



CARRIE MEYER

# COMPLETE HEALING

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

By

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In Partial Fulfillment of the Requirements  
for the Degree of  
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May 2010  
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ABSTRACT	9
PROBLEM STATEMENT	11
STATEMENT OF INTENT	13
THE PROPOSAL	17
NARRATIVE	18
USER/CLIENT DESCRIPTION	20
MAJOR PROJECT ELEMENTS	22
SITE INFORMATION	24
PROJECT EMPHASIS	26
PLAN FOR PROCEEDING	27
PREVIOUS STUDIO EXPERIENCE	29
THE PROGRAM	31
RESULTS FROM THE THEORETICAL PREMISE/UNIFYING IDEA RESEARCH	32
RESULTS FROM THE TYPOLOGICAL RESEARCH POUSTINIA	43
MOTT CHILDREN'S CENTER	47
JERSTAD CENTER	51
THE HISTORICAL CONTEXT OF THE THESIS	57
THE GOALS OF THE THESIS PROJECT	64
SITE ANALYSIS: INTRODUCTION	67
SITE ANALYSIS: QUALITATIVE	68
SITE ANALYSIS: QUANTITATIVE	73
PROGRAMMATIC REQUIREMENTS	81
DESIGN DOCUMENTATION	87
PROCESS DOCUMENTATION	88
PROJECT SOLUTION	91
PROJECT INSTALLATION	104
APPENDIX	107
REFERENCES	112
PERSONAL IDENTIFICATION	115

TITLE

Complete Healing

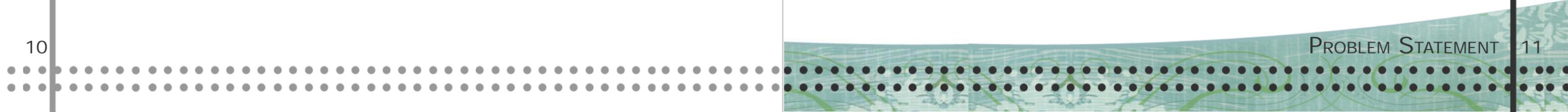
ABSTRACT

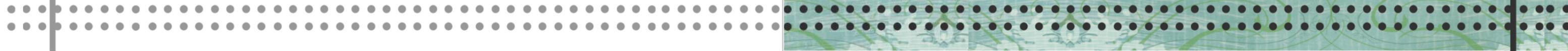
This thesis provides some answers to the question, does a design have the ability to promote health and wellness in our personal choices about the way we live? A healthy way of life is a personal choice determined by the individual and can be influenced by natural, environmental, and design factors. The typology for the examination of the problem is a healthcare facility and personal wellness retreat center. The Theoretical Premise/Unifying Idea that guides the research is, "the environment and its surroundings influence the choices made by individuals in the ways they live their lives." The project will be located in Alexandria, MN on the western side of Lake Carlos State Park. The 42,000 square foot facility includes therapy, treatment, fitness, education and living spaces. The project emphasis will focus on healthy environments and the influence of site on the building and users.

KEY WORDS

*health, wellness, retreat center, way of life, choices, environmental influence*

Does a design have the ability to promote health and wellness in our personal choices about the way we live?





THE PROJECT TYPOLOGY

Healthcare Facility & Personal Wellness Center

THE CLAIM

A healthy way of life is a personal choice determined by the individual and can be influenced by natural, environmental and design factors.

PREMISES

A characteristic of an individual is the ability to make decisions based on personal needs or wants.

Choices made by individuals that affect health and well-being can be guided by their environment and surroundings.

Changes in behavior or environment can influence an individual's way of life dramatically.

THE THEORETICAL PREMISE/UNIFYING IDEA

The environment and its surroundings influence the choices made by individuals in the way they live their lives.

THE PROJECT JUSTIFICATION

A change in a way of living often requires a total commitment by a person. Architecture that encourages this adjustment is essential to helping individuals as well as the natural and built environment.

THE NARRATIVE  
THE USER/CLIENT DESCRIPTION  
MAJOR PROJECT ELEMENTS  
SITE INFORMATION  
PROJECT EMPHASIS  
A PLAN FOR PROCEEDING  
PREVIOUS STUDIO EXPERIENCE

# THE PROPOSAL

We live in a world where words like “faster” and “easier” seem to dominate our everyday lives. We move fast, we multi task, and we want solutions that are instant and require little effort.

Health, on the other hand, is not instant. It requires time and effort. By definition, it is a state of physical, mental, and social well-being. Physical well-being, which includes healthy eating habits and exercise, is often seen as the most important aspect. Mental well-being, on the other hand, is also very important but often overlooked. Happiness and positivism, as well as stress management, can influence one’s health. Nearly every aspect of life is affected by health in one way or another.

Why is it important to be healthy? One major factor is family. Parents want the best for their children, including health and happiness. Being healthy, and teaching their children how to be healthy is an important goal for parents. Setting a positive example is one of the easiest ways to accomplish this goal.

While it is not hard to take care of yourself, it does require dedication. It requires choosing healthy meals instead of junk food, and going for a walk instead of watching television. Choices we make can affect us not only today, but many years down the road. These choices can be guided by the environment and its surroundings.

What if the spaces we interact with could physically make us feel better, or encourage us to make smarter choices about the way we live? Hidden Lake Health & Wellness Retreat seeks to create a spatial environment to encourage and support individuals in their journey toward a healthier way of life.

This facility will be owned and managed by one party, such as the City of Alexandria, which will be responsible for the user groups and their needs. This development will have multiple users with a variety of needs. The purpose of this facility is to cater to all of these needs and enhance users' experience.

#### *PARTICIPANTS*

In order to encourage healthy living choices in the community and surrounding area, all willing participants are welcome. These participants will vary in age, physical condition, economic status, as well as ethnic and cultural background.

#### *STAFF MEMBERS/HEALTHCARE WORKERS*

The staff of the center includes professionals trained in physical, mental and spiritual health and wellness. This may include, but is not limited to, trainers, nutritionists, doctors, and counselors. Support staff such as administrative or office management employees will also be important users of the space.

#### *NUMBER OF USERS*

The number of users of the space will vary from hour to hour, as well as day to day. The size of the natural environment available to the users will allow for large numbers of visitors at the same time. A more specific number of users will be determined upon further research.

#### *PEAK HOURS*

Although the building will be open during daytime hours, the peak usage time will be evenings and weekends, allowing those who work or have daytime commitments to use the facility.

#### *PARKING*

Most users of the facility, including the staff, will require space for a vehicle. However, access to the site through walking trails or bike paths will be encouraged.

#### *SPECIAL CONSIDERATIONS*

As a healthcare facility and personal wellness center, some of the participants may be faced with special physical needs. Access to the site and within the building will be a top priority, as will integration and ease of movement through the natural environment. In addition, this facility is intended to be used by anyone willing to make the commitment to a healthy way of life and needs to be accessible both financially and physically.

#### MAIN LOBBY

The participants will be greeted by the staff and faculty who will introduce the programs the facility has to offer.

#### OUTDOOR SPACES

The facility emphasizes the importance of healthy living and interaction with the environment. Opportunities to interact with the surrounding area, including Lake Carlos State Park, are provided. The facility, along with the park provides activities including: hiking, biking, cross country skiing, and swimming. Facilities for rental or storage of equipment for these activities will also be included. Other outdoor areas on site include a reflection pond and garden.

#### HEALING FACILITIES

This area of the building will include the spaces used by people seeking help and education about healthy living. This includes treatments spaces, a small clinic, and support group or therapy spaces.

#### EDUCATION SPACES

The center will offer education sessions for participants as well as the general public to educate people on the importance of healthy living, as well as ways to achieve this goal. These spaces will be designed to allow for both daytime and evening sessions.

#### COMMUNITY KITCHEN & DINING

A community kitchen/dining area will be included to give participants the opportunity to interact with and provide support to one another.

#### FAMILY LIVING UNITS

The facility will be designed to give participants and their families the option for short-term or long-term living units available on the site. These units are private and not monitored by the facility.

#### STAFF SPACES

This area of the facility will include staff offices, break rooms, preparation rooms, etc.

#### AUXILIARY

Circulation, mechanical, restrooms and other facilities will be included as necessary to support the facility.



The site is located in Alexandria, Minnesota, in the upper Midwestern region of the United States. Minnesota is known as the “Land of 10,000 Lakes.” These beautiful lakes, along with forests and other wilderness areas, make the state a destination area in the summer months, and unique in comparison to other states in the region.



Surrounded by many lakes, Alexandria is a popular tourist area during the summer months. Located along Interstate 94, the city is roughly halfway between the Twin Cities and Fargo, ND. Just over 12,000 people live within the city limits, with as many as 30,000 living in the nearby lakes area (“Alexandria, MN,” 2009).



Lake Carlos State Park is located 10 miles north of Alexandria on Highway 29. An ancient glacier sculpted the area, leaving bogs, marshes, ponds and lakes in its place. In addition to the natural landforms is the opportunity for several outdoor activities including skiing, hiking, biking, swimming, and fishing (“The Minnesota Department of Natural Resources,” 2009). The site is located on County Road 11, and is adjacent to the State Park on the park’s western boundary, allowing access and views to the nearby trails and lake.

Approximate Site Size:  
167.6 acres

Through examination of the Theoretical Premise, multiple areas of interest will develop, leading to two emphasis areas.

#### THEORETICAL PREMISE

The environment and its surroundings influence the choices made by individuals in the way they live their lives.

#### AREAS OF INTEREST

##### *HEALTHY ENVIRONMENT*

A built environment that can guide individuals' choices about their health is the main focus of this thesis project. Choosing to live in a healthier manner is often difficult and architecture that encourages this adjustment is essential to helping individuals.

##### *INFLUENCE OF SITE*

The role of healthy living choices as part of our well-being is changing in modern times. Factors such as proximity and ease of use influence the choices made about healthy living. Selecting a site where environmental influence emphasizes health and wellness is a priority. Presenting the opportunities as easier, everyday choices, rather than difficult, out of the ordinary decisions will encourage users to make informed decisions.

#### DEFINING A RESEARCH DIRECTION

As the project progresses, research will be conducted under the following categories: unifying idea, project typology, historical context, site analysis, and programmatic requirements.

#### DESIGN METHODOLOGY

Design methodologies this research will use include the following strategies: mixed method qualitative/quantitative analysis, graphic analysis, digital analysis and interviews.

This research will be collected using a Concurrent Transformative Strategy, and guided by the unifying idea. Priority will be given to the requirements of the Theoretical Premise.

Throughout the process, information will be gathered, analyzed, interpreted, and reported. This will occur at several stages of the process and the findings will be presented using both text and graphics.

Quantitative data includes, but is not limited to, statistical and scientific data. Statistical data is gathered and analyzed locally or obtained through an archival search. Scientific data includes measurements obtained through instrumentation and/or experiment and gathered directly or through an archival search.

Qualitative data includes information gathered from several sources, such as direct observation, local survey, archival search, and direct interviews.

DOCUMENTATION OF THE DESIGN PROCESS

The design process will be compiled and documented digitally from the beginning to ensure its preservation. Any data that is produced digitally, including text, images, and graphics, will remain digital; any data that is produced in a hard copy format will be scanned at 300 dpi resolution to convert it to digital format. Data will be saved to a permanent file dedicated to the preservation of any and all design information.

The data and documentation will be presented in the design thesis and project book to ensure its availability to future scholars. Additionally, important parts of the design process will be presented in the final thesis presentation in graphic and verbal representation.

Documentation and collection of data will occur at the completion of the categories outlined in the thesis manual.

2ND YEAR 2006-2007

FALL SEMESTER:

ARCHITECTURAL DESIGN I

DARRYL BOOKER

Tea House

*Fargo, ND*

Mississippi River Rowing Club

*Minneapolis, MN*

Dwelling

*Bear Lake, Colorado*

SPRING SEMESTER:

ARCHITECTURAL DESIGN II

JOAN VORDERBRUGGEN

Montessori School

*Moorhead, MN*

Prairie Dance Academy

*Fargo, ND*

3RD YEAR 2007-2008

FALL SEMESTER:

ARCHITECTURAL DESIGN III

CINDY URNESS

Center of Excellence for Solar Research & Technology

*Fargo, ND*

Library & Museum Remodel Cranbrook Academy of Art

*Bloomfield Hills, Michigan*

SPRING SEMESTER:

ARCHITECTURAL DESIGN IV

RON RAMSAY

Adaptive Reuse of Union Storage & Transfer

*Fargo, ND*

Hotel Congress

*Chicago, IL*

4TH YEAR 2008-2009

FALL SEMESTER:  
ARCHITECTURAL DESIGN V  
DON FAULKNER

Mixed-Use Sustainable High Rise  
*San Francisco, CA*

SPRING SEMESTER:  
ARCHITECTURAL DESIGN V  
DARRYL BOOKER

Santo Domingo Urban Plan  
*Santo Domingo, Dominican Republic*  
Marvin Windows Design for Livingstone School  
*Tanzania, Africa*  
Community Center for Santo Domingo  
*Santo Domingo, Dominican Republic*

5TH YEAR 2009-2010

FALL SEMESTER:  
ADVANCED ARCHITECTURAL DESIGN  
MARK BARNHOUSE

Water Property Analysis  
*Freshwater Use by Country*  
Water Resource Experiment Station  
*Linton, ND*

RESEARCH RESULTS & GOALS  
SITE ANALYSIS  
PROGRAMMATIC REQUIREMENTS

THE PROGRAM

By definition, health is a state of physical, mental, and social well-being. Physical well-being, which includes healthy eating habits and exercise, is often seen as the most important aspect of health. Mental well-being, on the other hand, is also very important but often overlooked. Happiness and positivism, as well as stress management, can influence one's health. Nearly every aspect of life is affected by health in one way or another.

#### HUMAN BODY SYSTEMS

Living in a healthy way requires balance. Without balance between the physical, mental and social well-being, human beings become vulnerable. Just as overall health requires balance, physical well-being also requires a balance and cooperation of the body systems to maintain health.

Physiology, the study of how things work, requires an understanding of how the parts of the human body work together. Through a process known as homeostasis, the human body maintains and regulates a constant environment that allows us to work in

a variety of conditions (Chiras, 2003). This ability to surround ourselves in a hospitable environment, whether internally or externally, enables us to live, work and learn under changing conditions.

The human body maintains a healthy internal environment through a process known as the homeostatic system. This system consists of five factors, each with individual importance key to the preservation of a healthy body: a regulated variable, set point, sensor, feedback controller, and effectors.

A regulated variable is an element that needs to remain constant, or relatively constant for the health of the individual. Temperature and blood pressure would both be examples of regulated variables. If either one of these elements changes for an extended period of time, the human body can quickly deteriorate. Because of the importance of the regulated variable, it is important to know the body's set point, or what is considered "normal" for the individual. Sensors and feedback controllers work together to send messages to the brain, indicating where the problem is located and producing a possible solution. Effectors, on the other hand, are the physical effects of the received messages. Sweating, shivering, skin blood flow, and skeletal muscle contractions all work to return the body to its original set point (Seidel, 2002).

Understanding the human body increases the awareness of health and wellness. The human body works very hard to maintain a consistent environment. Externally, however, our bodies live in turmoil, through the use

of overly-processed food, exposure to chemicals, and lack of exercise.

#### ENVIRONMENT & ITS EFFECT ON HEALTH

Health has almost always been a concern, although its origin and cause has changed vastly over the past few centuries; illness has been a part of our lives for thousands of years. Viruses, while causing illness for many centuries, have primarily been a natural illness, created from the biology of the body.

The 1918 Spanish Flu outbreak killed an estimated 40-50 million people from 1918-1919. Most of these individuals were healthy young adults, in contrast to most influenza outbreaks, which usually affect young children, the elderly, or people with weakened immune systems. Viruses, even in modern times, have the ability to create widespread panic in the general public. The H1N1 influenza outbreak currently affecting the world shows that history repeats itself, although advances in modern medicine have prevented mass casualties thus far.

More recently, however, illnesses and diseases that are not biological in nature have created new concerns for the current population. Cancer and obesity top the health concerns of the population in the current period. Not only are these diseases deadly on their own, but they can also cause other adverse illnesses or diseases as well. Obesity leads to high blood pressure and increased cholesterol levels in the blood, which can lead to heart attack and/or stroke. Heart disease is the number one cause of death in the United States each year. Other obesity-related

diseases include diabetes, certain types of cancer, gallbladder disease and sleep apnea. Cancers such as Mesothelioma and lung cancer are caused through exposure to asbestos and tobacco, and are easily preventable. Research shows that prolonged exposure to sulphur dioxide, ozone, and other pollutants can greatly increase the risk and symptoms of asthma, bronchitis and similar lung diseases.

Environmental health concerns continue to grow each year, and agencies have been established as a result. The National Center for Environmental Health, a division of the Centers for Disease Control, was formed with the intention of investigating the relationship between human health and the environment through research, education, and partnership. The goal is to increase the general population's knowledge of environmental health issues, and to develop, implement, and evaluate policies and programs used to prevent and control disease (Centers for Disease Control, 2008).

The National Center for Environmental Health contains four research departments: Air Pollution and Respiratory Health, Chemical and Radiologic Terrorism, Environmental Public Health Tracking, and Health Studies. The Air Pollution and Respiratory Health department researches the effects of airborne environmental agents – such as mold – on respiratory diseases like asthma. The Chemical and Radiologic Terrorism department works toward establishing guidelines and policies in the event of a large radiologic event. This includes emergency response drills, working

with all levels of government, and assessing human health risks from chemical threats. The Environmental Public Health Tracking department researches the environmental role in human health and development, particularly in children. This is an ongoing process and new links and discoveries are made often. Lastly, the Health Studies department focuses on the health effects of exposure to environmental hazards ranging from chemical pollutants to natural disasters. Cancer clusters, disasters, pesticides, harmful algal blooms, and water, air and food are all areas of interest for this division (Centers for Disease Control, 2008).

#### HEALING POWER OF NATURE

Human beings have always had a connection with nature, from primitive hunting and gathering hundreds of thousands of years ago, to more recent activities such as hiking, biking, or camping. Various studies over time have proven nature's effect on human emotions. In one particular study, Nancy Wells, an environmental psychologist at Cornell University, studied the effects of access to nature on children in grades three through five. Taking note of the number of houseplants, amount of outdoor greenery seen from inside, and the type of yard, Dr. Wells noticed distinct differences in the children's reactions to stress and adversity. Even when controlling for income and socioeconomic status, children with access to greenery coped with new situations much better than those without. Additionally, children who were surrounded by nature had longer attention spans and were

able to focus better. Children who were most vulnerable to stress also appeared to benefit the most from green surroundings ("The Healing power," 2003).

Beyond the emotional and calming benefits of nature, it also provides us with a healing power. The Hippocrates, Greeks living from 460BC to 370BC, believed that while physicians were important, they were merely nature's servants. Through diagnostic cues and observations of sick patients, they concluded that the body is powerful and capable of restoring itself to natural health. Their duty as physicians was generally aimed at assisting and encouraging these natural processes.

This is often considered the basis for homeopathic remedies. During the 1800s, therapies such as homeopathy, chiropractic, hydrotherapy, osteopathy, and naturopathy were quickly developed, and often referred to the Hippocrates as an example. The originator of modern naturopathy, Benedict Lust, was inspired by "natural therapies used successfully since ancient times," and paved the way for "alternative" or "complementary" medicine (Bynum, 2001, pg. 21).

Recently, we once again have begun to see the healing power of nature and the surroundings we live in. A gallbladder treatment study was conducted several years ago, and produced startling results. Although given the same treatment, patients with views of the natural environment healed faster than those without. Thayer (1994) coined the term "topophilia," describing the relationship between humans and

nature. It is defined as “the affective bond between people and place or setting,” or “the human love of place (pg 4).” This definition is not limited to natural settings, but any type of connection with nature, whether in town or the wilderness (Thayer, 1994). The need for the natural environment is part of human nature, and is crucial to the balance of physical, mental, and social well-being.

#### HUMAN BEHAVIOR & THE BUILT ENVIRONMENT

Just as the natural environment can greatly influence physical health and wellness, the built environment, and our perceptions of it, has the ability to influence and affect human behavior.

The environments that surround our everyday lives, built or natural, have an influence on human behavior and involve the cooperation of the five senses. Perception of the environment is affected by sociological needs, psychological states and individual differences. Experience in the environment is unique to each individual and influenced by factors such as sex, age, and health. These are important determinants in behavioral responses to the atmospheres around us. These responses are complex and consist of perception, cognition and spatial behavior (U.S. Army Corps, 1997).

Perception, through the accumulation of information by the senses, refers to the process of gained awareness in space. Cognition, on the other hand, is the mental processing of this information, and may involve thinking about, remembering or evaluating the information as it is received. As this

information is processed, the body reacts and responds uniquely and individually through a process known as spatial behavior.

Social interaction is influenced by the perception of the environment by the individual, and is effected by the scale of the space. According to Edward T. Hall, there are four levels of physical space in which interpersonal interactions normally take place: intimate, personal, social and public. Intimate space, the most private, is the area immediately surrounding the individual. Although this space promotes emotional and physical interaction, it can become intrusive if the space is too small. Personal, while slightly larger than intimate, allows only a few people to interact directly. Social space indicates a purely social interaction that is generally temporary, and public is an area where an individual does not expect to interact with others (U.S. Army Corps, 1997). Each of these space definitions can uniquely control the environment of the space and influence the type of interactions that take place there.

Human behavior is not only influenced by spatial perception, but color and visual perception as well. Color is a powerful tool, and if used with skill and care, it can positively influence mood and behaviors of the user. Many effects and behaviors – psychological, emotional, and physical – can be achieved through careful color use.

Relative size and appearance of a space, or the perception of it, is often influenced by its color. Warm colors can have a stimulating effect on the

user's mood, and are often used in living areas to raise the temperature and create a comfortable, homey atmosphere. Negatively, if used in large quantities or saturation, warm colors can create stress. Cool colors, such as blue or green, create calming atmospheres and generate feelings of relaxation (U.S. Army Corps, 1997).

Not only is color choice important in the design of a building, but the color combinations are as well. Colors that blend well create unity and harmony, while contrasting colors provide balance. On the other hand, clashing colors can produce feelings of unease or irritation.

Visual perception also plays an important role in human behaviors and interactions. Natural human behavior has the tendency to avoid situations where a person might be watched without their knowledge. Additionally, people tend to sit with a protected back, in order to control the area they cannot directly see. Through the use of furnishings, partitions, or walls, visual privacy can be easily achieved.

Like visual privacy, perception of line and texture can also influence behavior. Soft, delicate lines feel serene, while heavy jagged lines create movement and energy. Vertical lines produce feelings of stability and ambition, while horizontal lines promote relaxation and peace. Curved lines and geometries also influence and create emotions. Upward curves feel positive and relaxed, like a smile, while downward curves feel solemn and sad. Repetitive, simple patterns are stable, but can also be uninteresting. Irregular shapes, while

more appealing, can sometimes create confusion. Each of these visual design aspects can positively influence the atmosphere of a space if used correctly and in balance (U.S. Army Corps, 1997).

#### SUMMARY

Through the research, several topics have been investigated and discussed, including the human body and how it works, the environment and its effect on our health, the healing power of nature, and the influence of the built environment on human behavior. As the investigation into the thesis develops further, more information will be added as necessary.

The human body is a well-oiled and powerful machine, able to correct problems and maintain a healthy environment through a process known as homeostasis. Without this process, our bodies could easily become out of sync, and become very sick in a short amount of time. Understanding how the body works increases our awareness of health and wellness, and makes us more capable of making wise decisions.

Just as it is important for our bodies to maintain a healthy internal environment, it is important for humans to maintain an equally healthy external environment. Viruses, chemicals, pollution and processed foods all attempt to invade the body and break down its defenses. Through regular exercise and balanced, nutritious meals, the human body is able to rebuild and maintain an equilibrium, making it stronger and healthier.

Research has shown that a connection to nature can also aid in the healing process. Basic human nature longs for a connection with the wilderness, whether through hunting, hiking or fishing. Not only does nature have a calming effect, proven to reduce stress and tension, but it also provides a healing power. Several modern homeopathic remedies originated from nature and have paved the way for "alternative" or "complementary" medicines.

While the natural environment has been proven to influence emotion, the built environment has been proven to influence behaviors. Perception of space, color and pattern can influence the type of interactions that take place and the moods that accompany those interactions. Small spaces tend to initiate intimate conversations, while large spaces avoid them altogether. Warm colors create a homey atmosphere, while cool colors generate feelings of relaxation.

In order to design a facility best suited to the individual's needs, it is important to understand how human nature responds to various atmospheres. Interactions with the natural and built environment have the ability to generate positive feelings and behaviors that, in turn, enable healthy decisions. Architecture can be used as means of expression, to generate emotions and memories and allow the user to move forward in a journey toward better health. Healthy living is not an immediate result; it is a journey through the past and education of the future.

## POUSTINIA TIPPERARY, IRELAND

Glencomeragh House, located in a valley between the Comeragh Mountains and Slievenamon of Italy, has been operating since 1960. Originally used as the Romainian House of Prayer, the decision was made in 1990 to open the Glencomeragh House as a retreat center. The campus is bound by a river to the south and substantial woodland to the west. Since 1990, restorative work and improvements have been done on the original house and grounds. In 2003, architects Bates Maher were contracted to design self-controlled retreat units.

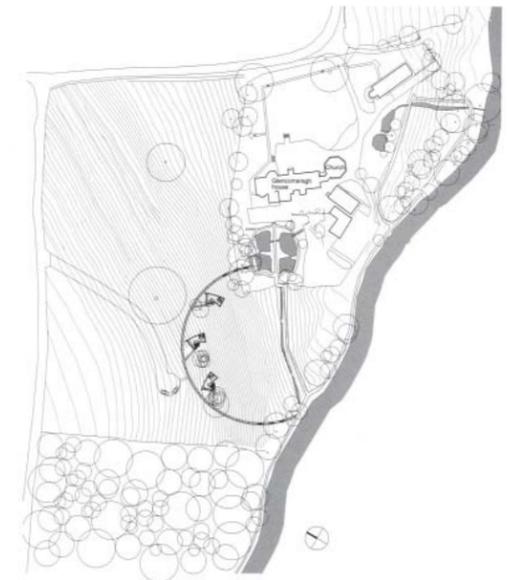
Construction was completed in 2005. Poustinia, the name for the individual units, originates from a Russian word meaning "desert," and is used to describe a small cabin or room set aside for silence and prayer. It is intended to be a place of quiet reflection, physically located within but separated from the noise of everyday life. Four hermitages are perched on the landscape, each about 430 square feet. Each unit consists of a private entrance, a small kitchen with dining area, a fold-down bed, washroom, and fireplace ("Architects Bates Maher," 2006).



A gravel pathway connects the Poustinias to the Main House, while a network of paths leads to the nearby ponds and woods. A meadow of wildflowers emphasizes the separation from the main house and reinforces the intentions of the space. The units are located on the northern edge of campus, and positioned close to existing plantings of large birch trees, providing an entrance and sense of privacy. Each unit is oriented to capture different views of the countryside and take advantage of natural light throughout the day. By simply closing the window shutters, the visitor is able to create an internalized space for meditation and contemplation.



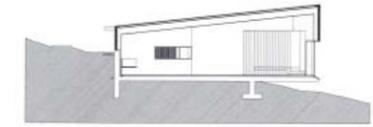
Reinforced concrete is set into the hillside and allows for the cantilevered floor, and standard timber framing is built off the concrete. Lighting is used in strategic ways, through specific openings in the walls and ceiling; all of which can be controlled by the visitor. The mass to void ratio is well balanced by an open section of wall and large skylight. The plan to section relationship is analogous - one generally resembles the shape of the other. Circulation, geometry, and hierarchy in the individual units are not significant, as each is only one large area. The units are considered separate, and treated and designed separately to provide a unique atmosphere for each.



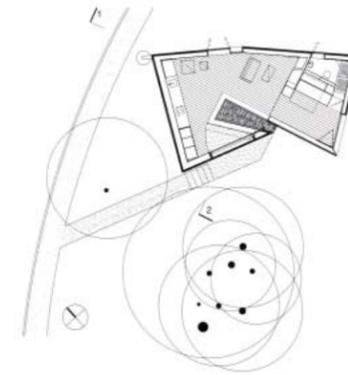
Site plan (scale: 1/3,000) / 配置図 (縮尺: 1/3,000)



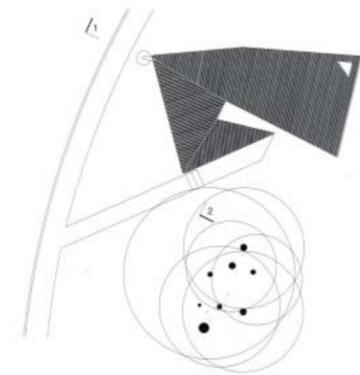
Southwest elevation (scale: 1/300) / 南西側立面図 (縮尺: 1/300)



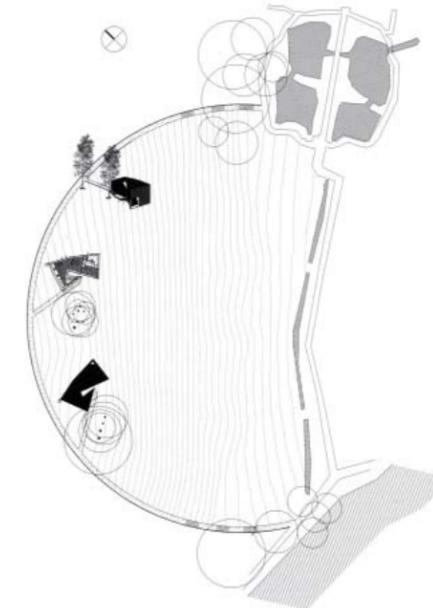
Section 1 (scale: 1/300) / 断面図1 (縮尺: 1/300)



Floor plan (scale: 1/300) / 平面図 (縮尺: 1/300)



Roof plan / 屋根伏図



Hillside site plan (scale: 1/1,200) / 丘の斜面の配置図 (縮尺: 1/1,200)



Southeast elevation / 南東側立面図



Section 2 / 断面図2



Poustinia Wild flower meadow Rill & path Glencomerage house Hall & church River

Site section (scale: 1/1,500) / 配置断面図 (縮尺: 1/1,500)

## MOTT CHILDREN'S CENTER PUYALLUP, WASHINGTON

This case study further enhances the validity of the Theoretical Premise/Unifying Idea through the use of light, materials, and spatial organization.

Natural lighting was used in strategic situations to provide a sense of tranquility, and to encourage the visitor to use the space for quiet meditation. Minimalist furniture and natural materials creates a space that focuses on the simplicity of the experience, rather than the materiality of the space.

Treating each Poustinia individually further emphasizes the spirituality of the space, and that the journey toward bettering oneself is about self-discovery and actualization.



Located in Puyallup, Washington, The Good Samaritan Hospital's Children's Therapy Unit and Child Development Center provides comfort and security to children facing challenges in their young lives. The unique, ark-like facility creates a non-institutional setting for children with neuromuscular disorders, birth defects, and/or developmental disabilities. Many of these patients, more than 600, may visit several times a week for years.

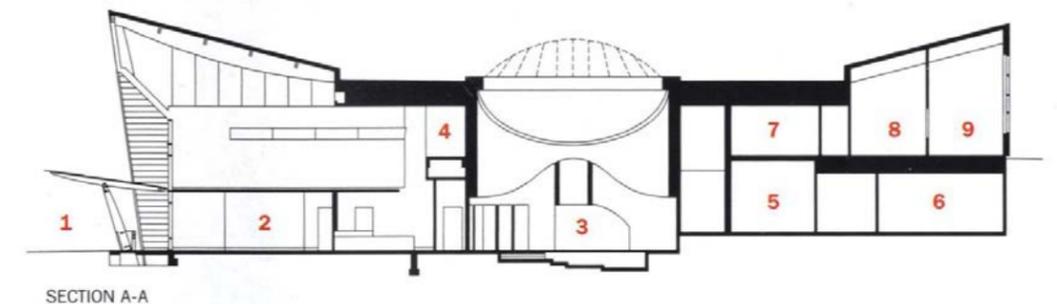
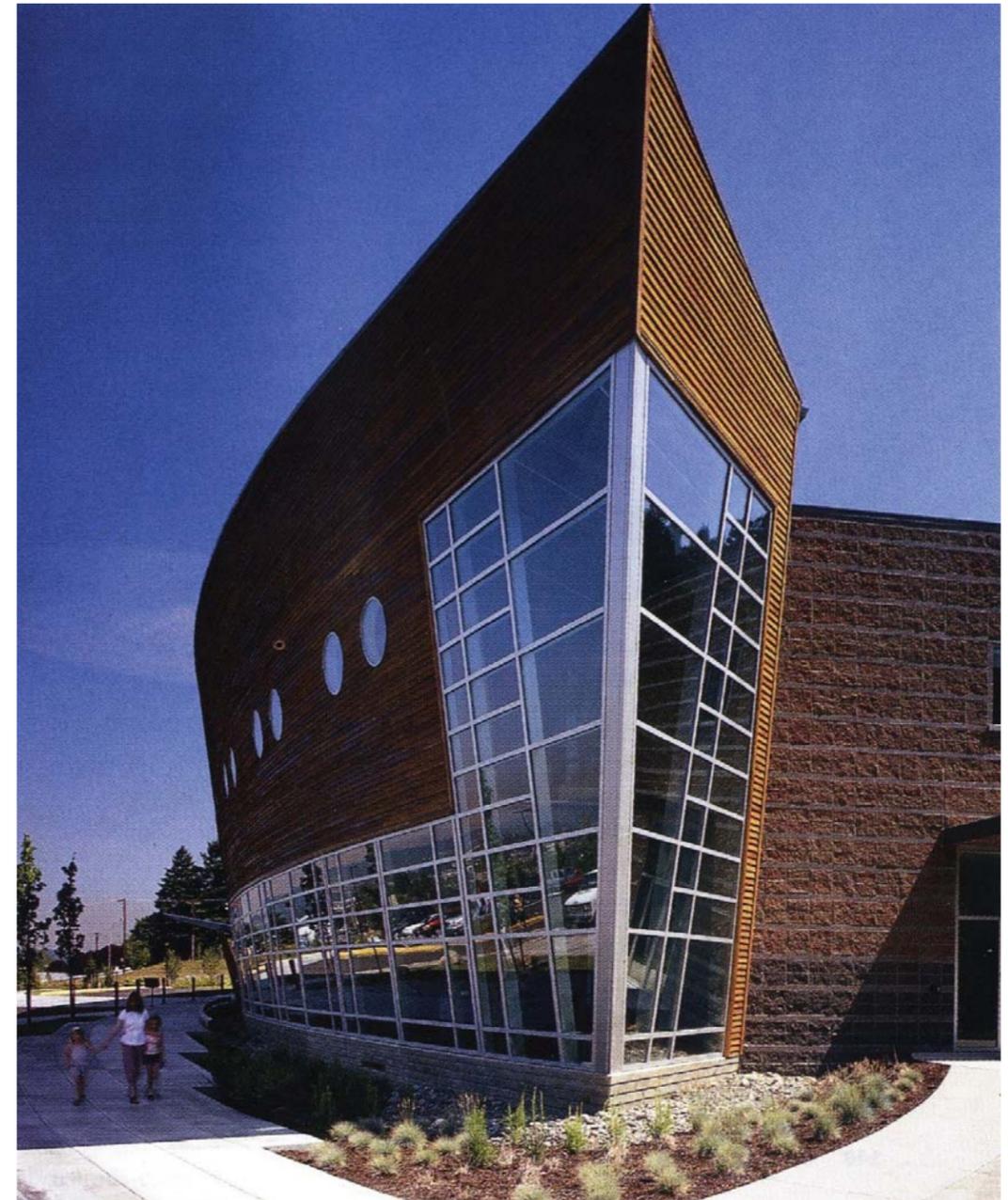
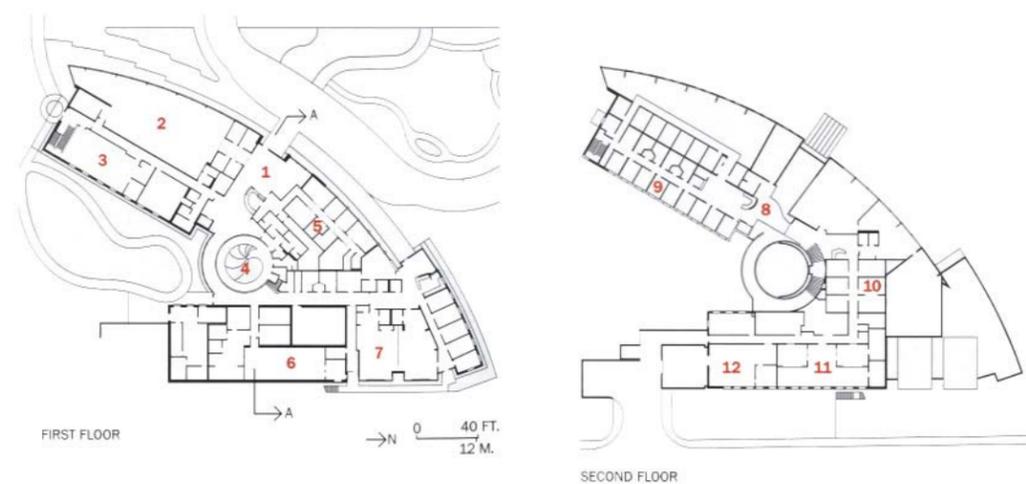
The 42,000 square foot center, designed by Zimmer Gunsul Frasca Partnership and completed in 2000, is centered in a 3 acre meadow on the edge of the hospital's main campus. Crushed rock, smooth pebbles, and wood chip paths create intentional and interesting challenges for the children as they enter the facility. Research labs, educational spaces, and physical, speech and aquatic therapy spaces are all integrated into the building and provide a well-rounded opportunity for growth and recovery.

Fun, yet classic, details are worked into the design of the building. Horizontal cedar siding wraps around the 120-foot-long front wall and establishes the non-institutional environment. Portholes and a short bridge across a moat to the front door further enhance the nautical atmosphere. Inside, animal tracks are sand-blasted into the concrete floors to help children navigate the building independently (Olson, 2002).



Mott Children's Center makes use of wood, concrete, glass and metal throughout the space to provide a light and natural environment that is beneficial to the healing process. Natural lighting is used in several different ways throughout the center. Portholes on the second floor create directed views to the surrounding landscape. Curtain walls and clerestory windows provide plenty of natural daylight for most of the day. The mass to void ratio is weighed more to the mass of the structure. Although several windows are visible on the facade, they blend into the material, and the building has a substantial weight felt in its presence. The plan to section relationship is proportional, as the rectangular wing in plan is proportional to the overall rectangular form in section. Linear circulation is used and is small in proportion to the floor area of the center. The facility uses a variety of geometric forms - rectangle, circle, and arc - in a rotated, shifted and overlapped configuration. Hierarchy is given to the pool area, just off the entrance, as the circular shape stands out against the rectangular or curved walls of the wings. It also creates a "pivot point" at which the wings are joined together.

Although the building is not symmetrical, the two wings and central lobby space are balanced in a way that complements the form and the experience.



## THE JERSTAD CENTER SIOUX FALLS, SD

The small details are what make this children's center unique from others of the same typology. Animal tracks designed into the floor, portholes and an overall nautical theme enhance the atmosphere and experience of the space. While rehabilitation and recovery are often difficult and trying experiences, for children they can be especially difficult. A facility that encourages these activities while making each one new and interesting are important and crucial to the success of the center.

This project increases the understanding of the Theoretical Premise and Unifying Idea by exploring the idea of architecture encouraging the choices and behaviors of users of the space. Just as recovery is difficult, life-changing choices can also be difficult, and architecture that supports the process can make the journey much easier.

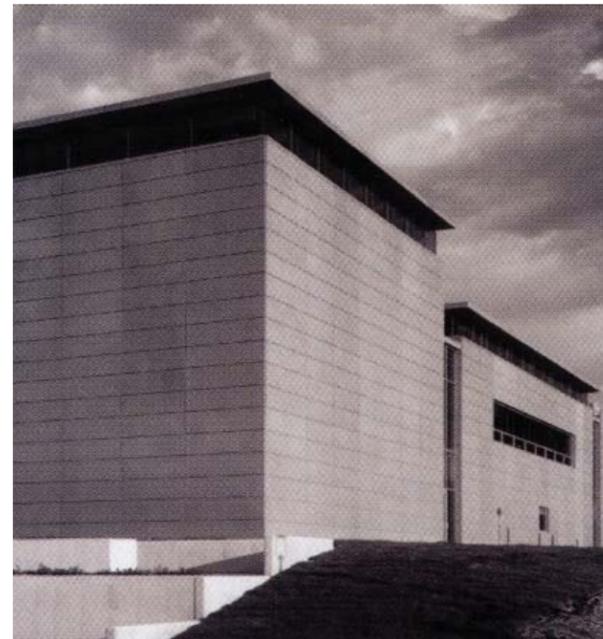


Begun in 1922, the Evangelical Lutheran Good Samaritan Society has aimed to provide shelter and support services for the elderly and other people in need. Since that time, the organization has grown to include more than 230 locations nationwide. The corporate offices, located in Sioux Falls, South Dakota are situated on the southwest corner of the same property, in a nondescript brick building. Dr. Mark Jerstad, the late director, approached Julie Snow in 1996 with a vision of a campus next to the existing offices that would offer space for corporate retreats and address the way long-term care is delivered in a new way (Cramer, 1999).

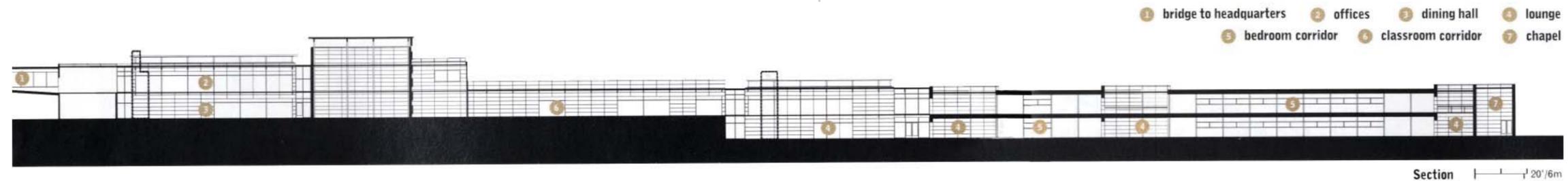
The 49,000 square foot center is home to the Institute for Study of Long Term Care, a conference center, telecommunications, a chapel, and dining and overnight stay rooms. A glass and steel covered bridge connects the new retreat center to the existing office building.

Closed in by the existing building on the southwest side and a housing development to the north, Snow created an L-shaped retreat center that faces an artificial lake and looks across to mostly undeveloped land. Construction and development has since appeared on that land. Coincidentally, a berm from the excavation of the lake has blocked views of the center from the development, and replicates the barren plains when viewed from inside the center (Cramer, 1999).





Glass, steel and masonry make up the Jerstad Center, and provide nearly seamless views to the prairie beyond. Curtain walls on the long axis of the building offer plenty of daylight in all areas of the center. The mass to void ratio is focused on void, as the curtain walls also make the building nearly transparent. The plan to section relationship is equal, as the linear form of the plan is almost exactly equal to that of the section. Circulation of the Jerstad Center is linear, with the corridors along one side of the form, and the spaces along the other. The facility uses rectangles as the dominant form, lined up along an axis. Hierarchy is given to the entrance of the facility through the use of a raised roof and floor that provides not only the entrance but space for the chapel as well. Rectangular and square units of the facility are lined up to create the overall linear form and create a sleek and modern appearance.



This case study provides the opportunity to look at a retreat center in a different way, and once again creates an understanding toward the goals of the Theoretical Premise/Unifying Idea

The Jerstad Center presents an opportunity for light and views through the use of curtain walls, and responds well to the prairies surrounding it. Long, horizontal lines further emphasize the flatness of the area and are repeated in all elements of the project such as the curtain wall mullions and concrete blocks.

Intended as a weekend retreat for a corporate business, this facility provides the opportunity to get away at the end of the work week and experience the natural surroundings in a new and relaxing way.



The case study/typology research provides the opportunity to look for examples of projects similar to the thesis. While retreat centers, healthcare facilities and wellness centers are all typical project types, a case study that combines all three was difficult to find. The research about Poustinia involved information about a spiritual retreat center in Ireland. The Jerstad Center in Sioux Falls, South Dakota presented another example of a retreat center, though the use and the needs of the clients were different. Lastly, Mott Children's Center in Washington provided information about designing a healthcare facility and the care and detail involved in the design of a building that is used mainly by children. All three provided relevant and important information to the design of the space, and created an overall sense of what the facility might be.

Another study, Kamalaya Koh Samui – although not included in the research – was most similar to the project goals of the thesis. The wellness sanctuary and holistic spa, located in Thailand, focuses largely on activities that promote health. The use of materials blends the indoors and outdoors, and introduces natural settings into the indoor spaces. However, the information lacked details, and little was known about the plan, sections, or elevations of the campus.

Each of the three projects researched use geometry, form, light, materials, and structure in vastly different ways. While two of the three projects leaned toward a more natural building atmosphere through the use of wood, the third allowed a connection with the natural through

the use of glass. The Poustinias, as well as Mott Children's Center, use wood in natural ways to increase the comfort and warmth of the atmosphere. The Jerstad Center, through the use of curtain walls, provides a connection with nature all year long, in an environment where this might not always be physically possible. Form and geometry varied among the studies, but all included rectangular forms either in plan or section. The Jerstad Center uses a traditional linear form of circulation, while Mott Children's Center uses a more abstracted form of linearity, through the use of curves. Poustinia, on the other hand, uses a very organic form of circulation, winding in and around trees and flowers in the journey to the retreat units.

Differing site environments were present at each project, from a hilly landscape, to a suburban site, to a rural site in the plains. Each project responded to the needs of the environment and complement its surroundings in a conscious and delicate way. Spiritual, healthcare, and corporate needs led these projects to different solutions, but listening to the wishes of the client and the constraints of the site, the designers moved toward a goal that kept the users of the space in mind.

Although these three projects vary in typology and goals, each provides a well-thought-out example of the atmosphere that evolves when designers put the needs of the users first. Life-changing behaviors and decisions require a total commitment by the individual. Architecture that encourages and supports participants in their journey – whether spiritually, physically or socially – is essential to helping individuals as well as the natural and built environment.

The needs of our society are ever changing, and never have those needs changed at a faster pace as in recent years. As technology increases, the need for fresh ingredients and sustainable forms of exercise have become nearly obsolete. The world that was once subconsciously health-minded has turned into a speed-driven, "easiest-route possible" society.

Humans once lived in an environment where the game hunted in the morning provided dinner for the family that very same night. Cutting logs for the fire once created a cardio workout and weight training at the same time. And taking a family walk was considered both exercise and quality time spent together.

Today we live in a world where we buy canned food with an expiration date three years down the road. After dinner, turning

on the electric fireplace provides a sense of comfort. In the morning, we exercise to the glow of the television screen and run in place to a program that simulates a jog through the park. Although some of the activities we do are within walking or biking distance, we choose to drive because it is more convenient. Yes, it is indeed easier to flip a switch than to cut the wood, to exercise in a thermostat-controlled environment, or to drive than walk. But, easier is not always better.

While technology advances are indeed beneficial in areas like medicine, others sometimes create more trouble than they are worth. Chemically-caused cancers, pollution-induced respiratory diseases, and obesity from processed foods are each products of the technology we have discovered. Self-destructive behaviors, such as smoking, continue to be popular even with knowledge of the health risks.

Society has begun to catch on, however. Innovations in health care have furthered our knowledge about the human body. In order to make healthy and wise decisions, we must first understand the body itself. The human body is a well-oiled and powerful machine,

able to correct problems and maintain a healthy environment through a process known as homeostatis. Without this process, our bodies could easily become out of sync, and become very sick in short amount of time. Understanding the physiology of the body identifies how the body works together to maintain a stable internal environment, and increases our awareness of health and wellness. This, in turn, makes us more capable of making wise decisions regarding our health.

Providing the best nutrition possible is one of the easiest ways to maintain a healthy internal environment. Recently, organic foods have become a popular section in the grocery stores and weekend farmers markets are once again thriving with business. The population has begun to show interest in the foods they put in their bodies, and the affects those foods can have. Scientists are also working to create cars that emit less pollution, and we are constantly working to find "greener" forms of technology. Wind and solar energy, although still under-developed, have both improved in the past few years and show promise as sustainable, reliable and renewable resources in the near future.

Change, however, is not instant. It requires both time and effort. And while we can work toward improved technology and a healthier society, the results will not be immediate and the process will not be effortless. Health, by definition, is a state of physical, mental, and social well-being and requires a delicate balance of the three. The goal of the retreat center is to provide a space where all of these important aspects of health can be explored and discovered.

The idea of a retreat center is not new. Catholic leaders in Europe began the practice of the retreat in the early 1600s, where the custom mirrored Christ's forty days in the desert, and was mostly exercised in churches. Later, in the 1800s, annual ecclesiastical retreats were practiced in France and other countries. These retreats were designed for the secular clergy of the church as well as the regular orders, and lasted 20 to 30 days. In more recent years, the range of religion-based retreat centers has varied widely, from day or weekend retreats for men or women of the church, to summer camps for youth. All retreats are meant to provide guidance and new opportunities for the participants ("Retreats," 1914).

The atmosphere of the retreat can vary depending on host or participants, and can either be a solitary or community experience. While some retreats are held in silence and focused on the individual, others involve a great deal of conversation and encourage interaction between the participants.

Although the types of retreat centers have changed through the centuries as the needs of society have changed, the goals behind them have remained much the same. All have the common goal of temporarily removing oneself from the usual environment in order to become immersed in a particular subject matter. Spirituality, stress, health, lifestyle, social and ecological concerns are all reasons to attend a retreat. Companies have also recently begun to hold retreats to focus employees on key issues of communication, creative thinking and problem solving strategies.

Most recently, trends in society encourage individuals to spend thousands of dollars to attend weekend retreats aimed at "bettering oneself." While the concept of self-betterment is a noble idea, creating a retreat that only the wealthy can afford quickly extinguishes the goal. Betterment should not be a concept

accessible to those with money to spare, but for everyone who is interested.

Hidden Lake Health & Wellness Retreat, on the other hand, is a type of retreat center that has not been attempted often in the past. Aimed at educating the public about healthy choices and providing support for those who choose to make healthier decisions, the center is one of the first of its kind. The resources of the center will be available at an affordable cost, providing the opportunity for all willing participants to engage in the process. These participants will vary in age, physical condition, economic status, as well as ethnic and cultural background, but the facility will provide a well-rounded experience to all users of the space.

Now more than ever, a center is needed that facilitates and promotes health and wellness in a way that is approachable by any individual who chooses to enroll in the program. This facility will provide the users with a greater sense of empowerment to make healthy decisions in their daily lives. It will help conquer challenges and celebrate the accomplishments of the users, and express motivation throughout the campus.

Interactions with the built environment influence the behaviors natural to the human body; therefore, spaces that allow and celebrate positive behaviors will contribute to the progress in the journey toward a healthier life. If we can influence the behaviors, and in turn, the choices we make with aspects of the architectural design, we can improve the health of the users of the spaces.

The world is ready for change, and looking for the chance. Hidden Lake Health & Wellness Retreat provides that opportunity.

Many goals have been set to make this thesis project a success, and these goals exist in three separate, but connected environments: the academic, the professional, and the personal. Although this project is deeply rooted in personal interest and experiences, it has the ability to present itself in a way that everyone can relate to.

#### THE ACADEMIC

As an academic project, this thesis will become the capstone of my education. Although it is complex in nature, it will increase my abilities each step of the way. My interest in the subject will not only keep me motivated, but will challenge me to push the project farther in its functionality, technicality and expression.

By researching the healing powers of nature, as well as architecture's influence on behaviors, the thesis will express a more comprehensive understanding of the needs of the individual. It will exist as a research piece for thesis students in the future, and provide insight to current and future health concerns.

#### THE PROFESSIONAL

Professionally, the thesis will demonstrate the ability of architecture to extend beyond its stereotypical "shell" role, and become an experiential and influential space. Not only should it function well for the users of the space, but it should become a poetic expression of sustainable living choices. It should be environmentally conscious, and contribute to the site in a silent but powerful way.

#### THE PERSONAL

My desire to create architecture that influences the choices people make about their health is deeply rooted in my personal experiences with family.

Looking at just a small portion of my family – siblings, parents, and grandparents – the following conditions and disease have been found in one or more individuals: heart disease, stroke, breast cancer, gallbladder disease, hyperthyroidism, obesity and diabetes, as well as others. Conditions associated with these diseases are also present, such as high blood pressure and cholesterol.

I have sometimes joked that if I make it to 60 years old, given the family history, it will be a miracle. This reality suddenly became much less funny when I had child. My father had a very serious stroke at the age of 52, and although he made a remarkable recovery, it was an unwanted wake-up call. It breaks my heart to think that I may not be here to see my grandchildren or great-grandchildren grow up or raise families. What is even more heartbreaking is to think that I may be passing these conditions onto my daughter.

While some of these diseases may be passed down through generations, most or all of them may be preventable by choosing to live in a healthier way. Other conditions, such as obesity, are completely avoidable through healthy choices made on a daily basis. As a mother, I want what is best for my child, including health and happiness. Leading by example is one of the

best ways I can set her up for lifelong success.

Through the creation of a facility for the education and support of healthy living and access to sustainable forms of exercise and alternative medicines, choices and goals become achievable and the unreachable target no longer seems impossible.

The needs of the individual are the first priority in designing a facility such as Hidden Lake Health and Wellness Retreat. Influences on behavior and choices may be infinite, but they need to be considered carefully in order to create positive results.

The site for the new facility is located west of Lake Carlos State Park near Alexandria, MN and is directly adjacent to the west boundary of the State Park.

The entrance to Lake Carlos State Park is located 10 miles north of Alexandria on State Highway 29, and 2 miles west on Highway 38.

The site is accessible by foot or bike from all directions, and by car from the north, south and west. County Road 11 curves along the northern and western boundary of the site. On the southern border, Carlos Timbers Drive physically separates the site from the residential neighborhood to the south. Large birch and evergreen trees visually separate the two sites, making the nearby houses virtually invisible.

The following site analysis will include both qualitative and quantitative data to better understand the character and unique aspects of the site.



In plan, the site is vacant in terms of structure. The east of the site is a field, once used for farming, but now vacant. Looking east from the field, the state park and nearby trails are visible. Northern views from the site include a small cemetery and the northern boundary of the park.

The remaining land is covered in dense greenery. Views into the center of the site capture the thickness of the trees and undergrowth. Portions of the site are so densely covered that exploring them was impossible.

The site is visible from the state park on its eastern edge, as well as the two roads that border the area. Although the perimeter of the site is visible, much of the interior remains inaccessible both through views and by foot.

Much of the site remains in shadow due to the intense covering of trees and bushes. The eastern end of the site is bathed in sunlight for most of the day, and only slightly covered in shadows late in the afternoon or early evening.

In section, the tree height appears uniform overall. Looking closer, smaller trees and bushes fill in the bottom of the landscape. The east side of the site, where the field is located, is the only break in height.

The overall form of the landscape is uniform. However, low-lying areas such as ponds and swamps are located in at least four locations on the perimeter of the area. High areas are also located throughout the site, but are not as easily accessible.



The only known built structure on the site is an abandoned farmhouse in the southern portion. The farmhouse appears to be at least 100 years old, and is not directly accessible due to overgrowth. Also included in the area is a gravel driveway from Carlos Timbers Drive to the house.

Sunlight on the site varies depending on location. In the eastern field, intense sunlight brightens the field and bathes the area in a yellow glow. In the densest area of the forest, very little natural light is seen, and the area remains quite dark for most of the day. Sunlight peeks through between the branches, and occasionally provides intense warmth in an area that otherwise is much cooler.

Maple, basswood, aspen, oak, birch and evergreen trees are all present on the site, and create a visual landscape of browns and greens.

There are several water sources on the site; however, none of them are clean. These ponds appear to be permanent, natural landforms created by a natural dip in the landscape.

Vegetation on the site is a major influence on the wind. In the midst of the heavy vegetation, the air is very still, almost stuffy. In the eastern field, a breeze is present almost all the time. Direction and strength would depend on the time of year and the weather. The site shows very few signs of human interaction. Built structures have been abandoned for many years and the site appears to have reclaimed the land.



Hiking paths are worn away in the greenery from several years of use, and are the only visible interaction with the site.

Overall, the quality of the site is as expected for an area of this type. Dead trees are apparent, but expected in an area with this amount of growth; however, only a few were discovered through site visits, and are not a cause for concern. Additionally, no erosion is visible in accessible portions of the site.





Map Unit Symbol	Map Unit Name	Acres in Site	Percent of Site
Mh	Marsh	5.3	3.5%
NbB	Nebish Sandy Loam, 2 to 6 percent slopes	88.8	54.2%
NbC	Nebish Sandy Loam, 6 to 12 percent slopes	66.2	39.9%
NbD	Nebish Sandy Loam, 12 to 18 percent slopes	3.7	2.4%
Totals for Site		164.00	100.00%

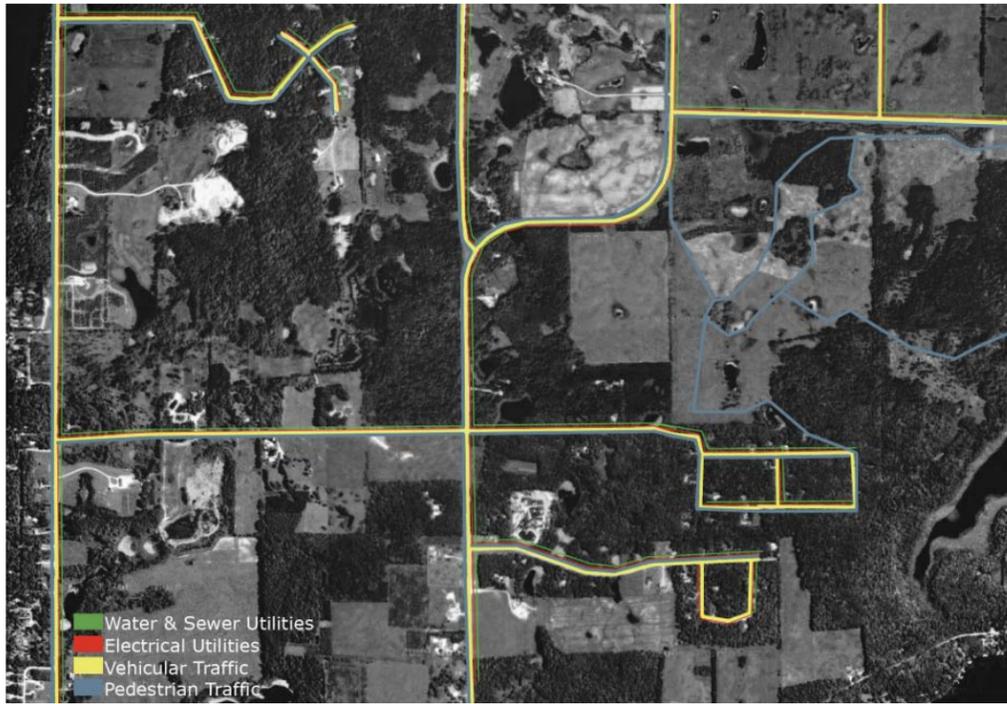
SOIL DESCRIPTIONS

*MARSH*

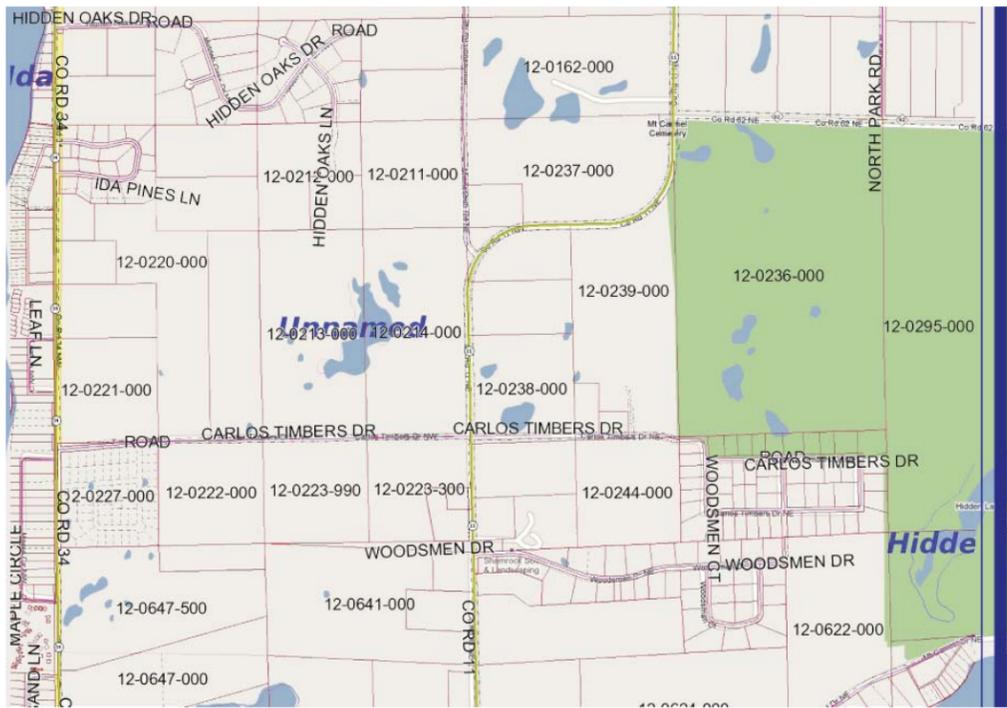
A marsh is a very poorly drained, water-saturated area. It is intermittently or permanently covered by water. It is an excellent wildlife habitat and is dominated by sedges, cattails, and rushes (US Department of Agriculture, 2010).

*NEBISH SANDY LOAM*

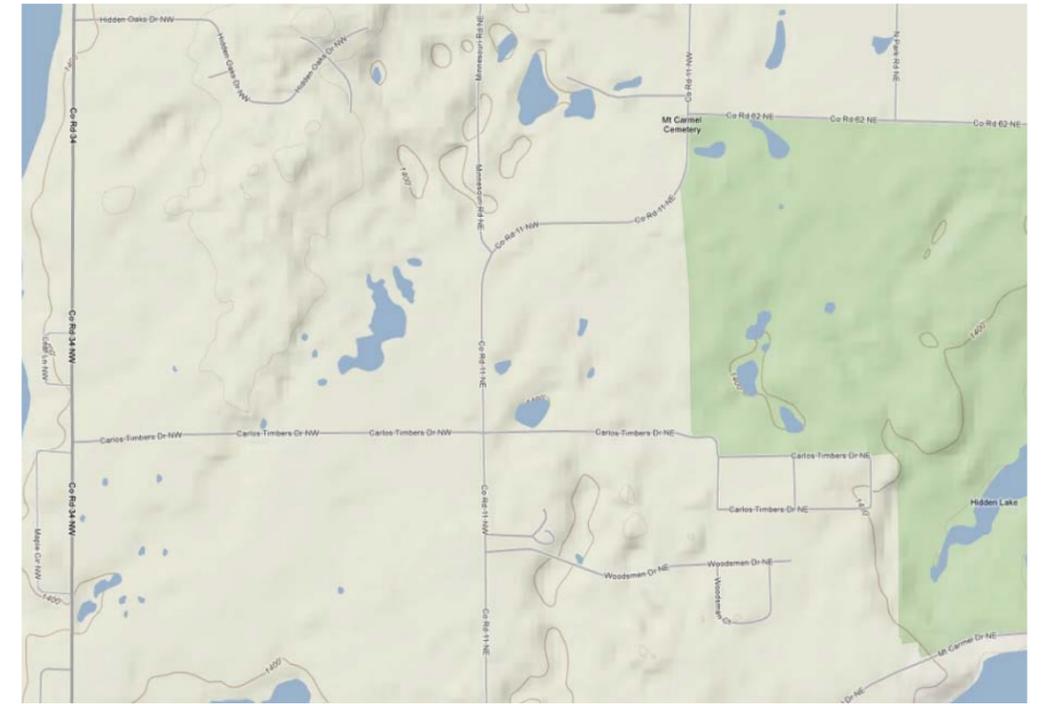
The Nebish series consists of very deep, well drained soils formed in loamy glacier till on glacial moraines and till plains. These soils have slopes of 2 to 40 percent and moderate permeability. The average annual precipitation is about 23 inches and the average temperature is about 42 degrees Fahrenheit (US Department of Agriculture, 2010).



This utilities and traffic map shows the location of electricity, water and sewer utilities, as well as vehicle and pedestrian traffic.



This base map shows parcel and plat lines, as well as the location of roads, swamps, streams, and other bodies of water.

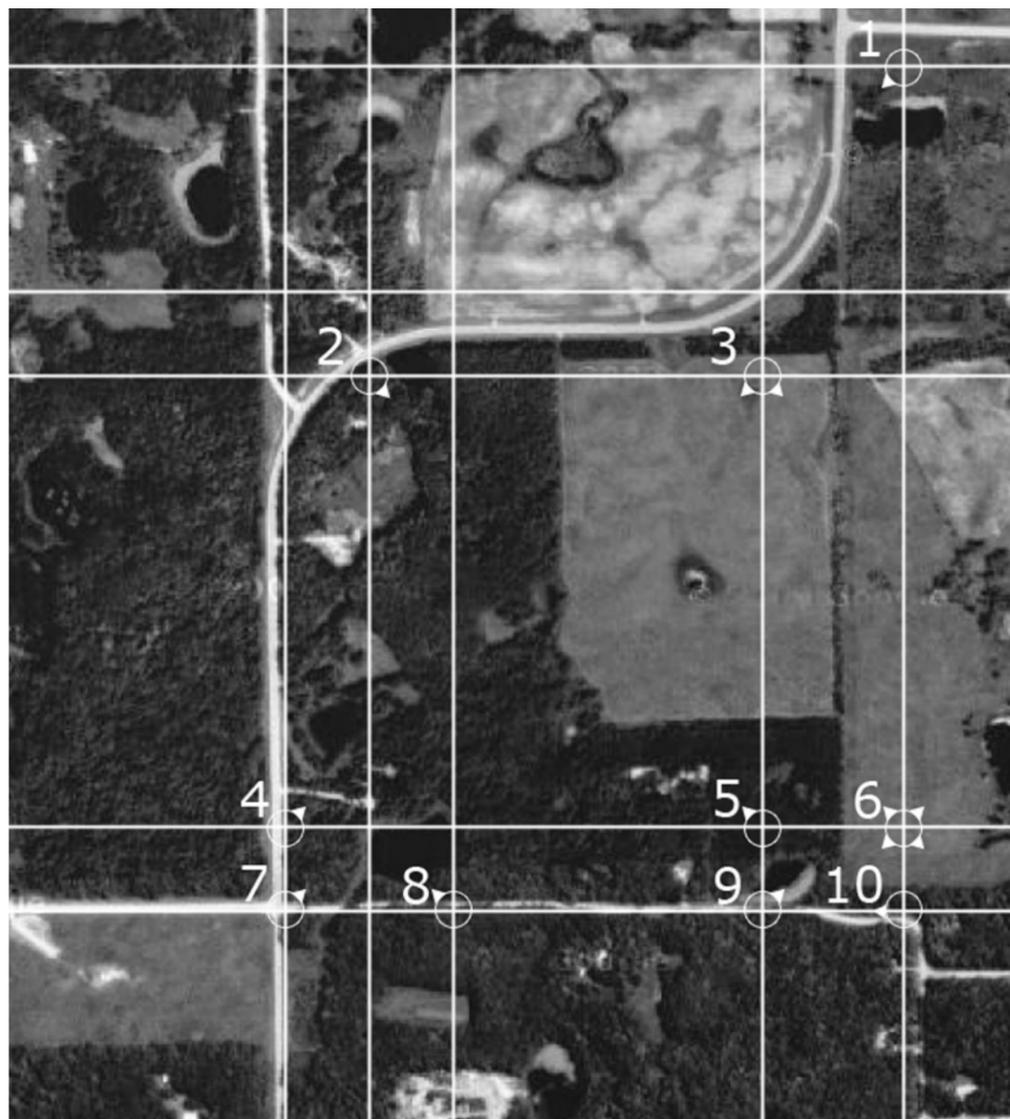


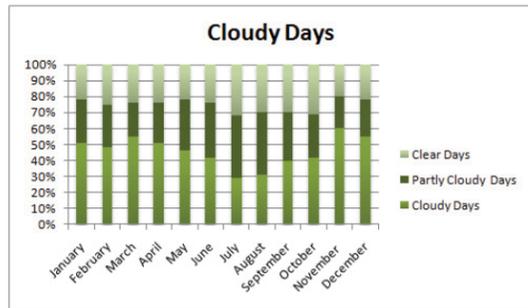
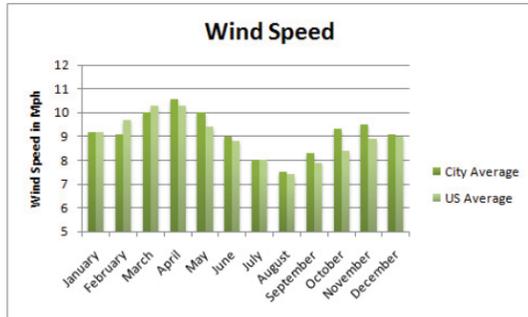
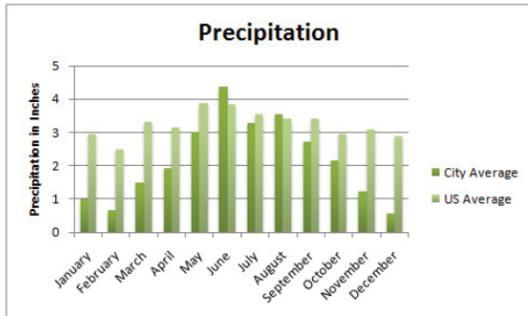
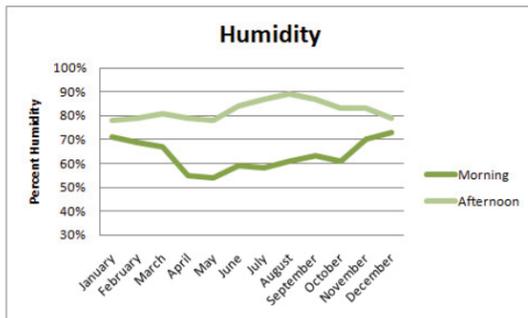
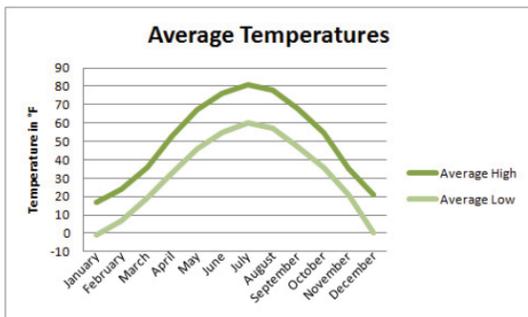
This terrain map shows contours and geological features.



This aerial image shows general vegetative cover and the location of trees.

RECONNAISSANCE GRID OF SITE IMAGES

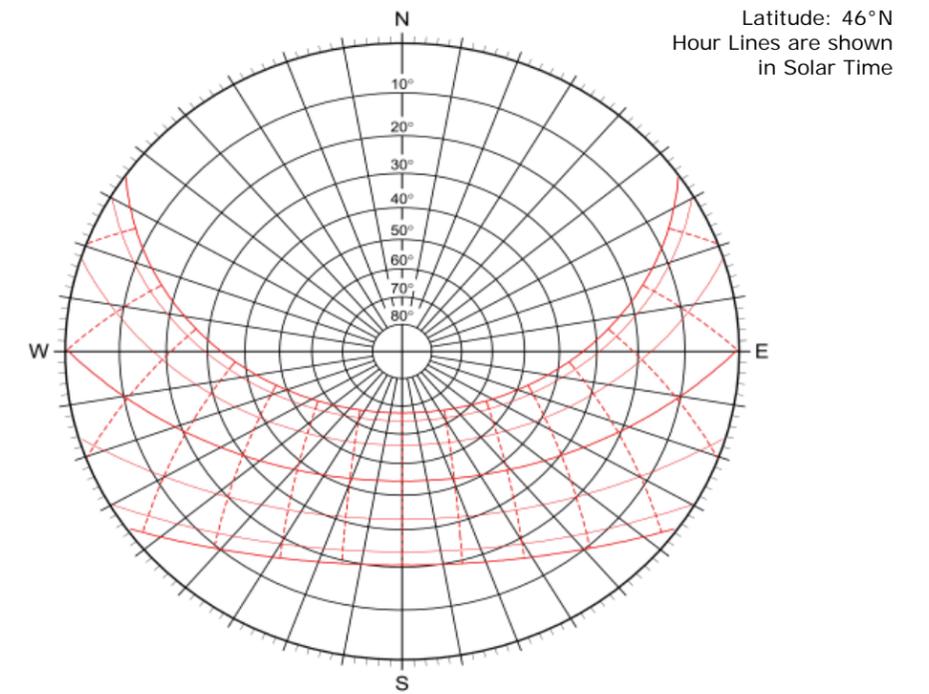




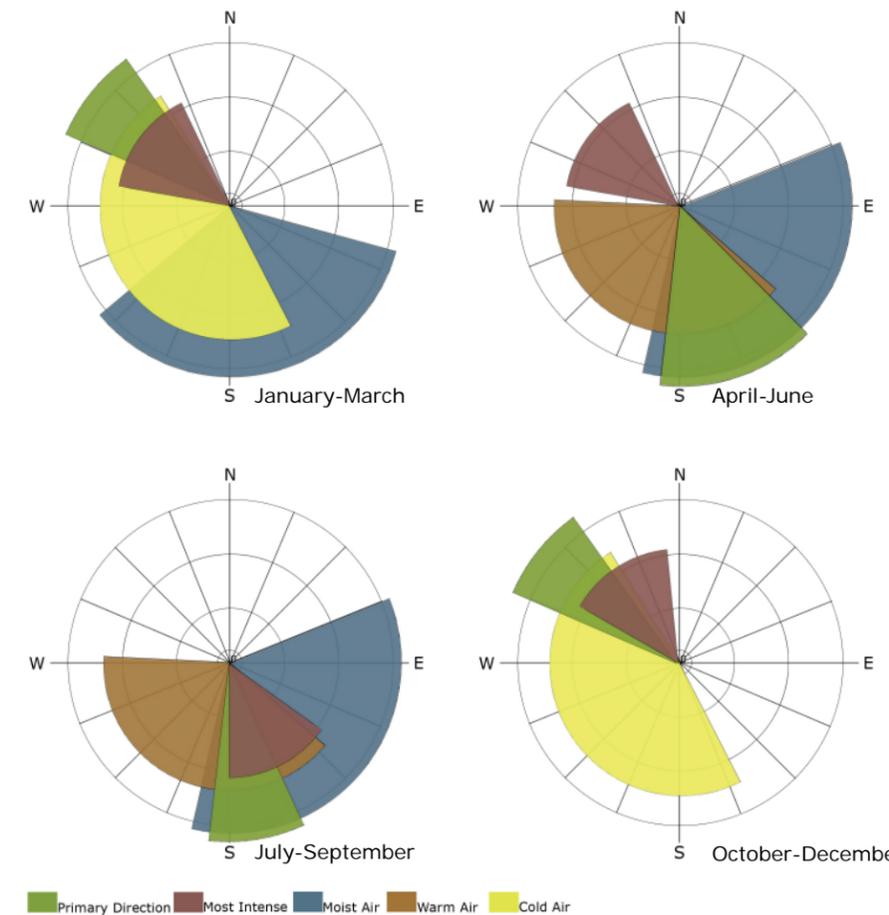
CLIMATE INFORMATION

The climate of the site is classified by a sub-humid, continental climate. Some of the greatest weather variety in the United States takes place in the Midwest, allowing the area to experience each of the four seasons. Summers are characterized as hot and humid, while winters are cold and long. Spring and fall are both times of great transition, and bring both a wide variety of temperatures and conditions ("Alexandria, MN," 2009).

The record high for the area is 114 degrees Fahrenheit, while the record low is 60 degrees below zero. An average of 21.6 inches of precipitation fall on the area each year, and the frost line ranges between three to five feet.



SUN PATH DIAGRAM FOR ALEXANDRIA, MN

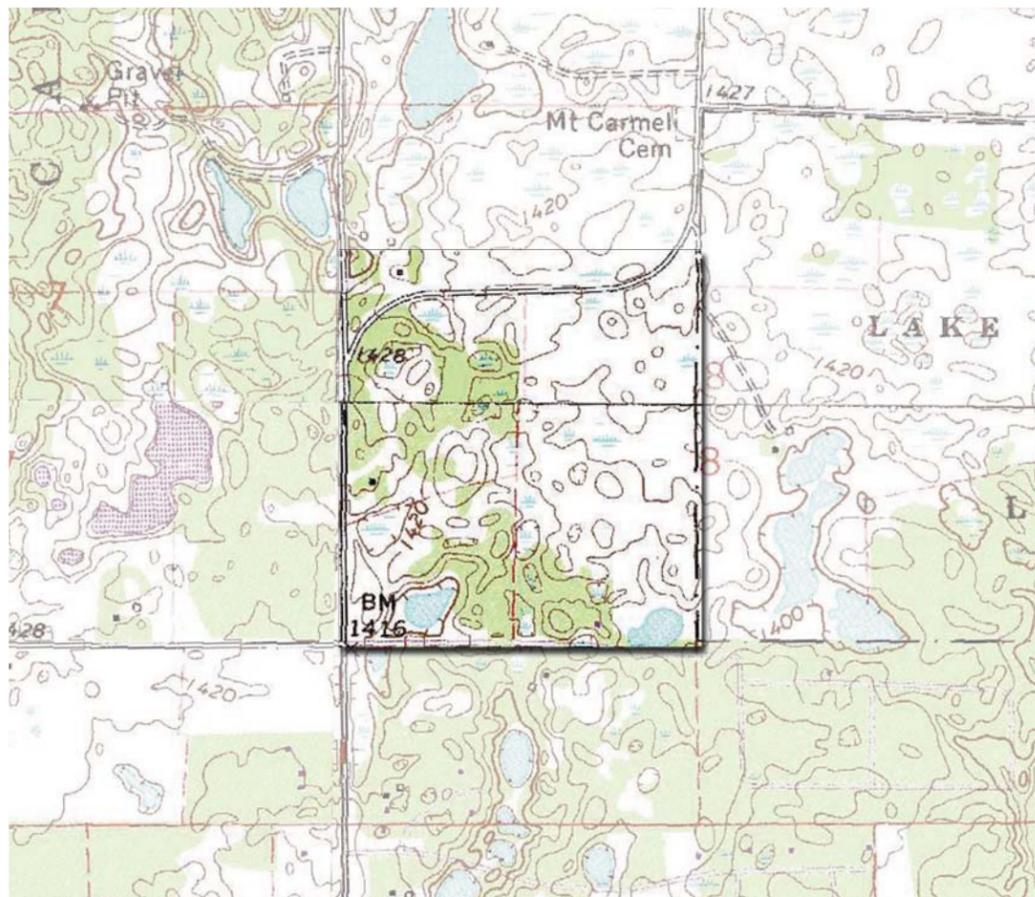


WIND ROSES FOR ALEXANDRIA, MN

Slopes of less than 12% are suitable for nearly all kinds of activity, making much of the site, nearly 90%, usable for any activity desired. Mild to moderately sloped hills are present throughout the area, creating a gentle rolling landscape that is perfect for casual hiking or biking. Little erosion is found on the site due to the mild slopes. Roughly 5% of the trees on the site would be categorized as dead or dying. This is an average and expected amount for the number of trees present.

The abundance of trees also contributes to the amount of shading present on the site. Deep in the woods, the ground remains in the shade all day long. Only slivers of light peek through the branches, allowing sunlight to pass through and warm the area below.

Trees also contribute to the peaceful nature of the site. Birds chirping, leaves rustling and the occasional car are heard in the distance, but much of the sound is absorbed before it even reaches the ears of the individual.



TOPOGRAPHY OF SITE

The following information is an estimate of the spaces at Hidden Lake Health and Wellness Retreat and their corresponding descriptions and sizes.

MAIN FACILITY

*COMMON AREAS*

Reception & Lobby	1,000 sq. ft.
Reception desk, sign-in and gathering space	
Storage	50 sq. ft.
Storage for files and records	
Toilets	2 @ 200 sq. ft.
Breakout Spaces	7 @ 200 sq. ft.
Gathering space for small group discussions	
<b>TOTAL</b>	<b>2,850 sq. ft.</b>

*SPIRITUAL SPACES*

Meditation Room	4 @ 220 sq. ft.
Self-reflection, music therapy, art therapy, and meditation space	
Chapel	1 @ 320 sq. ft.
<b>TOTAL</b>	<b>2,400 sq. ft.</b>

*THERAPY SPACES*

Small Group Therapy Room	3 @ 100 sq. ft.
Discussion space for about 10 participants	
<b>TOTAL</b>	<b>300 sq. ft.</b>

*TREATMENT SPACES*

Nurse's Station	200 sq. ft.
2 desk height workstation with visual control patient waiting	
Patient Waiting	200 sq. ft.
Seating for 10-12 participants	
Exam & Treatment Room	6 @ 100 sq. ft.
Consultation and treatment room	
Hydrotherapy	140 sq. ft.
Small exam room for hydrotherapy consultations and therapy	
Chiropractic	140 sq. ft.
Small exam room for chiropractic consultations and treatments	
Massage Therapy	140 sq. ft.
Small exam room for consultations and message therapy	
Acupuncture	140 sq. ft.
Small exam room for acupuncture consultations and therapy	
Supply Storage	300 sq. ft.
<b>TOTAL</b>	<b>1,860 sq. ft.</b>

*FITNESS SPACES*

Yoga/Pilates Room	2 @ 1,000 sq. ft.
Multipurpose space for group exercise	
Weight Training	730 sq. ft.
Physical therapy or casual weight training space	
Pool	4,030 sq. ft.
25 yard 4 lane pool with 6 foot deck around the perimeter	
Locker Rooms	2 @ 775 sq. ft.
60 Lockers, 1 private changing stall, 4 showers and lavatories	
<b>TOTAL</b>	<b>8,310 sq. ft.</b>

*EDUCATION SPACES*

Classroom	2 @ 575 sq. ft.
Multipurpose seating for 25	
Presentation Room	800 sq. ft.
<b>TOTAL</b>	<b>1,950 sq. ft.</b>

*STAFF SPACES*

Lounge/Breakroom	200 sq. ft.
Conference Room	275 sq. ft.
Mail/Workroom/Prep Room	175 sq. ft.
<b>TOTAL</b>	<b>650 sq. ft.</b>

*OFFICES*

Director's Office	250 sq. ft.
Physician's Office	6 @ 140 sq. ft.
Private office space for Chiropractor, Acupuncture, Hydrotherapy, and Massage Specialist, Nutritionist, and Physician Assistant used for workspace and consultations	
<b>TOTAL</b>	<b>1,090 sq. ft.</b>

*LIVING SPACES*

*SHORT-TERM LIVING SPACES*

Kitchen & Dining	1,800 sq. ft.
Kitchen and dining facility for guests staying in the short-term facilities	
Guest Suite	20 @ 350 sq. ft.
Includes 1-2 guest beds, a small seating area, desk, and bathroom	

*LONG-TERM LIVING SPACES*

Includes a private bedroom, living room, kitchen and bathroom	10 @ 800 sq. ft.
<b>TOTAL</b>	<b>16,800 sq. ft.</b>

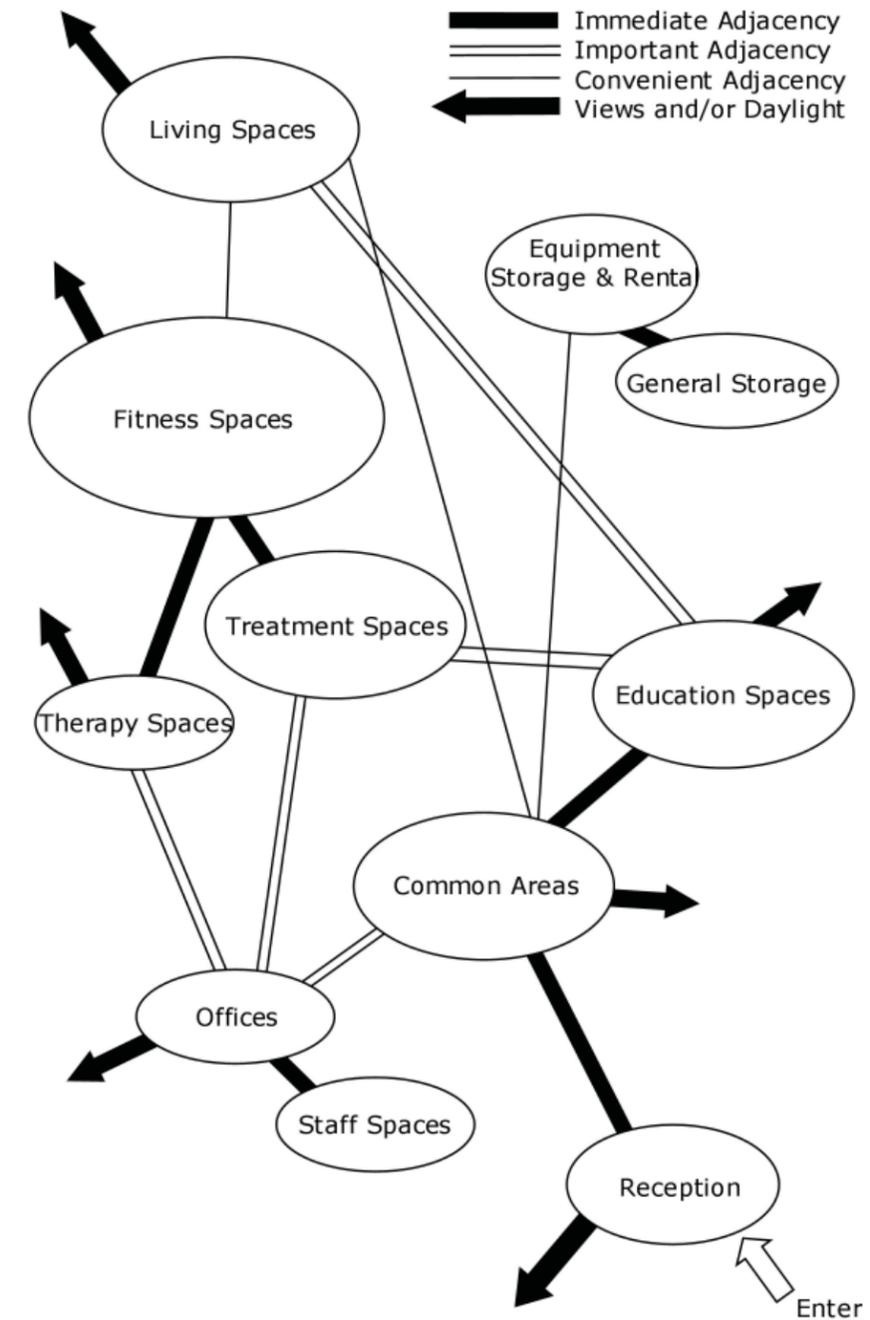
SQUARE FOOTAGE OF MAIN FACILITY SPACES	28,210 sq. ft.
Mechanical (8% of Space Square Footage)	2,250 sq. ft.
Circulation (12% of Space Square Footage)	3,400 sq. ft.

TOTAL SQUARE FOOTAGE OF MAIN FACILITY 33,860 sq. ft.

SQUARE FOOTAGE OF LONG-TERM LIVING SPACES 8,000 sq. ft.

**TOTAL SQUARE FOOTAGE OF RETREAT CENTER 41,860 sq. ft.**

Space	Square Footage	Quantity	Total Square Footage
<b>Main Facility</b>			
<b>Common Areas</b>			
• Reception & Lobby	1,000 sq. ft.	1	1,000 sq. ft.
• Storage	50 sq. ft.	1	50 sq. ft.
• Toilets	200 sq. ft.	2	400 sq. ft.
• Breakout Spaces	200 sq. ft.	7	1,400 sq. ft.
<b>Spiritual Spaces</b>			
• Small Meditation Room	220 sq. ft.	4	880 sq. ft.
• Large Meditation Room	320 sq. ft.	1	320 sq. ft.
• Chapel	1,200 sq. ft.	1	1,200 sq. ft.
<b>Therapy Spaces</b>			
• Small Group Therapy Room	100 sq. ft.	3	300 sq. ft.
<b>Treatment Spaces</b>			
• Nurse's Station	200 sq. ft.	1	200 sq. ft.
• Patient Waiting	200 sq. ft.	1	200 sq. ft.
• Exam & Treatment Room	100 sq. ft.	6	600 sq. ft.
• Hydrotherapy	140 sq. ft.	1	140 sq. ft.
• Chiropractic	140 sq. ft.	1	140 sq. ft.
• Massage Therapy	140 sq. ft.	1	140 sq. ft.
• Acupuncture	140 sq. ft.	1	140 sq. ft.
• Supply Storage	300 sq. ft.	1	300 sq. ft.
<b>Fitness Spaces</b>			
• Yoga/Pilates Room	1,000 sq. ft.	2	2,000 sq. ft.
• Weight Training	730 sq. ft.	1	730 sq. ft.
• Pool	4,030 sq. ft.	1	4,030 sq. ft.
• Locker Rooms	775 sq. ft.	2	1,550 sq. ft.
<b>Education Spaces</b>			
• Classroom	575 sq. ft.	2	1,150 sq. ft.
• Presentation Room	800 sq. ft.	1	800 sq. ft.
<b>Staff Spaces</b>			
• Lounge/Breakroom	200 sq. ft.	1	200 sq. ft.
• Conference Room	275 sq. ft.	1	275 sq. ft.
• Mail/Workroom/Prep Room	175 sq. ft.	1	175 sq. ft.
<b>Offices</b>			
• Director's Office	250 sq. ft.	1	250 sq. ft.
• Physician's Office	140 sq. ft.	6	840 sq. ft.
<b>Living Spaces</b>			
• Kitchen & Dining	1,800 sq. ft.	1	1,800 sq. ft.
• Guest Suite	350 sq. ft.	20	7,000 sq. ft.
• Guest Cabin	800 sq. ft.	10	8,000 sq. ft.
<b>Square Footage of Main Facility Spaces</b>			28,210 sq. ft.
Mechanical (8% of Space Square Footage)			2,250 sq. ft.
Circulation (12% of Space Square Footage)			3,400 sq. ft.
<b>Total Square Footage of Main Facility</b>			33,860 sq. ft.
<b>Square Footage of Long-Term Living Spaces</b>			8,000 sq. ft.
<b>Total Square Footage of Retreat Center</b>			41,860 sq. ft.



PROCESS DOCUMENTATION  
PROJECT SOLUTION  
PROJECT INSTALLATION

# DESIGN DOCUMENTATION

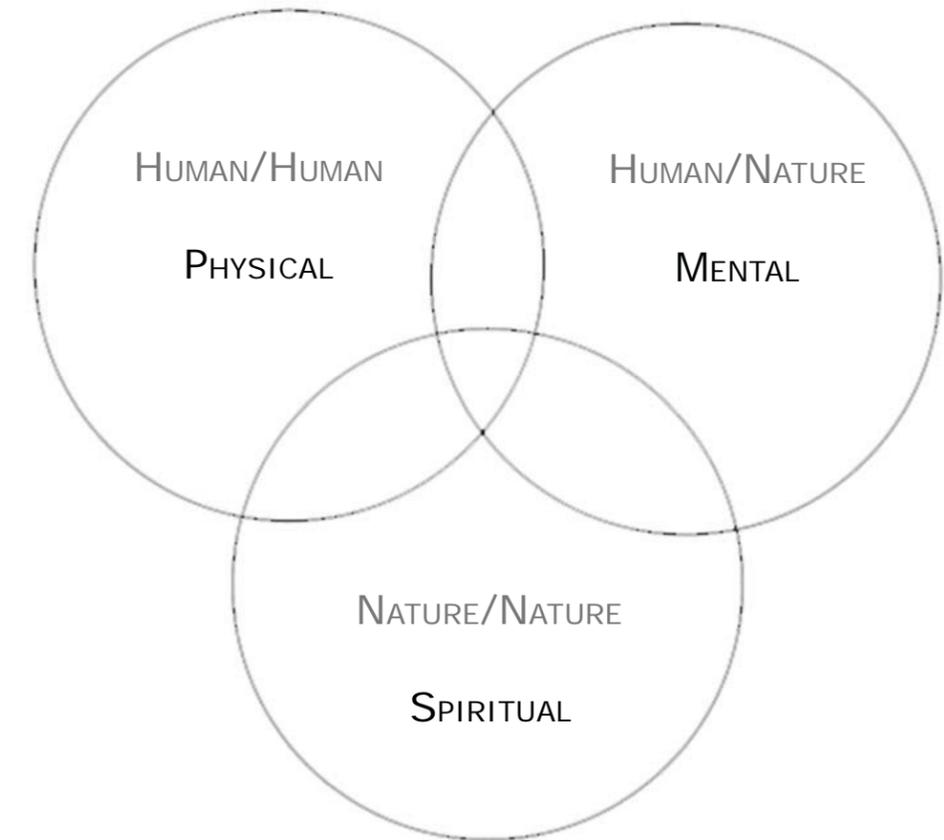
The image below is a sketch of a tree located on my grandparents' farm. The tree is over 20 years old, and surrounded by a large tractor tire at its base. It is impossible to separate these two elements without completely destroying one or both. Humans and nature need to be integrated together, and this important interaction and relationship became the basis for the process of the thesis project.



Interactions and relationships continued to play an important role as the project progressed, and are closely related to health and wellness.

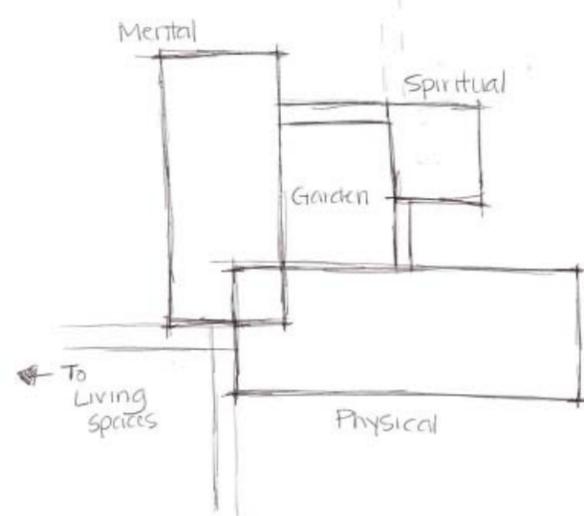
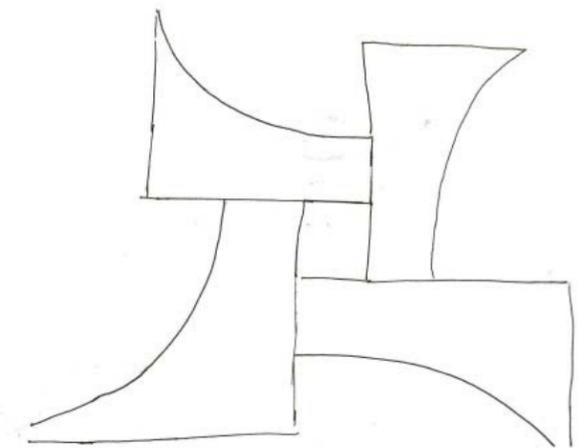
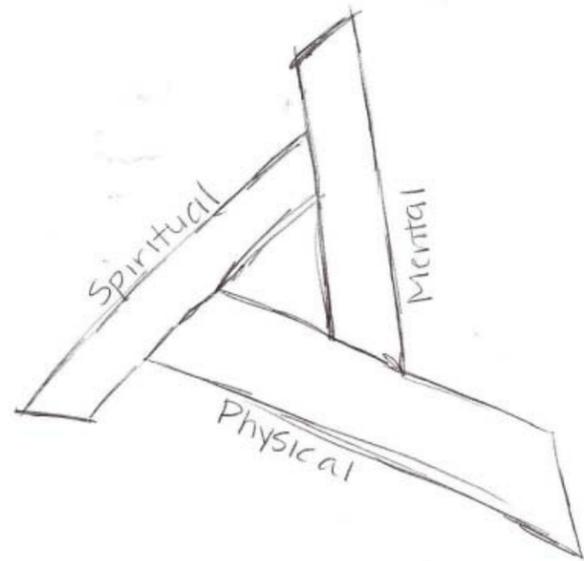
The mind, body and soul are closely related elements and one cannot be healed without treating the others. For example, the physical body cannot heal without mental and spiritual well-being. In the case of obesity, the weight loss can be treated through physical exercise and diet change, but little will change in the patient without a mental or spiritual change, such as discovering the emotional cause of the weight gain.

These relationships and interactions overlap and interconnect and create a powerful connection where complete healing and wellness can be achieved.

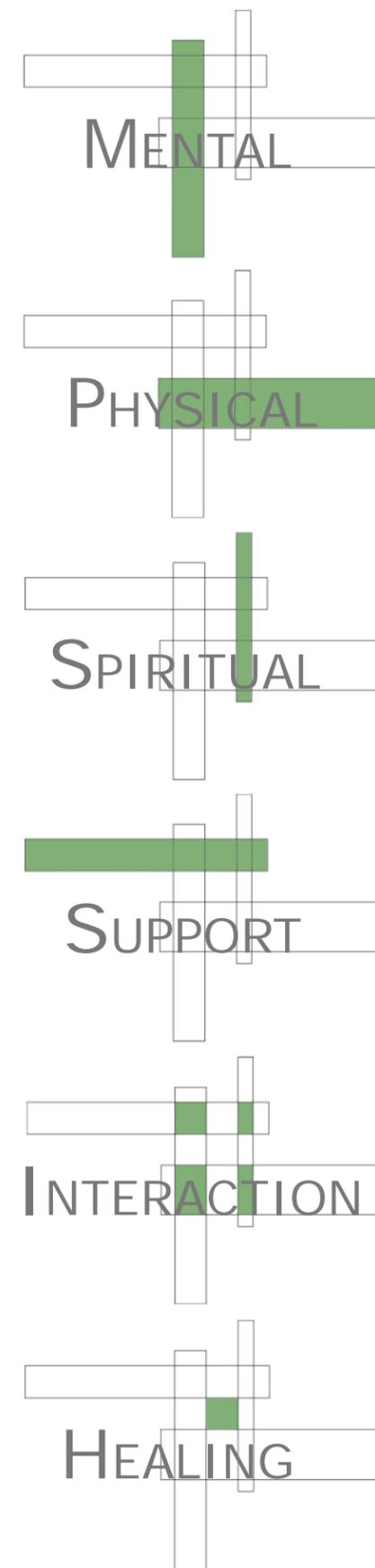


RELATIONSHIPS

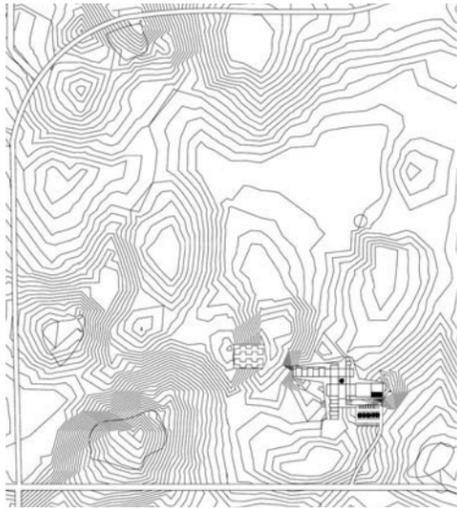
INTERACTIONS



As the project progressed, the organic nature of the original process emerged as a more linear form. A fourth element, in the form of a "support" wing was also added and provided guest suites that were connected to the facility to be used for weekend or short stays.



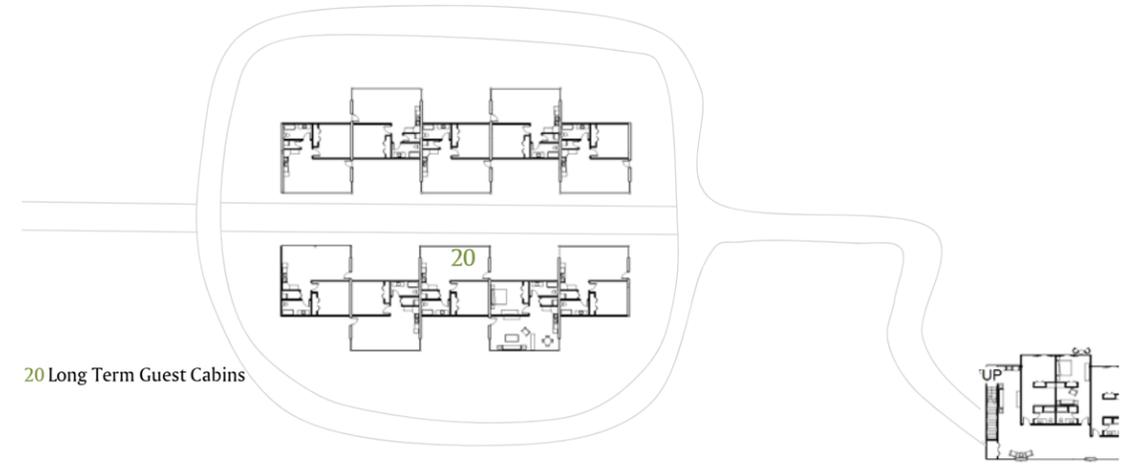
The final design consists of six spatial elements: mental, physical, spiritual, support, interaction, and healing. These individual elements interconnect to create powerful interactions throughout the facility.



SITE PLAN

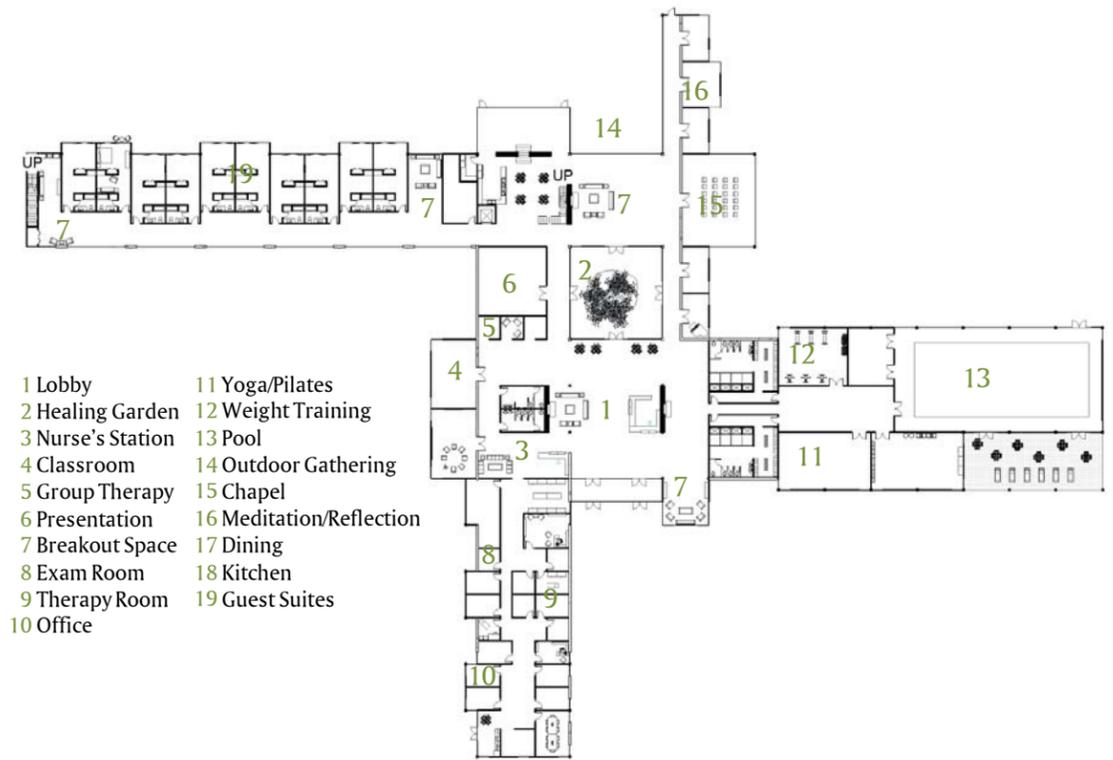


BIRD'S EYE PERSPECTIVE



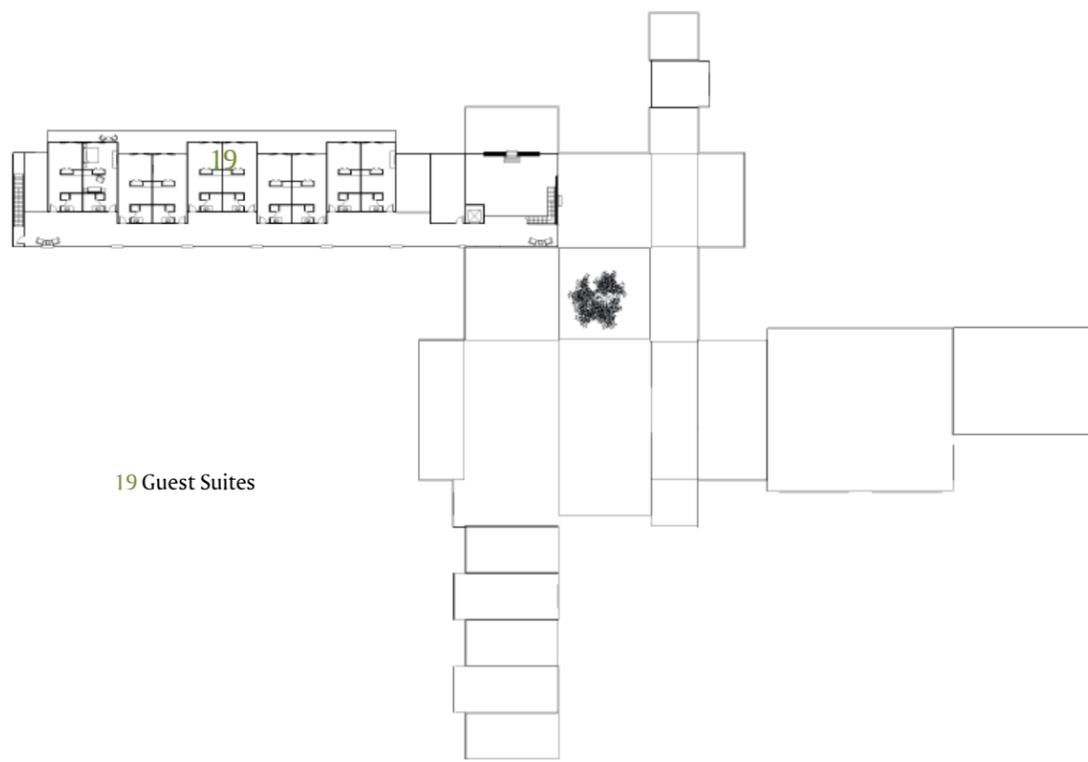
20 Long Term Guest Cabins

LEVEL 1: GUEST CABINS



- |                   |                          |
|-------------------|--------------------------|
| 1 Lobby           | 11 Yoga/Pilates          |
| 2 Healing Garden  | 12 Weight Training       |
| 3 Nurse's Station | 13 Pool                  |
| 4 Classroom       | 14 Outdoor Gathering     |
| 5 Group Therapy   | 15 Chapel                |
| 6 Presentation    | 16 Meditation/Reflection |
| 7 Breakout Space  | 17 Dining                |
| 8 Exam Room       | 18 Kitchen               |
| 9 Therapy Room    | 19 Guest Suites          |
| 10 Office         |                          |

LEVEL 1: MAIN FACILITY



19 Guest Suites

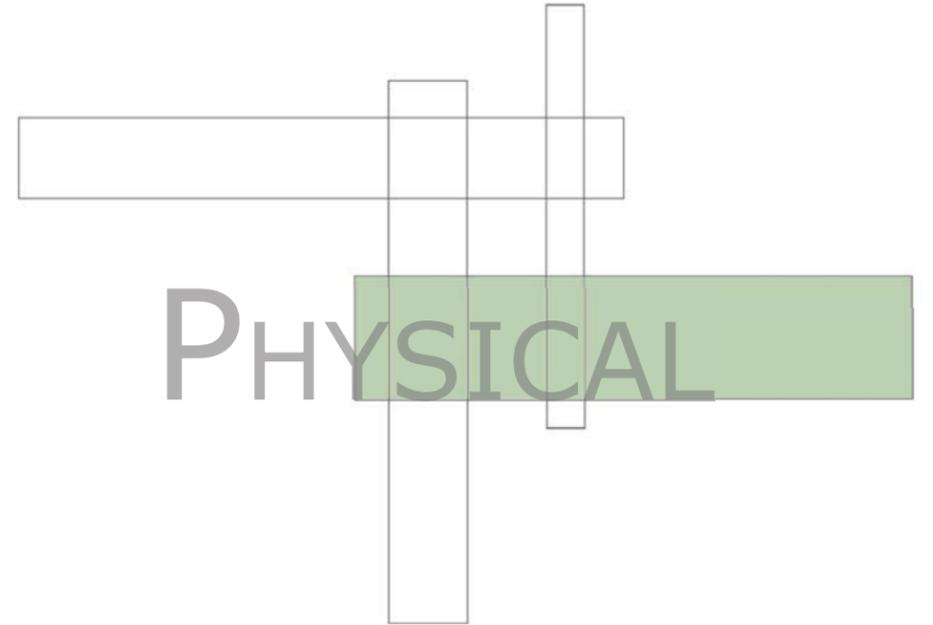
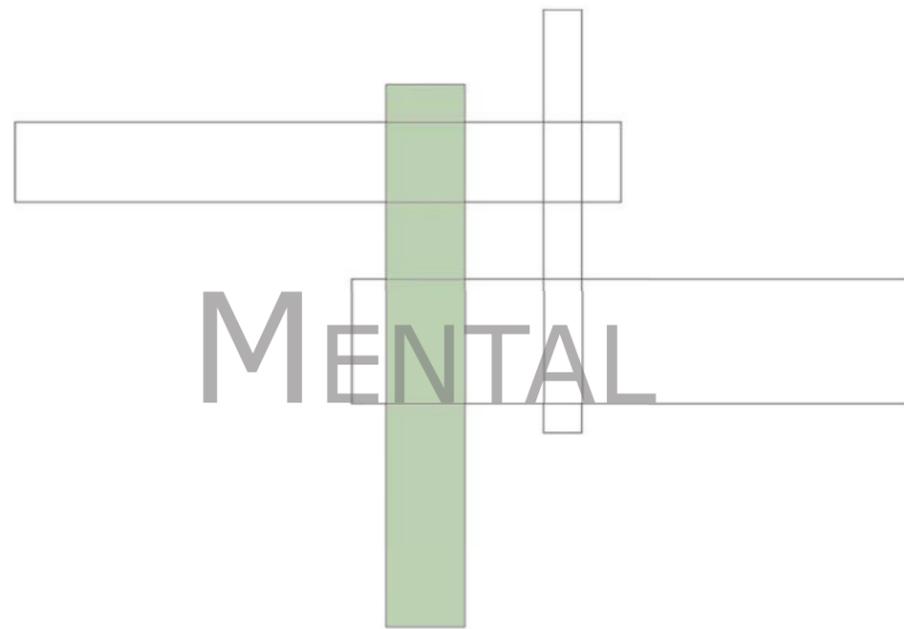
LEVEL 2



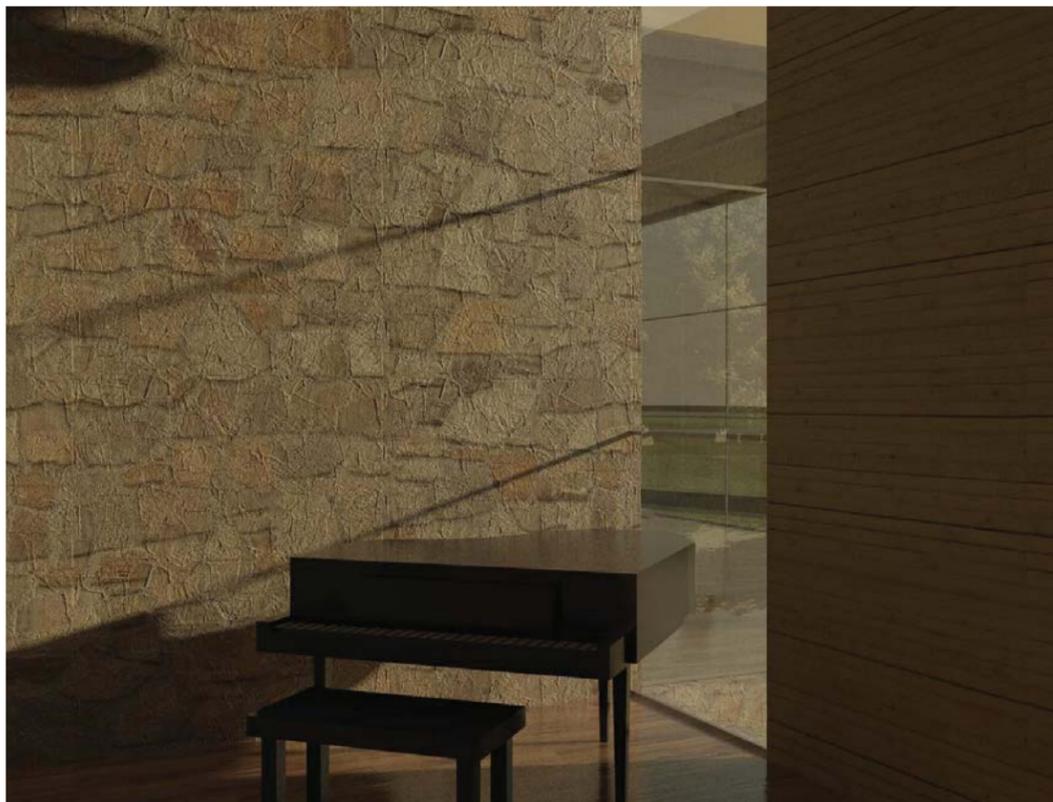
FRONT EXTERIOR



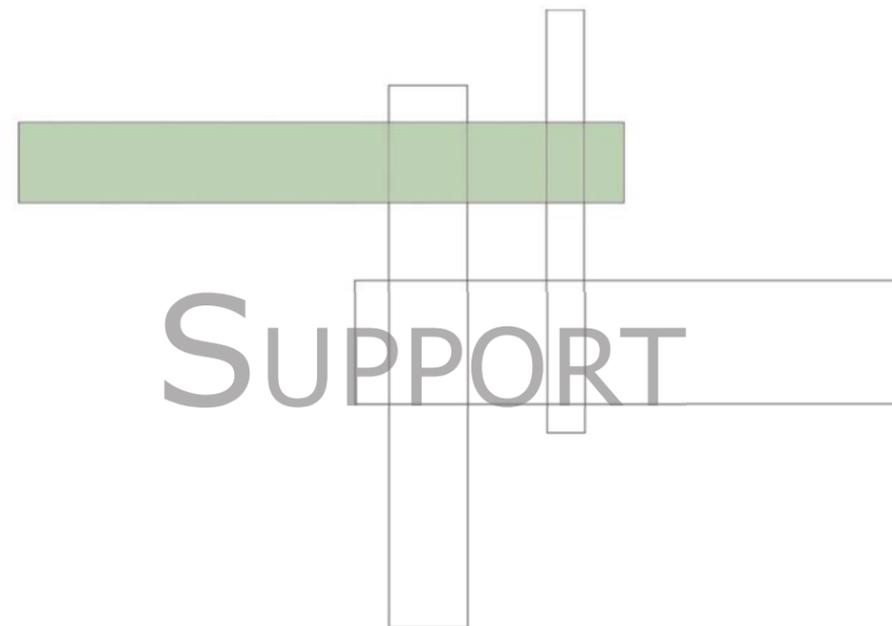
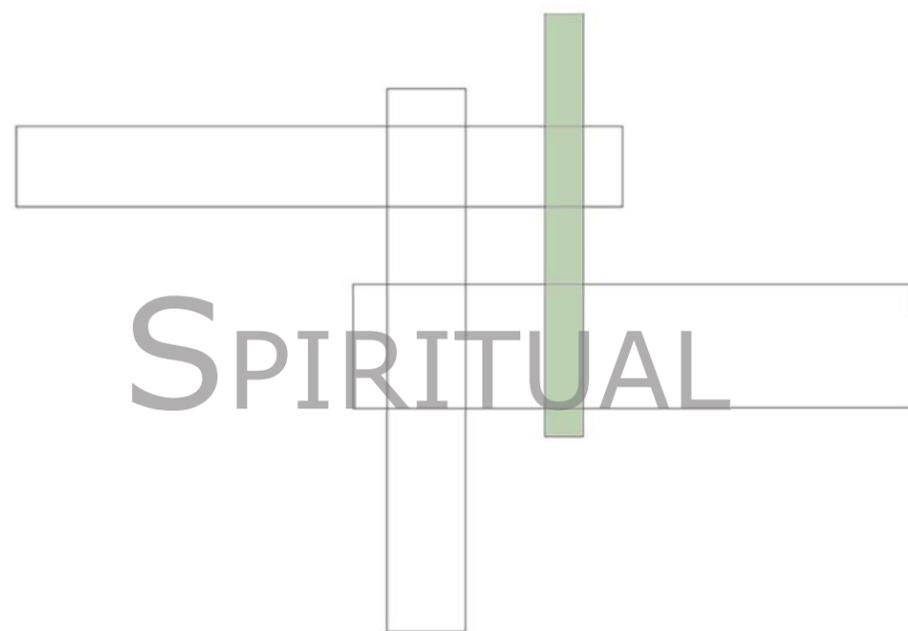
CLASSROOM



Pool



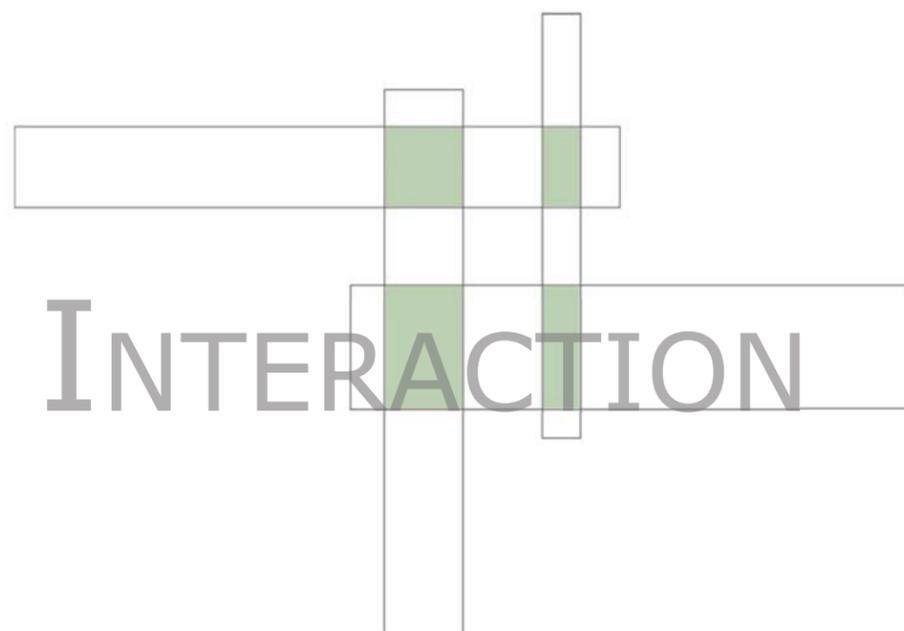
MUSIC THERAPY



GUEST SUITE



LOBBY



HEALING GARDEN



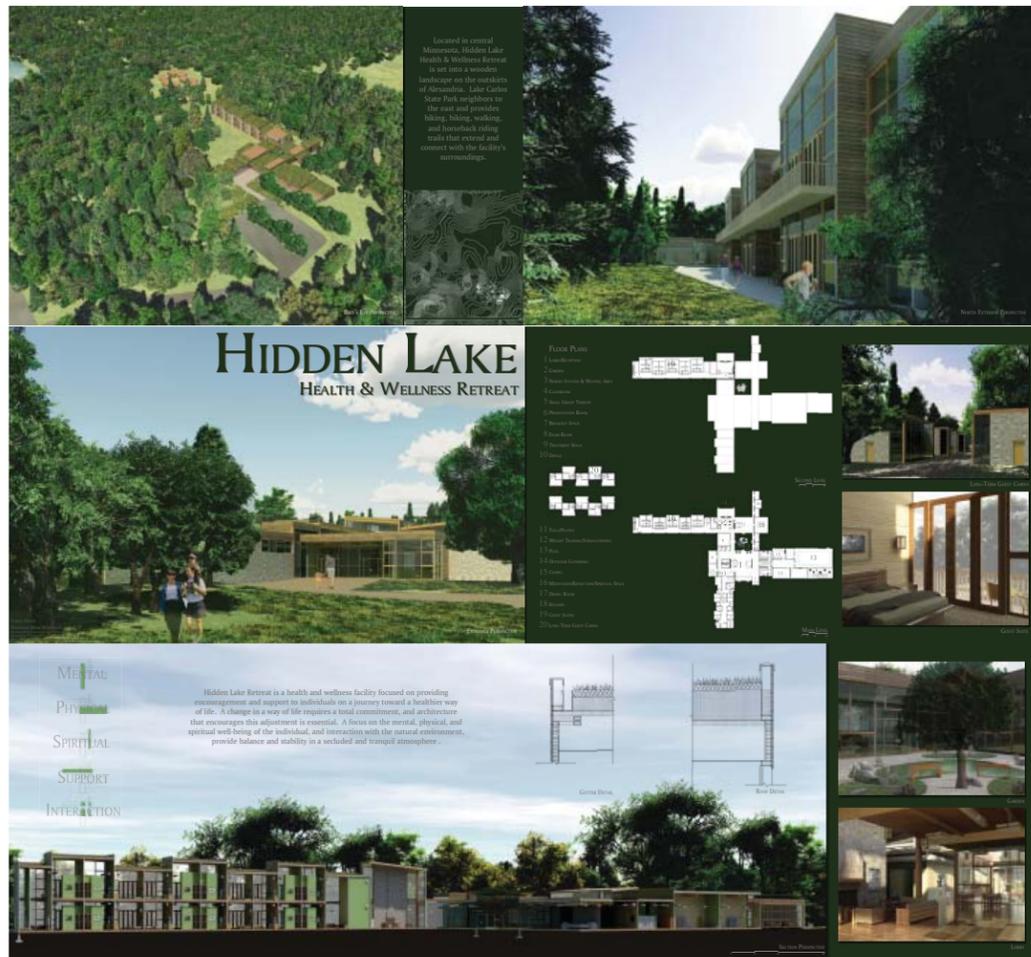
BACK EXTERIOR



HIKING PATH



LONG-TERM GUEST CABINS



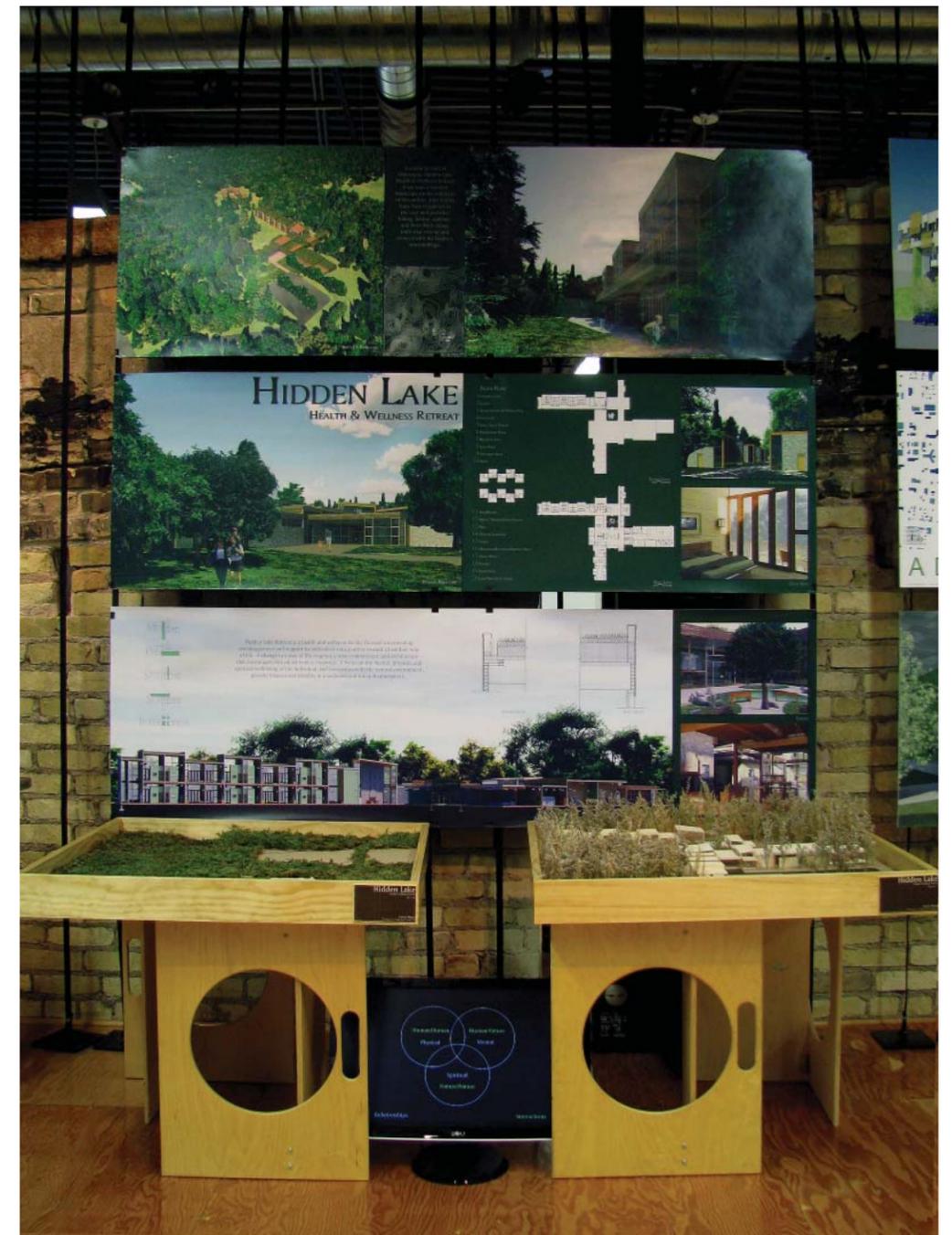
FINAL BOARDS



SITE MODEL



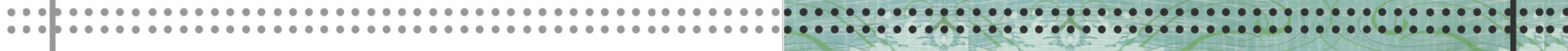
BUILDING MODEL

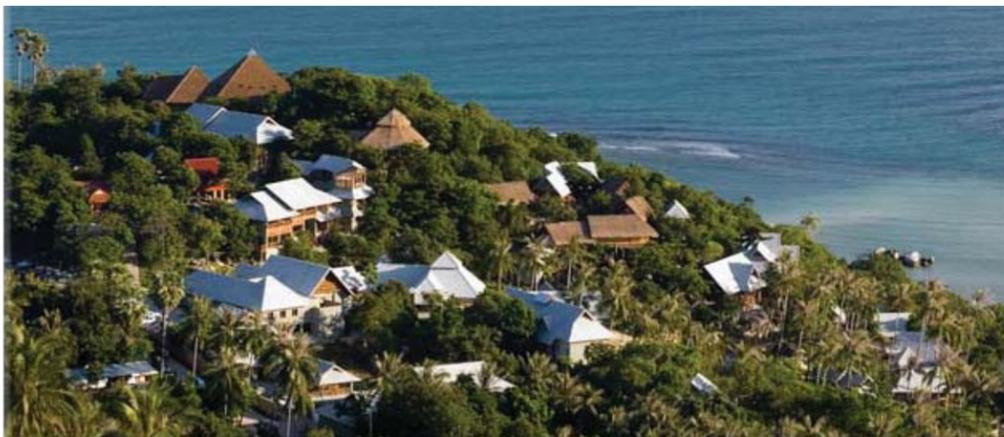


PROJECT INSTALLATION ON 5TH FLOOR OF RENAISSANCE HALL

KAMALAYA KOH SAMUI  
SEASONS RETREAT CENTER

# APPENDIX





## KAMALAYA KOH SAMUI

KOH SAMUI, THAILAND

The Kamalaya Koh Samui Wellness Sanctuary and Holistic Spa is located in Koh Samui, Thailand and offers a wide range of Oriental and Western healing techniques. Holistic wellness is the guiding principle behind the resort, and nearly every facet of the experience aims for the well-being of body, mind and soul. Not only does the resort introduce the visitor to a healthier lifestyle, it also aims to reconnect the body with the mind, and the healer and visionary within (Kamalaya Wellness Sanctuary & Holistic Spa, 2009).

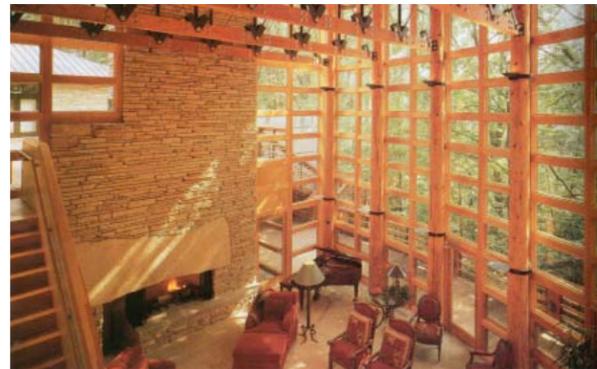
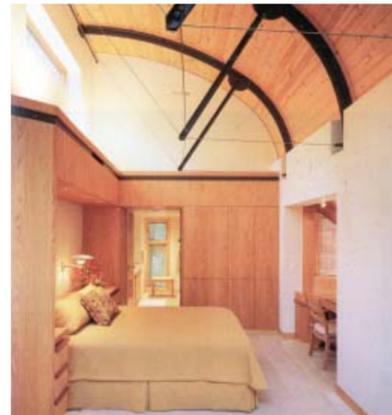
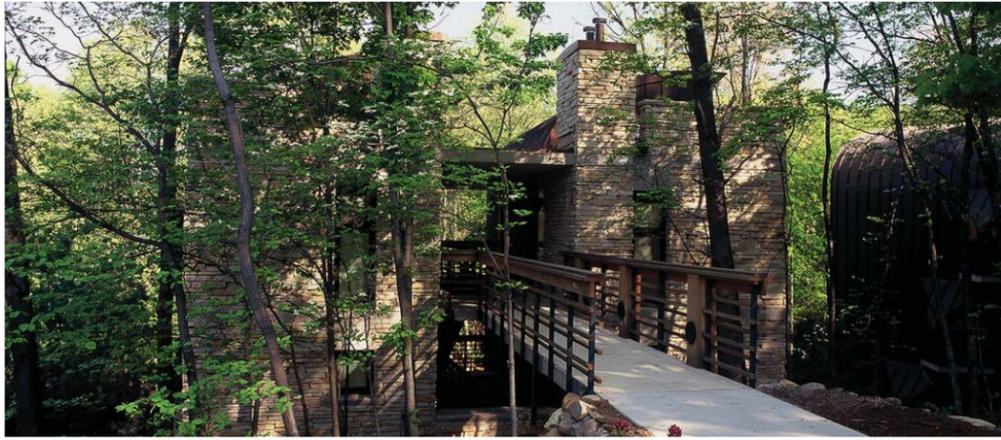
Three pillars create the foundation on which the resort is built:

- The Place: through the connection with nature, the elements and the universal energies.
- The Holistic Wellness: connect the body, mind, heart and emotions
- The People: connect with a diversity of people, healers, teachers and guests

Nine wellness programs provide the basis for the experience: healthy lifestyle, detox, stress and burn out, emotional balance, wellness a la carte, yoga, longevity, Asian alchemy, and awakening and meditation. Each of the programs focuses on a different part of the body or mental attribute in order to strength the whole being.

The resort facilities consist of guest suites, treatment and therapy spaces, and well as fitness facilities. Vernacular materials and a blending of indoor and outdoor spaces that interrelate further emphasize the focus on nature and the holistic experience.

The Kamalaya Wellness Sanctuary and Holistic Spa is continuously focused on the body, mind and soul and the connection and relationship between the three. Balance between the three is what creates a truly happy, healthy and balance individual, and the Kamalaya Resort strives to achieve this, much like the Personal Health and Wellness Retreat will do.



## SEASONS RETREAT CENTER KALAMAZOO, MICHIGAN

Located in Kalamazoo, Michigan, the Fetzer Institute works to bring the power of love and forgiveness to individuals and groups, and believes that these feelings are powerful forces that can transform human emotions, as well as physical conditions.

The Seasons Retreat Center, located near the institute, provides opportunities for retreats for the public and partners of the Fetzer Institute. According to their pamphlet, Seasons Retreat Center is designed "to facilitate purposeful work as well as contemplative practice, to foster a sense of community and well-being, to promote interaction and dialogue when needed, and to exemplify harmony with nature (Fetzer Institute, 2009, para. 1)."

Through the use of natural materials, warm and inviting colors, and access to nature, Seasons creates an atmosphere that encourages interaction at many levels. Community and conversation, as well as inward reflection and outward engagement are all important goals of the retreat center.

The center consists of a meeting house, 24 individual lodging units, a group dining room, large living room and other information breakout spaces. The buildings were constructed using materials native to the area, most from the Great Lakes basin, leaving as little impact on the surrounding landscape as possible.

The goals of this case study are much like the goals of the thesis project in process. Use of natural materials, interaction with the environment, and self-discovery and reflection are all important aspects of the design and need to be considered carefully as the spaces come to life.

Alexandria, MN. (2009). Retrieved from [http://www.alexandriamn.org/index.php/community/community\\_profile/](http://www.alexandriamn.org/index.php/community/community_profile/)

*Alexandria, MN.* (2009). Retrieved from <http://www.city-data.com/city/Alexandria-Minnesota.html>

Architects Bates Maher: Poustinia, Tipperary, Ireland, 2005. (2006). *A & U: Architecture & Urbanism*, (8), 64-71.

Bynum, W.F. (2001, November). Nature's Helping Hand. *Nature*, 414(11), 21.

Centers for Disease Control. (2008). *National Center for Environmental Health*. Retrieved from <http://www.cdc.gov/nceh/information/about.htm>

Chiras, D. (2003). *Human Body Systems*. Sudbury, MA: Jones and Bartlett Publishers.

Cramer, N. (1999). Plain spoken. *Architecture*, 88(10), 100-105.

Fetzer Institute. (2009). Seasons. Retrieved from <http://www.fetzer.org/retreat-facilities/seasons/seasons-overview>

Gallup, J. (1999). *Wellness Centers: A Guide for the Design Professional*. New York, NY: John Wiley & Sons.

*The Healing Power of Nature*. (2003, April 30). Retrieved from <http://www.psychologytoday.com>

Kamalaya Wellness Sanctuary & Holistic Spa. (2009). Thailand wellness sanctuary and holistic spa resort. Retrieved from <http://www.kamalaya.com/>

The Minnesota Department of Natural Resources. (2009). Retrieved from <http://www.dnr.state.mn.us/sitertools/copyright.html>

Olson, S. (2002). Mott Children's Center. *Architectural Record*, 190(7), 144-146.

Retreats. (1914). *Catholic encyclopedia*.

Seidel, C. (2002). *Basic Concepts in Physiology*. New York, NY: McGraw-Hill.

*Stereographic Sunpath Diagram*. (n.d.). Retrieved from [http://luxal.eu/resources/daylighting/docs/sunpath\\_46\\_north.pdf](http://luxal.eu/resources/daylighting/docs/sunpath_46_north.pdf)

Thayer, R. (1994). *Gray World, Green Heart*. New York, NY: John Wiley & Sons, 1-15.

U.S. Army Corps of Engineers. (1997, September). Design Guide for Interiors. *Engineer Design Guide, 1110-3-122* Retrieved from <http://140.194.76.129/publications/design-guides/dg1110-3-122/>

U.S. Department of Agriculture, Natural Resources Conservation Service. (2010). *Web Soil Survey* Retrieved from <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>

*Wind Rose for Alexandria, MN (KAXN)*. (2004). Unpublished raw data, Minnesota Climatology Working Group, University of Minnesota, St. Paul, MN. Retrieved from <http://climate.umn.edu/wind/kaxn.htm>

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HOMETOWN

Alexandria, MN



NDSU is a school that creates big opportunities with a small campus atmosphere, while providing real life experience and preparing graduates for lifelong success.

