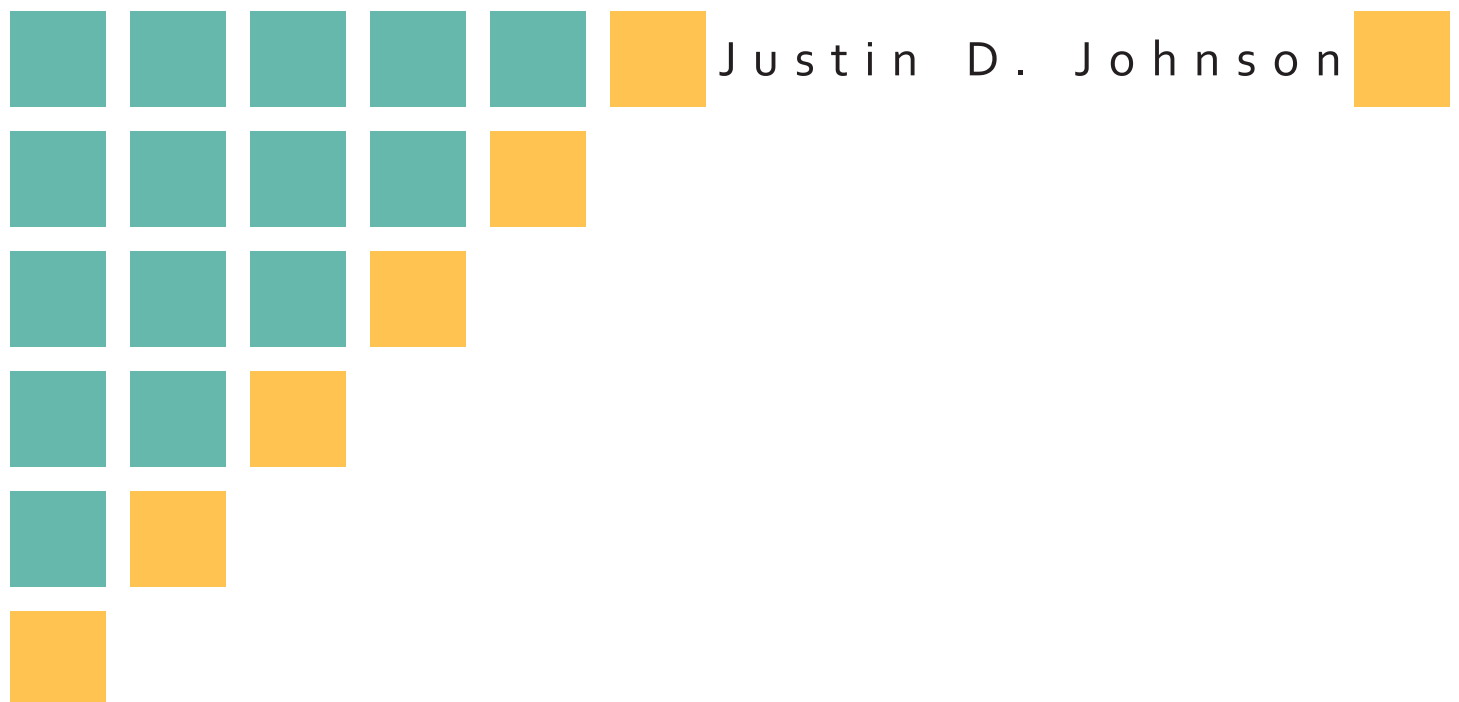
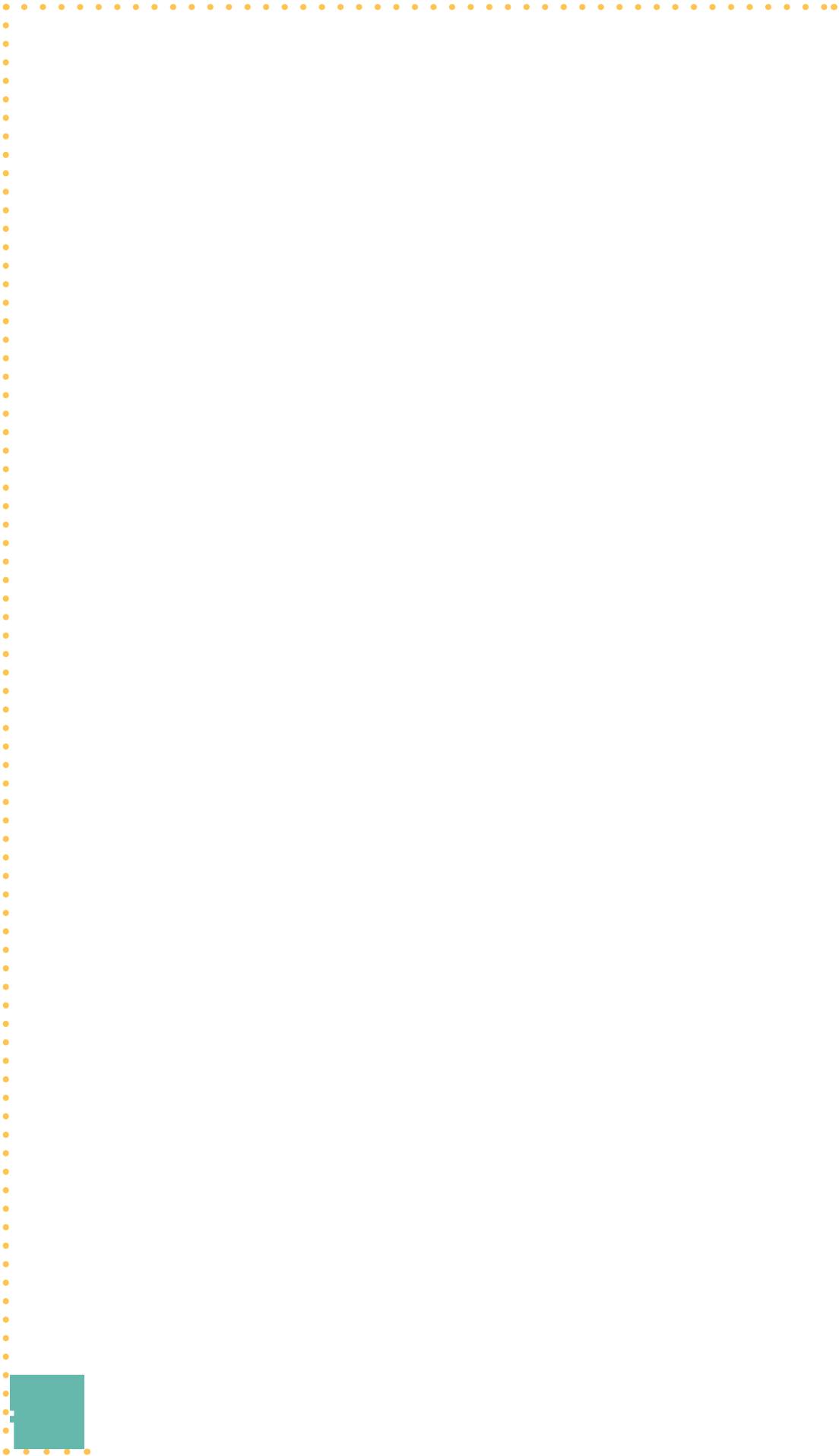


A Preventative Approach



Justin D. Johnson



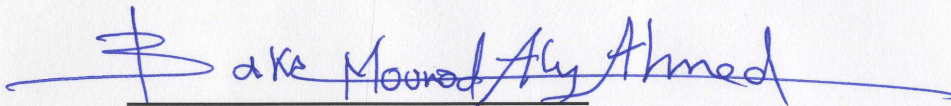
A PREVENTATIVE APPROACH

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

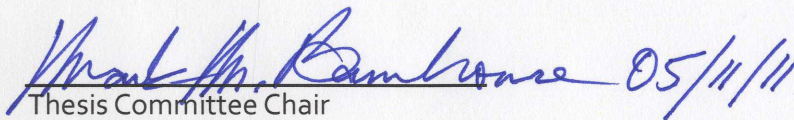
By

Justin D. Johnson

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



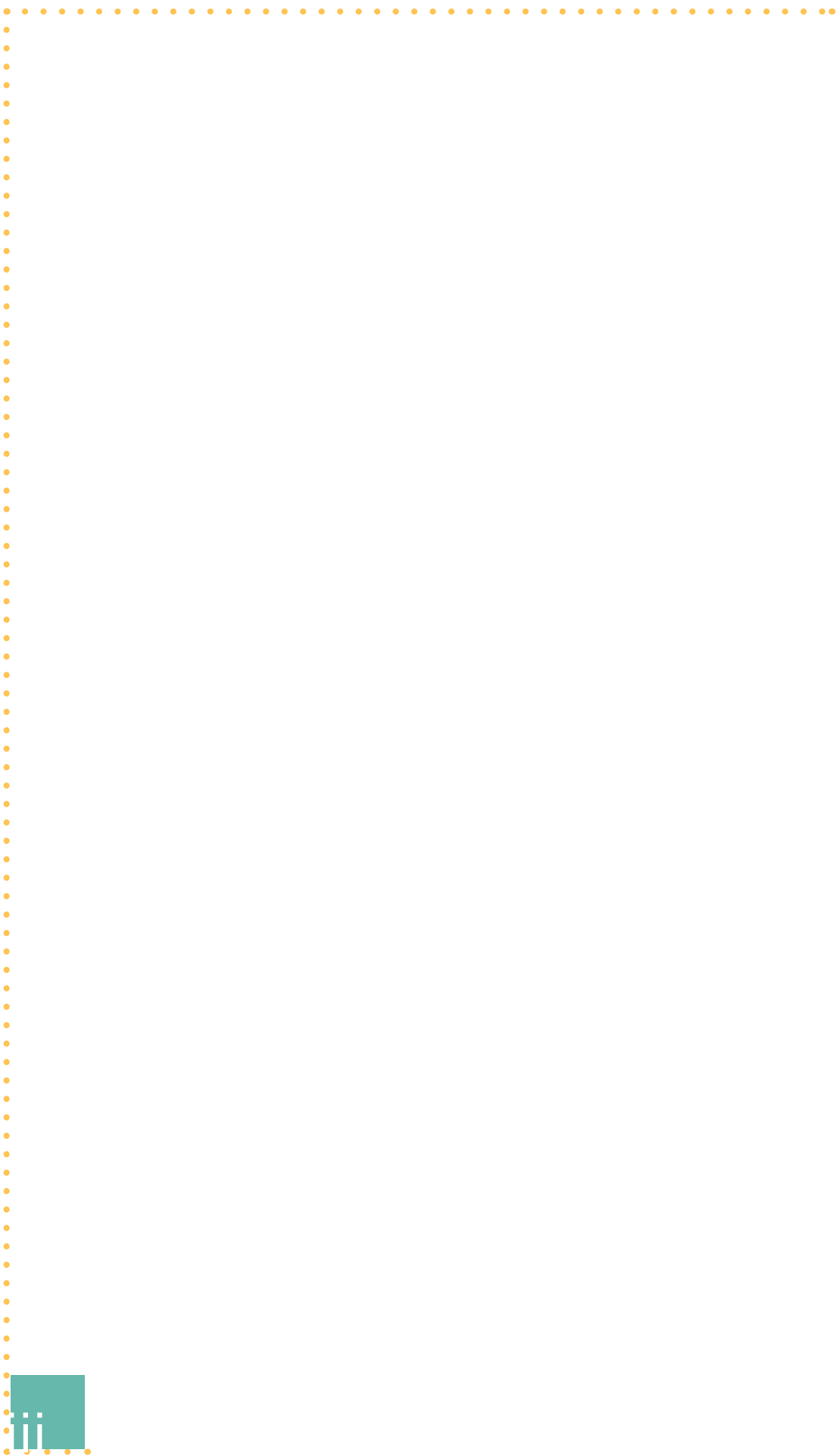
Primary Thesis Advisor



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May, 2011
Fargo, ND





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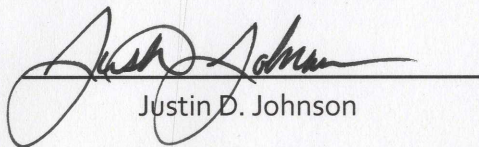
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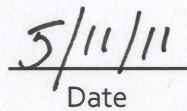
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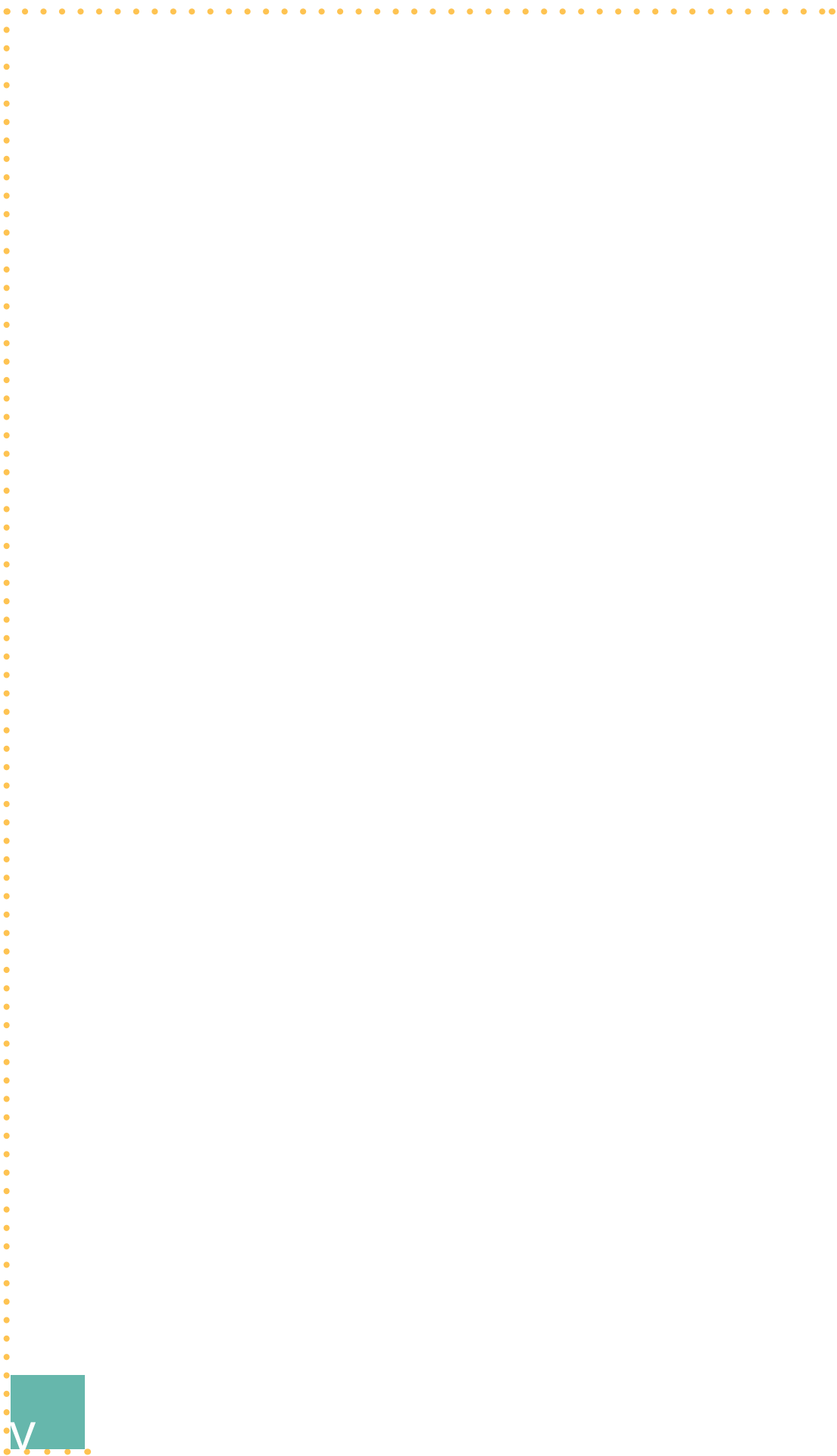


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The

Statement of Intent

■ ■ ■ ■ Thesis Abstract

This thesis examines and researches a **preventative approach** toward the present mental healthcare practice. The current mental healthcare system focuses on a curative instead of a preventative approach. This current treatment type of mental healthcare often increases the longevity of the mental illness with the overuse of prescription drugs.

After taking into account our culture's needs and issues it is found that we are often overworked and overstressed, which decreases our general well-being. After researching and learning more about the psychological aspects, I would like to offer a solution that is a "de stressor," and in the end becomes a **public retreat center**.

Keywords: **Retreat, Preventative Healthcare, Mental Illness, Healing Gardens**



Problem Statement ■ ■ ■ ■

How can architecture influence a better preventative mental healthcare system as an alternative to the current arrangement of inaccessible and sometimes inadequate mental healthcare treatment programs?

Statement of Intent

Typology:

A **retreat** for those in mental need for the Minnesota Department of Human Services.

Claim:

Architecture could aid in the movement from the current treatment type of the mental healthcare system to a preventative care system.

Premises:

It could be possible for architecture to influence certain portions of our mental healthcare system toward preventative care.

The change or movement of a curative or treatment type of mental healthcare system to a preventative one would be possible if it were a more readily available option.

The treatment or curative type of system works for certain areas of the mental healthcare spectrum, but if there was a movement toward more preventative options it could be less financially draining on much of the general population.

Theoretical/Unifying Idea:

The treatment type of mental healthcare is expensive and could be avoided or become unnecessary if there were more alternative or preventative options. Architecture can help ease the hardships healthcare is going through by offering new and stress-free spaces through an environmental connection.

Project Justification:

The current mental healthcare program doesn't offer enough alternatives for preventative care. If more unique preventative care options were available, especially those relating to the mental health point of view, it may help people avoid incurring future financial and health problems.

The

Proposal

Mental illness, in our present day culture, is usually perceived as an issue that should be condemned or, if mentioned, swept under the rug. The approach toward it is too often a treatment type, with the overuse (or misdiagnosis) of prescription medication. While certain prescription medications have their place, especially in short-term and severe cases, there are sometimes more useful solutions to many of these mental health issues.

One of the most common mental illness diagnosis is depression. While the quick solution is to prescribe a dose of medication, there may be more viable and healthier solutions to the problem, such as exercise and retreats. Studies show, and many psychologists agree, that exercise is a great healthy alternative to the use of psychopharmacology (Brown, Taub, & Ramirez, 1978). Other options are available, such as the chance to escape, or retreat, from the stress brought upon us and seeking out guidance, whether it be spiritual, physical or emotional. Keeping emotions and thoughts bottled up in our minds is usually a ticking time bomb for many types of mental illness. Unfortunately, our culture often views it as a negative subject to share what we feel, so we are often encouraged to keep our thoughts and emotions to ourselves.

Due to this negative view of mental illness, there is a lack of easily accessible mental health facilities. However, there is also the critical question; if mental health facilities were more easily accessible, would the general public be willing to seek help at such facilities? There would have to be a clear benefit for the general public to take the leap from medication toward preventative care, and the general public would need to be shown that there are clear cut healthier benefits toward preventative care through alternative means.

Narrative ■ ■ ■ ■

Financially there are several benefits to the movement from the treatment type of system to a preventative one. The decreased use of prescription medications would most likely lower costs of insurance. The user would also not necessarily have to take medication for a prolonged period of time, and would decrease the risk of certain side effects due to the use of the medication.

Healthcare is one of the biggest issues brought up within our government and politically becomes very heated among almost everyone in our nation. There are arguments for almost every spectrum within healthcare: economically and how cost effective it can be, politically how people should be insured or even if everyone should be allowed to be insured, ethically, considering the abuse on the current system, and many more issues. Whether we agree with what has been done or not, there is still going to be the issue of curative or treatment versus the preventative approach. Often in the end it becomes an issue with the state or government, in which they become politically involved.

Having the option of a readily available **retreat** would ease some of the issues that arise with the curative approach. Being able to escape from many of the stressors in our lives, for even a small amount of time, would be welcomed by many.

■ ■ ■ ■ User/Client Description

The Client:

The Minnesota Department of Human Services

The Minnesota Department of Human Services (MDHS) was originally known as the 'welfare agency' since its inception in the mid 1800s. The department has focused on helping people make transitions and overcome obstacles in their lives.

The MDHS has listed seven priorities which guide department planning efforts: at-risk adults, at-risk children, reducing disparities, health care, chemical and mental health, home and community-based services and organizational effectiveness.

The MDHS has a simple mission: "The Minnesota Department of Human Services, working with many others, helps people meet their basic needs so they can live in dignity and achieve their highest potential." (MDHS, 2010)

The Users:

Patients

Demographics

With the nickname "The Land of 10,000 Lakes," Minnesota has a long-standing reputation for its connection to the wilderness and nature. Even with its strong tie with nature it still has a large population, with roughly 5.25 million people calling it home. At about 2.85 million people, the Twin Cities area includes about half of the entire state's population. With a consistently growing population in the area there is always a need for various types of mental health facilities.

User/Client Description

Requirements and Usage

SINCE the site IS located in a more remote location, to keep a natural feel to the area, there will be limited parking. Many of the patients who will come to the retreat may arrive by a shuttle bus that is operated by the retreat staff.

Daily, the peak usage of the retreat will be during daytime hours, with no firm hours set. The clients/patients will generally stay for a set period of time determined before their arrival. Monthly, the retreat will see usage from the beginning of April until approximately the end of October. It will be closed during the winter months except for the possibility of special events.

The staff of MDHS

Demographics

The number of staff at the retreat will range from approximately 15-20 full-time workers and 5-10 part-time workers. The staff will include a director, a supervisor, licensed mental health clinicians, social workers, an IT staff, accounting, food service workers, maintenance technicians and a secretary. Full-time mental health clinicians will provide varying services to the client, with counseling being the main service offered. This includes drug and alcohol, grief, education, financial and pre-parent counseling.

Requirements and Usage

The requirements and usage of the site for staff members varies depending on the client. There will be required staff parking and a separate staff entrance, along with staff-only spaces inside.

Major Project Elements

Mental healthcare is a unique field in that both the client and the staff often share the same spaces. There will be necessary private spaces for staff.

Public

Outdoor Spaces

A large focus for this project will be on the connection with nature that is often forgotten within the city. There will be many outdoor spaces for the patients to enjoy, including walking paths, boat docks, gardens, meditating areas, many wooded areas and designated fishing locations.

Commons

The commons area will include many of the public entertainment spaces. There will be an area for meals and service and lounge that is connected to the outdoors, with the focus on the connection with nature.

Social Services Offices

The offices are public because they are used for counseling. These are used by the licensed mental health clinicians and social workers. They vary in size but the licensed clinician offices should be a comfortable size to allow for small group counseling.

Group Rooms

Group counseling and group meetings have become an important aspect in the mental health field. Many recent studies, especially within drug and alcohol abuse, have shown that the relapse rate of those who are in group counseling is much lower than those who just do individual counseling. The facility will include one large group meeting room that will seat a maximum of between 20-25 people.

Major Project Elements

Library/Resource Room

Many of the clients/patients who use this facility don't often have enough information on the topic they are dealing with. The library/resource room will have books, magazines and brochures on many common mental health problems.

Private

Private Living Quarters

The retreat will have to accommodate for patients staying overnight. There will have to be private living quarters available for the patients that include: a bed, storage, and a shared bathroom.

Conference Room (Private)

It is necessary to have a small group conference room for the staff to use for meetings within the mental health division.

Staff Breakroom

The staff breakroom is separate from the public patient areas so the staff has an adequate retreat from the work environment.

File Room

Security is an important aspect in a facility like this. It will need a large fire proof file room that is private and inaccessible to the public.

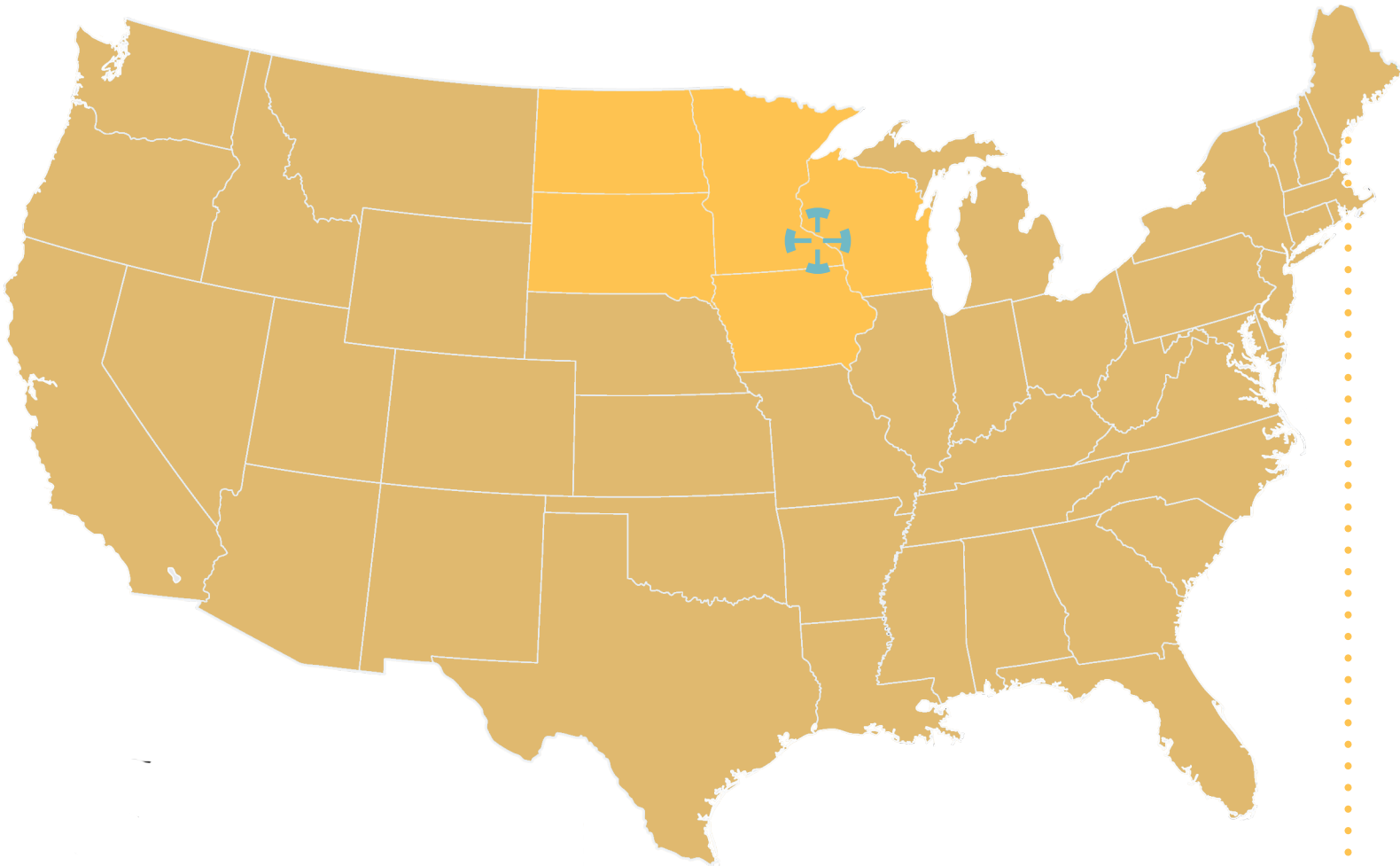
Administrative Offices

The administrative offices are used for accounting and bookkeeping, insurance, and IT. They are private and must accommodate up-to-date technological uses.

Regional

This site is located in the upper Midwest region of the United States. Minnesota has a wonderfully unique and varying landscape, with scenic bluffs on the Mississippi and rolling prairies in the southwest.

The climate has the standard four seasons with cold dry winters and warm-hot humid summers. Much of the land is rich and fertile and leads to great crop and agriculture production.



Site Information ■ ■ ■ ■

City

The area around Frontenac, MN was originally settled by the French in 1727, where they constructed Fort Beauharnois.

The town of Old Frontenac is nestled on the Mississippi River and is located about 45 miles southeast of the Twin Cities. Frontenac is separated into two areas, Old and New. Old Frontenac has preserved much of its history and includes no gas stations or commercial businesses; New Frontenac was settled later, along Highway 61 and includes all of the businesses and commercial buildings along with residential housing.



The exact location of the site is on the eastern edge of Old Frontenac. It is surrounded by Garrard Bluff on the west and Lake Pepin on the east.

Frontenac State Park is located just to the north of the site along Point No Point. The site has beautiful views all around, including across the lake into Wisconsin, where Maiden Rock sits. There is no major traffic going into the area except for residents and occasional tourists going to the state park, allowing it to have a remote feel.



Project Emphasis ■ ■ ■ ■

This project examines the alternative to treatment, *preventative care*. While this may not necessarily be a new idea it certainly has been something our society has gone away from. It is important not to diminish the good that the curative approach has done, but at the same time it is critical to show there are alternative methods available.

Most of our current healthcare facilities, both mental and physical, tend to focus on a treatment or a curative approach. The focus of this project will be toward a retreat facility that will give the public an opportunity for stress release that may not be available, especially in an urban setting.

■ ■ ■ ■ Plan for Proceeding

Research Direction

The research for this thesis will focus on several different directions to create a full and complete project. The first examination will be into the theoretical premise/unifying idea. The following research will also include the project typology, historical context, site analysis and programmatic requirements.

Design Methodology

To create a successful project that is full and complete I will use the mixed-method model. This will use and follow the concurrent transformative strategy which will generate both qualitative and quantitative information. These two forms of information and data are gathered concurrently and will yield results that will be used directly toward the project. Much of the research will be branched off of the theoretical premise/unifying idea, project typology and historical analysis.

Documentation of Design

The plan of documentation will use a diverse type of media. The use of sketches and process models will be documented through the use of scanning and photographs, giving the opportunity to store the documentation on the computer, creating a digital collection. Along with the digital collection it will be important to archive and store any physical materials for future review.

Previous Studio Experience ■ ■ ■ ■

2nd Year

Fall 2007: Mike Christenson

Tea House, Fargo, ND
Boathouse, Minneapolis, MN
A-Typical Retail Business, Fargo, ND

Spring 2008: Malini Srivastava

Spatial Study
Community Row, Fargo, ND

3rd Year

Fall 2008: Cindy Urness

Center for Excellence, Fargo, ND
Moorhead Public Library, Moorhead, MN

Spring 2009: Steve Martens

Museum of the Far North, Fargo, ND
Native American Community Center, Mille Lacs, MN

4th Year

Fall 2009: Darryl Booker

Vertical Community, Highrise, San Francisco, CA

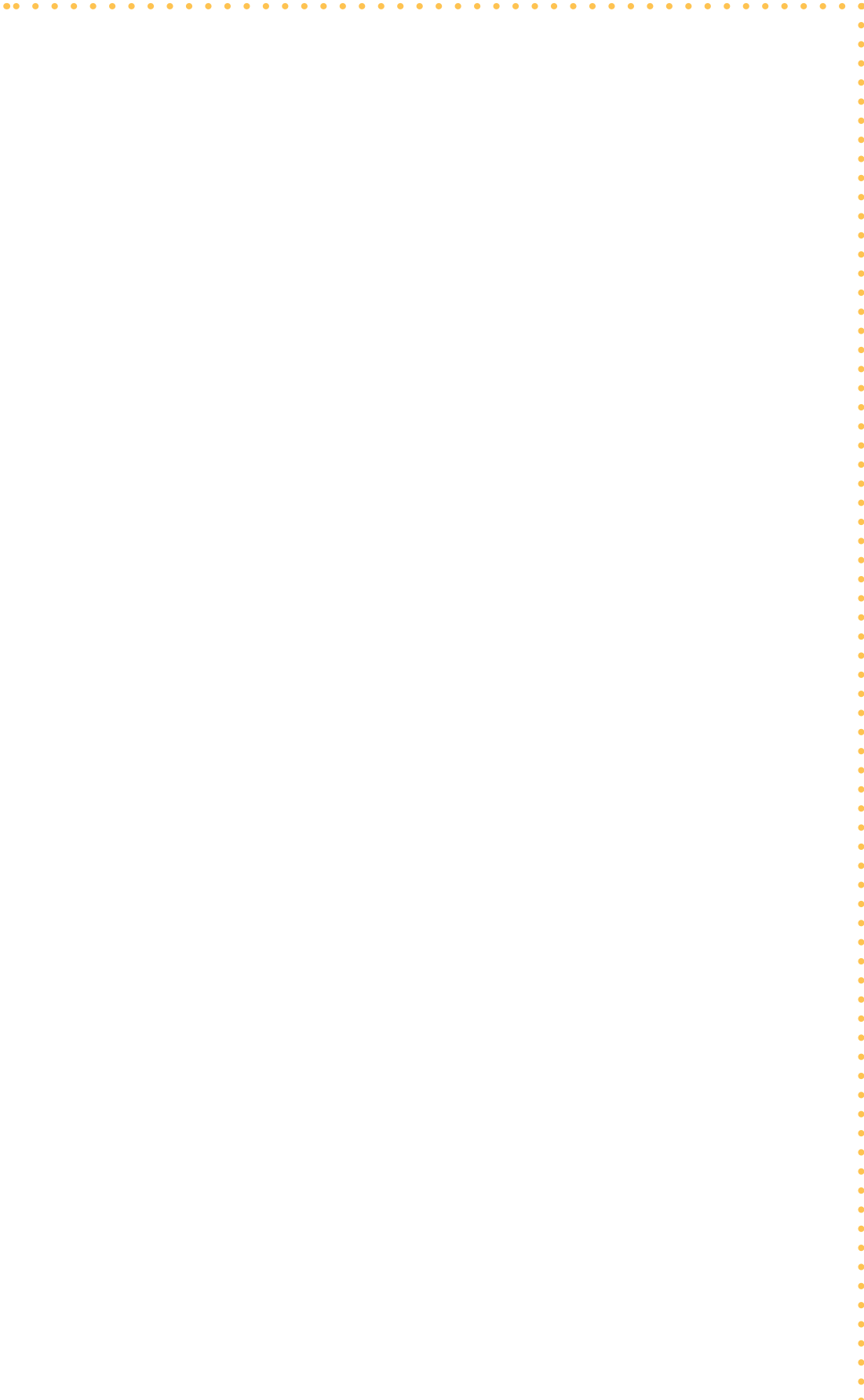
Spring 2010: Darryl Booker

Urban Community, Santo Domingo, D.R.
Kigoma School, Kigoma, Tanzania
Urban Housing, Santo Domingo, D.R.

5th Year

Fall 2010: Cindy Urness

MXC, Future City, Health Center, Minnesota



The

Research

Results

Stress and Our Culture

Our societal culture today often produces more stress and fewer ways to release it. Years of research have shown that stress comes with a various amount of negative outcomes, including anxiety, depression, physical symptoms, and in rare cases death.

What is the modern definition of stress? It is actually considered a “reaction” and is the process whereby a person responds physiologically, psychologically, and often behaviorally, to a situation that threatens well-being (Baum, 1982) What usually causes the extra stress? It is often the environment we choose to be in, or are forced. This brings us to our connection with our environment and how we feel in that environment, whether it be natural or built. An example of this would be the action I’m currently doing, writing.

What environment am I writing in? At home. Why did I choose this environment? It’s relaxing with limited distractions, whereas in a studio or a different loud environment I could get distracted or stressed. What are the negatives to this environment? It can sometimes get too relaxing to the point where I might get restless. These questions relate to the term environmental psychology.

Environmental Psychology

The definition of environmental psychology is how our behavior relates to the physical environment around us (Matthew, 2001). It is a relatively young branch of psychology, started in the late 1960s. What makes environmental psychology unique in its field is that it does not focus on or emphasize the interaction between people.

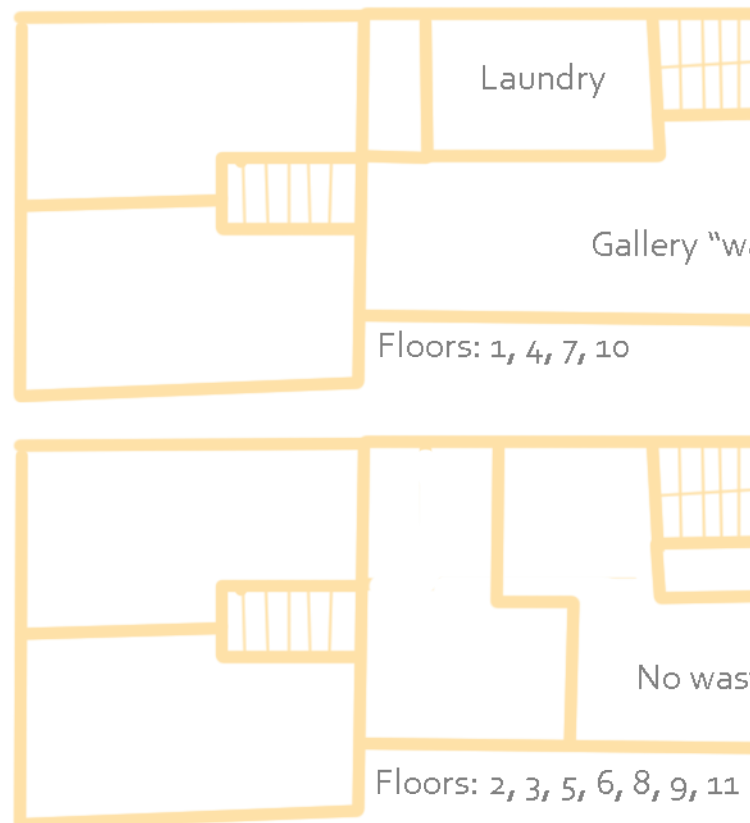
Research Results ■ ■ ■ ■

The environment influences our behavior, down to the arrangement of furniture, which influences how people interact (Matthew, 2001). The application of environmental psychology can be very useful, as it can be used to study effective ways to better conserve our natural environment and designing buildings, laying out towns and cities (Matthew, 2001).

A Problem

Before we can look at a possible good solution to a poor or negative environment, we can look at a case study. Going back in time a great example of poor environmental psychology would be the infamous Pruitt-Igoe Housing Project, located in St. Louis, Missouri. Some argue it was an economic failure, with its residents being mostly poor and jobless. Another explanation was that it was purely an architectural failure (Bristol, 2004). If we look at the environmental reasons behind it there might be more to the answer.

Yancey and Proshansky (1976) argued that the project had a splitting or fragmenting effect on the informal social networks that were frequently found in lower and working-class neighborhoods. Because Pruitt-Igoe did not provide much use of semi-public spaces and facilities in which these networks often develop, those living in the project withdrew themselves into the internal structures of their apartments. This had a domino effect in which residents did not have the social support, informal social control and protection that can often be found in other lower-class neighborhoods. There was a minimum of what was called "wasted space," which in an urban housing project is space within that is outside the individual family dwelling units.



■ ■ ■ ■ Research Results

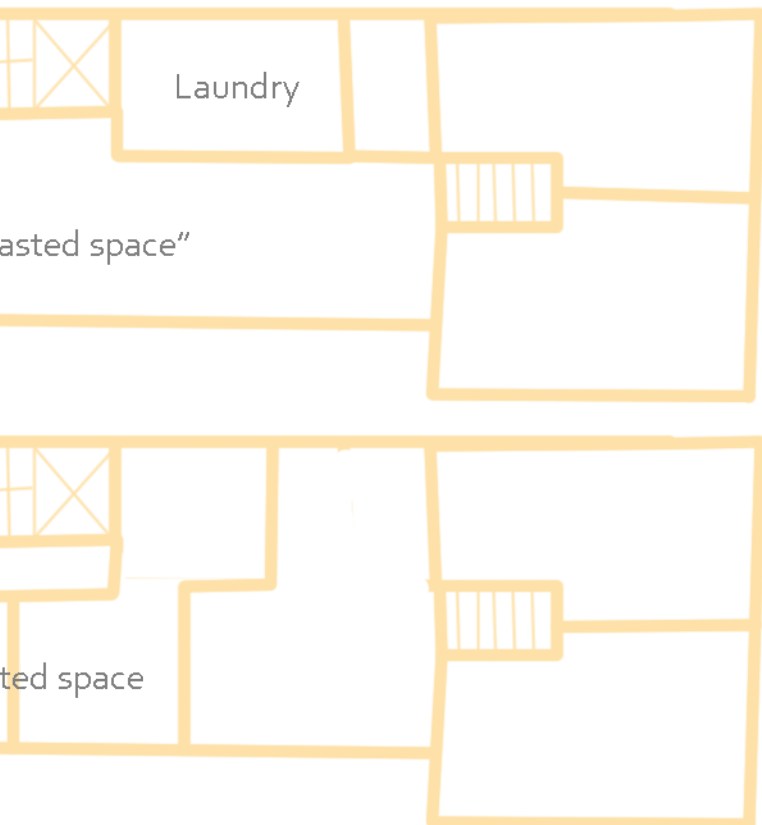
Although it may be an older article it describes in colorful detail what the environment was like:

Windows, particularly those on the lower floors are broken out. The cost of replacing glass in vacant apartments led the Housing Authority to cover them with plywood...Derelict cars provide an attractive source of entertainment for children...Fences around the "tot lots" are torn; swings broken, merry-go-rounds are noticeably unpainted, rusted and broken (Yancey and Proshansky, 1976).

These are the descriptions of an outdoor environment which would generally be deemed unsuitable for humans. They goes on to describe that within the buildings themselves the neglect is even more obvious.

Entering the buildings via one of the three stairwells, one is struck with the stale air and the stench of urine, trash, and garbage on the floors...Also struck by the unfinished construction, unpainted cinderblocks and cement, walls and stairwells are decorated with colorful graffiti. The alternative route is the elevator, which is used as a public restroom (Yancey and Proshansky, 1976).

While this may be on the extreme end of a poor or negative environment, especially in the United States, it is still a great example. Most of the stressors in our society today may not be as severe as Pruitt-Igoe, but they are generally still related to our environment, whether it be at work or home, the built environment (in this case) or sometimes people.



Research Results ■ ■ ■ ■

The Neuroscience of Architecture

While environmental psychology may still be considered a theory there is starting to become hard evidence through the joint research of architects and neuroscientists that the physical-based environment has a strong impact on human behavior, specifically studying the brain. The Academy of Neuroscience for Architecture (ANFA) is still in it's infancy stage, and was launched as a project at the 2003 AIA National Convention in San Diego, CA. (Dubbs, 2005)

The leading architect who has been behind ANFA is John Eberhard, and he states that:

The enormous body of knowledge being created by neuroscientists is about to dramatically change what it means to be a professional designer. Architects will benefit from the new knowledge base made possible by neuroscience, but the real beneficiaries are future generations of school children, hospital patients, and office workers who will have their environments more carefully tuned to their needs and desires (Dubbs, 2005).

The reason ANFA has been able to make so much progress in the past decade is because there are tools and devices now that were not available in past decades. The neuroscientists can use these devices to take images of the brain to see what is actually occurring inside the brain and what areas are being stimulated. One of the latest discoveries includes a finding by Fred Gage, president of ANFA, that enrichment and exercise can lead to the re-tooling of the brain, even in adults (Dubbs, 2005). With these advances in technology, John Eberhard says that it is possible to know more about how humans experience their environment, why they have the experience, and how we can, as designers, influence that experience.

■ ■ ■ ■ Research Results

Another example in the realm of neuroscience in architecture (and real world application) comes from Andrea Vanecko, who wrote an article "Making the Workplace Work Even Harder." In the article she states that the resource center of her firm, Future@Work II, has an Immersion Room. This Immersion Room is different than most standard meeting or conference rooms at a firm, because this space was designed to be extremely flexible and can hold a wide scope of activities that are necessary in a firm setting: design charettes, brainstorming, presentations and even formal meetings. The physical experience of the room is established by the opinions and observations of the visitors of the room. The room is circular in nature, is flexible or moldable by moving drapes and panels, and can easily change people's frame of mind when entering the room (Vanecko, 2002).

The Healing Process

It was necessary to look into the sciences, both social and hard, before we could look at possible solutions, or a healing process. Our stress can bottle up, it can become increasingly difficult to handle, and as has been shown, it often comes down to the environment. The next step to look at is the healing process. This healing process can begin with where it may have started: the environment. There have been several recent articles and studies that have shown that the healing process can begin with the environment. Good environmental design can actually reduce anxiety, lessen pain, lower blood pressure and even shorten hospital stays (Rubin, 1997). This process can be proposed through many different avenues, but one of the more recent ideas and theories has been through the use of a "healing garden."

Research Results ■ ■ ■ ■

The Healing Garden

The definition of the “healing garden” can be broad. Roger Ulrich refers to it as a “variety of garden features that have in common a consistent tendency to foster restoration from stress and have other positive influences on patients, visitors, and staff or caregivers” (Ulrich, 1999). The type and quality of the garden should be composed of “real nature,” like real vegetation, flowers, trees, bushes, and water features. These healing gardens can be either an indoor or an outdoor space, small or large, and some of the best current examples of healing gardens are located in healthcare facilities. The main rule for it to be defined as a healing garden is that it should have therapeutic or beneficial effects on its users (Ulrich, 1999).

Stress is a critical component of the relationship between us and our surroundings. Stress also becomes important for us to control in our lives because it directly effects several other types of health outcomes such as the feeling of helplessness, depression, social withdrawal and high blood pressure (Cohen, 1991). Understimulation can also cause increased stress. Patients in nursing homes can suffer from depression due to boredom, because their environments are so understimulated they become stressed, not unlike the opposite which is overstimulating. Studies have shown that when healthcare facilities focused on stress relief or restoration using healing gardens, it was widely considered the most important benefit of the patient’s stay (Cooper, Marcus, Barnes, 1995).

The research and studies that have been done on healing gardens show that they are stress reducers, and that the goals for these gardens be that they promote:

1. Sense of control and access to privacy
2. Social support
3. Physical movement and exercise
4. Access to nature and other positive distractions

There has been research done that shows that a sense of control over a person's situation increases the ability to handle stressful events. In this context, control relates to the person's real or perceived ability to determine what they do, to affect their situations, and to determine what others do to them" (Gatchel, 1989). To design for a sense of control the patient must know the garden exists, it must be easy to navigate and it should be able to be used in an active or passive manner (Ulrich, 1999). If the garden is difficult to navigate or if patients have a hard time accessing it, then it can create a feeling of loss of control and can actually induce stress.

The general definition of social support is perceiving emotional support or caring, and material or physical aid, that a person receives from others (Brannon & Feist, 1997). The focus of a counseling-based support system is critical in the social support aspect of the healing garden, and because of this it is quite an important aspect in relation to my project. Design considerations for the social support aspect include thinking about accommodations for larger group settings (as counseling keeps moving more toward social support groups) but also keeping in mind private settings for individuals.

Research Results ■ ■ ■ ■

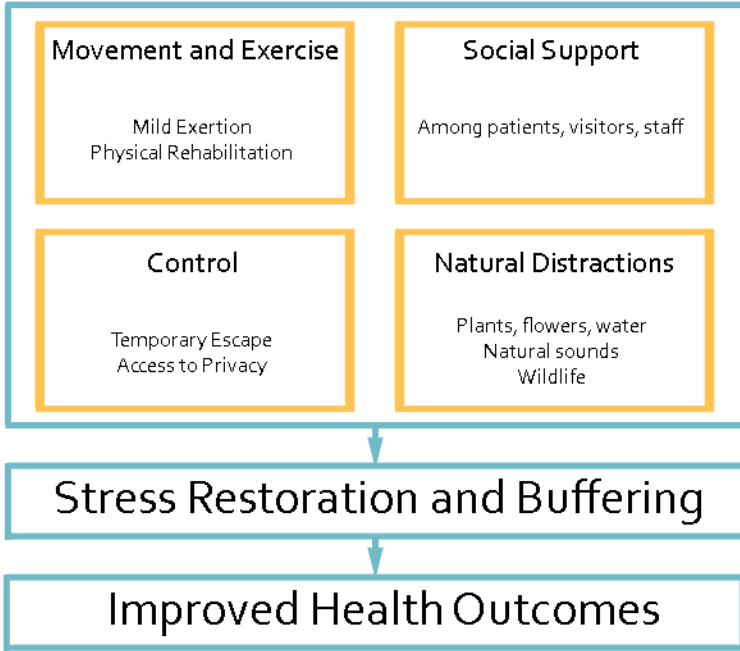
Physical exercise clearly provides great physical health benefits, but many studies also link it to improvements in mental well-being, with many showing it specifically beneficial in reducing depression. Physical exercise can be persuaded easier in a natural setting than the stereotypical workout setting, thus making gardens quite justifiable.

In environmental design, positive distractions can be used to efficiently advocate stress reduction and restoration in patients. These positive distractions could include the natural settings of a healing garden. Learning becomes an important category by which people use nature as a restorative response (Ulrich, 1992).

Dating back to ancient times there has been the belief that viewing vegetation, water, and nature in general can alleviate stress (Ulrich, 1992). The overload and arousal theory states that built environments are more taxing because of high levels of visual complexity, noise, intensity and movement (Berlyne, 1971), while nature settings have lower levels of such and all around better stimulating properties that increases relaxation (Wohlwill, 1983).

Nature and It's Restorative Effects & The Benefits of Leisure

Restorative Benefits of Nature



Much research has been done on the effects of nature on non-patients, and alleviation of stress consistently seems to be the most important benefit (Ulrich, 1999). The leisure and recreation aspect often comes into play when interacting with nature. The concept that is often used to cope with stress during leisure activities is called “temporary escape” (Driver & Knopf, 1976). Research has been done on the therapeutic benefits of leisure activities in how people cope with stress through this temporary escape. The best known studies come from Tinsley and Kaas, as they identified and developed psychometric charts as a measurement tool, identifying 27 leisure activity specific needs. The results have shown that leisure activities are important for helping people cope with stress as well as many other physical benefits (Tinsley & Kaas, 1979).

Interestingly enough it was found that the restorative benefits of nature are substantially increased in people who experience high levels of stress, or those who spend many hours stuck indoors and go all day without viewing daylight (Ulrich, 1979). These previous studies have proven that the relationship between stress and nature can go hand in hand, and that nature can offer wonderful restorative effects on people’s stress levels.

Research Summary

Theoretical Premise/Unifying Idea

The treatment type of mental healthcare is expensive and could be avoided or become unnecessary if there were more alternative or preventative options. Architecture can help ease the hardships healthcare is going through by offering new and stress-free spaces through an environmental connection.

Summary

The first step in my research was identifying the problem that correlated with my theoretical premise/unifying idea and my typology: stress and our culture. It was important to understand the true definition of stress, and that it is actually a reaction to a process where we respond behaviorally toward certain situations that are bad for our well-being. It may seem like a drawn-out definition but we often get stressed out about little things in our lives today that aren't worth it. This relates to our surrounding environment and how it affects our behavior.

The next step in my research was to look into a social science and see if this "problem" would fit under a category, which I found to be environmental psychology. Environmental psychology is actually quite a young social science, but has been making strides in research, especially in the last couple decades. It was interesting to find a case study in the field from 1976, with one of the more infamous projects in architecture's history, Pruitt-Igoe. It was discussed in somewhat grim detail how the architecture failed at almost every level of good environmental design. While it may have been an extreme example of poor environmental design, it correlated well with the environmental psychology field.

■ ■ ■ ■ Research Summary

While it was quite useful researching environmental psychology I had yet to find hard facts, or a hard science. Neuroscience and architecture was the answer. This was a very recent (2005) venture that brought the neuroscience of our brains into coordination with architecture. The tools that are available now were not around when environmental psychology first came about. These tools can actually measure our brains' activity levels to see what stimulates our senses, which could eventually allow us, as designers, to better influence the experience of the environment. There has been real world application of this done by a firm in Seattle, WA, in which they created an "Immersion Room," which was designed to be flexible and moldable, allowing them to change people's frame of mind when they entered the room.

For one of the last steps in this research process I wanted to focus on researching a possible solution to this problem, whether it be active or passive. The one possible solution that I saw best fitting my thesis project was our environmental connection with nature, or "Healing Gardens" as Roger Ulrich put it. It was found through countless articles and studies that having a stronger tie towards nature has a restorative effect with our stress level. One of the critical items of interest I came across in this research was the design considerations offered through four bulleted points: sense of control, social support, physical activity, positive distractions. This research correlates well with the problem that was presented and offers, what I believe, a viable solution to this issue.

The

Case

Studies

Case Study: Site Use

The Sleeping Lady Mountain Retreat

Location: Leavenworth, Washington

Size: Approximately 67 acres, over two dozen structures, including cabins, dining lodge, library, theater and chapel

Architect: Jones & Jones

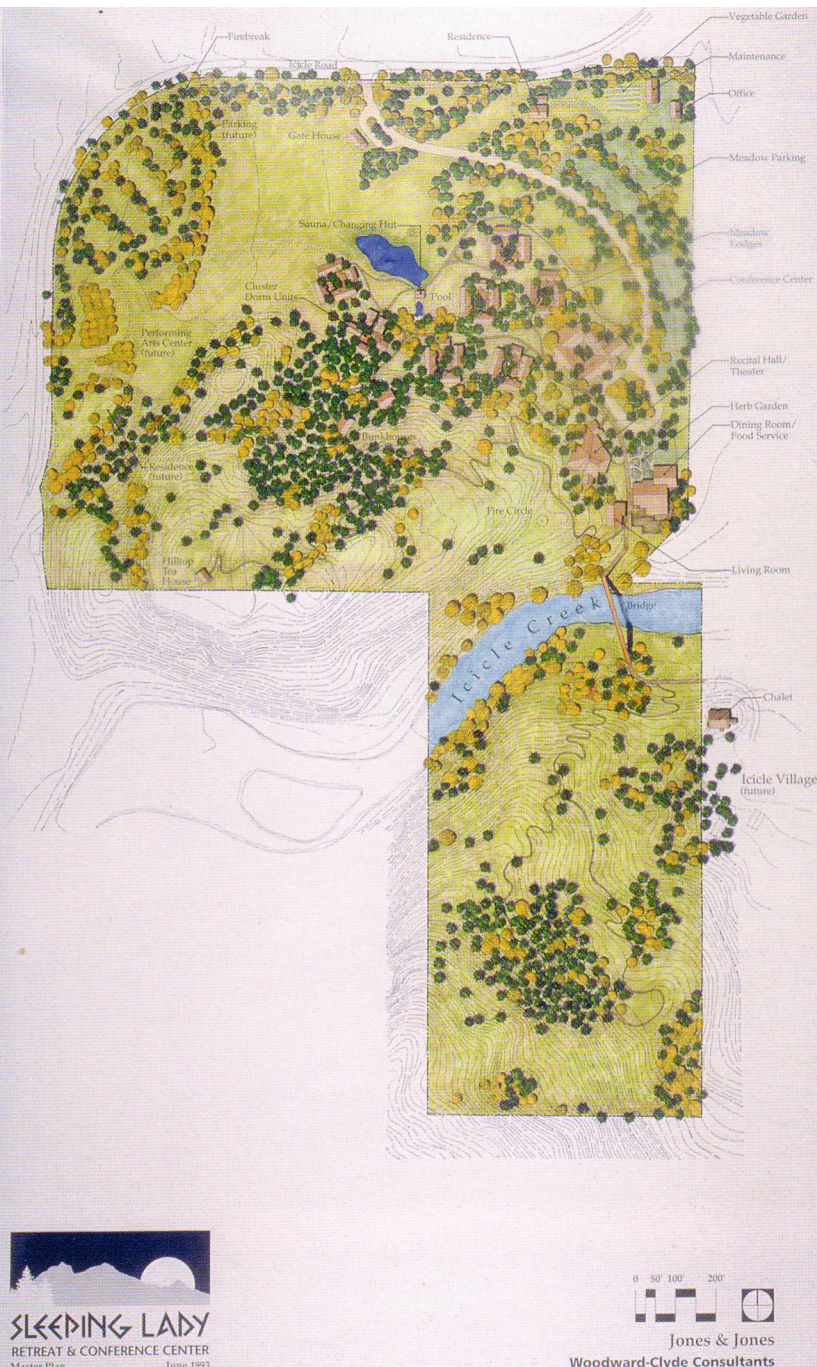
History

Originally the land was occupied by the Native Americans of the P'squosa tribe. During the 1930s and 1940s the site was known as Camp Icicle and housed the 983rd Company of the Civilian Conservation Corps. The buildings that were constructed back then were home to 200 people, and several of those structures are still around. The cabins were made into a family-style ranch named Icicle River Ranch in 1946.

Not unlike the site chosen for my thesis, the property was sold to a church in 1957 where it served as a retreat until 1991. In 1991 the property was purchased by Harriet Bullitt and was renamed Sleeping Lady. Finally, in 1994 the structures on the site were remodeled sustainably and exceeded building and energy codes. The new buildings were constructed in a similar style to the existing and it was opened to the public in August 1995.

Description

Sleeping Lady is a place where visitors are meant to recharge their energy and get away from the busy city life. It's a chance for the guests to focus on their professional or personal lives while they learn how to live close to nature. The architecture of Sleeping Lady is Northwestern Mountain yet vernacular.



Above: The preliminary master plan shows that it preserved much of the site and was able to reuse many of the old buildings still located in the area.

Case Study: Site Use

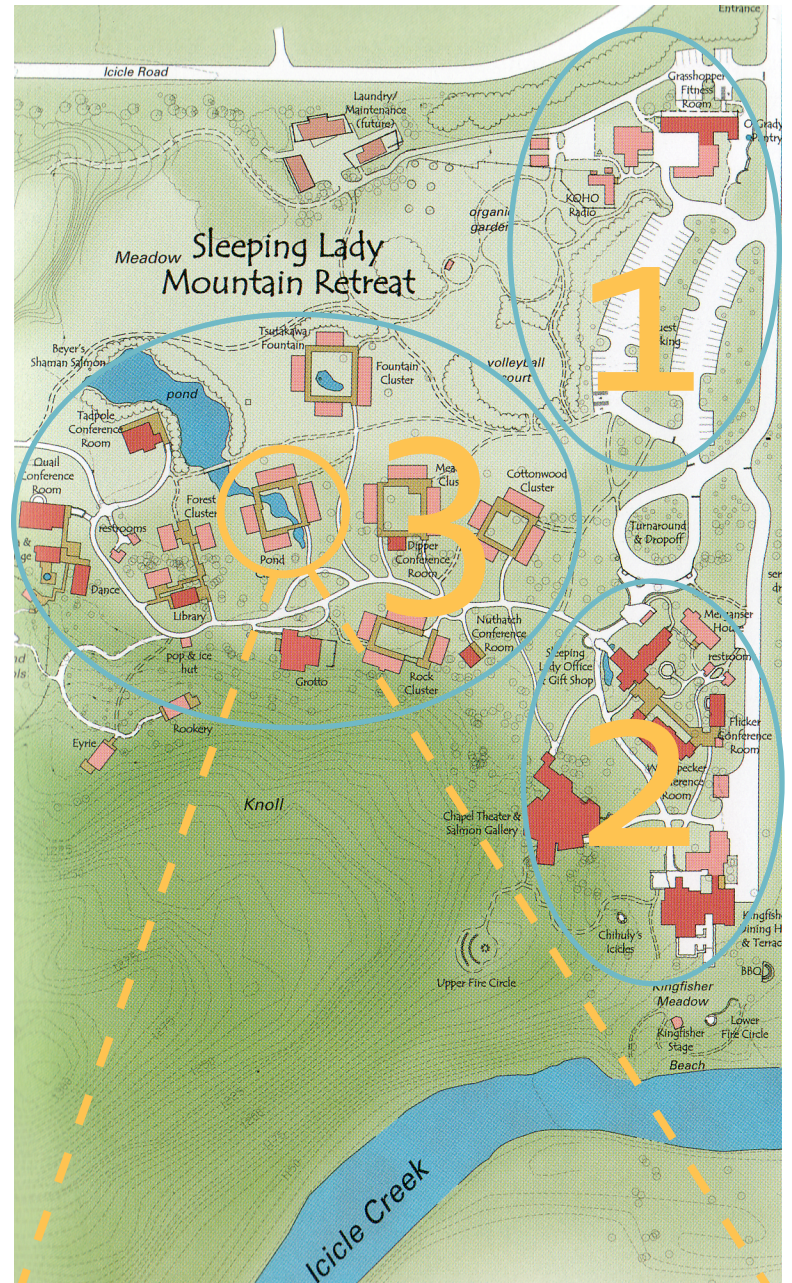
Analysis

The Sleeping Lady Mountain Retreat is subtly separated into three zones, which was an intended design. The main idea was to not unnecessarily disturb the land, which is why many of the old buildings were reused.

1 On the northeastern side of the retreat is the main entrance. The idea behind this being that you actually have to get out of your car, at the parking lot before you really arrive at the retreat. Many of the backstage functions actually take place here, outside of the natural area. These include the laundry and maintenance buildings, the local radio station, fitness room and a pantry.

2 Located on the southeastern corner of the retreat is the main entry area. Once you arrive at the parking lot to the north this is where you would check in. The important functions of this area include the main office, lobby, check-in, the chapel and theater, dining hall and conference rooms. These are considered front stage public spaces.

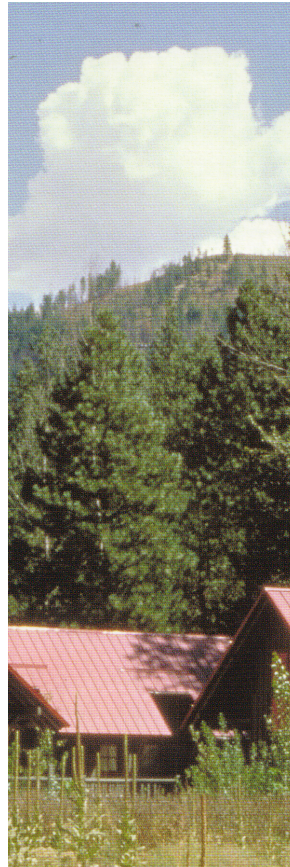
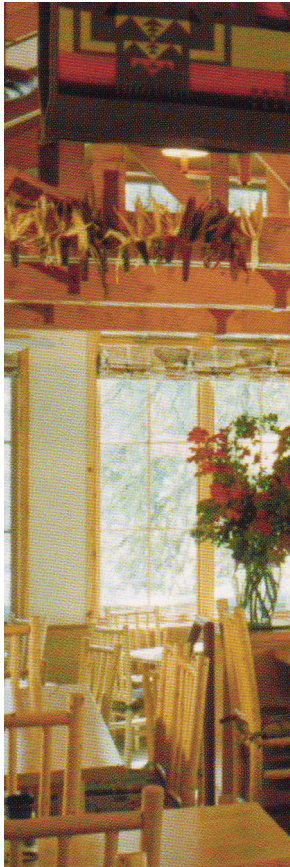
3 The last zone is truly the heart of the retreat. All of the living quarters are nestled back into the forest and right next to the mountain. To encourage interaction within the living quarters the zone was designed to have different levels of enclosure that open up into a courtyard, with a pod of four living quarters to a courtyard. The high ceilings are exposed with wooden trusses with bed lofts that can accommodate between one and four people. These areas would be considered front stage private spaces.



Right: The living quarters looking into the shared courtyard space.



Case Study: Site Use



Case Study: Healing Gardens

Stormont Health Centre

Location: London Swill, UK

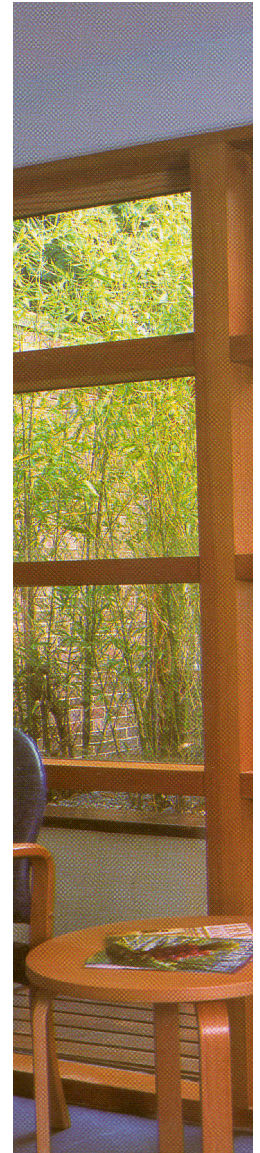
Architect: Greenhill Jenner Architects

The Stormont Health Centre is a project completed by Greenhill Jenner Architects located in southwest London. The project is unique because it is a restoration of an old clinic from the 1960s and is a good example of how old spaces can be converted into warm, welcoming and functional areas. Having these correlate with each other within a hospital are critical when the human aspect can sometimes come into conflict with our modern technical needs.

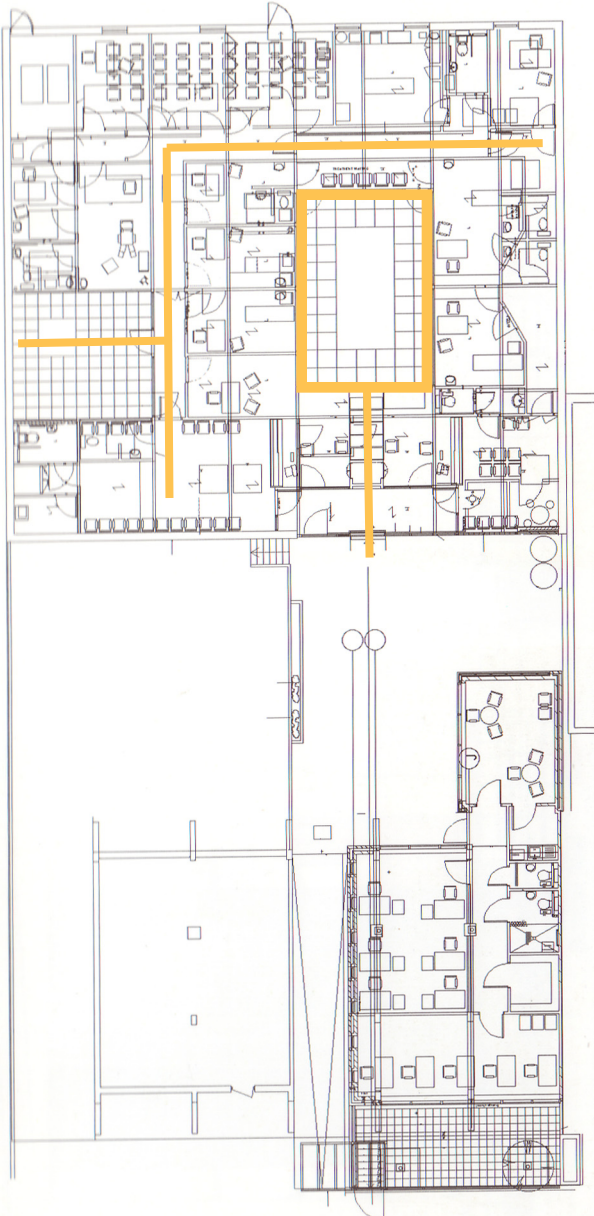
The health centre was planned and carried out in two phases. The first converted the original clinic into the new hospital, which also included a new general surgery room. Second, they created a new addition to hold the offices, and a new infirmary was built near the health centre on the same road, next to a block of homes built around the same time as the original clinic.

The design and restoration of the old clinic included new material changes. The wooden structure on the outside was cladded with new and attractive wood panels and much better natural lighting was provided through the installation of new windows.

Concrete was the main structure and parts of it are still visible and frame the main entrance of the centre. On the addition, the same types of panels applied in the other structure were used. There is a secret garden between the addition and original; the two buildings are oriented toward the garden and are connected by an L-shaped covered walkway.



Case Study: Healing Gardens



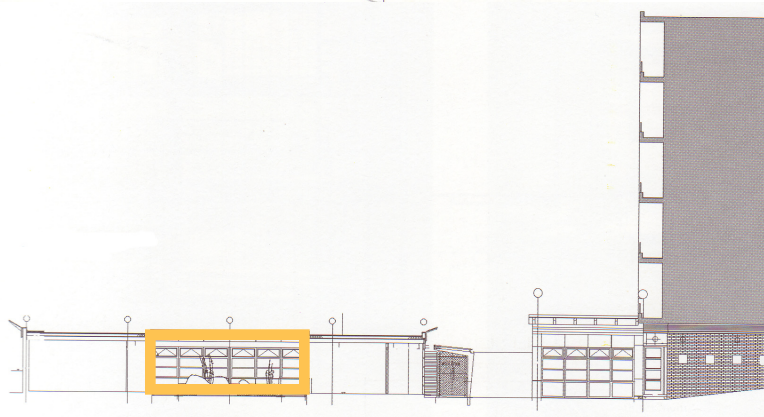
Probably the most exciting new feature that the centre added was the addition of new landscapes with inner courtyards, gravel floors, black bamboo and enormous stones. The green spaces create a much less intimidating environment, creating a pleasant, peaceful and quiet area, making visitors feel more at ease.

Analysis

The Stormont Health Centre is one of the more successful attempts at restoring an old environment and creating something new and welcoming with the use of green spaces and gardens. The **central location** of the garden/ outdoor green space was a great decision because it can be seen from almost every room within the clinic.

It was also successful because it was restorative to its own self, in reusing most of the previous structure. In a way the building itself becomes what it is trying to portray, with it being rehabilitated and restored.

The architects took time to see what the priority needs were, that the old building wasn't letting in much natural light and that it wasn't welcoming or warm towards patients. The new use of colors transformed it from the stereotypical sterile hospital to a more vibrant experience. The experience for the patients will be much more healing, as discussed in the research, than with the previous sterile environment.



Above: Floor Plan with the garden outline.
Below: Section through the garden space, outlined.

Case Study: Color & Materials ■ ■ ■ ■

Spa Bad Elster

Location: Bad Elster, Germany

Size: Approximately 187,000 square feet

Cost: \$43 Million

Architect: Behnisch & Partners

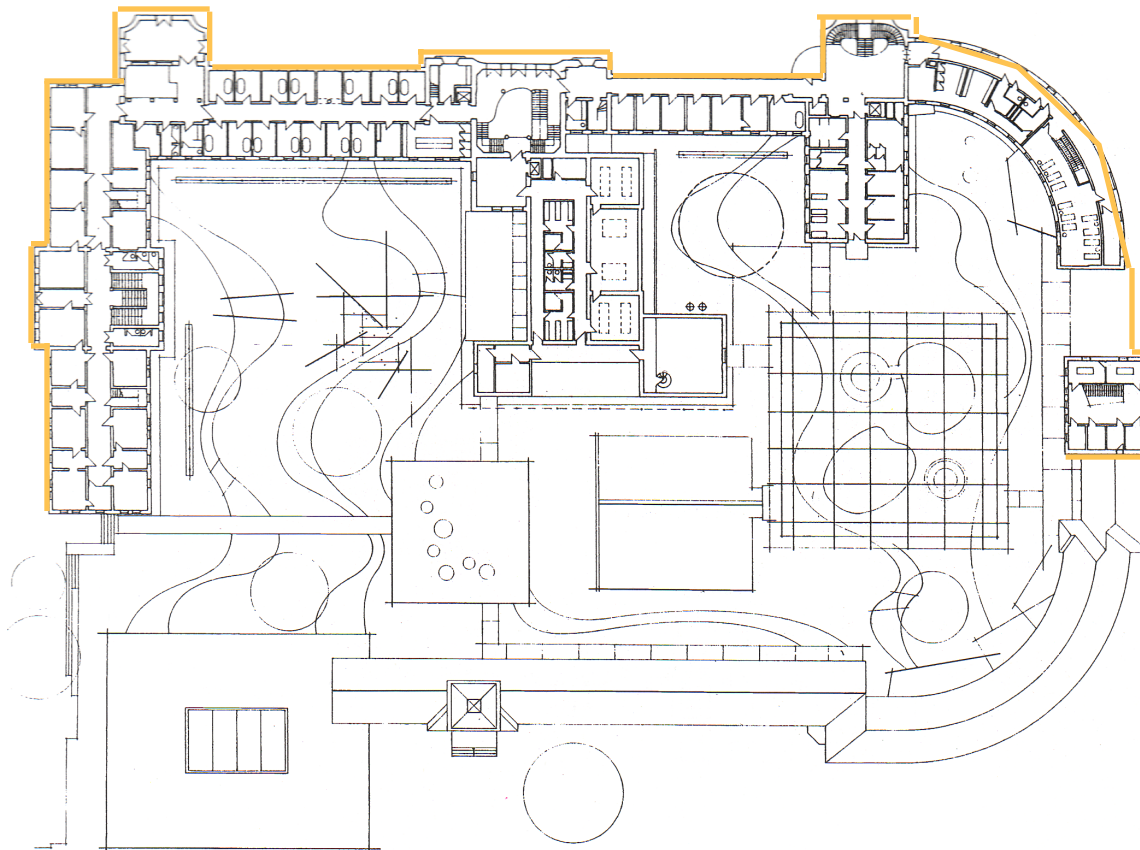
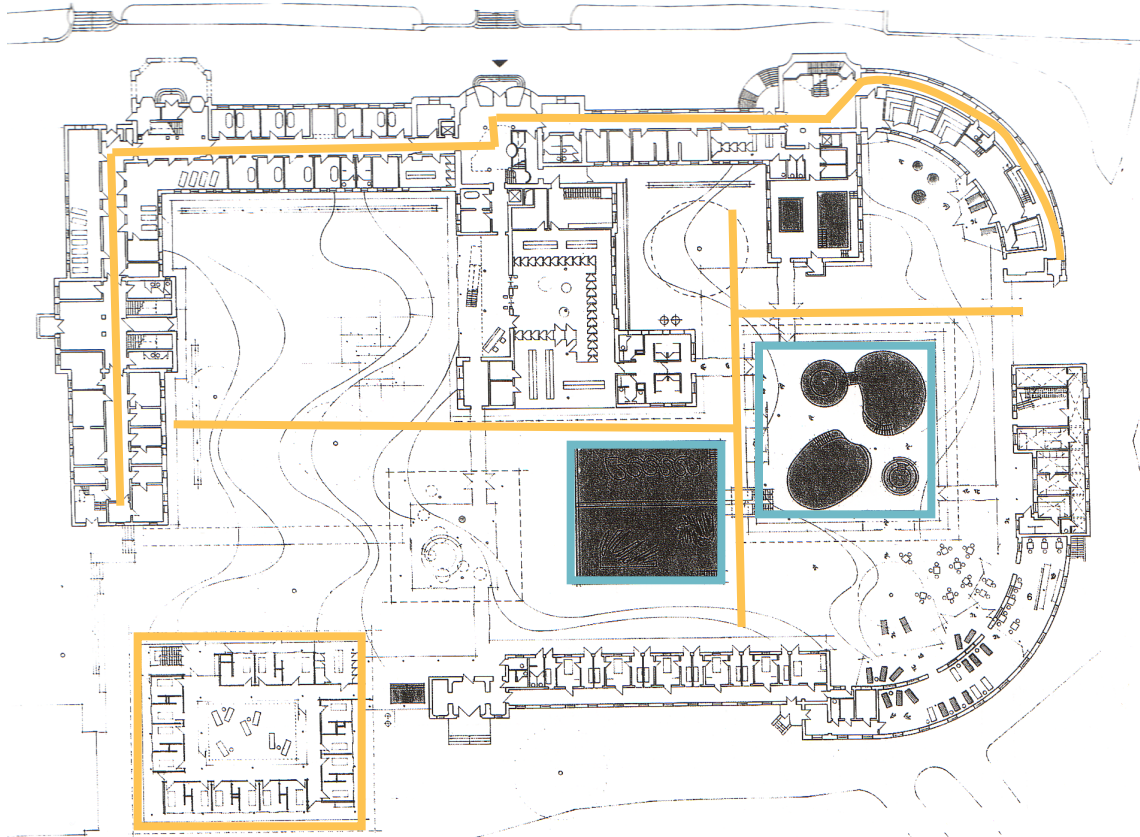
Spa Bad Elster is one of the oldest spas that specializes in mud baths in Germany and is located in a forested area with small lakes and plenty of green spaces.

It was originally constructed in 1894, and in 1994 the city decided to do a renovation to give life and color to a relatively boring inner courtyard. The spa was renovated several times in its history, which made for some interesting architectural combinations. When visiting the spa the main entrance, called Albert Hall, is to the west, and it is a large open space that sets the stylistic tone for the old complex. This part of the spa was built in 1910 and is tiled beautifully with fish and shell motifs, creating interesting yet unique connections with the new design.

Almost everything was renovated in the project, from subterranean steam pipes to the old surfaces of the walls, and new facilities were also added. With the addition of new structures and the demolition of parts of the old building, it paved the way for additional facilities. The new bath hall includes several pools, both indoor and outdoor. This bathhouse is the largest structure in the courtyard and includes **three small splash pools** and **two large 66-foot outdoor pools**. A new building specifically for massages, mud baths and **therapeutic treatments** was also added.



Case Study: Color & Materials



Case Study: Color & Materials

Analysis

Taking a look at the materials it can be seen that the new buildings were reduced to what they were meant to be. It is clear that the new bath hall is the focus of attention, with the creative lighting design and the strong point of light penetrating all areas. The spa was successful in connecting itself with the lake and surrounding landscape using such transparent spaces.

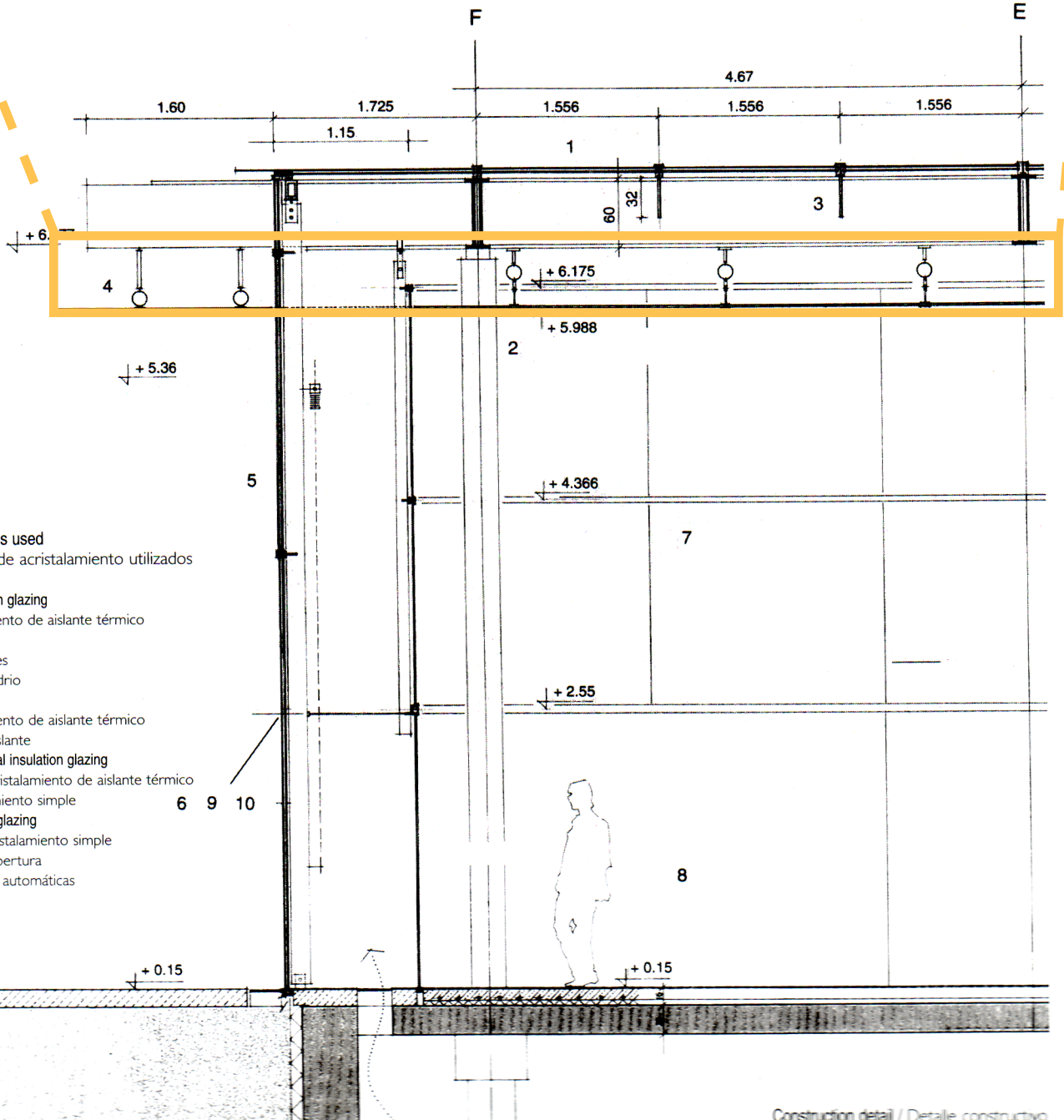
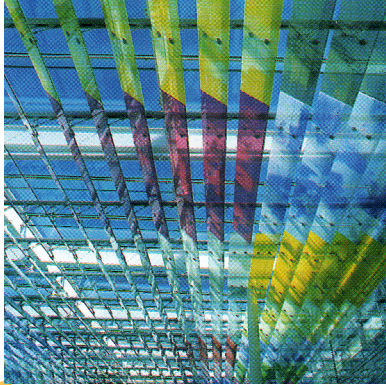
To create the calm and healing spaces the new structure uses light structures, transparency and the vibrant colors. It is a unique case study because it combines both color and materiality into a pleasant healing environment.

Possibly the most unique feature about the new structure is the double skin construction, which has almost three and a half feet of air space between the layer of glass. Due to how wide the space is it can act as a thermal buffer between the indoors and outdoors.

For climate control, the roof contains an ingenious climate control system with the outer layer of the clear insulating glass mounted on a white steel grid and glass beams. To ensure drainage the roof is sloped, and the ceiling placed horizontally. The ceiling is made of louvers and printed with 45 percent white frit to reduce too much sunlight. The underside of the louvers are much more vibrant; the Berlin artist Erich Wiesner coated the surfaces in blue, green, yellow and red, with the experience of the uneven colors feeling like clouds floating across the sky.



Case Study: Color & Materials



Detail section. Types of glass used
Sección de detalle. Tipos de acristalamiento utilizados

1. Roof with thermal insulation glazing
Cubierta con acristalamiento de aislante térmico
2. Adjustable glass louvres
Lamas de vidrio regulables
3. Glass beams / Vigas de vidrio
4. Fixed glass louvres
Cubierta con acristalamiento de aislante térmico
5. Insulation glass / Vidrio aislante
6. Exterior facade with thermal insulation glazing
Fachada exterior con acristalamiento de aislante térmico
7. Single glazing / Acristalamiento simple
8. Interior facade with single glazing
Fachada interior con acristalamiento simple
9. Opening wing / Ala de apertura
10. Automatic doors / Puertas automáticas

Construction detail / Detalle constructivo

Case Study Summary ■ ■ ■ ■

Introduction

A retreat, a hospital/clinic and a spa; it may seem that the three case studies that I chose are of varying typologies, but I found them to be relevant to my theoretical premise and unifying idea and my project as a whole. I also focused on some details that would relate to the research that I have done; environmental psychology with colors and experience, how the site and environment can relate to each other and healing gardens and their restorative features.

Discussion

Sleeping Lady Mountain Retreat, in Leavenworth, Washington, was the first case study that I chose to look into. This study fit almost perfectly in connection with my typology, it being a retreat itself, but it also related well to other aspects of my project.

The history, coincidentally, followed along in a similar fashion to the site chosen for my thesis. It was originally constructed for government use but was eventually sold to a church, like the Old Frontenac site. The church then converted it to a retreat for members, also similar to the Old Frontenac site. Eventually the church sold the site to an entrepreneur who expanded and converted it into a public facility for all to use.

The site use and description of how the site was modified to fit the new typology was the key component in this case study. Looking at the topography of the site it was apparent it had striking similarities to the site chosen for my project. It was quite dynamic and had mountainous and forested areas around it with a river to the south.

■ ■ ■ ■ Case Study Summary

Most importantly, I discovered how the facility was responsibly and sustainably converted into the new retreat. It was easily relatable to the Old Frontenac site because of the similar circumstances.

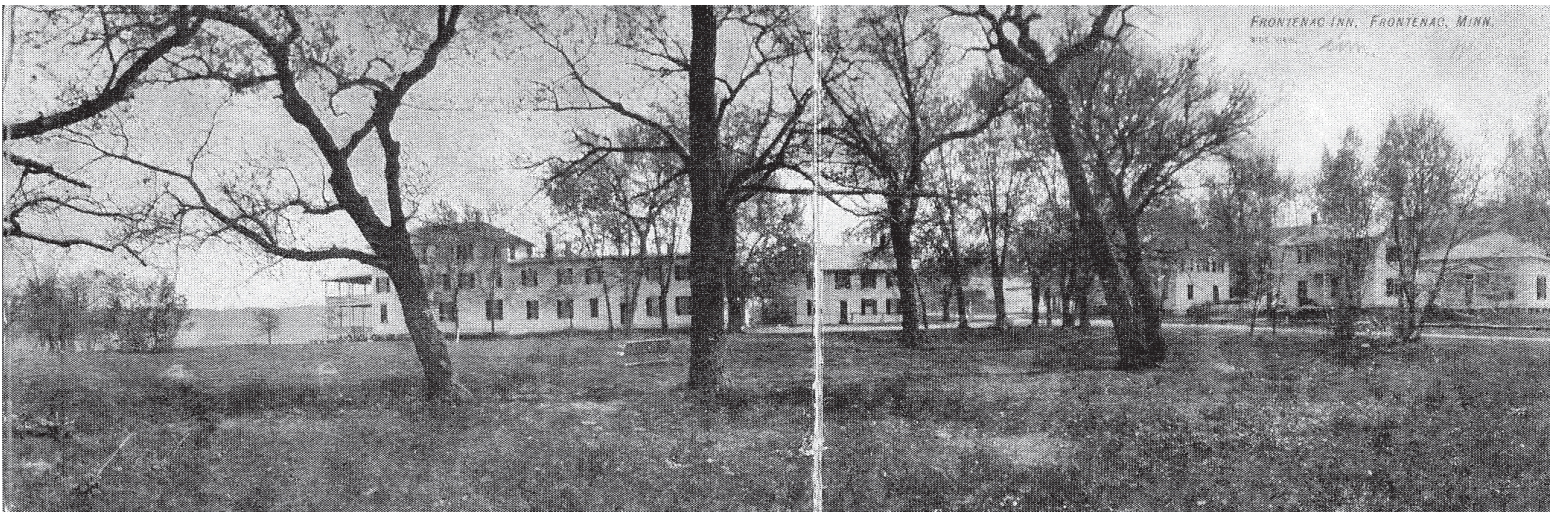
I chose the second and third case studies to focus on because of their experiential qualities. The first site was the Stormont Health Centre in London Swill, UK and the last site was the Spa Bad Elster in Bad Elster, Germany. In the Stormont Health Centre they chose to incorporate gardens and green spaces into an old clinic. The remodeling of the clinic, through the use of the gardens and a new lighting design, made it a much more pleasant and healing space than the typical sterile environments of normal hospitals.

Lastly I focused on the Spa Bad Elster for its unique response in materials and color choice. The original structure was kept with a courtyard of pools and spas added. Probably the most exciting and striking feature was the colors that were used in the new design to create a unique and pleasant healing environment.

Conclusion

Although they varied or were somewhat uncommon in typology, the case studies chosen all had, in some way, a common characteristic: preventative healthcare. Conceptually the focus on the three case studies were to offer natural and healing benefits in the form of preventative care. Functionally and spatially it was possible to relate the first case study to my thesis because of the site context and typology, as both are similar in several ways. While culturally the last two case studies may be different there is still a want and desire, in all cultures, for these typologies instead of the use of long hospital stays or prescription drugs.

The Historical Context

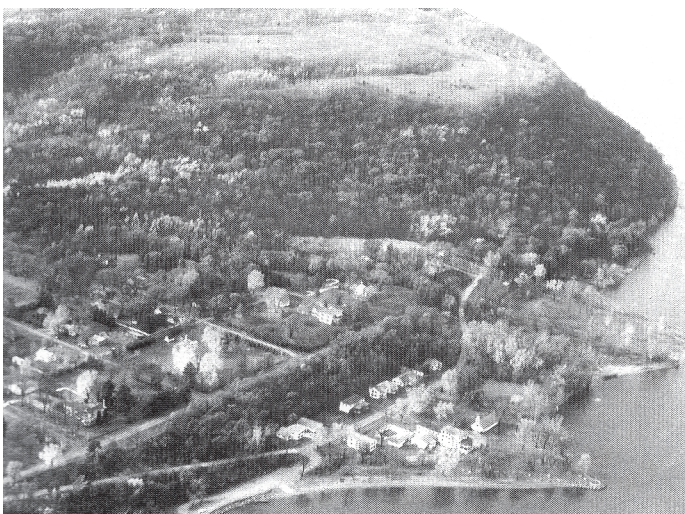


1680

Count Frontenac, Governor of New France (Montreal) sponsors explorers to the area.

1727

French construct Fort Beauhanois near present site of Villa Maria.



1837

James Wells establishes fur trading post at the future site of Frontenac.

1854

Frontenac stone quarry established, the limestone provided construction materials.

Historical Context ■ ■ ■ ■

History of the Retreat

There are several different and related meanings for the term retreat, but all of them are in common, in that they offer safety or a temporary means of removing oneself from one's usual environment in order to engage in a particular issue (Debushy, 1911). Retreats are taken for several reasons, mostly in connection with spirituality, stress, health, lifestyle, social or ecological concerns. The most recent movement among retreats is the rising number of organizations that are holding retreats for work-related issues like strategic planning, enhancing communication and collaboration, problem solving and creative thinking or brainstorming.

Retreats can also vary in the fact that they can either be times of quiet solitude, held in silence, or group community experience where there could be a great deal of conversation. Most retreats are located in rural or remote areas and can be private or a large center such as a monastery.

Spiritual

The most common types of retreats, and some of the earliest known retreats, were related to the spiritual aspect. Spiritual retreats are meant to allow time for meditation, reflection and prayer.

In Buddhism spiritual retreats are considered essential or even necessary. Established by the founder of Buddhism, Gotama Buddha, the rainy season retreat, or Vassa, is still common practice, even today.

1856

The warehouse which eventually is converted into the Lakeside Hotel is built.

1858

The state of Minnesota is established.

■ ■ ■ ■ Historical Context

It is said that the retreat, in Christianity's terms, is as old as the religion itself. It is common belief that the custom of the retreat goes back to the prophets of the Old Testament, in which Jesus Christ fasted in the desert for 40 days and 40 nights after being baptized. Through the custom of baptism it had found many followers in all sects and ages of the church. The religious sought solitude in the deserts or monasteries, or many just wanted to lead a contemplative life and withdraw from the world, in order to draw closer to God.

The practice of the retreat was brought back to life by St. Ignatius Loyola, combining the methods of reforming one's life and seeking the will of God in solitude. The Society of Jesus was the first active religious order in which the practice became obligatory. Most forms of the Christian religion offer or persuade its members to go on retreat (Debuchy, 1911).

Today's Practice

The most common form of retreat in today's practice may no longer be spiritually based. There are an increasing number of organizations that take their employees on retreats, as mentioned before. In France it is common practice to retreat and de-stress oneself, usually "prescribed" by the employer; it is considered a "prescribed vacation." This is one thing the culture in the United States is lacking; many people are overworked, stressed out and exhausted and never have the chance to take a little time to de-stress.

1859

The village name is changed from Westervelt to Frontenac, in honor of Count Frontenac.

1867

The Lakeside Hotel is established by converting an old warehouse.

Historical Context ■ ■ ■ ■

Site History and Context

District Overview

Frontenac, Minnesota is located on the north end of a plain, nestled in the bluffs. The plain is three miles wide and 10 miles long, and is located along the sandy beaches of Lake Pepin, a natural lake on the Mississippi River. It has long been a traveler's destination because of its beautiful and picturesque scenery. The bluffs define much of the scenery in the area, with the bluff known as Maiden Rock across the lake and cliffs to the rear named Sugar Loaf. The bluffs surrounding the township is called Point-No-Point, a name given by northbound steamboat captains who saw a bluff jut into the lake from miles away just to disappear as they went through the western bend of the Mississippi River. Much of the following information was obtained from a resident of Old Frontenac, from the Heritage Preservation Commission (HPM, 2009).

Architecture

Much of the architecture in Old Frontenac is preserved beautifully. The township contains the frontier adaptations of several important architectural styles from the pre and early post-Civil War era. Many of the examples that are represented through the township include French Colonial, Greek Revival and Georgian. Almost all of the buildings are wood structured and use clapboard siding, with uniform architecture. It is almost like taking a step back in time to the 1800s because of the quality of the preservation.

1870

Lakeside Hotel is enlarged by adding an 80-foot two-story addition to the west end.

1871

Garrard family donates land to route railroad away from Frontenac to preserve the village.

■ ■ ■ ■ Historical Context

Historical Significance

Old Frontenac is considered historically significant because it is “a completely intact example of a bygone era and lifestyle that lacks modern utilities such as streetlights, sidewalks, and gas stations” (HPM, 2009). It is a Minnesota hidden gem, and an amazingly well-preserved representation of early town planning. It is a link to an element of cultural heritage not often found in the north, it being derived from the southern lifestyle that existed in the Ohio River Valley before the Civil War. Old Frontenac was a great resort community and predates the era of elaborate resorts of the 1880s and 1890s by 20 years. The town still remains a quiet place that is immaculately well kept, with lawns and abundant gardens that create a park setting for the entire town. The vision of Israel Garrad is still intact, untouched by urban sprawl and development.

In 1971, Minnesota passed the Historic District Act and Frontenac was officially designated as an historic district. This act helped provide the creation of an historic district board for the purpose of providing architectural guidance of historic districts.

History and Analysis

Frontenac has a unique evolution from early European explorations to its current modern day historic preservation. Understanding the flow of time about the site gives more insight on the current attitude and why it is operated the way it is today. It also gives hints and details as to what previously occurred on the site chosen for my thesis.

1889

The Villa Maria Academy, a Roman Catholic Nun school, is established just outside of town.

1907

The Lakeside Hotel is sold and operated as a summer resort complex.

Historical Context ■ ■ ■ ■

The earliest known accounts about the site go back to 1680, when Count Frontenac, who was Governor of New France in Montreal, sent European explorers such as LeSueur, Hennepin and Pepin, west. Fort Beauharnois was the first structure constructed in the area; it was built near the present site of the Villa Maria and was used to protect the fur trading interests in the area. It was named after Marquis de Beauharnois, then Governor of New France, and contained the first Christian church in the area.

James "Bully" Wells and his wife were the first Americans to settle near the site. They established a fur trading post at the future site of Frontenac. In 1852 Evert Westervelt purchased land from Wells and established a general store. He began construction of one of many fine homes in what was then known as the town of Westervelt. Around that same time the Frontenac stone quarry was established, which was critical in the construction of many new homes in the area because of its unique limestone.

In 1854 the most influential family, known to Frontenac, the Garrard's, moved into the area. Construction in the area started to boom, and it thrived in fur trading, logging, limestone and hospitality. The village was officially renamed Frontenac, and most of the current structures seen in the town today were built within that 20-year period. The Lakeside Hotel was established in 1867 (on my current thesis site) by converting it from a two-story warehouse. The hotel was enlarged three years later by adding an 80-foot two-story addition on its west end.

1939

The Methodist Church buys the hotel complex and converts it into a retreat.

1957

Frontenac State Park is established and the Chapel on the complex is constructed.

■ ■ ■ ■ Historical Context

By 1871 there was fear of the town becoming “mainstream,” so the Garrard family donated land to re-route the railroad two miles out of town, essentially creating New Frontenac and preserving what is now known as Old Frontenac. The Villa Maria was constructed in 1889 a couple miles out of town, and operated as a Catholic Ursuline Nun school until 1969; its current use is as a conference retreat center. The Lakeside Hotel changed hands a couple more times until 1939, when the Methodist church purchased the property and converted it into a retreat center for religious, youth, and educational groups. The chapel that is still currently located on the grounds was constructed in 1957 by the church. The Methodist Church owned it until 1987 when it was sold again in the hopes of turning it into a hospitality center. These dreams never came to fruition and the current site is, sadly, abandoned, dilapidated and in need of repair.

I just happened to stumble upon the site, and it was coincidence that the site context had so much in common with my typology. One of the most exciting, and probably challenging, features of the site is the fact that there are existing structures, both of which played a part in the retreat’s history. At the same time it is also disappointing to see that those structures have been sitting vacant, derelict and deteriorating, for more than 20 years. It will be a challenge, but this site has such great possibilities and excellent potential, as it has a chance to return to some of its unique and interesting history. It will be most important to approach it in a responsible and sustainable manner that doesn’t ruin the site or the surrounding area.

1971

Minnesota Historic District Act is signed into law, allowing preservation of historic sites.

1987-Current

Lakeside Hotel Complex is sold again and now sits abandoned.

The

Project

Goals

Goals for the Project

The Academic

There are several goals I hope to accomplish academically with this thesis project. First I would like to offer a thoughtful theoretical premise and unifying idea. This is the foundation that the whole project is designed around. With this foundation my next hope is to offer a viable and responsible solution to the issues that I have discovered.

I'm grateful for the fact we are given these chances in our academic institution to pursue an idea that might be considered out-of-the-box. With that I've chosen a typology that isn't necessarily common; retreats have been around for hundreds of years, but not by the definition or solution I hope to convey with my project and not in the way that our culture in the United States sees it.

Reading and writing have always been a disinterest for me and being "forced" to research and write has allowed me to expand my knowledge and skills with written communication. It has been a challenging but worthwhile experience in writing this thesis book.

The Professional

Professionally the goals I would like to accomplish are technical in nature. I plan on continuing and expanding my knowledge of the various software programs out there, including Revit, AutoCAD, 3DS Max and other useful aids. I feel this is only a benefit for my future in finding a career, and making myself more marketable, especially with the movement toward BIM software.

Project Goals ■ ■ ■ ■

I plan exploring materiality within my structure and comprehending how pieces of the building are put together. I want to be more creative in my technical solutions instead of just picking a wall section out of a book.

I chose a typology that focuses heavily on site development and detailing, which I haven't had much experience with, so it will be important to learn and also convey and successful site design. It will be critical to integrate my project into the site without disturbing or hurting the environment around it, whether it be physically or socially.

The Personal

One of my biggest obstacles (and fears) is public speaking. My goal is to improve my public speaking and communication skills through practice and enthusiastic appearance. This will, in the end, also become a professional goal, as I want to appear more confident in selling my "product."

Having the autonomy to choose your own typology is a benefit of this major and I want to finish with a thorough and complete project that is finished on time. It should be something I'm proud of and would be excited to put in my portfolio or take to job interviews.

Lastly, I want to have a project that successfully shows all the work, time and effort I have put into my education, and a project that is responsible in nature and can withstand the pressures of time.

The

Site

Analysis





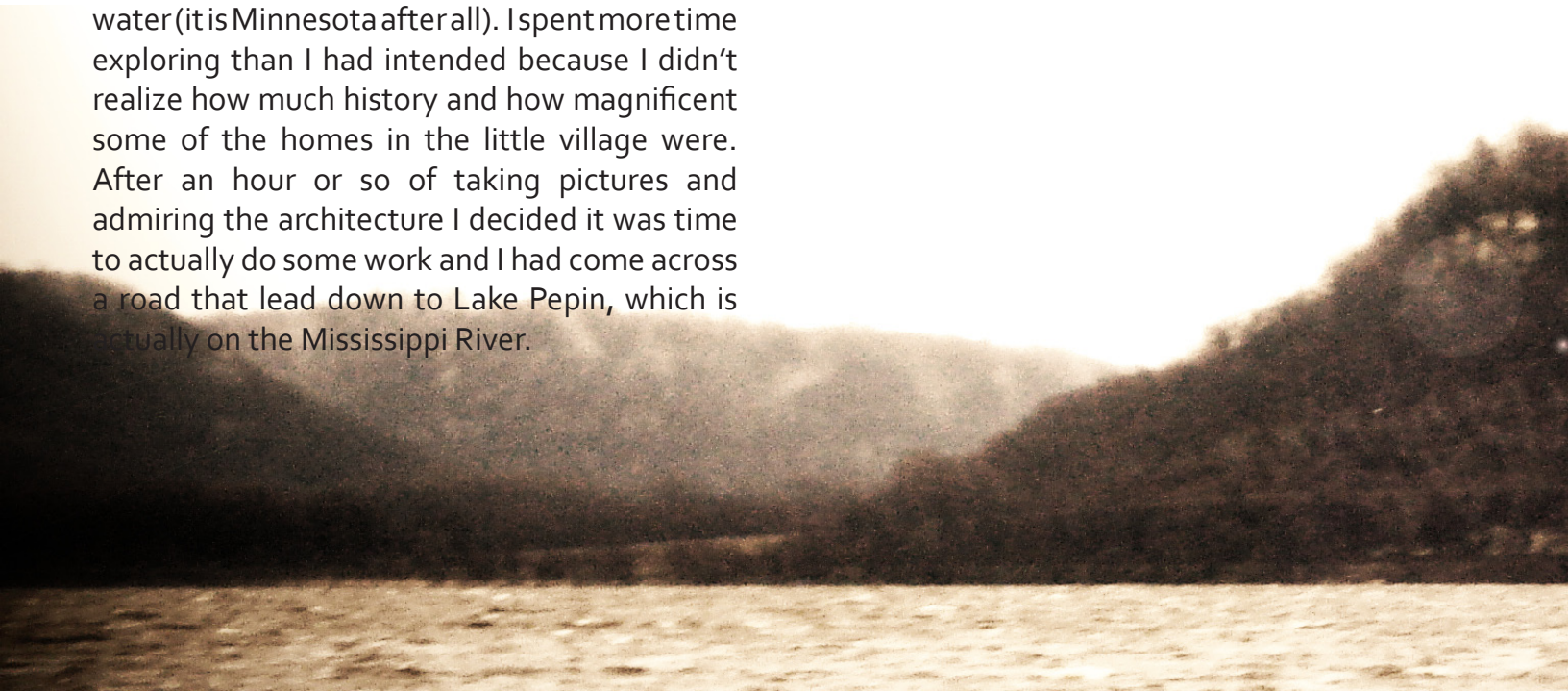
Narrative ■ ■ ■ ■

I had lived in Red Wing, Minnesota for 10 years before I found one of the state's best hidden gems in the little village of Frontenac. I had heard people making a fuss about this town but never took the chance to visit it, until now.

I originally hadn't really considered Frontenac as a site choice, and in fact didn't even have Minnesota on my radar. However, after narrowing down my typology into a viable and beneficial option that related to my theoretical premise and unifying idea, I had come to the realization that my first choice wasn't the best option because it was in an urban setting, and with this typology I found it almost necessary for it to have a strong tie to nature.

After giving it some thought I chose a site located near my home town of Red Wing, which is well-known for its natural setting within the bluffs on the Mississippi River. It wasn't until after some discussion and a brief tour with my mother that I decided to give Frontenac a try.

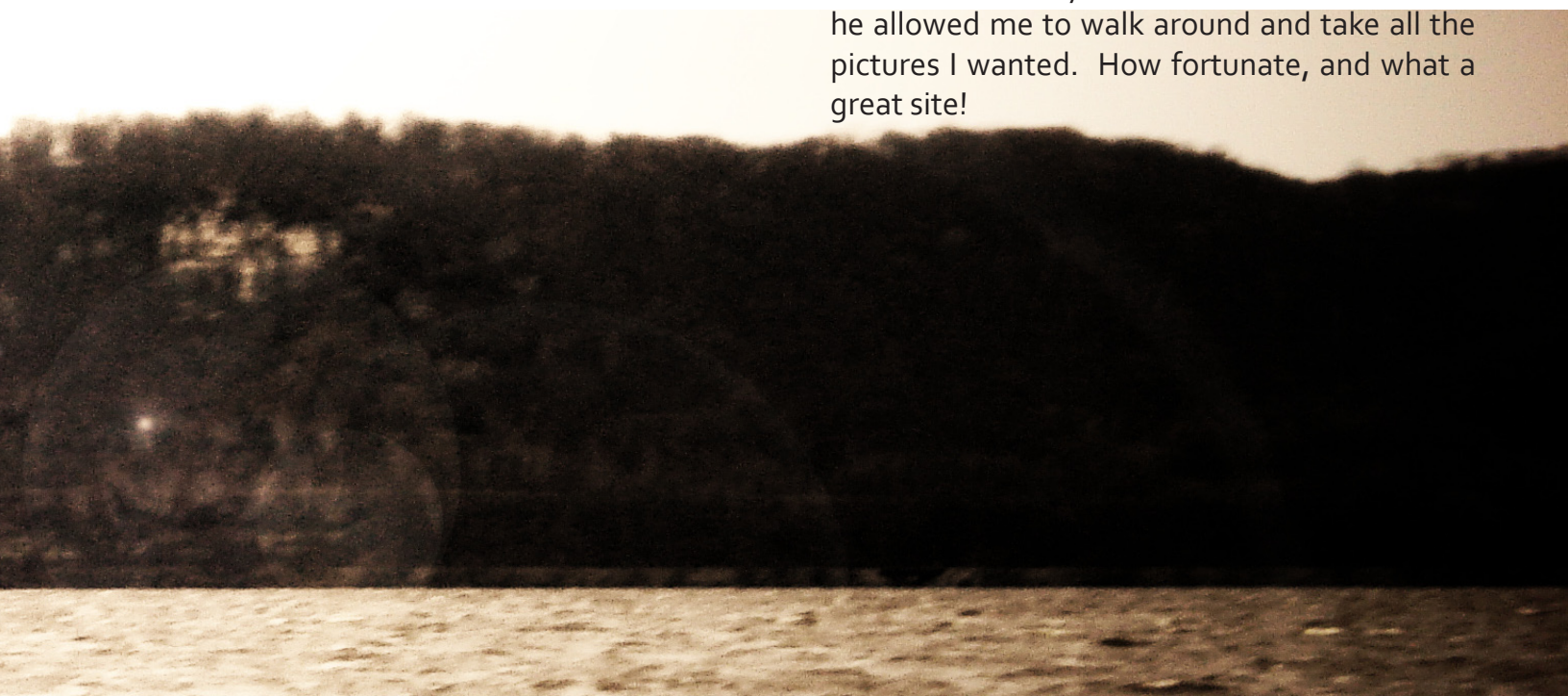
It was a brisk and cold afternoon when I decided to explore the area of Frontenac. I had a general idea in my mind what kind of site I was looking for; not directly in town, a well-vegetated area, a dynamic landscape, and preferably near the water (it is Minnesota after all). I spent more time exploring than I had intended because I didn't realize how much history and how magnificent some of the homes in the little village were. After an hour or so of taking pictures and admiring the architecture I decided it was time to actually do some work and I had come across a road that lead down to Lake Pepin, which is actually on the Mississippi River.



■ ■ ■ ■ Narrative

A site that lay down that road had caught my eye, on it was a large dilapidated old structure with an unused building next to it. It was also located right next to the river. Perfect, I thought. I found a place to park and started wandering around the area and took pictures. The wildlife in the area decided to come out of hiding and pose for my camera; I had come across several deer and a large owl. I made my way down to the lake and was amazed at the wonderful view of Maiden Rock, a large bluff on the other side of the lake. I worked my way back around the wooded area to the large open green space when I was approached by a man.

I don't remember his name off the top of my head but I was hoping he wouldn't be too angry that I was poking around. He greeted me and I asked if he knew anything about the site. He said, "Of course, I own it!" He was very pleasant and invited me over to his home to tell me more about the history of the site. I was very fortunate, he even had a history booklet about the town and it included some very useful history specifically about this site. It was an amazing coincidence; I found out that this site actually had been a retreat for many years in the past. After getting some background information and some history stories I thanked him and he allowed me to walk around and take all the pictures I wanted. How fortunate, and what a great site!





Grid

Frontenac has the standard Jeffersonian block grid, to a point. It deviates off the north-south axis to align parallel with the river, thus, essentially, becoming a river town, elongated in nature.

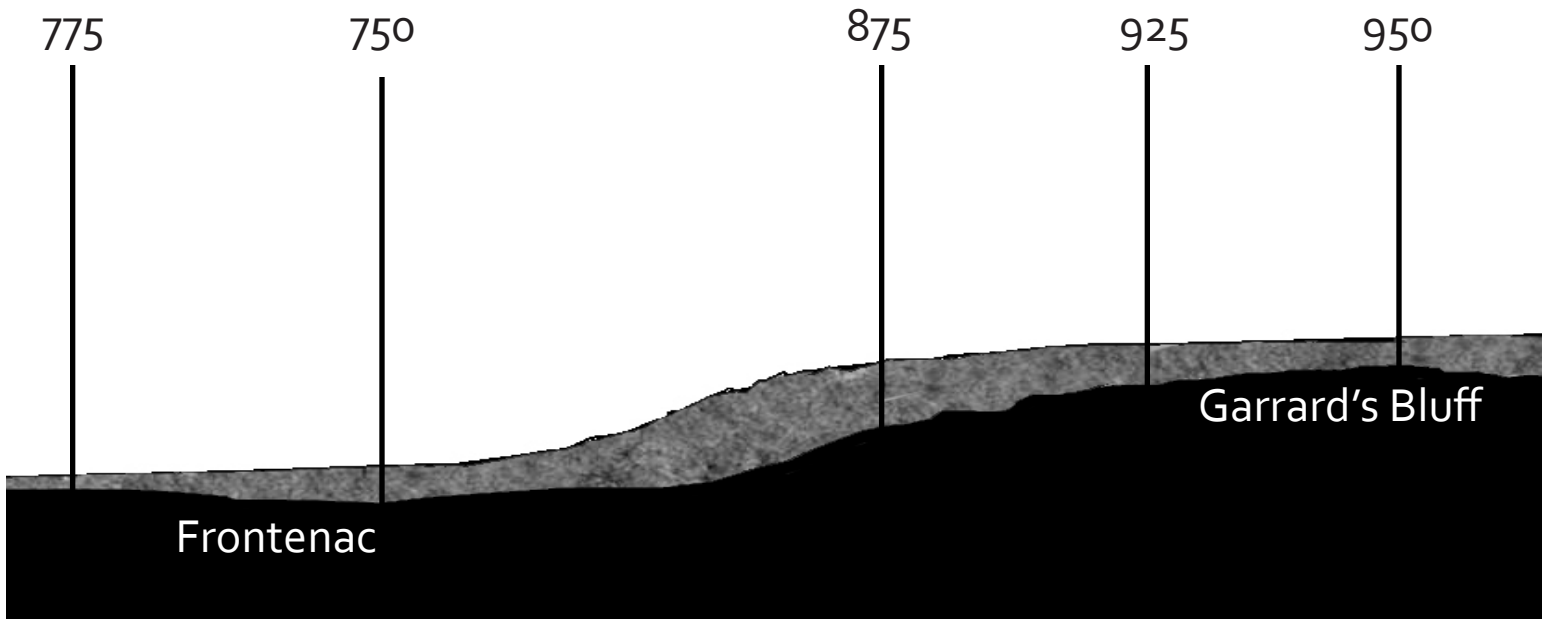


Textures

The site has a wide variety of textures and materials throughout. The river/lake is on the east side and creates a long curvy and sandy shoreline. Parts of the site are also densely packed with trees while others are large open green spaces.

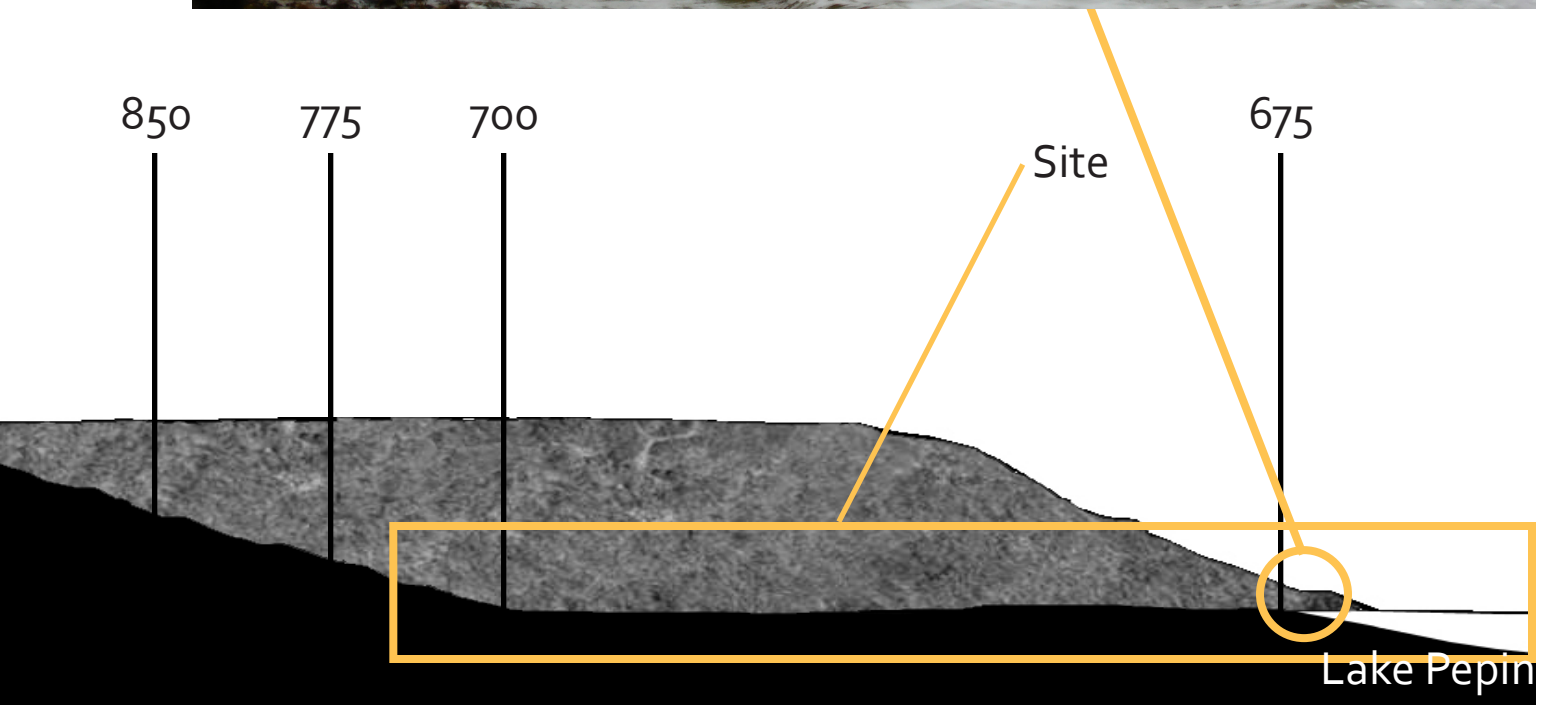
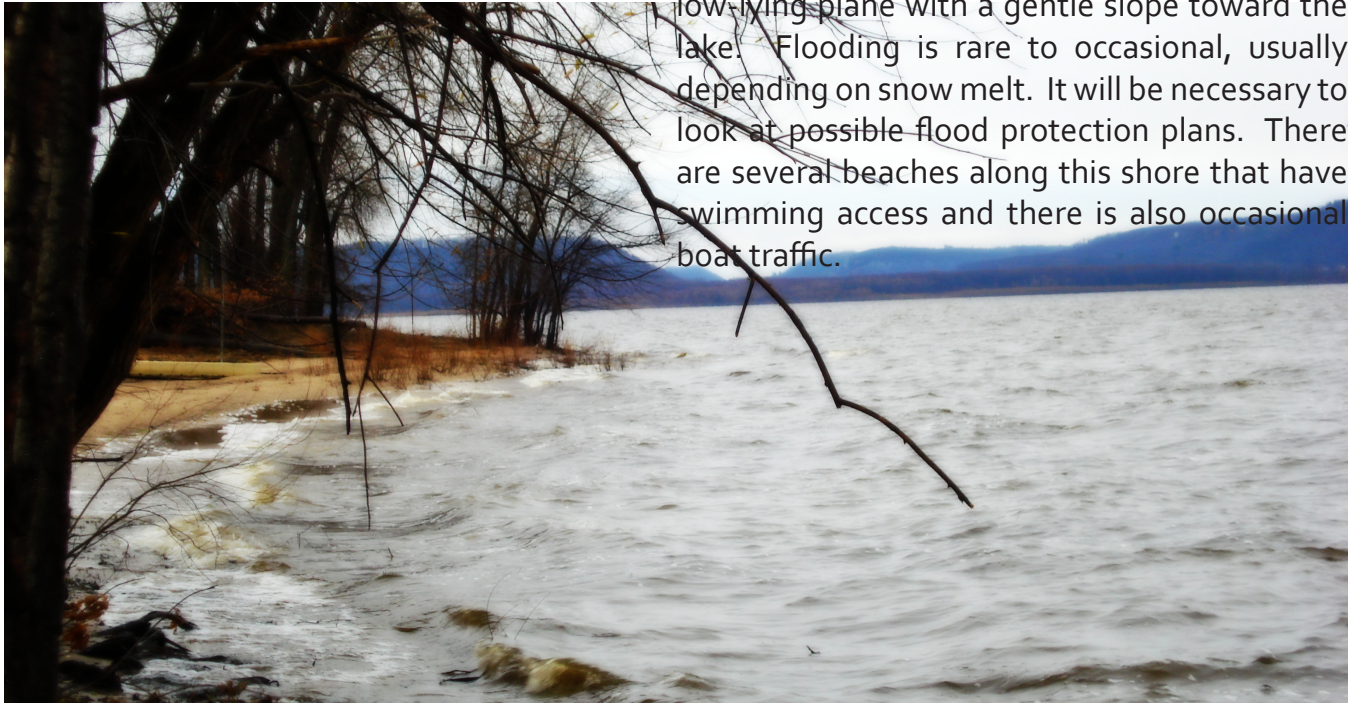
Section

The section of the site was done to better understand the relationship of the site to the surrounding environment. While the site is mostly flat, the surrounding area is much more dynamic, with Garrard's Bluff enclosing much of the site.



Water

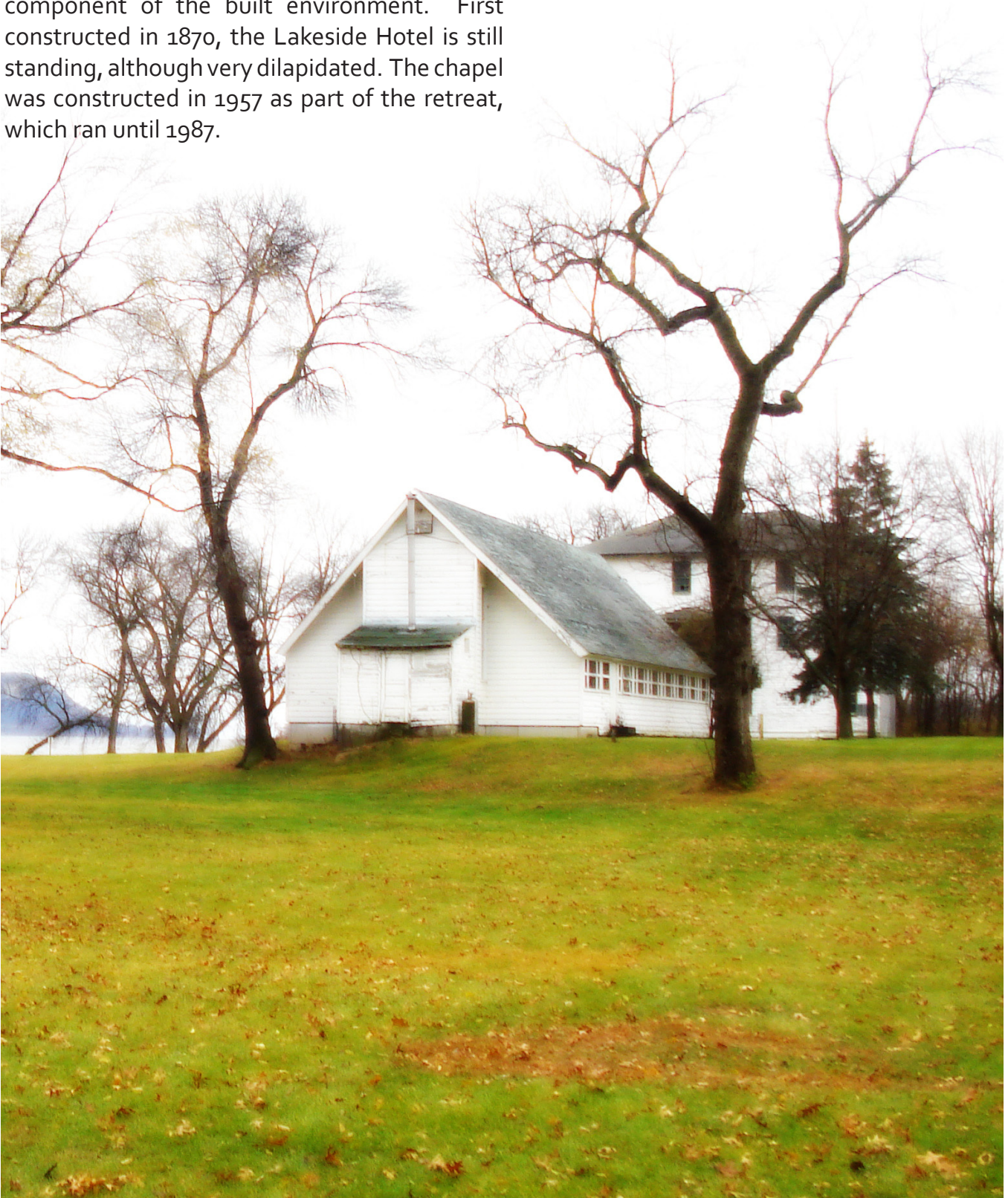
Lake Pepin, on the Mississippi River, is probably the most dominating and striking feature about this site. It also has one of the best views from the water in the state of Minnesota; looking across into Wisconsin you can see the surrounding bluffs. The site is located on a low-lying plane with a gentle slope toward the lake. Flooding is rare to occasional, usually depending on snow melt. It will be necessary to look at possible flood protection plans. There are several beaches along this shore that have swimming access and there is also occasional boat traffic.



Qualitative ■ ■ ■ ■

Built Environment

While the site is large it still has the key component of the built environment. First constructed in 1870, the Lakeside Hotel is still standing, although very dilapidated. The chapel was constructed in 1957 as part of the retreat, which ran until 1987.



Distress

The most obvious places of the site in need of attention are the existing buildings. The old Lakeside Hotel building is in dire need of help, and it is so bad it may be unsalvageable. The chapel, however, is in much better shape, comparatively. The rest of the site is pretty well-kept except for a portion on the north side where it looks like there was a plan for some sort of construction that was never completed.





Wind & Light

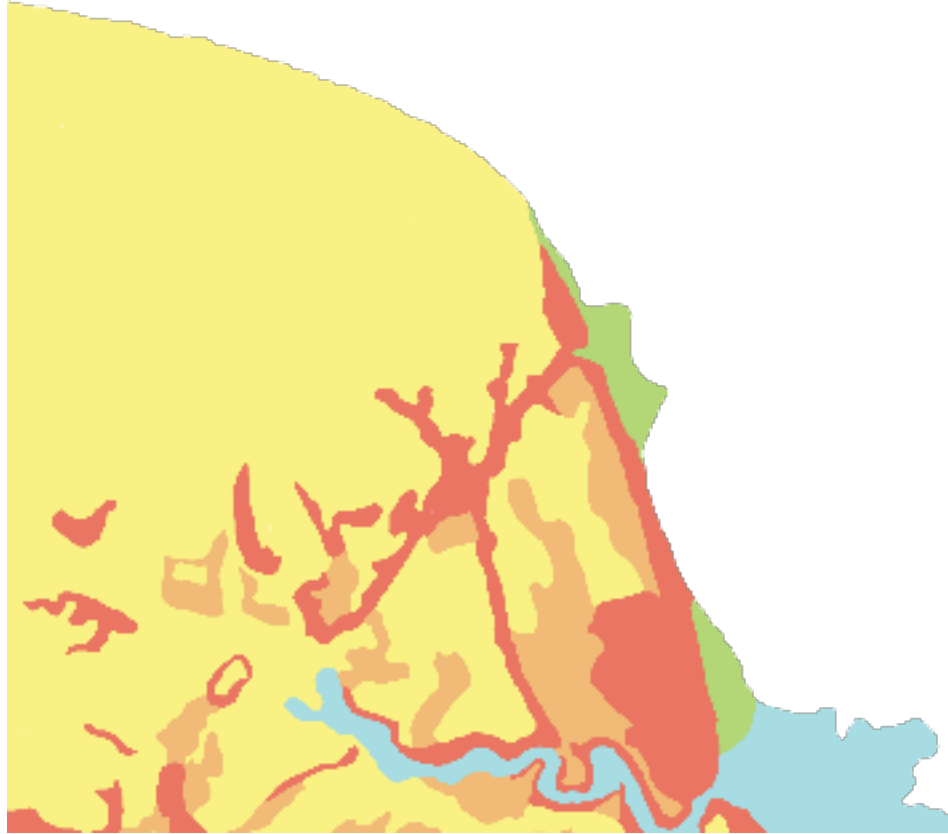
The day I visited the site the air was thin and brisk with a heavy wind coming from the lake. Living in the area, however, I know that the wind can vary, and is generally calm most of the time. When there is a breeze it can be expected to be cool, coming off the large lake.

It was cloudy the day I visited but I was still surprised at how bright the area was. The only areas where light would be an issue are the dense wooded spots in the middle and western side of the site. The water seemed to have a good reflective quality, essentially increasing the brightness of the area.

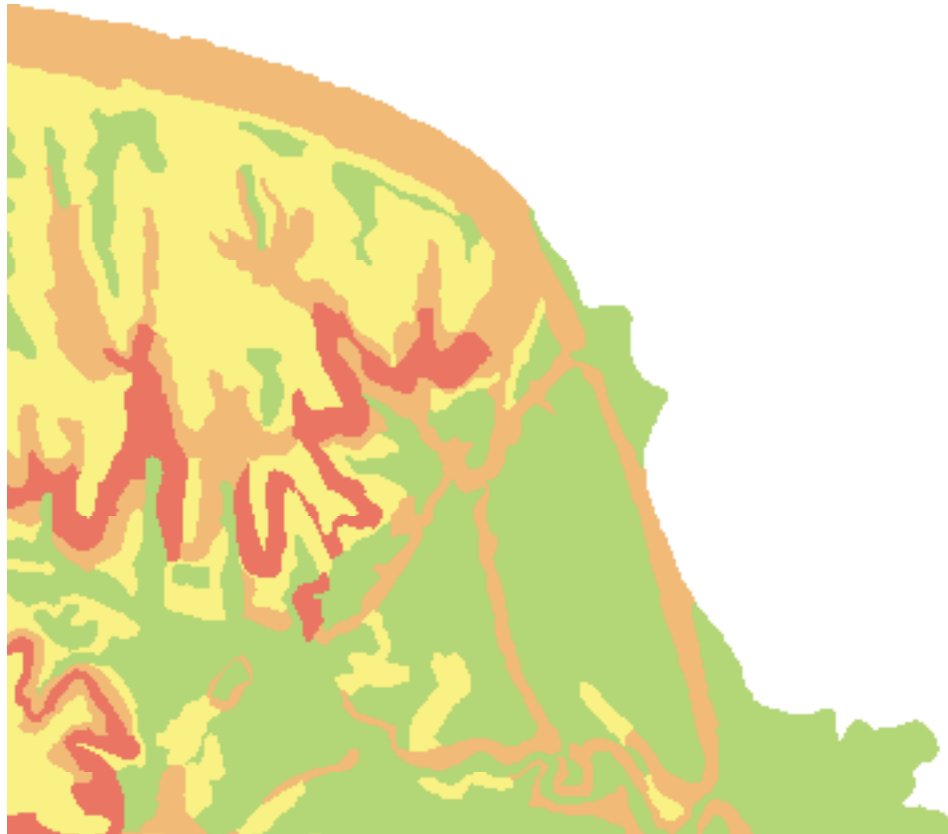


Quantitative ■ ■ ■ ■

Drainage
Map



Slope
Map



Drainage Legend

-  Somewhat Poorly Drained
-  Moderately Well Drained
-  Well Drained
-  Somewhat Excessively Drained
-  Excessively Drained

Slope Legend

-  0-5% Slope
-  5-15% Slope
-  15-30% Slope
-  30-45% Slope

Quantitative ■ ■ ■ ■

Flooding
Frequency
Map



Watertable
Depth
Map



Flooding Frequency Legend



None- flooding is not probable. The chance of flooding is nearly 0% in any year. Flooding occurs less than once in 500 years



Rare- flooding is unlikely but possible under unusual weather conditions. The chance of flooding is 1 to 5% in any year.



Occasional- flooding occurs infrequently under normal weather conditions. The chance of flooding is 5 to 50% in any year.

Watertable Depth Legend



0-25 cm



50-100 cm

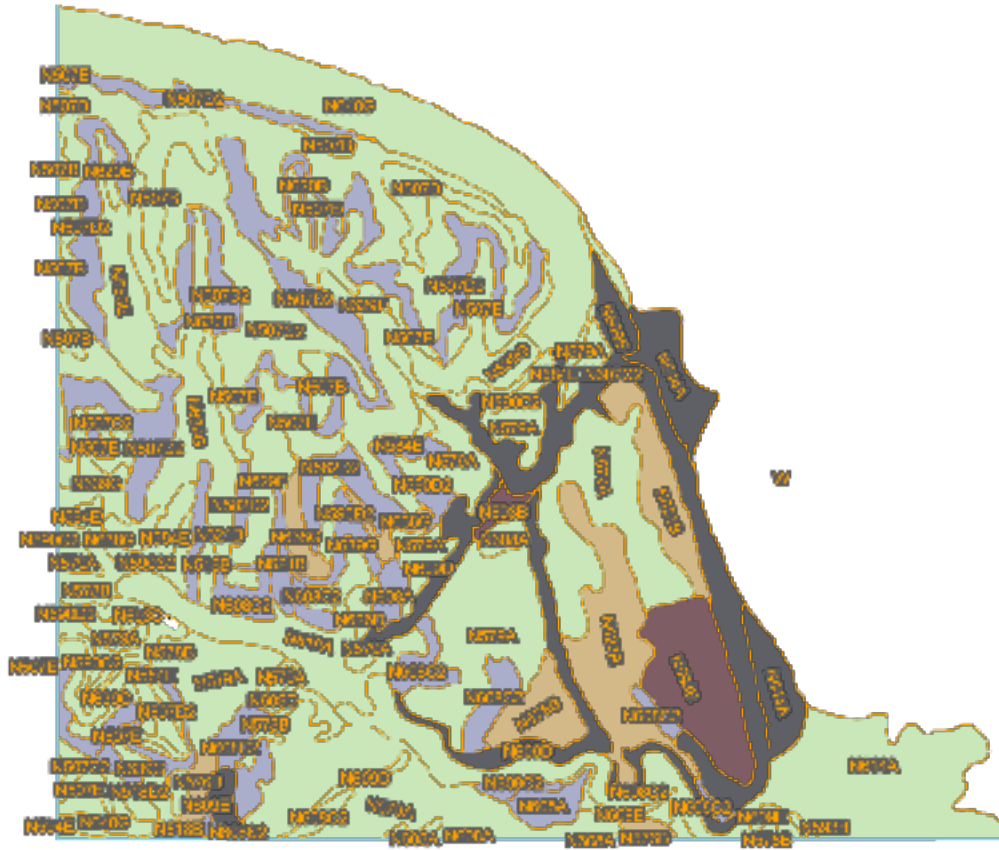


100-150 cm


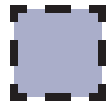





Greater Than 200 cm

Soils Type Map



Soils Type Legend

-  ML
-  CL
-  SC
-  SM
-  SC-SM

Table—Unified Soil Classification (Surface)

Unified Soil Classification (Surface)— Summary by Map Unit — Goodhue County, Minnesota				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
GP	Flie, gravel-UDpeanments complex		2.8	0.1%
N807B	Tinula-MR. Carroll complex, 2 to 5 percent slopes	ML	88.9	3.3%
N807C2	Tinula-MR. Carroll complex, 5 to 12 percent slopes, moderately eroded	ML	228.2	7.8%
N807D2	Tinula-MR. Carroll complex, 12 to 15 percent slopes, moderately eroded	CL	200.2	6.9%
N807E	Tinula-MR. Carroll complex, 15 to 25 percent slopes	ML	108.1	3.7%
N818B	Lindstrom silt loam, 2 to 5 percent slopes	ML	18.1	0.6%
N818D2	Lindstrom silt loam, 12 to 15 percent slopes, moderately eroded	CL	4.7	0.2%
N833E	Franklin-Neset-MR. Carroll complex, 15 to 25 percent slopes	ML	26.5	0.9%
N878B	Roseet fine sandy loam, 0 to 5 percent slopes	SC	88.2	2.2%
N878B	Baurenville silt loam, drainage-way, 1 to 5 percent slopes, occasionally flooded	ML	38.4	1.2%
N878A	Delois silt loam, 0 to 3 percent slopes	ML	301.8	10.4%
N882D2	Newhouse-Valton complex, 12 to 15 percent slopes, moderately eroded	CL	18.3	0.6%
N884E	Downe silt loam, valleys, 15 to 25 percent slopes	ML	28.7	0.9%
N888C2	Ridgelen, sandy substratum-Eden Prairie complex, 5 to 12 percent slopes, moderately eroded	CL	2.3	0.1%
N888D2	Ridgelen, sandy substratum-Eden Prairie complex, 12 to 20 percent slopes, moderately eroded	CL	2.2	0.1%
N890C2	Tams silt loam, valleys, 5 to 12 percent slopes, moderately eroded	ML	20.3	0.7%
N890D2	Tams silt loam, valleys, 12 to 15 percent slopes, moderately eroded	CL	32.4	1.1%
N893B	Sparta loamy sand, 0 to 5 percent slopes	SM	82.1	1.8%
N893C	Sparta loamy sand, 5 to 12 percent slopes	SM	7.4	0.3%
N894C	Chebea loamy sand, 5 to 12 percent slopes	SM	1.5	0.1%
N894E	Chebea loamy sand, 12 to 25 percent slopes	SM	4.8	0.2%
N897C2	Mertilan silt loam, 5 to 12 percent slopes, moderately eroded	ML	7.3	0.3%
N898A	Melard loam, 0 to 3 percent slopes	CL	184.7	6.7%
N898C2	Melard loam, 5 to 12 percent slopes, moderately eroded	CL	89.8	2.4%

Quantitative

Unified Soil Classification (Surface)— Summary by Map Unit — Goodhue County, Minnesota				
Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
N608D	Hewitt sandy loam, 12 to 18 percent slopes	SC-SM	37.0	1.3%
N608E	Hewitt sandy loam, 18 to 48 percent slopes	SC-SM	146.1	5.0%
N614A	Kalmaville-Radford complex, 0 to 3 percent slopes, frequently flooded	ML	102.5	3.7%
N616A	Karnebo-Lawson, channeled, complex, 0 to 3 percent slopes, flooded	ML	35.1	1.3%
N620B	Chaseburg silt loam, 2 to 12 percent slopes, frequently flooded	CL	5.5	0.2%
N621B	Udumverts, loamy, 2 to 12 percent slopes, frequently flooded	CL	12.3	0.4%
N622B	Burford sandy loam, 0 to 8 percent slopes	SC	81.5	2.9%
N626C	Plainfield loamy sand, 8 to 12 percent slopes	SM	5.1	0.2%
N626D	Plainfield loamy sand, 12 to 18 percent slopes	SM	11.0	0.4%
N629F	Mt. Carroll and Tirula soils, 20 to 40 percent slopes	ML	15.7	0.6%
N636A	Houghton muck, ponded, 0 to 1 percent slopes	OL	45.9	1.7%
N638G	Brodale, Baggy-Bellechealer complex, 30 to 70 percent slopes	SM	24.0	0.9%
N639G	Frontenac-Lacmeent complex, 30 to 70 percent slopes	ML	175.3	6.2%
N640G	Lacmeent, Baggy-Frontenac-Rock outcrop complex, 45 to 80 percent slopes	ML	181.5	6.5%
N644A	Abeola loamy sand, 0 to 3 percent slopes	SC-SM	69.5	2.5%
W	Water		309.5	11.1%
Totals for Area of Interest			2,465.4	88.5%

Tables, resources, and information gathered from <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>

Topography

The actual topography of the site doesn't vary much in slope and is an even 0-3% slope. A bluff on the western edge creates a steep slope and varies between 15-30%. Flooding may be an occasional problem on the site if extreme weather were to occur; however, it is clear that it doesn't seem to effect the residents, as it has been settled for almost 150 years.

Traffic

Traffic is a non-issue on Lake Street. The main traffic comes off Highway 61, which is the main highway that runs along the Mississippi River, from the Twin Cities down through southeastern Minnesota. Any traffic that comes through is mainly homeowners and the occasional tourist.

Plant Cover

The ground is well-kept and gets plenty of water from drainage off the bluff. There are plenty of woods in the area, with some that partially run through the site.

Utilities

There are several residences within the vicinity of the site, mostly lake homes by the water, and permanent homes up on the plateau. For utilities, the site is equipped with all the standard and modern utilities needed for new construction.



Base Map

This base map gives more detail about the site and includes the property lines. The numbers with arrows also correspond with the views on the next pages.



1



2



3

4



5



6





7

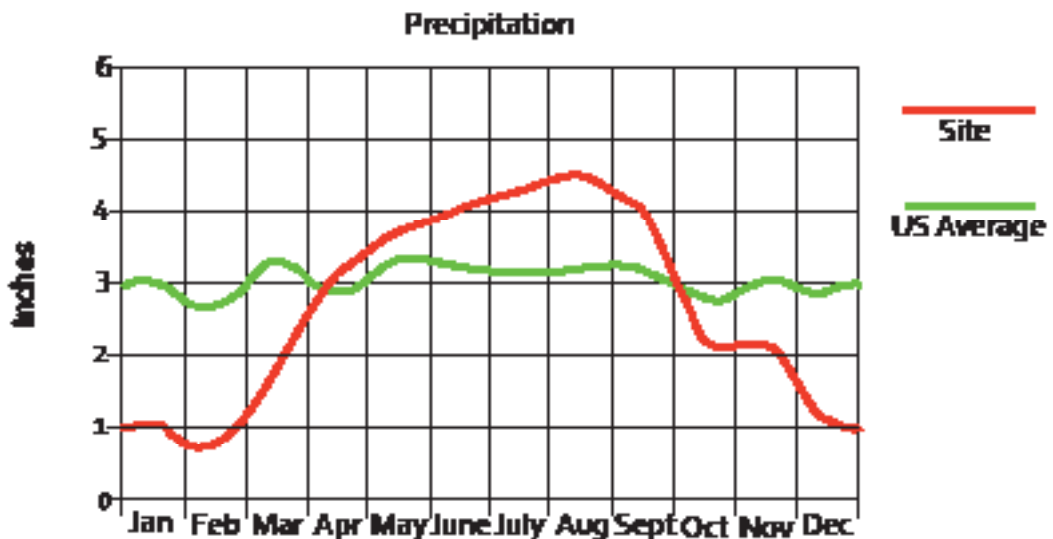
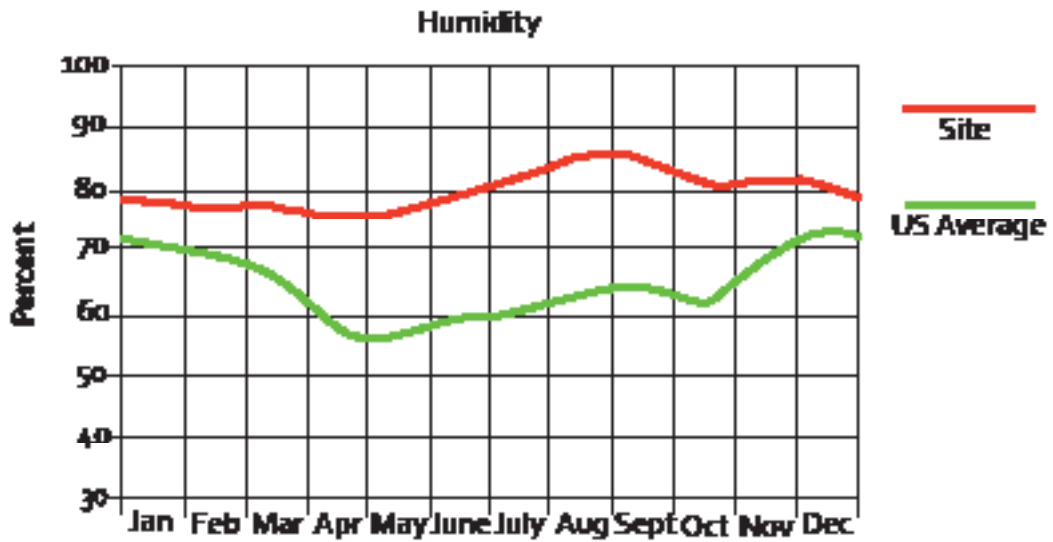
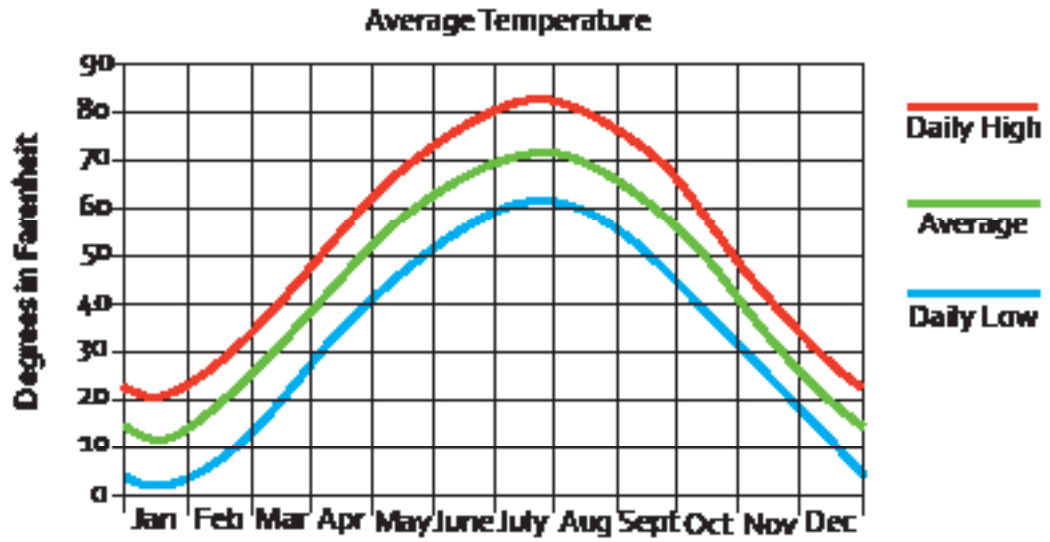


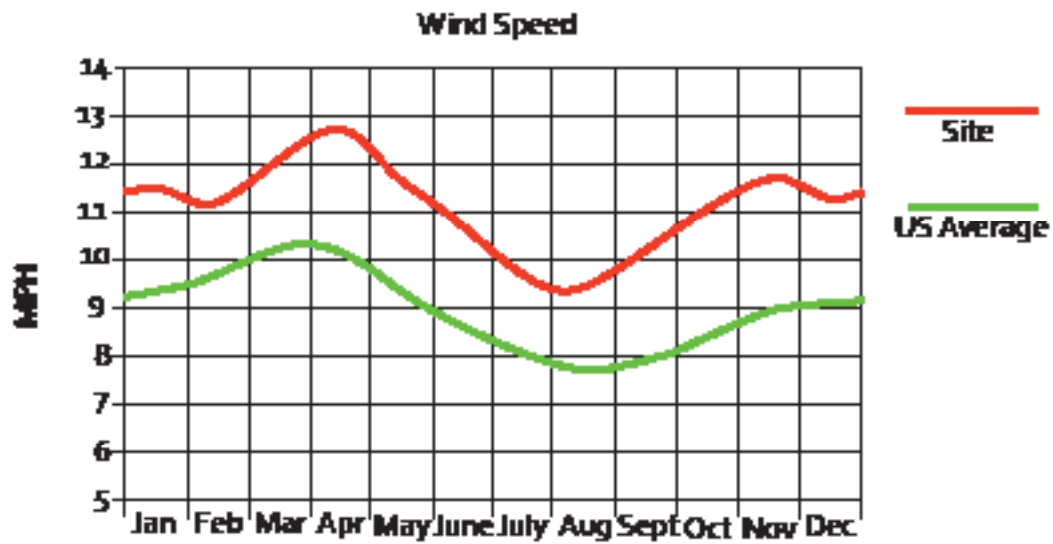
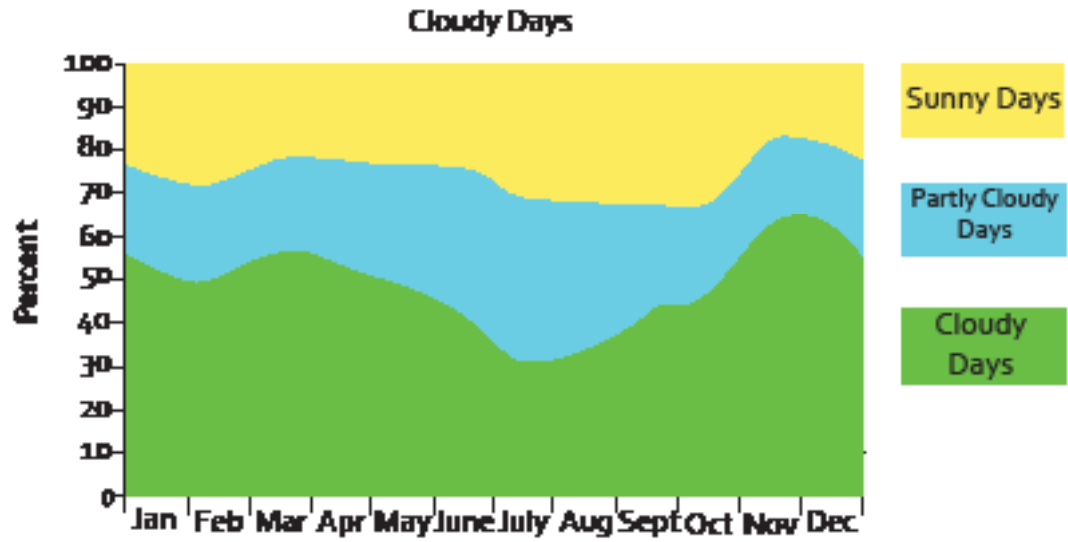
8



9

Charts ■ ■ ■ ■





The

Programmatic Requirements

Public Spaces

Entry and Reception:	400 S.F.
Indoor Gathering Space:	1500 S.F.
Resource Room/Library:	1200 S.F.
Dining Hall (Indoor):	1600 S.F.
Outdoor Dining:	600 S.F.
Fitness Room:	1000 S.F.
Conference Room:	600 S.F.
Fire Circle & BBQ:	500 S.F.
Outdoor Meditation:	500 S.F. @ 2
Healing Gardens:	Undefinable
	<hr/>
	8400 S.F.

Private Spaces

Sleeping Quarters:	200 S.F. @ 16
Living Area & Bathrooms:	400 S.F. @ 4
Quiet Room:	200 S.F. @ 2
Counseling Rooms:	400 S.F. @ 6
	<hr/>
	7600 S.F.

Employee Spaces

Offices:	300 S.F. @ 6
Breakroom:	800 S.F.
Commercial Kitchen:	1300 S.F.
Laundry:	1200 S.F.
Maintenance:	1600 S.F.
	<hr/>
	6700 S.F.

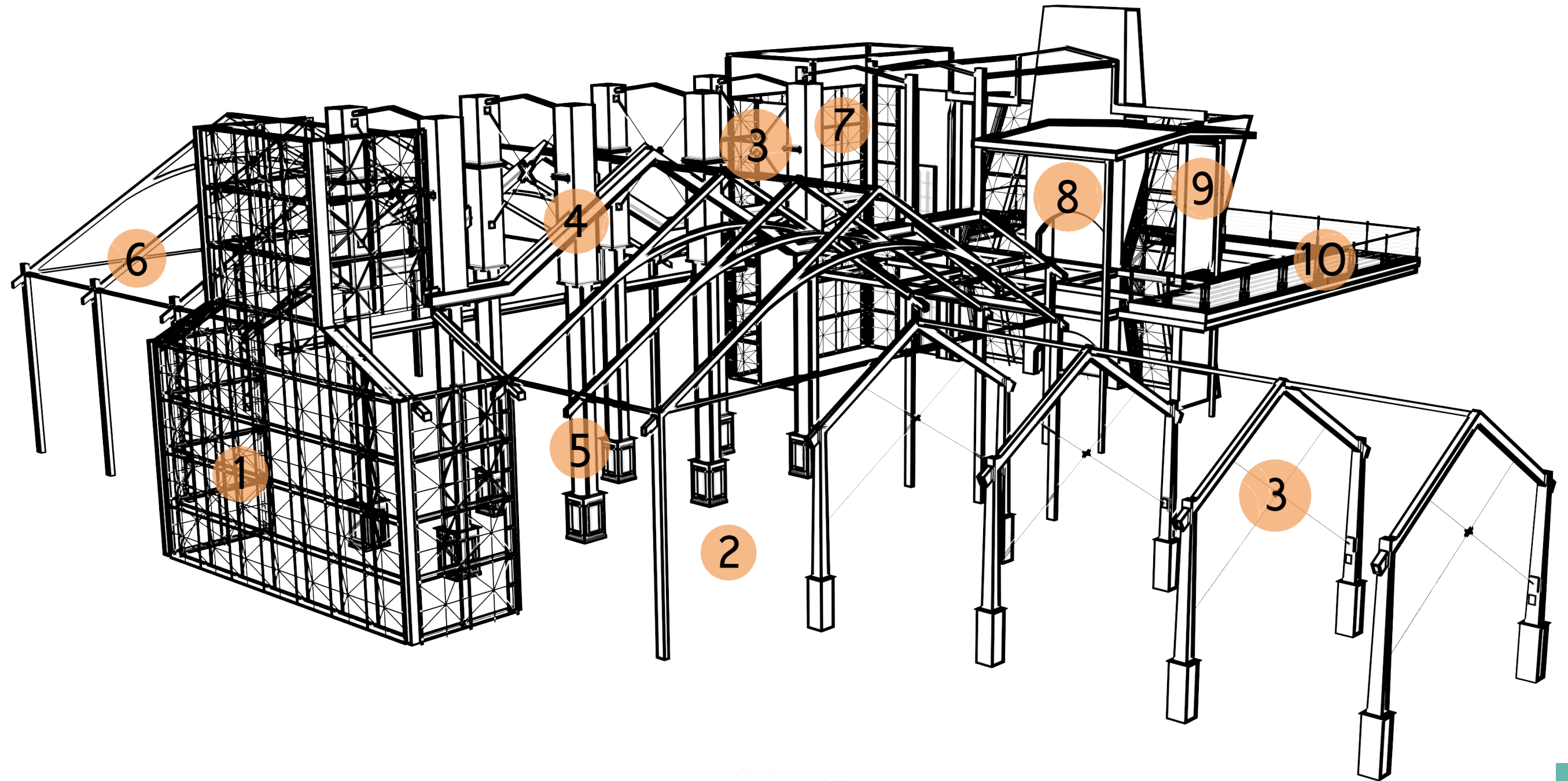
Other

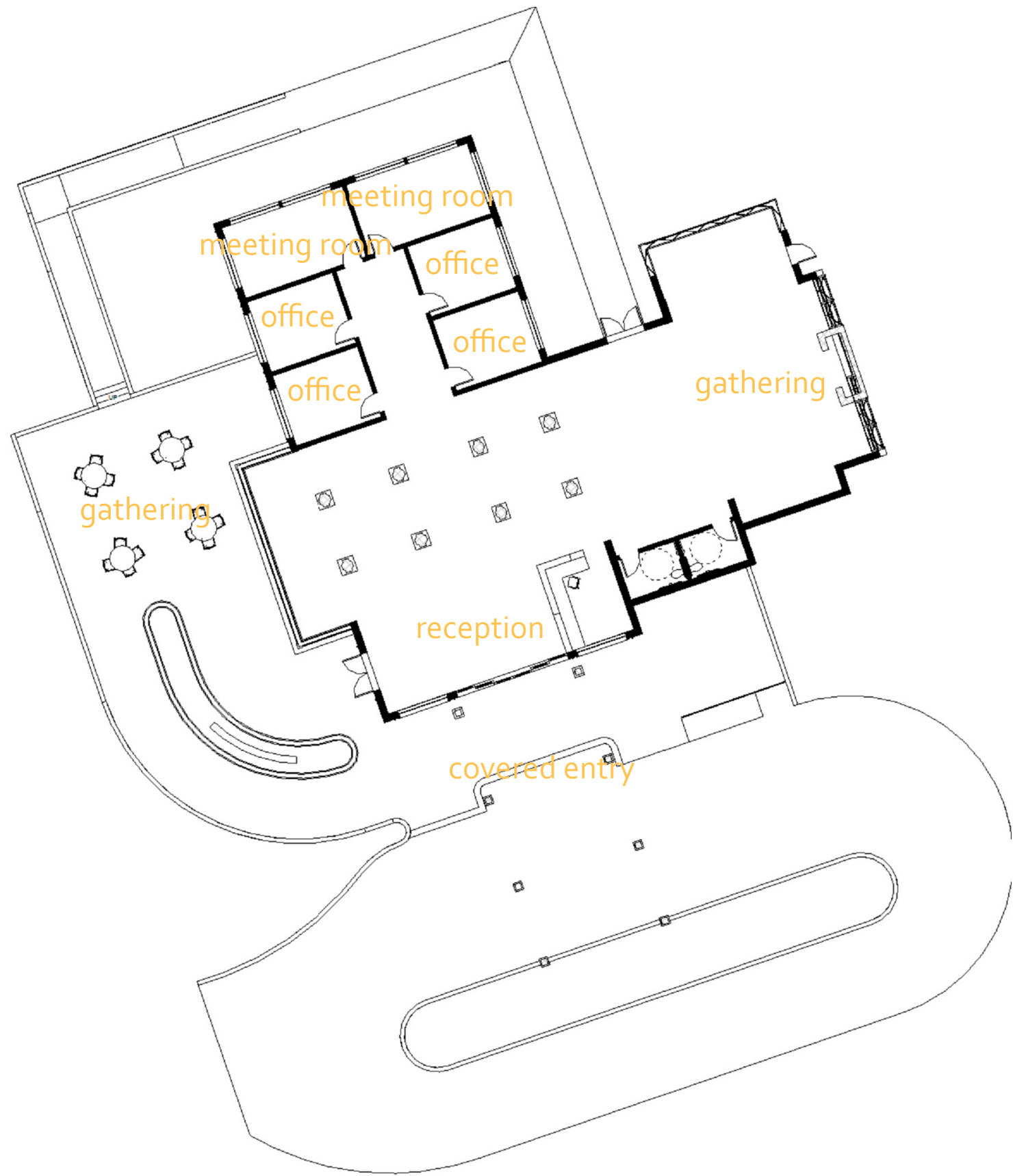
Circulation:	2800 S.F.
Restrooms:	200 S.F. @ 4
Mechanical:	1800 S.F.
Storage:	1900 S.F.
	<hr/>
	7300 S.F.

Grand Total: 30,000 S.F.

The Outcome

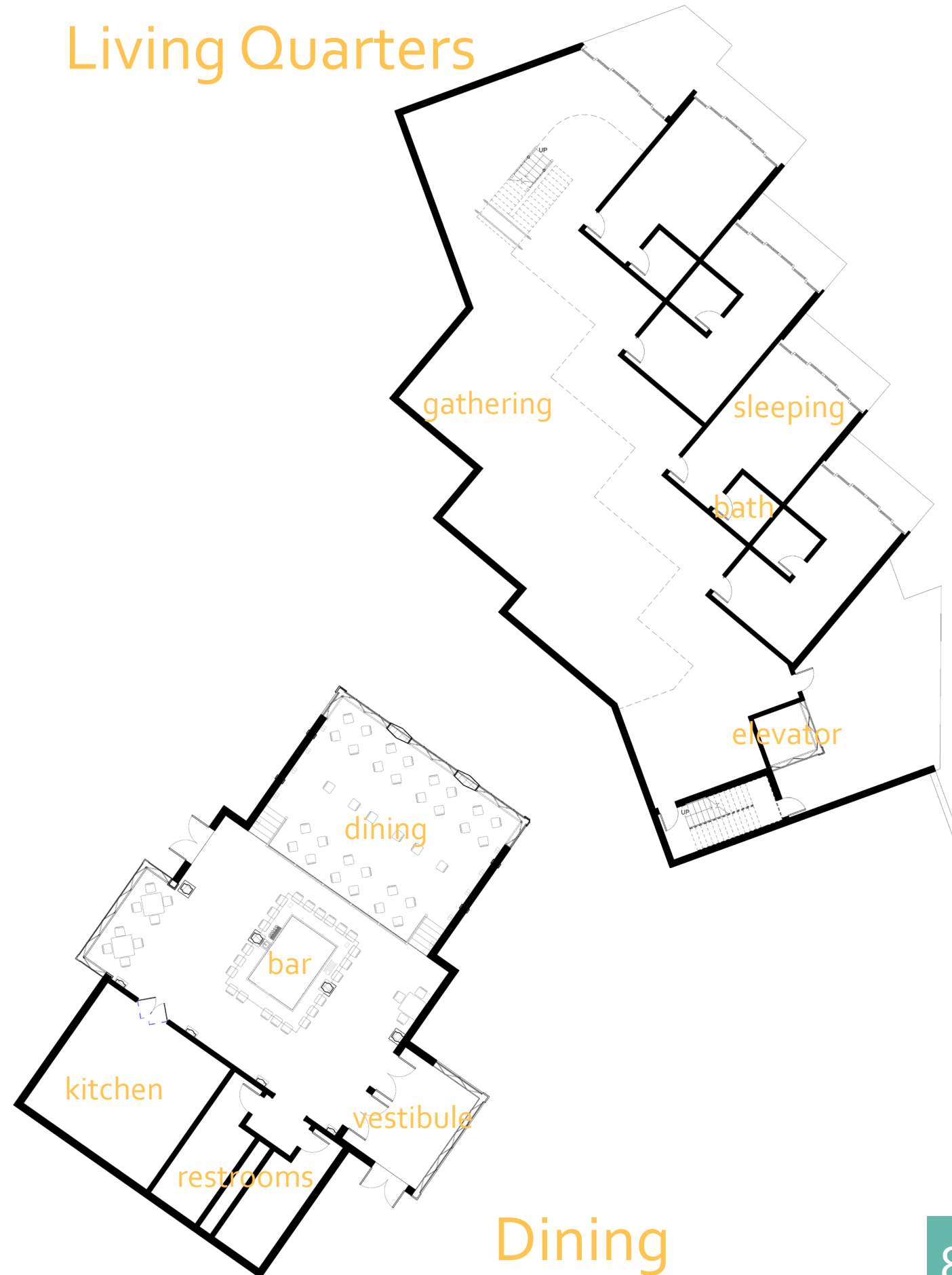
- 1 dual-skin garden wall
- 2 wood flooring with concrete subfloor
- 3 diagonal tensial cross bracing
- 4 large timber framing
- 5 polished limestone
- 6 existing glu-lam structure
- 7 dual-skin curtain wall
- 8 limestone fire place
- 9 limestone bearing walls
- 10 cantilevered balcony





Welcoming Center

Living Quarters



Dining



Welcoming Center



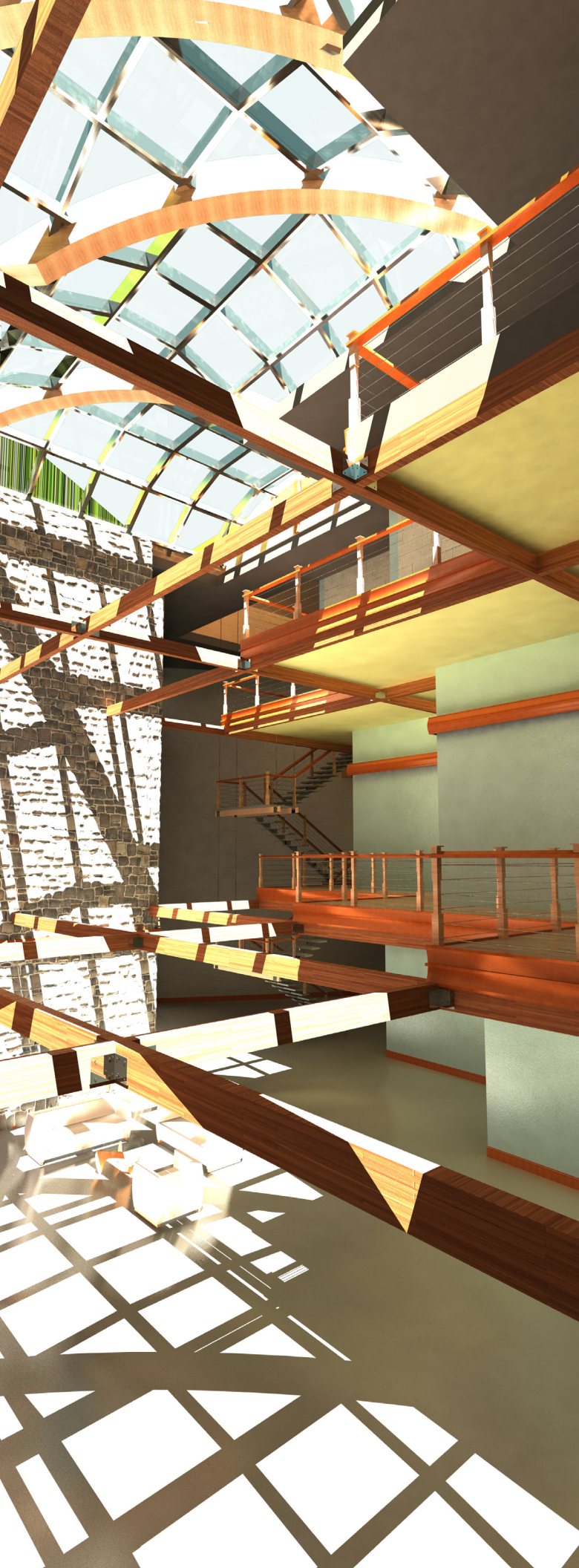
Healing Garden



Dining

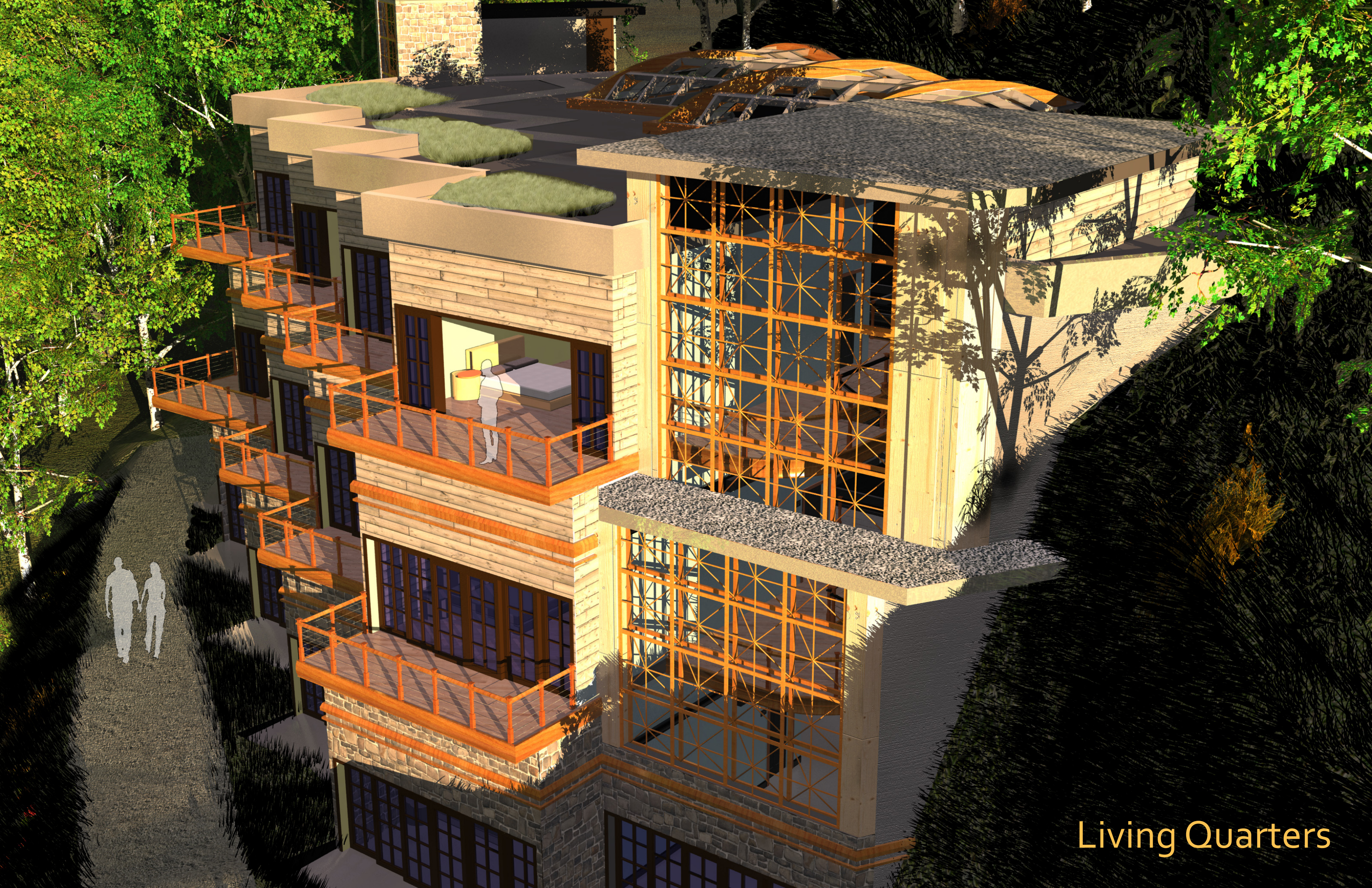


Dining



Living Quarters





Living Quarters

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“The two basic items necessary to sustain life are sunshine and architecture.”