provide a facility where the emotional and psychological effects of architectural experience are researched, understood, and implemented. The result of this experience will improve the quality of life and restore a sense of belonging in service members and their families. People are affected every day by traumatic events such as war. Service members who are returning from deployment find themselves in a very difficult situation. They are left to deal with many things mentally, physically, and emotionally.

The typology for this thesis is a veteran support facility located in St. Cloud, Minnesota, for service members returning from deployment and for their families. This facility provides temporary housing for transitioning service members and their families while they get the help they need to restore them to a healthy civilian lifestyle.

Service members who are willing to put their lives on the line to defend our country are faced with a mix of emotions and changes when they return from deployment. They are immediately bombarded with welcome and praise by our nation, followed by the happiness and joy of being reunited with family and loved ones. As time passes and the excitement fades, they begin to realize that while they were gone, people they were closest to may have learned to get along without them, they may no longer have jobs to tend to, or people

telling them what to do every day. Life is drastically different from what they were used to. There is also a chance that they have experienced traumatic events while they were away that can often be life-altering. There is a high probability for soldiers to develop disorders such as post-traumatic stress disorder, depression, anxiety, insomnia, irritability. What kind of impact psychologically do traumatic events have on a service member?

It is commonly known that architecture can evoke emotions in people. Elements of a space such as form, color, light, and order have an impact on the way a person feels and reacts within a space. Does architecture have a way of making people feel and react a certain way after they have left the space? Does architecture have inherent healing qualities that can alter a person's outlook on life and their surroundings in the future? Returning service members are coming from an unsafe environment where everyone is constantly on the lookout and conditions can change in an instant. Certain places, sounds, smells, etc. can trigger negative emotions and reactions. It is important to be mindful of what the service members are experiencing. In what ways can architecture provide an environment where a user can harness these negative emotions and channel them into positive outcomes?

An environment where users feels safe, welcome and can get access to the help they need is a step toward restoring psychological well-being, re-establishing a sense of belonging and improving quality of life in the future. An architectural design must reflect the user's aspirations. It must be easily understood by all users for it to be effective. If positive change

and healing is to occur, the design must provide positive healing environments for its users.

The question I am looking to answer through my thesis and research is, "By providing a transitional facility with the proper care for returning service members and for their families, can we help them safely transition back into civilian life and restore a sense of belonging in their home?" These questions are the basis of research into the character of the Theoretical Premise/Unifying Idea. A holistic healing facility will aim to restore well-being; aid in physical, mental, and emotional recovery; lower the suicide and substance abuse rates among service members; lower health-care costs; re-establish a sense of belonging; and improve their quality of life in the future.

Owner

The owner of this facility will be a private practice health care facility. This facility will work collectively with the St. Cloud VA Health Care System to provide all of the necessary care. Senate Bill 2 (2010) states that, “many veterans seek to get treatment outside of the VA in private practices.” Providing an individualized environment for transitional psychological care without the stigma of a hospital will help users restore a higher quality of life and sense of belonging.

Service Members

This facility is intended for service members who have returned from deployment in any branch of military service and are in transition back into civilian life. The repercussions of war and deployment can leave a service member feeling off track with themselves and their surroundings. The goal of this facility is to bring them back on track to a healthy lifestyle and better quality of life.

Service members who utilize this facility will be of any age, gender, ethnicity, social class, or economic standing. No two people or stories are the same. This facility aims to care for a wide variety of cases and to provide for each and every user’s specific needs.

Families

Families often find it hard to adjust their lifestyles for a service member returning home from deployment. To ensure full support and recovery for all users, this facility will also be open to families of service members in transition. This integrated approach helps families heal as a whole, reconnect, and overcome obstacles together.

Care Givers

Care givers in this facility include case managers, nurses, psychologists, psychiatrists, and social workers. All health care professionals will be trained and certified to deal with specific military culture and combat-related trauma as stated in the Senate Bill 2 (2010).

Occupancy

There will be a total of 7 small family residences to accommodate service members and their families. 1 residential unit will also be provided for 24 hour staff. Larger community spaces can accommodate up to 200 people at one time. Specialized areas of the facility will accommodate smaller groups of people at different times throughout the day.

Peak Usage

Residence facilities are staffed and occupied 24 hours a day. Peak usage for the rest of the facilities is during normal business hours and into the evening when group activities will take place.

Parking

Parking will be provided for users staying in the residential units; 1 spot per unit=8 spots plus 4 additional spots. Limited parking will also be provided for the shared facilities and staff. The facility will have a link to public transportation via bus service to eliminate the need for individual parking spaces for each user.

Physical Restrictions

It is not uncommon for service members to become wounded while deployed. They may have temporary or permanent physical conditions. This facility is entirely ADA-compliant to accommodate the physical restrictions of its users.

Medical/Mental Health Issues

Many of the users of this facility are suffering from post-traumatic stress disorder, anxiety, depression, and other related mental health issues. This facility is designed to stop the development of these issues and prevent them from interfering in the everyday lives of service members and their families.

The goal of this design is to promote holistic healing. Finding a balance between physical, emotional, and spiritual healing will help users achieve a better quality of life and restore well-being within them. Each of the different spaces provides the user with a variety of choices depending on their current mood and level of comfort.

Short-Term Residential Units

These residential units are meant to provide a safe and comfortable space for returning service members and their families to re-connect and transition back into civilian life. The duration of stay in these units may range from one to six months.

Library

The library provides a means for emotional healing. It is a space for users to relax, study, enhance their education, or read for recreation. The library houses books and other reading materials on a variety of topics as well as a small computer cluster for internet purposes. Here users can find information on deployment, in transition process, and healthy lifestyle choices. There are books and other various media on ways to cope with issues a service member or family member may be experiencing.

Recreation Areas

Indoor and outdoor recreation areas are meant to promote physical healing. It is proven that physical activity improves mood by stimulating brain chemicals. Physical activity can help service members who are suffering from anxiety, depression, or hyper-vigilant feelings. Physical activity helps to reduce stress and tension and also promotes team-building and interaction with others.

Recreational facilities will include an outdoor court, small fitness room, running/walking paths, and outdoor playing fields.

Reflection/Meditation Spaces

Small, intimate spaces are provided for users to think, reflect, meditate, and heal on their own time. Emotional healing is different for each person. Providing a space for users to get away, think, and reflect on their own is important in the holistic healing approach.

Community Gathering Spaces

Community gathering spaces promote social interaction between users. These facilities are meant to be fun, relaxing environments and include elements such as pool tables, televisions, a fireplace and small seating clusters. Being able to talk to people who are going through the same thing as you is a large piece of the healing process. These spaces are meant to provide a non-formal setting for people to meet, visit, and discuss issues they have on their mind.

Chapel

Spiritual healing can be very powerful in the recovery of in transition service members and their families. This chapel provides a means for reflection. The chapel is a space for private and group reflection. It is non-denominational and is open 24 hours a day.

Child Care

A small childcare facility will be provided for children of families being treated. It will be open during daytime hours for support when family members are in counseling or busy with other things.

Healing Gardens

Healing gardens will be provided throughout the facility to create a space for people to take a moment, step outside, and get some fresh air while surrounded by positive, uplifting elements in nature.

Administration

Administration offices are necessary to maintain all operations of the facility including management, record keeping, coordinating facility usage, overseeing maintenance procedures, and more.

Region: Midwest

When researching existing opportunities for veterans in the United States, I saw a trend in existing and developing facilities in the southern and eastern parts of the country. The Midwest seemed to me like a place that could benefit from more services and opportunities for veterans. Minnesota is a state composed of bigger cities surrounded by many smaller thriving suburbs. This layout allows for veterans of many nearby communities to benefit from my facility without having to travel across the country.



Figure 7

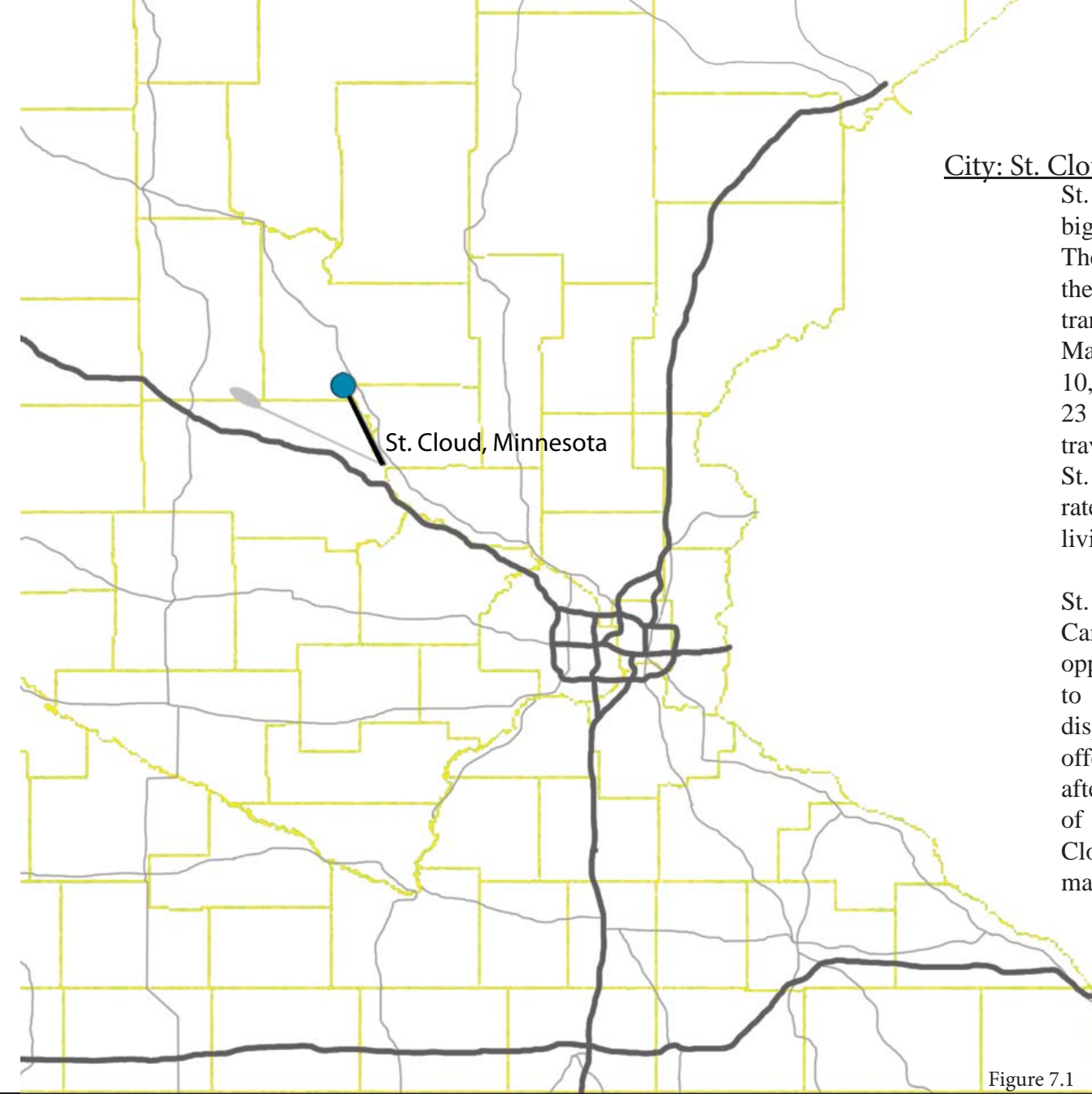


Figure 7.1

City: St. Cloud, MN

St. Cloud has all the opportunities of a big city without the big city atmosphere. The population of St. Cloud according to the 2010 Census is 65,842. It is a regional transportation hub within Minnesota. Major roads such as I-94, U.S. Highway 10, and Minnesota State Highways 15 and 23 pass through St. Cloud, allowing easy travel to and from the city in all directions. St. Cloud boasts a 4.4% unemployment rate, low crime rate, reasonable cost of living, and healthy lifestyle.

St. Cloud is home to one of two VA Health Care Systems in Minnesota. This allows opportunity for returning service members to get all the services necessary at their disposal. St. Cloud State University also offers opportunity for continuing education after deployment. Looking into the future of the returning service members, St. Cloud is a good place to raise a family and maintain a high quality of life.

Site Information

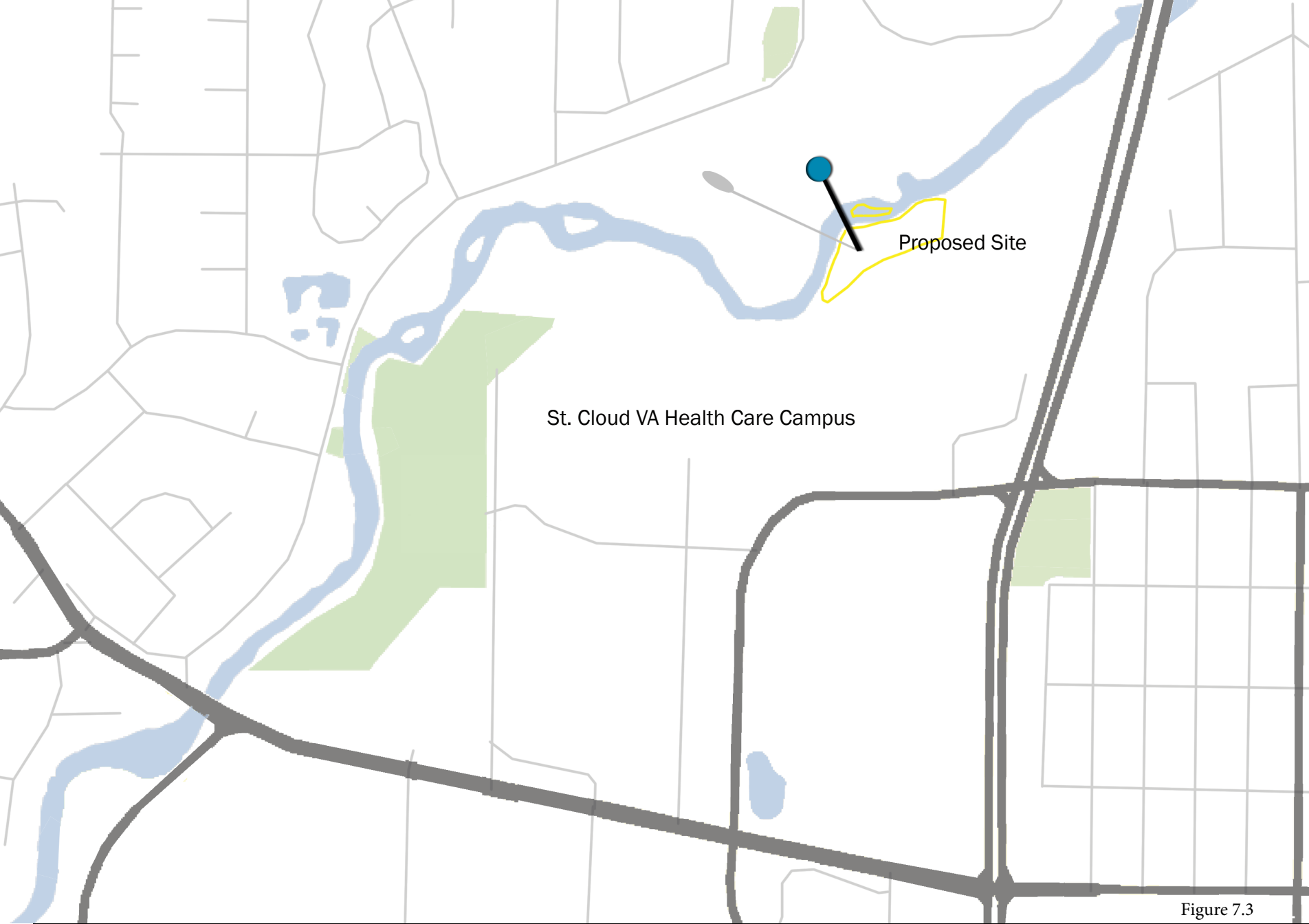


Figure 7.3

Site: St. Cloud VA Health Care Campus

I chose my site on the northeast edge of the St. Cloud VA Health Care Campus in St. Cloud, Minnesota, for a couple of reasons. The main reason is that this facility will be working collaboratively with the VA Health Center to provide for all the necessary needs for returning service members and their families. The VA Health Care Campus is situated along the riverfront which provides privacy and excellent views from my site. I wanted to choose a site where users would feel close to the amenities and opportunities of the city and the Health Care Center while also giving them a sense of tranquility to give them a chance to transition on their own time without the distractions of civilian life all around them.

My site is bounded by a local road and parking lot for the VA Health Care Center on the south side and the river on the north side. Options for vehicle transportation to my site would be Minnesota Highway 15, 12th Street, and 44th Avenue North to the east. Veterans Drive is to the south. Public transportation is available via St. Cloud Metro Bus Waite Park Route that runs 7 days a week. The site is 10 miles from the St. Cloud Airport and 5.5 miles from the St. Cloud Amtrak stop. The area of my site is roughly 180,000 sq. ft.

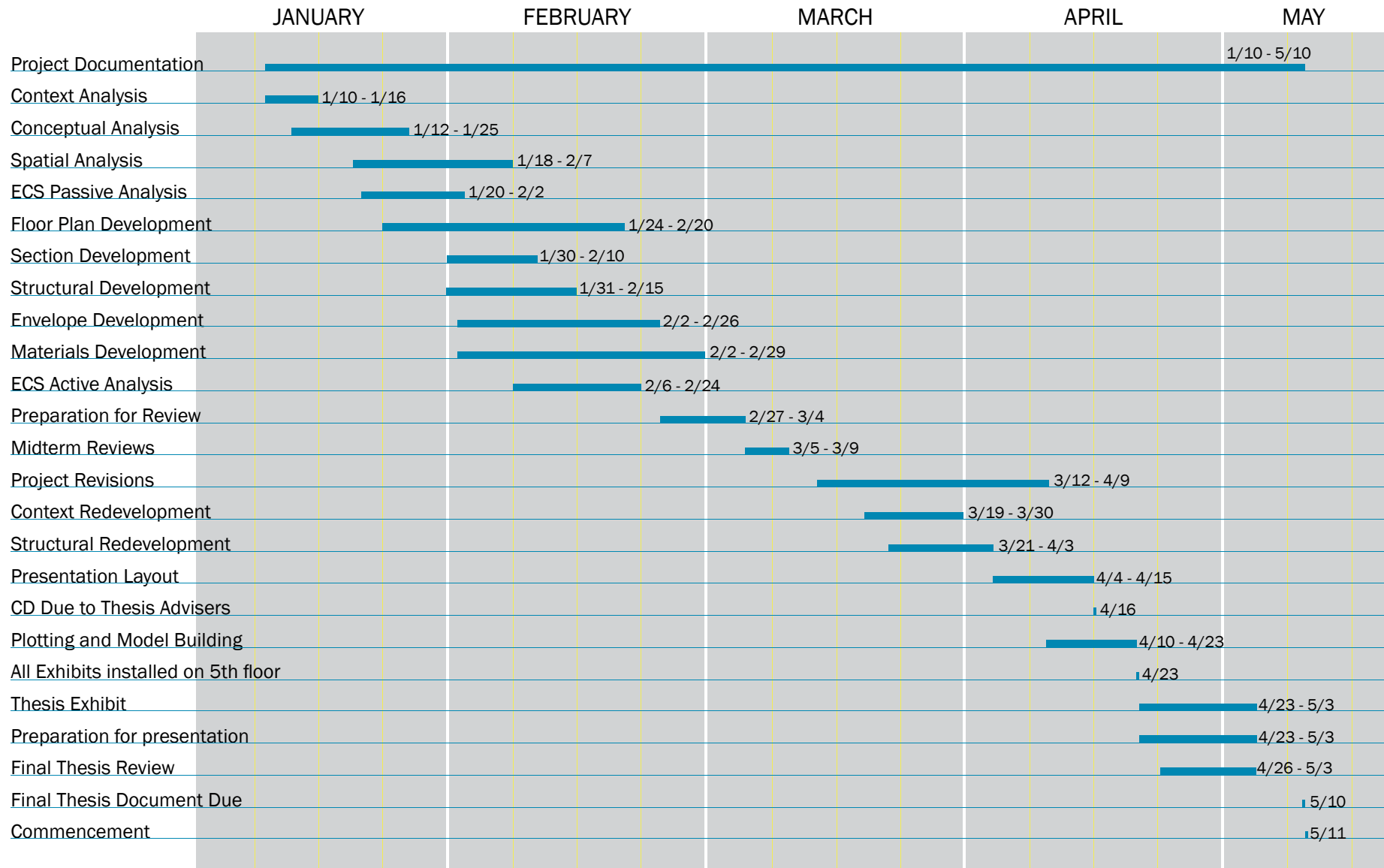
Major Landmarks around my site include the VA Health Care Center, Mississippi River, St. Cloud Regional Airport, St. Cloud State University, St. Cloud Technical and Community College, and 95 parks totaling more than 1,400 acres of green space.



Figure 5

Site Information

This project will aim to understand the relationship between user, built environment, and human psychology. I will be conducting research to study ways in which architectural experience can have a psychological impact on a person's lifestyle. The research will help to understand the effects of post-traumatic stress disorder, anxiety, depression, sense of belonging, and other psychological issues that returning service members are faced with as they begin to transition back into civilian life. The design will respond to ways in which the built environment can manipulate these negative issues to create positive outcomes.



Research Direction

In order to fully understand the scope of my project, I will be conducting research on the Theoretical Premise/Unifying Idea to better understand the relationship between users, built environment, emotions, and human psychology. Research will include typology, historical context, site analysis, and programmatic requirements.

Design Methodology

Research for this project will be conducted using a Mixed Method, Qualitative/Quantitative Approach. The strategy to be followed will be a Concurrent Transformative Strategy. With this approach, qualitative and quantitative data will be gathered concurrently. Qualitative data will be collected through periodical and archival research, site visits, and direct interviews. Quantitative data will be collected through archival research. These two types of data will be continually integrated throughout the stages of the research process to ensure comprehensive examination of the premises. Analysis, interpretation, and reporting of research will occur throughout the research process. I will present findings textually and graphically.

Documentation of Design Process

Documentation of my design process will be digitally compiled and backed up every two weeks into one main folder on my computer and external hard drive. This process will include all relevant photos, scanned sketches and drawings, digital images, and photographed physical models. This information will be organized and dated in a way that clearly portrays the process of design from start to finish. Data, research, and process will be logged every two weeks.

At the completion of the project, process will be preserved by being burnt to CD's and backed up digitally on an external hard drive. This process documentation will also be placed on my final DVD submittal to the faculty. Selected process will be presented in my thesis book and made available to future scholars through the NDSU digital repository.

2nd year

Fall 2008 - Darryl Booker

A Place for Tea
Minneapolis Rowing Club

Spring 2009 - Joan Vorderbruggen

Dance Academy
Dwelling

3rd year

Fall 2009 - Cindy Urness

Downtown Fargo Analysis
NDSU Center for Excellence
NDSU Center for Health and Wellness

Spring 2010 - David Crutchfield & Mike Christensen

Austin Performing Arts Center
Regent Biker Bar
Iteration Assembly

4th year

Fall 2010 - Don Faulkner

San Francisco High Rise
DLR Group KKE Vision Competition

Spring 2011 - Malini Srivastava

Design-Build Itasca Cabin

5th year

Fall 2011 - Cindy Urness

Minnesota Experimental City Community School

Previous Studio Experience

Program Document

Research Results and Goals

Results from the Theoretical Premise/Unifying Idea Research

Theoretical Premise/Unifying Idea Research

In order to gain a clear understanding of this thesis project, the following research will be broken down into three components. In my opinion, the most important aspect of architecture is the user. The essential purpose of architecture is to provide users with a space that adheres to their particular wants and needs. It is important to not only understand the needs of the everyday person but to then break it down further and understand any needs beyond the basic needs that may be relevant to the users of the building. The main focus of research will be on the users: transitional service members and their families. Second, research will cover information on mental healing of transitional service members and their families. It will break down different aspects of healing such as causes and effects of mental health issues; seeking help; and information on restoring mental, emotional, and spiritual health. Finally, I will conduct research on architecture and the intrinsic healing qualities it can offer. It aims to answer the question, “In what ways can a space alter the way a person feels in the present and in the future after the experience has ended?”

VALUES

Thomas Jefferson defines values of United States citizens in the Declaration of Independence as, “Life, liberty and the pursuit of happiness.” If you ask a typical middle-class working person in the United States on any given day what they value, they may say things such as friends, family, career, money, and property ownership. These are all things that have become a fundamental part of life in the United States.

If you ask a service member who is deployed overseas what their values are at any given time, you may get a very different response. They have been trained to not value materialistic things such as money and property as much as they may have in the past. Values have changed to basic survival essentials. Their most important values are things such as life, safety, welfare, and freedom. In the book *Down Range to Iraq and back* written by Cantrell states, “War forces its participants to go beyond the paradigms of ordinary life, pushing them beyond what one would think are humanly possible. When we assertively take the life of another human being we are catapulted far beyond the range of “normal” human behavior (Cantrell). This way of thinking and reacting can have far-reaching psychological implications.

When a soldier is transitioning back into civilian life it can be hard to adjust their basic values and needs away from what they have been trained to do. Their values now must suddenly shift back to family, career, money, and ownership in order to maintain a high-quality way of life for themselves and their families. For example, if a service member was driving a convoy that experienced an ambush or sudden explosion from an I.E.D., they might find

Theoretical Premise/Unifying Idea Research

that they experience more road rage than they did in the past as a way to express their aggression (Cantrell 2005).

For families of service members, things can be just as difficult during deployment as well as homecoming. If a family member is gone for an extended period of time, adjustments need to be made to compensate for the void. When a service member returns to their family it is often difficult to quickly adjust back to the way things were before. Especially since so much has changed in the service member, in the family, and in the world. “Veterans have shared the deepest of human emotion, terror, vulnerability, hope, love, and despair. They learned to bond based on these common emotions, and they formed connections that journey to the very depths of their souls (Cantrell, Dean 2005). This relationship is so unique and powerful that when service members return home and do not find that same relationship with their loved ones, they may have trouble re-connecting. Divorce rates among enlisted service members are gradually increasing. Four percent of marriages among enlisted service members fail (Zoroya 2009). Long deployments are detrimental to marriages and family life. According to an article in USA Today, research found a strong link between multiple deployments and divorce (Zoroya 2009). In 2009, nearly 23% of soldiers fighting in Iraq claim that they planned to divorce or separate after returning home (Zoroya 2009).

STATISTICS

The statistics of returning soldiers suffering from mental, emotional and psychological disorders are disconcerting. “A 2003 study published in the New England Journal of Medicine said about 1 in 6 soldiers returning from Iraq suffered from Post Traumatic Stress Disorder. Interviews with those at risk showed that only 23-40% sought professional help, most typically because they feared it would hurt their military careers” (Epstein, Miller 2006). It has been shown that because of the history of treatment for returning service members after the Vietnam War, returning service members are reluctant to seek treatment because they fear they will be discharged from the military and people will treat them differently.

MENTAL HEALTH

Post-traumatic Stress Disorder can develop while overseas which may be grounds for early homecoming. It can also develop after a service member has returned home and struggles with the transition back to civilian life. PTSD, depression, or any other mental issues relating to military combat can arise at any time and can last from as little as one month to the rest of the service members lifetime.

A survey was conducted from 18,305 U.S. Army soldiers over the course of 3-12 months following deployment. Over the course of the study, soldiers who experienced PTSD and depression after 3 month of deployment did not improve after 12 month of deployment. This lack of improvement illustrated that the mental issues may have less to do with the health effects of combat and more to do with issues related to adjusting back into civilian life or lack

of proper health care to deal with these issues. (“Soldiers Returning from Combat Suffering Mental Illness”)

Service members who are not diagnosed with Post-Traumatic Stress Disorder may still suffer from issues of their own. Depression, anxiety, guilt, and sense of belonging are common issues that returning service members experience. It may take some time after returning home from deployment for service members to realize they have changed and may need to seek treatment. “War is something shared by many, but few understand its aftermath” (Cantrell, Dean 2005). The reactions to war are common among soldiers of every era and nation, and soldiers are able to find a certain degree of peace in knowing that they are not alone. Sharing experiences with one another can help in the healing process. Not sharing experiences with others who understand and want to listen can make everything worse.

There are places in the United States for people suffering from these issues to seek help. VA medical centers are located all over the United States and can offer physical and mental treatment for those diagnosed with a mental disorder. Soldier and Family Assistance Centers (SFAC) are located on military bases around the United States and offer services such as information and referral services, benefits counseling, financial assistance, child care referral, guidance counseling, substance abuse information and referrals, lodging resources, family services, social services assistance, financial counseling, VA benefits counseling and legal services assistance (Army OneSource 2011). These facilities are helpful in establishing foundations for returning service members to build upon to aid in a safe and smooth transition back into civilian life.

According to Cantrell and Dean in the book *Down Range to Iraq and Back*, receiving proper treatment may help a returning service member accomplish the following goals:

- Identify emotional, social, and physical health problems through professional assessment
- Reduce the frequency and intensity of painful memories and dreams of traumatic experiences
- Reduce symptoms of depression and anxiety
- Improve control over anger
- Develop better communication and relations with family members and other people
- Control of drug and alcohol abuse
- Obtain restful sleep
- Increase involvement in purposeful and productive activities
- Receive medical care for physical problems
- Resolve financial and housing problems

(Cantrell, Dean 2005)

The government is doing its part to ensure the safety of our returning service members. Senate Bill S.2 (2011) is meant to increase the mental health care services for America's veterans. The bill states that a set amount of money is to be appropriated each year for mental health care research and alternative programs. It also calls for all health care providers in veteran health care facilities to be trained on how to handle military-related mental health conditions. The Bill also states, "Immediately upon a soldier returning from deployment, they must undergo psychiatric screenings. If the doctors find that these soldiers have mental health care symptoms, these symptoms must be addressed immediately." (S.2 2011)

ARCHITECTURE

If the proper facilities are available for returning service members where they can get information or treatment, it may increase the use of facilities therefore decreasing the chance for post-deployment issues to arise. There are healing facilities around the country for different issues such as physical disability rehabilitation, substance abuse rehabilitation, cancer support centers, and many other facilities. These facilities key into the essential healing aspects of the particular ailment. Psychologists at the Grant Air Force Medical Center are developing a program that aims to stop Post-Traumatic Stress before it starts. Instead of administering drugs to reduce anxiety in stressful situations, psychologists developed a series of behavioral techniques which can reduce anxiety and focus on turning the attention away from the internal experience. (Can Post-Traumatic Stress Disorder Be Stopped Before it Begins, 2010).

There are many studies done on the healing qualities of architecture and space. Elements such as lighting, color, temperature, size, and shape of spaces can evoke feelings and emotions in users. Well-designed healing spaces make a user feel safe, welcome, secure, and generally in a good mood. For example, the book *Places of the Soul* by Christopher Day states, "Fluorescent lights, with their subtle-visible mechanical flicker, flat, even light and restricted color spectrum, can cause headaches and eye strain. They also increase levels of cortisol and ACTH, exacerbating stress and, for children, distorting development" (Day 2004). This is a good example of how design elements can affect health.

While looking at healing facilities in general, different types of spaces need to be considered. Public spaces need to be treated differently from private spaces and residential spaces. Also, the different natures of user needs to be addressed and the spaces must respond to the individual needs of all users. The Epidaurus Project of Healing Design, established in 2001, "brings together architects, designers, health care policy makers and bioethicists to examine the challenges and principles of patient centered-ness" (Huelat Parimucha 2001). The project emphasizes positive experiences. It states that positive experience can be transformational, memorable, personal, and healing. A quote from Leland Kaiser, Ph.D (1995) says, "Medical centers have poured millions of dollars into high-tech equipment and treatments, while ignoring common miseries within their walls that hamper healing. To be a successful institution, you must serve the patient's inner self."

CONCLUSION

The only way to fully understand what returning service members and their families are faced with upon homecoming is to experience it right alongside them. Research, studies, and testing have been done to help non-service members gain an understanding of what soldiers may be experiencing, what to expect, and what can be done. The relationship between users and their environment plays a large part in the way users feel about themselves and the way they interact with others around them. Providing an environment where returning service members and their families can get the help and support they need, can decrease the chance of future issues occurring. Treatment for a diagnosed mental health issue is good; prevention is better.

Theoretical Premise/Unifying Idea Research Summary

The Theoretical Premise/Unifying Idea for my thesis project is, “In order for positive change to occur, it is important to provide a facility where the emotional and psychological effects of architectural experience are researched, understood and implemented. The result of this experience will improve the quality of life and restore a sense of belonging in service members and their families.” I will conduct research for this idea based on three contributing premises: service members and their families, healing, and architecture.

VALUES

When I began to look into the values and needs of citizens, service members, and families, I began to realize just how different the lifestyle is between them. It takes time for people to become accustomed to change. Once people become comfortable with their lifestyle and way of thinking, it becomes difficult to transition to a lifestyle that seems so foreign to them in such a short amount of time. This is very much relatable to service members who are transitioning to or from deployment as well as their family members.

When service members returns home from deployment, they as well as their family will soon realize that things have changed.

MENTAL HEALTH

Change can be difficult without the proper support or time. It seems as though there is a large jump from deployment lifestyle to civilian lifestyle. This can make the transition difficult and can be a potential catalyst for mental health issues in the future. Research proves that there is a need for an added stepping stone along the way for service members and families to find common ground where holistic healing can take place. This could help bridge this gap and make the transition process much smoother. Allowing service members to transition on their own terms and their own time will prevent common disorders such as Post-Traumatic Stress Disorder, depression, anxiety, guilt, and other mental health disorders from developing in the future.

It is equally difficult for a family member dealing with a service member who is away at war. Their lifestyles also drastically change. Housekeeping, raising children, working, financial responsibilities, and many more things that were once a partner effort are now all to be handled by one spouse. The burden of the extra responsibilities can be hard along with constantly worrying that the next time the phone rings or there is a knock on the door that you are going to hear some stranger tell you the exact news a spouse never wants to hear. It can have an impact on children as well. A child is constantly developing at a fast rate. For a parent to be away for an extended period of time and then suddenly be back to resume the role as father or mother can make it hard for a child to adjust to the change.

Theoretical Premise/Unifying Idea Research Summary

ARCHITECTURE

Each story and experience is different but they also have many things in common. Part of the healing process deals with people being able to gather and share stories and experiences, and by doing so, be able to find peace within them. There are many studies done on the healing qualities of architecture and space. The emotion a space evokes is directly related to what happens in the space. Spaces such as gathering spaces, reflection spaces, living spaces, outdoor spaces, etc. suggest different types of activities therefore suggesting different emotions. Gathering spaces promote communication and togetherness while reflection spaces promote self-actualization. Living spaces promote a sense of safety and security while outdoor spaces promote activeness and engagement.

Research Results and Goals

Results of Typological Research



Figure 1.1



Figure 1.2

<p>Project Type: Rehabilitation Center Architect: Architectenbureau Koen van Velsen Location: The Netherlands Size: 14,000 sqm Year Built: 2011</p>
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Figure 1.3

The Groot Klimmendaal Rehabilitation Centre is a 14,000 square meter rehabilitation facility located in Arnhem, Netherlands that provides care for children, adolescents, and adults who have had illness or accident. Spaces included in this facility are offices, clinical areas, a sports facility, a fitness area, a swimming pool, a restaurant, a theatre, and a Ronald McDonald House. The separately-owned Ronald McDonald house is located on the top floor and provides temporary living quarters for patients.

What is so unique about this building is that it provides a wide variety of programs and activities within a relatively small footprint for the given program. The Rehabilitation Centre Groot Klimmendaal was designed by Architectencureau Koen van Velsen in January of 2010. This facility is the first phase in a three-phase masterplan to consolidate and rejuvenate the Rehabilitation

Centre Groot Klimmendaal (Gregory 2011). This design has won numerous awards including the Building of the Year in 2010 by the Dutch Association of Architects.

This case study has a few things in common with other case studies researched. The design is largely based off of the ideas of light vs. shadow and mass vs. void. Nature plays a large part in care and healing facilities. This is a good case of how nature inspired every aspect of the design process all the way down to how it is experienced by its users on a daily basis. It is uncommon from other case studies because of its wide variety of programs, including the Ronald McDonald house on the top floor and the theatre and restaurant on the main floor.

The facility is built in a beautiful, heavily-wooded area in the Netherlands. The building is designed entirely around the idea of being a part of the landscape. There was a strong desire to make the building almost disappear within the site at times. Although it is a very large building, the architects were able to accomplish this through the use of materials, structure, light, and shadow. The building seems to almost float over the site reaching out over the sloping topography with a sleek cantilever. The floor-to-ceiling glass in the central spaces allows for seamless continuity between interior and exterior spaces (Minner, 2011). The structure on the interior is designed to mimic the trees on the site. I imagine that being inside this building and feeling completely surrounded by the seclusion of the natural site on the outside brings much peace and harmony to all of the interior spaces as well.

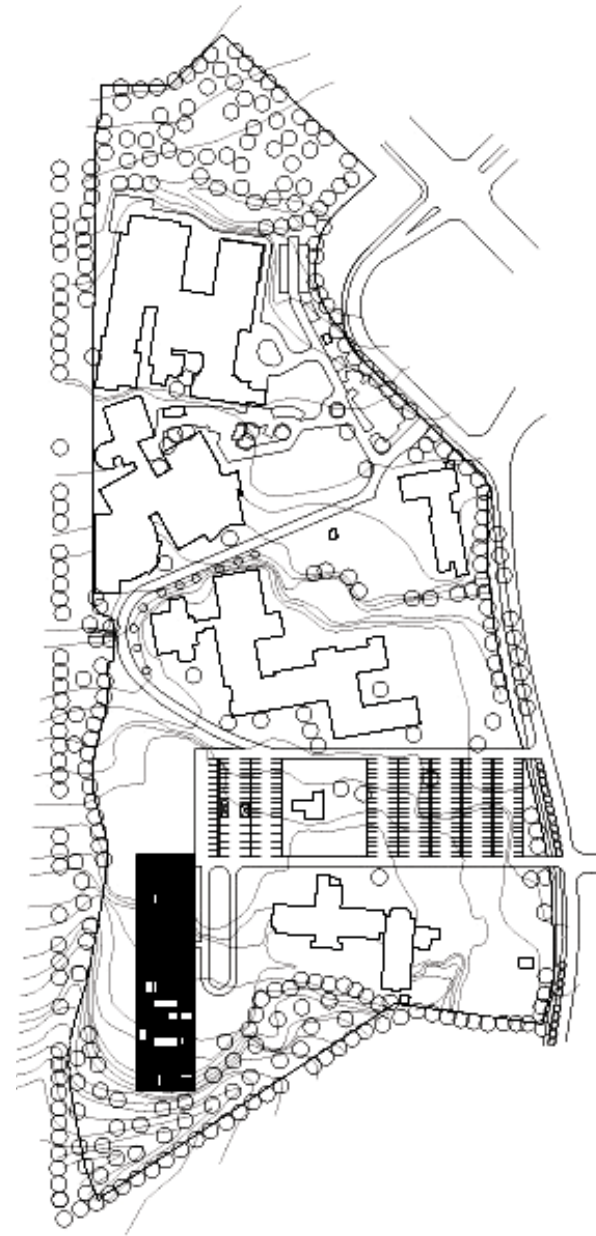


Figure 1.4

This design does a good job of bringing a sense of community to the space. The ground floor, which contains the sports facility, fitness area, swimming pool, restaurant, and theatre, is used by the community on a regular basis. This allows for both the patients and the building to be placed at the center of the community (Minner, 2011). Culturally, this facility is taking part in sustainability issues that so many designs are utilizing today around the world. The facility reduces its energy use because of its compact design and the design of its carefully chosen mechanical and electrical installations. The architects were very mindful in choosing sustainable materials that need little or no maintenance.



Figure 1.5

This project will help me relate to my thesis in a number of ways. It is a great example of how to incorporate community spaces and private spaces to flow seamlessly together. When a service member is transitioning back into civilian life, it is important for them to play an integral part in their community. A design such as this would allow service members to participate in community activities while maintaining the privacy and support they need. Also the use of nature and site in influencing the design is something that is very important when designing a healing facility. “The care concept is based on the idea that a positive and stimulating environment increases the well-being of patients and has beneficial effect on their revalidation process” (Minner, 2011). The clients of the Rehabilitation Centre Groot Klimmendaal wanted a design that did not feel like a standard health building but instead a building as a part of its surroundings (Minner 2011). They wanted a design that radiates self-confidence and self-control. Although this facility deals with physical illness or accident, a lot of the same ideas can be applied to mental health as well. Feelings of self-confidence and self-control promote all aspects of healing. This case study demonstrates that my Theoretical Premise/Unifying Idea is valid, and in order for positive change to occur, the psychological and emotional aspects of architecture must be understood and implemented into the design. This is a good case study to reference for my thesis project since I would like to incorporate many different programs and activities into one small space.

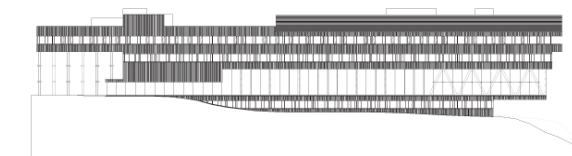
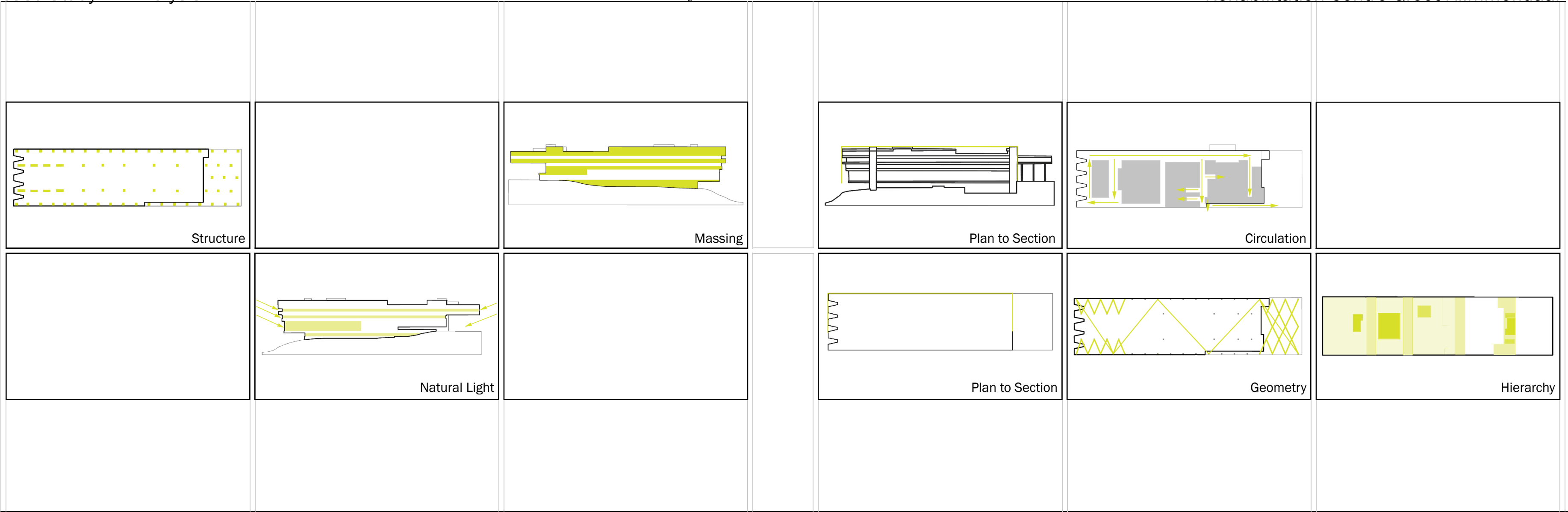


Figure 1.6



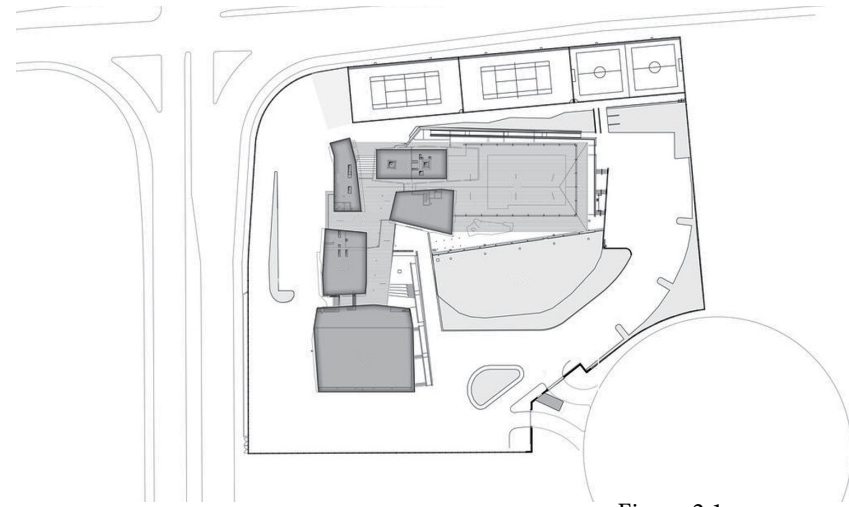


Figure 2.1

Beit Halochem Rehabilitation Center is a 6,000 square meter rehabilitation facility located in Be'er Sheva Israel. The function of the facility is to, "serve disabled veterans and their families living in the South of Israel as well as victims of the terror onslaught raging in these past several years in the city of Sderot and its environs including those from "Operation Cast Lead"" ("Beit Halochem Centres in Israel," 2011). The spaces in this facility include lobby, physiotherapy, administration, hydrotherapeutic pool, cafeteria, swimming pool, children's pool, sport hall, multi-purpose classes, and art studios. These spaces function together as rehabilitation and community spaces.



Figure 2.2

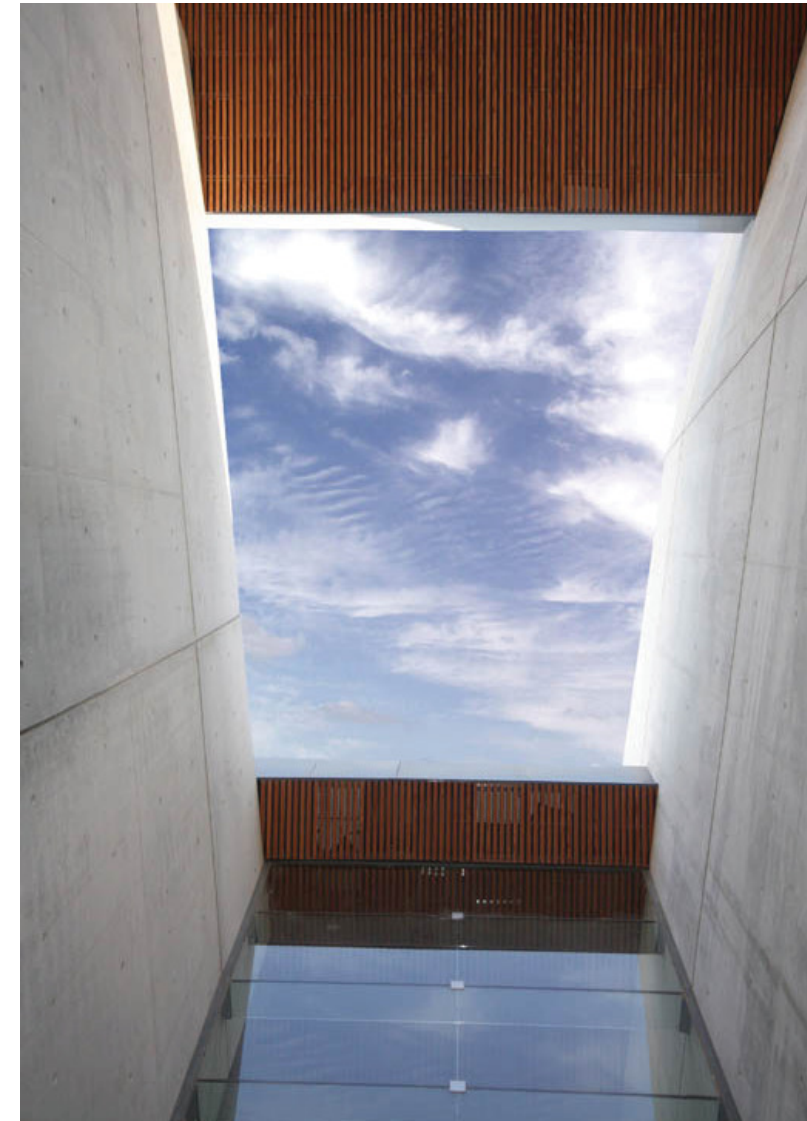


Figure 2.3

Project Type: Rehabilitation Center
Architect: Kimmel-Eshkolot Architects
Location: Be'er Sheva, Israel
Size: 6,000 sqm
Year Built: 2008-2011

The architect for this project was Kimmel-Eshkolot Architects. The design, much like the Rehabilitation Centre Groot Klimmendaal, was based on ideas of light vs. shadow, solid vs. void, and positive vs. negative. The facility is made up of "rock-like" structures and connecting elements between the structures. "Rock" structures accommodate private, intimate functions while the space between the "rocks" creates the gathering spaces and circulation that give the facility a sense of community (Rosenberg, 2011).

The facility has most of the program elements of a traditional rehabilitation facility. The thing that makes it different from other rehabilitation facilities I have research is the response to the culture and the site it is in. The design responds very well to its site, which is on the edge of the city where the desert begins. It is composed of thick walls that provide climate protective from the harsh heat of the desert atmosphere. Overhangs throughout the facility provide shade and protection for outdoor spaces. This design is unlike anything one would see in the Midwest since the climate and environmental issues are so different. The culture of Israel is very different from anything that I am accustomed to. The facility sees the outcome of the violence and combat that is

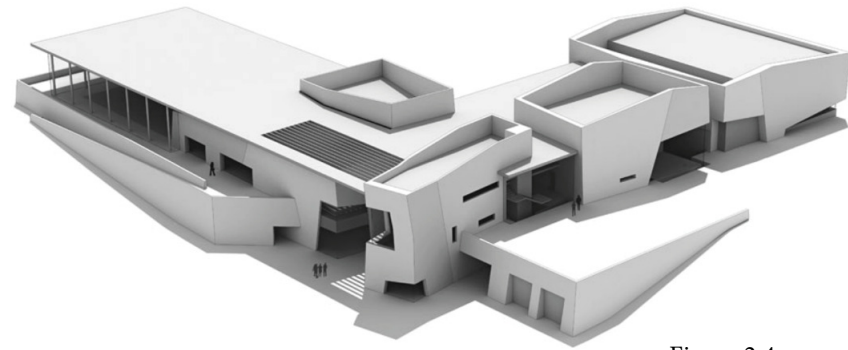


Figure 2.4

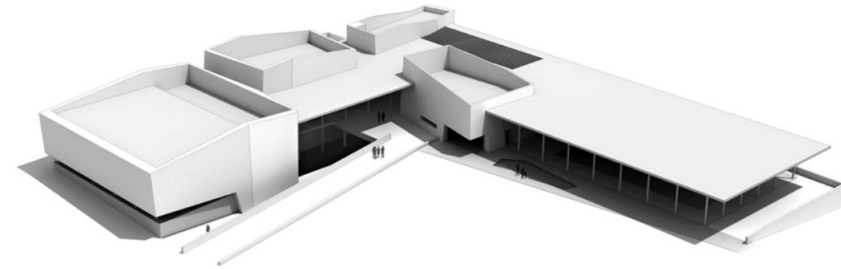


Figure 2.5

happening throughout the country and they are doing their part to rehabilitate the people of the community who have been affected. This facility gives injured veterans the opportunity to regain their quality of life after an injury or accident. This case study provokes its users to make the best of a non-favorable situation by creating an environment that responds to the users, the site and the culture where users feel safe and supported.

This facility is located on the outskirts of the city, allowing for privacy and seclusion. It is open to veterans and families from all surrounding areas of Southern Israel. The facility incorporates community into the program by opening it not only to injured veterans but to their families as well. Providing community gathering spaces, a children's pool, sports facility, and other spaces promotes togetherness and community within families.

This case study will help me in designing my thesis by looking at ways in which treating veterans may be different than treating the common person. By looking at the ways in which this facility incorporates family into the process directly relates to my premises that the family is an integral part of the healing process. The circulation of this facility is designed for maximum accessibility for the special needs users, which is something that I will need to take into account since it is not uncommon for a service member to be injured while on deployment. This case study validates my Theoretical Premise/Unifying Idea and is a great case study to reference since the users are very similar.



Figure 2.6



Figure 2.7



Figure 2.8

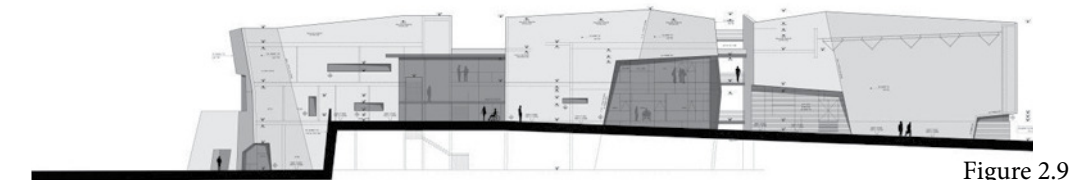


Figure 2.9

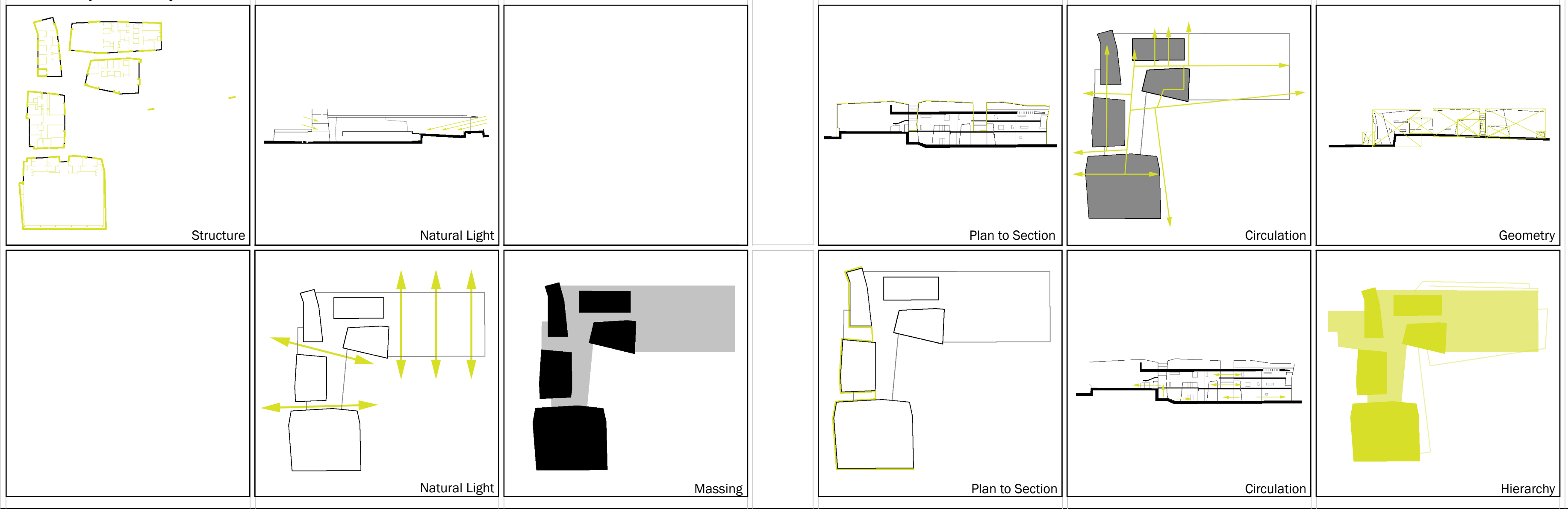




Figure 3.1

Maggie's Centre London is a 370 square meter cancer support facility and healing garden located at Charing Cross Hospital in Hammersmith London, United Kingdom. The function of this facility is to provide a space and support for people with cancer at any stage. The program consists of 5 parts: an exterior wall, a kitchen, sitting rooms, small courtyards, and gardens. People who have just received news that they have cancer have a difficult road ahead of them. The main goal of this facility is to provide a space for these people and their families to go to talk with others, read a book, access support or just visit. This facility provides a space where users feel welcome, safe and are able to come to terms with their health condition. There are 14 Maggie's cancer caring centers located across the United Kingdom.



Project Type: Health, Landscape
Architect: Rogers Stirk Harbour + Partners
Location: London, United Kingdom
Size: 370 sqm
Year Built: 2008

Figure 3.2

The architect for Maggie's Centre London is Rogers Stirk Harbour + Partners. The structure of the space is flexible and adaptable to allow for free movement through the building. The design is about finding the proper niche whether it is a small place to read a book or a larger space to visit with others. The architects chose to make the building a bright color so that it would stand out on the busy street corner where it is located. There are many tall buildings surrounding the site and the designers wanted to ensure that the small structure would not disappear amongst all the tall buildings.

The site was a challenge for the designers. They were trying to accomplish a facility where people could get away from the outside world and have peace and quiet to do what they need to do. The site is located on the Charing Cross Hospital campus on a very noisy street. The tall wrapping wall around the exterior cuts off views of the outside and views of the hospital. The elevated roof allows views of users to be directed up towards the sky instead of out towards the busy streets. The site is very small but still allows enough space for the facility as well as a number of outdoor garden spaces. Maggie's Centre London is a good example of strong inside/outside integration. It is naturally ventilated through the elevated roof structure. Each room on the interior opens up to an interior garden space. There is a rainwater collection system on the roof that is used for irrigation of the landscaped areas.

This building is uncommon from many other case studies I have researched in that it does not necessarily have one primary function with a staff and a schedule. It is very flexible and open for people to come and go as they please. It is similar to other case studies in the idea that it is a healing environment and the designers were very mindful of how elements were used in order to provide a space where people can open up and express themselves.

Sitting rooms and small courtyards provide a space for people to interact socially and communicate with people who may be dealing with similar issues. Architect Richard Rogers said, “The physical environment and the social quality of life go hand-in-hand” (Basulto, 2009). Culturally, cancer is something that people speak very little of. It is something generally that people are scared to talk about because of the nature of the disease itself. Designers for the Maggie’s Centre London suggest that it is not something to be shied away from but instead the more you talk about cancer, the less of a bad word it becomes (Basulto, 2009). This was part of their reasoning for making the structure the bright red color that it is. It serves as a conversation piece and people will talk not only about the building but also what happens inside the building. The design is not something that should be hidden away for nobody to speak about.



Figure 3.3

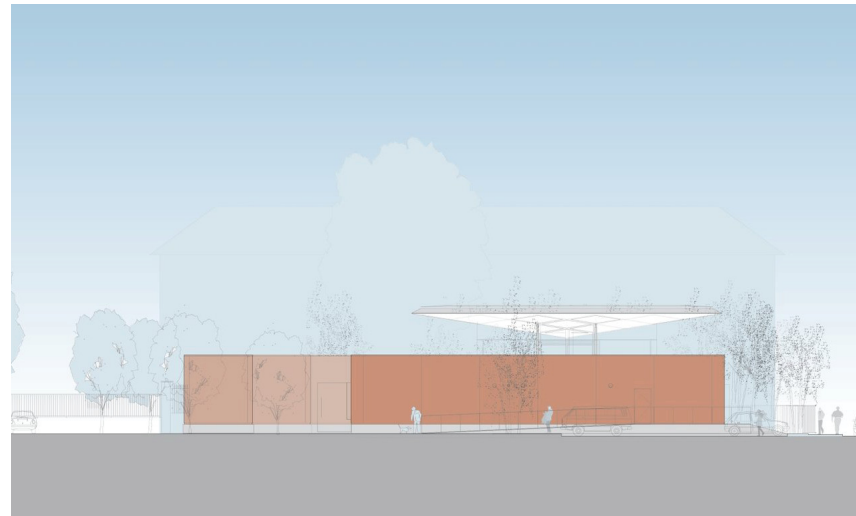


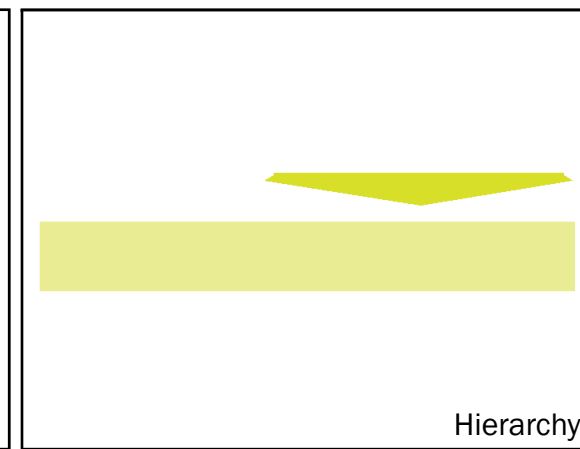
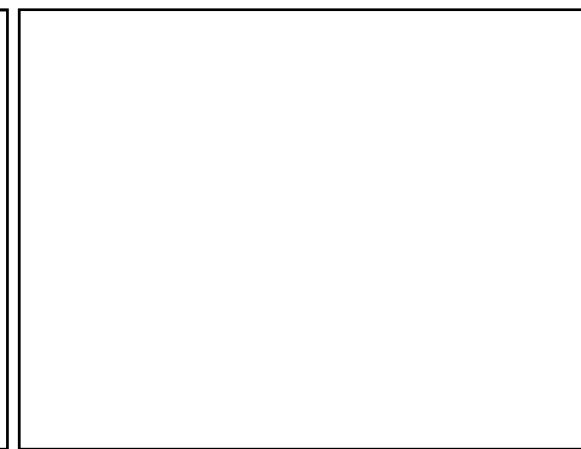
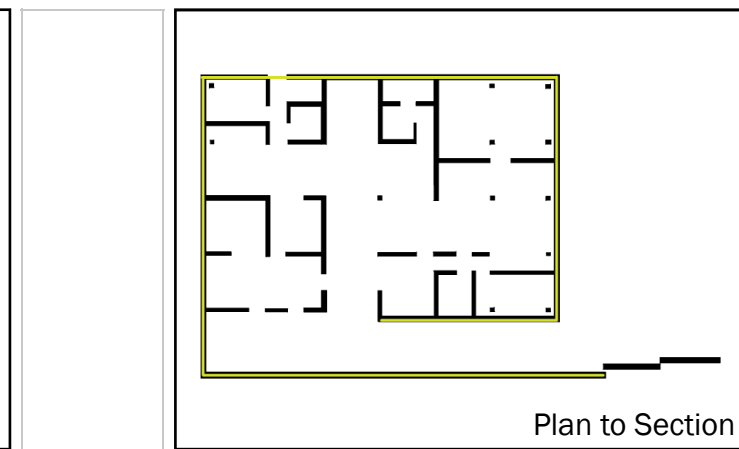
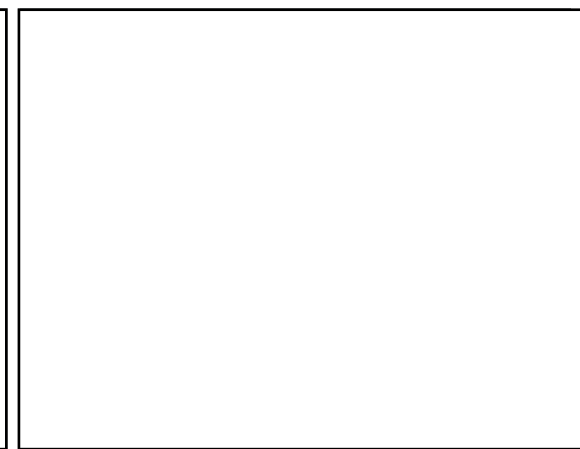
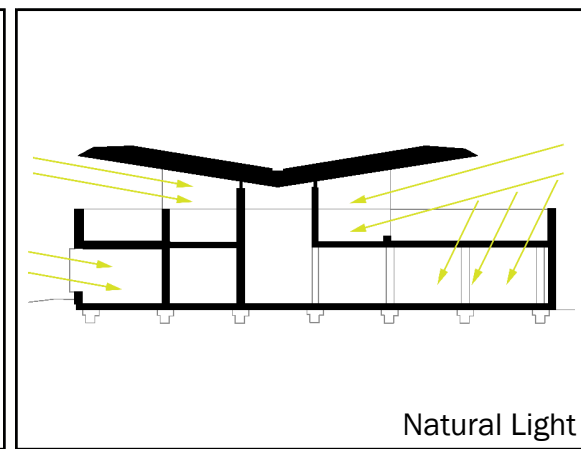
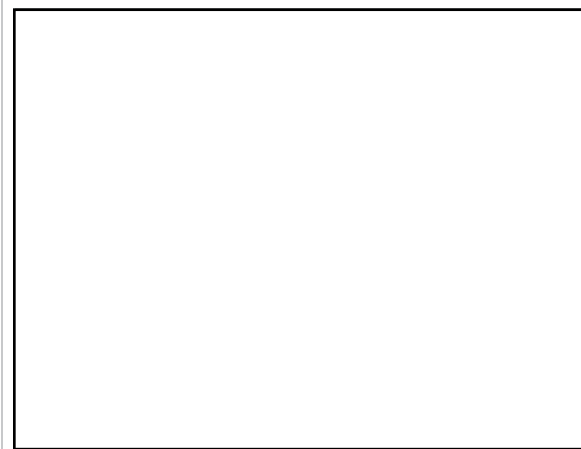
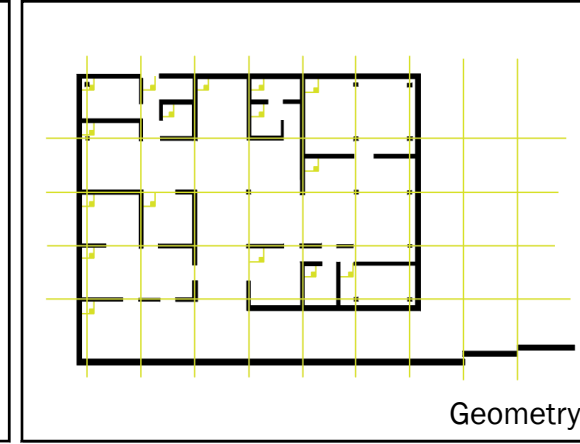
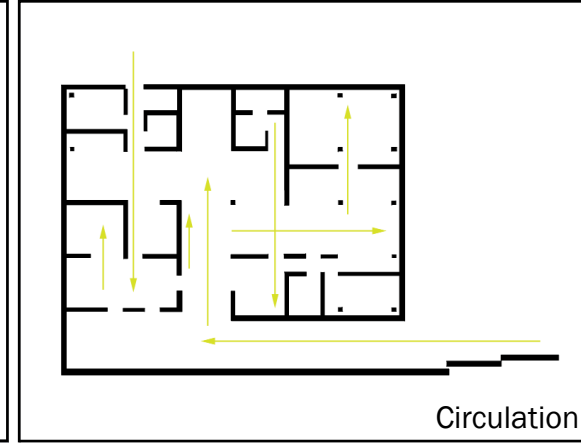
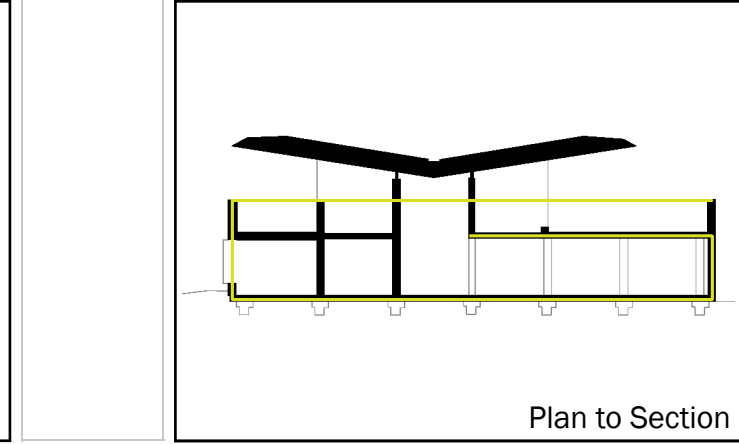
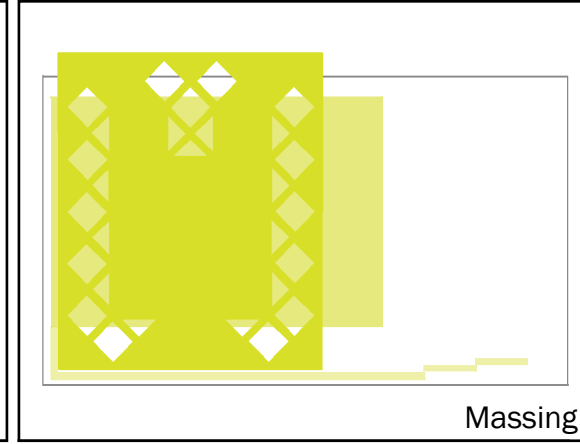
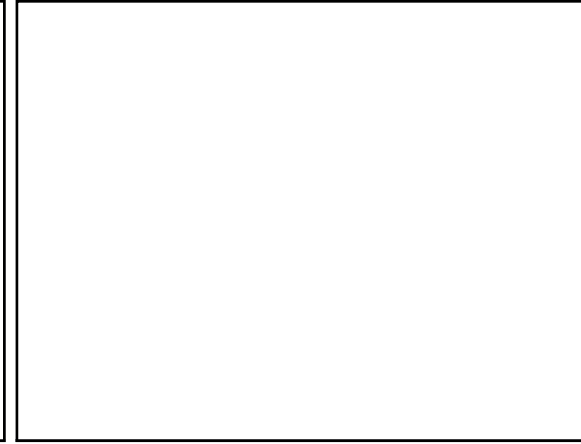
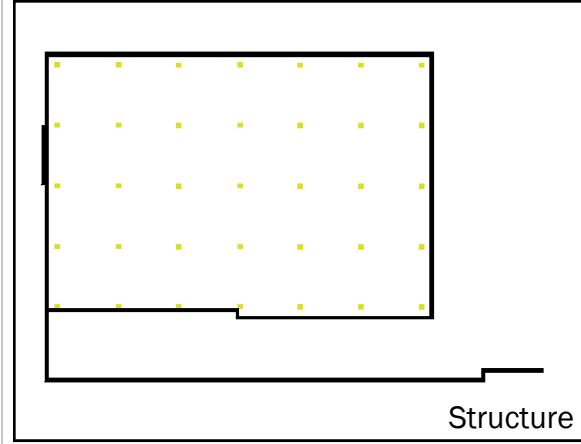
Figure 3.4



Figure 3.5

This project relates to my thesis in the sense that it is providing an outlet for users to react to a life-changing event. When a service member returns home from deployment, they are not necessarily given the time to react to what they have experienced while away. They need time to understand what it is that they have experienced and how things are going to be different from now on. By having a space designated to make these realizations, get information, and find support, users will feel more at terms with their experiences and will then be better prepared to deal with challenges they are faced with. “The design allows people using the Centre to be aware of life going on around them while still maintaining their personal privacy” (Basulto, 2009). This is important for returning service members as well. It is important for them to begin to realize what is happening in the world around them while still giving them the space to heal without all the distractions the real world presents.

This case study provides good examples of how materials, organization, and placement of design elements can play a large part in making people feel safe and welcome. This applies directly to my Theoretical Premise/Unifying Idea.



Case Study #3 Landscape Analysis

The landscape and vegetation throughout the facility play a large part in the healing nature of the design. Vegetation and landscape is carefully thought out and arranged in ways to provide paths through the site, dominant entrance points, and small outdoor gathering spaces. “The gardens are designed to complement the process of restoration the centre aims to encourage among users” (World Buildings Directory, 2008). The entrance to the building is defined by large, mature trees and decorative ground cover. There is a bench located outside the entrance that looks directly into the heart of the facility (Basulto, 2009). This bench is to allow people to enter the facility on their own time. They may sit outside on the bench or wander through the gardens and the public courtyard on the site and when they are ready to come to terms with their condition they may enter into the facility. There are three external garden areas within the facility that can only be seen from within the facility. They are the northern, eastern, and southern winter areas. These garden areas are treated as extensions of the interior spaces. Faculties at the facility introduce gardening as a therapeutic activity for users. The site designers were mindful of how the vegetation and landscape would perform over time. Birch trees planted along the southern side of the building over time will grow to provide a green backdrop to be viewed from the mezzanine level.



Figure 3.6

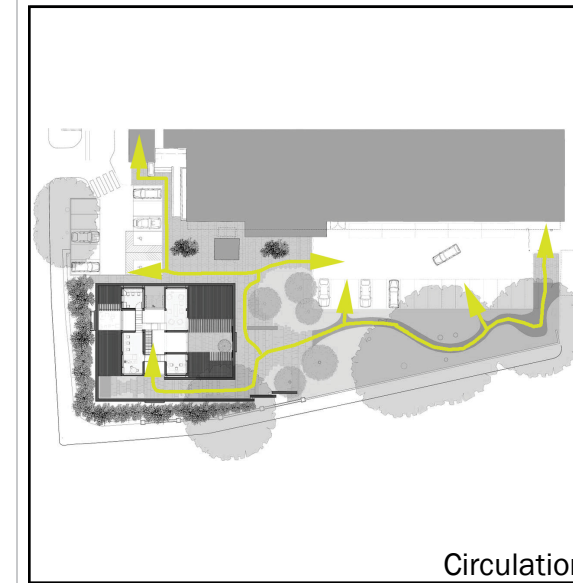
Maggie’s Centre London Healing Gardens

This example of healing gardens will help with the design of my thesis. It will help me understand the relationship of the site to the built structure. It is important to create outdoor spaces and an extension of indoor spaces and vice-versa. Minnesota’s cold climate only allows us to get full use of outdoor spaces for less than half of the year. It is still necessary to make these spaces equally as important as the interior. There is a different sensation about being outside that gives people a sense of freedom and activity. Allowing users that freedom while creating a well-designed space for it to happen can aid in the healing process.

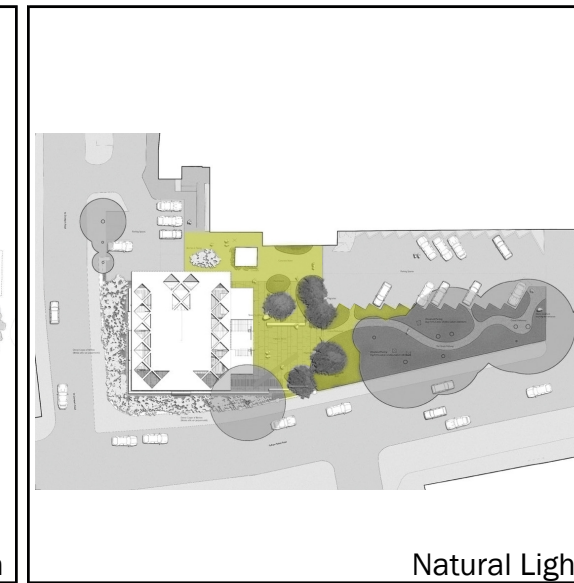


Hierarchy

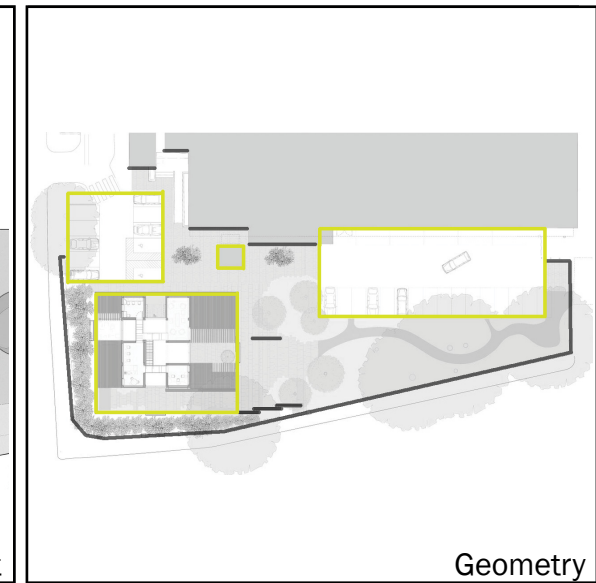
Figure 7.7 (All)



Circulation



Natural Light



Geometry

Case Study Series Summary

When deciding on case studies for this series I looked for two main similarities to my thesis idea: program and mission. I looked for buildings that had a similar program to my own in order to analyze spatial progression, size of spaces and adjacencies. Healthcare provides a wide range of functions so I decided to narrow my search down to rehabilitation facility and healing facilities. I also searched for case studies that had a similar mission to my own. My mission for my thesis project is to provide a space where users feel welcome, safe, and supported and a space where users have the freedom and the amenities provided for them to come to terms with their experiences. Each of the three case studies I analyzed has a similar mission to mine as well as similar functions. I will describe these similarities as well as differences in this summary. Each of these case studies helped me gain a better understanding of my Theoretical Premise/Unifying Idea.

Similarities between all three designs were how they each responded to their individual site. Maggie's Centre London responded to its busy London site by building high walls and creating specific views for its users to experience. Rehabilitation Centre Groot Klimmendaal responded to its forested site with floor-to-ceiling windows so its users can experience the nature outside from inside the building. Beit Halochem Rehabilitation Center responded to its desert Israel site by the use of heavy concrete walls and overhangs to protect from the harsh desert environment. In both Maggie's Centre London and Rehabilitation Centre Groot Klimmendaal, I was able to find evidence of sustainable practices and innovation.



Figure 3.7



Figure 1.7



Figure 2.10

Each of the case studies has distinct private and public spaces. Each of the cases promotes community as well as privacy. Maggie's Centre London, although a very small building, provides spaces of different scale to allow users to find their niche. Rehabilitation Centre Groot Klimmendaal provides community spaces that are regularly used by the public as well as private clinical areas and living units, all under the same roof. Beit Halochem Rehabilitation Center provides intimate spaces with the concrete "rocks" leaving the connecting spaces between the "rocks" to become the community spaces and circulation.

Some things that were different about each of the cases were the specific users. Maggie's Centre London is designed for people who are experiencing cancer at any stage. Rehabilitation Centre Groot Klimmendaal is designed for children and adults who are experiencing illness or accident. Beit Halochem Rehabilitation Center is designed for injured veterans and their families. Each of these categories of people shares similarities but comes from different lifestyles and has a different set of challenges. Each of these facilities seems to be well accepted by its community for the good it provides for its users.

A small amount of research was also done on homeless shelters. Homeless shelters have a mission to get people back on their feet and give them a sense of self-worth and self-accomplishment so that they may live a higher quality of life after they leave the shelter. This is similar to my thesis because my facility is also attempting to get people back on their feet after life-changing experiences and help them to be able to deal with the challenges they are faced with on a daily basis.

My Theoretical Premise states, "In order for positive change to occur, it is important to provide a facility where the emotional and psychological effects of architectural experience are researched, understood and implemented. The result of this experience will improve the quality of life and restore a sense of belonging in service members and their families." The case studies I analyzed validated this idea in multiple ways. Each of the individual designs was built on healing aspects of architecture and the needs of their clients. Each of the designs attempts to evoke an emotional response in its users by the use of materials, elements, and quality of spaces. Each of the designs strives to improve the quality of life for its users.



Figure 3.8

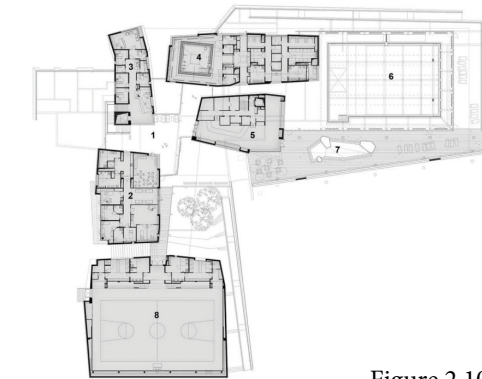


Figure 2.10



Figure 1.8

Historical Context Narrative

President Obama announced on Friday, October 21, 2011, that all nearly all troops stationed in Iraq will be coming home by the end of the year, effectively bringing an end to the long war (Montopoli, 2011). This means that many service members will be returning home and making the transition back into civilian life. Our country today does a very good job of honoring anyone who has served in the military for the sacrifice they made for our country. Each one of these service members has had a different experience while on deployment and each one is going to face challenges of his or her own when integrating back into civilian life in the U.S. Reintegration has never been easy for anyone who has been deployed for a long period of time and taken part in combat or other traumatizing events. This holds true throughout history. One thing that can help service members with making a smooth transition is access to benefits and support services they need. Support of the country and support services have changed throughout history and throughout the different wars. The first part of this narrative will take a look through history at how returning service members were treated for mental health issues upon returning from war as well as what was available for them in terms of support services. Research is broken down into these well-known and researched wars throughout U.S. History: World War I, World War II, Vietnam War, and Operation Iraqi Freedom/Operation Enduring Freedom.

HISTORY OF COMBAT STRESS REACTION

WWI

As veterans returned from World War I, they were treated as heroes and praised for their services for a short while. Soon after the war was over, they were not treated much differently than anyone else. Soldier Frank Buckles, last surviving veteran of WWI, claims upon his homecoming he was offered a one-month free membership to the YMCA and nothing else (Field, 2008). Soldiers who experienced combat-related stress were said to have “shell-shock” or “battle-fatigue”. This was classified in the medical field as a psychiatric illness resulting from injury to the nerves during combat (Bhattacharjee). Soldier’s experiencing “shell-shock” were to be labeled “S” for sickness. In August 1916, Charles Myers came up with the idea that it was necessary to create centers for these soldiers with treatment based on promptness of action, suitable environment, and psychotherapeutic measures (Taylor-Whiffen, 2002). The book *Shot at Dawn: Cowards, Traitors or Victims?* written by Peter Taylor-Whiffen states, “During the war, 266 British soldiers were executed for “Desertion”, 18 for “Cowardice”, 7 for “Quitting a post without authority”, 5 for “Disobedience to a lawful command” and 2 for “Casting away arms”, some of whom may have been victims of shell shock” (Taylor-Whiffen, 2002). In 1922 a report was produced titled *Report of the War Office Committee of Enquiry into “Shell-Shock”*. This report stated that all neurosis cases be treated as close to the line as possible to ensure that soldiers will be back on the battlefield as soon as possible and that no soldier with neurosis symptoms should be labeled on evacuation unless the case is deemed severe.



Figure 4.1

Figure 4.2



Historical Context

WWII

The term used in World War II for service members experiencing mental health issues was “battle fatigue”. Psychiatric casualties had increased by 300% as compared to World War I. One story in particular spurred the institute to secure more forward treatment of soldiers experiencing “battle fatigue”:

“On August 3, [General George S.] Patton was visiting wounded patients from the recent Sicilian campaign at the 15th Evacuation Hospital near Nicosia when he encountered 27-year-old Private Charles H. Kuhl of the 26th Infantry Regiment, 1st Infantry Division, sitting slouched on a stool midway through a tent ward filled with injured soldiers. Years later, Kuhl would affirm this version of his initial meeting with Patton, recalling that when Patton entered the hospital tent, “all the soldiers jumped to attention except me. I was suffering from battle fatigue and just didn’t know what to do. When Patton asked Kuhl where he was hurt, Kuhl shrugged and replied that he was “nervous” rather than wounded, adding “I guess I can’t take it.” In response, Patton slapped Kuhl across the chin with his gloves, then grabbed him by the collar and dragged him to the tent entrance, shoving him out of the tent with a final kick to Kuhl’s backside. Yelling “Don’t admit this son-of-a-bitch”, Patton demanded that Kuhl be sent back to the front at once, adding, “You hear me, you gutless bastard? You’re going back to the front.”” (Atkinson, 2007)

It was commonly known among these service members that to be effective in combat, they must learn to suppress their feelings. Soldiers turned to alcohol to numb themselves. Battle-fatigue was seen by some as poor leadership. Psychiatrists believed that once a service member was removed from the



Figure 4.3

battlefield, they would return back to normal but this was rarely the case (Van Ells, 2005). Nearly all combat victims experienced some symptoms of PTSD after returning from war. Many continued to bury their emotions, which led to substance abuse and sometimes suicide. Some sought the help of a psychiatrist but besides that, America really did not give returning veterans much of an option to deal with battle-fatigue, and many soldiers felt like they had nowhere to turn.

VIETNAM

Vietnam was a very different story in terms of how returning service members were treated. Many cases of psychological issues due to combat arose after the war was over and troops had returned home. “It was not until the early 1970’s, when the war was winding down, that neuropsychiatric disorders began to increase” (Evolution of Shell Shock to PTSD). A stereotype was applied to veterans of Vietnam as being psychologically devastated, bitter, homeless and drug-addicted. “In 1968, the American Psychiatric Association removed “gross stress reaction” from the Diagnostic and Statistical Manual of Mental Disorders. As a result, mental health professionals could no longer diagnose a soldier with a specifically combat-related mental illness. For Vietnam War veterans, the last of suitable diagnosis made it difficult to access health and disability benefits” (Baran, 2010). After the term “Post-Vietnam Syndrome” was coined to target veterans suffering from psychological issues. “About 15 percent of American soldiers who served in Vietnam were still suffering from war-related mental health issues fifteen years after the war, according to a government-funded report published in 1990” (Baran, 2010). “The National Vietnam Veterans Readjustment Study (NVVRS) was conducted by the U.S. government following a congressional mandate in 1983 to better understand the psychological effect of being in the Vietnam War. At the time of the study, there were about 479,000 cases of PTSD and 1 million lifetime PTSD cases as a result of the Vietnam War.” (Tull, 2009).



Figure 4.4

In 1979, Public Law 96-22 established the first vet centers. Vet centers were mainly staffed by Vietnam veterans themselves. These centers helped develop many of the debriefing techniques used today with people suffering from a traumatizing event. They began serving Vietnam veterans as well as veterans from World War II and the Korean War. These centers are located around the country and are still used today to help veterans who are experiencing readjustment problems.

In 1980, the American Psychiatric Association included the term “posttraumatic stress disorder” in the updated DSM (Baran, 2010). This diagnosis applied to people suffering from psychological distress “outside the range of usual human experience.” Military combat is one potential source for development of PTSD.

OPERATION IRAQI FREEDOM/OPERATION ENDURING FREEDOM

Means of dealing with combat-related psychological trauma in Operation Iraqi Freedom/Operation Enduring Freedom is increasing compared to in the past, largely because it is more talked about and publicized.

“One can argue that more attention has been paid to mental health issues of military personnel during the wars in Iraq and Afghanistan than at any other time in the history of warfare. Incidents of violence, directed at self and others, have led to a whirlwind of coverage in the media, which in turn has led to the allocation of more than \$900 million to the military for additional mental health interventions and research. Mental health issues have been prominent throughout the wars, with suicides outnumbering combat deaths in both 2009 and 2010” (Donnelly, 2011).



Figure 4.5

The biggest change from previous wars to today has been an increasing focus on prevention and providing consultant services to commanders (Adler, Bliese, McGurk, Hoge, Castro, 2011). From the current wars in Afghanistan and Iraq, despite aggressive outreach by the VA, roughly 40% of eligible Operation Enduring Freedom/Operation Iraqi Freedom veterans use the VA health services (Hinojosa, Nelson, 2011). PTSD is getting worse with modern American war conditions (Field, 2008). Some sources even claim that the technology of today such as internet and text messaging is making it worse. There are many facilities and resources available today for veterans to get assistance. One example of the facilities available is Soldier and Family Assistance Centers. These centers are located on army bases and medical centers around the United States. They provide services such as counseling, education and employment assistance, housing, and substance abuse assistance to help returning service members get back on track to a good quality of life (Soldier and Family Assistance Center). VA medical centers deal with diagnosed psychological trauma in veterans but there are many veterans who don't necessarily meet the criteria for diagnoses who could still benefit from some added support.

Senate Bill S.2 (2011) is meant to increase the mental health care services for America's veterans. The Bill states that a set amount of money is to be appropriated each year for mental health care research and alternative programs. It also calls for all health care providers in veteran health care facilities to be trained on how to handle military related mental health conditions. The Bill also states, “Immediately upon a soldier returning from deployment, they must undergo psychiatric screenings. If the doctors find that these soldiers have mental health care symptoms, these symptoms must be addressed immediately.” (S.2 2011)



Figure 4.6

Professionals today are trying to make soldiers understand that admitting to experiencing combat psychological related stress is not something to be afraid of and admitting to these issues can help them live more successful lives. It is widely recognized around the nation that these issues exist and services are provided for veterans and families to seek assistance. Since 1997, service members returning home from deployment are required to undergo psychological screening. This screening is supposed to point out any possible psychological issues. The downside of this is that many cases might increase some time after returning home. Nearly 2/3 of sampled soldiers in a study reported that they would seek treatment if they thought they had a problem. Admitting to having a problem is the first step. Without admitting to that, there is no treatment that can help.

HISTORY OF ST. CLOUD VA HEALTH CARE ADMINISTRATION

The St. Cloud VA Health Care System is located in St. Cloud, Minnesota. The city of St. Cloud and its surrounding cities are home to more than 100,000 people. The VA System serves veterans all over the upper midwest region of the United States. The only other VA medical center in Minnesota is located in Minneapolis. Minneapolis is located 65 miles southeast of St. Cloud. The St. Cloud VA medical center was established in 1924 and delivers care today to more than 34,000 veterans in the area (“About this facility – St. Cloud VA Health Care System, 2011”). The St. Cloud VA Medical Center recently changed its name in 2011 to the St. Cloud VA Health Care System to reflect the expansion of medical services in other locations of Minnesota including Alexandria, Brainerd and Montevideo.

Areas of care at the center include primary and specialty care, mental health care, surgical and specialty care, urgent care, acute psychiatric care, telemedicine, extended care and rehabilitation, imaging, laboratory and

pharmacy services. The mental health facility offers programming including psychiatric intensive care unit, psychiatric evaluation and treatment, behavioral interventions, supportive counseling, health education, pastoral care, recreation therapy and discharge planning (“About this facility – SCVAHCS, 2011”). They also have a 148 bed in-patient program in a residential setting that uses a recovery model to treat PTSD, substance abuse, and a variety of other mental health conditions.

Their mission as a facility exists to “Honor America’s Veterans by providing exceptional health care that improves their health and well-being” (“About this facility – SCVAHCS, 2011”). Their vision is that “They will be a patient-centered, integrated health care system for Veterans, providing excellent health care research and education, and active community partner and a backup for national emergencies” (About this facility – SCVAHCS, 2011).

The VA Health Care System is there to provide the support service members need when reintegrating back into society. The health care system has an OIF/OEF/OND Combat Veterans Program Office where they can assist returning service members with this transitional process. To date, approximately 4,350 OEF/OIF/OND Veterans have enrolled with the St. Cloud VA HCS (Annual Report, 2011). They also have a Homeless Veterans program and have plans set in place for homeless and at-risk veterans and their families (Faulkner, 2011).

The VA Health Care System is currently undergoing a lot of new construction. In 2010 they opened a new urgent care clinic, completed final phases of a road construction project, and remodeled the Specialty Care support spaces and Acute Psychiatric spaces. A geothermal heating system is currently being put into a few different buildings on the campus (Annual Report, 2010). A wind turbine was also recently installed on the northeast side of



Figure 6



Figure 6.1

Historical Context

the campus which is expected to produce 15% of the center's energy. 2011 construction includes a remodel of the CLC building, construction of a 20-bed Intermediate Psychiatric building, construction of a new rehabilitation center, an Ambulatory Surgery Center, and an addition to the Audiology Clinic (Annual Report, 2011).

St. Cloud is home to a large population of students. St. Cloud State University has a Veterans program and a Higher Education Veterans Program Regional Office that is more than willing to assist returning veterans in gaining an education (Veterans' Resources at St. Cloud State University, 2011). They offer the GI Bill benefits, tuition assistance, a Veterans support staff, and a student Veterans Organization.

St. Cloud is a welcoming place for returning veterans because of the many opportunities it presents. The population of St. Cloud and the surrounding areas is up 13.6% since 2000. The surrounding cities to St. Cloud include Sauk Rapids, Waite Park, Sartell, St. Joseph, Pleasant Lake, Rockville, St. Stephen, and Clearwater. The Midwest is full of opportunity while still providing civilians with a safe, affordable lifestyle in which to live a high quality of life. The median resident age of St. Cloud is 28.2 years old which is similar in age to many service members who are currently serving in Operation Iraqi Freedom/Operation Enduring Freedom. Cost of living is reasonable and it is within reasonable distance to big cities such as Minneapolis (60 miles) and Chicago, (413 miles). The unemployment rate is 7.1%. Travel to and from St. Cloud is well developed. In 2007, St. Cloud was recognized as having the best transit system of its size in North America. It also has an Amtrak station and the St. Cloud Regional Airport. Education opportunities in St. Cloud include the St. Cloud State University, St. Cloud Technical College, College of Saint Benedict, and a number of public schools. (St. Cloud, MN profile, 2011).

Project Goals

ACADEMICALLY

My goals academically for this thesis project are to create a well-researched, thought-provoking design that will give viewers a clear understanding of the social and political aspects of the design. My hope is that I will be able to successfully exhibit and present it to my viewers in a way that will help them understand the time, effort, and personal emotion that I have poured into the project. My goal is that this project will be the culmination of everything I have learned throughout my 5 years at NDSU. I want to incorporate everything I have learned from research techniques, programming, planning, schematic design, design development, and detailing all the way to final product and presentation. My plan to make all of the aforementioned happen is to create a well-thought-out schedule, stick to it throughout the spring semester, and find an organized means of collecting and preserving the process of the project. I want this thesis project to be a good example for future thesis students. I want viewers to see my thesis as a project that is well-thought-out, relatable, and easily understood.

PROFESSIONALLY

Professionally, my goal for this thesis is to be able to articulate the scope of work that I am capable of producing. Also, I would like my design to establish a form work for who I am as a designer and how professionals will view me as a designer. I would like to be able to use this thesis project to get an internship in the Architecture field after graduation. Since I have not decided on a specific typology with which I would like to get involved in designing, my wish is that my thesis project will open many doors for me and give me options and opportunity to find the right job. My goal after being done with my thesis project is that I will feel prepared to enter the professional world with all the knowledge I have gained through my educational experience. My goal is that this thesis project will help me better understand the level of work that goes into a real-world design project.

PERSONALLY

My goals personally for this thesis project are to gain a better understanding of returning service members and what they are faced with and what we as a country can do to help. My goal is to be able to present this thesis project to a returning veteran in a casual setting and receive a positive, relatable response. It seems like in today's society, almost everybody knows at least one person that has

been deployed in a war. My goal is that my design will exemplify a sort of humanness that viewers can easily understand and relate to on a positive level. Personally, my goal is that this thesis project will be something that I can proudly stand behind to demonstrate what I have learned here at NDSU in the architecture program about design, work ethic, dedication, and professionalism.

Site Analysis

Site Analysis Narrative

When designing a healing environment, choosing the proper site can help strengthen the effectiveness of the design. When I think of a mental/emotional healing environment it must have a few things. The first thing that comes to mind is a place that is quiet and secluded and away from distraction where a person can have time to relax and think. The second is a place where the proper amount and type of support can be found. The design of this thesis is meant to serve people, so bringing it to an area with a high population would promote use by a larger group of people. In order for all of these criteria to be met, I had to find a place that was quiet and secluded yet close to opportunity and support.

I can only imagine that most service members returning from deployment do not want to immediately leave their family again to seek treatment in a remote location far away. Families have obligations such as work and school, so it is also not easy for them to

pick up and travel somewhere for an extended period of time. When visiting the St. Cloud VA Health Care System Campus I was able to find a site that I believe embodies these characteristics that I was looking for. In my opinion, St. Cloud and the surrounding cities make up a large, diverse population without being too large and intimidating. The many opportunities that St. Cloud has to offer makes me think that it would be a great place to restore a high-quality lifestyle for families and individuals. The proximity of the site to the surrounding population will allow me to have in-patient as well as out-patient services. This will allow the facility to reach out to more service members in need. There are existing facilities whose functions are to serve returning service members and their families located on the southern and eastern coasts of the country. There are very little services such as these located in the Midwest despite the fact that many returning service members return home to families and lifestyles in the Midwest.

By providing a location that is on the St. Cloud VA Health Care System Campus, returning service members are in close proximity to a variety of health care support if necessary. The location on the campus provides a safe secure environment for service members. The St. Cloud VA Health Care System is located near the edge of St. Cloud. It is easily accessible by people in the area. There is a bus service that runs to the campus everyday that would service people who were unable to drive and also would promote sustainability.

The reason I chose the site up in the northeastern corner of the campus is because that area of the campus is somewhat undeveloped. This will allow my facility and users the seclusion they desire. The site is located next to the Sauk River with great views of the river to the north and the opportunity to interact with a small island near the site. The site is fairly small and slopes towards the north. I believe that the site has a lot of character and offers great opportunities for development.

Site Analysis
Qualitative

Views and Vistas

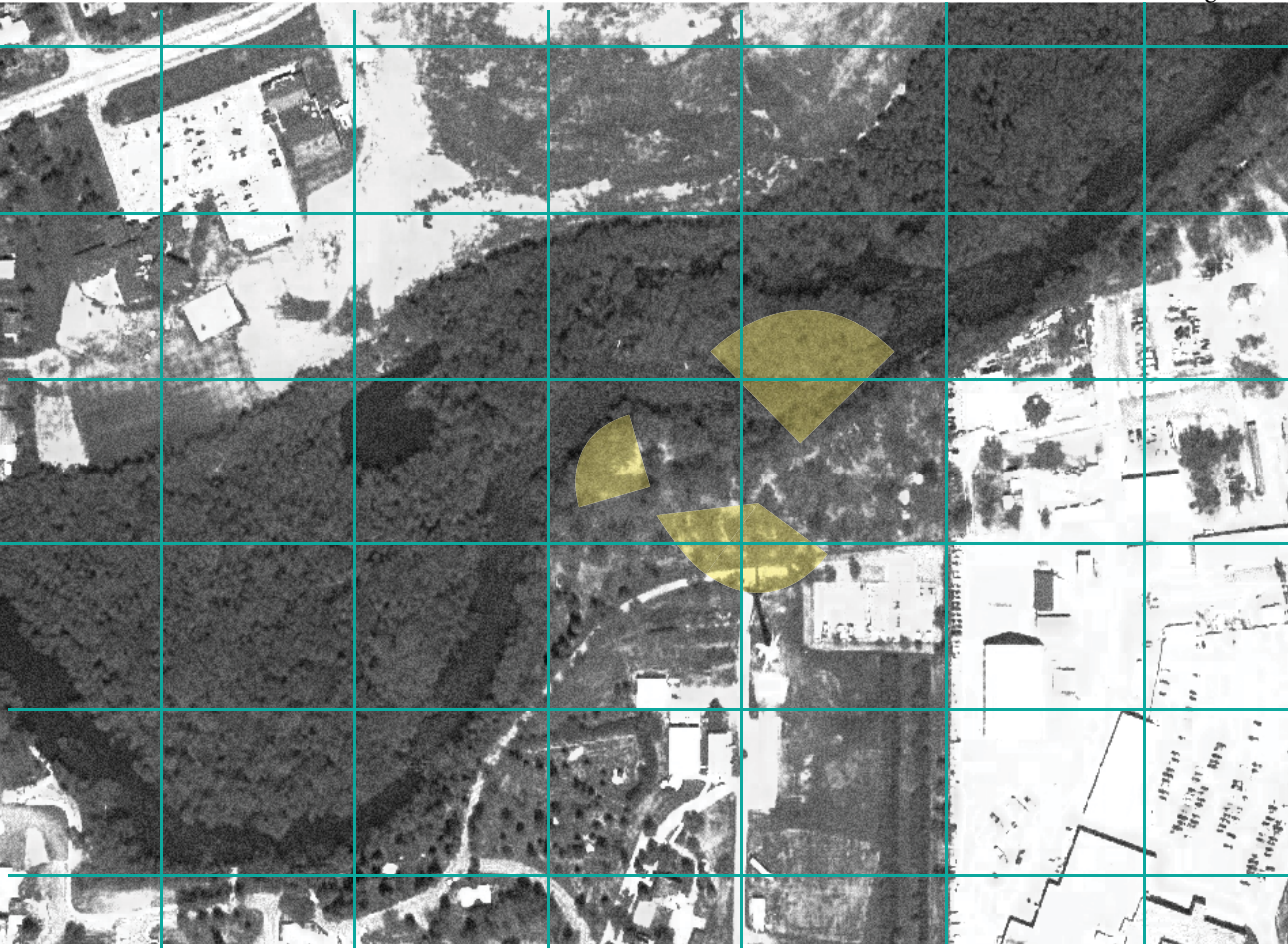


Figure 7.8

Views from my site include views to the north and west of the Sauk River and the dense trees surrounding the river. Views to the south include the Medical Center campus. The view to the east of my site is looking towards the Department of Transportation, mainly their storage buildings and storage yard. This view is undesirable.



Figure 8

Plan

The St. Cloud VA HCS Campus is not laid out on a square grid. In fact, it is composed of many curving roads and paths. Most of the existing buildings on the campus are rectangular or 'U' shaped. There is a very uniform nature to the design and layout of the buildings.

Section

There is only one structure built directly next to my site which is a storage unit that I don't anticipate blocking any natural light from reaching my site. The figure on the next page illustrates the angle of sunlight into a structure placed on my site.

Light Quality/Vegetation



Figure 8.1



Figure 8.2



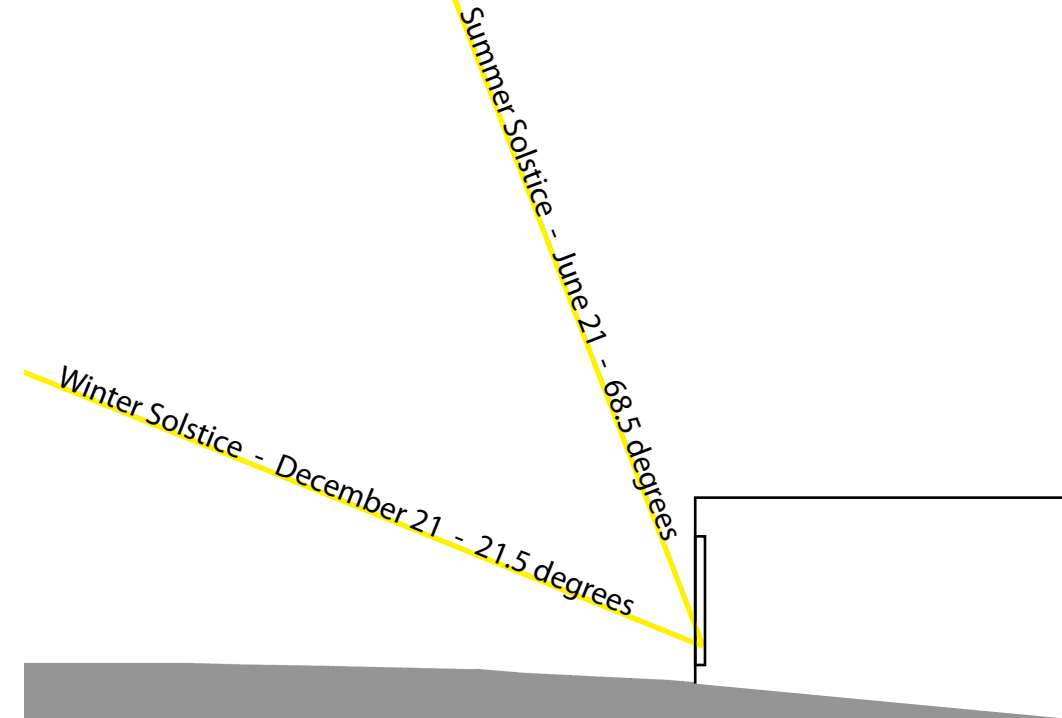
Figure 8.3

Light

The light color and temperature of the site on my initial site visit was a cool blue color. It had just snowed the day before and there were no leaves left on any of the deciduous trees. It was nearing sunset so the light intensity was low. Most of the trees located on my site are deciduous which will change the amount of light received in summer vs. the winter.

Vegetation

A variety of plant life is found along the Sauk River in this area. This plant life ranges from natural prairie grass to hardwood forests. Oaks, elms, silver maples and willows are the most common trees found in this area. Along with the river comes a variety of wildlife as well, including native birds, squirrels, chipmunks, and more.



Built Features

- 1 Transportation Department
- 2 Transportation Department Storage
- 3 Storage Facility
- 4 Vocational integration program/
Compensated Work Therapy
- 5 St. Cloud Hospital Sleep Center
- 6 Clara's House
- 7 Offices
- 8 Mental Health Clinic
- 9 Dorms
- 10 Mental Health Services/Pharmacy
- 11 Auditorium
- 12 Admissions/Information/Primary
Care
- 13 Specialty Clinic/Lab/X-Ray

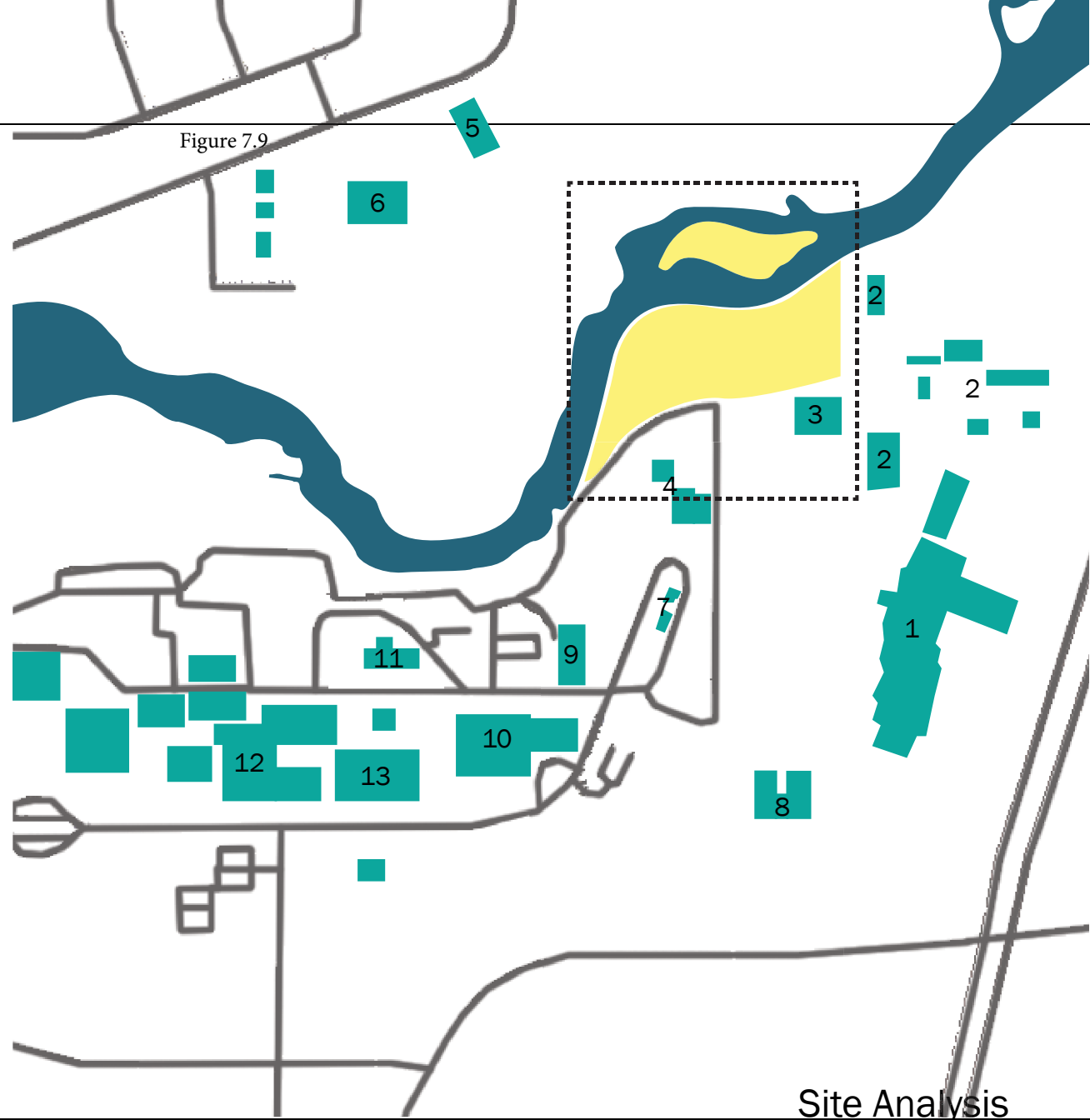


Figure 8.4

The built features surrounding the site include the storage and maintenance facilities for the Department of Transportation as well as the wind generator located directly to the south of the site. All new construction on the campus must pass approval by the National Historic Society. Buildings surrounding the site are constructed of washed-out red brick and concrete. They represent a very historic type of design. The central area of campus is fairly densely populated while the outskirts of the campus are still being developed.



Figure 8.5

Flood Plain

The Sauk River is a tributary off of the Mississippi River that drains many small lakes in Stearns County. It does flood a small amount in the spring around the time everything is melting. Shown in yellow is the 2010 flood plain. I also researched the 500-year flood plain and the FEMA floodplain, all of which were very similar in dimension. Majority of the site that I have chosen for my thesis does not flood. This is ideal to have wonderful views of the river without having to worry about flooding every year. The area down closest to the water does flood in the spring. Also, the island that I am looking at building on does flood every spring.



Figure 8.6



Figure 7.10

Site Analysis



Figure 8.7

In April of 2011, the St. Cloud VA Health Care System received funding for a wind turbine as part of a nation-wide VA energy conservation initiative. The turbine is anticipated to produce approximately 15% of the facility's annual electricity usage. The VA chose to put the wind turbine just south of my proposed site. It is in a very large open space that gets access to wind from all directions.

On a smaller scale, my site is very protected by trees on the north side which will help in protecting my building from strong northern winds. In the summer my sight will receive the cool southerly breezes from across the campus. Wind will travel with the Sauk River and create ventilation and air movement throughout my site.



Figure 8.8

The only indication of human characteristics on my site are a few small piles of rock and distress from foot traffic and small vehicle tires. There is an old concrete structure located near the water. I am not sure what it was used for at one time but it looks as though it has not served any purpose for many years.

There are signs of distress directly surrounding my site because it is a very undeveloped area. The existing structures look as though they have not been updated in many years and the roads are not paved. The rest of the campus is very well kept up.

In the image to the right you can see the actual scale of a human standing next to a tree on the site. The human scale helps give perspective to the actual size of the site.



Figure 8.9

Figure 8.10















Site Analysis
Quantitative

Soil Analysis

The soil on my proposed site is Urban land Hubbard complex. *Soil Survey of Hennepin county* states, "Urban land consists mainly of residential areas and is covered by impervious surfaces. Most areas have been disturbed to some degree by construction activity. Because of the variability of this component, interpretations for specific uses are not available. Onsite investigation is needed." Hubbard and similar soils are usually found on hills and on stream terraces. Mosford is also part of this soil type and is found on stream terraces typical in swales.



Figure 8.11

-  Dickman sandy loam, 2-6% slopes
-  Estherville sandy loam, 0-2% slopes
-  Pits, Gravel
-  Psammments, sloping
-  Estherville-Hawick complex, 2-6% slopes
-  Urban land-Osakis complex
-  Water
-  Dickman sandy-loam, 0-2% slopes
-  Estherville sandy-loam, 2-6% slopes
-  Kalmervilla sandy loam, frequently flooded
-  Urban land-Hubbard complex, 1-8% slopes
-  Osakis loam

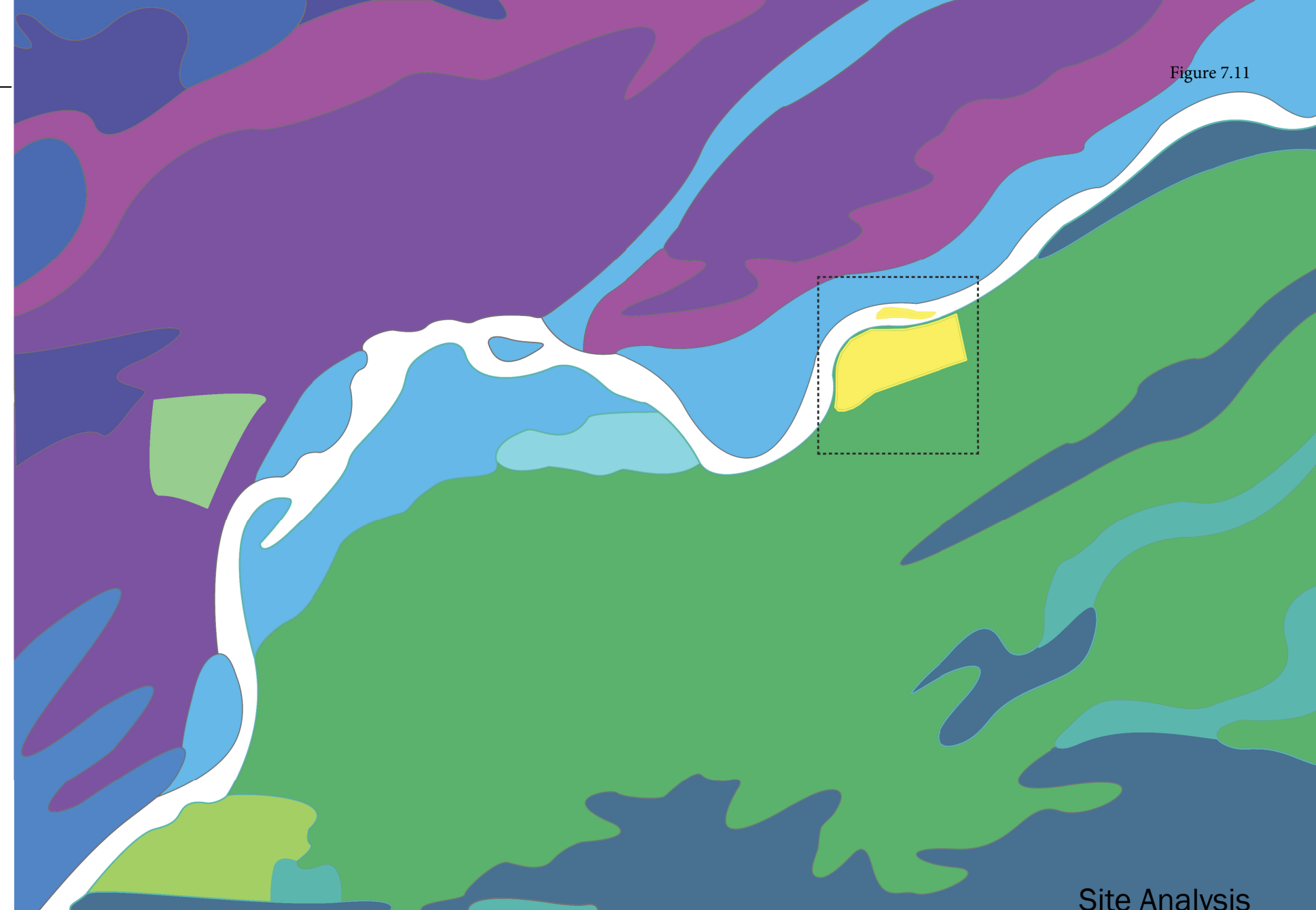


Figure 7.11

Site Analysis

Utilities/Vehicular Traffic/Pedestrian Traffic

Vehicular traffic is low directly surrounding the site. The only other facilities in the area are not commonly used. The roads leading up to my site are narrow and winding. The heaviest traffic approaching my site would be on Highway 15 to the east followed by Veterans Drive to the south. Since the VA Campus is Federal property, vehicle traffic is kept to a minimum. 24 hour security is on site to provide safety and report suspicious activity.

Pedestrian traffic is also low surrounding my site, mainly because there is no reason for people to be walking there. Most of the facilities are located in the center of the campus and get a lot of pedestrian traffic on their main circulation paths. The VA has plans for developing the site directly south of my site as well as the site to the southwest. This will bring more vehicle traffic as well as pedestrian traffic to that area.

Facilities located near my site are Apollo High School to the south and a Lutheran church across the river to the northwest.

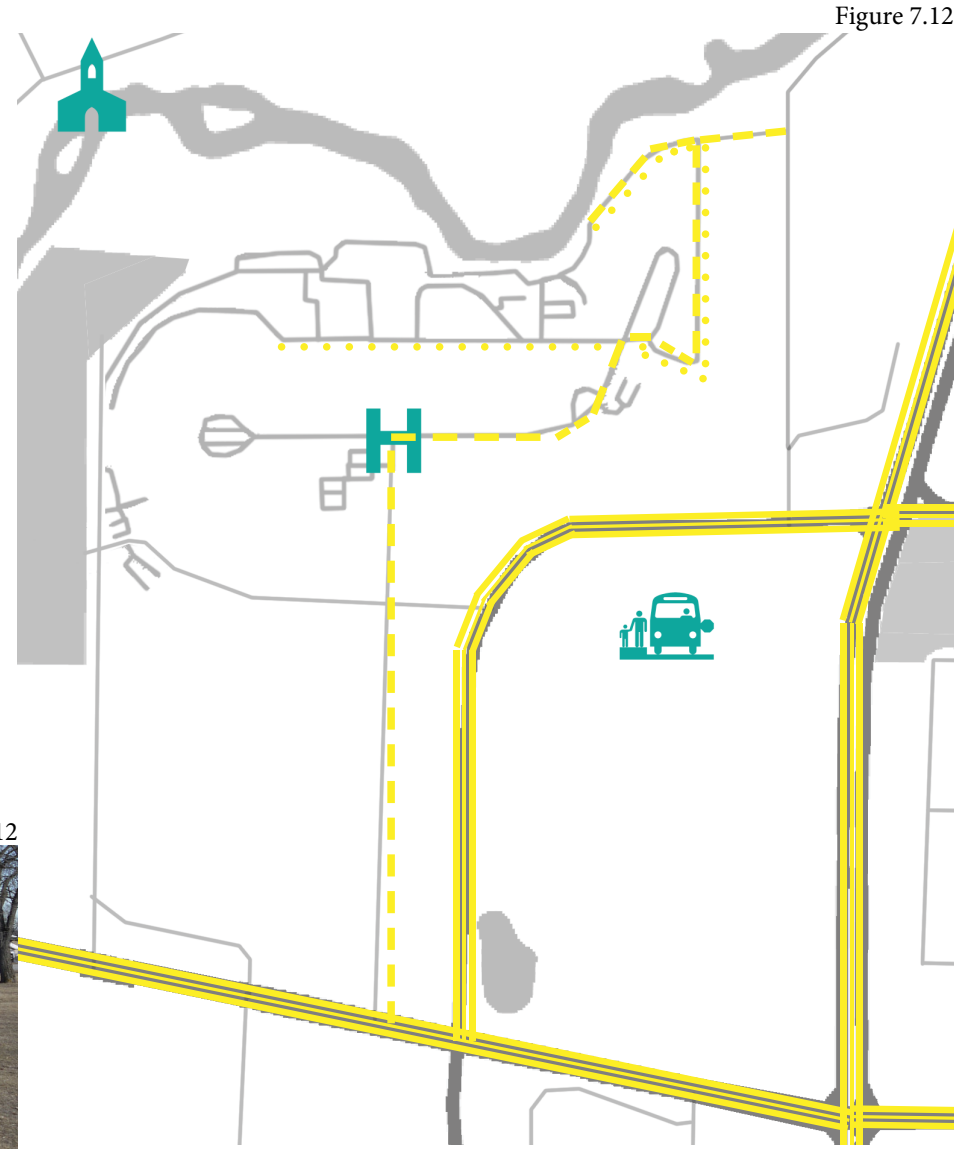


Figure 8.12

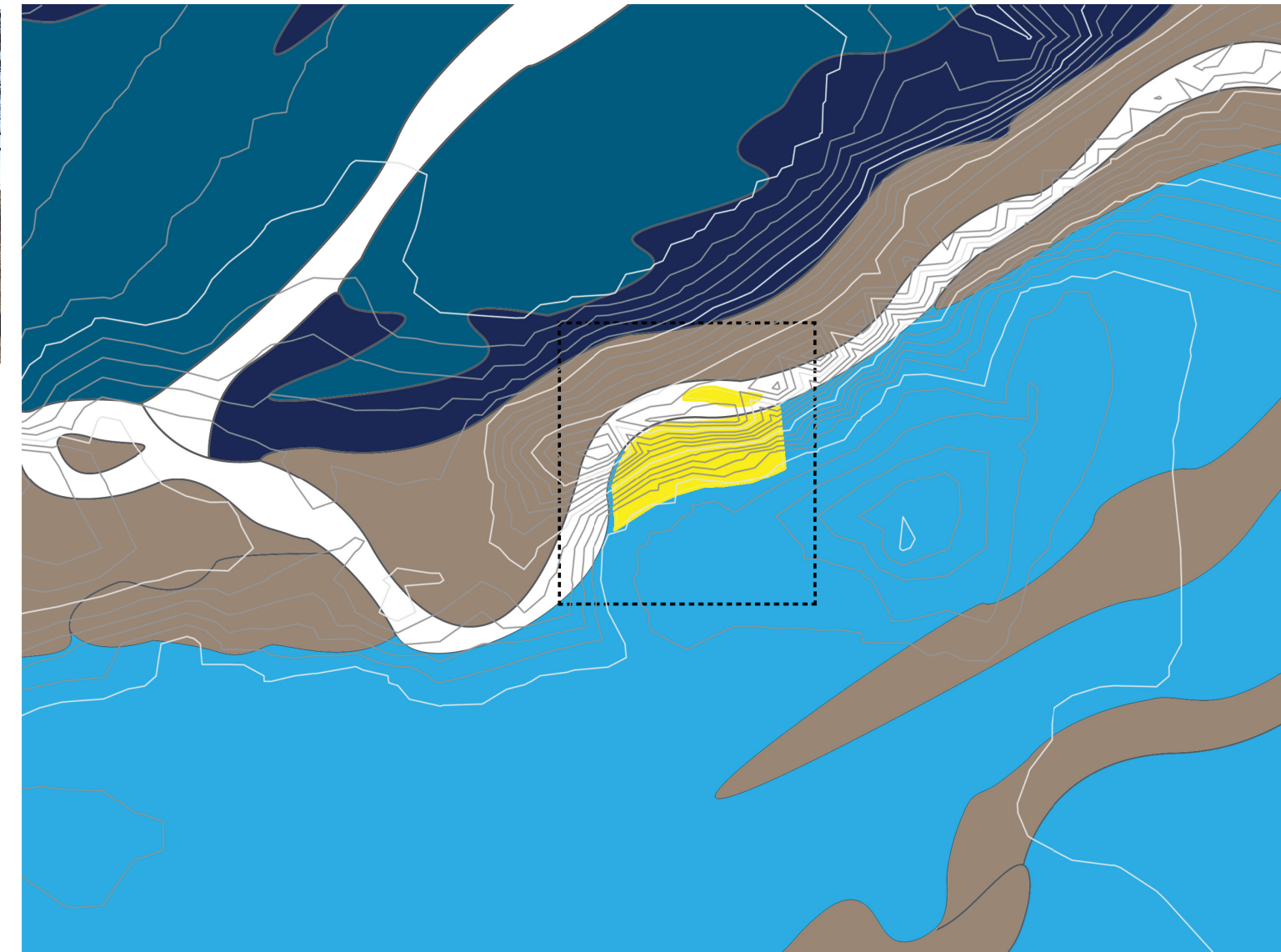
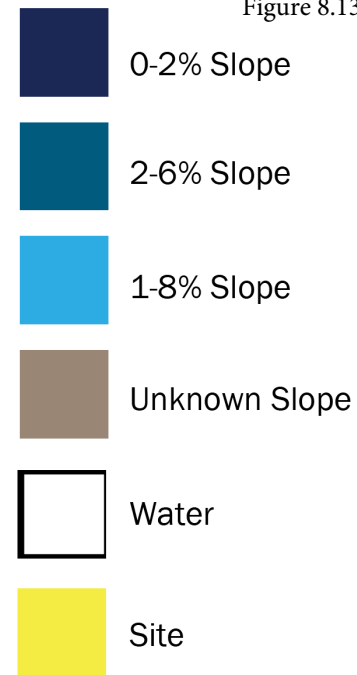


Topographic Survey

Figure 7.13



Figure 8.13



Site Analysis

Site Character



Figure 8.14

There are plans for construction of a few new facilities in the areas surrounding my proposed site. This will draw more attention to the area in the northeast corner of the campus.



Figure 8.15

Sauk River running north of my site splits apart briefly to allow for a small island to rise in the center. This slightly speeds up the water movement as it passes through. The island floods every spring. The tall trees on the site indicate that they manage to survive the flood waters in the spring.



Figure 8.16

There are a few signs of trees dying down by the river. This could possibly be due to over-crowding. It does not seem like an outstanding amount of trees are dying nor does it seem like they are dying because of anything out of the ordinary such as disease or human involvement.



Figure 8.17

The location of my site is very secluded in the northeast corner of the VA Health Care System Campus. It is very quiet without much traffic. At the same time, it has close access to the rest of the VA Campus. My site is centrally located in the city of St. Cloud and close to Highway 15 and other high-traffic roads that will take you to the surrounding cities of St. Cloud.

Site Boundaries



Figure 8.18

Across the street to the south of the site is a shelter belt of trees that provides privacy from the other facilities nearby.



Figure 8.19

Located directly to the east of the site are storage and maintenance facilities for the Department of Transportation. There is a chain link fence spanning the property line between the sites.



Figure 8.20

The Sauk River defines the boundary to the north of my site. Small dense trees line the shore of the river. These trees create a nice barrier from the wind off of the water but also allow for great views in areas where the trees split apart.



Figure 8.21

The west boundary of the site is defined by a dense line of trees followed by a steep slope down to the winding river.

Base Map

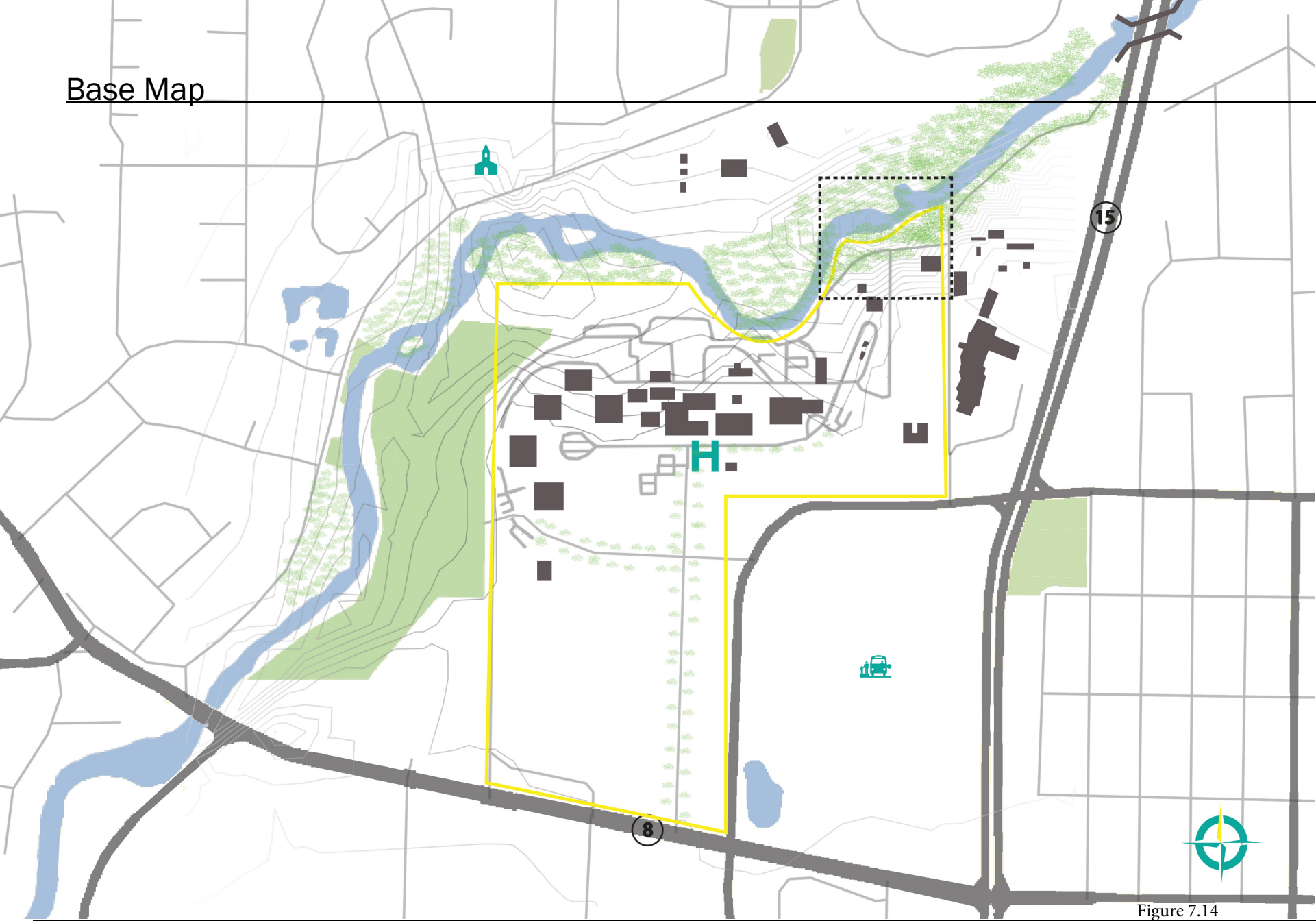


Figure 7.14

The map on the previous page represents many aspects of my site and the surrounding area. It represents:

the legal boundary of the St. Cloud VA Health Care System,

the location of roads, buildings and bridges,

the presence of streams and small ponds, parks and greenspace,

general areas of vegetation,

contours of the site,

and close by facilities.

It is meant to summarize most of the analysis that was done for this particular area.

Figure 5.1



Site Analysis



Figure 8.22

View from south edge of site



Figure 8.24

Panorama from mid-site



Figure 8.23

Panorama from mid-east site



Figure 8.25

View from southeast edge of site



Figure 8.26

View to Island from site



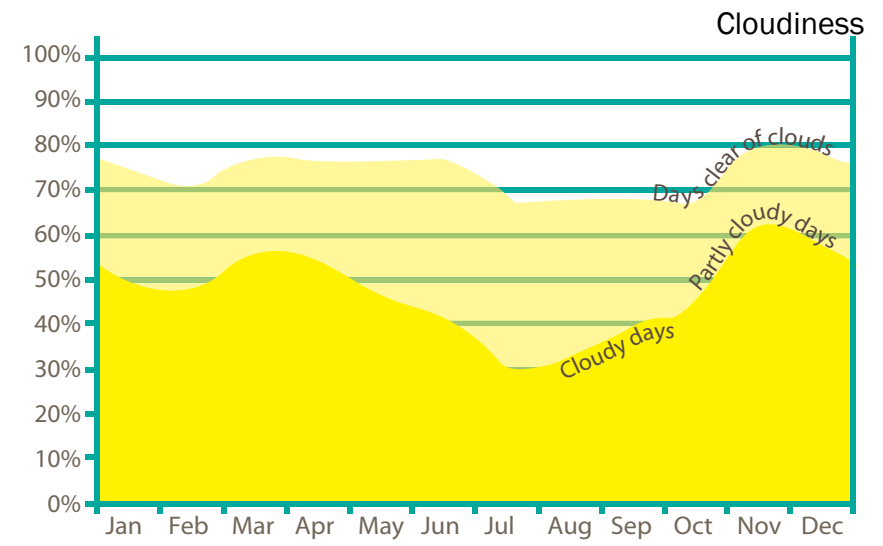
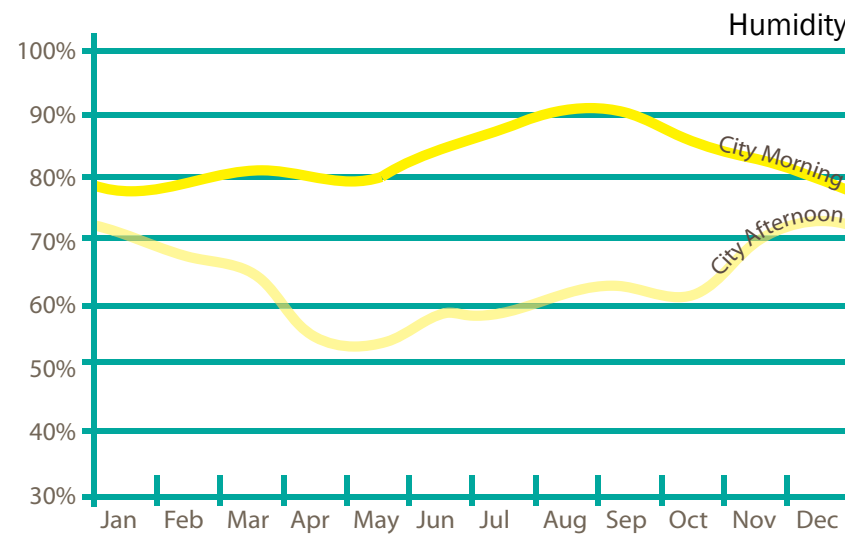
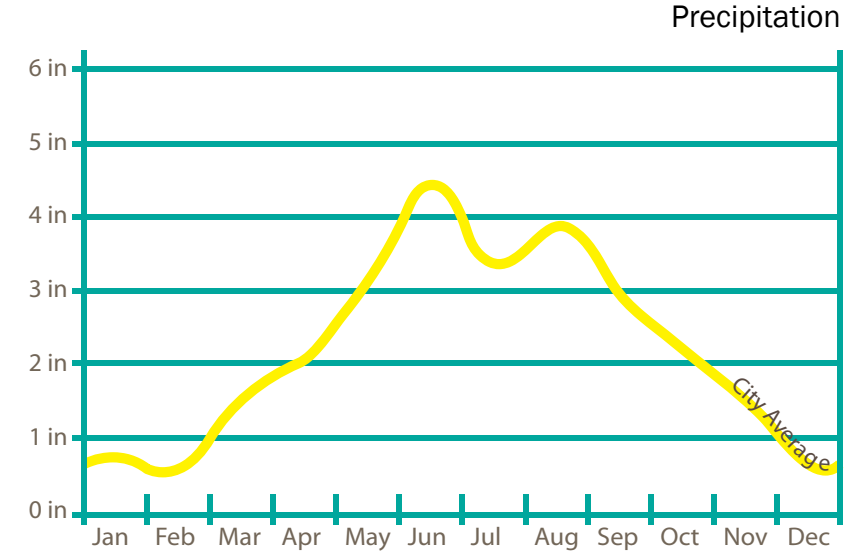
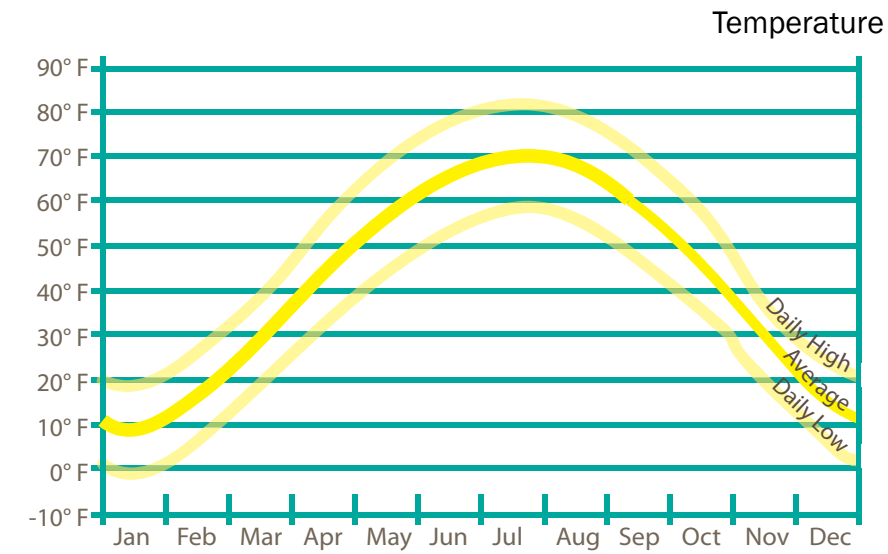
Figure 8.27

View to river from site



Figure 8.28 (All)

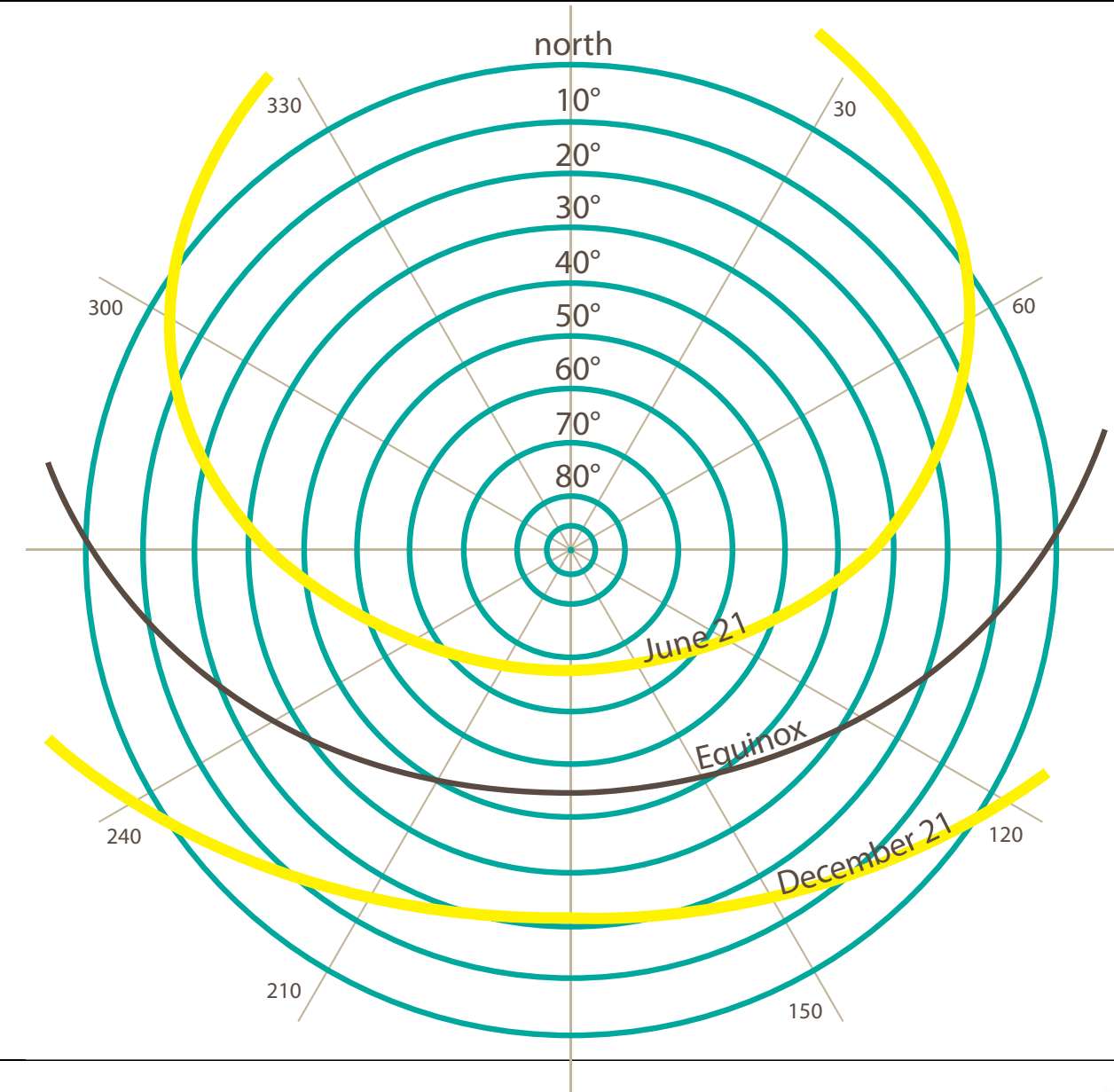
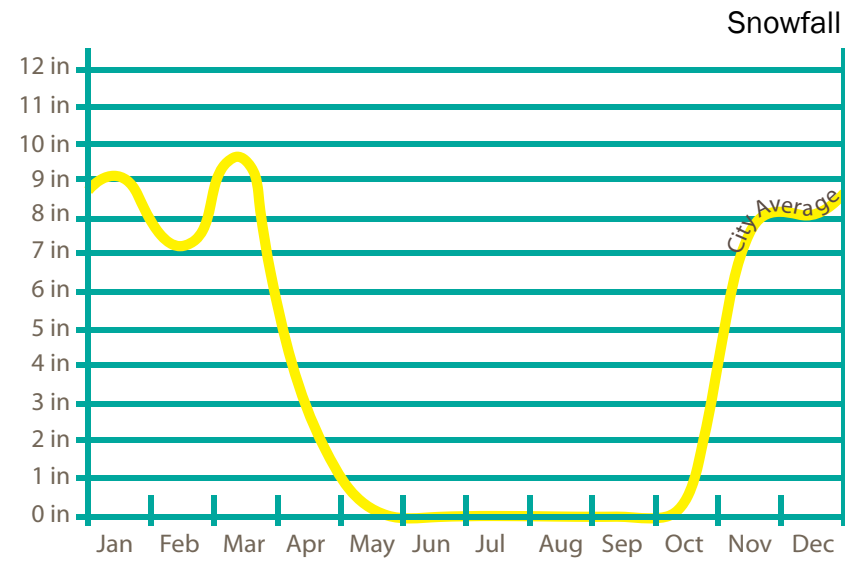
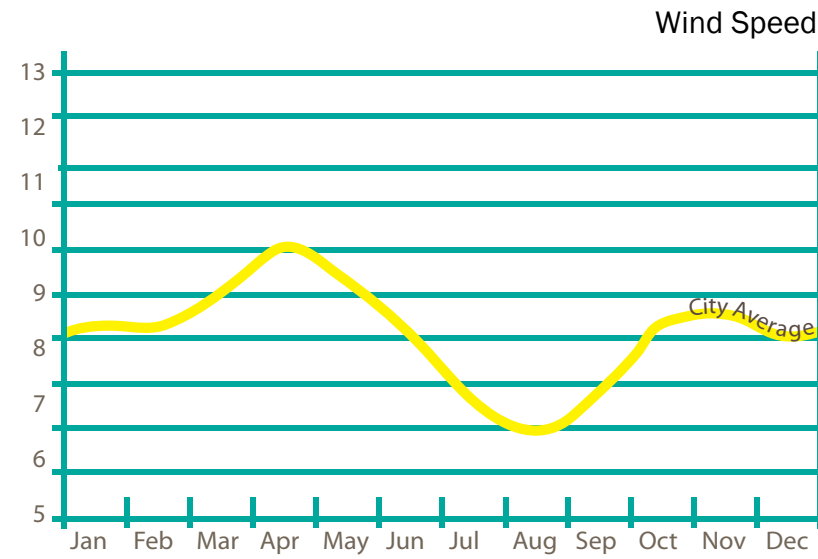
Additional Site Photos



Climate Data

Figure 7.16 (All)

Sun Path



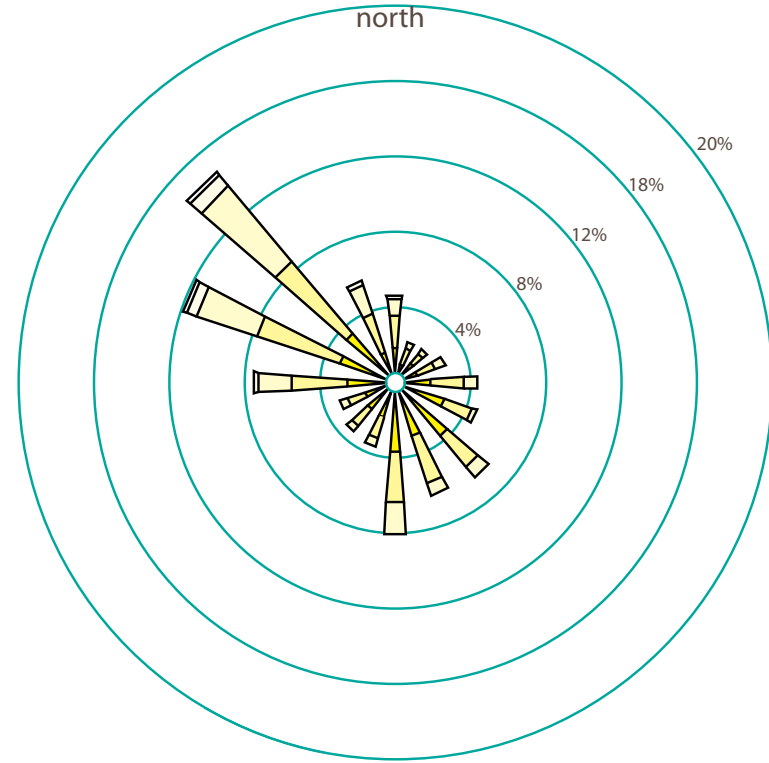
Site Analysis



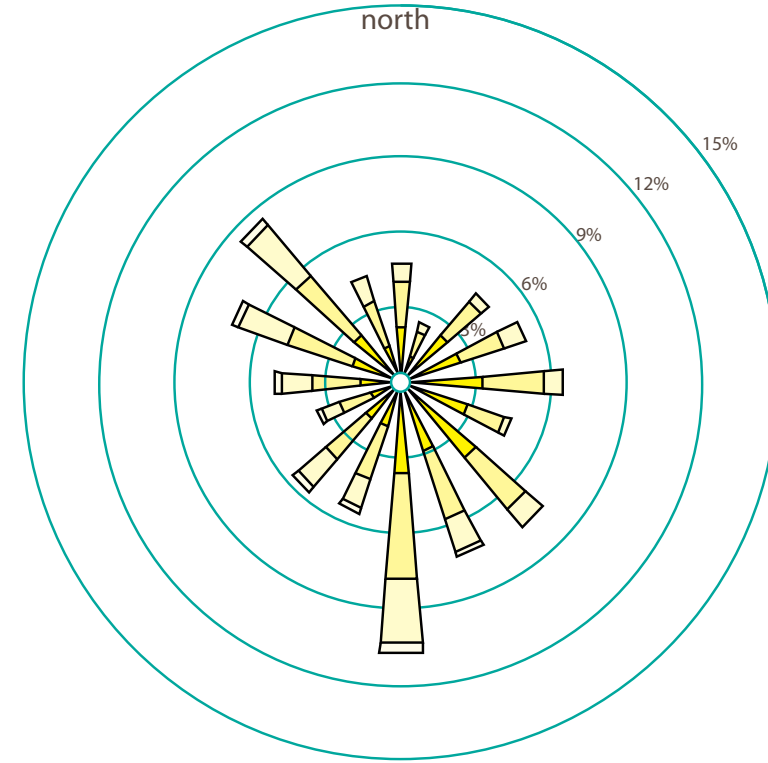
Wind Direction

Figure 7.17 (All)

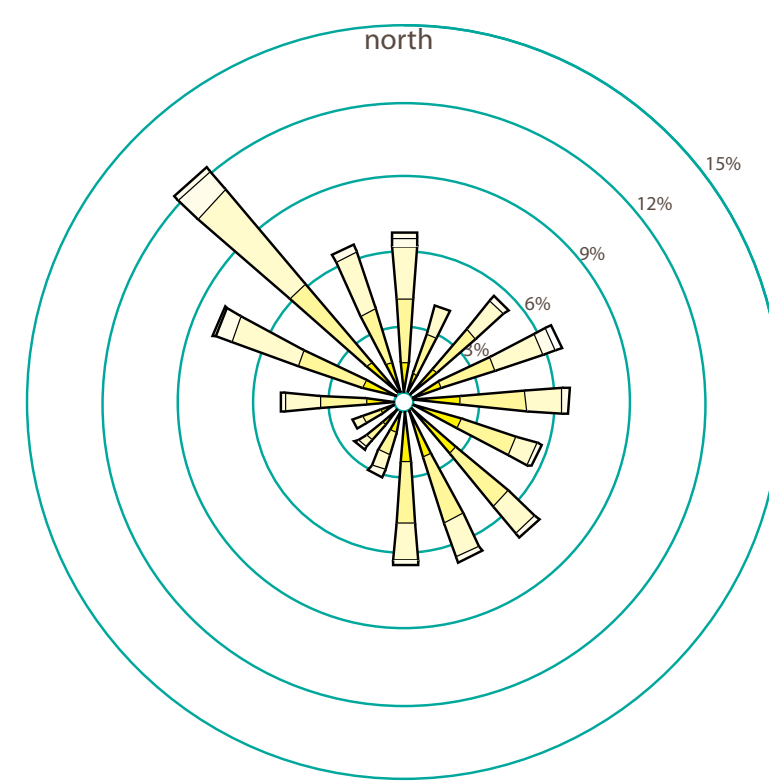
Winter - December



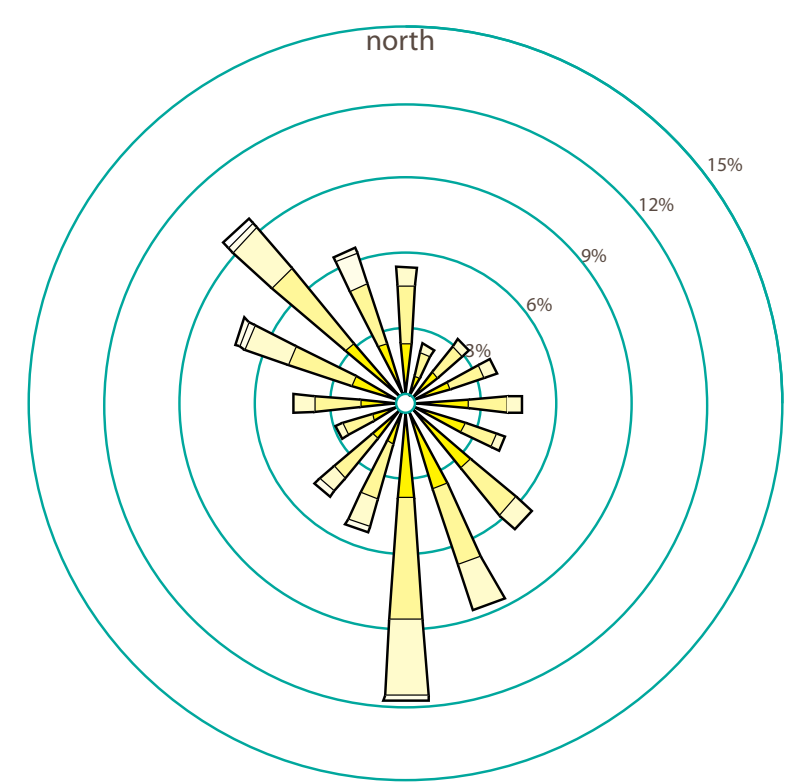
Summer - June



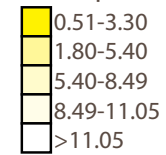
Spring - March



Fall - September



Wind Speed (mph)



Topography & Slope

Figure 7.18



Lower Site:

24' elevation change over 200' running north to south.

The site slopes towards the north at approximately 10-15%

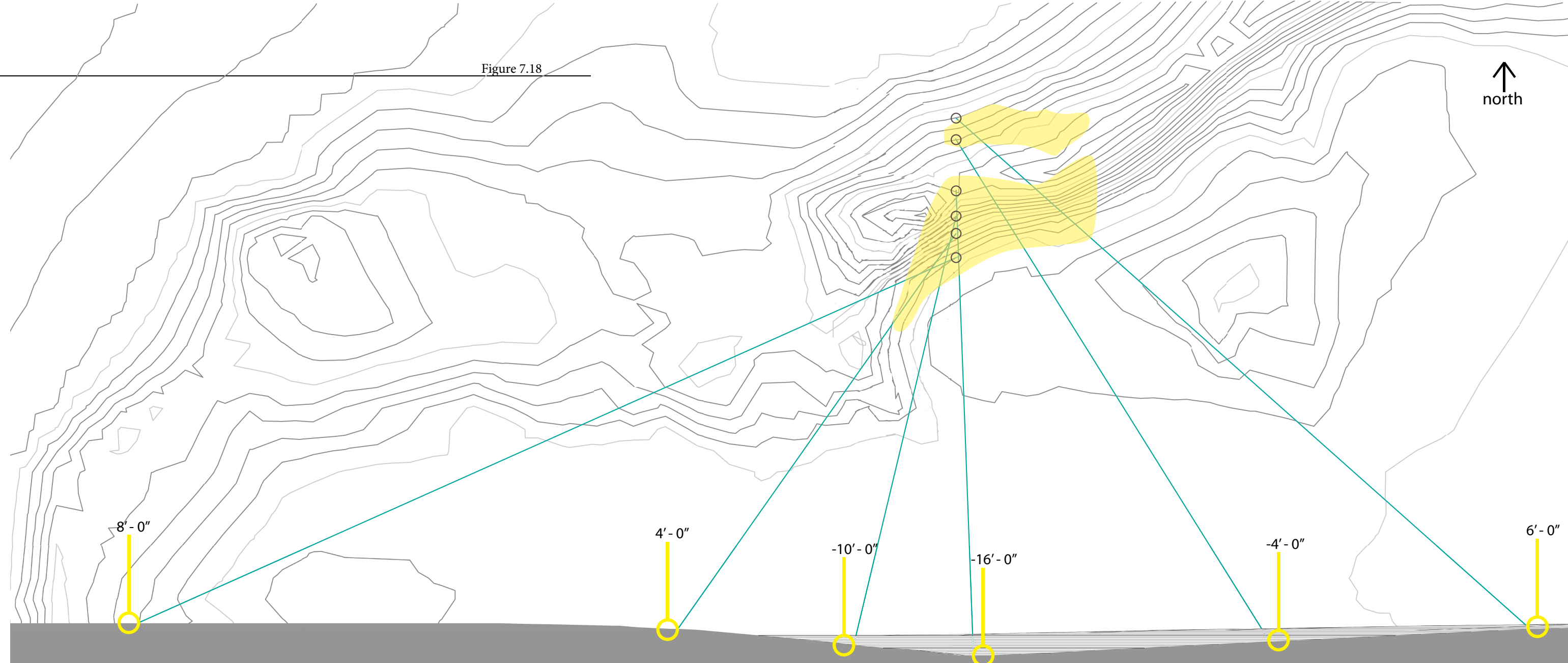
The elevation change from east to west is very minimal

Upper Site:

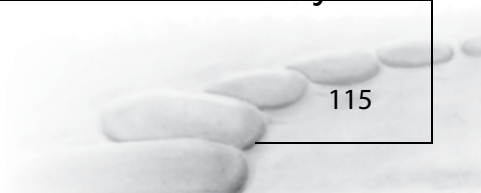
6' change over 120' running north to south

The site slopes slightly towards the south at approximately 5%

The elevation change from east to west is very minimal



Site Analysis



Shading



Figure 7.19

There are really no tall structures around the site

Shading primarily comes from deciduous trees located on the site

Because of the slope to the north, some southern sun exposure will be lost resulting in shading on the site

The upper site sits lower down than the lower site which will result in shading from the slope of the lower site as well as the deciduous trees located on the site

Noise

There is very little noise on the site.

Sounds from the running river

Minimal vehicle traffic on the service roads of the campus

Highway 15 located to the east, but is very minimal due to being so far away

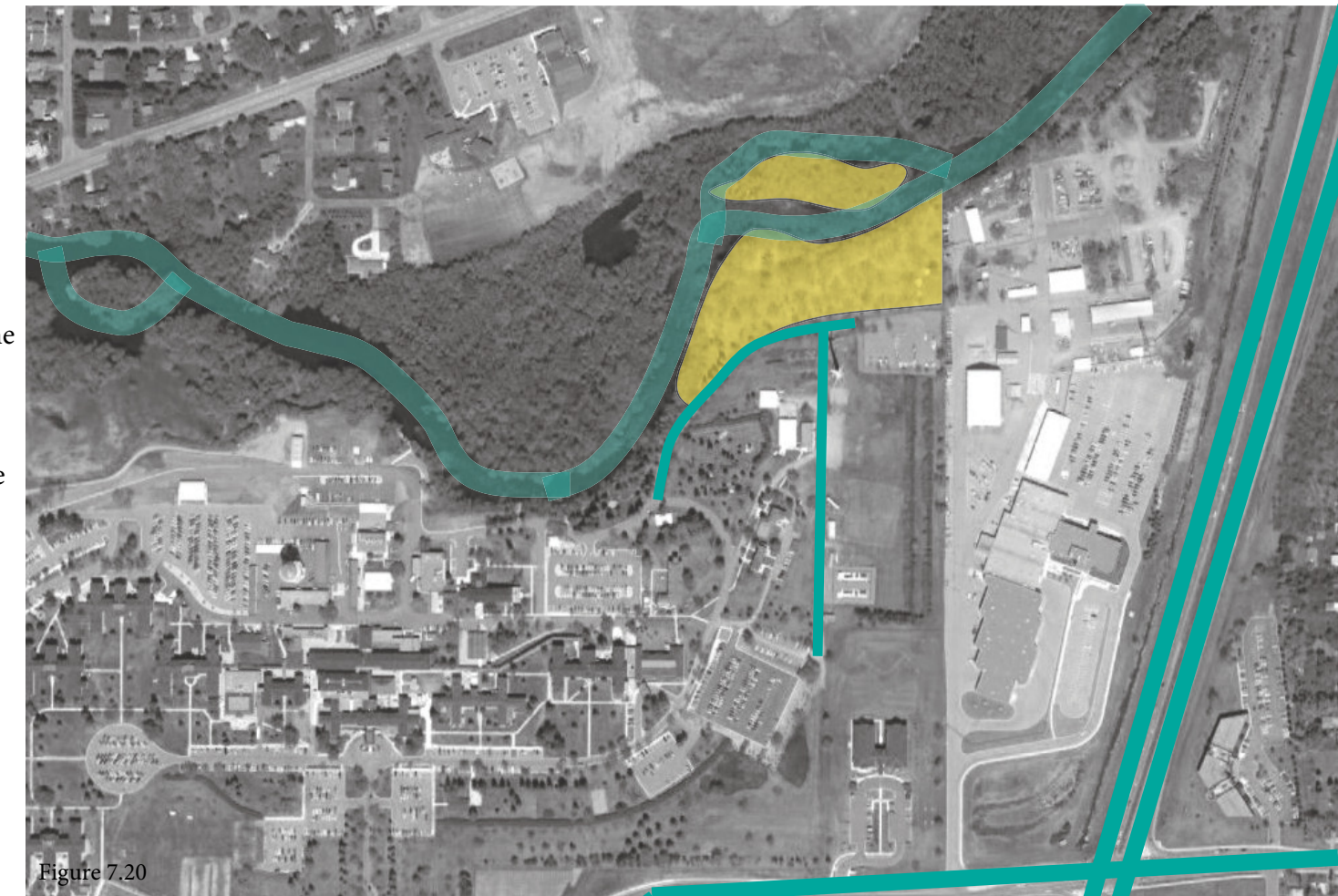


Figure 7.20

Programmatic Requirements

Space Allocation

Public Parking	n/a	Counseling Services	1 @ 400 s.f.
Public Entrance	1 @ 50 s.f.	Administration Offices	1 @ 200 s.f.
Information/Reception	1 @ 75 s.f.	Administration Break Room	1 @ 200 s.f.
Child Care	1 @ 600 s.f.	Administration Restrooms	2 @ 100 s.f.
Public Toilets	2 @ 150 s.f.	Administration Storage	1 @ 50 s.f.
Public Lounge	1 @ 300 s.f.	Storage	1 @ 100 s.f.
Therapeutic Garden	n/a	Mechanical	1 @ 150 s.f.
Library	1 @ 400 s.f.	Janitorial	2 @ 100 s.f.
Short-Term Residences	8 @ 900 s.f.	Circulation	1 @ 500 s.f.
Private Residence Lounge	1 @ 200 s.f.	Religious Gathering Space	1 @ 600 s.f.
Indoor Recreation	1 @ 300 s.f.		
Reflection Space	2 @ 100 s.f.	TOTAL	14,525 s.f.
Small Meeting Rooms	2 @ 150 s.f.		
Large Meeting Rooms	1 @ 300 2.f.		
Residence Restrooms	2 @ 150 s.f.		
Kitchen	1 @ 200 s.f.		
Dining	1 @ 600 s.f.		
Small Fitness Room	1 @ 600 s.f.		

Space Allocation

	Public Parking	Public Entrance	Information/Reception	Child Care	Public Toilets	Public Lounge	Healing Garden	Library	Short-Term Residences	Private Residence Lounge	Indoor Recreation	Outdoor Recreation	Reflection Space	Small Meeting Rooms	Large Meeting Rooms	Residence Restrooms	Kitchen	Dining	Small Fitness Room	Counseling Services	Administration Offices	Administration Break Room	Administration Restrooms	Administration Storage	Storage	Mechanical	Janitorial	Circulation	Chapel
Public Parking																													
Public Entrance	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Information/Reception	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Child Care	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Public Toilets	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Public Lounge	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Healing Garden	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Library	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Short-Term Residences	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Private Residence Lounge	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Indoor Recreation	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Outdoor Recreation	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Reflection Space	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Small Meeting Rooms	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Large Meeting Rooms	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Residence Restrooms	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Kitchen	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Dining	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Small Fitness Room	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Counseling Services	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Administration Offices	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Administration Break Room	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Administration Restrooms	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Administration Storage	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Storage	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Mechanical	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Janitorial	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Circulation	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Chapel	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Figure 7.21

Interaction Matrix

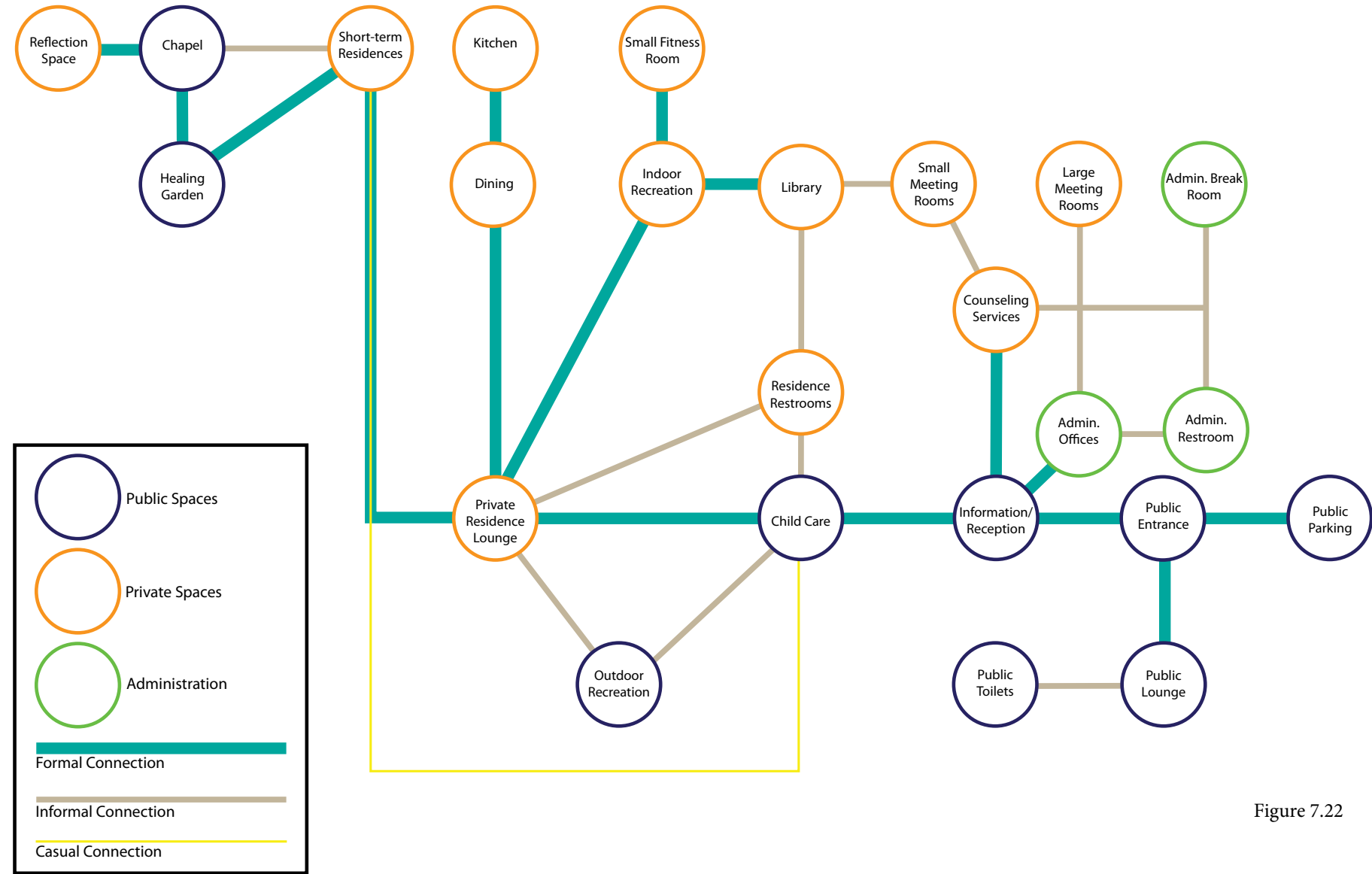
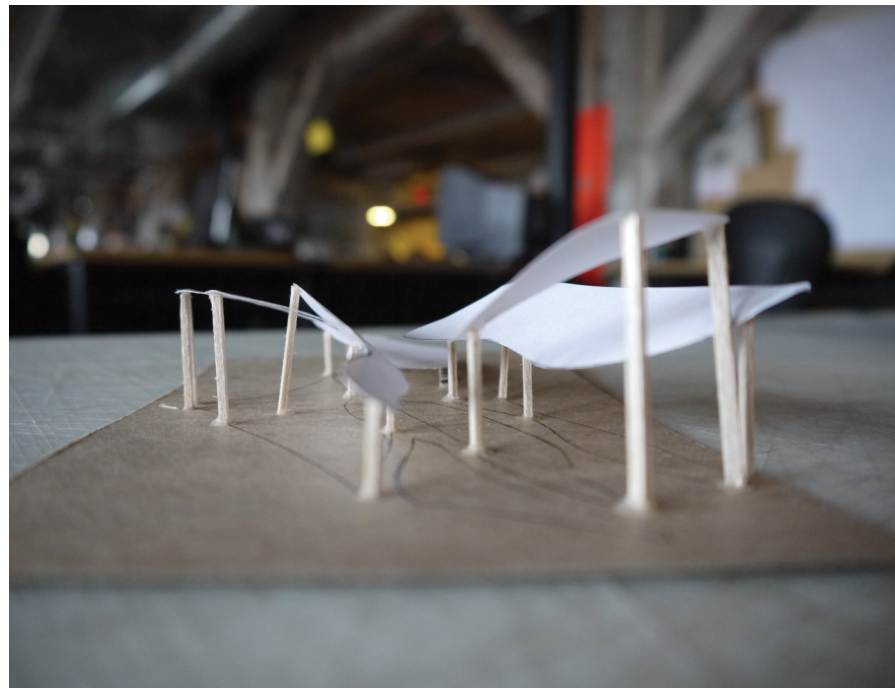
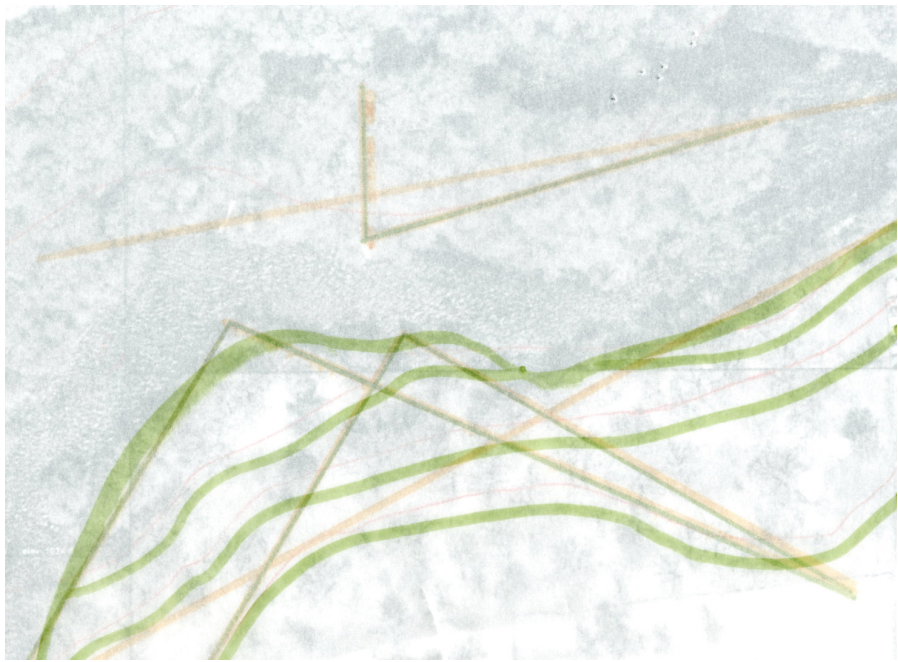


Figure 7.22

Interaction Net

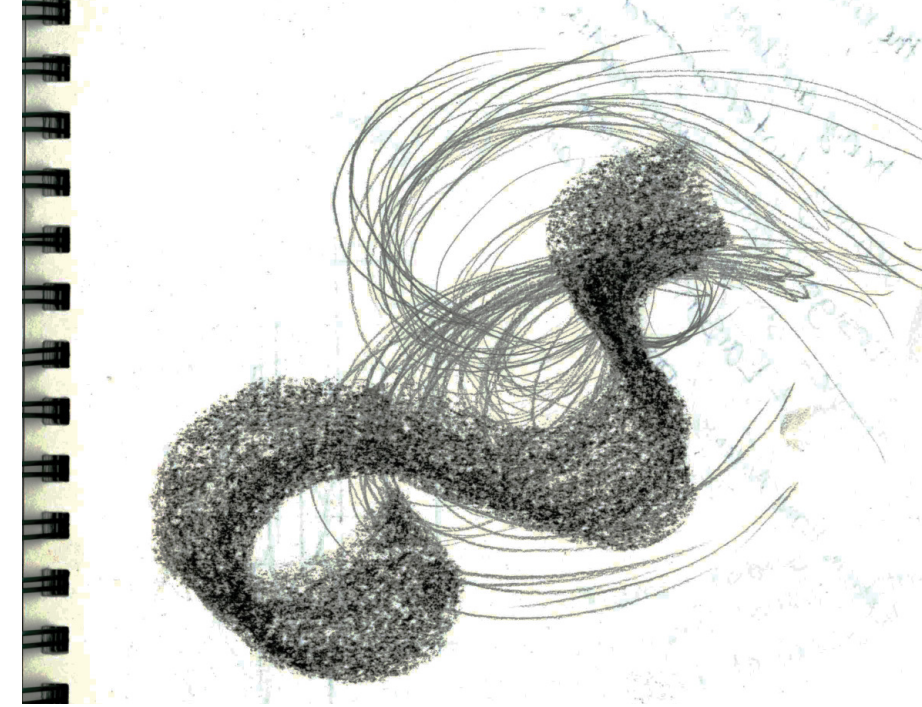
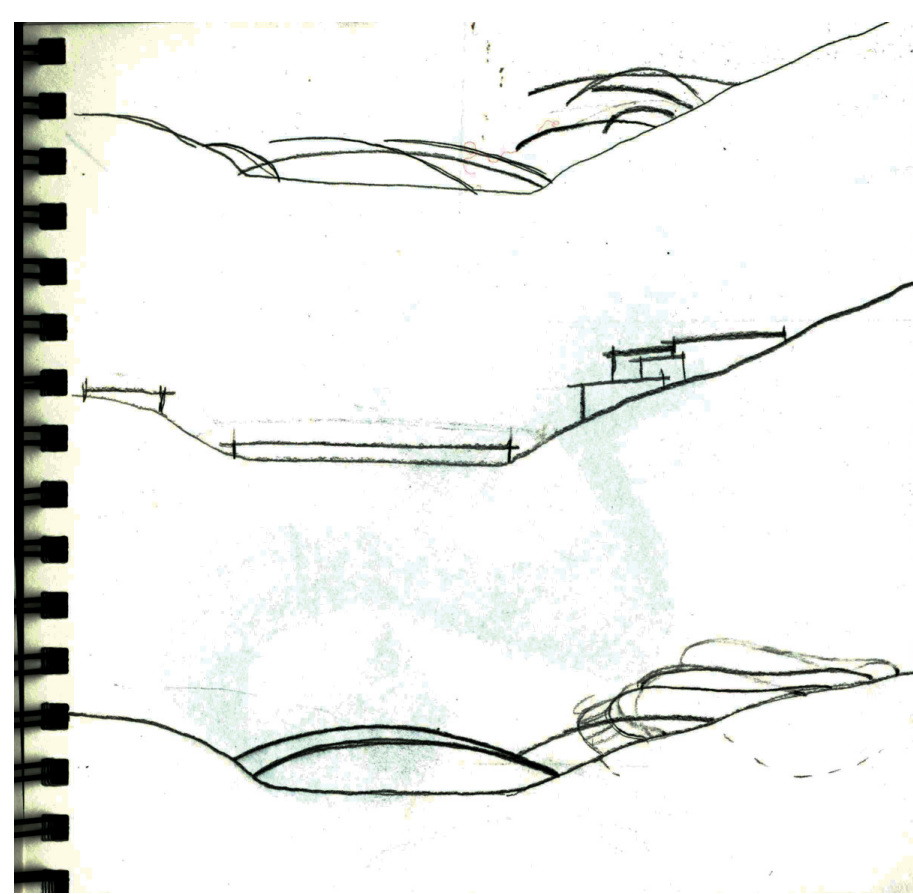
Process



Jan 16-22

Concept:

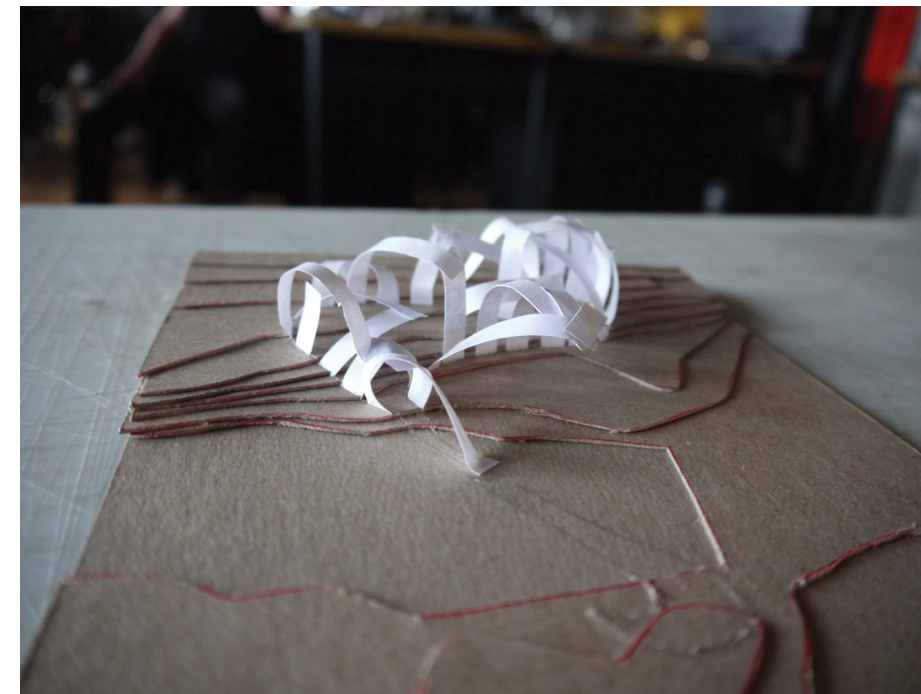
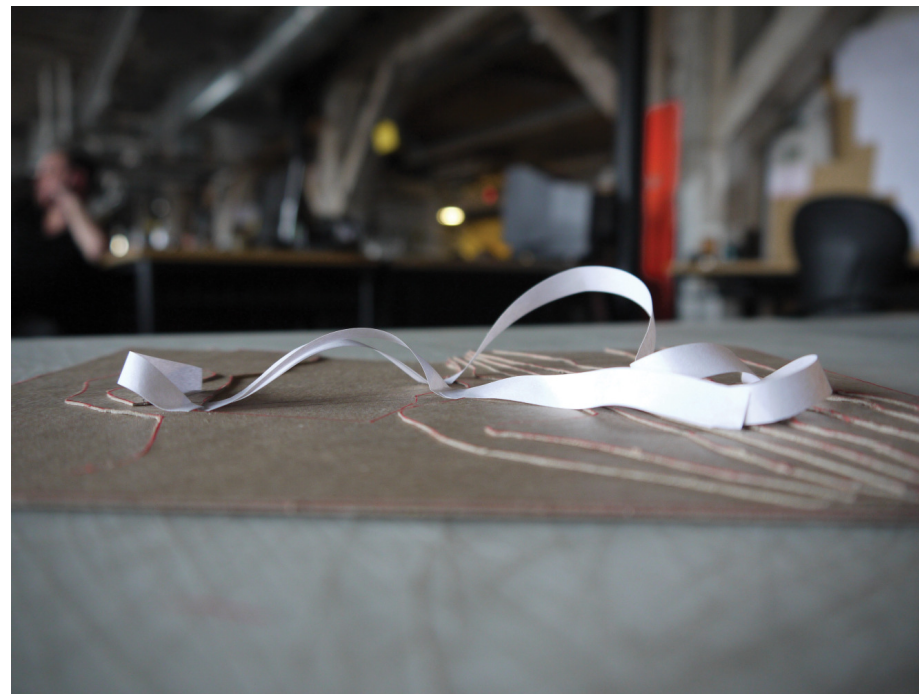
At the start of this week I decided to define some Design Goals for myself and my project. I will have to keep reminding myself of these throughout my entire design process. I also started to develop a concept. Barnhouse began the week by asking each of us in studio, “what is your story?” The main focus of my design is the service-members. No two service-members have the same story. They each come from different backgrounds, have different experiences and are headed in different directions. They each have their own path to follow. Each path has similarities and differences. Sometimes paths will cross. Each person that is coming through this facility is hoping to take a path that will lead them to a better place. With this concept in mind I began finding paths on the site. The paths I chose to analyze were 1) the path I took when visiting the site 2) the existing contour lines on the site and 3) the paths I determined when doing my Interaction Net of spaces in the fall. I then began to look for forms within these paths whether it be the paths themselves or the negative space the intersecting paths formed.



Jan 23-29

Form Studies:

The week of January 23-29 was focused on doing some concept studies. The pathways of the site were leading me in a direction with straight edges and protruding corners which I decided did not have a “healing” or “calming” approach. Possibly a more organic form will perform better for my concept. With the idea of pathways in mind I started to look at images of the brain and its neurons. The neurons are the pathways of the brain. They work together and carry signals. The best way to represent the pathways in the brain was to do a few string studies. This allowed me to look at the form in 3d and start to get sense of a building. The knot in the strings represents where all the neurons in the brain come together at the spinal cord and from there each go on their own path. Moving forward with the idea of the knot I began trying to understand how the bridge to the island would connect in a cohesive way with the design of my building. I did a few study models to find connections. To give structure and control to the string forms, Barnhouse directed me to look into some textile design and the weaving patterns of textiles. After looking into the textiles, I think that this could inform some sort of a structural system.

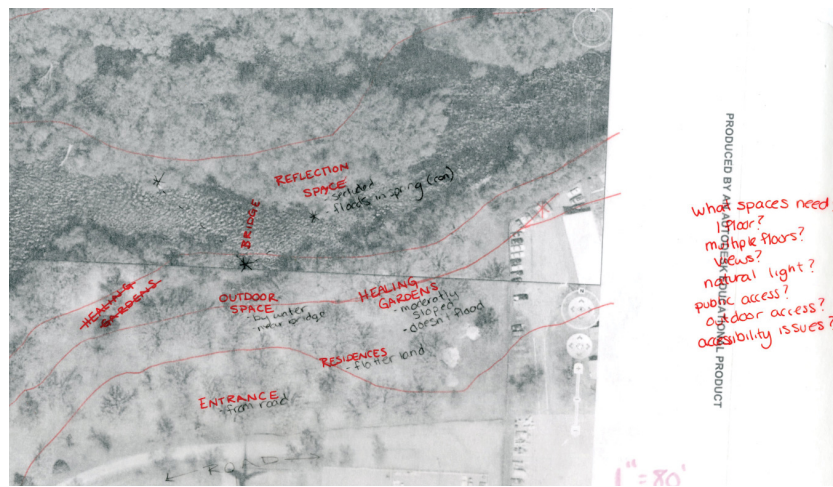


Jan 23-29

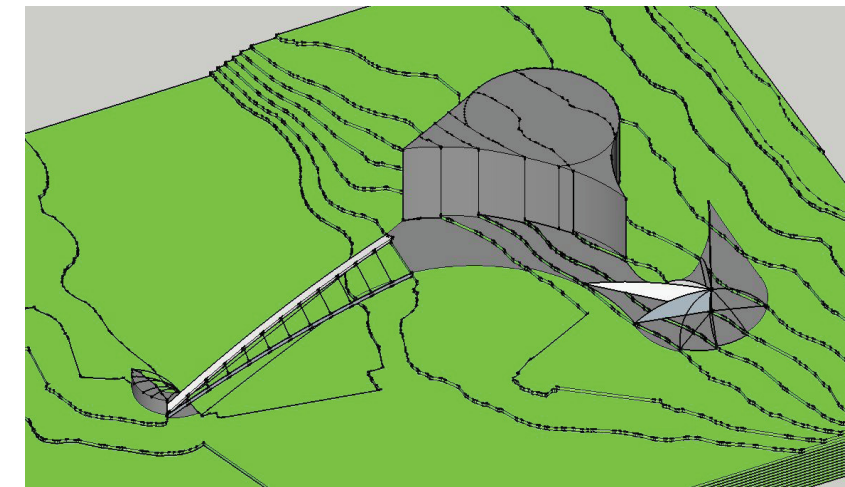
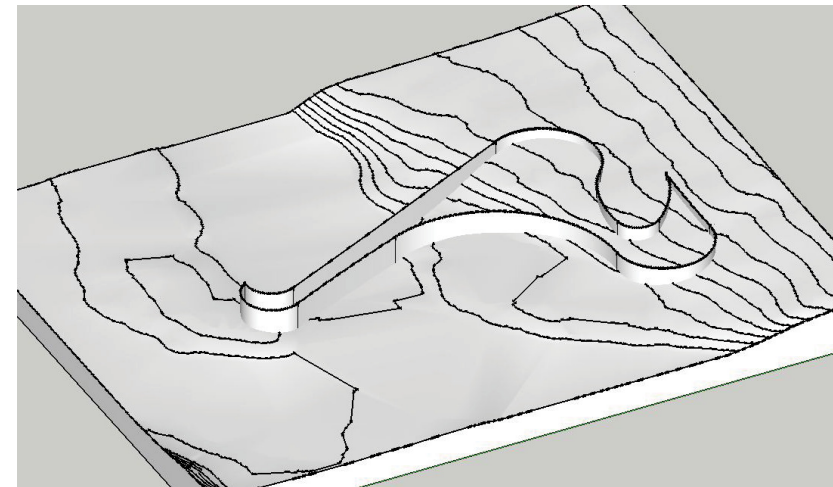
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Form Studies



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ARCHITECTURAL PRODUCT
What spaces need:
light?
multiple floors?
views?
natural light?
public access?
outdoor access?
accessibility issues?



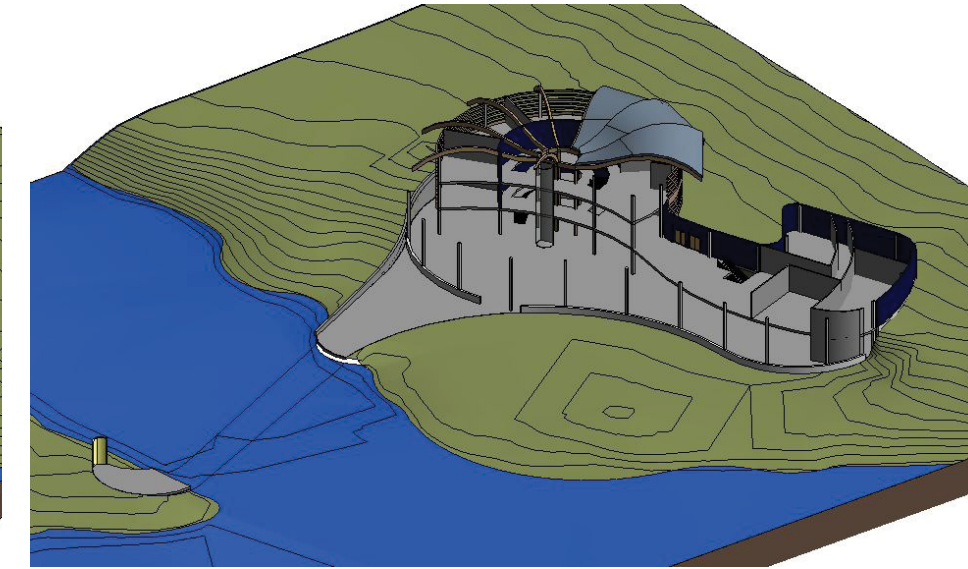
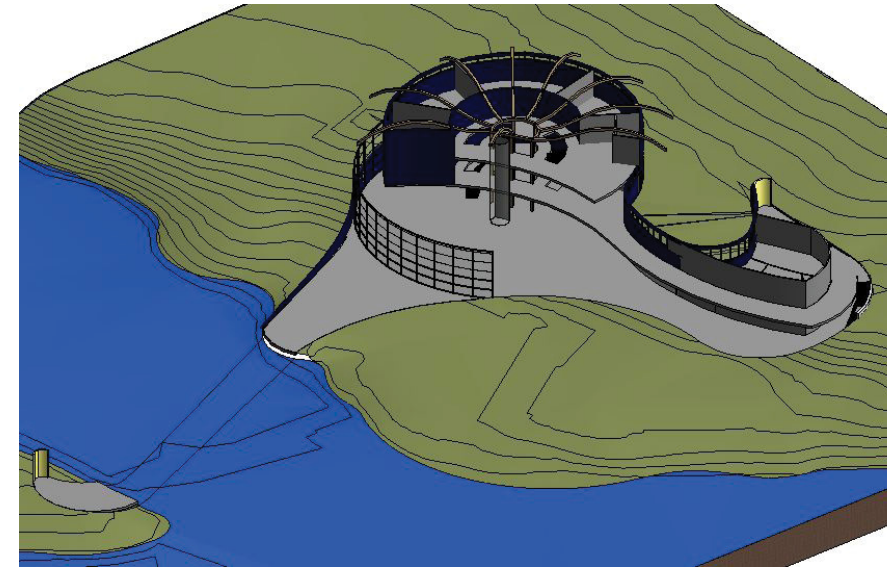
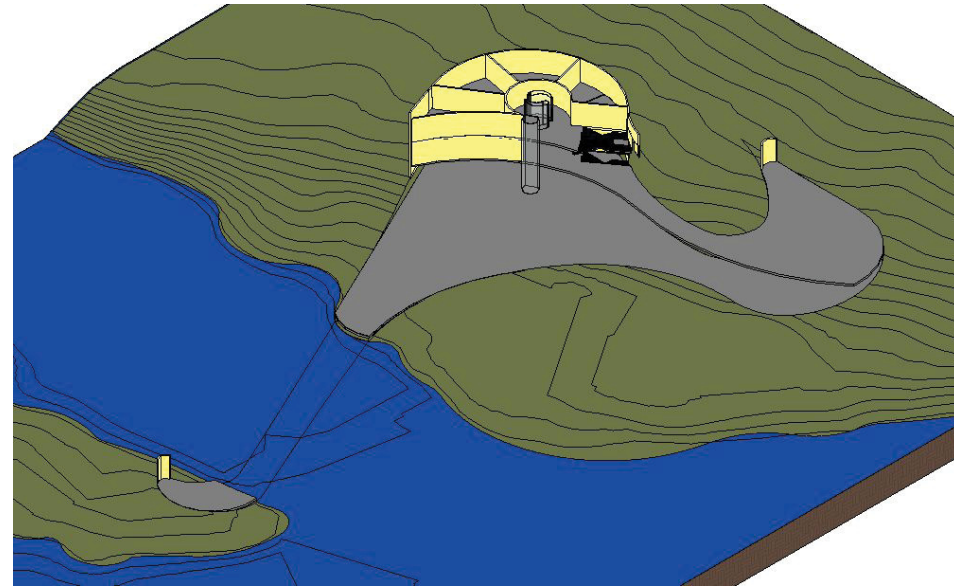
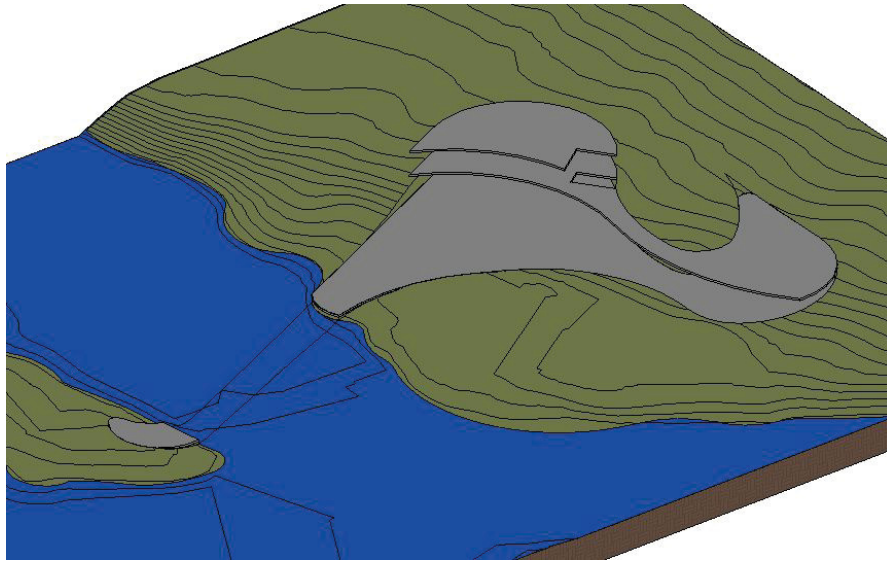
Jan 30- Feb 5

Envelope and Spatial Analysis:

This week I began to look more closely at the layout of my spaces and how they can have an effect of the form of my design. After taking everything I have learned from my studies and doing an initial layout of spaces I came up with a shape that might actually be working! My next step was to take the shape and start designing it in section and 3D to see what potential it has. I did three different iterations with the shape and there are things I like and dislike about each of them. I am going to begin modeling in the computer and see where that takes me next!

Barnhouse referenced me to the architecture of Bruce Goff, namely the Bavinger House, to begin to understand how spaces can be laid out in a curving manner.

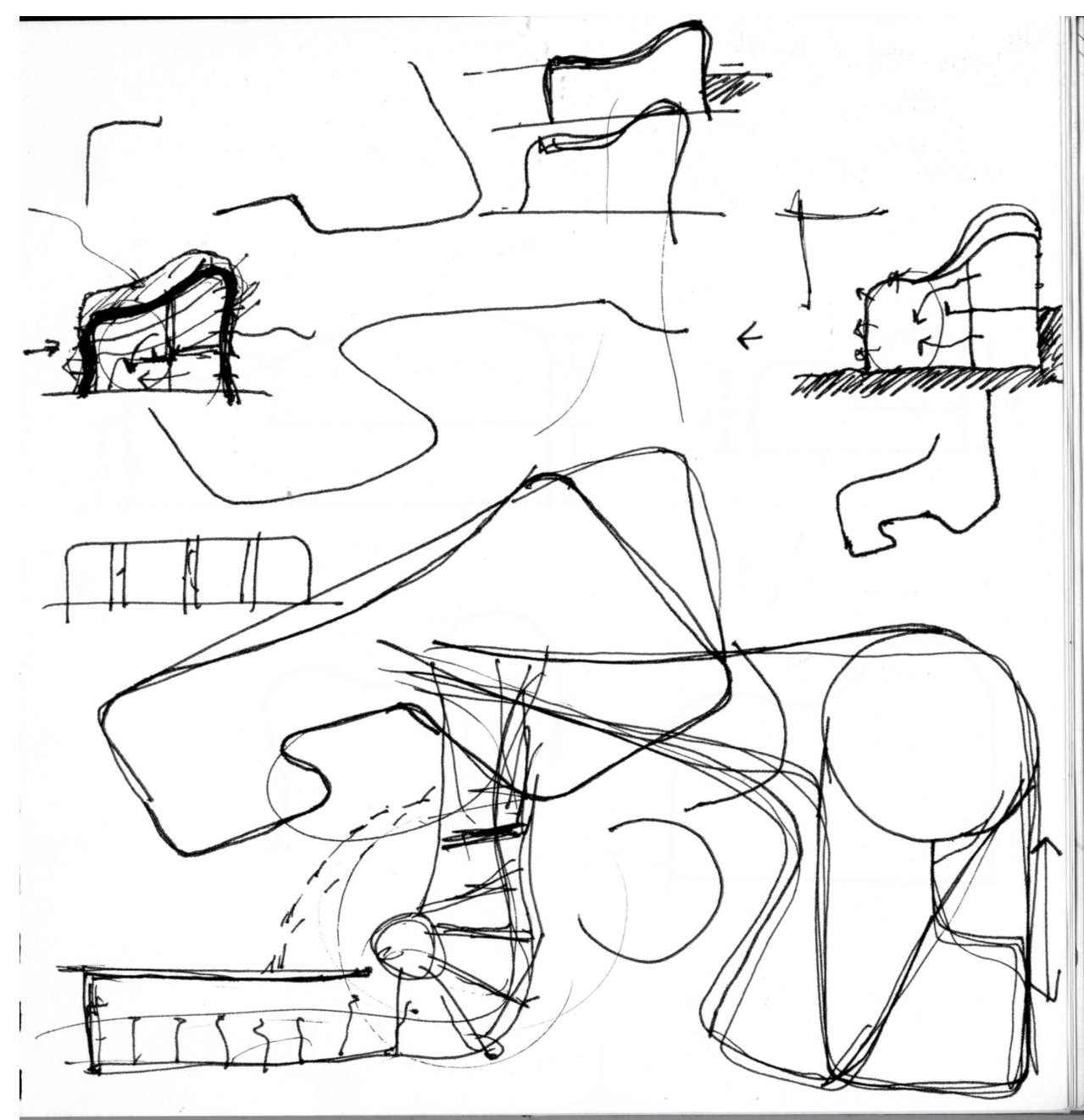
Envelope and Spatial Analysis



Feb 6 - 12

Form Development:

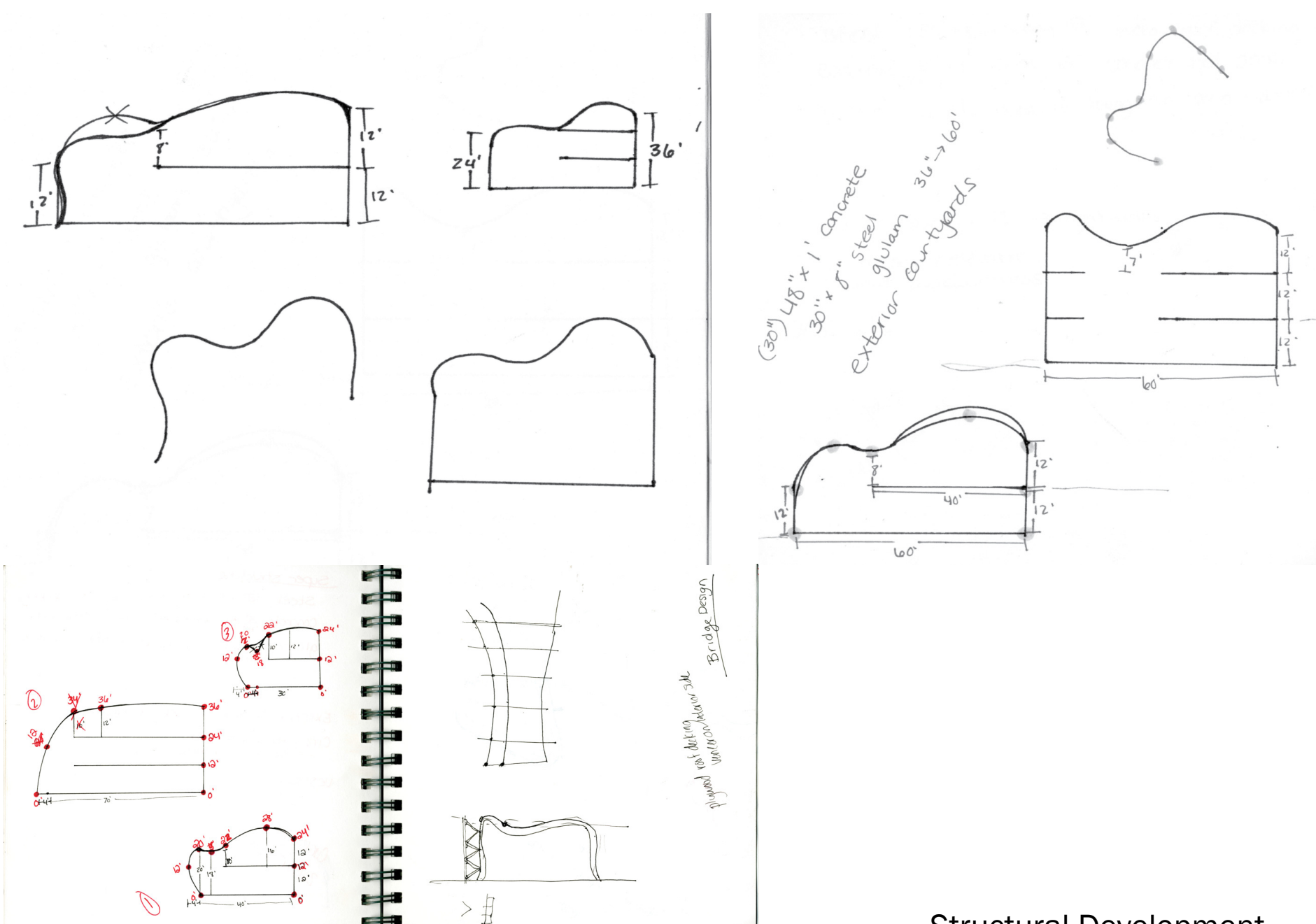
This week I began modeling my spaces and form in Revit. The form developed with a few slight changes to adapt to spatial analysis and site. I was unhappy with some of the changes to the form. I wanted a form that was very graceful and natural. I decided that I wanted to simplify the form in order to design an simple, graceful structure.



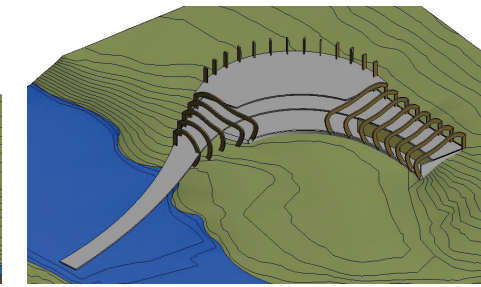
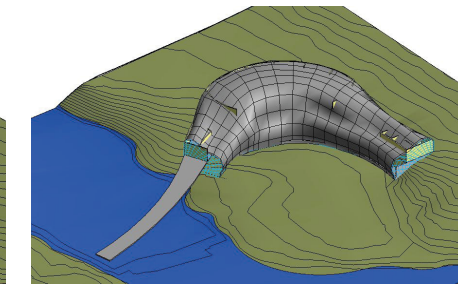
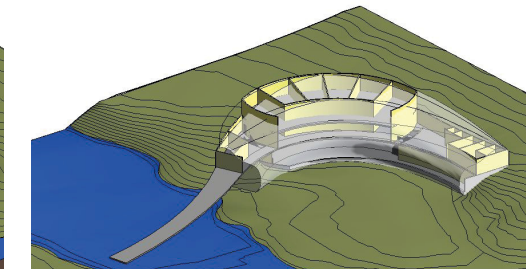
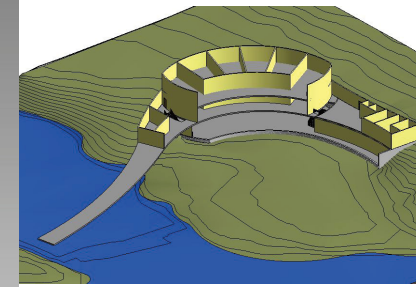
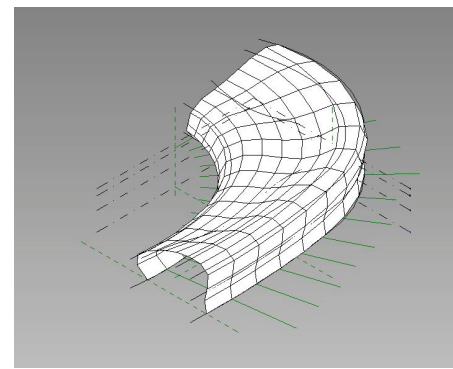
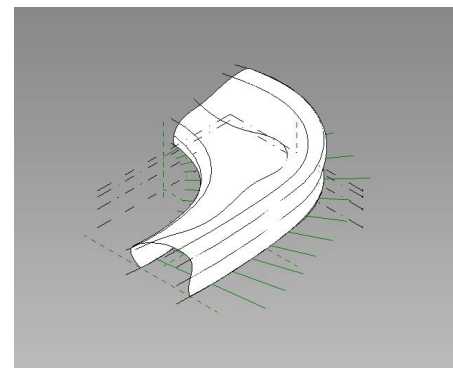
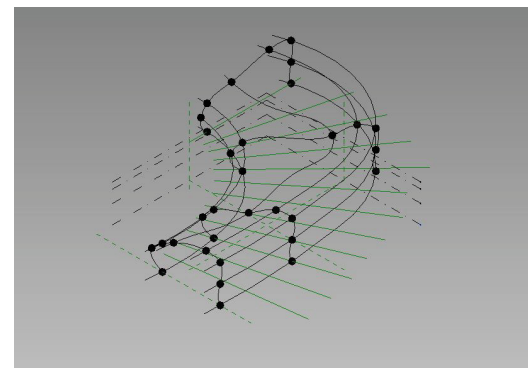
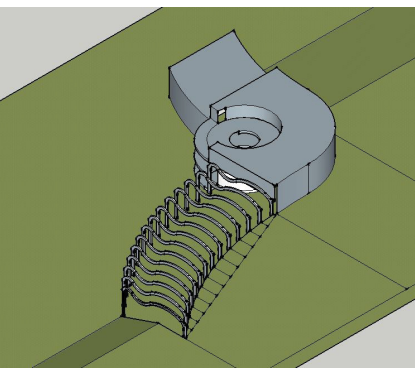
Feb 13 - 19

Structural Development:

This week I did sketches and studies in order to design the structure of the building. The profile of the structure developed from studying the site and contours. On the south side of the building, users would enter onto the second floor. On the north side users would exit out of the first floor. The building would be built into the slope of the site. The profile is taller to the south and views are focused towards the river and therapeutic gardens to the north.



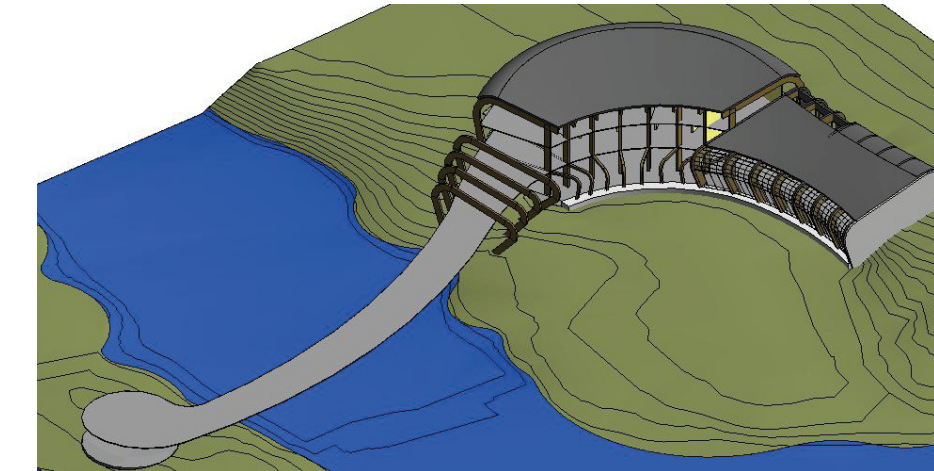
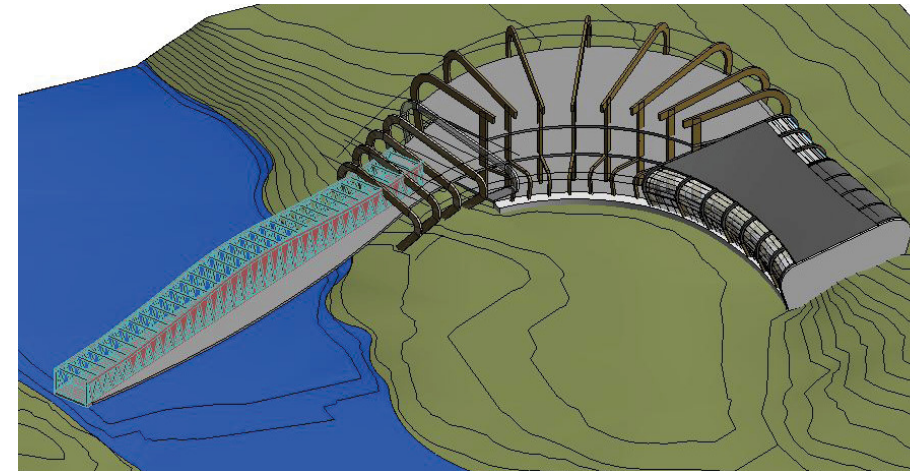
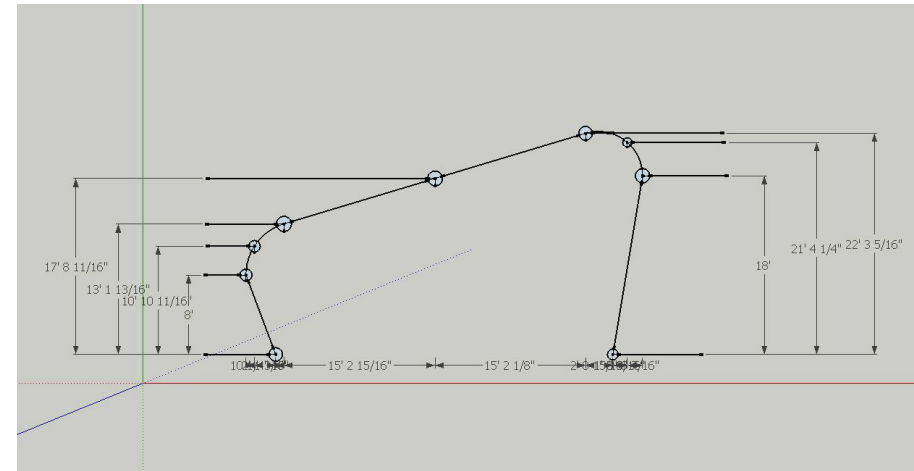
Structural Development



Feb 20 - 26

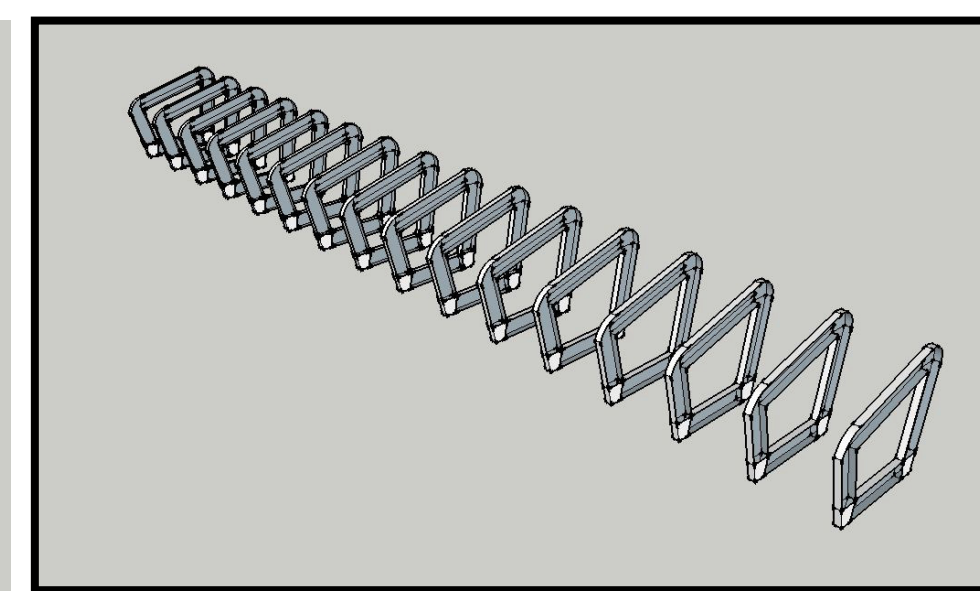
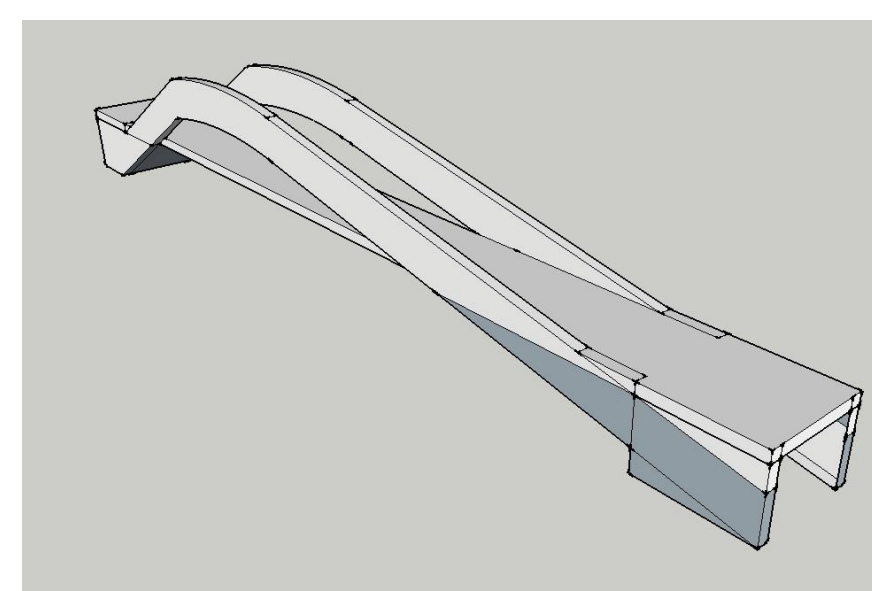
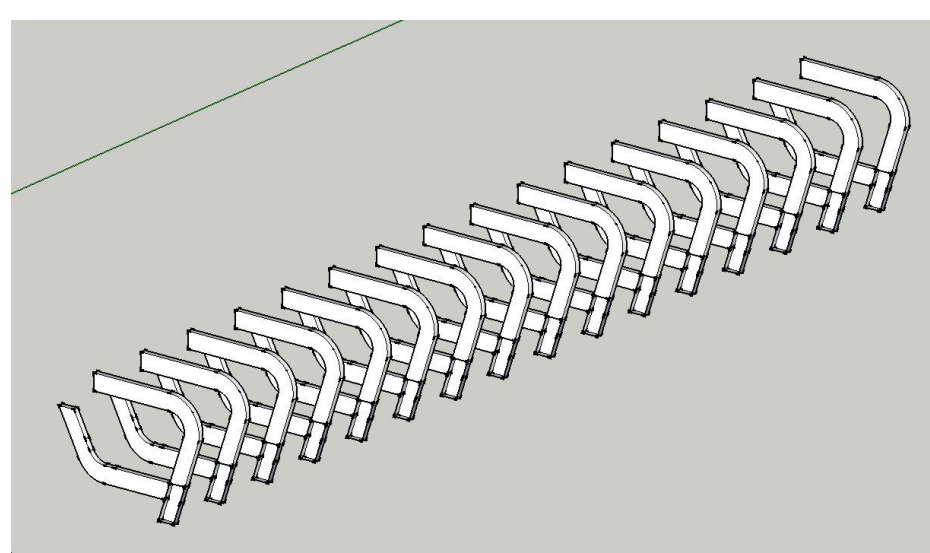
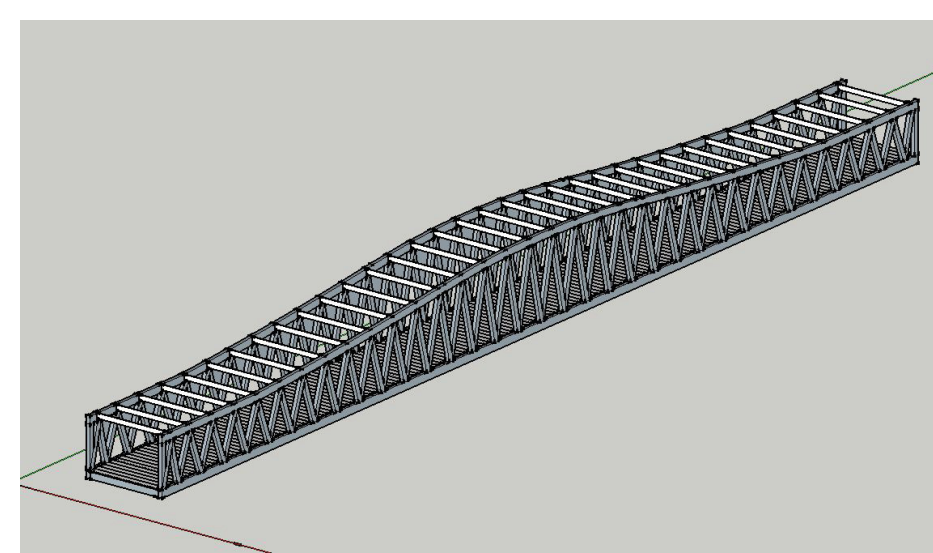
Structural Development continued:

This week I continued to develop the structure and the form of the building. I am satisfied with the form I settled on (below). It exemplifies the graceful form that I was going for. It flows nicely with the contours of the site. The layout of the interior spaces allows for ease of circulation.



Structural Development





Feb 27 - Mar 4

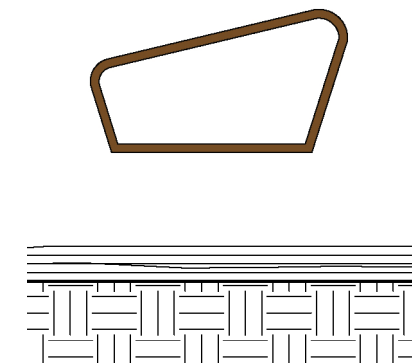
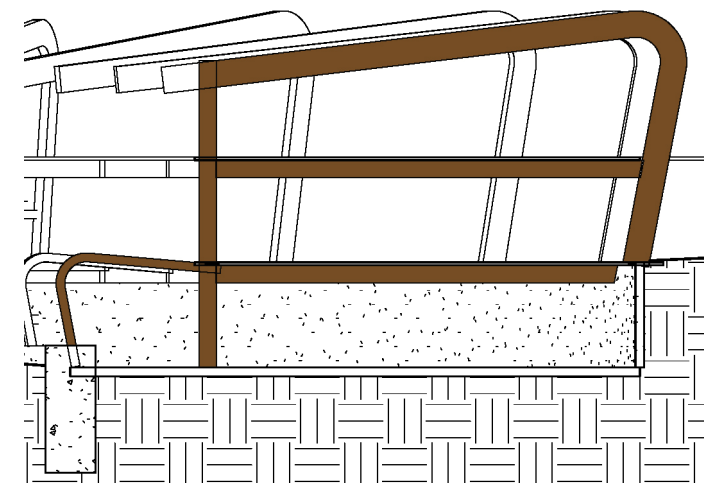
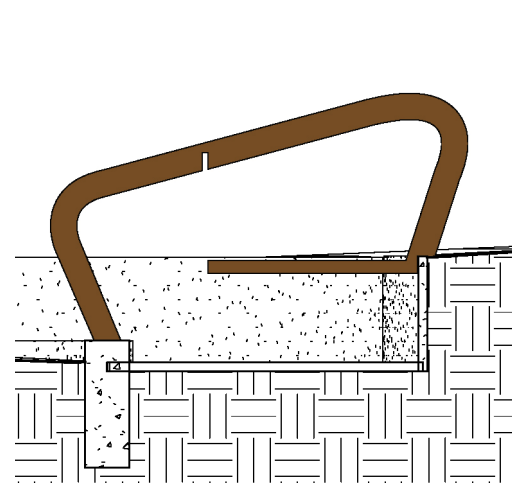
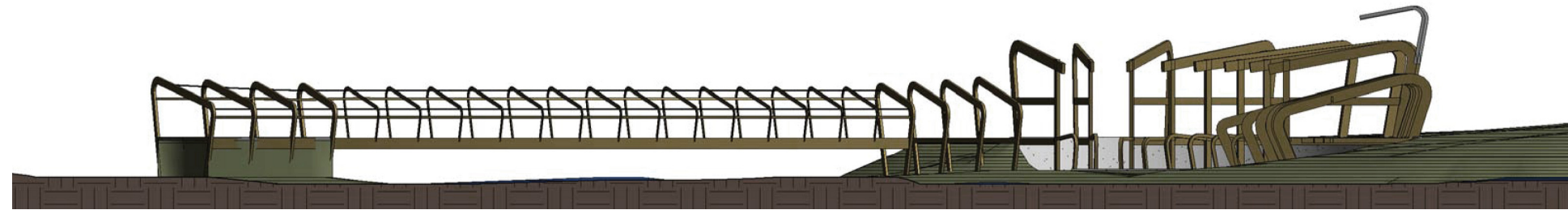
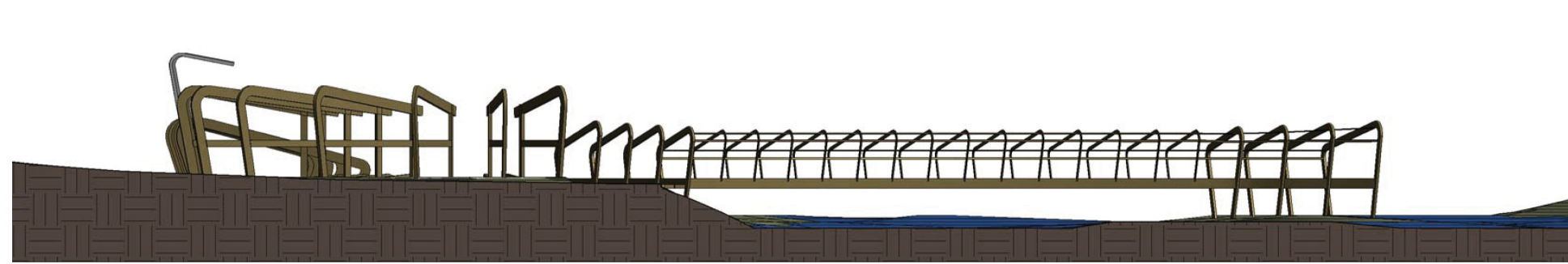
Bridge Development:

This week I began to develop and design the bridge that would connect the island to the main site. I wanted the bridge to be an integral part of the building that would work with the form and reach across the river to the island. After different structural studies I decided that the best way to represent the building would be to carry the interior structure outside to create the structure for the bridge. This way there can be a strong correlation between the structure on the interior and the structure of the bridge on the exterior. The bridge spans approximately 180' across the Sauke River to the small island.

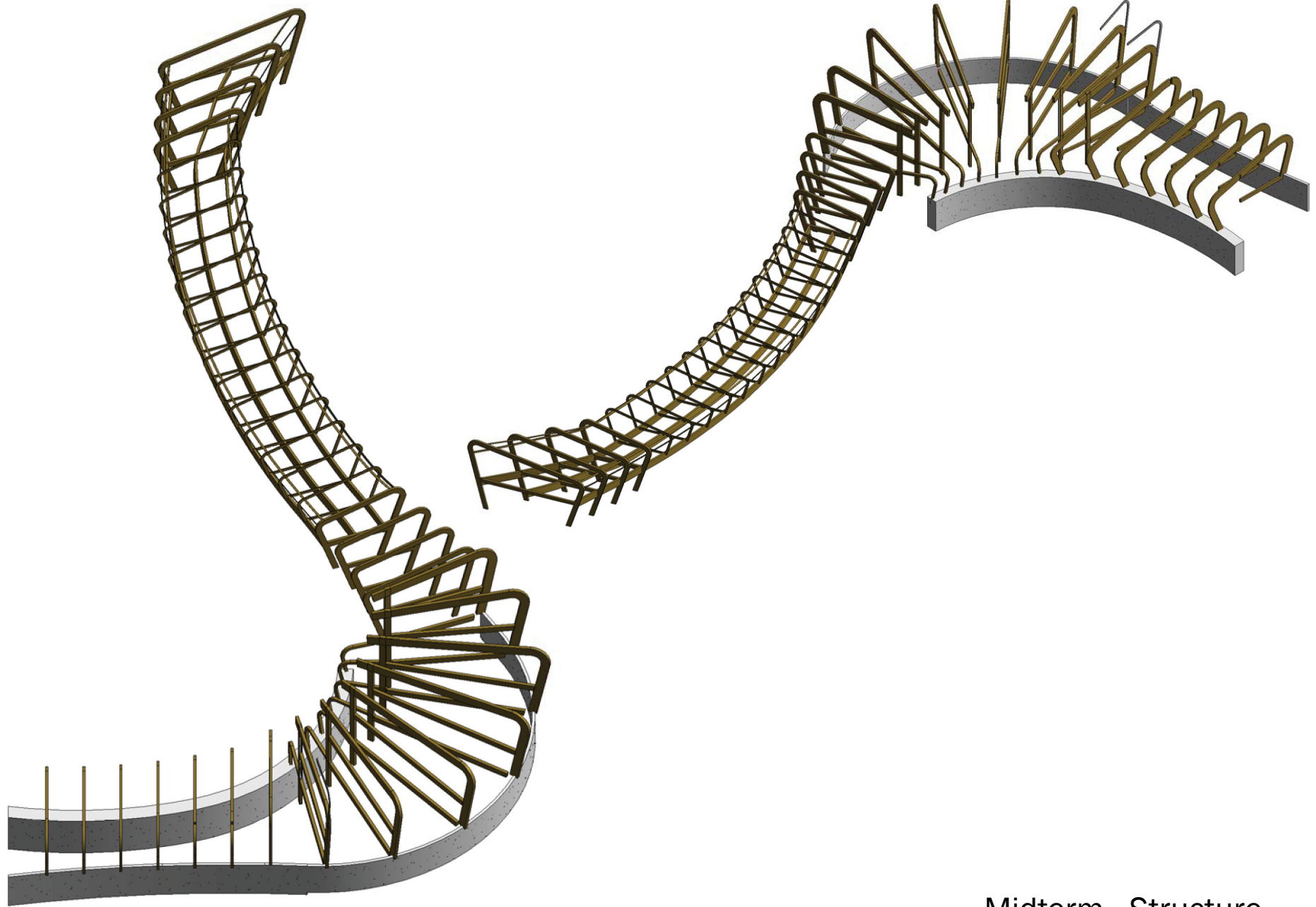
Midterm



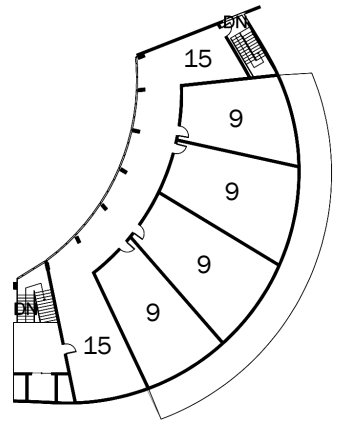
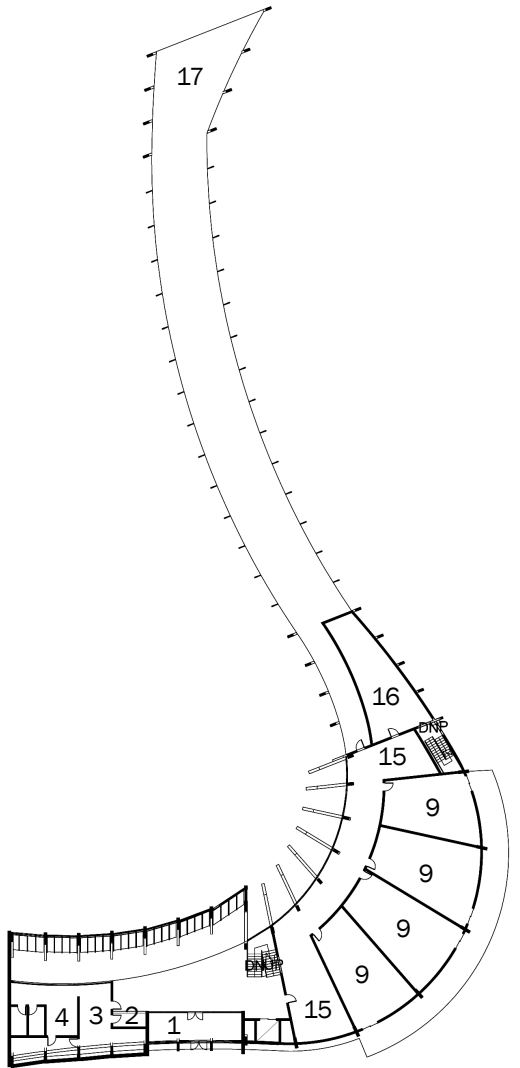
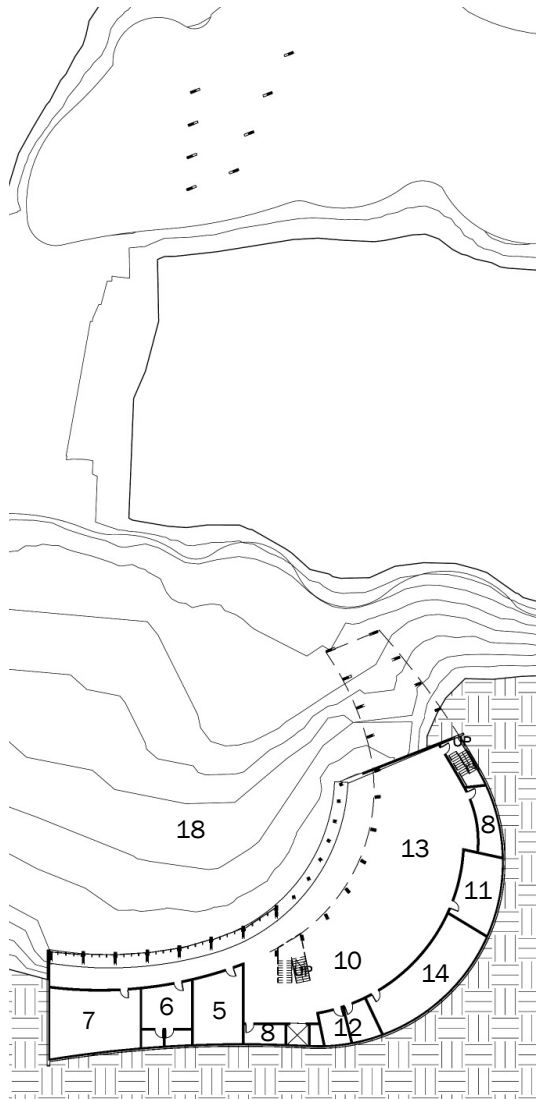
Midterm - Site Plan



Midterm - Structure

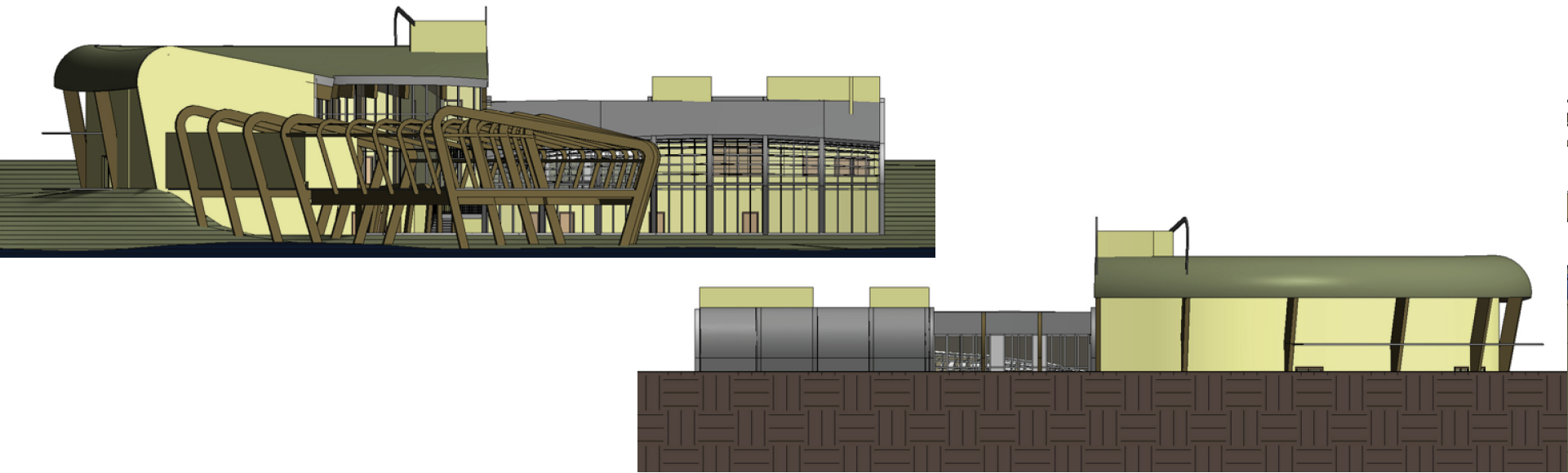
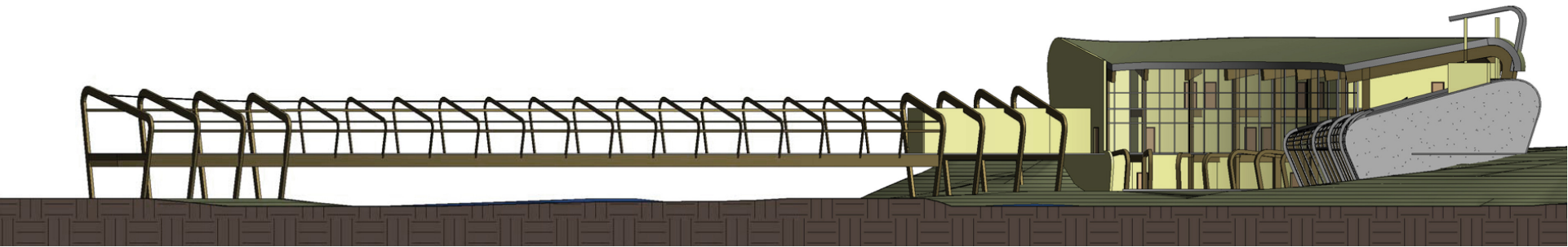
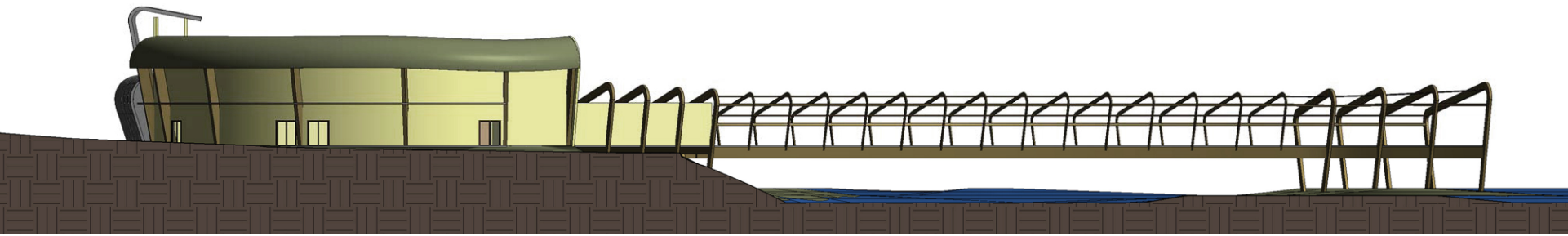


Midterm - Structure

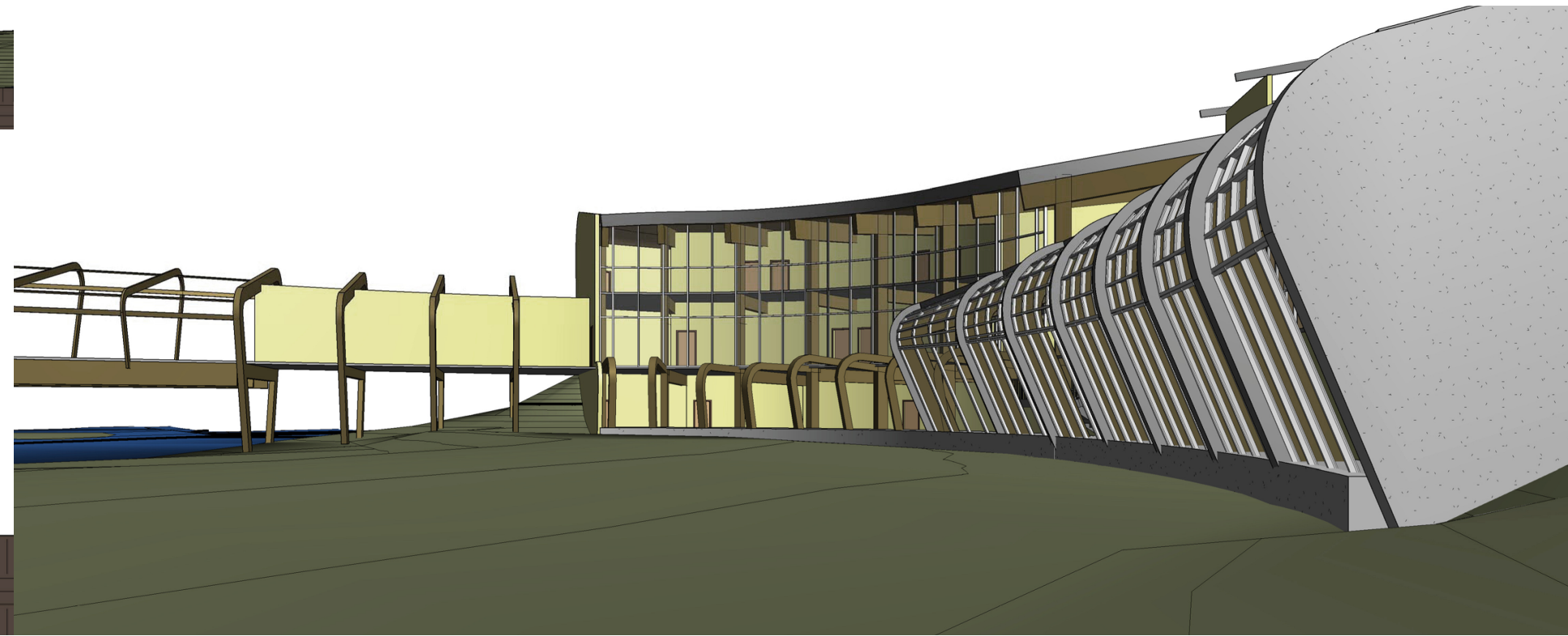


Midterm - Floor Plans

- 1 Entrance
- 2 Information
- 3 Administration
- 4 Meeting Space
- 5 Counseling services
- 6 Library
- 7 Child Care
- 8 Mechanical
- 9 Residences
- 10 Lounge/Social Space
- 11 Kitchen
- 12 Restrooms
- 13 Dining
- 14 Fitness Room
- 15 Residence Lounge
- 16 Chapel
- 17 Reflection Space
- 18 Therapeutic Garden

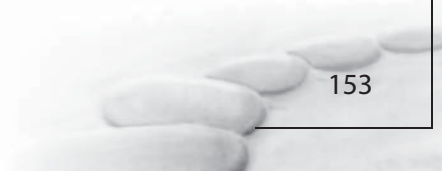
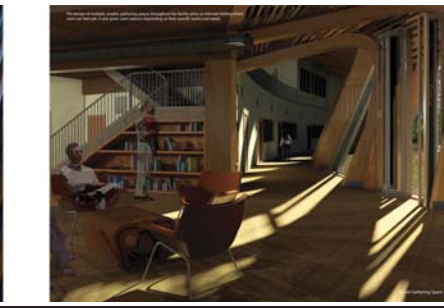
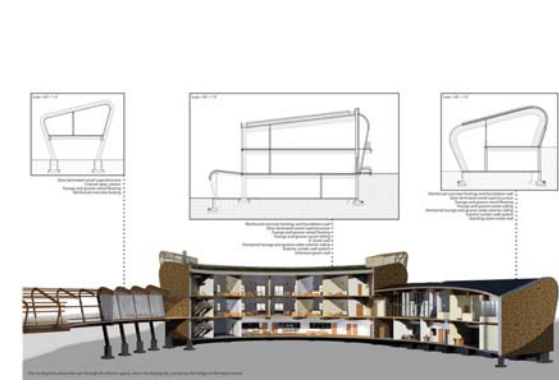
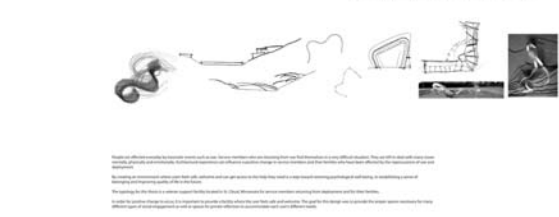
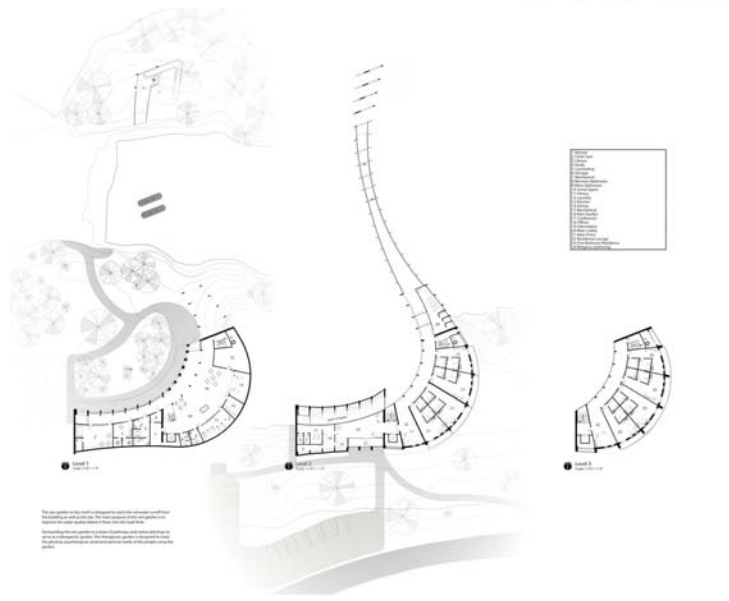


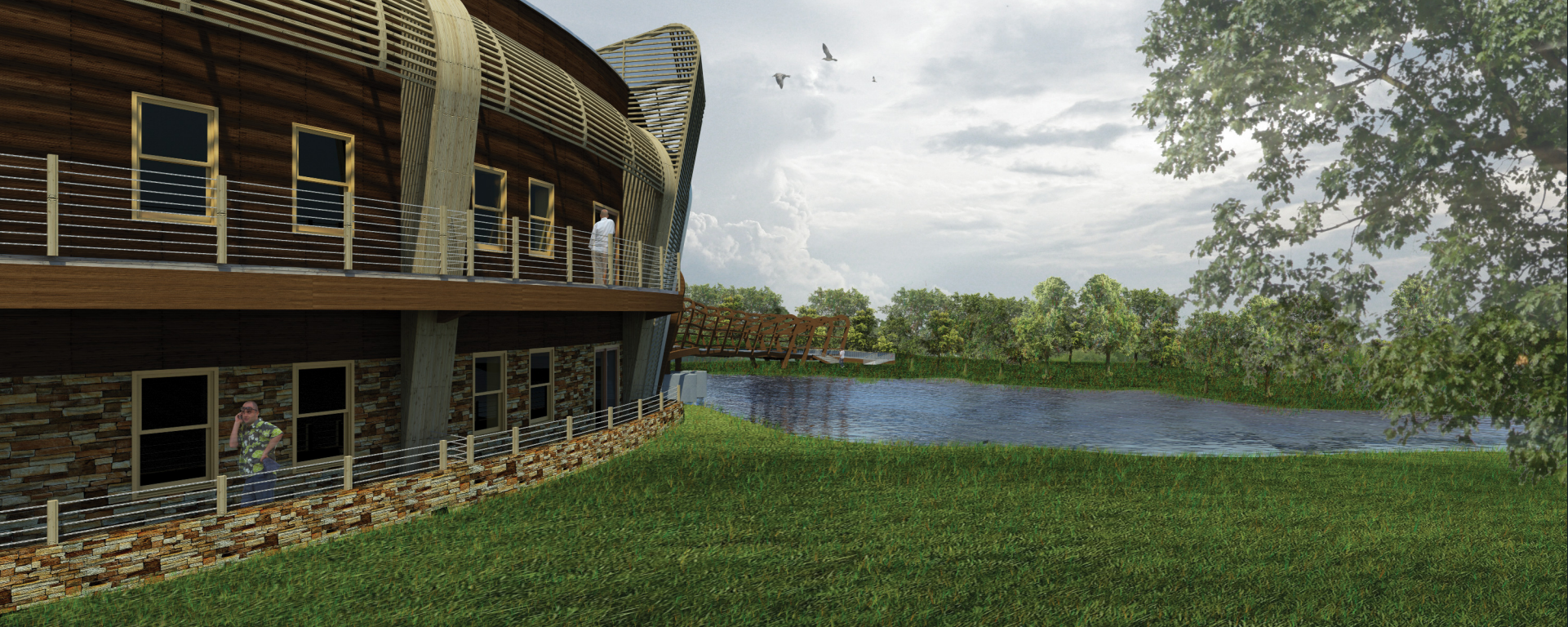
Midterm - Elevations



Midterm - Perspective

Final Design





People are affected everyday by traumatic events such as war. Service members who are returning from war find themselves in a very difficult situation. They are left to deal with many issues mentally, physically and emotionally. Architectural experience can influence a positive change in service members and their families who have been affected by the repercussions of war and deployment.

By creating an environment where users feel safe, welcome and can get access to the help they need is a step toward restoring psychological well-being, re-establishing a sense of belonging and improving quality of life in the future.

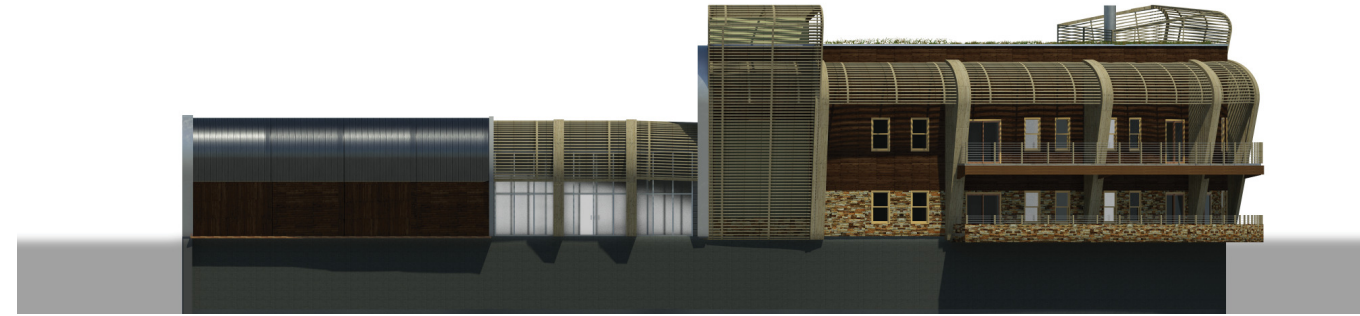
The typology for this thesis is a veteran support facility located in St. Cloud, Minnesota for service members returning from deployment and for their families.

In order for positive change to occur, it is important to provide a facility where the user feels safe and welcome. The goal for this design was to provide the proper spaces necessary for many different types of social engagement as well as spaces for private reflection to accommodate each user's different needs.

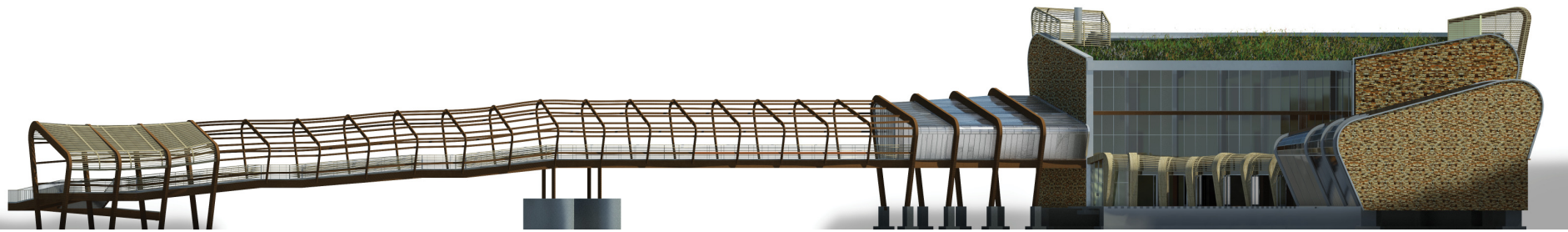


The natural landscape and meandering pathways allow the user to experience the beauty of the site, the river, and the surrounding environment

The design of the building is meant to make users feel comfortable and welcome. The hope is that this facility will encourage users to talk about their experiences and socialize with people who may be experiencing similar struggles

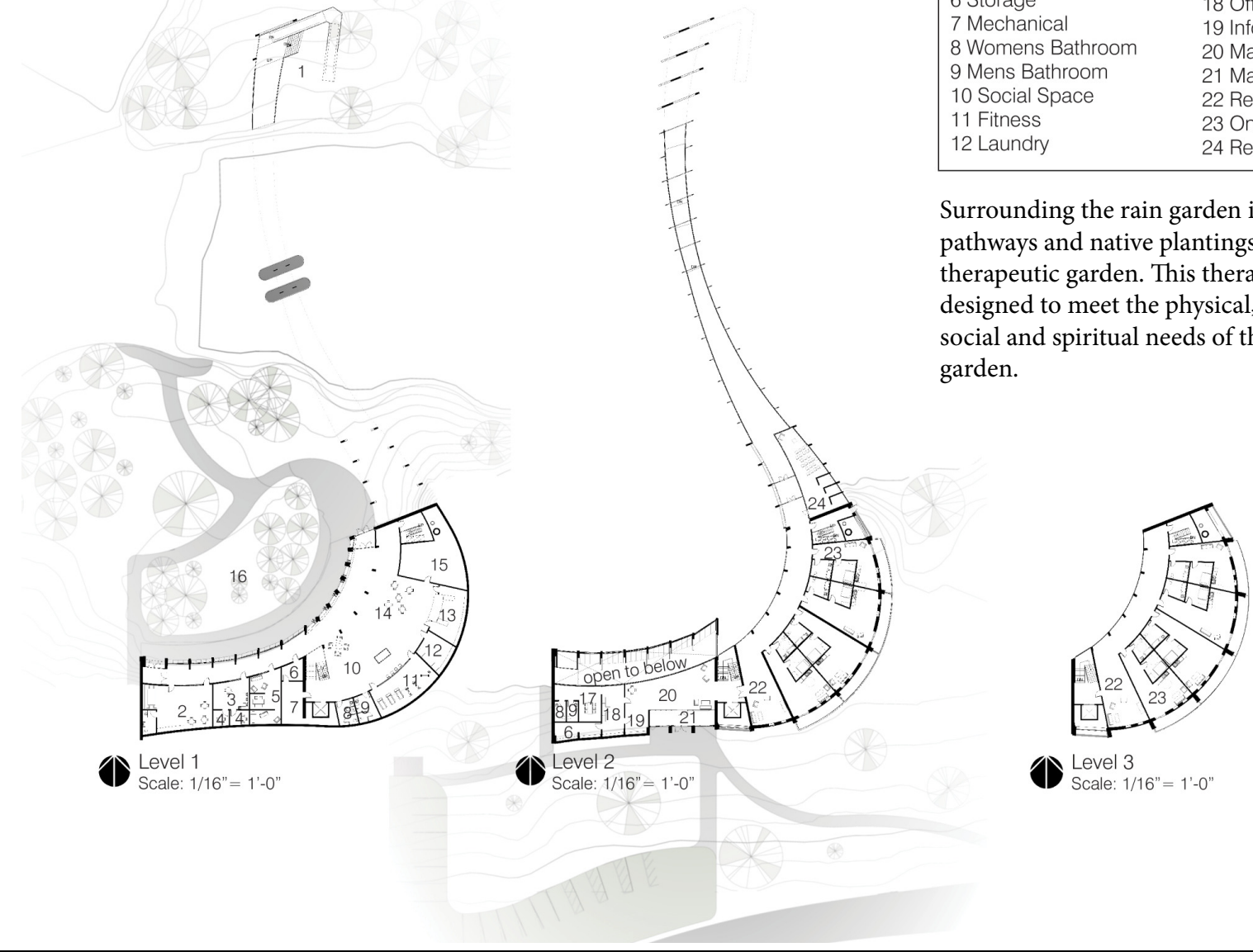


The natural, warm material palette composed mainly of wood, stone and glass suggests a "home-like" comfortable feeling



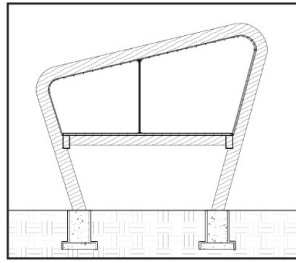
Large windows located along the north side of the building allow for consistent natural light throughout the year.

The rain garden to the north is designed to catch the rainwater runoff from the building as well as the site. The main purpose of the rain garden is to improve the water quality before it flows into the Sauk River.

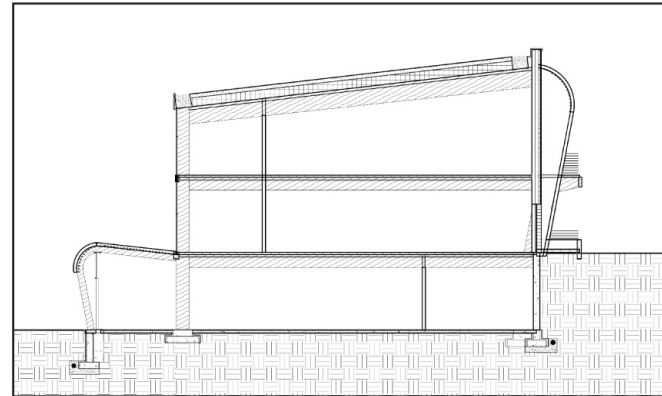


1 Retreat	13 Kitchen
2 Child Care	14 Dining
3 Library	15 Mechanical
4 Study	16 Rain Garden
5 Counseling	17 Conference
6 Storage	18 Offices
7 Mechanical	19 Information
8 Womens Bathroom	20 Main Lobby
9 Mens Bathroom	21 Main Entry
10 Social Space	22 Residence Lounge
11 Fitness	23 One Bedroom Residence
12 Laundry	24 Religious Gathering

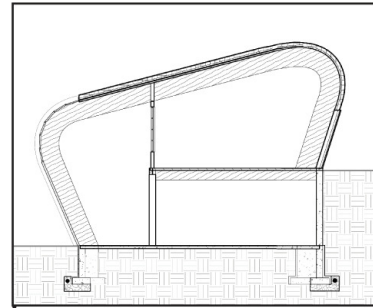
Surrounding the rain garden is a series of pathways and native plantings to serve as a therapeutic garden. This therapeutic garden is designed to meet the physical, psychological, social and spiritual needs of the people using the garden.



- Glue-laminated superstructure
- Channel glass system
- Tounge and groove wood flooring
- Reinforced concrete footing



- Reinforced concrete footings and foundation wall
- Glue-laminated superstructure
- Tounge and groove wood flooring
- Tounge and groove wood ceiling
- 8" stone wall
- Horizontal tounge and groove cedar exterior siding
- Exterior curtain wall system
- Extensive green roof



- Reinforced concrete footings and foundation wall
- Glue-laminated superstructure
- Tounge and groove wood flooring
- Tounge and groove wood ceiling
- Horizontal tounge and groove cedar exterior siding
- Exterior curtain wall system
- Standing seam metal roof

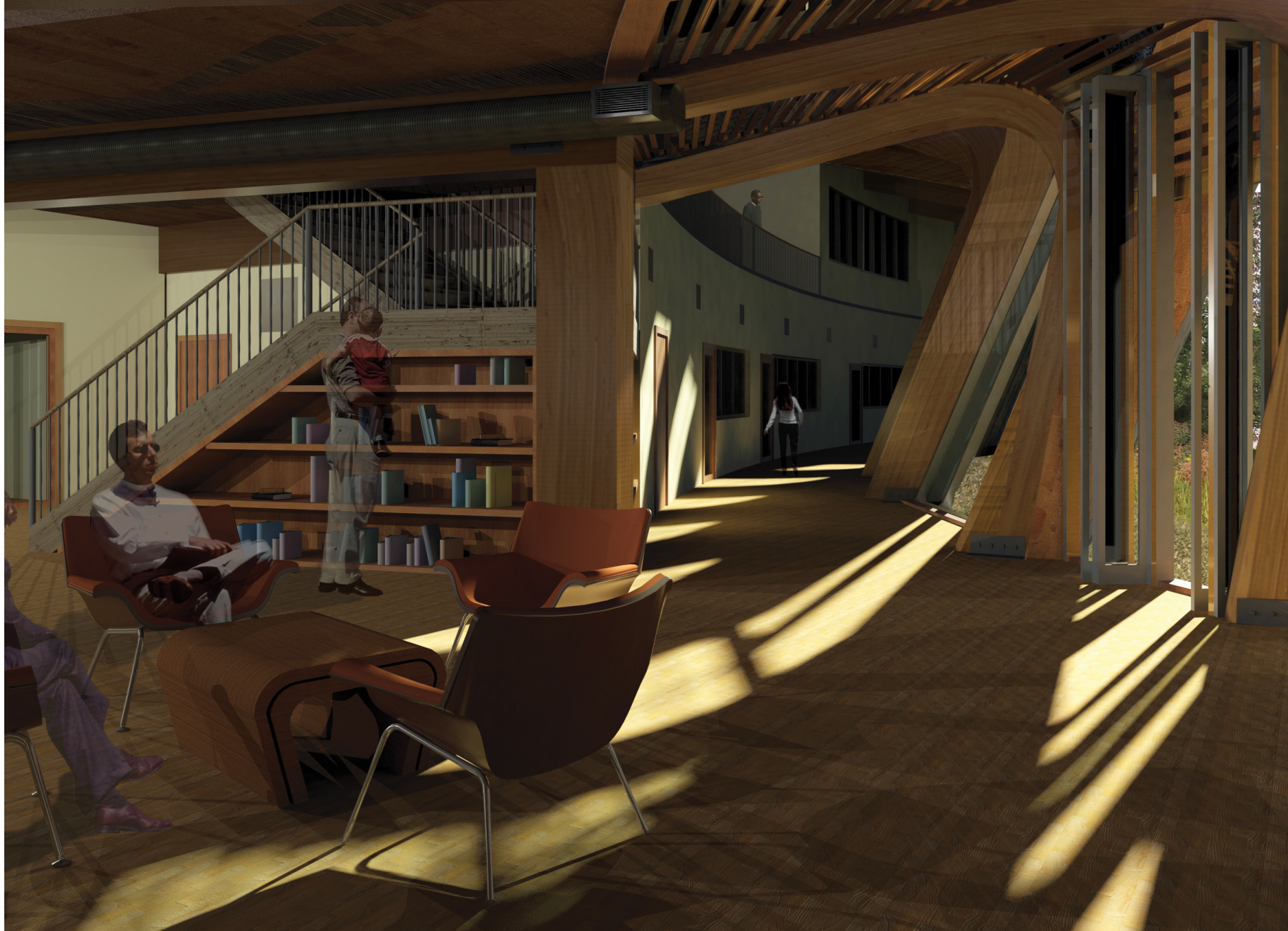


The curving form draws the user through the interior spaces, down the sloping site, and across the bridge to the island retreat.



Religious Gathering Space

This gathering space is designed to be flexible and accommodate many different religions at any given time to meet the needs of all of its users. It can also be an escape for meditation or reflection when the weather permits users to stay indoors.



Social Gathering Space

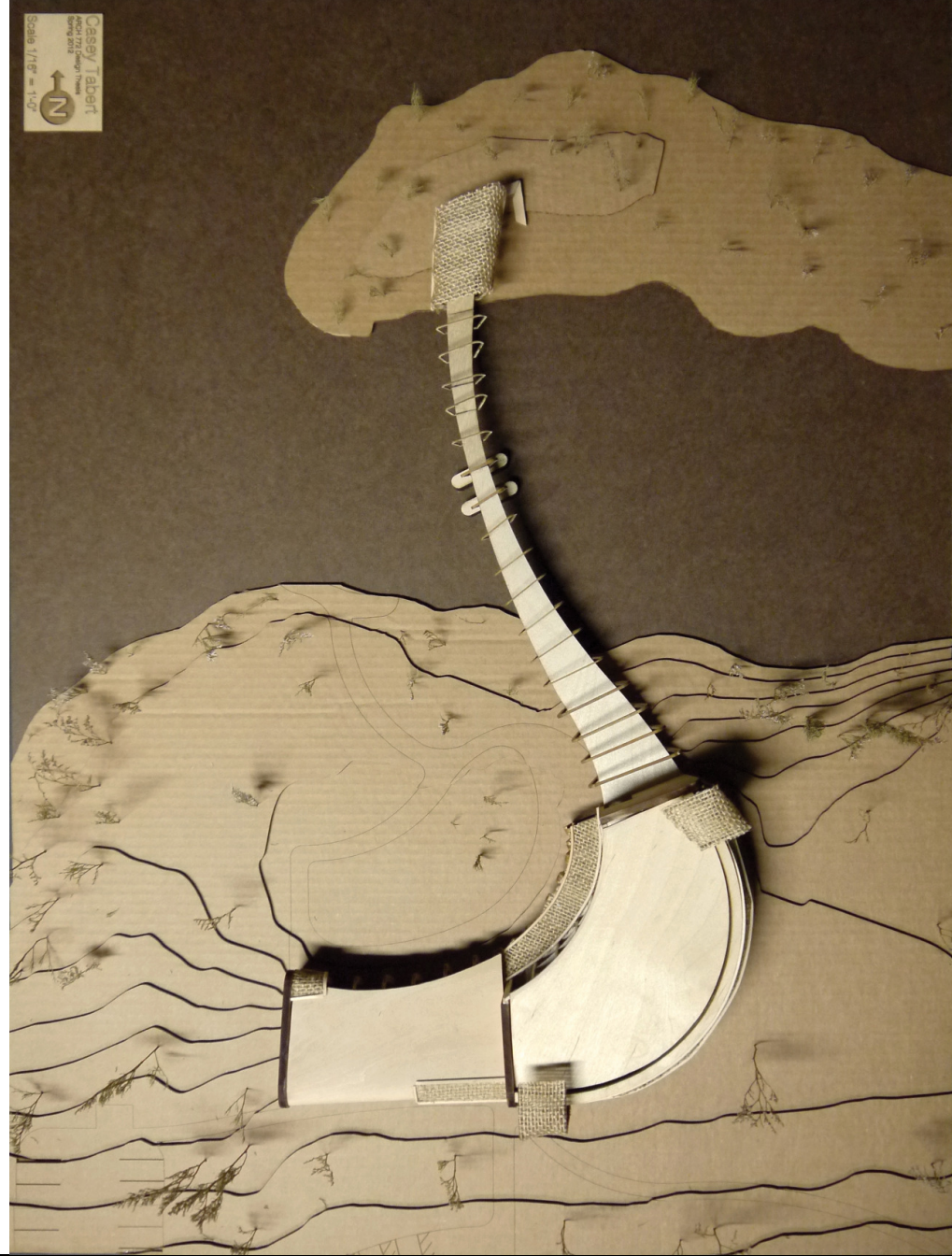
The design of multiple, smaller, gathering spaces throughout the facility gives an intimate feeling where users can feel safe. It also gives users options depending on their specific wants and needs.

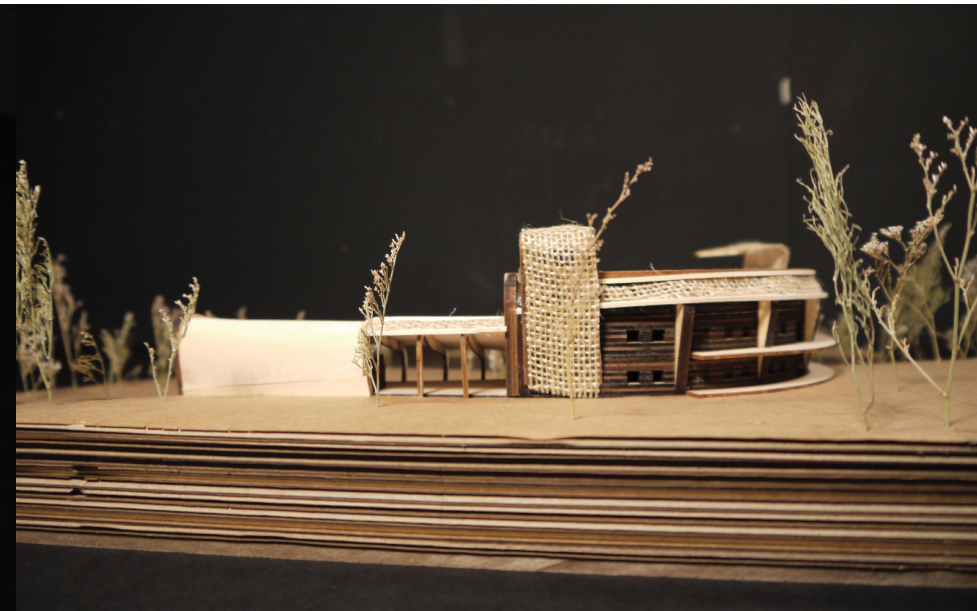
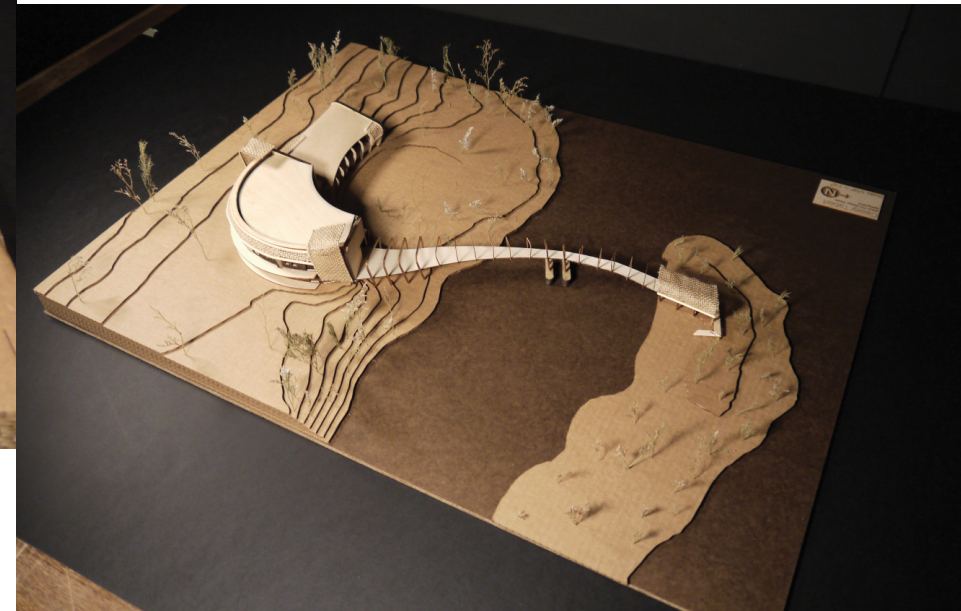
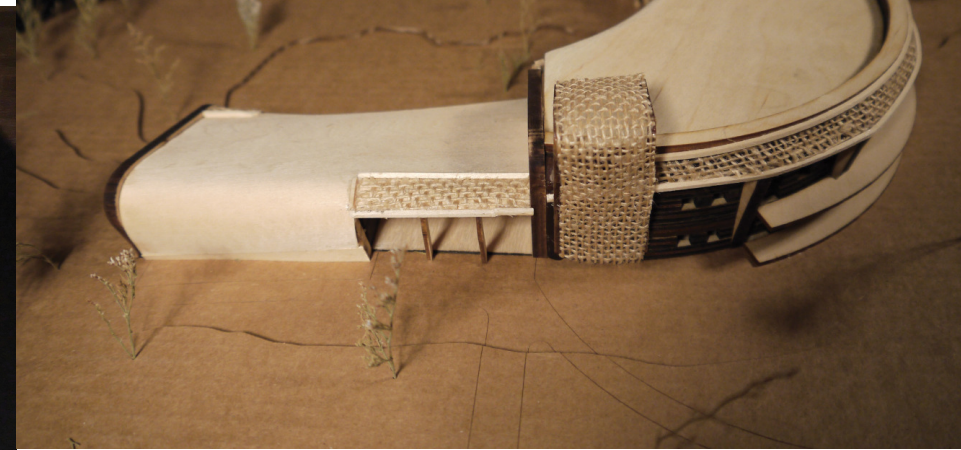
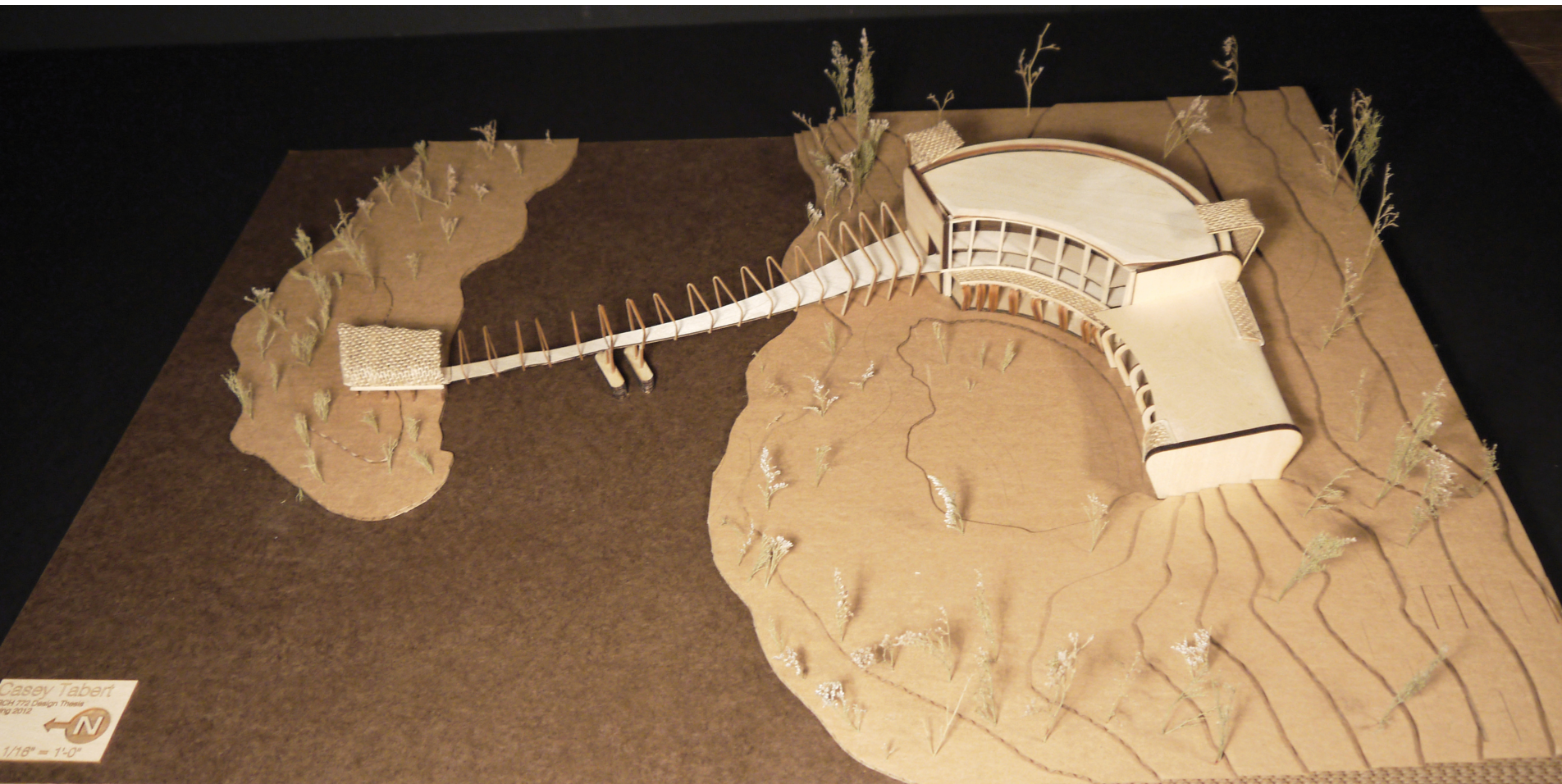


Outdoor Gathering Space

A bridge over moving water signifies overcoming obstacles. Families are able to cross over the bridge together and spend time outside on the privacy of the island strengthening their relationship.

Model Photos





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