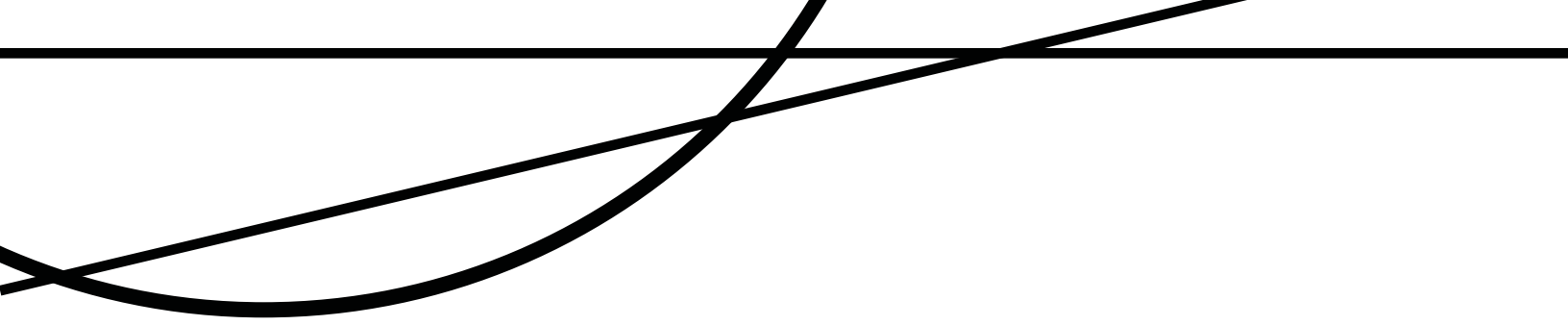




Matilda's House



# Matilda's House

A DESIGN THESIS SUBMITTED TO THE DEPARTMENT OF ARCHITECTURE AND  
LANDSCAPE ARCHITECTURE OF  
NORTH DAKOTA STATE UNIVERSITY

BY

AMANDA KOHN  
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE OF  
MASTER OF ARCHITECTURE

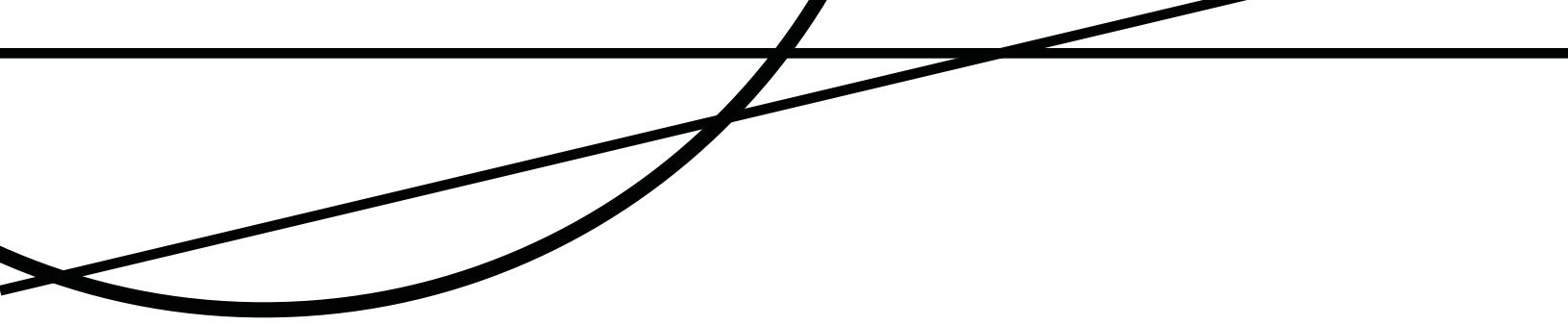


PRIMARY THESIS ADVISOR

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FARGO, ND  
MAY 2010



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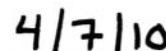
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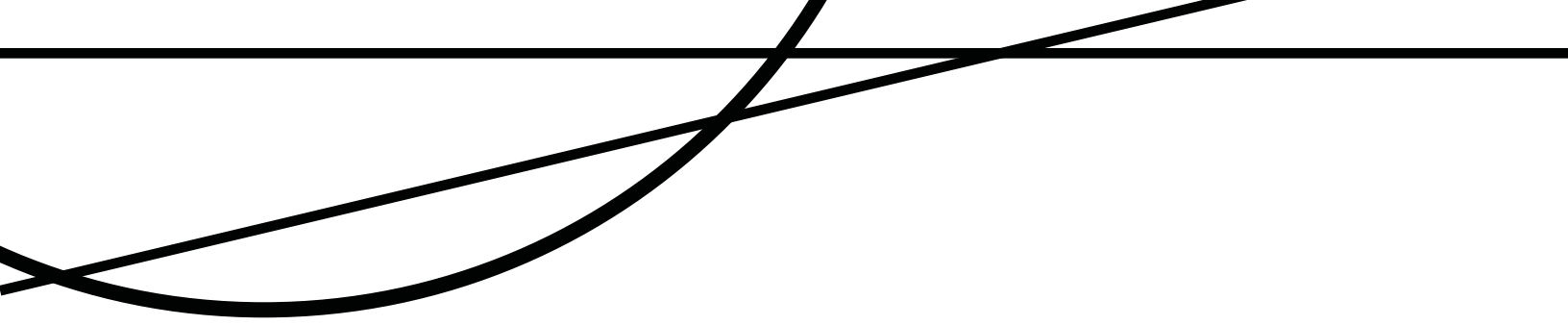
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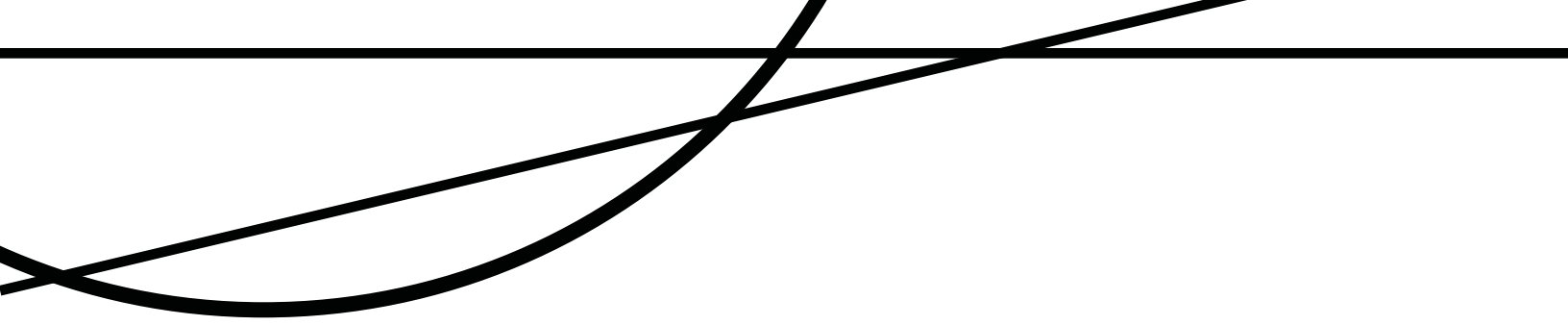


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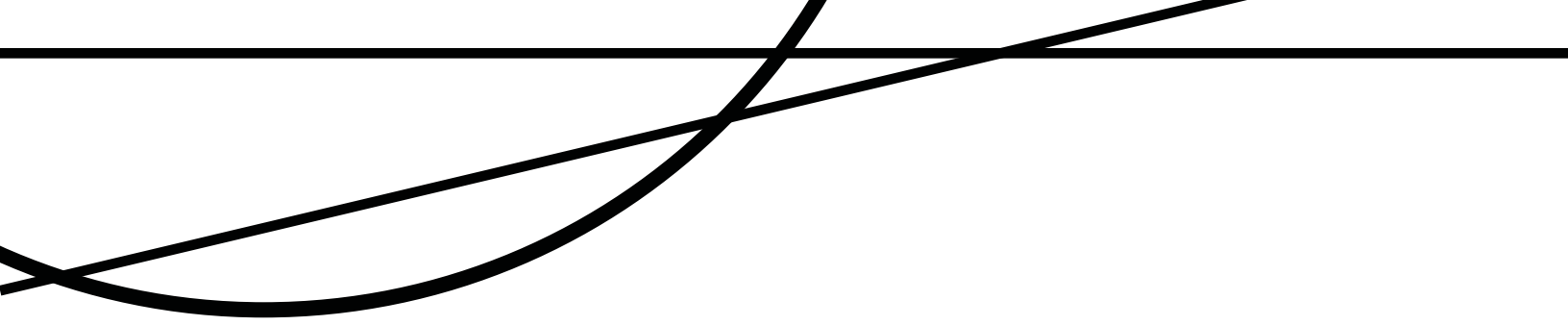


# Abstract

Suffering is part of the human condition, and, thus, so is healing and comfort.

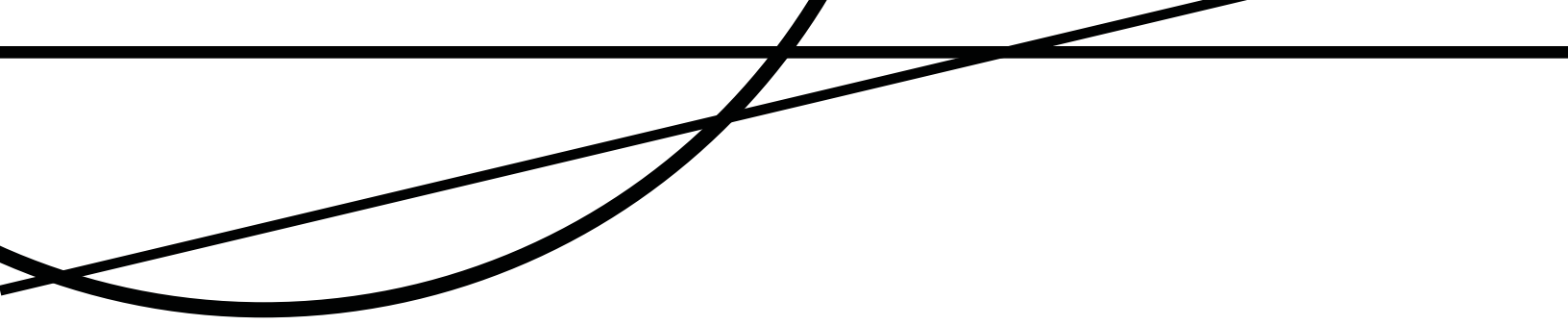
An architecture that can foster the healing process and the restoration of balance between mind, body, and soul brings to light the true meaning in architecture. Herein, is an investigation in the design of a 12,000 square foot transplant house that seeks to incur such a space of healing and comfort.

Located near the transplant center at the University of Minnesota Medical Center in Minneapolis, Minnesota, it will act as a home away from home for transplant patients and their families.



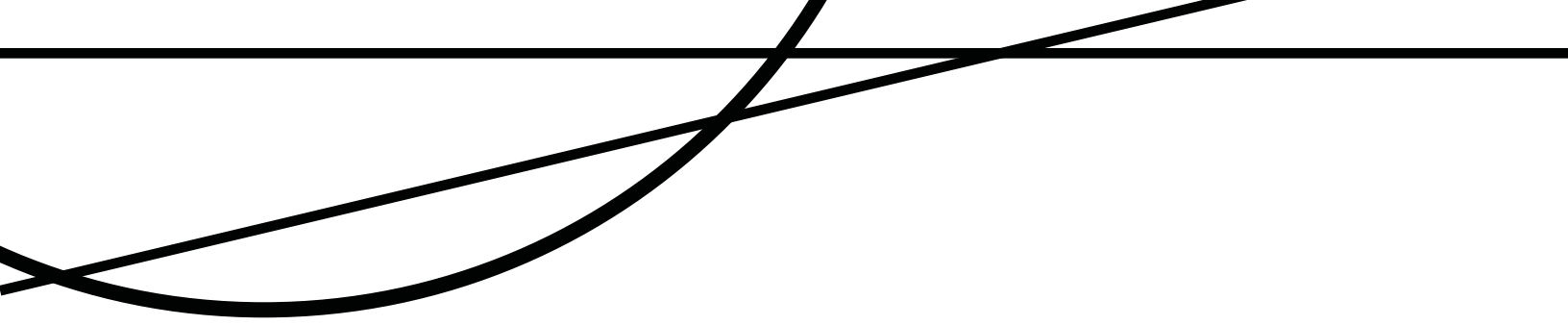
## Problem Statement

How does one receive healing or comfort, receive consolation, or relief from sadness, sorrow, pain, or worry and receive the strength to hope and continue living? How can architecture respond to this?



# statement of Intent





# Statement of Intent

## **Typology**

A temporary residence for transplant patients, their families, and in special cases, the families of deceased donors.

## **Theoretical Premise/Unifying Idea**

Comfort and healing is received by people through a balance of closeness, community, and personal freedom or "space." Architecture can foster this air of sociability by providing a place for people to gather and support each other. It can also provide a sanctuary, or a refuge, where one can be alone.

## **Supporting Premise**

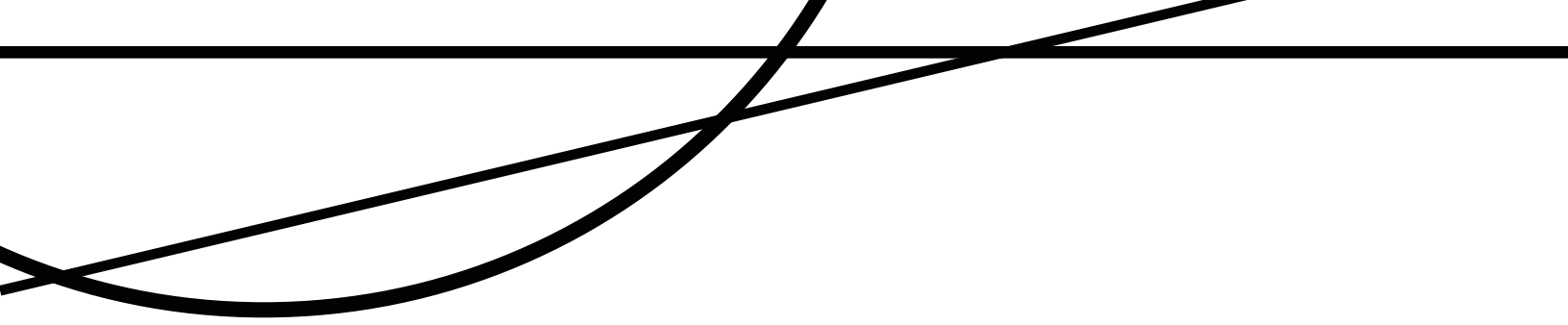
The built environment is an integral part of our existence. It has the ability to positively or negatively affect our lives. It can provide a place of comfort, or it can be a comfort in itself. Such a provision is necessary and desired for relief or solace from the crises we all face in life. The places we return to, where we call home, should be designed, not only for function, but also as spaces where personal freedom is preserved. Spaces that we can return to peace in ourselves, and spaces where comfort can be received and hope restored.

## **Conclusion**

Through good design, a home is a place where one's need for comfort can be met through interaction with others or solitude in a safe haven, that is, in our connection or relationship with what surrounds us.

## **Project Justification**

The idea of comfort is one of the most intimate and personal issues in every person's life. How it is received may vary in form, but it is fundamentally based on the same starting foundation. An architecture that is sensitive to this needs to be further realized in today's society where often, little thought is put into building beyond pure physical function.







Proposal

## Narrative

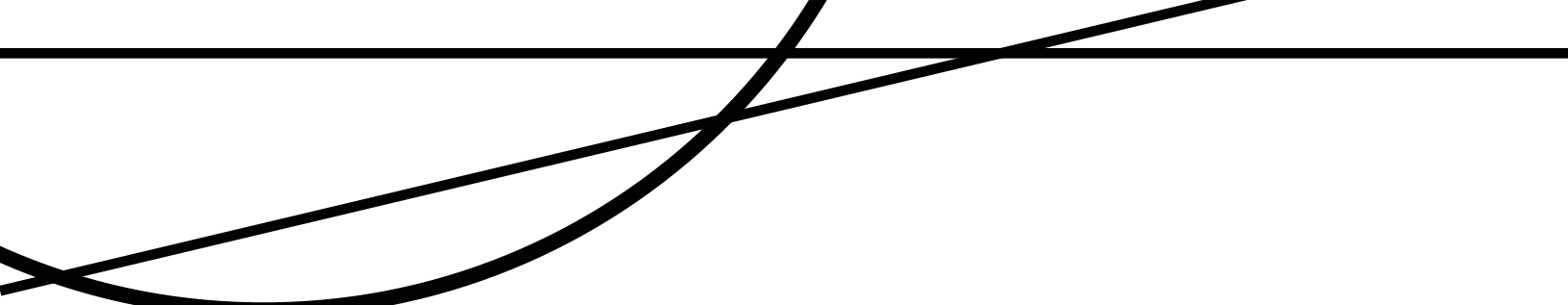
For more than 30 years, my grandfather battled liver disease. In 1991, when I was only 5 years old, he was told that without a new liver he would die, possibly within days. Because of the nature of his disease, a living donor would not suffice, so he was placed on the transplant list. It wasn't long before he got a call that a match had been found. He got a new chance at life. Through all of this, my grandma and mother often stayed at the Gift of Life Transplant House in Rochester, Minnesota. It provided a home for them close to the hospital that included even the most basic things such as a laundry room that allowed them to focus much more on my grandpa and his recovery. Unfortunately, because children often carry a lot of germs, no one under the age of 18 was allowed in the house, so we stayed home, and would never have gotten the chance to say goodbye had he died. Also, because of the privacy policies surrounding such a transplant, he does not know who saved his life. He never got to thank the family of the donor who had died and given him another chance. Throughout my childhood, he was very involved in my life. We went camping with him. He told us fascinating stories from his childhood. He was a real testimony to hope and living life to its fullest.

When I was a senior in high school, his liver failed again and death was almost inevitable. Hesitantly, he got placed back on the transplant list for a second time. His chances of getting a match were much slimmer, and even the odds of surviving the surgery were significantly lower than the first time. That fall, as my mother and I drove up to NDSU for my first college visit, she received a call that a liver had been found and surgery scheduled for the next morning. She rushed back to Rochester to be with him and my grandma, again staying at the transplant house there. Miraculously, everything went smoothly. Again, he was faced with the burden of wondering why he was alive while two other people had died, saving his life.

Just a few years later, as expected, the disease returned. This time, he would not be put on the transplant list. After trying every known method to slow the disease, his doctor sent him home, telling him that there was nothing he could do. Last June, just days before my youngest brother, who wasn't even a year old when he received his first transplant, graduated from high school, my grandfather passed away. I'll never forget the last time I saw him, just days before he died. As I left his house to drive back to my job in South Dakota, he hugged me goodbye with tears in his eyes, knowing it was goodbye forever. He hung on for what seemed like several minutes, and I knew that this was the last time I would see my grandpa, my hero, alive. Looking back, I cannot even imagine facing death as he was facing it. He knew he had only days to live and was faced with the scary results of liver failure. He found some comfort in tying up loose ends and simply having his family close.

Are you ready to die? Your doctor approaches you with a grim prognosis: your liver has failed so over the coming weeks your body will slowly fill with toxins, poisoning your brain and slowing your internal organs until one of them just quits working. The end is the same; you will die, regardless of which one fails first. The only glimmer of hope you have is a transplant. In special cases a family member or another person can take the risk and give half their liver to you. However, in most cases, someone else will have to die for you to receive your life-saving liver.

If a match is found, and you survive the surgery, recovery will take months and you will be faced with regular tests for the rest of your life. Hospital bills pile up, not even counting the multi-million dollar transplant surgery. Hotel life and eating fast food is trying on families and adds to the financial stress.



Thousands of families are faced with this today, not only for liver transplants, but also for other vital organs such as kidneys, lungs, hearts, intestines, even the pancreas.

How does someone find comfort with such grim circumstances? How can one find strength to have hope for a new organ? How can a family find peace knowing that for their loved one to live, another family is faced with the death of their loved one? How can comfort be found so far from home amidst the chaotic, heavy atmosphere of a hospital and the forever growing debt?

The transplant house in Rochester, MN has been a huge part of my family's life. It has benefitted thousands of transplant patients and their families, offering them a home away from home. It offered a place to be close to family, connect with other people faced with the same circumstances, be alone and deal with everything, as well as just offering a simple, cheaper, more personable alternative to living in a hotel and eating fast food indefinitely. If you ask anyone who has stayed there for any amount of time, I'm sure that they would say the same. Very few such houses exist anywhere else in the United States or the world, and few people understand the realities of transplants. This is the reason I am proposing a transplant house be built near the transplant center in Minneapolis. The public nature of the university and placement of the house itself would allow for the public to be better introduced to transplants. Also, and more importantly, it would provide a getaway for patients and their families where they could escape the often overwhelming atmosphere of the city and hospital. It would be a place of closeness with others and a place to be alone to reflect and cope. It would be a home.



## User Description

Each year, hundreds of thousands of people are placed on a transplant list for any number of organs including a heart, liver, lungs, kidney, pancreas, and intestines. Their own organs are failing them and without a transplant, they will die. Some spend years on the list. Even if they are fortunate enough to get a life-saving organ quickly, months of recovery and lifelong tests are required. On top of the hospital bills, housing, food, and other daily requirements must be met for them as well as their families. Bills add more stress and worry to the already painful medical situation. A transplant house provides a home away from home. Those affected by organ transplants can find comfort from others in the same situation while being relieved of the concerns of daily life and the cost of spending so much time away from home. This center will be unique in that it will seek to open this opportunity to all age groups, when in the past, transplant houses have prevented anyone under the age of 18 inside the house. It will serve as a refuge for anyone waiting, recovering, or returning for tests after a transplant and their immediate family. There will be housing for 10 families, including 2 private apartments for extremely immune sensitive cases.

## client Description

National Association of Hospital Hospitality Houses Incorporated: The mission of the NAHHH is to support homes that help and heal to be more effective in their service to their patients and families. The association connects hospital houses across the nation including Ronald McDonald house, houses for cancer patients, houses for families of patients in the ICU, transplant houses, and other specialty housing. Membership is free and provides a network of support, both financially to the houses, and emotionally to the people and families they support.

Gift of Life Transplant House: Mayo clinic is known as one of the best transplant hospitals in the world. Just a few blocks away sits the Gift of Life Transplant House. Currently expanding the house in Rochester, it has been a home for thousands of transplant patients and their families for more than 20 years. Working with the transplant center in the cities and the National Association of Hospitality Houses, a similar house will be proposed in Minneapolis, MN.

# Major Project Elements

## **Entry**

An entry, as an entry to a house, should be designed. It should be noted that this space should NOT be viewed as a lobby or reception area as in a clinic or hospital.

## **Community Living Room**

A large space to relax and enjoy time together with family or neighbors also dealing with the concerns of transplants and the medical problems surrounding them. Views and a sunny atmosphere are desired.

## **Communal Kitchen**

An appropriately sized kitchen to be shared by the residents of the house to provide them with the appliances and feeling of being at home. It would serve to relieve them of the stress and cost of eating out every night.

## **Dining Room**

Based off community like the rest of the house, the dining room should include either one large communal table or several smaller round tables where residents can eat together.

## **Hearth**

A hearth as the central symbol of healing, warmth, and community (later studied through case studies).

It should be located near the living room and near the kitchen, possibly as a bridge between the two.

## **Library**

Whether informal or formal in nature, a library can provide informational support in times of crises or provide an escape to another world.

## **Laundry Facilities**

## **TV and activity rooms**

Especially geared toward the children, spaces to just be free and let loose should be included. Here imagination should roam free and life's harsh realities should be forgotten for just a moment.



## **Several Private Bedrooms**

A place to escape and be alone for each person or family involved. A variety of options will be available from single rooms to a cluster or rooms for families. All will be complete with their own bathroom and private sitting area.

## **Private Apartment**

A private apartment for special situations including families with small children. It will be connected to the rest of the house, but also be able to be completely separate to prevent the germs carried by children from spreading to vulnerable patients.

## **Outdoor spaces**

Nature is a vital part of the healing process, both physically, mentally, and emotionally. It is important to include it both inside and outside the building to be enjoyed when weather permits. Spaces to be included are as follows:

### **Healing Garden**

Nature can be soothing. It shows life, harmony, and peace. The scents, sounds, and feeling of nature can also contribute to the healing process. A garden that allows such, possibly in correlation to the meditative space or food garden, should be included in the design.

## **Play Area**

Sometimes people just need to let go and burn off stress through physical activity. A kid's play area and adult space to do this should be provided, either separately or in connection to the surrounding park space.

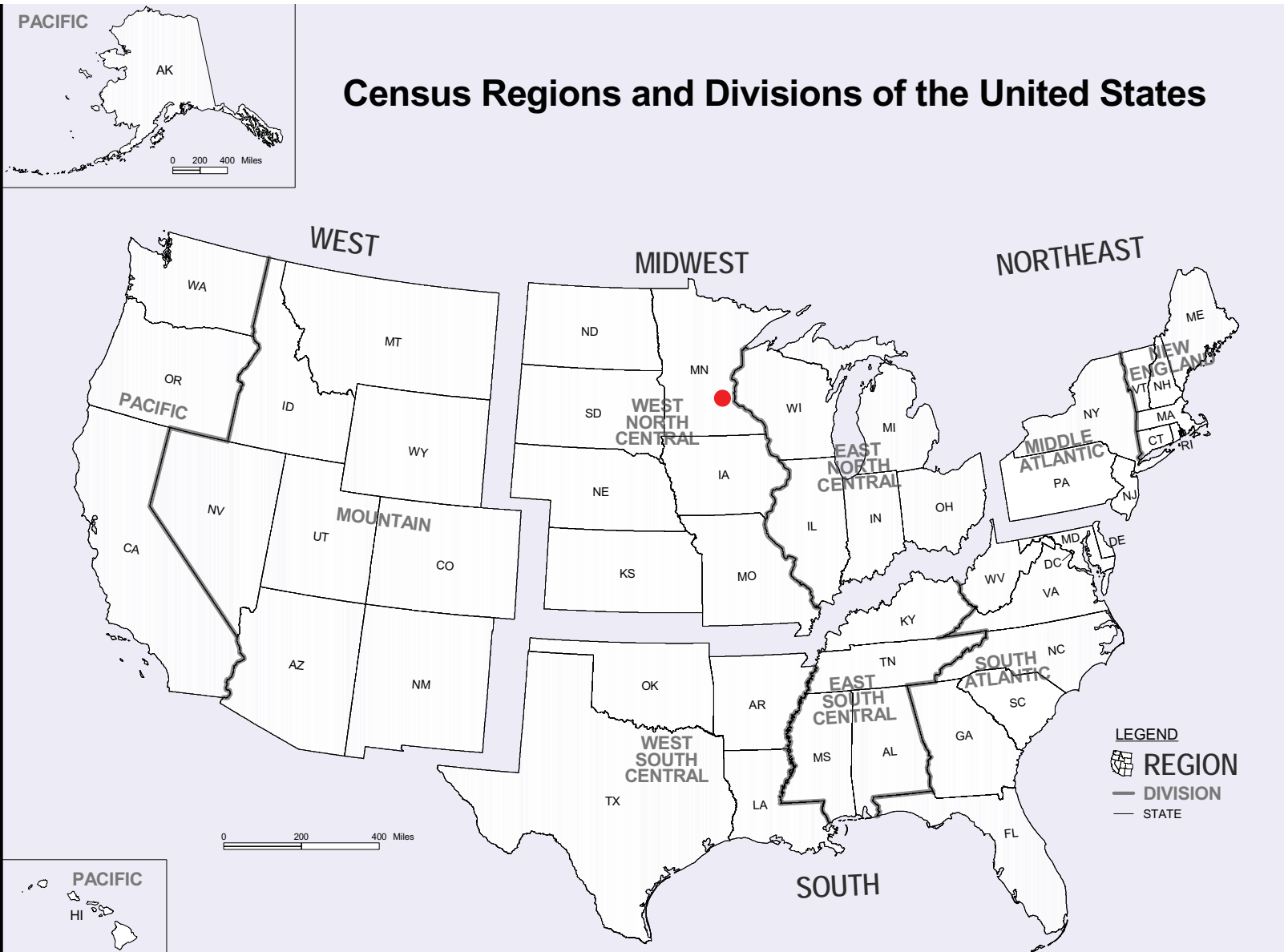
### **Sitting and Contemplation Space**

Possibly in connection to the Healing Garden, or as a bridge between the two gardens, a place to sit and reflect should be provided. Views abound on the site and nature can relax the mind, body, and soul.

## **Food Garden**

Nature provides the best metaphor for healing. A connection can be made with it as one cultivates and watches nature at work. Food is an essential part of our day, providing sustenance and nutrition. Provide a place for residents of the house to interact with nature as well as contribute to their own bodily needs.

site-macro



(U.S. Department of Commerce, Economics and Statistics Administration and U.S. Census Bureau)

## **Macro-Region**

The boundaries of the Midwest region of the United States have always been vague, ranging anywhere between the Appalachian Mountains to the Rocky Mountains. However, according to the U.S. Census Bureau, the Midwest includes the following twelve states: Ohio, Michigan, Wisconsin, Indiana, Illinois, Minnesota, North Dakota, South Dakota, Nebraska, Iowa, Kansas, and Missouri. This places the boundaries at the two mountain ranges, the US/Canada border, and roughly at the 30th parallel, the line created by the Missouri Compromise in 1820 to define states where slavery was prohibited. The region is known for having some of the richest farmland in the world where everything from cattle to wheat is raised. It also includes the Rust Belt, where the historic heavy industry is declining. Traditionally thought to be a conservative, mainly protestant, and homogeneous region, the Midwest is growing much more diverse in political, economic, and religious opinion, as well as, its ethnic mixture of people. The major cities of the region include Chicago, Detroit, St. Louis, Milwaukee, and Minneapolis/St. Paul (Minneapolis).

## Macro-City

With an estimated population of 372, 833 in 2006, according the US Census Bureau, Minneapolis is home to over 7 percent of Minnesota's residents and is one of the biggest cities in the Midwest region. Its history can be seen in its name. "Minne" in the Sioux language means "water" and "polis" is from the Greek meaning "city". From the beginning it was a city that was based around water, specifically the water flowing in the mighty Mississippi River. Saint Anthony Falls is the only waterfall along the Mississippi river and, therefore, the site chosen by the U.S. military for Fort Snelling. Settlers began to occupy the land around the fort, forming two villages.

In 1872, St. Anthony and Minneapolis merged into a single city, keeping the name Minneapolis. The waterfall continued to be the main ingredient in the success of the city, providing transportation to the logging industry and power to flour mills. The grain industry remains to this day, even after a shift in the flour trade to eastern cities. As in much of the Midwest, the original population was primarily of European descent, but it is now becoming a mixture of people from nearly every ethnic background. The population peaked at over 500,000 in 1950, after which it declined due to a shift to suburbs. It is now believed to be stabilized at about 350,000 (Minneapolis).

Today, Minneapolis is a internationally known city. Its residents are known as very cultured, and it is remarkably named first or second in the list of most literate cities in the U.S. (Miller)


# Site-Micro

## **Micro-University of Minnesota, Twin Cities Campus and Medical Center**

Before Minnesota was officially a state, the University of Minnesota was founded as a preparatory school. It survived, despite rocky financial times, to become a land-grant university. Currently home to more than 60,000 students and 4,000 faculty, it has expanded into 5 distinct campuses around Minnesota. It is recognized as one of the top public research universities in the world, showing medical advances such as the creation of a beating heart and a stem cell transplant to cure recessive dystrophic epidermolysis bullosa, a fatal disease.

The original campus that spans the Mississippi in Minneapolis and Saint Paul is also the site of its medical campus (University of Minnesota). Located on both banks of the river, the University of Minnesota Medical center has facilities for both inpatients and outpatients. Its services include providing basic medical care, delivering babies, and treating cancer and other complex diseases.

Today, it is the result of a merge between the University's medical center, and Fairview Health Services, and it includes the Amplatz Children's Hospital. Among its areas of specialty are organ, bone and marrow transplant as it partners with the research center in these areas. World renowned, it is a leader in living-donor transplantation and is one of the oldest pancreas transplant centers. Its bone and marrow transplant program is also one of the best known, boasting that it is the second largest unrelated program in the U.S. It also lays claim to being a top umbilical cord blood transplant centers in the world (Fairview Health Services).



## site-Micro

### **Micro-Site**

The site itself is just a few block south of the transplant center on the edge of a park. It can be easily walked to from the center, yet is set apart from the huge institutional hospital by nature. The Mississippi River forms a boundary on one side, while natural land forms and vegetation border the other side. It occupies the space opposite the new university boathouse, a symbol of health and wellness. A parking lot sits between them, to service them both. To the south is a steep decline to the Mississippi River and to the north is an equally steep incline up to the hubbub of the busy city. A lot of vegetation surrounds the site, further separating it from the urban noise not far away. A bike and walking trail starts here and goes deeper into the woods along the river, providing access to a site just a brisk walk away for a quiet retreat to reflect. The sound of the river and wildlife almost overpower the sounds of the city, and the views of the river and opposite bank are picturesque and calming. It's a site perfectly placed within walking distance of the hospital, yet it is peaceful and is an escape from the chaos of everything.





## Project Emphasis

A dwelling of comfort for transplant patients and their families will be the main emphasis for this project. It follows that a dwelling close to people going through the same hardship, one separated from the stress and worry resulting from this hardship, and one providing a place for quiet reflection will be studied in congruence with each other. Architecture that can speak of these three things and further promote them will direct the project to the end. It will show that a well-designed collection of spaces can offer or promote emotional and mental comfort.



# Plan for Proceeding

## **Definition of Research Direction and Plan for Design Methodology**

A mixture of qualitative and quantitative data will be used to further explore the theoretical premise and unifying idea. From there the theoretical premise and unifying idea will direct further research on the project typology, historical context, site analysis, and programmatic requirements. Everything will be checked periodically to make sure that it points back to the theoretical premise and unifying idea, thereby acting as a control to keep the project focused, integrated, and driven in a single direction. A process of collection, analysis, interpretation, and reporting of the data (both quantitative and qualitative) will be followed and presented in appropriate text or graphic record.

## **Plan for Documenting the Design Process**

The final presentation will employ a range of physical modeling techniques and digital media and representation. It will be documented in this thesis book through text and graphics so that it will be preserved and available in the future. Throughout the process, information will be compiled as each phase is completed. Such information may include sketches, models, graphical representations, narrative/informative text, or other worthwhile means.

# Previous Studio

## Experience

### 2nd year

Fall 2006: Stephen Wischer

Teahouse Design, Fargo, ND

Minneapolis Rowing Club House and Chapel, Minneapolis, MN

A House for Twins, Fargo, ND

Spring 2007: Bakr Mourad Aly Ahmed

An Exploration of Movement Through Space, Fargo, ND

A Waldorf School, Fargo, ND

Dance Academy and Performing Center, Fargo, ND

### 3rd Year

Fall 2007: Ronald Ramsey

Agincourt-Designing for the past and future, Agincourt, IA

Small Performance Hall for the Darrow School

and the New York Symphony Orchestra, New Lebanon, NY

Spring 2008: David Crutchfield

Structural Study

Mixed Greens--a mixed use residential

and organic market design, Fargo, ND

### 4th Year

Fall 2008: Darryl Booker

Mixed Use High Rise Design, San Francisco, CA

Spring 2009 Study Abroad Semester: Stephen Wischer

High Speed Rail Station and Hotel, Barcelona, Spain

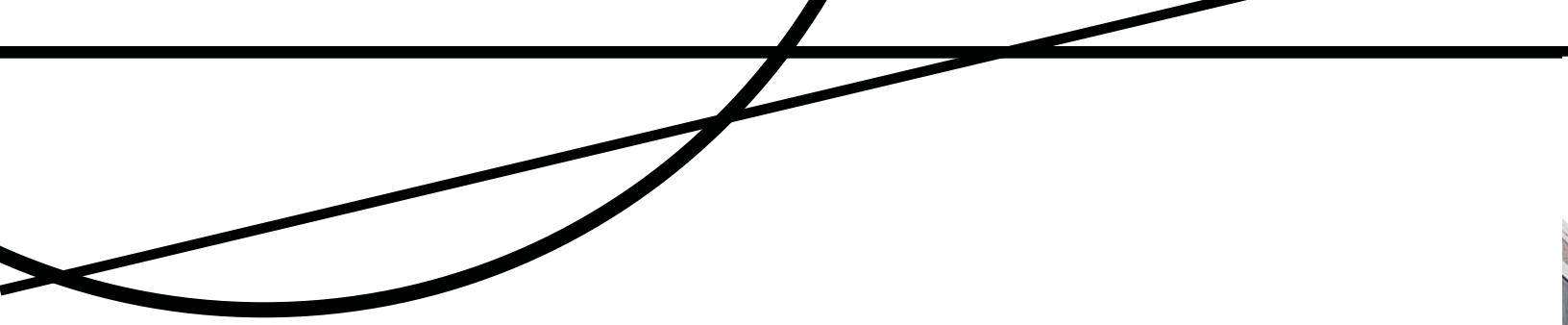
### 5th Year

Fall 2009: Mark Barnhouse

Water Properties Study

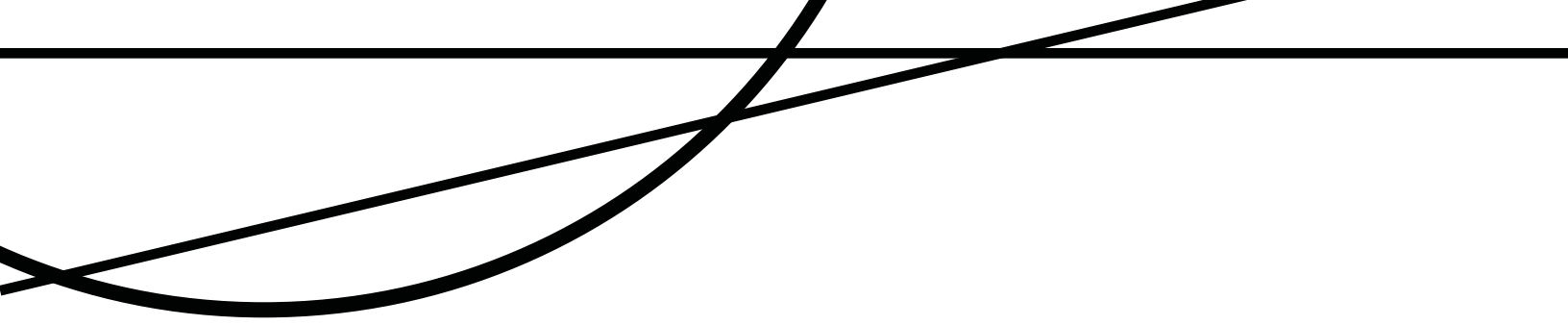
Water Research Lab Design, Linton, ND







Program Document



## Research Results and Goals

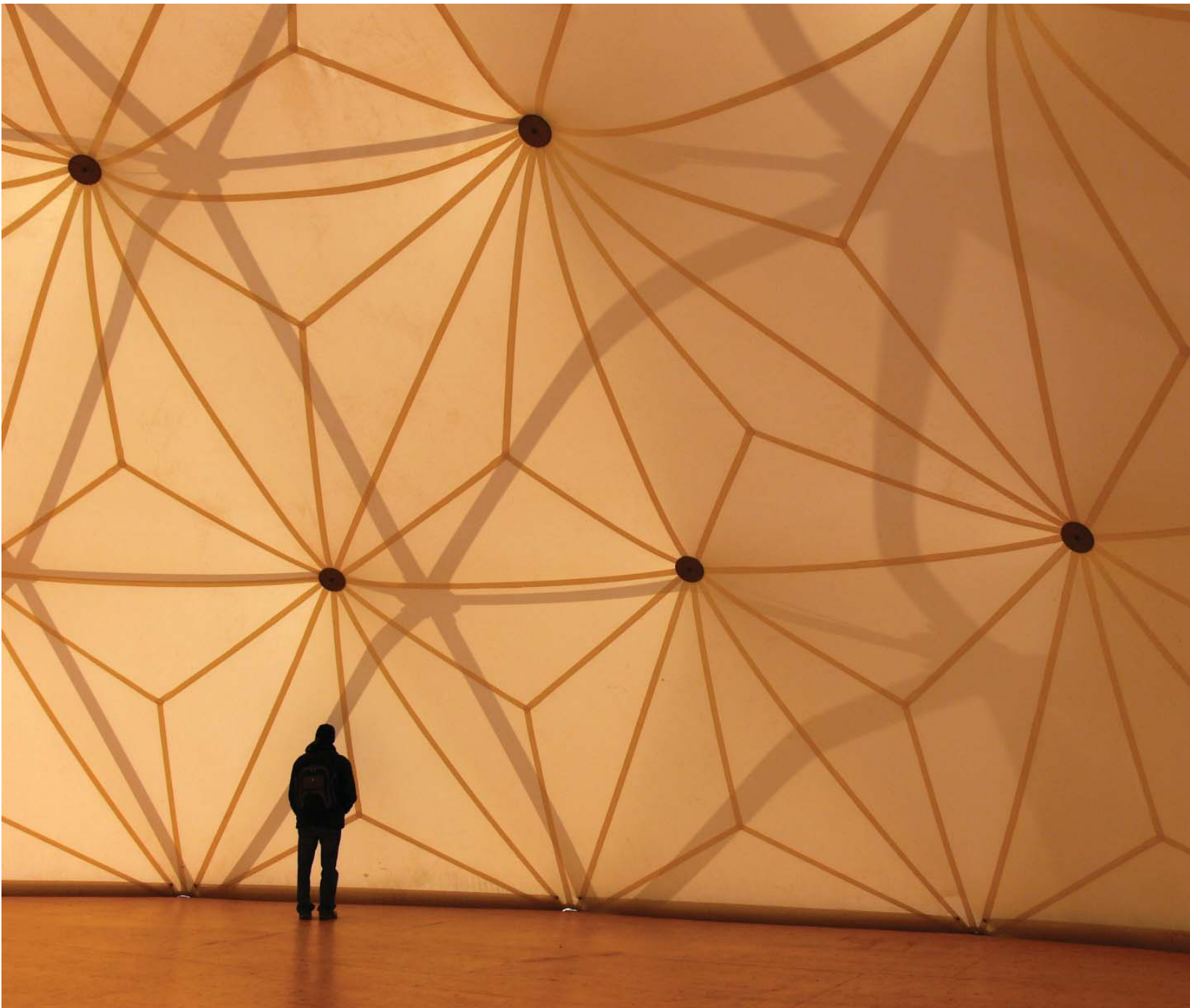






Research Results:  
Theoretical Premise and Unifying Idea

Theoretical Premise  
& Unifying Idea



# Introduction

“Other than architects, few people think about architecture, but many people feel it” (Day, 1993, pg.8). Architecture is more than just something to look at; it is where we live. The spaces have the ability to positively or negatively affect us. “Architecture can be life-suppressing or even crushing, not only to our finer sensitivities but to our feelings of freedom” (Day, 1993, pg. 9). Conversely, architecture also has the ability to enhance life, to offer comfort or healing. The word heal is from the old English word halen meaning “to make whole or sound,” (Day, 1993, pg. 9), that is, not simply to cure. To heal, then, is to restore harmony between the mind, body, and soul (Day, 1993). It is important to note that these three branches of our being are interconnected and interdependent. Architecture that nourishes each of these three by upholding and promoting relationships and thereby allowing a greater harmony within is one that promotes healing. Vital relationships exist in each one of our lives, several will be later explored. They include, but are not limited to the connection between us and a higher power, the relationship between us and other people, the relationship between ourselves and nature, and a relationship with the built environment itself.

# Spirituality

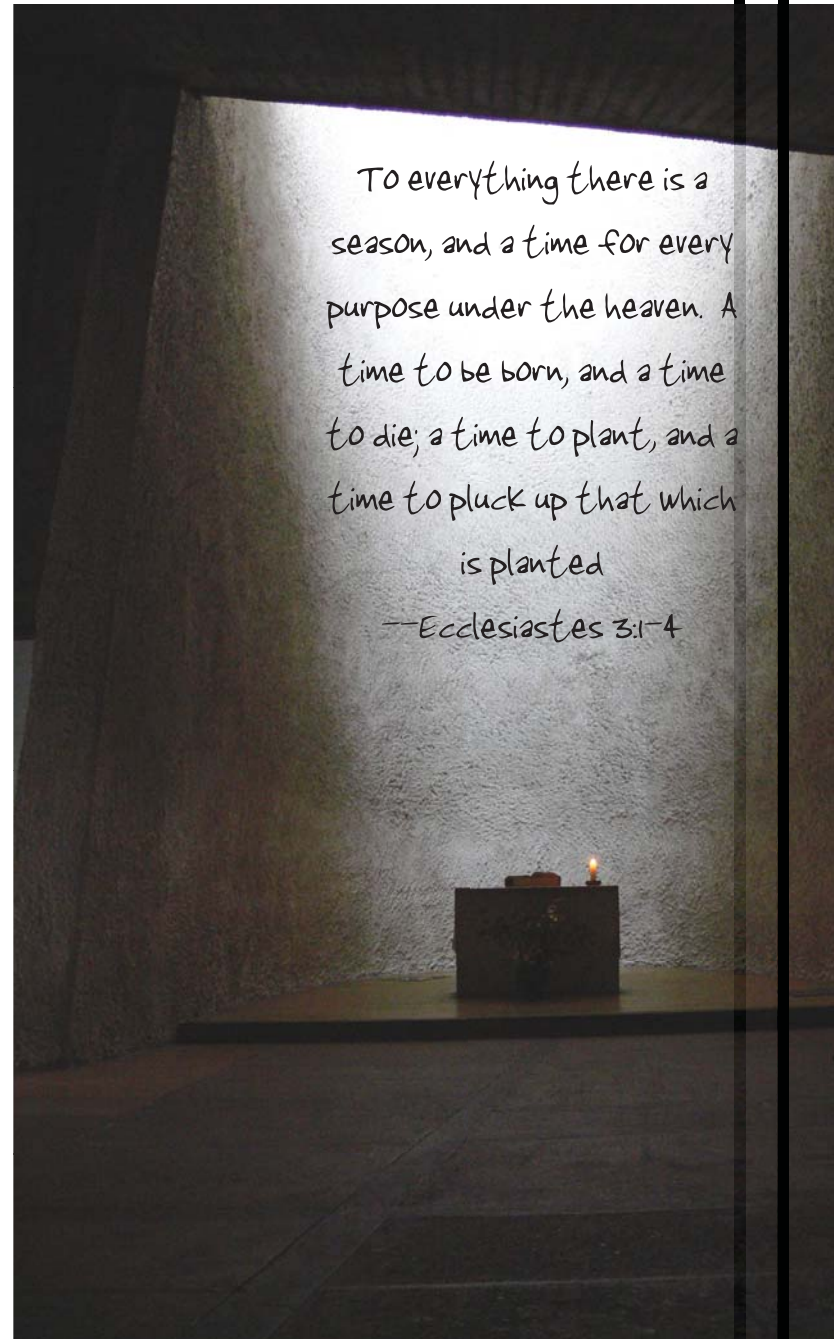
The word spirituality comes from the Latin, *spiritus*, which means simply breath, air, or wind. It can be seen as “whatever is at the center of all aspects of one’s life or that which gives life to a person” (LaPorte, 2001, pg.5). Spirituality is not synonymous with the word religion. Religion is merely a form of expressing it. Spirituality, rather, can be seen as a lens through which to interpret life. Through it, understanding about oneself, others, nature, God, and their relationships with these can be found. The meaning of spirituality can be interpreted many different ways, but in every definition



there is a common ground in its recognition of God, a higher power, or a transcendence beyond the physical. It is a quest for meaning in life. One chaplain, S. Ryan, concluded that there are five spiritual needs of every human. They include: “1) the need to find meaning in life, particularly at times of illness; 2) the need for a relationship with a transcendent other through which

we find purpose and meaning in life; 3) the need to change whatever causes us to suffer or be unhappy; 4) the need for hope, no matter how difficult life can be; and 5) the need for others who will care for us and are willing to co-journey with us” (LaPorte , 2001, pg.5). Confronted with suffering, one can turn to spirituality which embodies the virtues of hope, courage, faith, love, acceptance, and meaningful encounter with death. In these, it is possible to rise above the suffering to achieve well-being and healing.

Even if the suffering does not go away, a peace can be found that provides comfort and strength to endure the suffering. Studies have shown that comfort can be found in the spiritual beliefs of a person. It was shown that those who suffered found this comfort in the knowledge that they were not alone and also in the sense of peace that spirituality revealed. In fact, a deeper meaning in life was found through the crises. Life became a gift and time was to be appreciated (Laporte, 2001). Creating spaces of privacy, spaces for quiet reflection or meditation, as well as ones that further develop our relationships with other people and nature, can help to advance spirituality.



To everything there is a  
season, and a time for every  
purpose under the heaven. A  
time to be born, and a time  
to die; a time to plant, and a  
time to pluck up that which  
is planted  
—Ecclesiastes 3:1-4

God grant me the serenity to accept the things I cannot change and the courage to change the things I can, and the wisdom to know the difference.

# Relationships

There is no doubt that suffering is a part of everyone's life. It is a part of the human condition. It is a physical, emotional, spiritual, even social experience, and can even be felt by a bystander who sees another person's suffering. Suffering can be defined as, "the state of severe distress associated with events that threaten the intactness of a person" (LaPorte, 2001, pg.7). Additionally, "Suffering can be defined as the endurance of or submission to affliction, pain, or loss" (LaPorte, 2001, pg.7). It is important to note that suffering and pain are not the same thing. It is possible and likely for them to be present simultaneously or separately. Suffering is a psychological condition unique to each person, yet it involves not only one's self, but also those around. Coping with suffering and caring for another person go hand in hand. Relief is found through one's relationships to another person, community, and society. Social support is "a perceived entity with multiple dimensions, resources, and establishment and sustenance of relationships" (Cetingok, 2007, pg.42). A network of such includes the relationships needed to handle crises and cope in times of suffering. Three distinct types of social support relationships exist. They include: concrete, emotional, and informational. Studies have been done linking one's social support network and their quality of life. The composition of a social support network generally consists of immediate and extended family members, as well as a few close friends. Concrete and emotional support were shown to greatly increase one's quality of life,



whereas informational support was scarce, resulting in little evidence on its effect. Closeness and mutuality of support were also found to be beneficial, while prolonged attachment needed to be kept in check as it affected feelings of independence and freedom.

Simple steps in architecture can be taken to encourage relationships between people. Gathering spaces should be included of varying size. Dining and living rooms, for example, are places where groups can meet and support each other, while small niches can provide space for more intimate connections between just a few people. “There are places, like widenings in a corridor with a window seat, that induce casual social meetings, and places, like lifts, that stifle such interplay. Similarly, there are shapes, like round tables, which bring people into community, and others, like uninterrupted corridors or long rooms, which do not” (Day, 1993, pg.21)

The planet is in fact one interwoven web of  
life. I must love my neighbor as I do myself,  
because my neighbor and myself are interwoven.  
If I hate my neighbor, the hatred will recoil  
upon me.

If I treat my neighbor's pain and grief as  
foreign, I will end up suffering when my  
neighbor's pain and grief curdle into rage.  
But if I realize that in simple fact the walls  
between us are full of holes, I can reach  
through them in compassion and connection.

—Rabbi Arthur Waskow





# Nature

There is an increased consciousness of sustainability in the world today. As humans, we and our built environment exist in the larger natural environment. For years we disregarded this reality, and buildings not only hurt nature by abusing its resources, but we also did harm by separating ourselves from nature. From the artificial lights and mechanically pumped air to the dull colors, inorganic chemicals and interaction limited to a machine, nature was removed from the places we occupied. Such bleak spaces promoted sickness and actually inhibited healing. Research of nature's physical, emotional, mental and spiritual effects on people made it increasingly obvious that something had to change. Our bodies craved interaction with nature, often only getting it unconsciously amid the chaotic hustle and bustle of modern life (Schumm, 2004, pg.15). Today a shift is being made toward architecture that considers the natural environment in mutually beneficial ways. A connection between nature and ourselves can also nourish our other relationships. There is no greater metaphor for a harmonious, connected life, than that of nature and its bonds (Crisp, 1998).

As a response to the need to reincorporate nature into the built environment, the theory of Feng Shui is growing in popularity. We are inseparably linked to our environment, and it seeks to reestablish that connection via our senses and emotions. "Feng Shui is nothing other than bringing nature inside to it can continue to have a positive impact" (Schumm, 2004). Feng Shui literally means "Wind and Water" and it is often thought about with regards to the five elements, metal, water, wood, fire, and earth. The goals of Feng Shui as well as other characteristics of nature can be applied to architecture (Lee, n.d).



Water is often referred to as the elixir of life since more than 70% of our bodies are comprised of water; it is the building block of all life. It has the power to calm, remove fear, strengthen trust and communication, and stimulate. Water is a symbol of wealth, purity, a journey, and even healing. It flows freely, winding its path through the landscape. The sound as it moves is rejuvenating, refreshing, and stimulating (Schumm, 2004). Design that incorporates properties of water is to be sought after. This can be done through placing a building near water, incorporating a water feature or reminiscent motif, or even exploring its properties in the form and course of the spaces.

Similarly, wind has a soothing effect. It has great power and strength, yet can be like a gentle whisper. It refreshes a space, carrying away the bad and replacing it with that which is good or fresh. Natural ventilation and a natural flow between spaces are two ways wind provides a connection to nature in design (Schumm, 2004).



# Nature

Light is another aspect of nature than can be brought into a design. Natural lighting provides contrast, and a balance between darkness and light. It has a life and a mystery to it that artificial light lacks. Light from fire also has rejuvenating effects, and a hearth or fireplace in the design brings them into the space. Furthermore, color is found in light, and it is said to express the subconscious and nourish the soul. It is an ideal element in design, bringing strength and vitality into spaces. The lack of color in spaces, or spaces that are white, gray, or black, causes fatigue. It is important in architecture to remember to use color as well as natural light (Lee, n.d).

Materials from nature such as stone or wood, with their warmth and texture, play to the senses and provide a link to the outdoors (Schumm, 2004).

Shapes and forms in nature follow organic, regular and simple geometric patterns. Spiral and helixical forms are also prevalent in nature. A design that is too complex causes a disunion between the built and the natural. Proportions such as the golden section developed by the Greeks and a human scale to details and spaces also help join the two environments (Schumm, 2004).



Nature is filled with smells, and architectural design often overlooks the power of this sense. Natural scents boost well-being and energy and have a positive influence on the mental and emotional self.

Finally, architecture that is feng shui can instill a sense of place and time. A building is a part of the site not an intrusion. Strength and inspiration can be drawn from the landforms, and a contrast can be drawn between the experience through time of nature versus society. Society today operates on a very instantaneous level, whereas the natural environment is perceived as a durational experience that yields new discoveries. Creating this sense of mystery and revelation through time and space within architecture echoes nature. Paths should be winding, not straight, in both the horizontal and the vertical movement through space (Lee, n.d.).

Though this list is not exhaustive by any means, it gives practical ways that architecture can cultivate and feed a relationship between the people and nature. In doing such it elevates the body, mind, and soul, creating a place for healing.

# Built Environment

“We attain to dwelling, so it seems, only by means of building. The latter, building, has the former, dwelling, as its goal. Still, not every building is a dwelling.” (Heidegger, 1993, pg.347).

Heidegger explored the idea how we as humans dwell here on earth and our relationship with the built environment.

Heidegger’s investigation led to an examination of language. The German word *wohnen* means “to reside or stay, to be content; it is related to words that mean to grow accustomed to, or feel at home in.” (Heidegger, 1993, pg.345).

The spaces where we reside, our homes, are more than just shelter from the elements. Shelters and homes were originally formed out of the earth and are still central to daily rituals. They form a link to nature through the exploration of its cycles and use of materials from nature. They represent the family nucleus; they are the containers for our personal possessions. They are reflection of ourselves and a mirror of social conditions and values. Traditionally, they “symbolize a form of retreat for the restoration and regeneration of mind and body” (Crisp, 1998, pg.12). Home has always been considered a place of love sustenance, and where we could create our place in the world, our corner of it. In modern society, however, technology and the house as a symbol of status has pushed this connection aside. Homes have become cold and mechanized. If homes are the extensions of ourselves, the architecture should reflect that. It should embody a conscious connection to both us and nature in a holistic way, rather than the only connection being with the “stuff” inside the hollow form. Care and attention must be given to detail and the simplicity of forms.



Our homes are an investment through care and kindness and should be places of inspiration, imagination, and delight to our bodies, minds and souls. They should be places of meaningful dwelling and living.

Similar to the German word *wohnen* discussed earlier is the Gothic word *wunian* which also means “to be at peace, to be brought to peace, or to remain in peace” (Meljac, n.d.). Furthermore, *friede*, the word for peace, means freedom, which leads to the idea of a safeguard, of protection from harm and danger (Meljac, n.d.).

One space that seeks to especially promote freedom and protection is a space of health or medical care. Throughout history, culture, societal trends, and religious beliefs shaped these spaces, often filled with superstitious rituals and ceremonies. In Western medicine, it was always the case where a strong connection between mind and body was thought to exist and a medicinal space sought to restore peace between the two. Modern technology and scientific advances in medicine led to the discovery of specific causes and treatments for disease. Because of its predictability and success, emphasis was shifted away from the mind-body connection. This led to a deemphasization of a patient and a loss of individuality. The spaces of medicine became ones of sterility, isolation, and fear rather than ones that promoted community, family, culture and the understanding of such relationships (Ridley, 2006). Today, global culture has become more conscious of overall health and the way we relate to our built environment. Clinics, doctor’s offices, and hospitals have become a focus area in the study of the “capacity to creatively push the boundaries” of the built environment to better serve our relationships. Evidence shows that incorporation of features such as nature, homelike qualities, and sacred geometries can contribute to the healing process in the healthcare environment (Schumm, 2004).

# Theoretical Premise

## Unifying Idea

“A building should not be viewed independently from the factors that cause it to be built” (Crisp, 1998, pg.10). Architectural design requires a conscious purpose. It cannot be isolated from the context for which and in which it was built, that is, to only discuss it in terms of its physical aspects removes from it the context of humanity. It was built to serve a function which ultimately serves to enhance our life. If a building’s function is to heal, then it must be looked at in terms of how it can help restore the harmony among body, mind, and soul.



## Summary



“Most people, myself included—but possibly architects excepted—don’t normally look at our surroundings. We breathe them in. We look at picture postcards or at views from viewing platforms, and these can be interesting. However, the experience only touches our hearts when it becomes an ambience we can breathe; most of the time we don’t notice our surroundings and then they can work upon us without any conscious resistance on our part. In fact, we spend so much time in or near buildings that it is true to say that most of our environmental experience is affected by architecture” (Day, 1993, pg.10). Our relationship with architecture is overlooked, forgotten, or minimized, yet its power remains. Architecture has the power to affect our mood, our mental abilities, even our actions. When examining our other relationships, it is clear that each plays an important role in maintaining a balance within our threefold beings, that is they nourish our mind, body, and soul making us whole. This is when healing and comfort is achieved and joie de vivre, a delight in being alive, is restored. Architecture, too, must instill vivacity. It, though built of matter, need not be dead, but rather life-filled to realize this positive impact. “Its constituent elements and relationships can sing—and the human hearth resonate with them” (Day, 1993, pg. 10)

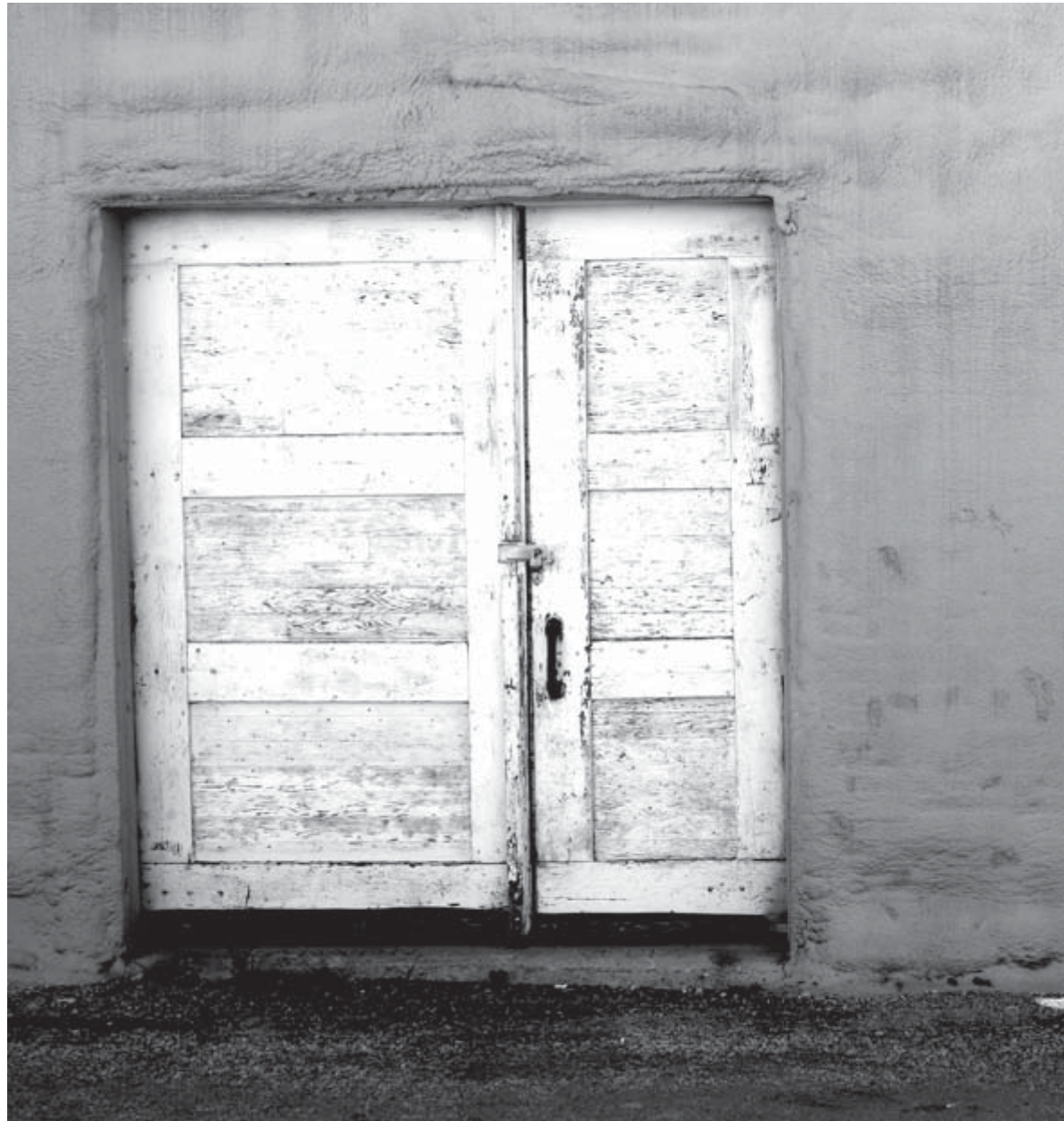




Research Results:  
Historical context

## Historical context

A topic of human healing, comfort, and connection cannot fully be explored in the simple use of facts of the scientific kind. Numbers, dates, names, and figures provide important insight into the subject of healing and comfort. It can be argued, however, that personal stories can offer (perhaps in a more meaningful way) additional context of this thesis.



# Introduction

That said, the research conducted will balance the two approaches. Factual information together with people's stories will help paint the whole picture of the context of this thesis. The historical context, then, includes the history of health and healing, the history of various hospital hospitality houses (also related to the case studies), and the history and current trends in transplantation.



## Time line

Historically, religion offered comfort or healing. From the ancient civilizations where various gods had to be appeased to the oldest known hospital temples in Sri Lanka. Churches offered confession when relief from guilt was sought. They offered asylum and sanctuary when under attack. They offered community and a hope beyond this world. Beyond this, it was the church's responsibility to care for those in need. They took in orphans, helped the poor, and ran hospitals. Before modern advances in medicine, hospitals offered not only physical healing, but also emotional and spiritual comfort (Ridley, 2006).

In modern society, it is the hospital or clinic that is linked to the idea of healing, but not to comfort. In fact, the modern institutional hospitals have forgotten some of the most essential aspects of healing. Focused on the scientific means of healing through advancing medical techniques and medications, these institutions have become impersonal and no longer about the people. Dutch architecture historian Cor Wagenaar points out that many hospitals are “built catastrophes, anonymous institutional complexes run by vast bureaucracies, and totally unfit for the purpose they have been designed for. [...] They are hardly ever functional, and instead of making patients feel at home, they produce stress and anxiety” (Ridley, 2006). This stress produced is counterproductive to the efforts toward healing. It can hinder the healing process by “intensifying pain, suppressing the immune system and causing heart problems, insomnia and depression” (Ridley, 2006)

Suffering and death is even seen as a failure, as their purpose is to cure. Doctors are taught to preserve life at all costs, and the medical profession in general views death as a failure. When it comes to death, most Americans would prefer to die at home, but it is estimated that 80% die in our “anonymous institutional complexes” (Ridley, 2006). It seems in an effort to prolong life and in light of modern science, the idea of palliative care was pushed back or forgotten. Palliative care is care to reduce suffering. It is not seeking to cure, but is a form of support through medicinal and human means .

One of the earliest forms of palliative care arose in the monasteries in Europe. The edict of 1163 barred monks from performing surgery, but the Catholic order preserved their tradition of caring for the sick, homeless, and otherwise suffering. In the late 1800s the first organization called a hospice was founded in Dublin. Led by Sister Mary Aikenhead, it was the first of

I said to my soul, be still,  
and wait  
without hope,  
For hope would be hope  
for the wrong  
thing; wait without love  
For love would be love of the wrong  
thing; there is yet faith  
But the faith and the love  
and the hope  
are all in the waiting.  
—T.S.Eliot

many in Ireland, Scotland, Great Britain, and the surrounding countries. A similar movement began later in the United States, begun by the Dominican Sisters Congregation in New York. However, the development in America differed from that of England. Because of the American way of life as well as its centralization of hospitals (rather than the community-based hospitals of Europe), palliative care was seen as un-American, and pressure mounted to emphasize either home-care or care within a hospital. Nonetheless, the first architecturally designed, free-standing hospice facility in the US was finished in 1980 (Carey, 1986).

Even before the first hospice facility, a new concept had emerged from the inspiration of a place where care, comfort and healing could be provided other than in an institutional hospital. A new proposal for comfort and healing, that broadened its view to include, not only the dying, but everyone faced with medical crisis such as cancer, mental illness, and organ transplants. It also reached out to families who also suffered and were in need of healing and comfort. This movement looked at the need for a home. It sought to provide a home away from home for patients and their families. Health care costs weighed heavily on families whose main priority should have been the care of the sick loved one, and the benefits of a community contributed to the success of these homes. Today there are hundreds of homes worldwide committed to the care and healing of the suffering.

## First Home

“In the very early 1970’s, Claudia and Cyril Garvey, from Sharon, Pennsylvania, traveled to Buffalo, New York to be with their son Kevin, who was a patient at Roswell Park Cancer Institute, where he was being treated for leukemia. Kevin was a young boy just nearing his thirteenth year at the time. The Garveys’ were a fairly affluent family and could afford to stay in a hotel to be near their child during his time of need.

However, they saw other families who were also visiting loved ones but were less able to afford adequate lodging. Sometimes, these people would sleep in the waiting room or even in their cars because they were from out of town and didn’t want to stay far from the loved one they were visiting. As Mr. Garvey was driving along the streets adjacent to the hospital, he came upon Ellicott Street and noticed a for sale sign on the front of house number 782. An idea began forming in his head and the idea became a reality when not long after, he purchased the property at 782 Ellicott Street. It didn’t take the Garvey’s long to put together the outline for what soon became America’s first Hospital Hospitality House.

Unfortunately, young Kevin Garvey lost his struggle with leukemia in January 1972. In a tribute to this courageous boy, the house was called Kevin Guest House. We would not exist today if it weren't for the warmth, generosity and continued support of the Garvey Family.

The work of Kevin Guest House has continued for the past 35 years, serving over 36,000 people and all Buffalo area hospitals. Guests have hailed from nine different countries and represent all but two of the 50 states in America.”

(Homes)

# First Ronald McDonald

## Home

Many people have heard of the Ronald McDonald House, or at least seen various donation opportunities to help support one. What many people don't realize is the true impact it has on people's lives. The first Ronald McDonald House opened in 1974 as a place for families to stay while their child was in the hospital.

In 1985, the first international Ronald McDonald House was opened in the Netherlands. A year later, twelve years after the first house opened, the 100th Ronald McDonald House was opened. Today, more than 88 similar houses exist outside of the United States. They are truly a testament to the generosity of people, and to the healing and comfort offered through the houses.

A new form of the Ronald McDonald House was realized in 1992 with the Ronald McDonald Family Room. Here, parents and children could have a home within the hospital itself. The family room offered a place to sleep, cook, shower, and relax without having to leave the hospital and their sick child.

Another positive step was made by the organization with the opening of the LEED Registered Ronald McDonald House in Atlanta, Georgia. Not only does it show the organization's commitment to sustainability as a vital component to one's overall health, but the house also contains a special wing for children affected by organ failure and transplantation. It offers two-bedroom suites for families of children who have undergone bone marrow, heart, liver, or kidney transplants. In the past, such a home was not available to such immune-suppressed patients and families. It offers a separate entrance and isolated rooms to protect the children from exposure to infection.



Today, Ronald McDonald Houses, Living Rooms, and recently added Mobile Care Centers can be found in over 52 countries and regions. Next year, 2010, the 300th house is scheduled to open (Ronald McDonald House Charities, n.d).

*"When Philadelphia Eagles tight end Fred Hill's 3-year-old daughter, Kim, was being treated for leukemia in 1974, his life changed. He and his wife, Fran, camped out on hospital benches and sat in cramped waiting rooms during Kim's three years of treatment. The Hills watched other parents and families of seriously ill children do the same thing. Many of the families had to travel long distances for their children to receive medical treatment and couldn't afford hotel rooms.*

*The Hills knew there had to be a solution. Fred rallied the support of his teammates to raise funds. Through Jim Murray, the Eagles' general manager, the team offered its support to Dr. Audrey Evans, head of the pediatric oncology unit at Children's Hospital of Philadelphia. Evans dreamed of a comfortable temporary residence for families of children being treated at her hospital.*

*Jim enlisted Don Tuckerman from the local McDonald's advertising agency, who with the support of McDonald's Regional Manager Ed Rensi, launched the St. Patrick's Day Green Milkshake (dubbed the Shamrock Shake) promotion. Funds raised helped buy an old house located near the hospital, which was opened in 1974 as the first Ronald McDonald House."*

*(Ronald McDonald House Charities, n.d)*

# Letters of Home and Hope

Max

Ben Williamson

03/12/2009 3:20pm

My cousin Max was born in 2000 with a hole in his heart. he could not live through his own bodily functions and needed machinery to breathe. he was sent to Alder Hey, Liverpool, England. My aunt and uncle lived on the other side of the country and needed somewhere to stay. RMH helped my aunt and uncle through maxs last days and made life a touch easier.

Thank You very much. Ben, 14.

"My Dad realized that the House offered more than just a place to lay our heads down. He saw the support system that wasn't planned or bought, it just happened. My Mom could hardly wait to get back the House to be with me. This is when we all realized that the Ronald McDonald Houses brought a whole new meaning to the word Home."

- Chrissy Katz

"Our Gift from God"

Dominic Wahl

31/10/2009 2:16am

In March of 2007 my husband and I found out that the baby boy I was pregnant with had Hypoplastic Left Heart Syndrome. Our world just fell apart. At the time our oldest daughter was nine and our youngest son was only 8 months old. We were told that I would have to deliver at the University of Michigan Hospital which is 3 hours away from our home. We had no idea how we were going to be able to afford to stay by the hospital and still pay our bills back at home. We were told about the Ronald McDonald House by the hospital but we had no idea how wonderful it was. They set up a day for us to start staying there before our son was to be born and I ended up going into labor early. I was rushed to the nearest hospital in Kalamazoo and I was too far along to transport to the U of M. The delivery was not going well and they had to do an emergency c-section so I was put under.

The U of M team came to Kalamazoo by helicopter and took my son before I came to. The next day my husband went to Ann Arbor to stay by my son and the people at the Ronald McDonald House got him a room right away. I did not get to join him until 6 days later due to complications of my surgery. When I got there I could not believe how wonderful it was we only needed to bring our clothes every thing else was supplied. Our children had a great time in the play room. They also provided free use of the washer and dryers and laundry detergent. Cans of pop were only .25 and the people there were wonderful. We met some great families there. Our stay was for 3 weeks. Our son passed away 10 days after his heart surgery. I was 32 years old and nothing I had ever done or went through up to that point was as hard as the day I held my son while he passed away in my arms. We named our Matthew which means "Gift from God" and he really was, he made us realize how great the little things are like the way their soft baby skin feels when you kiss them on the cheek or how you could just hold them on your chest for hours smelling their baby smell. Seeing them smile and hearing them say their first words. For anyone out there wondering if this is a good charity it is. I was able to spend everyday with my son until he went to see god and my other children were right across the street so I could be there for them as well. Thank You Ronald McDonald House

## Maggie's Story

In 1993, Maggie Keswick Jencks sat in a bleak hospital and received the news that she had only two months left to live. Her breast cancer had returned and spread throughout her body. She was then asked to move to the corridor, being informed, “We have so many patients waiting.” Her husband recalls that “she physically shrank and went into herself” upon hearing the news. It was not until they decided to learn more about her disease and what could be done that she came out again. Six months later, after extensive radiotherapy, she traveled and learned more about the treatment of terminal illnesses. Upon her return to Scotland, she began to fight for something new, an alternative place for people in her situation to go, to find comfort. The British hospitals, as with most hospitals around the world, consisted of “gloomy corridors, featureless waiting areas, cramped consulting rooms, and anonymous wards” (Maggie’s: Home, n.d.). She understood that people needed time, friendship, information, psychological and emotional support, and a non-institutional place to cope. Hospitals were more like prisons, and she believed that good architecture could have a positive influence on one’s life. It could remove some of the negative stress that seemed to bring death, replacing it with the comfort from people in the same boat and positive stress used to deal with the situation. There would be no reception or waiting area and no appointments. People would be in control

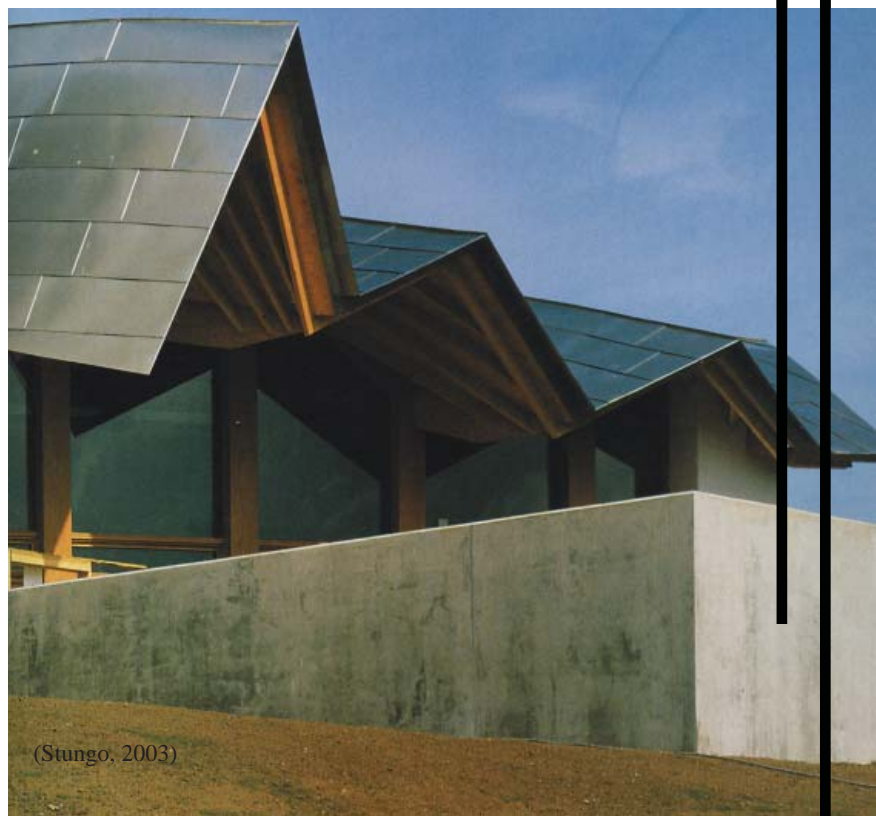


(McIntyre, 2008)



(Maggie's Highlands, 2005)

and free to do what they needed or wanted, in their own time. Light from windows would fill the spaces, and a openness to the plan would “create a sense of liberation that is very different from the sense of mystery and secrecy often found in hospitals” (Maggie’s: Home, n.d.). At the heart of the design, Maggie envisioned a kitchen and a kettle, like the hearth of a home. Maggie worked toward this vision until she died in 1995, 18 months after her grim diagnosis. The night before she died, even in her weakened state, she was filled with enthusiasm, surrounding herself with the architectural plans and papers for the first centre. Sadly, the first centre was not completed until after her death, but her influence and passion were not forgotten. A year after her death, her specialist breast cancer nurse, left her nursing career to fulfill Maggie’s dream and run the first centre in Edinburgh. Since then, many more centres have been built or planned, shifting from the conversion of older buildings (as the first centre by Richard Murphy) to designs from scratch, many by world-renowned architects. They still all follow the same vision and meet five important criteria: built beside a NHS hospital to form a relationship between the two and allow for ease of getting from treatment to the centre; built as individual to stand apart from the hospital; built around a kitchen where there is a large central table and the kettle is always on; has interesting artwork, comfortable furniture, fresh flowers and a full fruit bowl; and finally, designed to have an open floor plan where there are no long corridors or rows of shut doors, signs or arrows. At Maggie’s Centers, cancer sufferers could just drop in for information, emotional support, or even relaxation classes. They can be a model for a similar support center for transplant patients (Maggie’s: Home, n.d.).



(Stungo, 2003)

# Transplants Today

1902: First Successful transplant (in Austria) with animals

1954: First Successful Kidney Transplant.

1961: Anti-Rejection drug Azathioprine released

1962: First Successful Deceased Donor Kidney Transplant

1966: First Successful Kidney/Pancreas Transplant

1967: First Successful Liver Transplant

1968: First Successful Heart Transplant and isolated Pancreas Transplant

1981: First Successful Heart-lung Transplant

1983: First Successful Single-Lung Transplant and introduction of immune-suppressing, anti-rejection drug Cyclosporine

1984 National Organ Transplant Act passed establishing a national system of organ transplantation

1986: First Successful Double-Lung Transplant

1987: First Successful Intestinal Transplant

1988: First Successful Split-Liver Transplant

1989: First Successful Living-Donor Liver Transplant

1990: First Successful Living-Donor Lung Transplant

1991: First Successful Small Intestine Transplant

1998: First Successful adult to adult Living-Donor Liver Transplant

*(Timeline of Key Events in U.S. Transplantation and UNOS History, 2004)*

## **Transplants**

From the year 2004 to 2008, the number of transplants rose steadily. So far this year (2009) over 19,000 transplants have been performed in one of the 250 transplant centers offering at least one transplantation program in the US. Costs for the transplant (not including costs related to ongoing care past 180 days post-transplant) started at about 20 thousand dollars for a cornea transplant and reached over 1.25 million dollars for a multiple organ transplant in 2008. Also, according to one report, the length of hospital stay for a transplant ranges from 9 to 70 days.

## **Waiting List**

The waiting list for a transplant is steadily growing longer. In 2008, for the first time the number of people in the United States waiting for a life-saving transplant exceeded 100,000. Since 1995, 13% to more than 20% of patients removed from the list were removed because a suitable organ could not be found in time, and they passed away.

## **University of Minnesota Medical Center**

From 1988 to present, over 8100 transplants have been performed at the University of Minnesota Medical Center, ranging between 300 and 500 per year. In general, the number each year has increased slightly. About 1200 people are currently on the waiting list, with the highest demand for kidney, liver, and pancreas transplants. The percent of people removed from the list due to death ranges from 13% to 18%, with the overall percentage being about 15%.

# Transplant story

Following is a story of hope through transplant from Mayo Clinic's Arizona Campus:

Thanksgiving 2006 came early for Laura Matthews of Flagstaff, Ariz. Nine days before any turkey was served, she was the recipient of a much-needed new kidney — from her daughter. Air Force Staff Sgt. Jodi Mennie, her kidney donor, insists the surgery represents Thanksgiving for her as well.

“My mom has a second chance now,” says Jodi.

Laura, who suffers from polycystic kidney disease (which runs in her family), was close to requiring dialysis because she had only 15 percent kidney function left. Physicians at Mayo Clinic told her the time had come for a transplant.

Jodi, 31, got the call she knew was coming, given that she and her mother had talked about Jodi being her possible donor. She was stationed at Bagram Air Base in Afghanistan when she heard from Laura that she would require a kidney transplant. All along, Laura would tease, “You better take care of my kidney” when Jodi would be immersed in a dangerous mission.

Then it was Mission Kidney Transplant on Nov. 14, where Laura's family gathered in the waiting room, holding hands, to support Laura, Jodi and the rest of the family. With them was Jodi's fiance, Wayne, who came home with her from the Air Force to be her caregiver. Laura's caregiver was her youngest daughter, Audra.

Jodi went back to pre-op first, followed by Laura about an hour later. In pre-op, Laura and Jodi were allowed to be in side-by-side beds, enabling them to say their goodbyes before being taken to surgery.

Surgery for Jodi was performed by Dr. Paul Andrews, who removed her kidney laparoscopically, allowing her a quicker recovery time. Laura's surgeon, who gave her reassurances in the pre-op area, was Dr. Kristin Mekeel. Surgery went well for both patients. Jodi, extremely physically fit from her job responsibilities as an avionics specialist supervisor in the Air Force, felt well enough that night of surgery to ask to walk to Laura's room to see how she was doing. Despite being tethered to some tubes, she managed to check on her mom. She was discharged soon after and has continued to feel



great and returned with Wayne to an Air Force base in Germany.

Surgery and long-term recuperation is an atypical experience for Laura, who had never had a sick day on her job as Flagstaff deputy city clerk — a job that also requires many night meetings when the city council meets. But she acknowledges that she knew the time would come when she would require the transplant. She had witnessed her own father dying from the same disease — and enduring dialysis for 13 years before his death. “My father was never able to get a transplant,” she says, and added that her brother, Steve, has been on dialysis for four years and is awaiting a kidney transplant.

Polycystic kidney disease is a disorder in which clusters of cysts within the kidney become serious enough to cause kidney failure.

On Thanksgiving 2006, Laura and Jodi were still recuperating at the Arizona Transplant House in Scottsdale, Ariz., and were joined by Wayne and Audra for Thanksgiving dinner around the large table with other transplant patients and their caregivers. The blessing said before dinner was all the more sweet for Laura and her family.

Jodi noted that her sense of joy and thanksgiving comes from knowing that her mom now has a perfect, functioning kidney.

And while Laura expressed that it was difficult for her to put her daughter at risk by undergoing surgery on her behalf; she feels “a profound sense of gratitude.”

(Alison Steinhauser, n.d.)

## Transplant House

In the 19th Century, the Mayo brothers and their partners founded Saint Mary's Hospital in Rochester, MN. It was the first hospital practice of its kind: an integrated, not-for-profit group practice. Today it is the largest practice of its sort in the world, and it still shares the philosophy "the needs of the patient come first." It has also expanded beyond its original campus in Minnesota, setting up clinics in Arizona and Florida. In 1963, ten years after the first successful transplant between identical twins in Boston, the first transplant surgery took place at the Mayo Clinic. Each year, Mayo Clinic performs more than 1100 transplants, which makes it the largest transplant program in the United States (*Gift of Life Transplant House*, n.d.).

In 1973, the "gift of life" was given to Edward Pompeian. His mother donated one of her kidneys to save his life. His experience with an organ transplant inspired him to try to improve the process for people faced with similar situations in the future. He believed that the health and well-being of transplant patients and their families would be better served in a home-like setting. Throughout the next years, he worked closely with others at the Mayo Clinic to see his dream become a reality. In 1984 the Gift of Life Transplant House opened in Rochester, Minnesota, just blocks away from Saint Mary's Hospital, after nearly a decade of planning. Since then, more room has been needed and subsequently acquired. In December 2008, ground was broken for the new transplant house, and it opened its doors in October 2009. The house's mission is, "to provide transplant patients and their caregivers with high-quality, affordable accommodations in a supportive, home-like environment" (*Gift of Life Transplant House*, n.d.). In doing this, the houses "help transplant patients achieve optimal recovery in a 'home that helps and heals' " (*Gift of Life Transplant House*, n.d.).

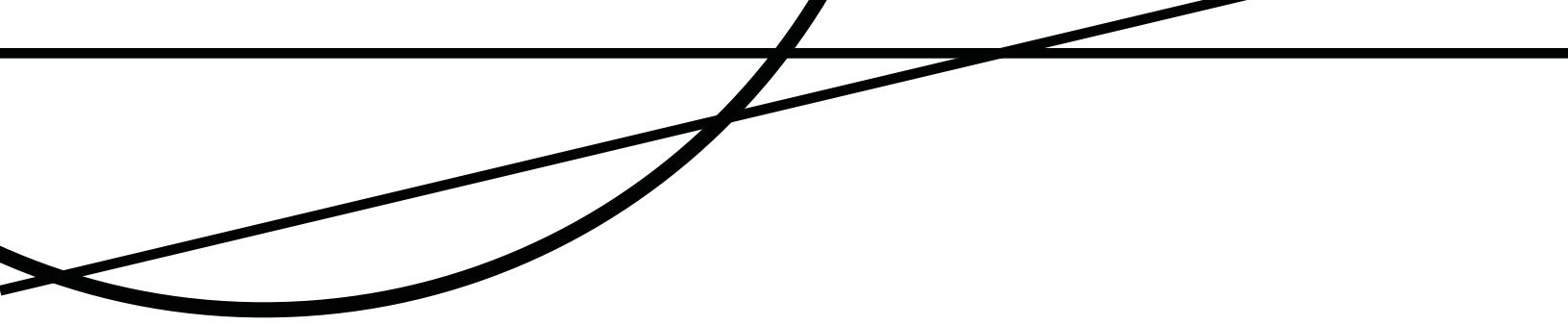
Guests at the house include those listed on one of the transplant lists awaiting a life-saving gift. Anyone at any place along the journey of a transplant is also welcome. Due to the sensitive condition of the immune system in transplant patients, however, no one under the age of 17 is allowed in the house, with the exception of children who are themselves transplant patients.

A similar home stands welcoming patient in near the Mayo Clinic in Arizona. Around it sits a village of smaller houses, or casitas, opened in the summer of 2009 to meet the growing need there.

More transplant houses continue to be established throughout the United States, many based off of the hope found at Rochester's home. There is an increasing need for more houses for transplant patients. Often they are overlooked in the medical world where diseases such as cancer have the public eye. Another special need arises in the case of children. Few Ronald McDonald houses are prepared to take in transplant patients and families, and few transplant houses will admit them either. If a home is beneficial to adults in their time of suffering, how much more would a child benefit.

It is impossible to quantify and few studies have been conducted to try to measure the effect a transplant house has on the comfort and healing of a patient. The biggest evidence of its impact and benefits is in the stories of those who have called it home.

*(Gift of Life Transplant House, n.d.)*



Research Results:  
Typological Studies



# case study 1

## Ronald McDonald House, Utrecht, The Netherlands, 2000

Bosch Architects

Designed by John Bosch with

West 8 (Landscape)

Ontwerpstudio

Jan des Bouvrie (Interior Design)

Type:

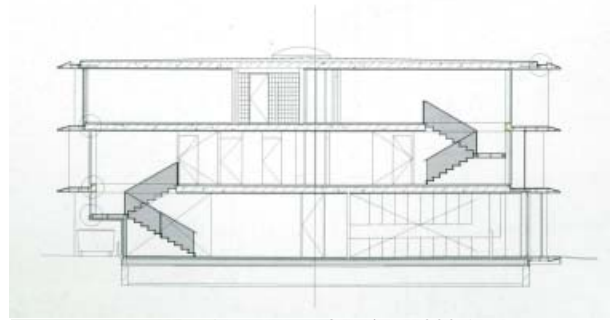
Area: 18,292 square feet



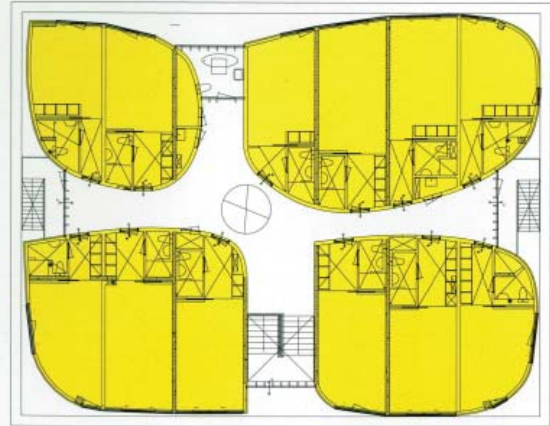
# Ronald McDonald House utrecht

To meet the growing need for a “home away from home” for the families of children undergoing treatment at the nearby hospital, a competition was held in 1995 for the design of the 9th Ronald McDonald House to be located in Utrecht, Netherlands. The Amsterdam-based firm of John Bosch won the competition and led his design team to the ironically metaphorical hamburger of a house that opened in 2000. The three story building contains 25 rooms on three floors. Identical rectangular floor plates act as trays to separate the three floors whose plans are different and independent of each other. It almost appears to be a kitschy representation of the layers of a hamburger. However, the clustered spaces of each floor follow one of Le Corbusier’s five points, that is, the plan libre or free plan. In a free plan, the structure is placed on columns allowing walls to move freely to fit the function. The clusters of rooms are reminiscent of child’s blocks, all different in color, shape, and size and also taking on free organic forms. The common spaces, including a kitchen, living room, and halls occupy the negative space between the blocks and connect the building to the outside garden.

(Free Form Overlaps, 2009)



(Free Form Overlaps, 2009)



(Free Form Overlaps, 2009)



(Free Form Overlaps, 2009)



(Free Form Overlaps, 2009)

case study 2



(Zapalac, 2008)

## Ronald McDonald House, Austin, Texas LEED Platinum

Client: Ronald McDonald House of Charities Architect: Eckols & Associates AIA

Area: 28,500 square feet

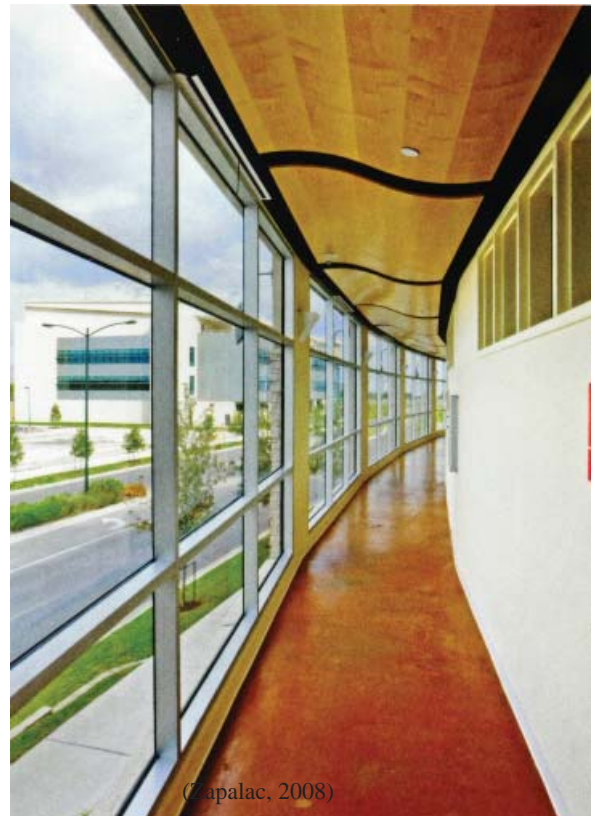




# Ronald McDonald, Austin

A Ronald McDonald House is not just a house. It needs to serve as a home, a retreat center, a hotel, a hospital waiting room, and an office environment. It needs to be sensitive to basic life needs, medical needs, as well as the emotional needs of those that dwell there. Ultimately it must offer the comforts and security of a home away from home. The Ronald McDonald house in Austin, Texas takes all of this to heart. The mission of the house is to “improve the health and well-being of children,” (*Ronald McDonald House Charities of Austin and Central Texas*, n.d.) and that was always the driving force of the design. In this, the house serves as more than just a place to stay. It offers a sense of normalcy, of a home-life, as well as a sense of control.

Each of the 30 private rooms offer a family a place to escape and be just at home. They each contain a small living room, bathroom, and sleeping area. Essential to each suite is the visual connection to the nearby Dell Children’s Hospital. This provides a vital connection between the sick child and family. Outside of these suites is a kitchen that guests are welcome to use, or they can eat food prepared by volunteers. Adjacent to the kitchen sits the common dining room which together with the kitchen, making up the heart or hearth of the



(Zapalac, 2008)



(Zapalac, 2008)

## case study 2



(Zapalac, 2008)

Also available to be shared are a library, video game room, area for watching movies or playing in general, and a laundry room.

The building form itself includes two wings gracefully curving off a centrally located main entrance. In this the architect sought to fulfill the need “for the architecture to convey a sense of friendliness and hopefulness” (Zapalac, 2008, pg.48). Green space was also a critical part of the healing or comforting environment the design wanted to attain, but the site presented a challenge in providing such. Built as part of a redevelopment of the former Robert Mueller Municipal Airport, the house sits in a busy and car-driven area. The only thing that occupies the space between it and the Medical Center is a vast parking lot. As a response to this, a safe refuge was constructed in the form of three extensive roof gardens.

This planted green roof also contributed to the overall green design. Second to the mission of the house came the desire to have it be sustainable over time. The architect and designers wanted it clear that the goal of platinum certification with LEED would never overshadow the mission for children. However, both the design for its primary purpose and the houses sustainable features seemed to work hand in hand, allowing it to become the third building in Texas to achieve the highest LEED certification. Everything from water conservation to transportation connections was considered. Perhaps the main concern of both the functional design as well as the sustainable design, was that of indoor air quality. As in any medical facility, good ventilation coupled with minimized sharing of air

## Ronald McDonald, Austin

between guest rooms is necessary. The ability to do this while increasing energy efficiency is what makes the house unique. A special air handling system, the first of its kind in the area, was put in place. This system, with other energy saving techniques, allows the building to realize a total energy savings of 65 percent over standard code-compliant systems.

The Ronald McDonald House in Austin shows that it is possible for a building that is both institutional in nature and intimately personal to be functional, sustainable, and comforting. It is a significant reference point for the design of a transplant house (Zapalac, 2008).



## case study 3

### Maggie Centre Dundee

Architect: Frank Gehry Size: 255 square meters

In September 2003, the first Maggie Center, designed from scratch, was opened in Dundee, Scotland. Designed by Frank Gehry at no cost, it is his homage to Maggie, a close friend. Dundee is a fitting place for the centre. Scotland has some of the highest cancer rates in Europe, yet Dundee's rates are worse. Twenty-six percent of the deaths in Dundee between 1993 and 1999 were cancer related. Charles Jencks, Maggie's husband, says, "The architecture is inspiring and risk taking, like we ask our patients to be" (Stungo, 2003, pg.32)



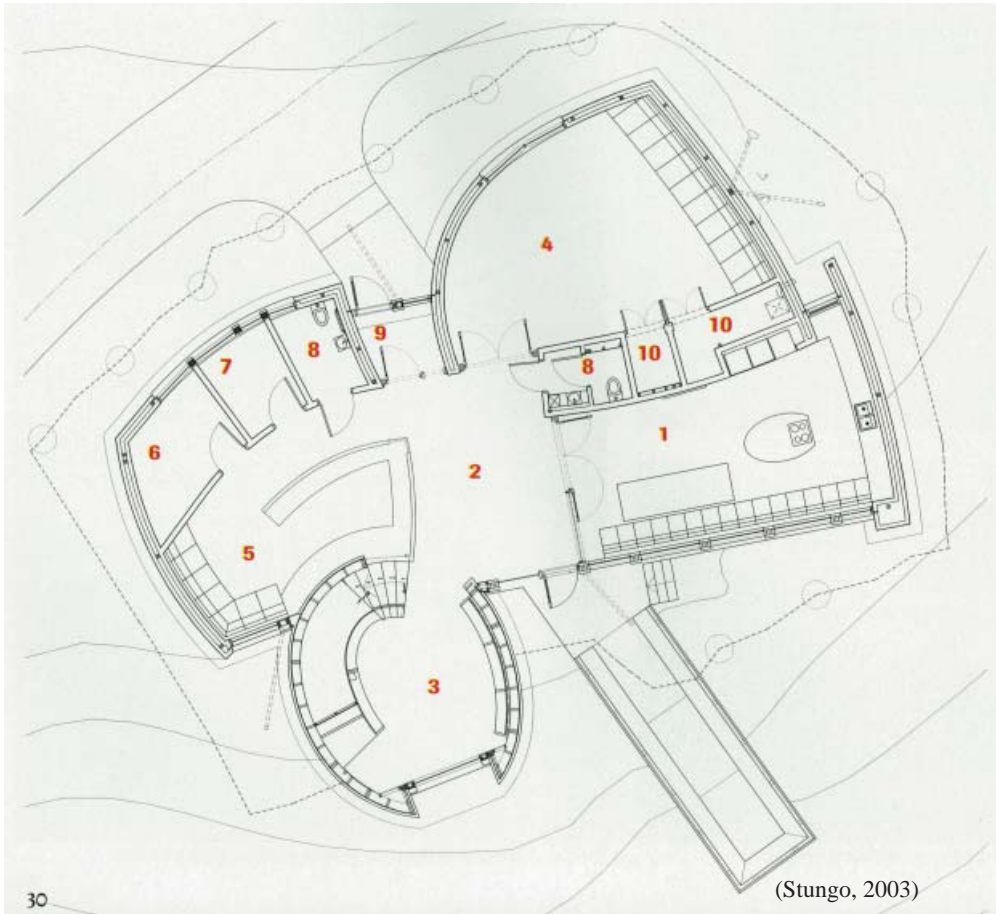
## Maggie's Dundee

As you drive out of the city and along the Tay River Valley, the centre is the first thing you see. From a distance, it has the spirit of a still life. Its tower stands tall as a lighthouse, a beacon of hope over the surrounding farmland and bay from its elevated position in the landscape. The other side takes on a more domestic feeling. Although the center is dwarfed by many of Gehry's prominent designs, it unmistakably follows his aesthetic. Its roof seems unsystematic, crinkled, and folded over the peculiar, eccentric building form. The original designs were much more flamboyant, but Gehry felt they needed to be toned down to better fit Maggie's image of the centre.

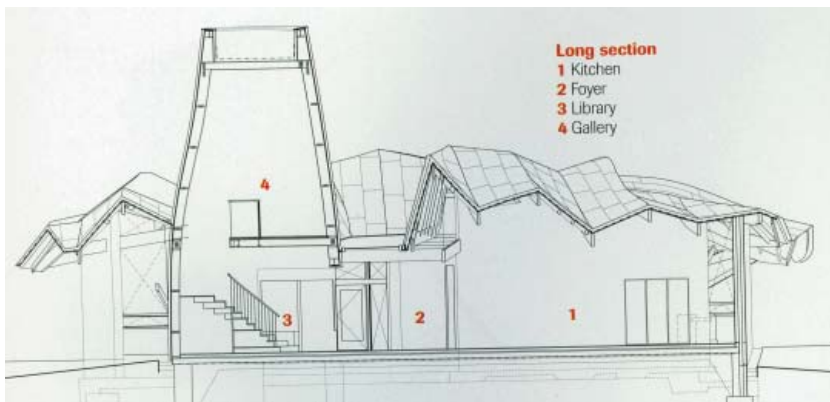


## case study 3

In the end, he focused on the lighthouse-like tower and the pleated roof, which some say echoes the traditional kilts of Scotland. Nothing is regular, and no two pieces are identical (Stungo, 2003).

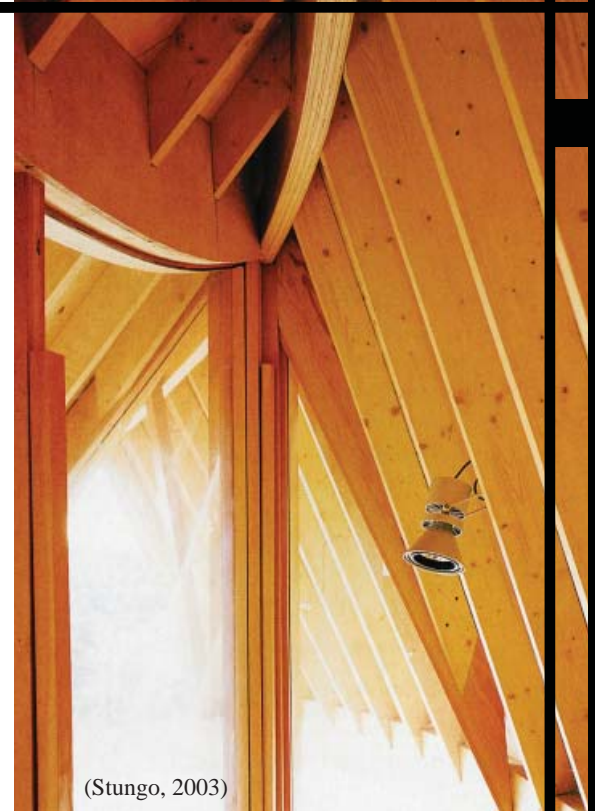


Inside, the structure resembles a barn, being made from raw, exposed laminated plywood beams that curve in every direction. It contains a variety of spaces including the kitchen, lobby, offices, library, exercise space, and quiet rooms. It is reminiscent of a home, but at the same time, very complex

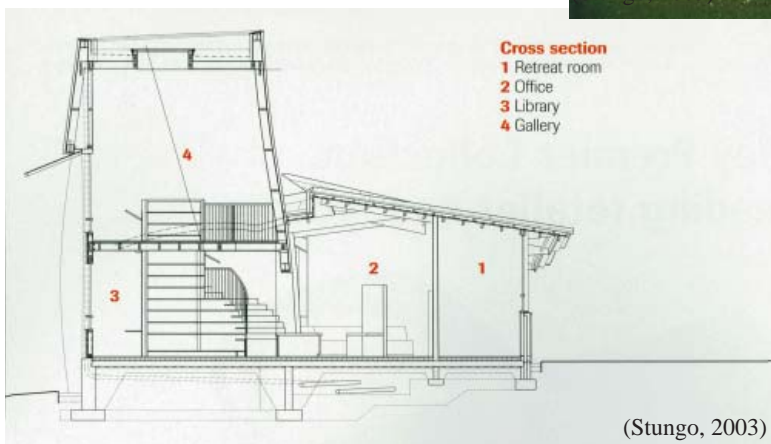


# Maggie's Dundee

in form, opposing the simple shelter offered by a home. Critics point out the problems of complexity of construction and costs, but more importantly, the rapid planning that led to spaces that can be unforgiving to the body weakened and ravaged by cancer. The quiet space in the tower with meditative views can only be reached by the steep, irregular staircase, making it inaccessible for some. Despite these issues, it still offers a place of support for hundred of people every year, and, being a signature building of importance, it has the effect of making those inside feel important (Stungo, 2003).



Gehry took a risk with its unconventional design, and he was right in saying, "I hope the architecture won't override the purpose of the building, but complement it and take it to a higher plane of comfort and beauty" (Stungo, 2003, pg.32)





## **Maggie's London**

Architect: Rogers Stirk

Harbour+Partners

Landscape Architect:

Dan Pearson Studio

Start Date: October 2006

Completion Date: April  
2008

Area: 370 square meters

RIBA Stirling Award

2009 Winner





(McIntyre, 2008)



(McIntyre, 2008)



(McIntyre, 2008)



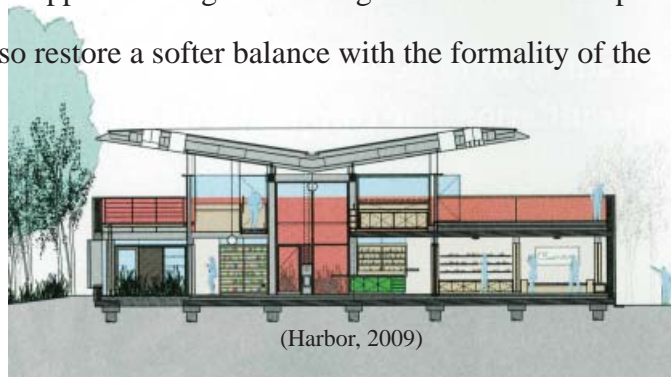
(Harbor, 2009)

## case study 4



Squeezed between the Charing Cross Hospital in Hammersmith and the busy Fulham Palace Road, Richard Roger's design for the first Maggie's Centre in England transforms its site from a chaotic wedge and whirlwind of activity into a serene, open, house of comfort. Like the privacy in a home, it provides an atmosphere of solace to help the users regain a sense of balance through emotional support not offered in the harsh sterile institution nearby.

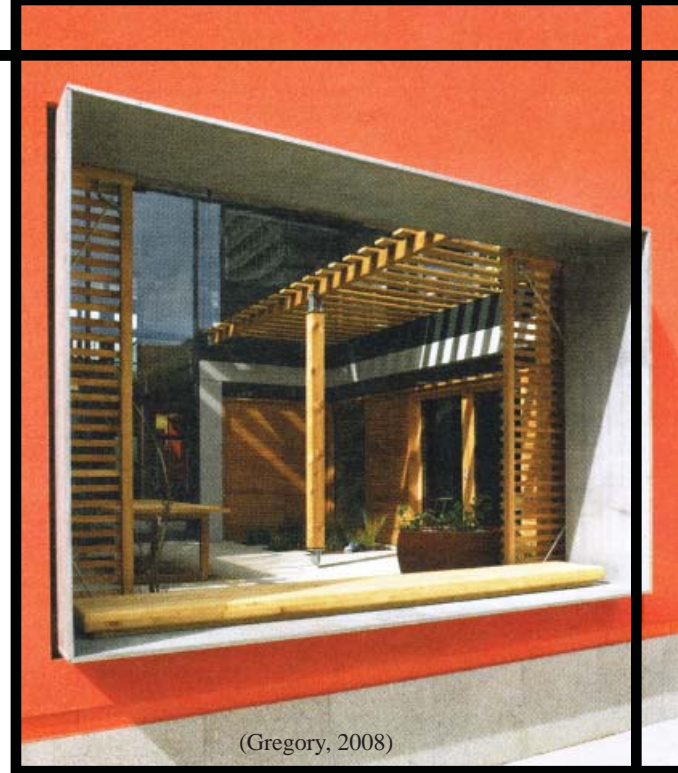
It's design takes on a zen-like quality, following Asian traditions in an almost yin and yang likeness. The outer wall, in a warm red color, wraps from the inside all the way around, protecting its precious contents from the incessant traffic whirling around. It breaks from the very rational structural grid of columns to provide a soft entrance approach. A grove of magnolia trees line the path to the house, allowing Pearson's landscaping to also restore a softer balance with the formality of the



## Maggie's London

building. Once inside, a guest can directly enter the library without having to meet anyone or continue into the heart of the home where a wood burning stove sits warming a kettle for tea. Surrounding this hearth are courtyards and sitting rooms with sliding screens to allow for privacy. This eastern approach to the plan allows flexibility and a balance between sociability and opportunities to be alone.

The upper floor dances around these spaces of varying height through a series of bridges and offices. Light flows in from the half-glazed upper floor and openings in the roof making the spaces light and calm. The roof itself seems to float above the walls with its openings allowing light, wind for ventilation, and rain for the gardens inside. A play between concrete and wood shapes the building, and is the only interruption to the openness. Some carpeting and simple furniture improve the acoustics of the spaces, which are already fairly quiet because of the tall outer wall which blocks the harsh noise from outside. No unnecessary decoration, signage, or



(Gregory, 2008)



(Gregory, 2008)

even false ceiling is used, and any of the spaces can be used for any number of functions. It can “adapt to become noisy or quiet, light or dark” (Gregory, 2008, pg.31) There is no doubt that it fulfills its purpose and provides an oasis of relief and support away from the stresses of life associated with cancer.

## case study 5

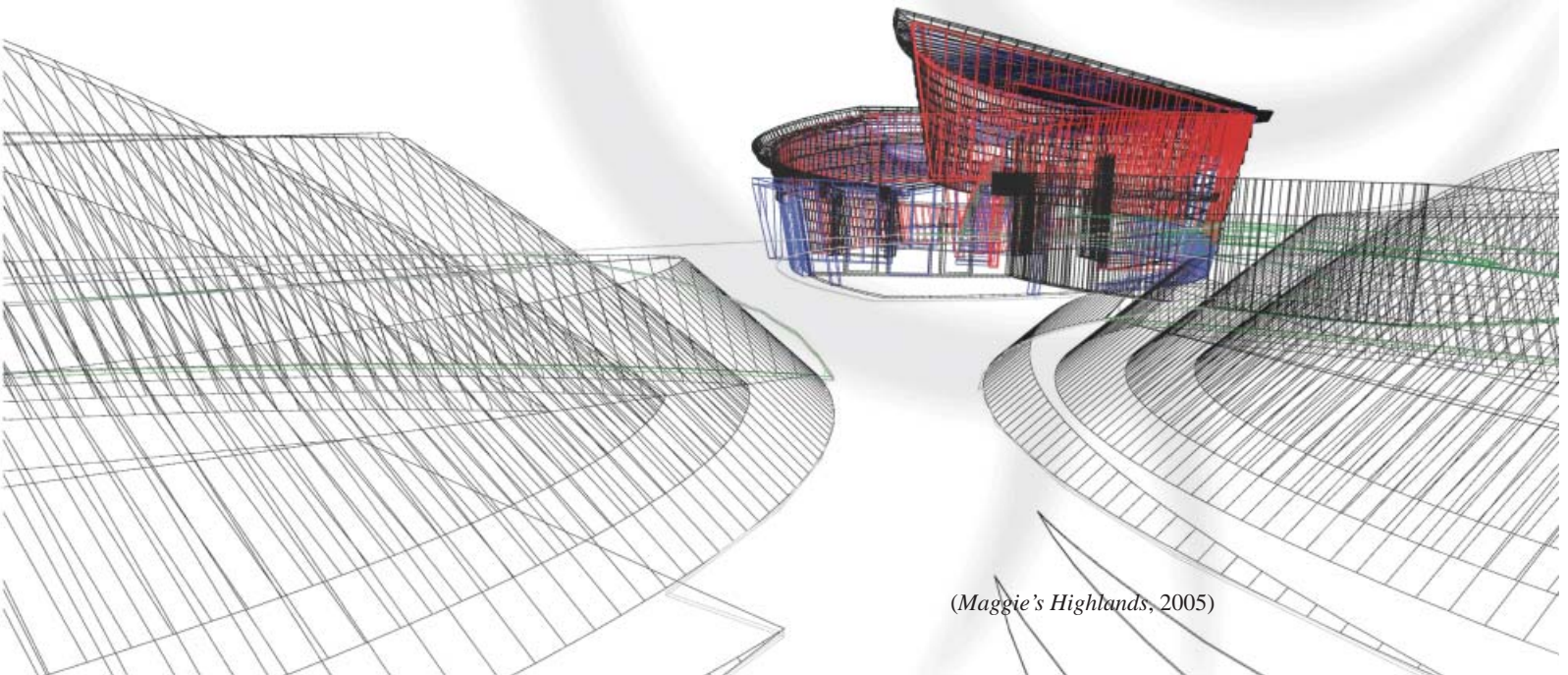
### **Maggie's Highlands**

Architect: Page/Park

Landscape Architect: Charles Jencks (Husband to Maggie)

Area: 225 square meters

Each Maggie Centre takes on a unique character and can be used as a new, fresh inspiration for a transplant house. The centre near the Raigmore Hospital in Inverness demonstrates the importance of the design of not only the building itself, but also the surrounding landscape. Gardens and architecture have always been yoked together through aesthetic and spiritual beliefs. Throughout history nature has been used as a symbol for healing and numerous rituals use nature beauty as their foundation. It is seen as a place for transformation, where plants spring up from seeds, cocoons reveal butterflies where caterpillars once were, where life thrives. Maggie's centres seek to harness this transformation and instill it in the people that come. They seek to change an institutional hospital mindset of "will I live?" into one of hope and "the will to live" (*Maggie's Highlands*, 2005) The design of Maggie's Highlands uses nature as its parti, looking at the most basic of transformation in life, that of cell division. A sign of health, cells divide in all living organisms to sustain and



(*Maggie's Highlands*, 2005)

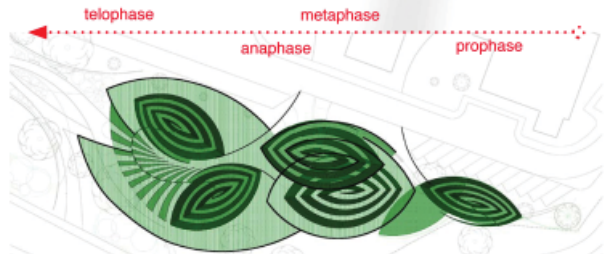
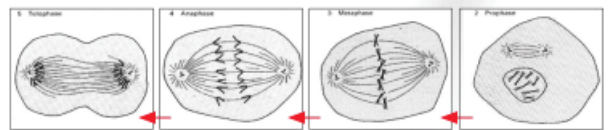
# Maggie's Highlands

restore life. The biological process of mitosis is translated into the landscape and building forms. The terrain was formed into versicas, ovals with pointed ends, that unfold from one end to the other. Its continuity points forward, toward a persistence and future. The harmony and connection between every piece points to a healthy body's balance and connectedness, where everything works together. Here, it is the wish to restore or strengthen the connection between physical and emotional self one's emotional self. The two work together to improve and prolong life, but are often jarred apart because of the struggles faced with cancer. A separation from the cause of stress is allowed by the variable terrain, where atop each rise, sits a bench for contemplation, reflection, and to regain perspective. From this seat, one can look out over the landscape and see the interconnectedness of the whole place. They can see, illustrated before them, the transformation of healthy cells from one to two in ever step of the way.



(Maggie's Highlands, 2005)

## Cell Mitosis - organising theme



(Maggie's Highlands, 2005)



(Maggie's Highlands, 2005)



(Maggie's Highlands, 2005)

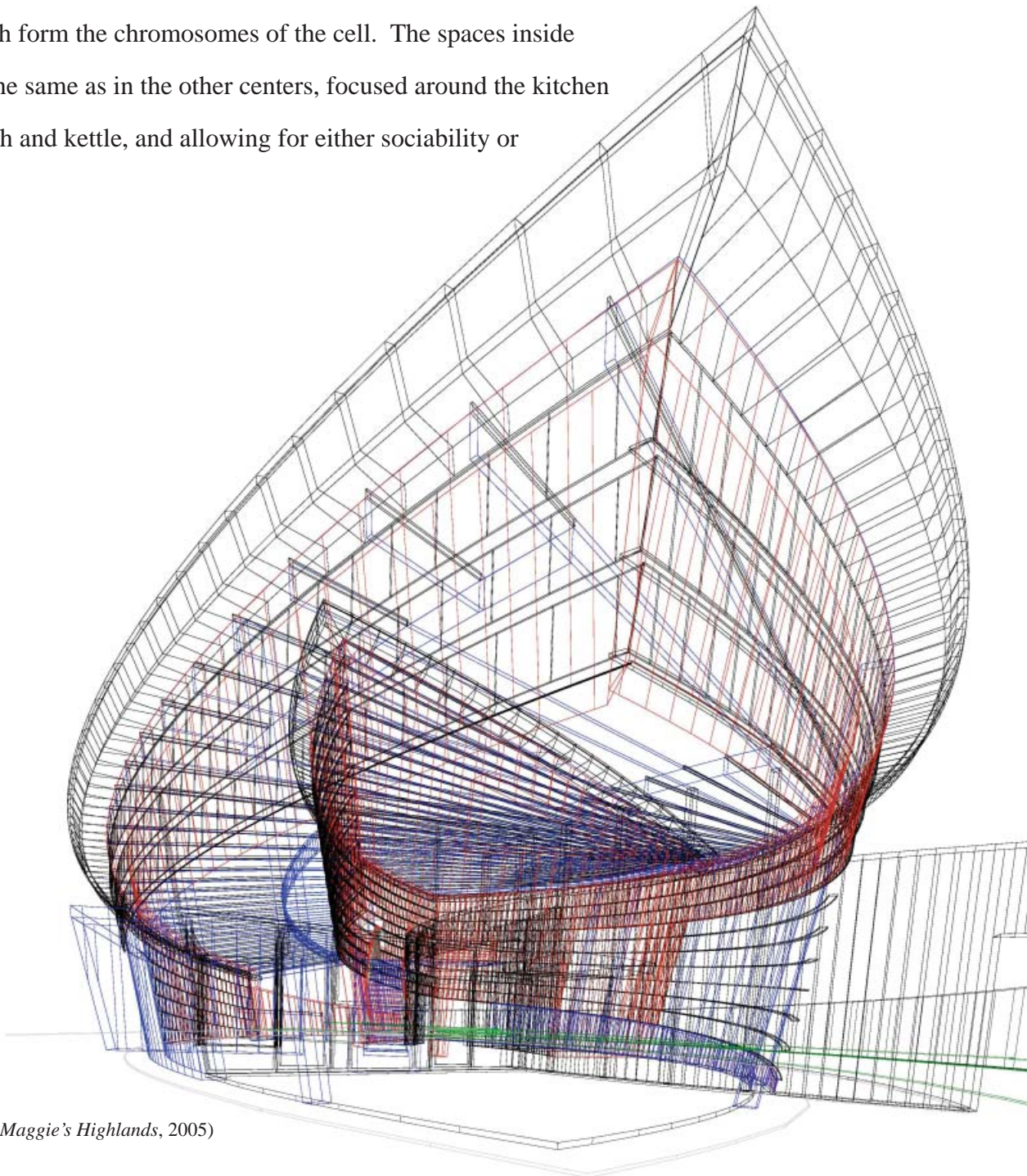


## case study 5

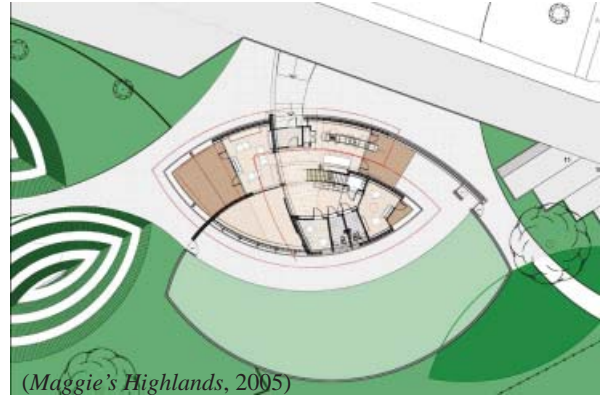
The building flows directly out of the landscape, formed by the same versica shape and inversion of the landscaped mounds. Its green copper connects it to the site, and its enclosed gardens carry nature throughout. The metaphor is carried into the layout and even as far as the stair balusters which form the chromosomes of the cell. The spaces inside are the same as in the other centers, focused around the kitchen hearth and kettle, and allowing for either sociability or



(Maggie's Highlands, 2005)



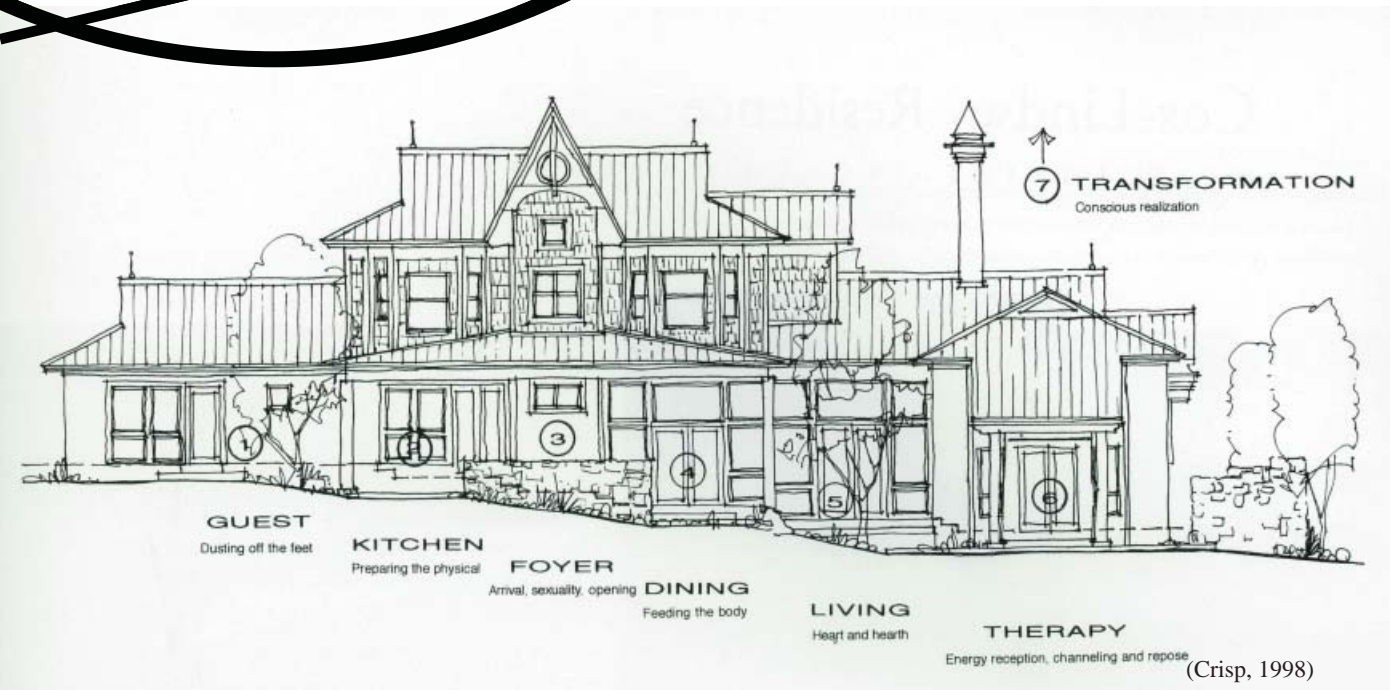
# Maggie's Highlands



private, quiet reflection. Light floods the space and views create a feeling of continuance from outside to inside. All in all, this centre shows how the site and building can and should work together to create a home of healing and comfort as an even greater whole.



## case study 6



## The Wimberly Home of Healing

Wimberly, Texas

Marley Porter

Living Architecture

5800 square feet

“Far too many homes and offices in North America lack meaning. They are empty of soul and void of divinity. America’s preoccupation with speed, modularity, cost, and size has evolved a sea of insanely proportional and grossly unsustainable ‘tract houses with thyroid problems’” writes Marley Porter, living architect of the Wimberley House of Healing outside of Wimberley, Texas. Here he attempts to restore equilibrium between the right and left hemispheres of thought, between the physical and metaphysical. Porter’s work focuses on what he calls “living architecture,” that is, architecture that connects, takes many pieces and makes them one (Crisp, 1998, pg.20).



## Wimberly House of Healing



(Crisp, 1998)

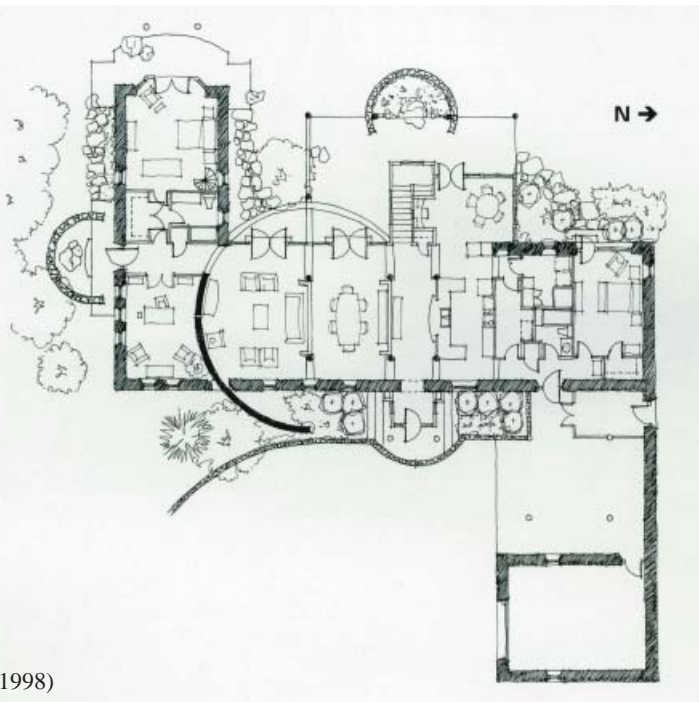
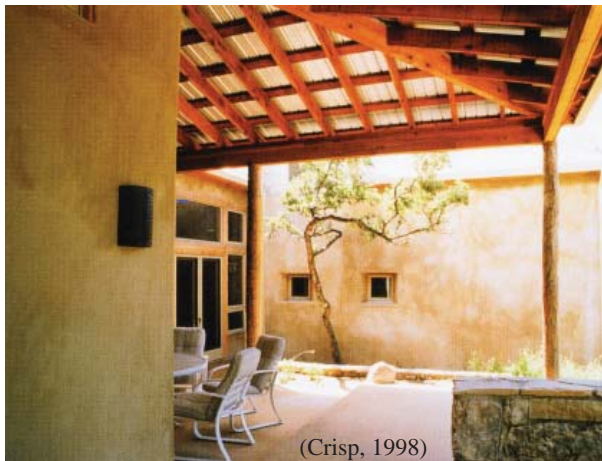
Porter endeavors to make the building connect with the site. The site has a gentle slope to a nearby creek where boulders gracefully rest and a natural dam creates a cascade of rippling water. The new structure searches for a way to not subtract from the natural. Made of straw bales from nearby fields, the size of the members allows for a complementary slope within the building. Six subsequent levels emerge inside, followed by a seventh that rises out as to the divine. Ironically, though not consciously prepared, is a connection to the human body in plan. When superimposed over the floor plan, the functions of the human body correspond to the spaces they lay over. On one end, the feet are elevated as one would do when relief is sought, and in the center the entry to the building lies at the entry of the body from where life comes, facing east and reminiscent of rebirth and rejuvenation. Here there is an interplay between angles and curves,

## case study 6

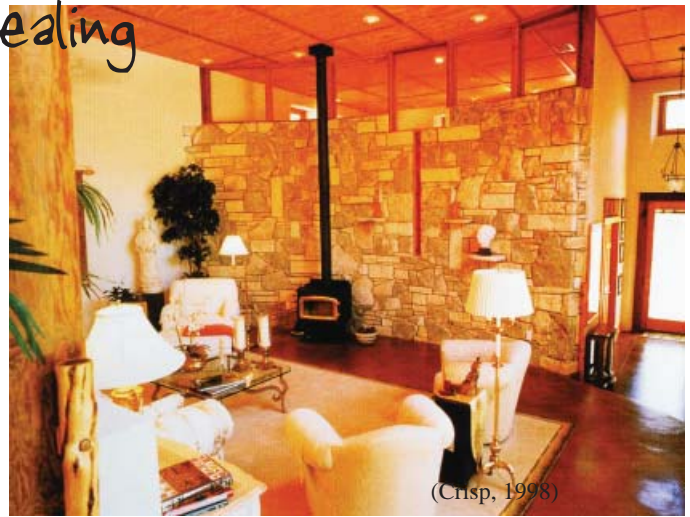
ground and heavens, finite and infinite. Similarly, the stomach lies over the space of nourishment, reminding those who come that food is a vital part of healing. Here a round table fosters equality as King Arthur's table once did. Nearby, the hearth sits at the heart of the home. The final space in the sequence is the transformation room where it sits as a sanctuary. Its proportions are perfect, drawing on the Greek's golden section in both plan and section. The numbers of the sacred hold their place in window, seats, and other simple décor. Three windows occupy the main wall as if to represent the mind, body, and soul.

Throughout the home, "the space between" is emphasized. From double columns to double steps. It is important to realize that "what goes on a wall is never as important as what goes on between the walls" (Crisp, 1998)

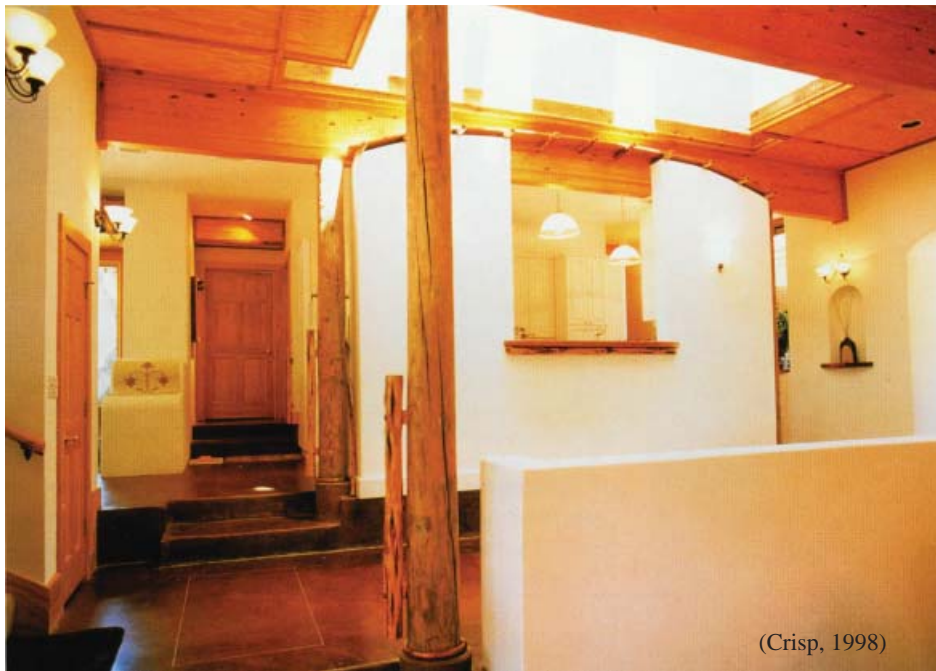
Moreover, inspiration from nature is not its only presence in the home. Structured with straw, mud, and sweat, its finishes are also natural, non-gassing, and holistic. Aromatic cedar cut from the site itself lines the walls and ceilings, purifying the air. Rain is collected and used for all the site needs, as well as most of the drinking water.



# Wimberly House of Healing

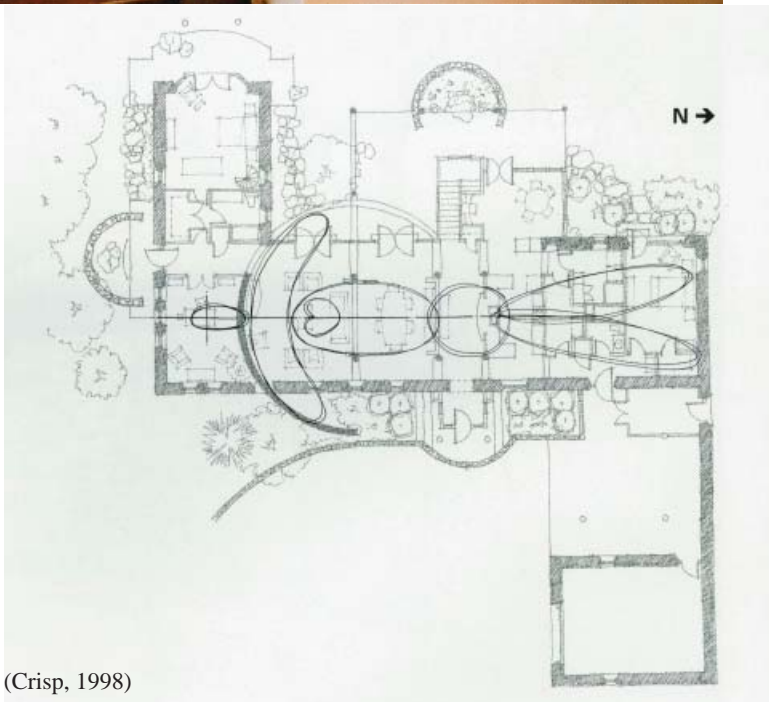


(Crisp, 1998)



(Crisp, 1998)

The Wimberly Home of healing has risen to become a living architecture “a breathing, moving, dancing thing that wraps and plays about its occupants like a mother or a lover, with caring open hands lifting through layer upon layer of overlapping spaces, fields of energy, and conscious thought” (Crisp, 1998, pg.20).



(Crisp, 1998)

case study 7



## **House on Mount Desert Island**

Mount Desert Island, Maine

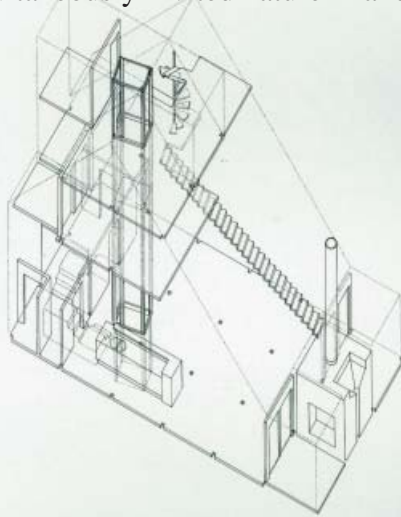
Peter Forbes and Associates

2800 square feet

(Crisp, 1998)

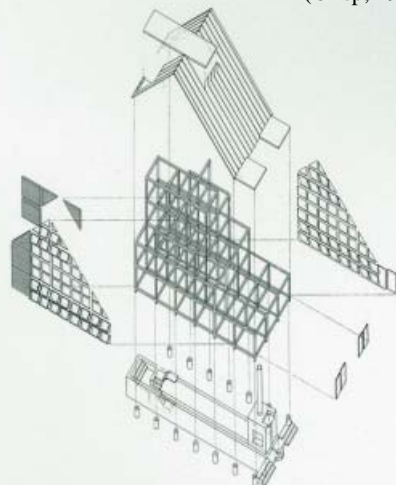
# House on Mount Desert Island

Architecture does not always need to fill our need for tradition, and, in fact, many times, good architecture is one that challenges the way we have always thought about the spaces we frame. Phillip Johnson's glass house is one example of a house that pushed the traditional way of defining the spaces we call home. A modern example that uses this idea is the house on Mount Desert Island in Maine. Here, the client sought a healthy house that expressed freedom and movement and one that drew in the picturesque beauty of the site. Because of her sensitivity to many materials and finishes, the inspiration for the house was explored using a series of recycled steel tubes set in both a horizontal and vertical grid. The exterior tubes framed the glass that simultaneously invited nature in and reflected it as a dynamic exterior finish.

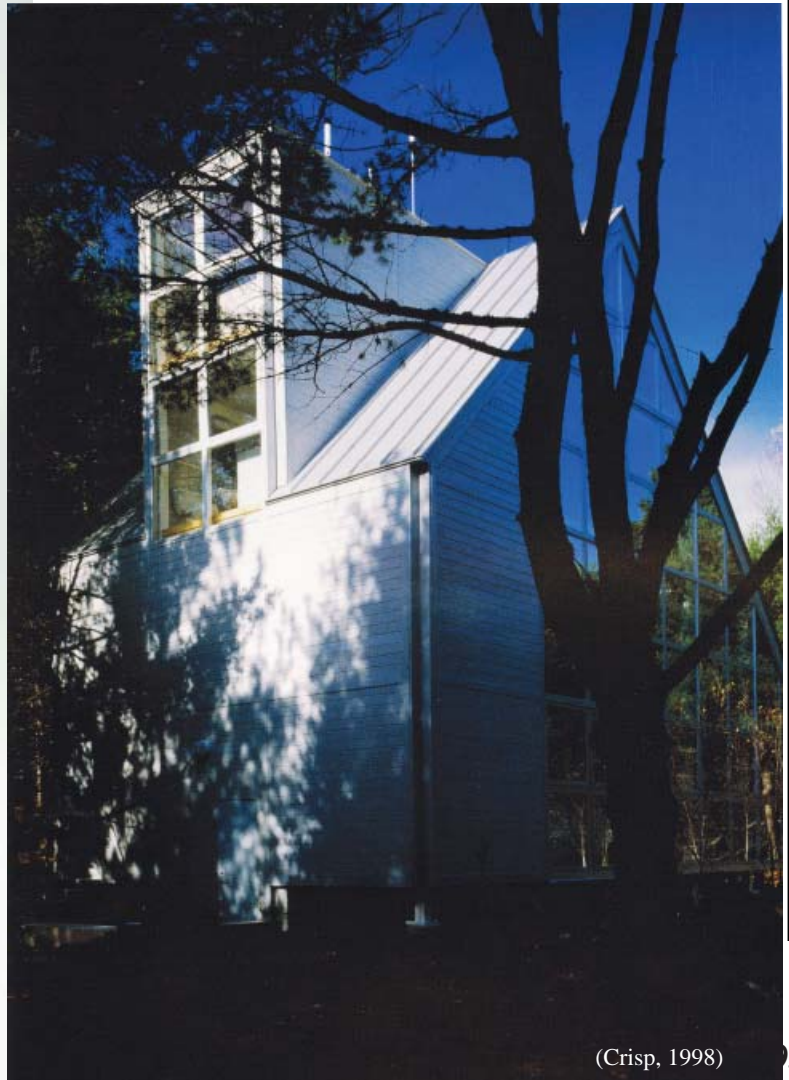


*Spatial relationships and circulation*

(Crisp, 1998)



*Structure and enclosure*



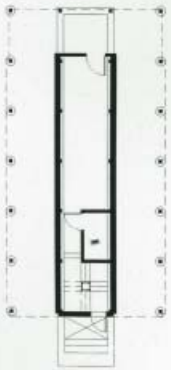
(Crisp, 1998)

## case study

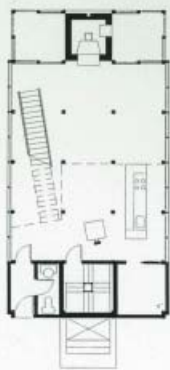
Inside, the tubes created shelves for spaces eliminating the conventional partitioning system while still allowing for a comparable amount of privacy. Air movement is free and not restricted to typical ductwork, promoting a healthy atmosphere, and though small in actual size, the experience of the house is one of an expansive space. Stairs dance off the grid, creating an interruption to its rigidity. Despite the open plan, the cubes define each space distinctly while connecting them openly to the whole. This simple home that challenges traditional separation of spaces can be an inspiration to be fresh and new in design, even in the design of the oldest and most primary built form, the home (Crisp, 1998).



(Crisp, 1998)



Foundation plan

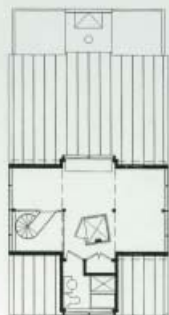


First-floor plan

(Crisp, 1998)



Second-level plan

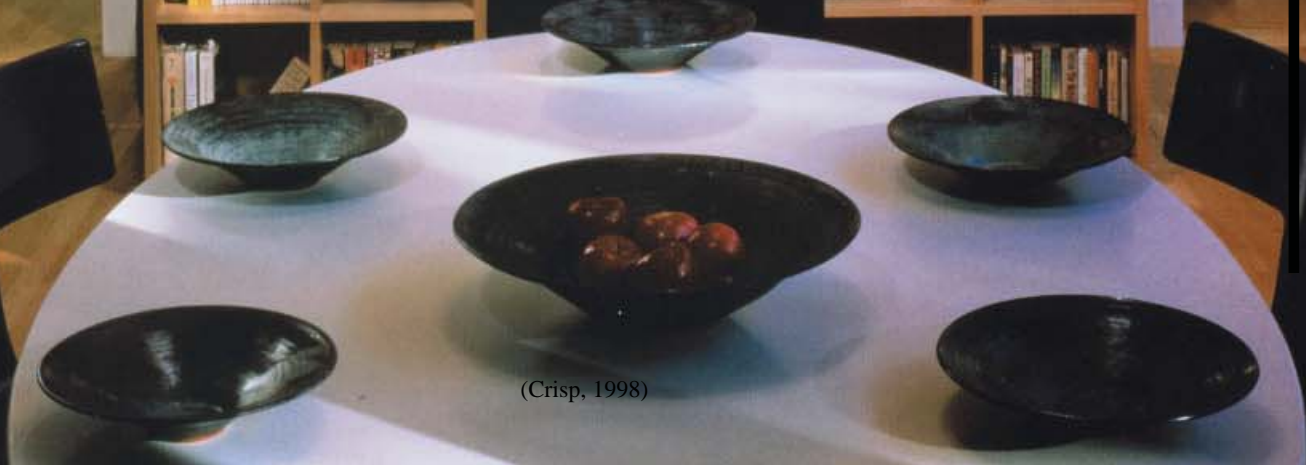


Dormer plan



(Crisp, 1998)

Number 7



(Crisp, 1998)



## case study

Today we live in an ever-changing dynamic world. From the invention of computers to the discoveries of modern science and medicine, the way things were is quickly outdated, replaced by the continually changing new realities. In recent years there has been a push for architecture to respond to this through modern technological advances in the field. There is also a push to be retrospective and look at the way things were before modernity's chaos. It seemed that in the hustle and bustle of everything, care was lost in the way we approached design. A lot of architecture became solely about function, and function was interpreted in isolation apart from its own context of humanity. Yet, examples of work that sought to restore balance between the physical and metaphysical do exist and can be helpful in the move forward.

The idea of a transplant house is, in fact, a very new one indeed. They are just beginning to be established and their benefits are slowly being made more apparent. To date, no such house exists that has been holistically, architecturally designed from scratch. This thesis investigates such a house with a innovative, novel approach. Thus, in an effort to draw on historical truth about the typology, several varied dwellings types have been investigated. The cancer support inspired by Maggie, the Ronald McDonald Houses for children around the world, and even just individual houses all embody some image of home. They inquire how healing and comfort can be provided through the architecture. Some are a physical residence, while others simply provide an emotional and mental home. Some key ideas presented in each case included the presence of a central hearth where the community is supported, as well as quiet or private spaces.



# Summary

From the urban site to the rural one, nature should be a part of the design, from the outside in. While functional and special arrangements varied, human values and the care that is needed to heal seems to be fairly universal. Similar ideals were present in various buildings from various countries including the United State, the United Kingdom, and the Netherlands. Various important technical issues also came up including the consideration of the medical aspects of the spaces. Transplant patients often have suppressed immune systems and it is important to care for this, especially when it comes to children. Isolation of systems and ventilation, as well as careful selection of materials, was important while not isolating the people in the spaces.

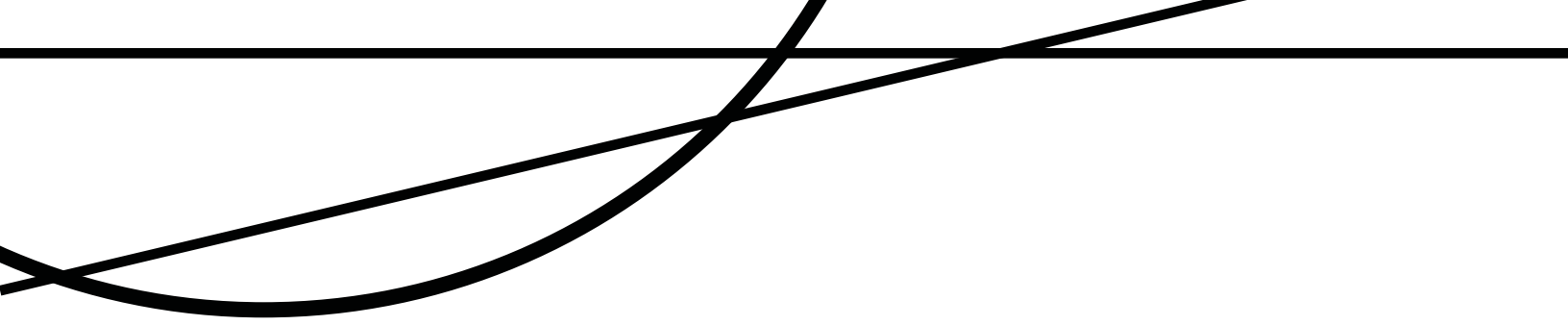
All things considered, the design of a transplant house from scratch and in a holistic way offers a creative challenge that draws on many varied typologies, conceptual, functional, special, and technical aspects.



(Free Form Overlaps, 2009)



(Maggie's Highlands, 2005)







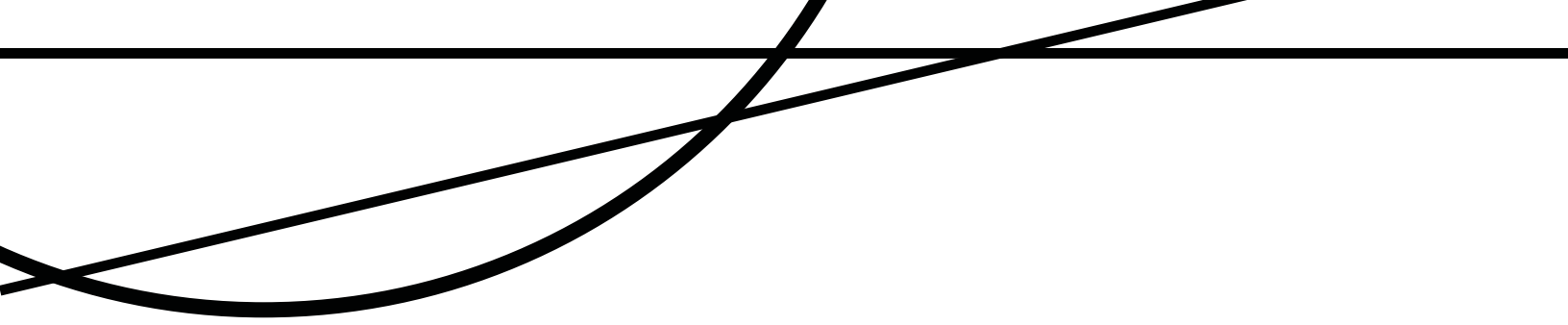
## Goals

This project has a great personal meaning for me. My grandfather has always been my hero, and I knew that he would never have gotten that chance without the gift of a liver he received. I never took the time to ask him about his experience through the healing process or about the impact that the transplant house in Rochester had on him. Nonetheless, the effect of having his family nearby and the stress of everyday living away from home not resting on their shoulders was always apparent. However, perhaps the experience could be pushed even more. That said, the foundation for the project is to grow in knowledge about the healing process and to push the envelope regarding the design of healing spaces. Architecture is about designing spaces for people. It is impossible to remove people from the equation, yet often they are overlooked or nearly forgotten in the design of healthcare spaces. These spaces are where people are supposed to be made whole, and are houses where people live. Even I am guilty of forgetting to put people first in the myriad of classes, projects, due dates, and distractions while at school. Personally, my goals for this thesis are to grow in knowledge and recognition of the people we as architects are designing for, and be able to design a space that inspires care and healing. It's not about the money or awards; it's not about how efficient or sustainable it is. It's not even about designing the most beautiful building. When it comes down to it, it's about the people. I want to learn how to apply all the knowledge I've gained through school and, ultimately, use this training to improve the lives of people: my brothers, sisters, friends, colleagues, and those friends I have yet to meet or may never meet. I look around today and see the hurt, pain, and loneliness that modern society with its emphasis on money, success, and selfishness instills. I cannot be everywhere or everything that people need to help, to heal, but a space designed for this is an artifact that I can leave for those who need to feel that care. Now, without the constraints of budget or client I can explore the ideas freely and apply them in the future in practice.

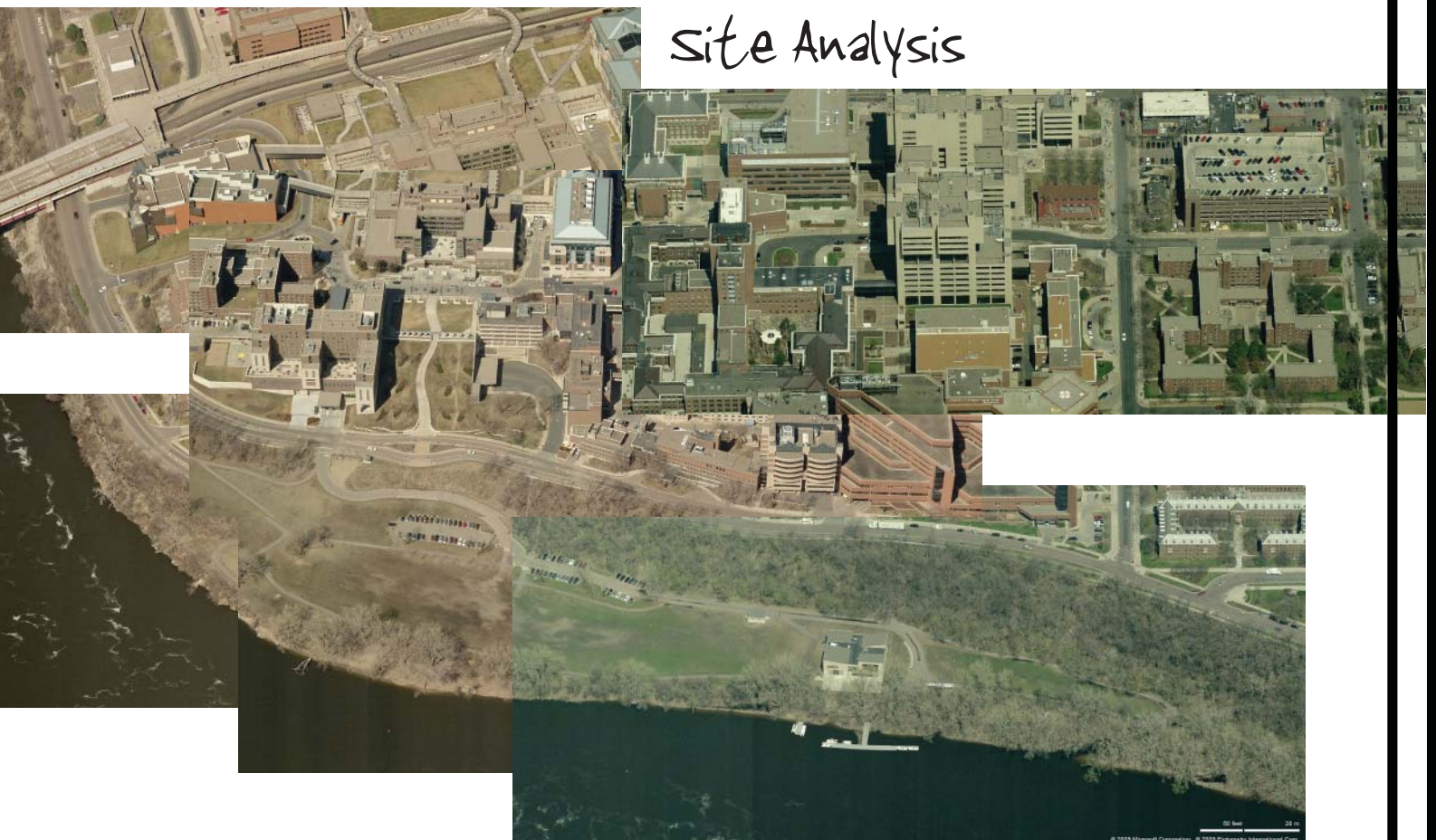
In regards to the academic environment, as a capstone for my architectural education, what better way to complete it than to consider humanity. A thesis about healing, harmony, and restoring balance has the power to balance the educational scales between the technical knowledge gained so far and the humanistic heart it takes to truly design for people. It will challenge the skills I have and encompass all that I have learned. My goal is for it to be a capstone of my education and the foundation for what lies beyond.

Finally, in the professional world, my goal for this thesis is that it serves as a reminder to other professionals of the importance of people. A design, a building can have so much meaning, but only if it speaks to the people. With a fresh, innovative, and forward-looking typology set in the old and spiritual ideals of people and healing, I hope to be an inspiration to design for people.





# Site Analysis



(Maps Beta, n.d.)

## Site Analysis

Amid the huge hospital buildings at the University of Minnesota Medical Center, it is easy to feel insignificant, overwhelmed, and disconnected. The towering buildings cut off any views, and the whole environment is one of sterility and anxiety. Finding where you want to be is nearly impossible unless you ask one of the unsociable employees marching between buildings. If you reach the edge, where a winding road marks the backside of the medical campus, a hint of life captures you. One side of the street is lined with cold facades while the other is cushioned by a soft line of trees. Stairs switchback into the valley below, and one branch of the road snakes down gradually. Here lies the tail of something inhuman and the beginning of something more natural. Cars and traffic takes their seats, and a path unfolds for us. Here, at the intersection of these two contrasting environments, lies a place for man to dwell.

From this crossroads, though in a valley, views thrive in contrasting balance. To the north, atop the bluff the once overwhelming hospital sits, its power reduced. To the east, a smooth, grassy plain emerges as a step in the naturally terraced landscape. It extends far into the distance slowly funneled by trees to the point where the path disappears into their blanket of green. The steady flow of the Mississippi River winds around from the south to the west, framing the views of its opposite bank, also flanked by trees and the companion hospital beyond. The view to the south almost appears to be a mirror, like a reflection of the site itself. To the west, a bridge can be seen pulling the two banks together. Every view is framed by the trees instilling life's energy into







## Qualitative

the place. Nature is allowed to govern the site with its tranquil presence.

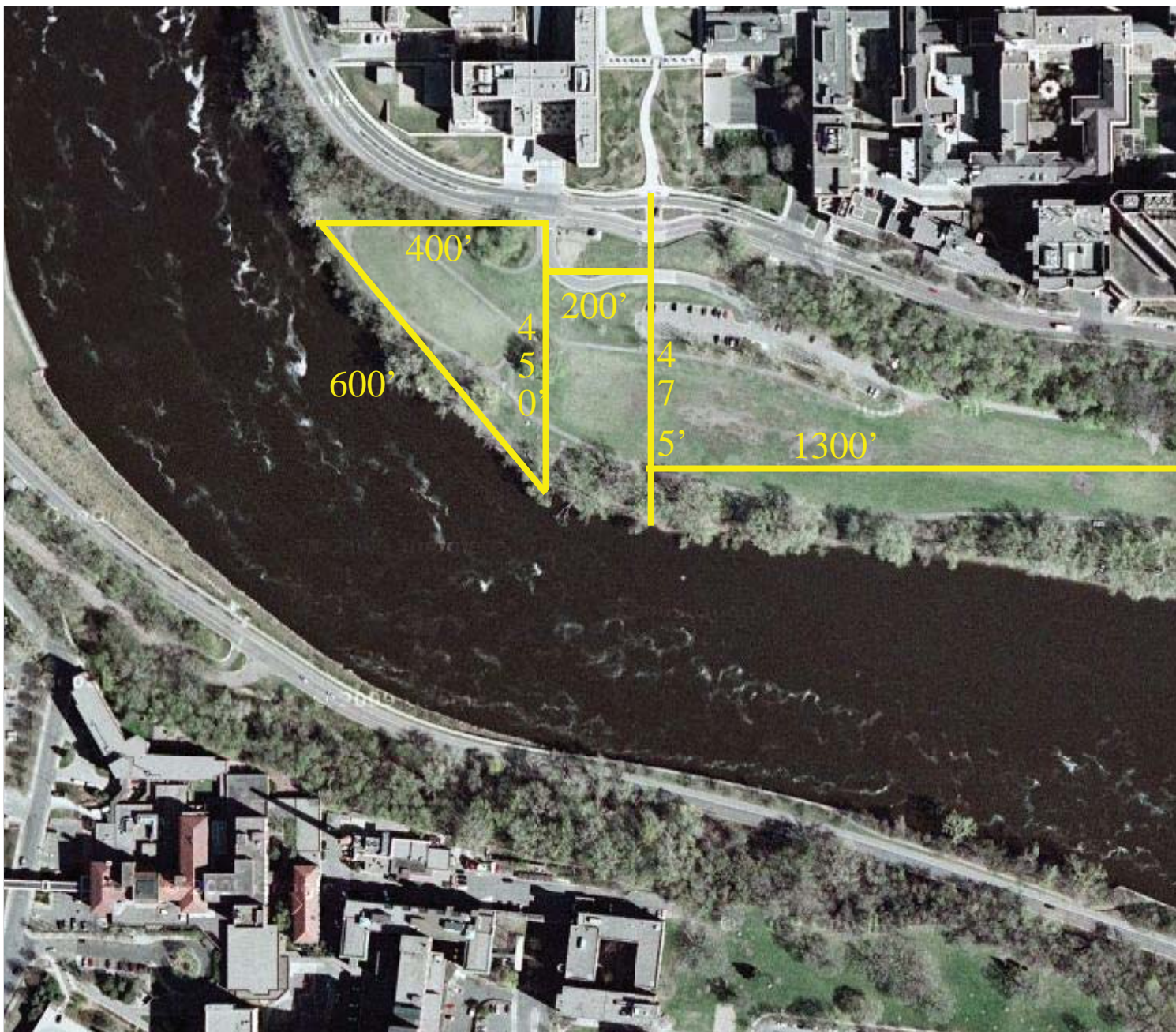
In harmony with nature, man has left footprints on the site. From the man-made path to the area where his machines sit, there is no doubt that this is a place for man as well as nature. The newly constructed boathouse rests near the far limits of the grassy plain, offering a symbol of health and wellness. It is the only man-made structure that occupies the park, other than the tree-like legs of the platforms spanning the river high above.

The field is tended to by man, its decoration kept short and regular offering a place to run and play. It offers an interruption from the groves of trees around, allowing the sun's warmth and light to penetrate onto the site. Light and darkness dance across the site between the sun's rays and the shadows of nature's canopy. Intense light frequents some sections while it is scarce in others. A few streetlights dot the road, and the distant buildings offer a twinkle of artificial lighting.

The stimuli of the site flood the sense. First met with vistas of sight, if one allows the other sense to roam freely as sight, they too will be met with the junction of the man-made and natural. Sounds of the river's soothing flow balance the sounds of traffic and the city. Wind rustles through the trees, which offer a buffer against its power, and creatures sing in the background. The refreshing, water purified air is filled with the scent and flavor of life and

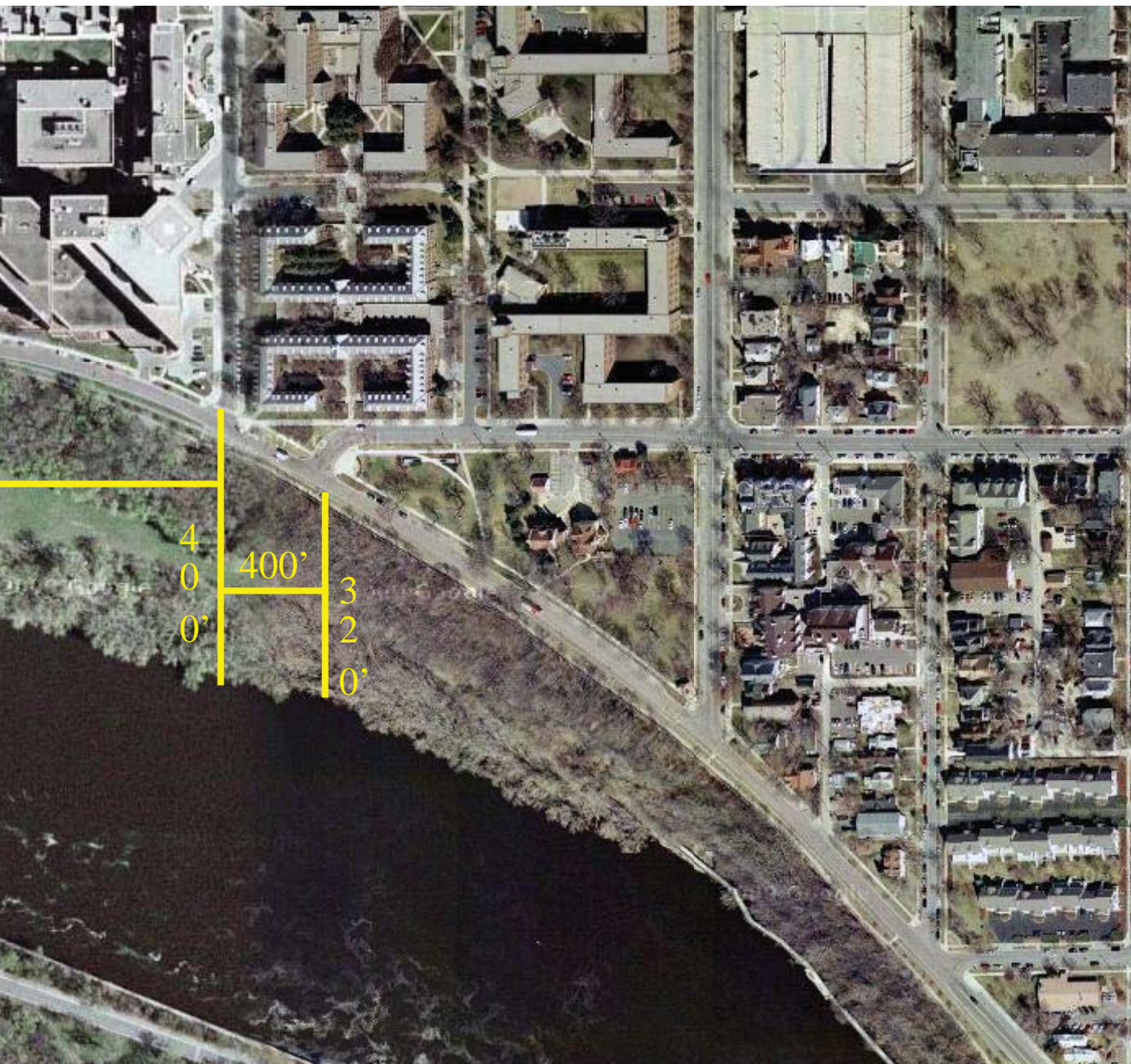
rejuvenation seasoned with a hint of the bustling city's polluted, stagnant sensation. Textures in the skin of the trees, ripples of grass, and waves of water excite the hands and inspire the mind.

# Site Analysis



(Maps Beta, n.d.)

# Quantitative



# Site Analysis



First glimpse of the site from the sidewalk by the street



Standing on the west side of the site looking toward the new boathouse

# Photos



Looking at the spot of the proposed house

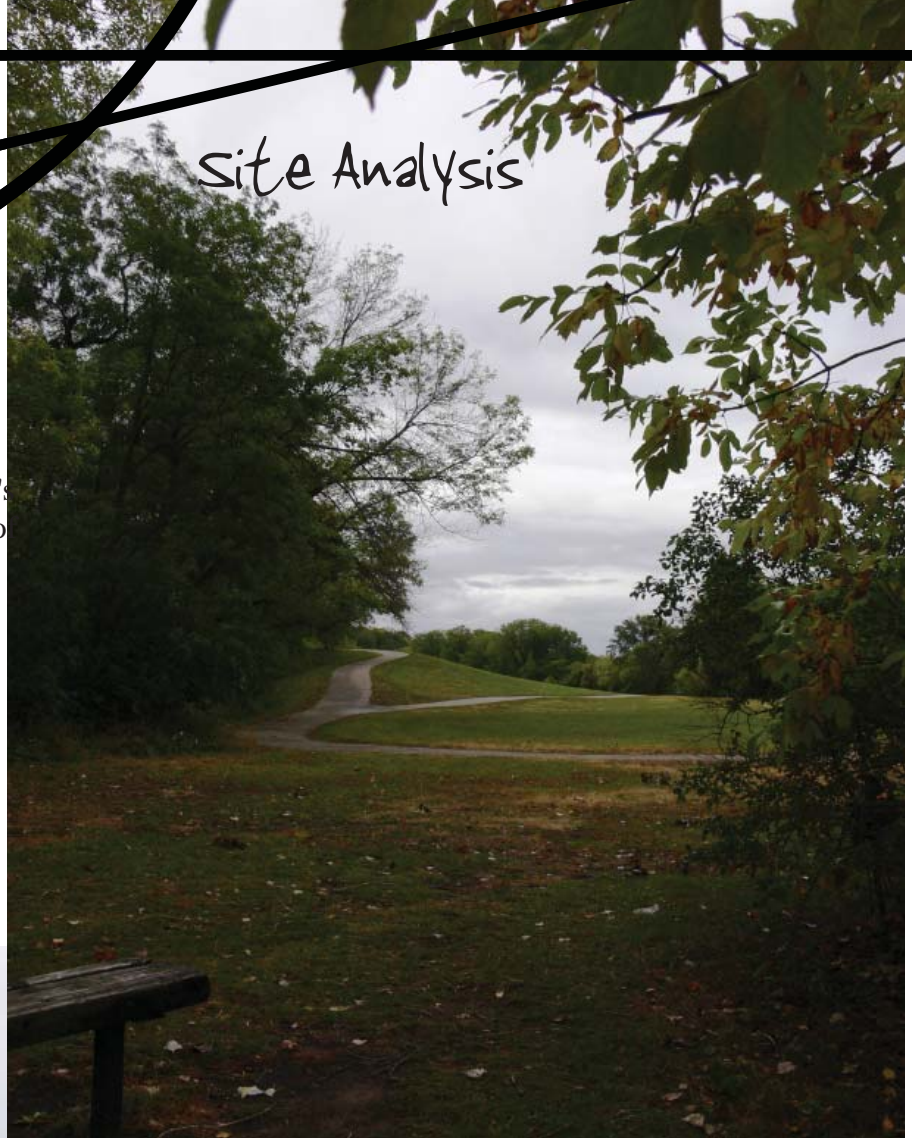
View of the site from the road



# Site Analysis

View from the water's edge at the location of the proposed house

View of the site from the west edge



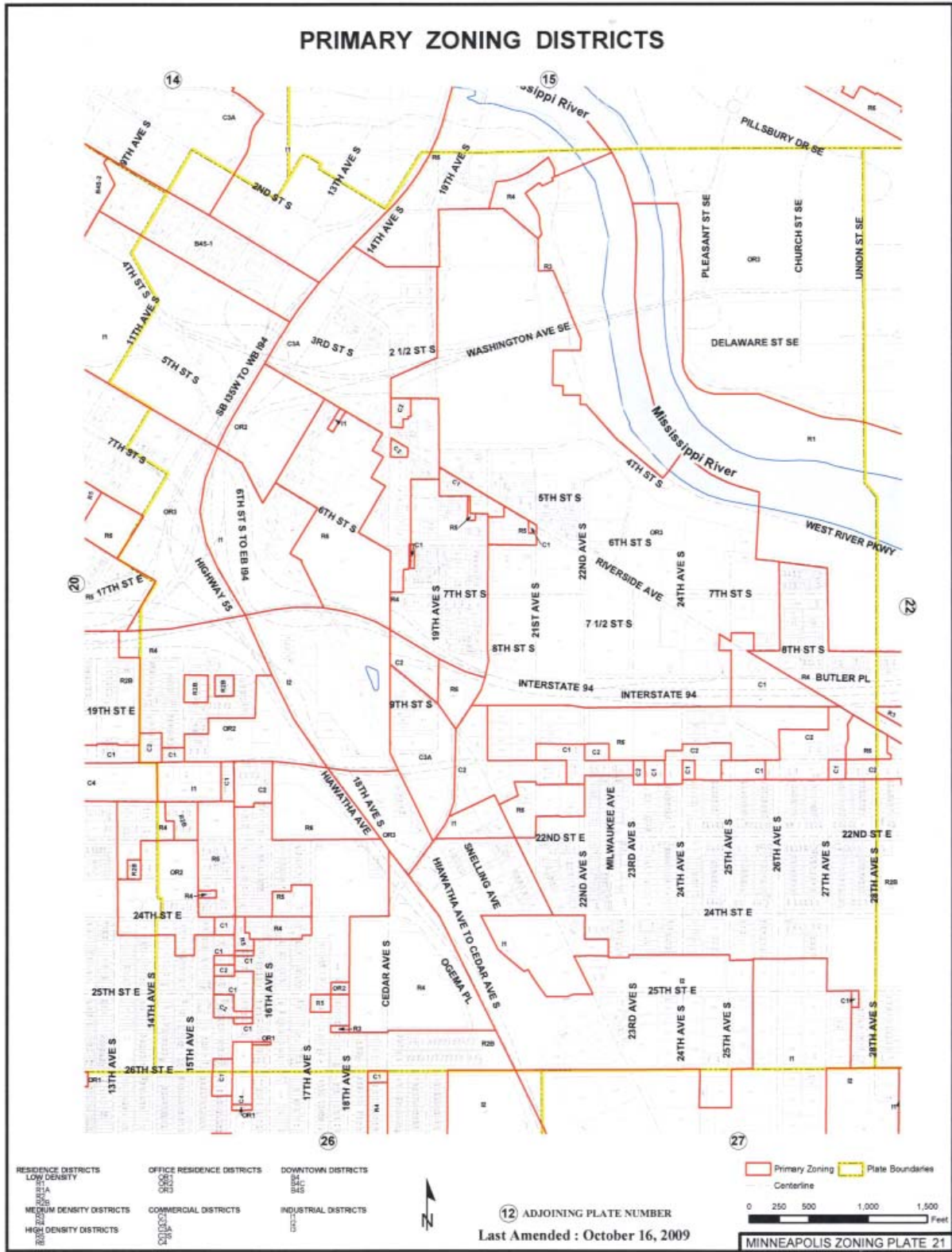
# Photos



Views across the river from the west side of the site



# Site Analysis



(Zoning, 1997-2010)



# Legal/Zoning

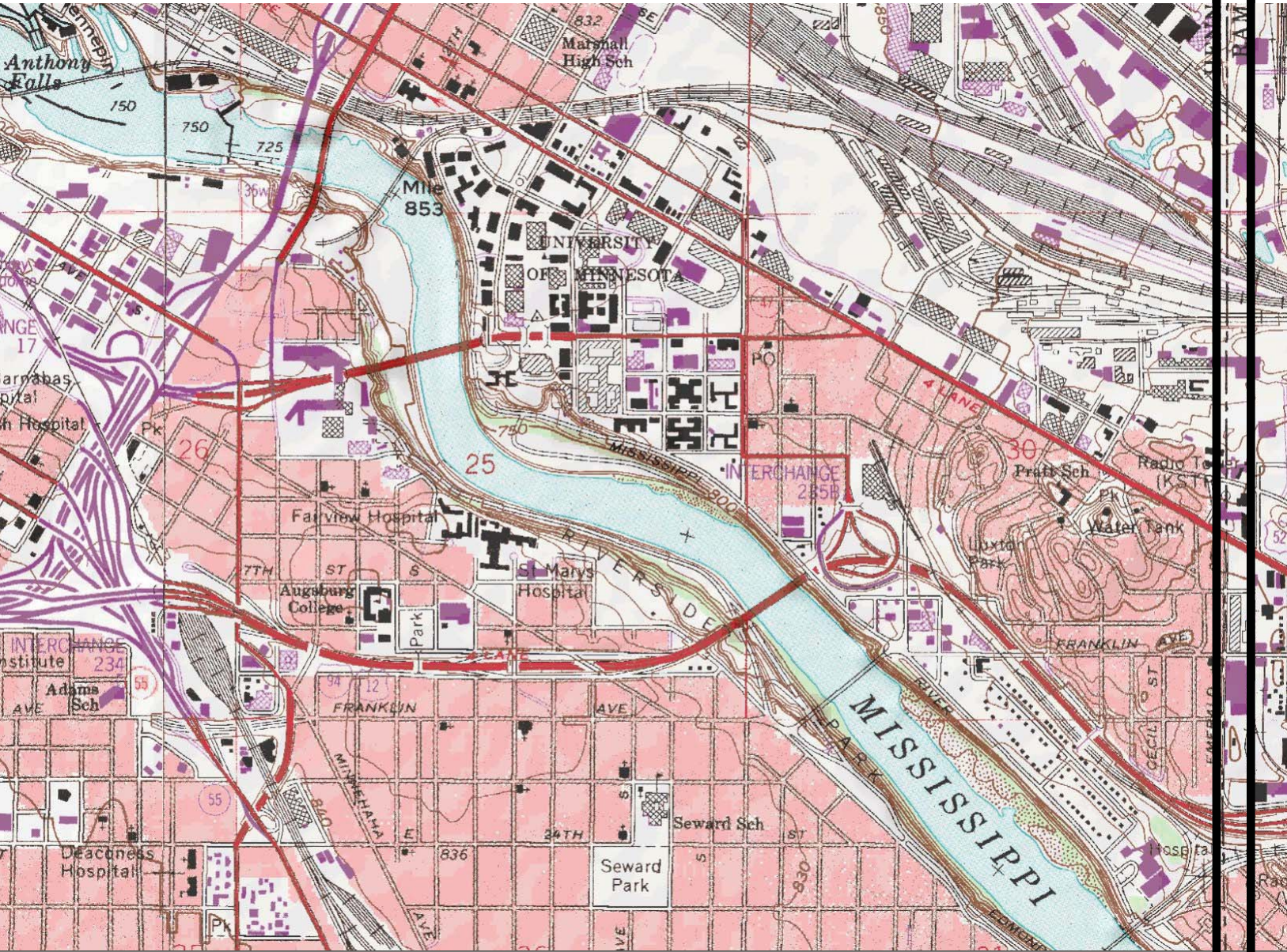


(Zoning, 1997-2010)



Site Analysis

# Topography

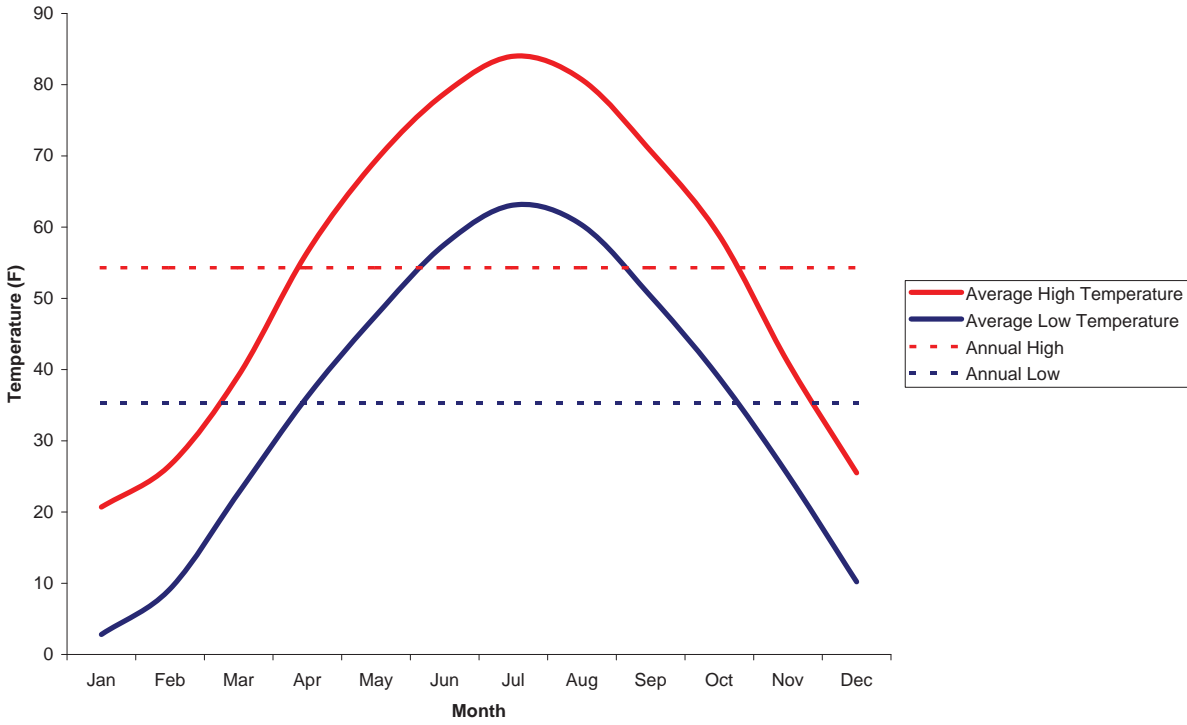


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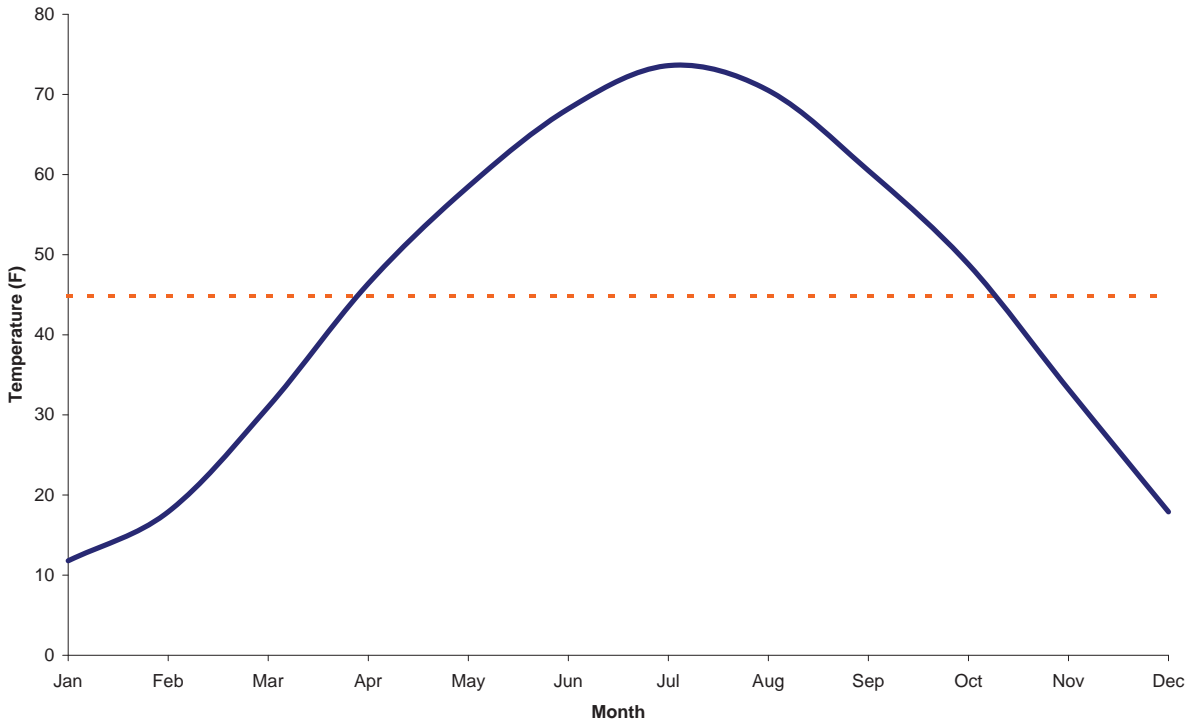
Map provided by MyTopo.com

# Site Analysis

### Minneapolis Average High/Low Temperature

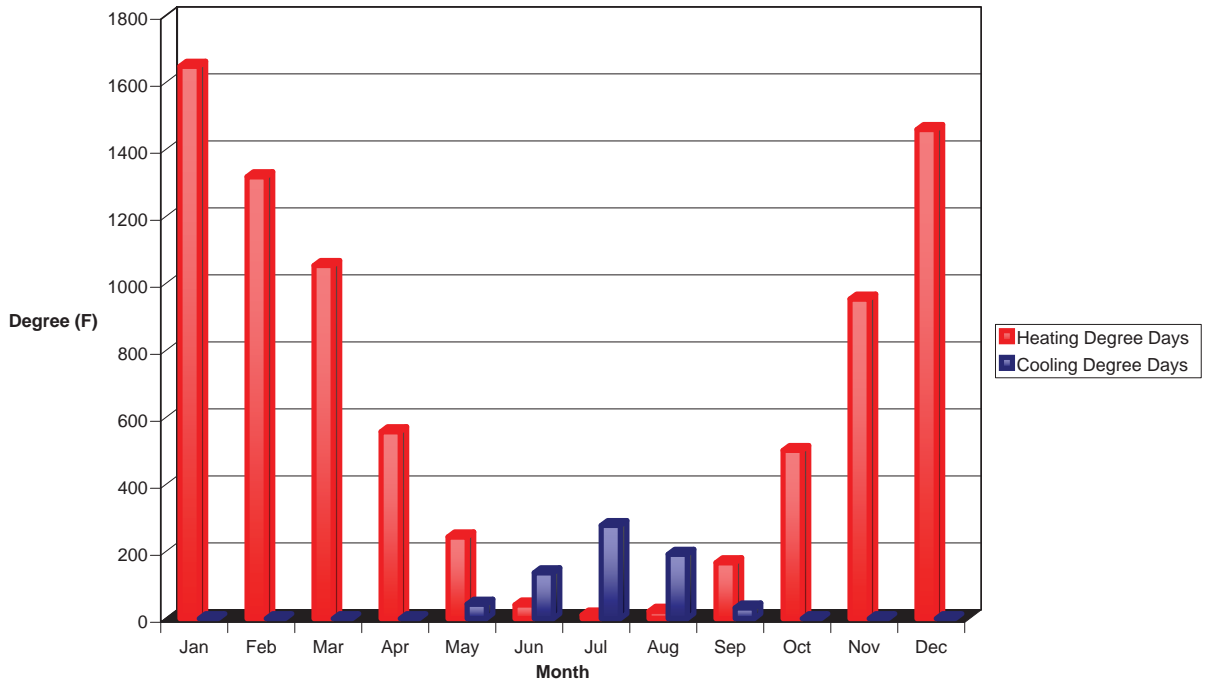


### Minneapolis Average Monthly Temperature

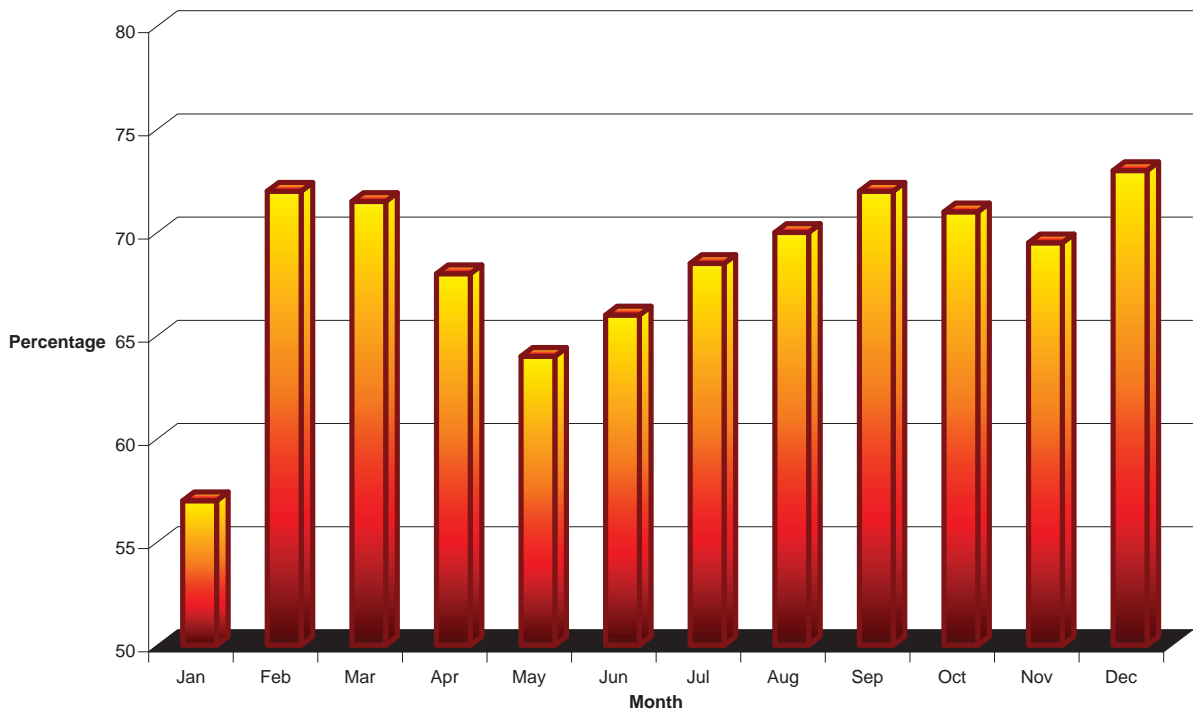


# Temperature/Humidity

Heating and Cooling Degree Days (Base 65)

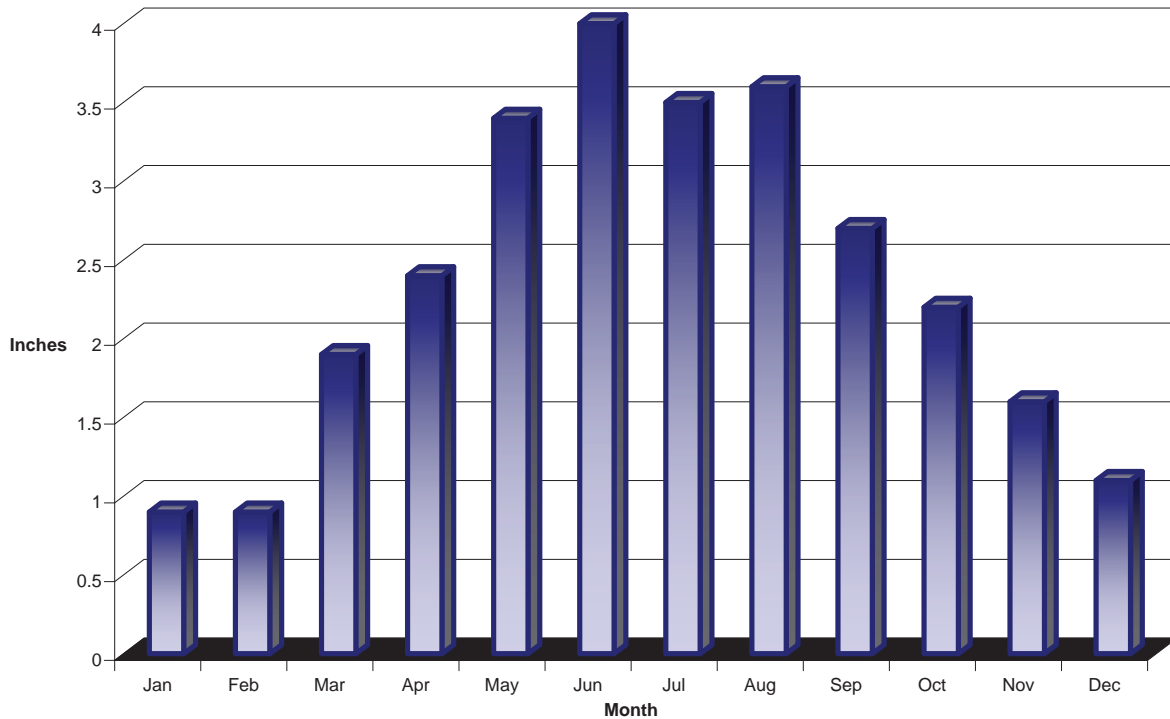


Average Relative Humidity

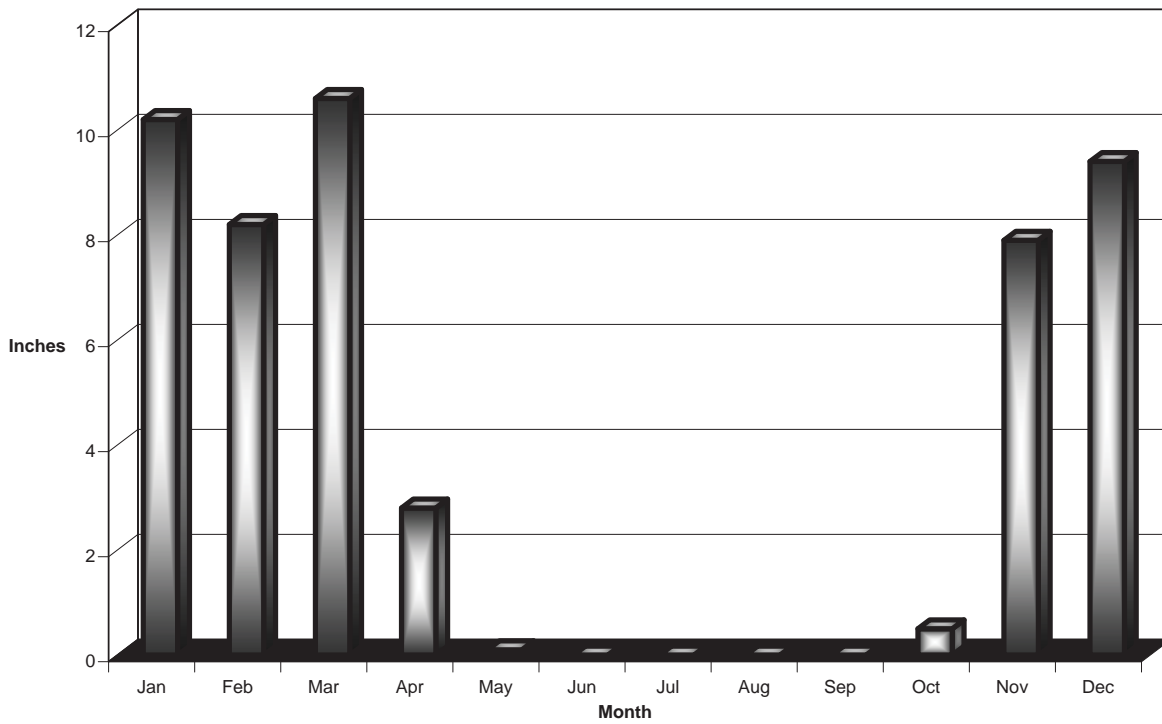


# Site Analysis

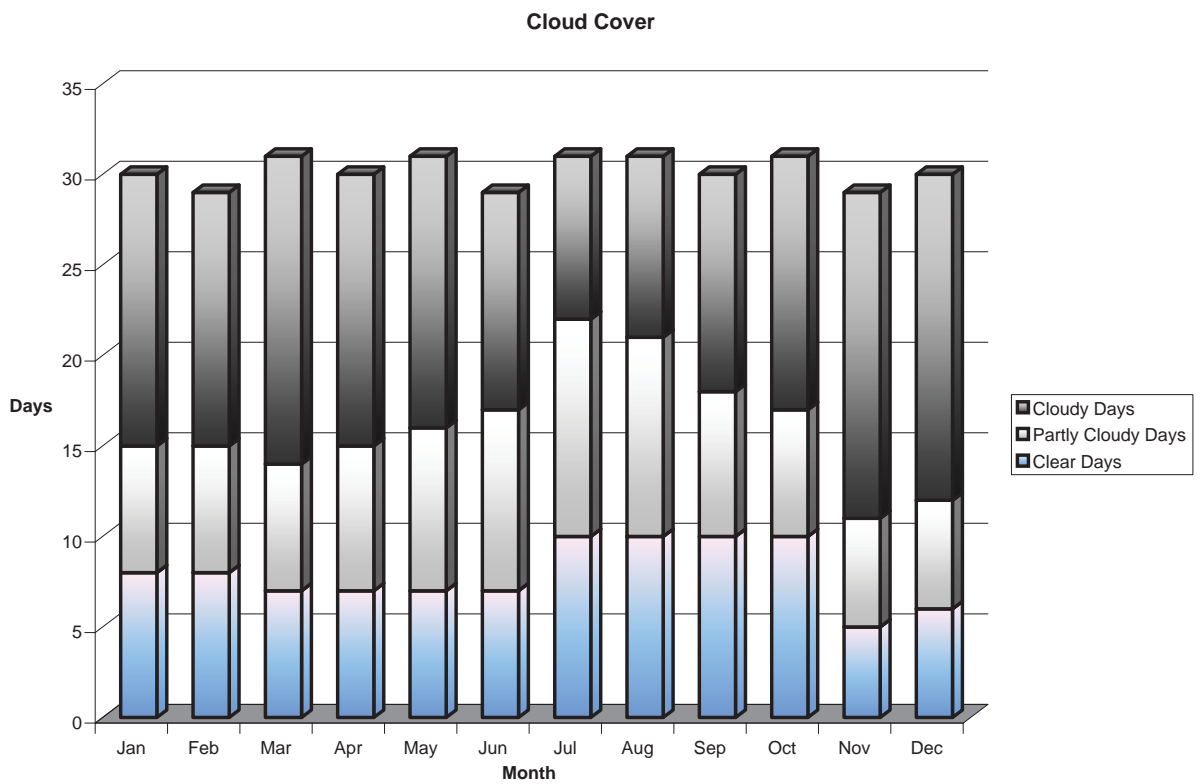
### Precipitation



### Monthly Snowfall

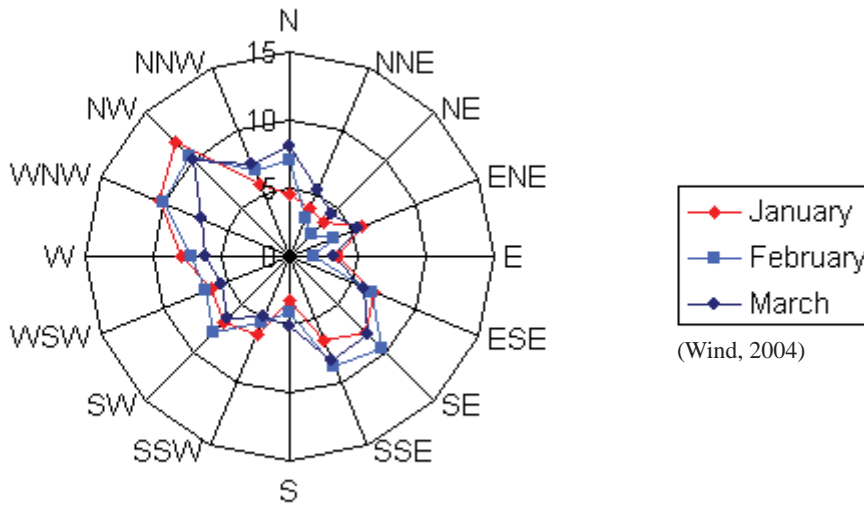
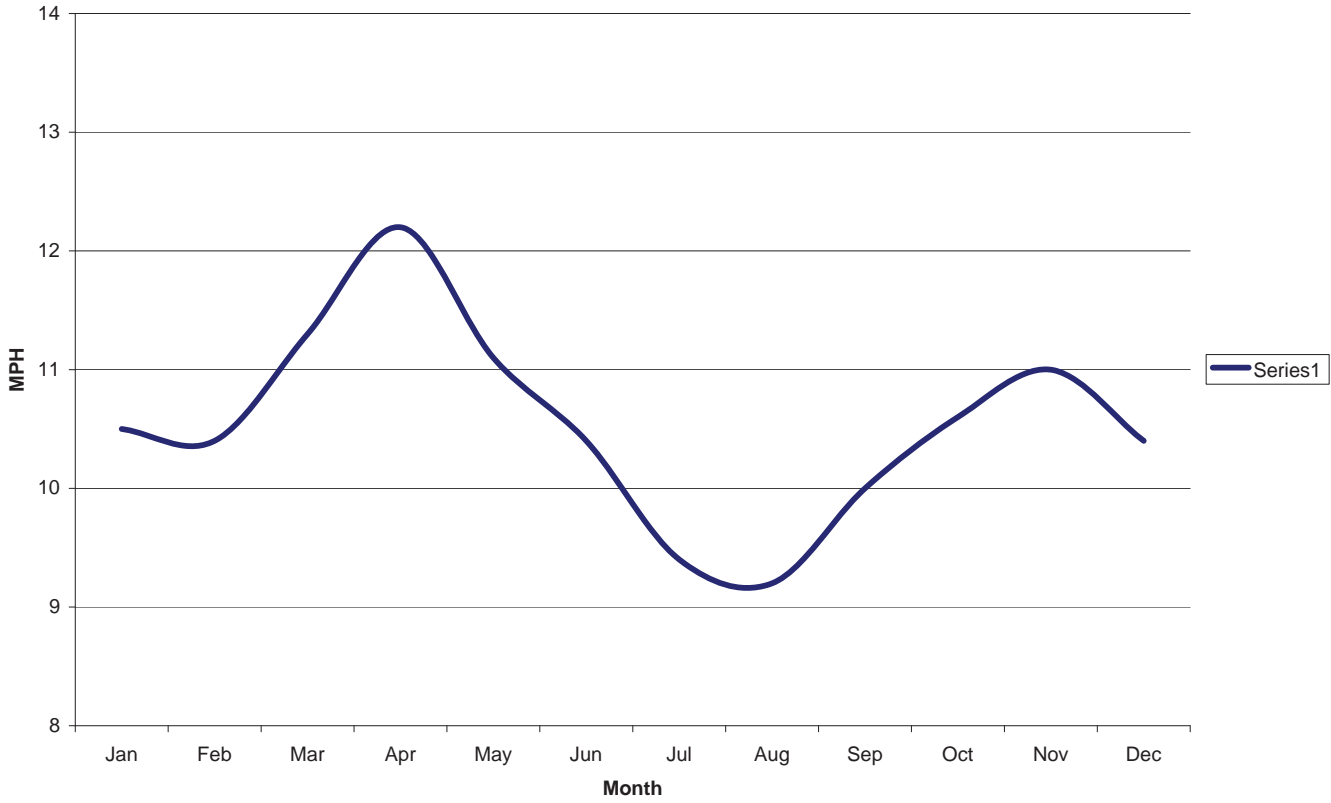


# Precipitation/clouds



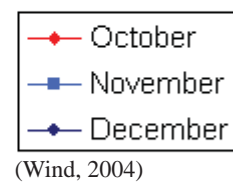
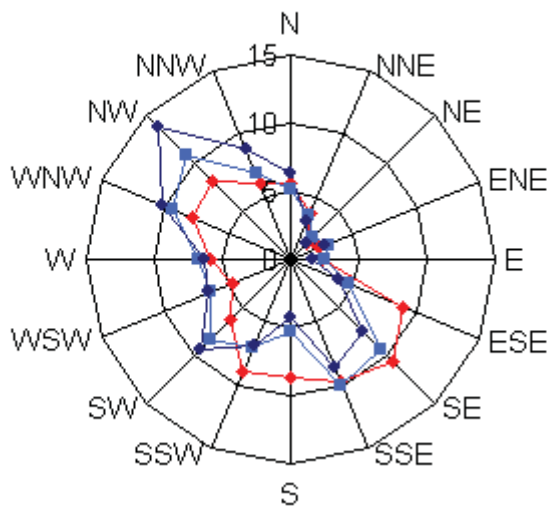
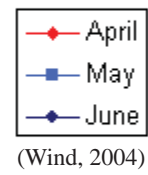
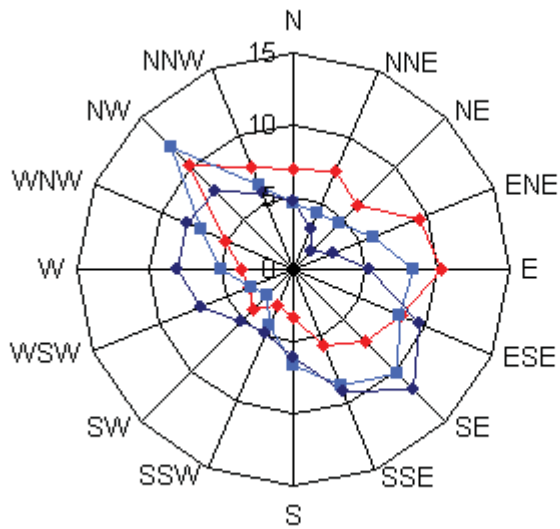
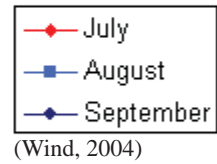
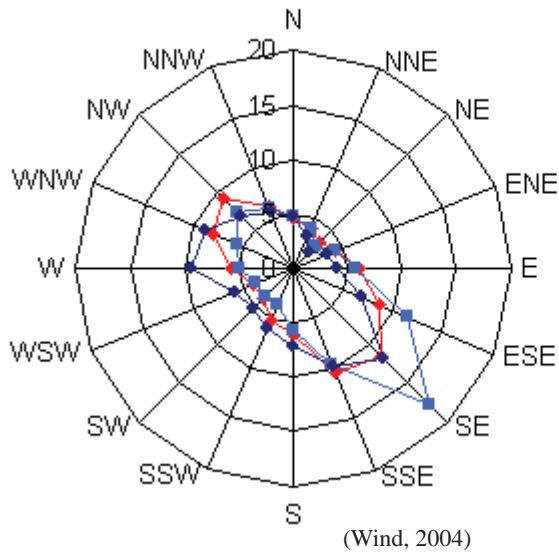
# Site Analysis

## Average Wind Speed by Month

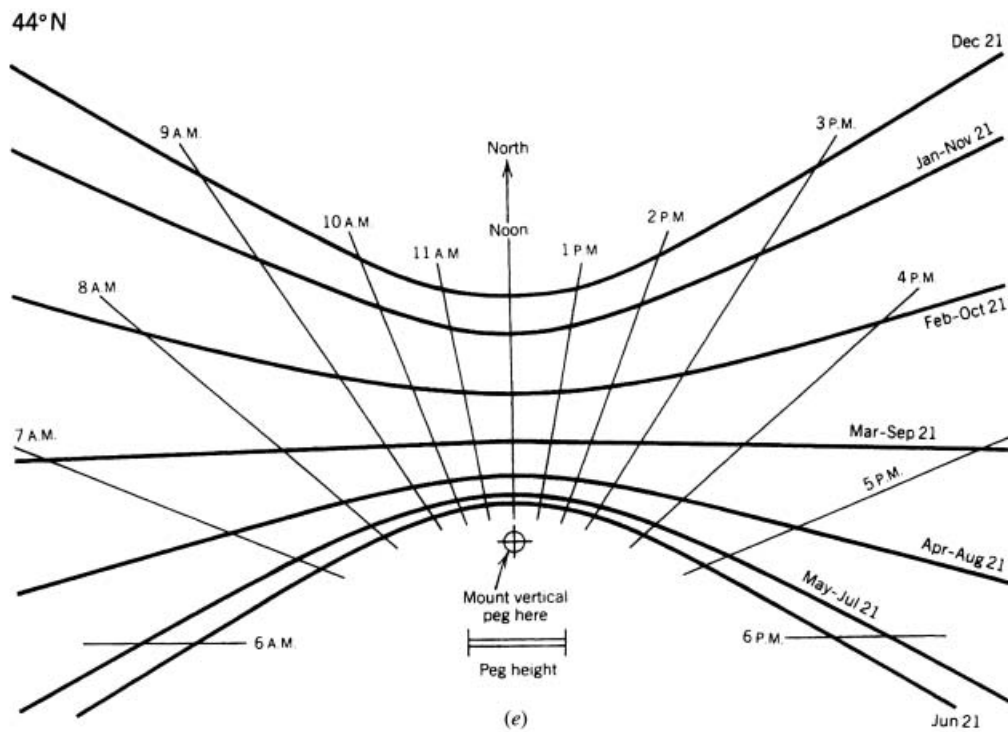




# Wind

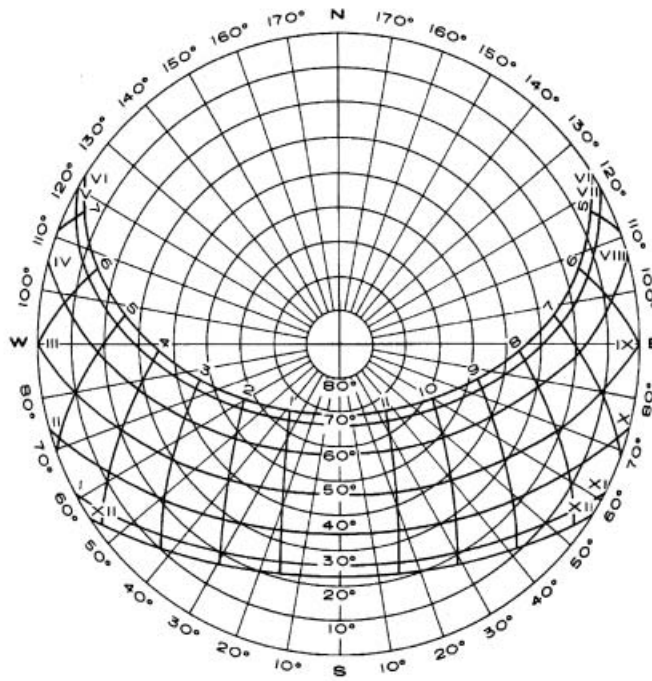


# Site Analysis



(Mechanical, 2006)

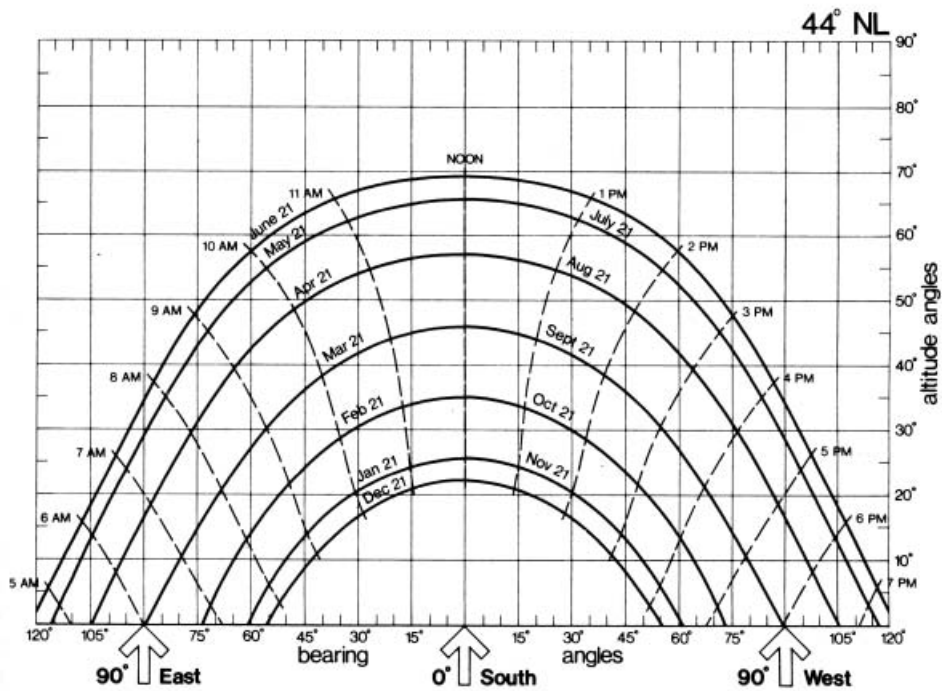
# Sun



(f) 44°N LATITUDE

(Mechanical, 2006)

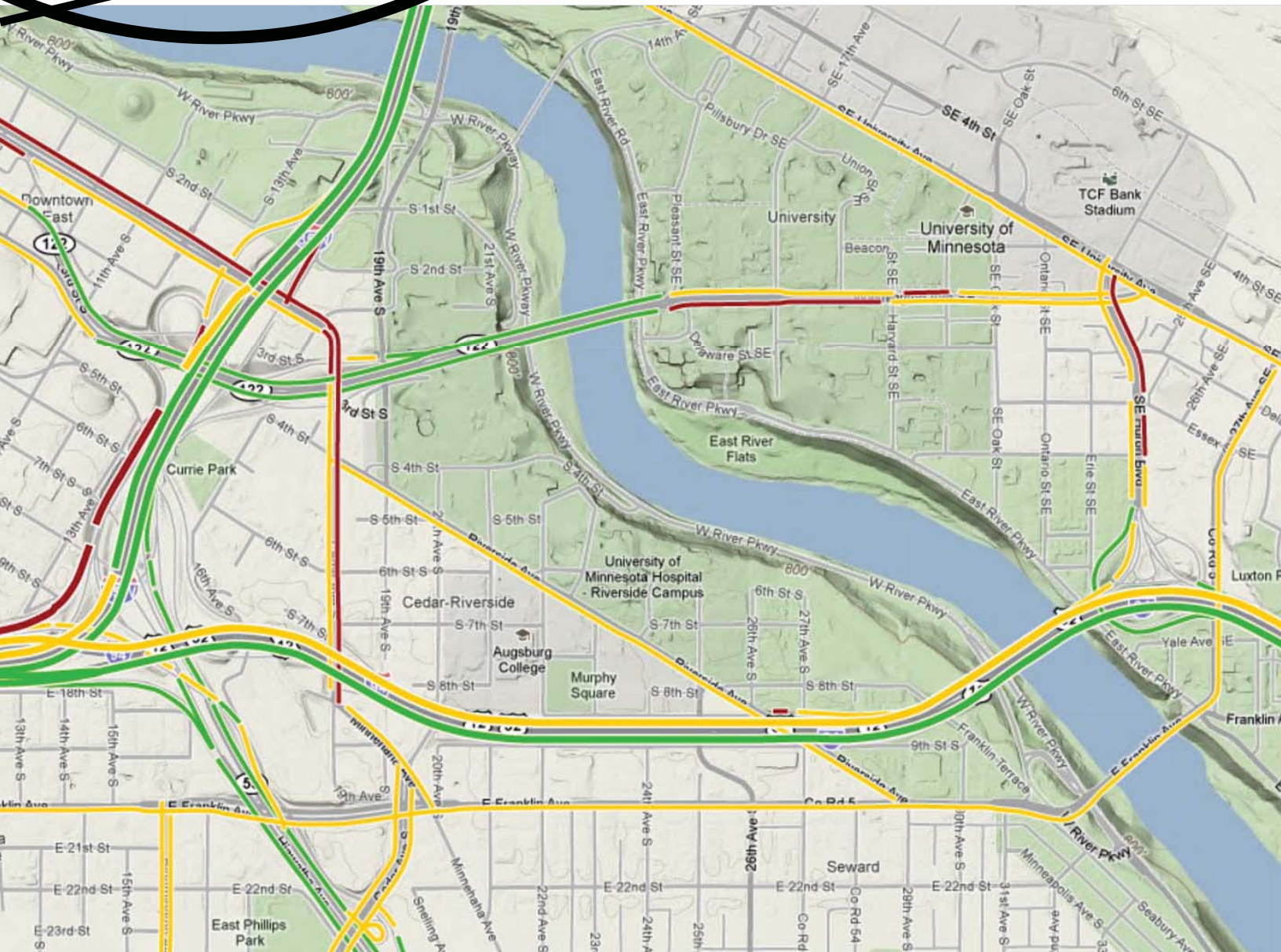
Fig. D.2 (continued)



(Mechanical, 2006)

(e)

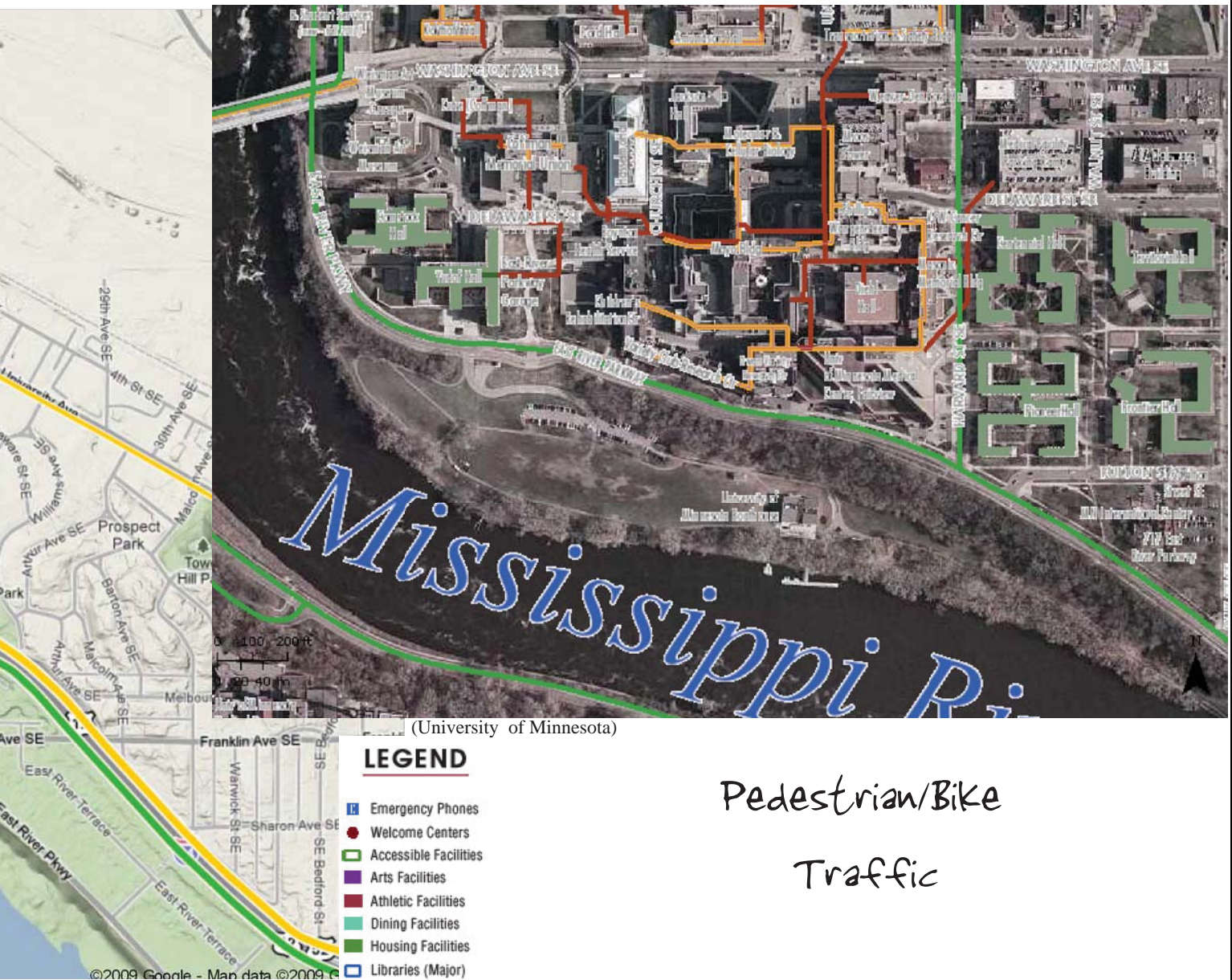
# Site Analysis



(University of Minnesota)

## Vehicular Traffic

# Traffic



(University of Minnesota)

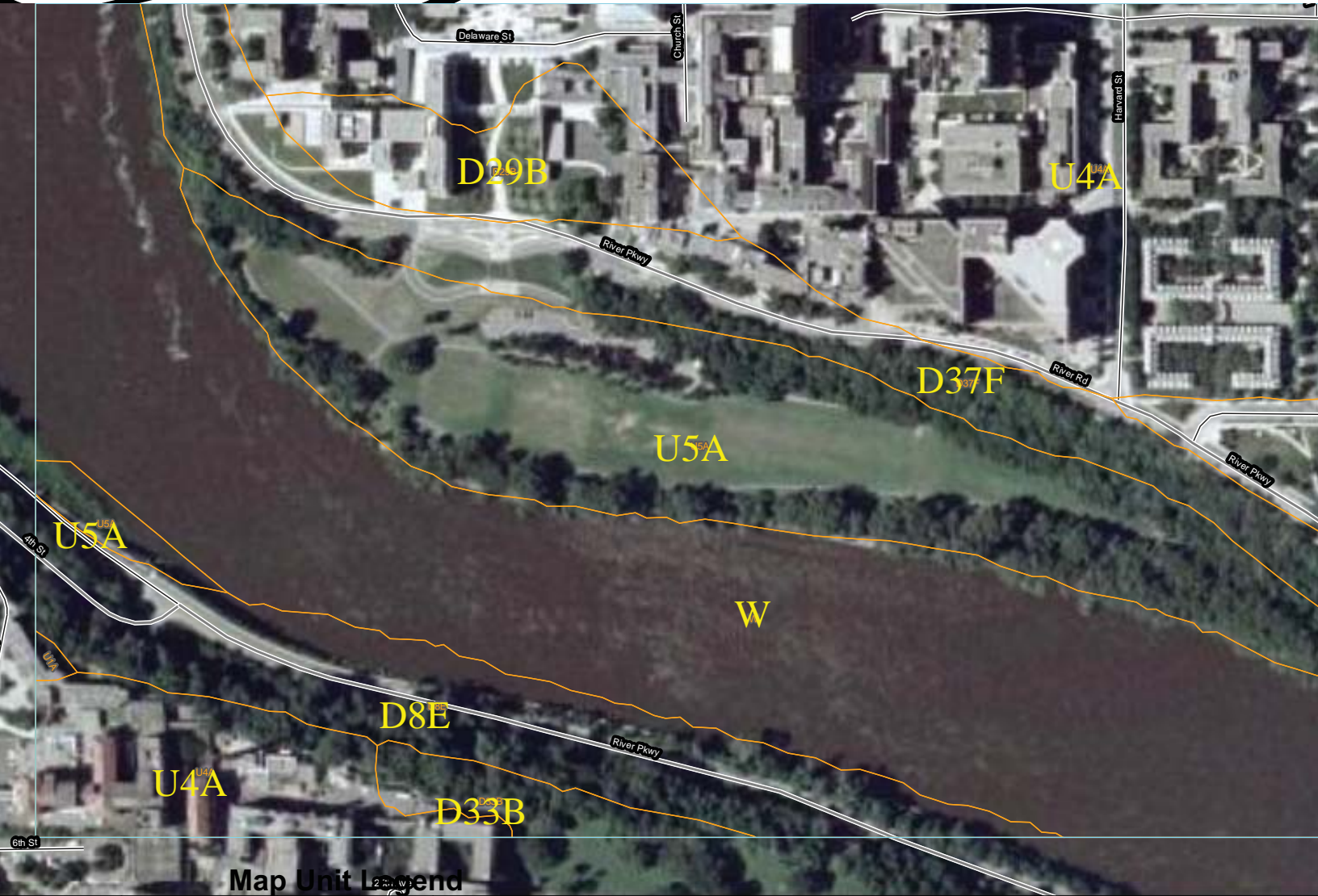
## LEGEND

- Emergency Phones
- Welcome Centers
- Accessible Facilities
- Arts Facilities
- Athletic Facilities
- Dining Facilities
- Housing Facilities
- Libraries (Major)
- Tunnels & Skyways
  - Tunnels
  - Skyways
- Transportation
  - Visitor Parking
    - Hourly
    - Daily
  - Carpool Parking
  - Contract Parking
  - Meter Parking
- Campus Connector
  - ➔ Route S Stops
- East Bank Circulator
  - ➔ Route S Stops
- Wash Ave Bridge Circ
  - ➔ Route S Stops
- St. Paul Circulator
  - ➔ Route S Stops
- Bike Routes

Pedestrian/Bike

Traffic

# Site Analysis



Map Unit Legend

Hennepin County, Minnesota (MN053)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
D8E	Sandberg loamy coarse sand, 18 to 35 percent slopes	9.5	7.1%
D29B	Urban land-Hubbard, bedrock substratum complex, 0 to 8 percent slopes	4.5	3.4%
D33B	Urban land-Dorset complex, 0 to 8 percent slopes	1.6	1.2%
D34B	Urban land-Hubbard complex, 0 to 8 percent slopes	12.7	9.5%
D37F	Dorset, bedrock substratum-Rock outcrop complex, 25 to 65 percent slopes	12.1	9.0%
U1A	Urban land-Udortheints, wet substratum, complex, 0 to 2 percent slopes	0.1	0.1%
U4A	Urban land-Udipsamments (cut and fill land) complex, 0 to 2 percent slopes	39.2	29.4%
U5A	Urban land-Udortheints, wet substratum, complex, 0 to 2 percent slopes, rarely flooded	19.4	14.5%
W	Water	34.6	25.9%
<b>Totals for Area of Interest</b>		<b>133.6</b>	<b>100.0%</b>

# soils



(U.S. tttttt.S, 2009)

## **U5A—Urban land-Udorthents, wet substratum, complex, 0 to 2 percent slopes, rarely flooded**

### ***Component Description***

#### **Urban land**

*Extent:* 35 to 85 percent of the unit

*Geomorphic setting:* Flood plains

*Slope range:* 0 to 2 percent

*Flooding does not occur (months):* January, February, March, July, August, September, October, November, December

*Flooding is most likely (frequency, months):* Rare (April, May, June)

*Ponding:* None

*General description:* Urban land consists mainly of commercial and residential areas and is covered by impervious surfaces. Most areas have been disturbed to some degree by construction activity. Because of the variability of this component, interpretations for specific uses are not available. Onsite investigation is needed.

#### **Udorthents, wet substratum**

*Extent:* 15 to 50 percent of the unit

*Geomorphic setting:* Flood plains

*Position on the landform:* Filled areas

*Slope range:* 0 to 2 percent

*Parent material:* Various soil material

*Flooding does not occur (months):* January, February, March, July, August, September, October, November, December

*Flooding is most likely (frequency, months):* Rare (April, May, June)

*Ponding:* None

*General description:* The Udorthents consist of fill material that has been placed in wet areas on flood plains to match the adjoining upland landscape. Because of the variability of this component, interpretations for specific uses are not available. Onsite investigation is needed.

## Plant Search Result Report



---

### Search Criteria

#### Tree and Shrub

Formal: Low, Moderate  
Place Of Origin: MSA Zone 1

#### Grass and Sedge

Formal: Low, Moderate  
Place Of Origin: MSA Zone 1

#### Flower and Fern

Formal: Low, Moderate  
Place Of Origin: MSA Zone 1

#### Site Characteristics

USDA Hardiness Zone: 4A  
Site Orientation: South  
Topography: Lowland (Stable Water)  
Animals Present: Deer, Mice/Voles, Rabbits/Hares, Gophers



# Vegetation

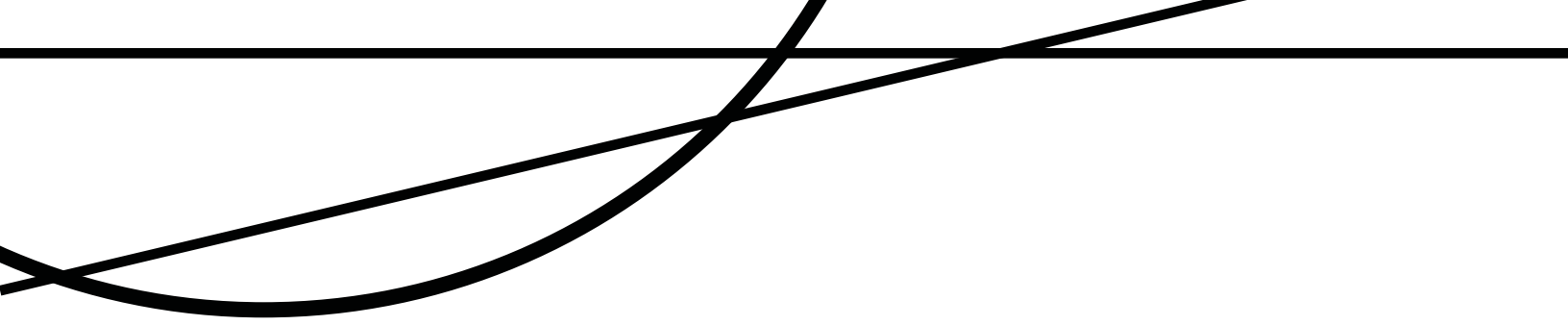
## Plant Search Result Report



25 matches found.

#	Common Name	Scientific Name	Type
1	American Larch	Larix laricina	Tree
2	Black Ash	Fraxinus nigra	Tree
3	Boxelder	Acer negundo	Tree
4	Bush Cinquefoil	Potentilla fruticosa	Tree
5	Cardinal Red Osier Dogwood	Cornus sericea (Cardinal)	Tree
6	Common Hackberry	Celtis occidentalis	Tree
7	Common Honeylocust	Gleditsia triacanthos	Tree
8	Common Milkweed	Asclepias syriaca	Flower
9	Common Ninebark	Physocarpus opulifolius	Tree
10	Downy Hawthorn	Crataegus mollis	Tree
11	Eastern Cottonwood	Populus deltoides	Tree
12	False Indigo	Amorpha fruticosa	Tree
13	Glossy Black Chokeberry	Aronia melonocarpa	Tree
14	Green Ash	Fraxinus pennsylvanica	Tree
15	Narrowleaf Meadowsweet Spirea	Spiraea alba	Tree
16	Prairie Blazingstar	Liatris pycnostachya	Flower
17	Prairie Willow	Salix humilis	Tree
18	Red Elm	Ulmus rubra	Tree
19	Red Maple	Acer rubrum	Tree
20	Red Osier Dogwood	Cornus sericea	Tree
21	Silky Dogwood	Cornus amomum	Tree
22	Silver Maple	Acer saccharinum	Tree
23	Swamp Milkweed	Asclepias incarnata	Flower
24	White Spruce	Picea glauca	Tree
25	Wild Columbine	Aquilegia canadensis	Flower

(U.S.G.S, 2009)



# Programmatic Requirements



Programmatic

# Requirements

## Programmatic Requirements:

The following are approximate square footages for each space listed in the program (excluding exterior spaces). They are developed using the Ronald McDonald Houses studied in the Case Studies, as well as the plans published online for the new Gift of Life Transplant House in Rochester, MN.

### **Community Spaces (30%)**

Entry	150 sf
Living Room	800 sf
Kitchen/Pantry	400 sf
Dining Room	400 sf
Laundry Facilities	150 sf
TV	500 sf
Activity Rooms	800 sf
Library	300 sf
Meditation Room	500 sf

### **Private Spaces (50%)**

Private Bedrooms (500-650 sf each)

Eight Total 4000-5200 sf total

Private Apartments (1000 sf each)

Two Total 2000 sf total

**Mechanical/Service Space (5-10%)** 500-1000 sf

**Circulation Space (10%)** 1000 sf

**TOTAL SQUARE FOOTAGE** 12,000 sf

# Final Presentation



The following pages contain the final presentation which walks through research, process, and the final design. Both the oral presentation and the powerpoint slides are included.

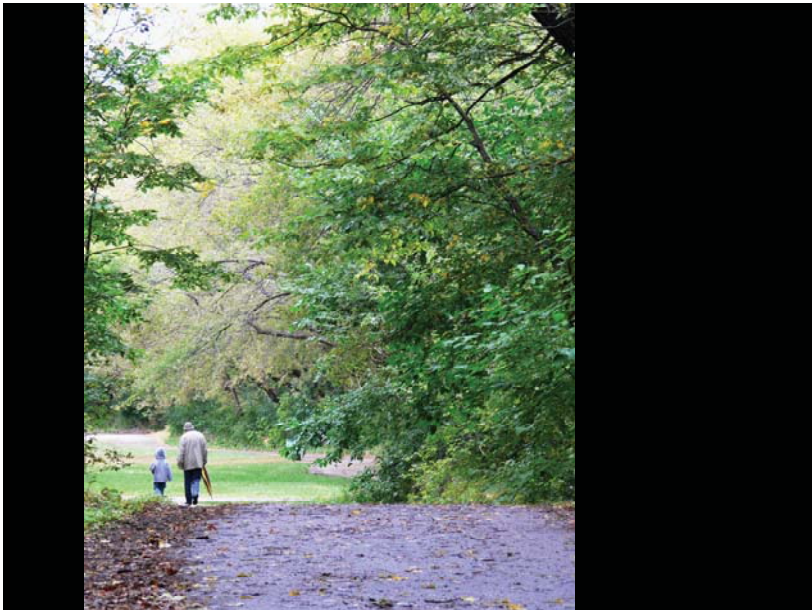
# Final Display



Final Project

Matilda's House

Design Thesis  
by  
Amanda R. Kohn





It is often said that we don't know where a journey will take us or where it will end. Sometimes we don't even realize we are on a journey or know where it all began. With every connection between two things, two experiences, two people, and even two moments in time, there are countless more connections that flow from each. When I look back at the thesis project here today, it is a moment along a journey that I never realized started so long ago. Over five years ago, I was leaving the twin cities on my way to Fargo to visit NDSU for the first time unsure of where I was headed in my life when my mother received a phone call. My grandfather, who was in the hospital with a failing liver, had just received the news that a liver had been found, and surgery to perform the transplant was scheduled for the morning. Suddenly plans all changed and my mother headed south to be with her father before the risky procedure. What made the operation even more dangerous was that this was not his first transplant. Thirteen years earlier, before I was even old enough to read, his liver had failed and it was uncertain how much longer he would live, certainly not more than a few days or weeks. It was then that he received the miracle of a transplant, a gift of life. For more than a decade he lived on borrowed time though this gift of another person's liver only made possible through their family's hardship. Through it he had gotten the chance to travel the country and the world, to see his sons get married, and to be part of the lives of five more grandchildren. He had taken every opportunity to be a part of my life, coming to school functions, taking my sister and me camping, and even taking my family to the black hills and then Yellowstone. He told me stories about his childhood mischief and taught me about making the most of life. He educated me on how to make the very best s'more and made sure we took a picture of every bison we saw, ironically his favorite animal.

The second transplant was also a success, another miracle granting him more time. Again, he was an active part of my college education, always interested in my work and even asking if he could travel with me when I studied abroad last year.

## Final Project

It was during this time abroad that we were asked to submit a question for our thesis. Branching off of other personal life experiences and crises faced by friends, I had posed the question, “How does one receive healing and comfort, that is, receive consolation or relief from sadness, sorrow, pain, or worry and receive the strength to hope and continue living? How can architecture respond to this?”

I envisioned a place of quiet and meditation or a spiritual setting, a place to escape from life’s difficulties.

Soon after I returned home, it was clear that my grandpa’s liver was failing again, his liver disease returning. This time there would be no transplant, so after several weeks in the hospital, he was sent home. I was lucky enough to have the chance to spend time with him and say goodbye to him not long before he died last June after the gift of 18 additional years of life thanks to an his two life-saving transplants.

I did not make the connection between him and my project until the fall, when, thru the beginning of my research, I decided I needed a more focused program and user. Thinking back over the years, I remembered the countless days my grandfather was in the hospital, days my grandmother and mother spent at his side several hours from home. On top of the stress of a loved one in the hospital, an impersonal hotel room or chair in the corner of his hospital room would have had to act as their home. Bills added up from the numerous tests, drugs, and nights he spent in the hospital. The relief came for them in a small house near the Mayo Clinic, one where they knew they could stay as a home away from home.

In addition to an affordable place to stay for the night, it offered the needed but often forgotten comforts of home such as a kitchen, a laundry room, and a place to be with other people who understand what you're going thru. It is a place for patients to stay when not staying overnight in the hospital, but still in town for tests before or after a transplant. It also serves their families during any length of stay. It seemed to be the kind of place that fit with my question and a place that held great meaning for me, fueling my ambition for the project.

As my research progressed, I looked at connections. I explored the connections that people have with each other, a higher power, the built environment, and nature, focusing some on the ideas of Feng Shui. I also explored other similar buildings. Very few transplant houses exist today, less than a dozen that I could find.

*How does one receive healing and comfort, that is, receive consolation or relief from sadness, sorrow, pain, or worry and receive the strength to hope and continue living?  
How can architecture respond to this?*



*Gift of Life Transplant House  
Rochester, Minnesota*

## *Connections*

- *Each other*
- *Higher Power*
- *Built Environment*
  - *Nature*

# Final Project

## Ronald McDonald Houses

Austin, Texas  
Transplant  
Friendly and  
LEED Platinum



Utrecht, Netherlands



Few people know they even exist or even much about the life-saving power of a transplant. However, most people have heard of a Ronald McDonald house, which is similar home, except focused on kids with various life-threatening illnesses. I explored how these houses work and what some of the goals behind the architecture, such as the importance of views from each room and a feeling of community in the shared spaces.

## Maggie's Centre



Maggie's  
Highlands  
Page/Park



Maggie's London Rogers Stirk  
RIBA Stirling Award 2009



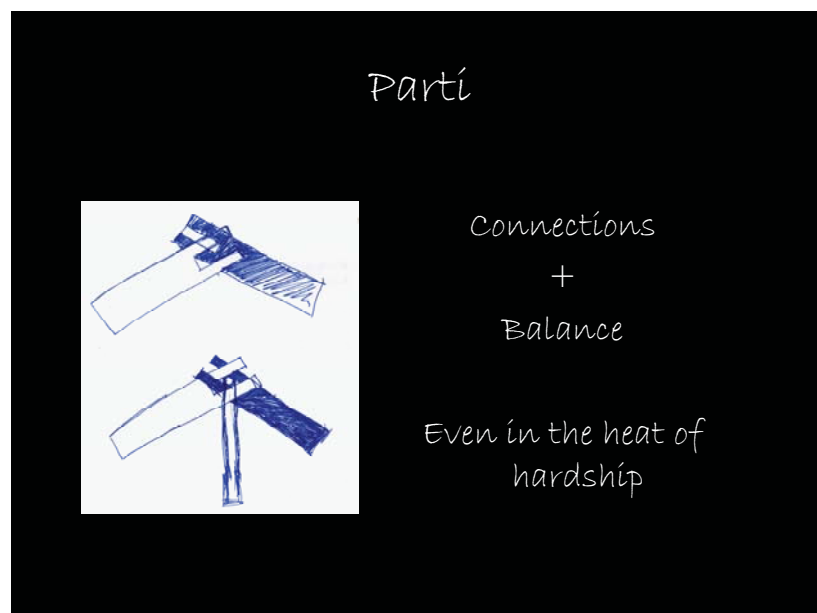
Maggie's  
Dundee  
Frank  
Gehry



I also looked at several of the award-winning Maggie's Centres in the United Kingdom. They don't function as a residence, but rather a place where anyone affected by cancer can escape for a bit, find out more information, or simply find community.

Already, the initial direction of my design was beginning to come into focus. And so I set out to design a transplant house, one that was a hybrid of a residence and a place of escape, even for just a few hours, and one that would be conceived in such a way that would allow for affected children to stay in the house as well.

My parti, or initial idea that I could look back on for inspiration and direction, focused on the idea of connections and balance. Separately, the three pieces do little, but when connected, they balance, seemingly against the odds, and even when one is hurt, the connection allows them to continue to stay in balance.

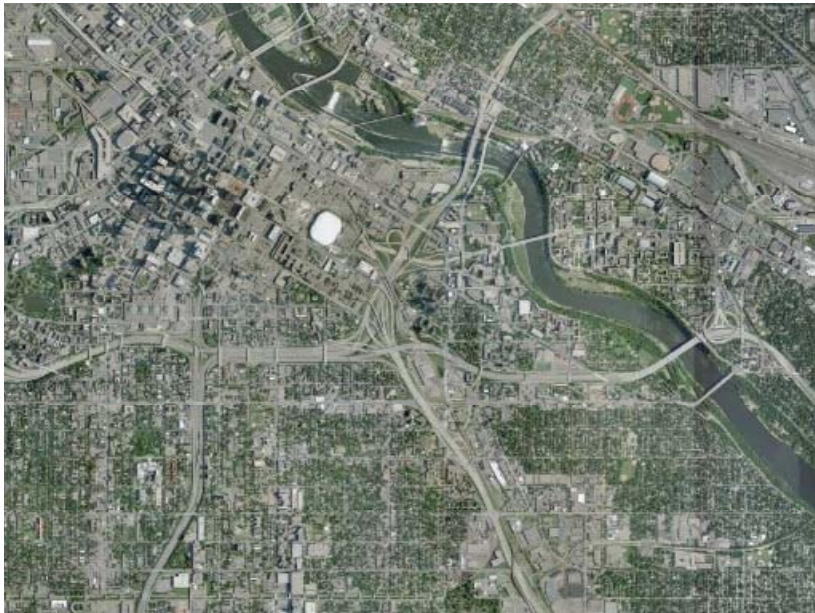


## Final Project

From there, I began looking at my site in Minneapolis, Minnesota. The site I selected for my project was on where I saw a great need for such a house.

The University of Minnesota Medical Center performs over 300 transplants every year, making it one of the top university hospitals in the world for transplants. It specializes in transplants in children and high-risk cases. No transplant house currently exists for the transplant center there, and so I began looking for a place that would make a suitable location for this house of healing and comfort.

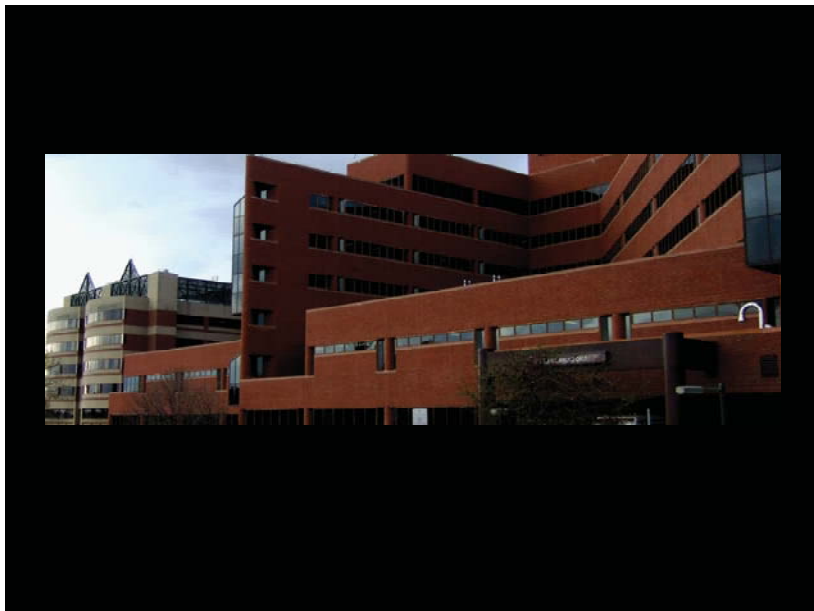
A sliver of green exists along the Mississippi River nearby, beginning in a park just south of Gehry's Weisman Art Museum and then winding along the river with a bike path hidden among the trees. Set apart from the busy university by a steep hill and abundant foliage, it seemed like it could be the perfect location for a small oasis house. When I visited the area, I was struck by the contrast between the between the hospital and the park.



# Final Project

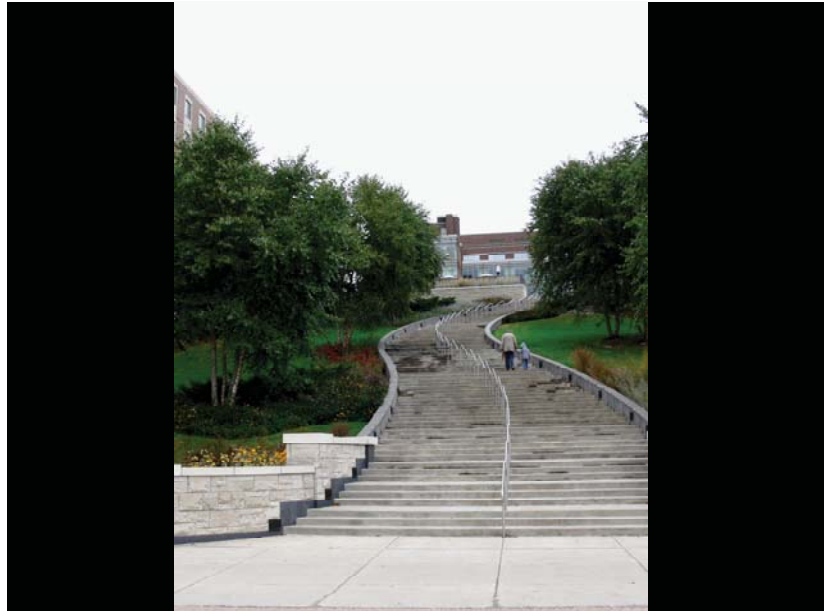


Amid the huge hospital buildings at the University of Minnesota Medical Center, it is easy to feel insignificant, overwhelmed, and disconnected. The towering buildings cut off any views, and the whole environment is one of sterility and anxiety. Finding where you want to be is nearly impossible unless you ask one of the unsociable employees marching between buildings.



If you reach the edge, where a winding road marks the backside of the medical campus, a hint of life captures you.

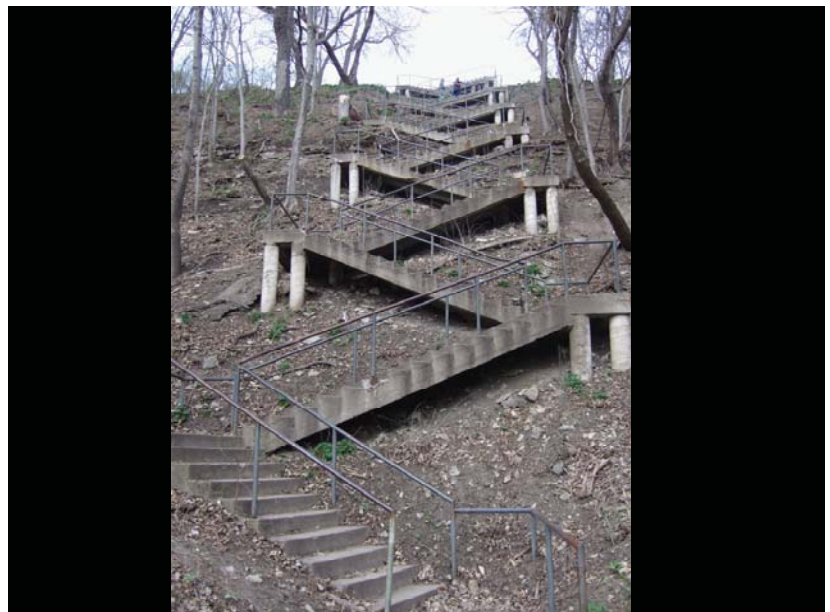




One side of the street is lined with cold facades while the other is cushioned by a soft line of trees.



Stairs switchback into the valley below, and one branch of the road snakes down gradually. Here lies the tail of something inhuman and the beginning of something more natural.



# Final Project



Cars and traffic takes their seats, and a path unfolds for us. Here, at the intersection of these two contrasting environments lies a place for man to dwell. From this crossroads, though in a valley, views thrive in contrasting balance.



To the north, atop the bluff the once overwhelming hospital sits, its power reduced.

To the east, a smooth, grassy plain emerges as a step in the naturally terraced landscape. It extends far into the distance slowly funneled by trees to the point where the path disappears into their blanket of green.



The steady flow of the Mississippi River winds around from the south to the west, framing the views of its opposite bank, also flanked by trees and the companion hospital beyond.



The view to the south almost appears to be a mirror, like a reflection of the site itself.



# Final Project



To the west, a bridge can be seen pulling the two banks together. Every view is framed by the trees instilling life's energy into the place. Nature is allowed to govern the site with its tranquil presence.



In harmony with nature, man has left footprints on the site. From the man-made path to the area where his machines sit, there is no doubt that this is a place for man as well as nature.

The newly constructed boathouse rests near the far limits of the grassy plain, offering a symbol of health and wellness. It is the only man-made structure that occupies the park, other than the tree-like legs of the platforms spanning the river high above.



The field is tended to by man, its decoration kept short and regular offering a place to run and play.



It offers an interruption from the groves of trees around, allowing the sun's warmth and light to penetrate onto the site. Light and darkness dance across the site between the sun's rays and the shadows of nature's canopy. Intense light frequents some sections while it is scarce in others. A few streetlights dot the road, and the distant buildings offer a twinkle of artificial lighting.



# Final Project



The stimuli of the site flood the senses. First met with vistas of sight, if one allows the other senses to roam freely as sight, they too will be met with the junction of the man-made and natural.



Sounds of the river's soothing flow balance the sounds of traffic and the city. Wind rustles through the trees, which offer a buffer against its power, and creatures sing in the background.

The refreshing, water

purified air is filled with the scent and flavor of life and rejuvenation seasoned with a hint of the bustling city's polluted, stagnant sensation.



Textures in the skin of the trees, ripples of grass, and waves of water excite the hands and inspire the mind.



The site offers an oasis of life. It resonates with peace and healing in contrast to the cold air of the nearby health center.

I decided to use the far



# Final Project



western corner of the site for my building for many reasons. First, it allowed the majority of the site to remain a public park and green area. Second, it allowed for the building to be tucked away from the general public and retain some privacy and intimacy with the surrounding environment still allowing for some more private green space focused at the occupants of the house.

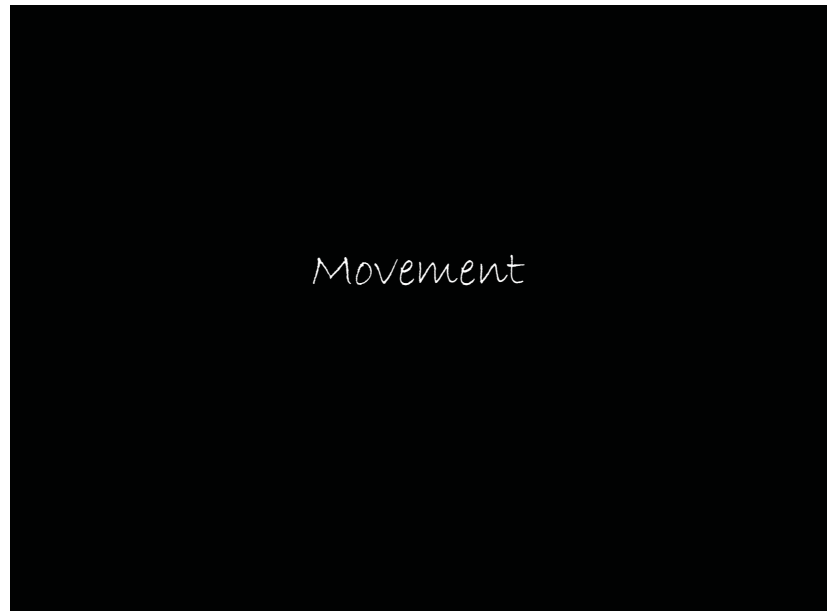


Third, it rendered itself a good location of strength and energy, with water and openness at the front, and a hill for strength at its back. Fourth and finally, it provided good views in all directions, including views of the river to the south and all the way back to the transplant center to the northeast.

I illustrated many of these important connections with this map where I literally tried to tie the site to the various important aspects of the site and surrounding area. As you can see, it includes ties to nature, topography, views, even hidden links to the other hospital buildings and the Ronald McDonald House that serves them.

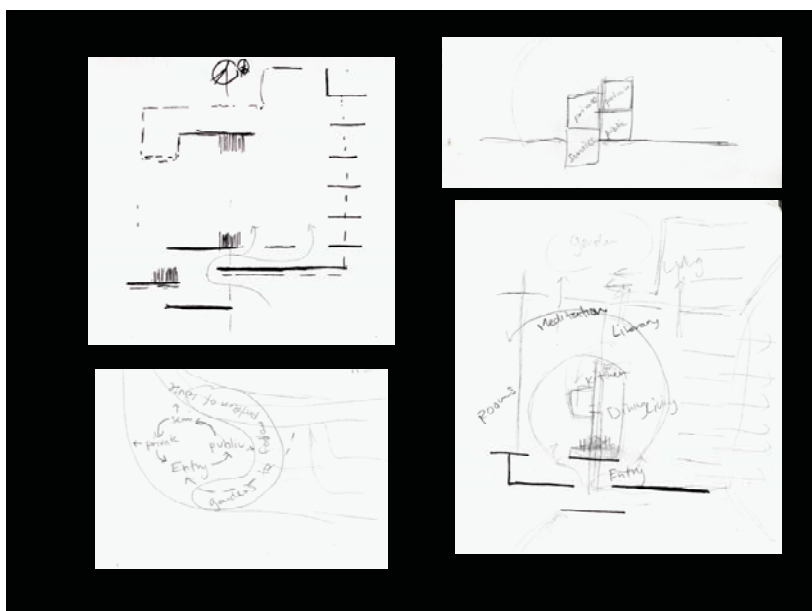


Focusing even further in, I began to explore the movement within the building and spaces themselves. Drawing from the ideas of Feng Shui, I envisioned the spaces to be laid out in a radial, spiraling manner, as is common in nature.



The entry would be prominent at the front, close to the water and outdoor public areas. From there the movement within the house would work through more public spaces such as living and play rooms into the kitchen and community dining area, then slowly work up to the more private and quiet spaces, separating them for privacy. At the back of the house would be the strong hill and private gardens, further creating a safe, personal, comforting space for the residents. I also did not want the separation and flow to be simply two dimensional. Instead I saw the spiral wrapping around and up allowing for more separation of the functions and a cohesive flow throughout the house, not just on each floor independent of the others.

I continued studying Feng Shui in residential design more and began to gather different



# Final Project

## Feng Shuí

- *Inseparably linked to our environment*
- *Encourages the connection between the built and the natural environments*



aspects of it that I wanted to apply in the house, aspects that made sense functionally and aesthetically as I tried to create an environment of comfort and healing. Feng Shui is a theory originating in the eastern world that is concerned with the connection between the built and the natural environment. It reminds us that we are inseparably linked to our environment, and it seeks to reestablish that connection via our senses and emotions. As with the spiral idea, shapes and forms in nature follow organic, regular, and simple geometric patterns. A design that is too complex or irregular creates disunion between the two environments whereas proportions such as the golden section developed by the Greeks and a human scale to details and spaces help to reconnect the two. Paths should echo the timeless duration of nature; they should wind both vertically and horizontally, eliminating a straight course that allows energy to pass too quickly through it making it seem dead. Techniques that permit and encourage new discoveries, creating a sense of mystery and revelation through time and space follow from the natural. Natural lighting and even color and material palates that come from nature help unite the built and the natural environments.

On a practical and direct level some of the things I wanted to remember throughout the design include:

- Movement, as before, through the spaces, following a spiraling pattern
- Carefully watching for symmetry, even in the smallest sense such as putting doors directly across from each other
- Uses of high or vaulted ceilings sparingly, and only in gathering or public spaces, keeping them at a human level and scale in all other more private or intimate spaces
- Avoid the use of long hallways or paths
- Be critical of stair placement to not overwhelm the space, nor be a large focus in a house where the majority of vertical movement would probably be done in an elevator
- A low and prominent entry that is easily found and welcoming at a human scale, and creating a bridge between the natural and built
- Clear movement, direction, and way finding throughout the building
- Human details, fit to a human scale
- Use of natural light and ventilation as much as possible and in every space
- Avoid irregular shapes, even L shapes, and sharp corners eliminating the feeling that something is missing or something is lurking around a corner
- A strong and clear foundation or grounding for the building, something that it can tie back to, and a lighter, smaller top as seen in nature
- Consider furniture placement, giving furniture a base or support so that its not just floating in a space or creating awkward flow

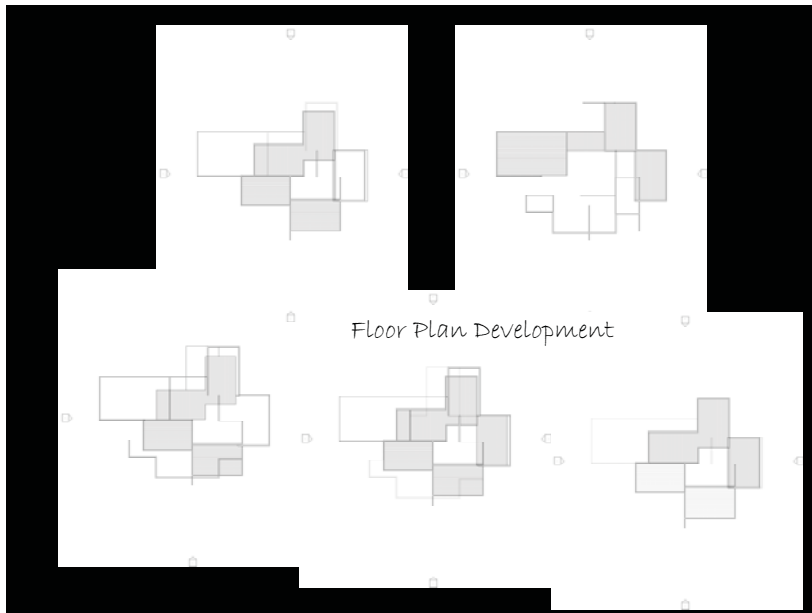
# Final Project

## Layout and Development

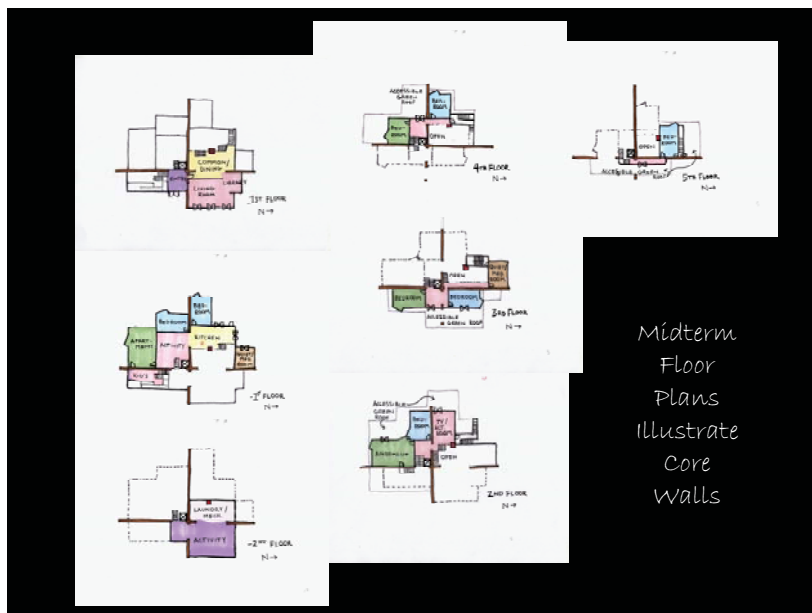


After playing around with different space configurations, using the golden section to initially determine the proportions of each space, it was necessary and made sense to put in a strong element to tie everything together, more than just the center of the spiral atrium was doing.

Two strong core walls were

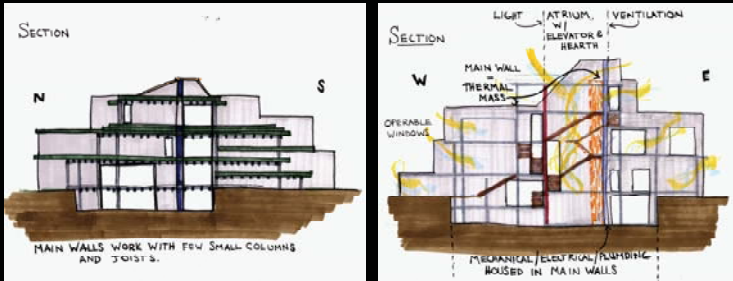


integrated into the design, running on the two cardinal axes as a further reflection of feng shui and the natural environment. Paths wended through them like thread passes through cloth tying the spaces together. Every space was arranged to touch one or both of the walls as they became the elements that connected every space together yet allowed them to be separate. They took on a thickness and strength to be a focus and a way for the residents to orient and ground themselves.



# Final Project

In addition, these core walls took on human traits, acting as the veins that pumped vital fluids throughout the house. Fresh air ducts, pipes, electrical wires, and all other important mechanical system components flowed through them from the mechanical room that beat in the foundations of the building.



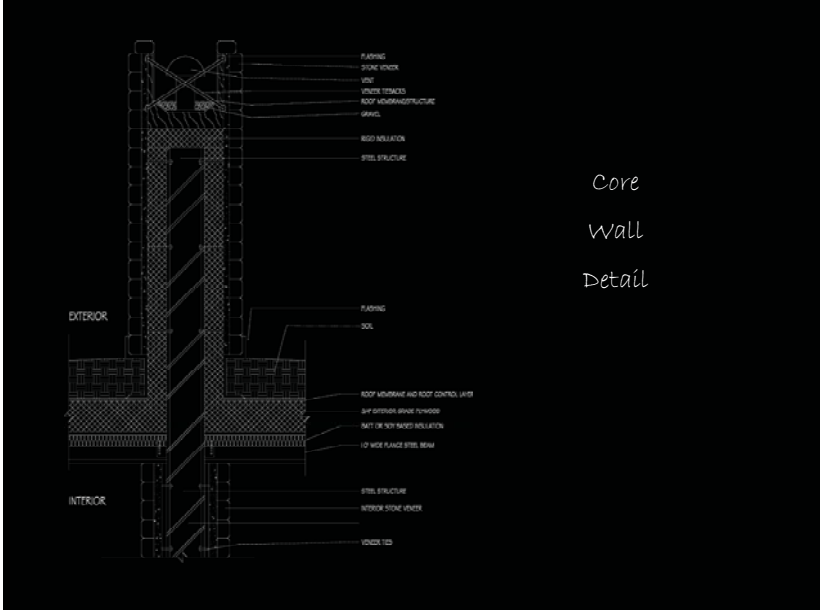
Midterm Core Wall Sections

They acted as the backbone, or main structural system for the building to which the smaller beam and column system connected like ribs protecting the important spaces and inhabitants.

I continued making my

Structural  
Exploration





Core  
Wall  
Detail



Sections Revealing Core Walls

# Final Project

Floor -1



concentration smaller and began to look at each space within the larger whole, focusing first on the individual bedrooms.

A total of 8 bedrooms and 2 private apartments each with a private bathroom are included in the design allowing for up to 10 families to stay at the house at one time, including a host.

Floor 2



No long hallways are used, most branch off a small gathering space restricting the number of each per floor.

Each room or apartment is directly connected to one of the two core walls providing a visual strength, necessary structure, and vital technical connections to water, air, and power.

They delicately touch



adjoining spaces and bedrooms, allowing for almost complete privacy and limited need for acoustic treatment between the rooms. This also allows for the separation of the mechanical functions to help cope with immune suppressancy.

None is a replica or mirror image of another, yet all are kept simple and understandable.

These personal spaces were given top priority when it came to views out. Some face the river and a view that is secluded and quiet for relaxation. Others have views of the open public park, still inviting nature in, but also a view that is animated and filled with active life and people. Several have a hint of a view toward the transplant center itself, acting as a visual connection to a family member who may be staying there.

Floor 3



Floor 4



Floor 4



# Final Project

Living Room



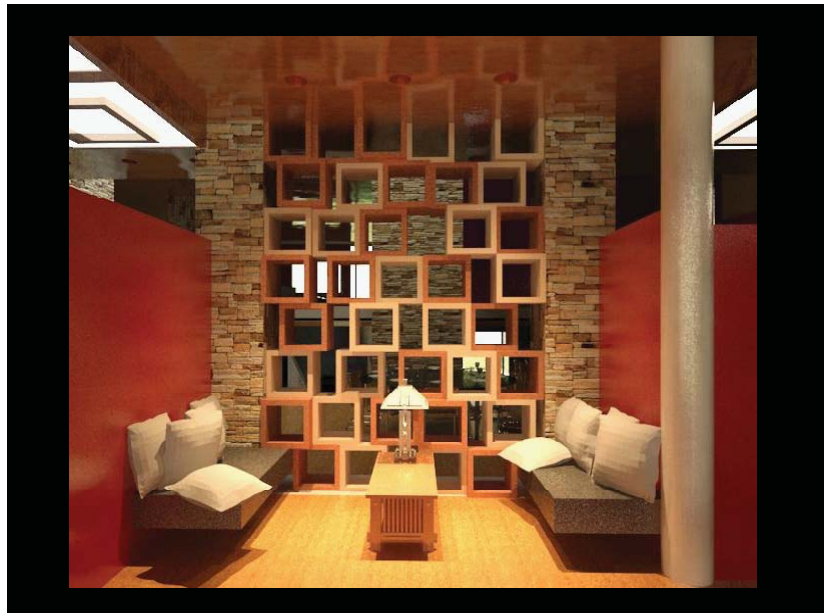
The public spaces in the house have a more robust presence.

Floor 1

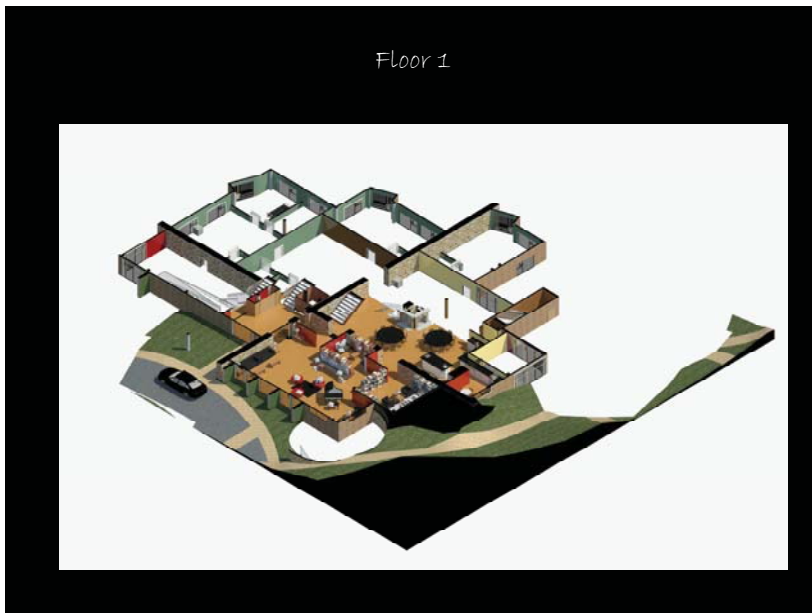


Directly off the entry, they provide spaces that can be used for small gatherings, day visitors like in the Maggie Centre's, and also as a place for community within the house to grow. Doors off the main living room allow it to connect almost uninterrupted to the park outside making it animated and fresh, filled with the light, sounds, and smells of outside.

Variety in the spaces prevent



it from becoming stagnant or dead despite the regularity of the shape of the spaces.



The communal dining room and kitchen continue the gathering space, offering a variety of options for communal eating and cooking.

The main dining area lies in the central atrium and is

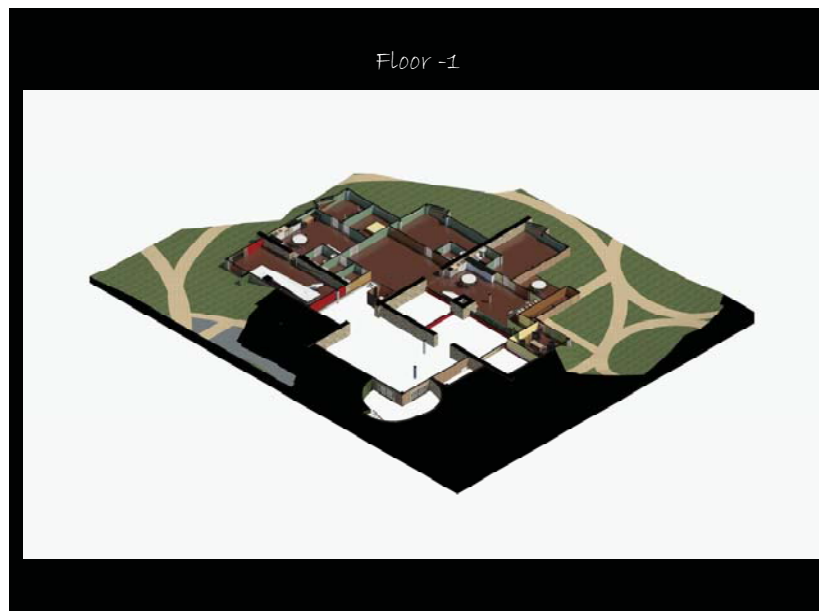


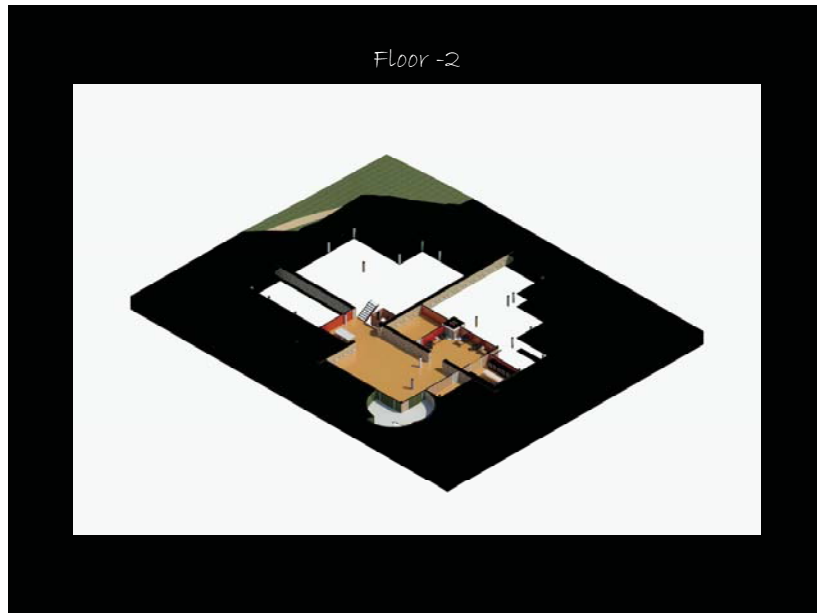
# Final Project



flexible to accommodate many people or other functions. From the main floor of the house the public spaces taper off as you ascend or descend.

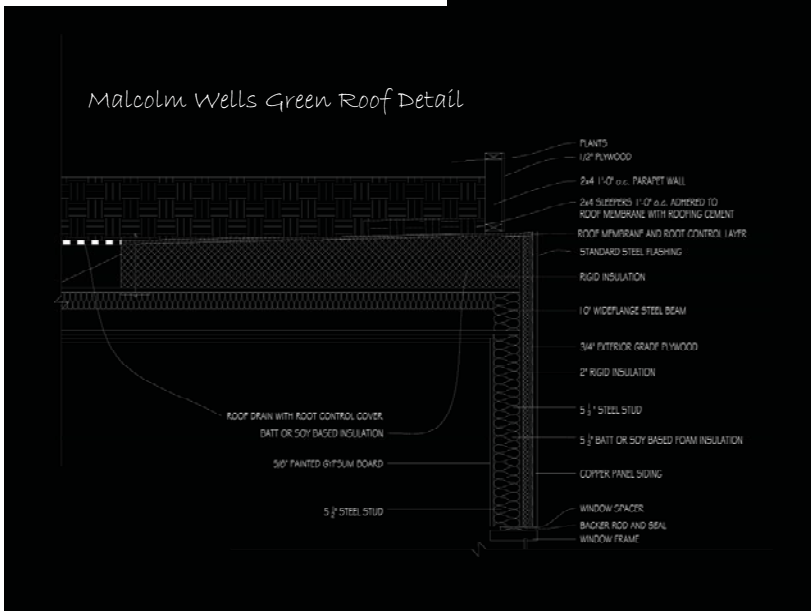
Below are flexible spaces and louder activity spaces that allow for the noise from them to be separate from the bedrooms, as well as laundry rooms, storage and the mechanical room.





Above the dining area are smaller, more intimate or chance meeting and gathering spaces, a TV room focused more toward overnight guests, and small quiet spaces for meditation.

An elevator and staircase sit central to the plans allowing easy and direct access to all the bedrooms if one needs to be alone and does not wish to walk through the active community spaces.



At every level there is access to green space, whether it is directly out into the park or one of many extensive green roofs. This allows for a degree of privacy to be achieved while still being outside in the midst of a public area.

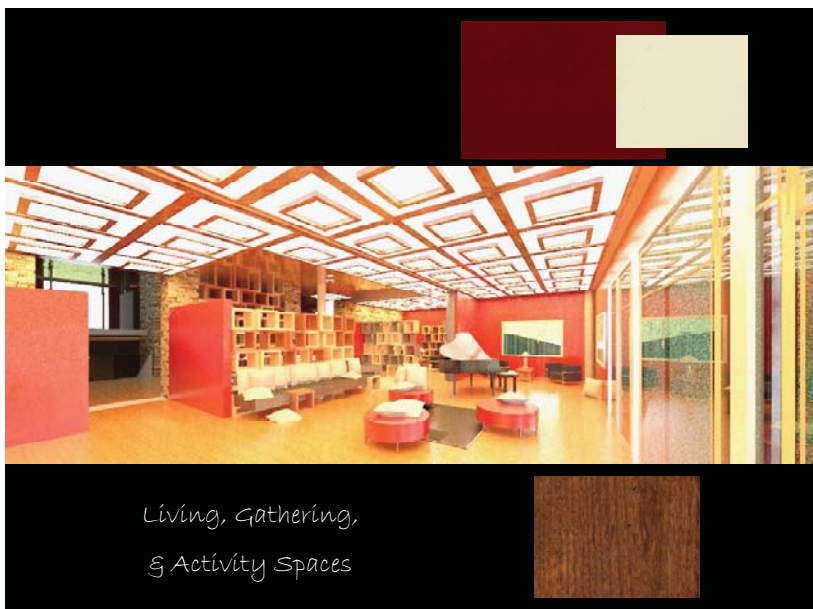
# Final Project

## Materials and Details



I took one more step closer and looked at materials and several details within the spaces. I selected a color palette for each space, keeping in mind the energy it gave.

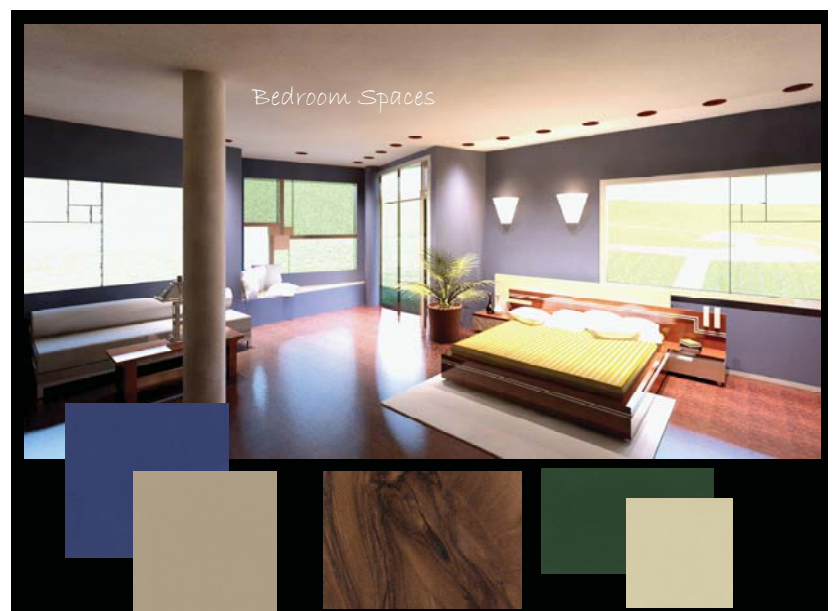
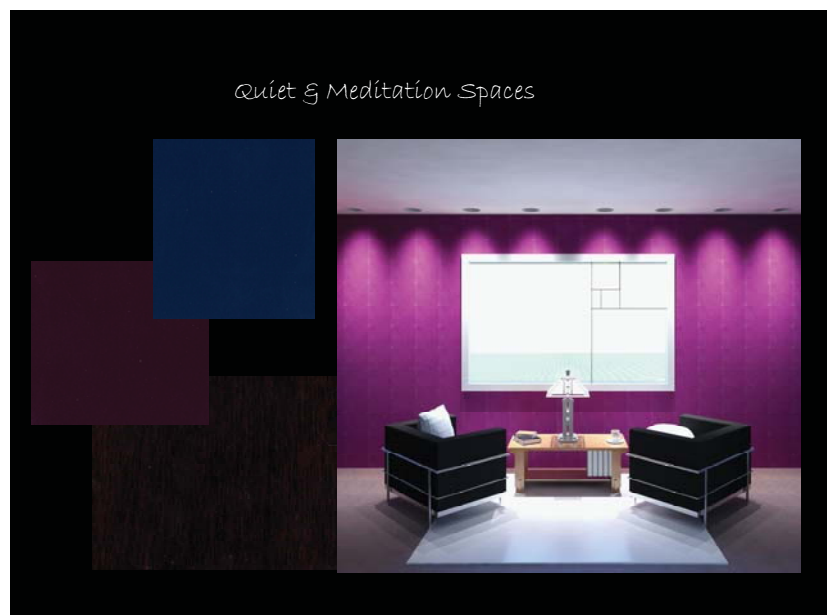
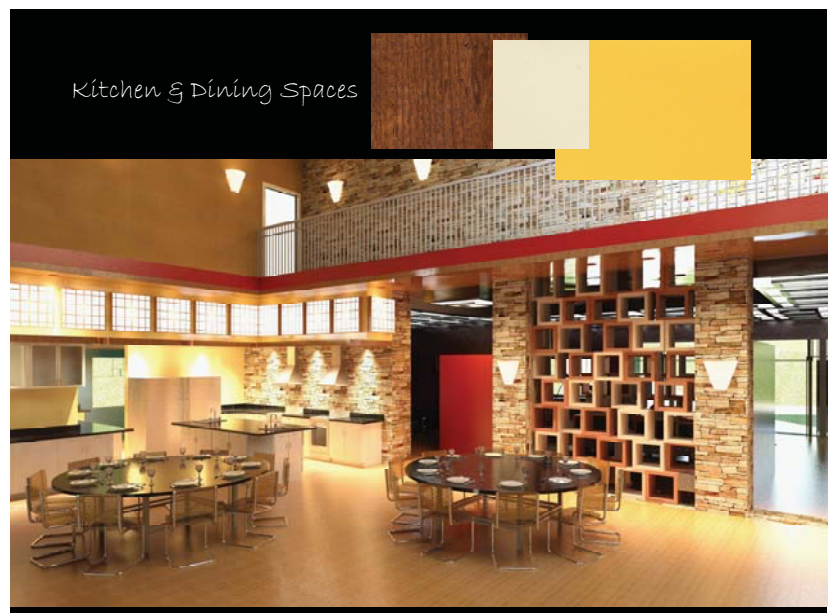
The core walls add texture to each of the spaces with a red and tan stone color palette. The modular nature of stone brings the massive walls down to a human scale while still portraying strength and foundation. Neutral spaces took on a warm yet simple light brown, to be warm and comforting, yet not chaotic or overwhelming.



Warm active colors were used in the public spaces such as yellow and red.

Contemplative spaces were painted with a cool yet active color such as purple or blue.

Two color palettes were selected for the bedroom spaces, one blue and one green. Each of the colors is nature based and not overpowering for the given space, but also not a color possibly associated with death or disease. Hardwood floors would be used to make cleanup easy to keep the house sanitary without being stiflingly sterile like the hospital. Rugs, pillows, and other soft, home items would be used to soften these hard surfaces and allow for more individual control.



# Final Project

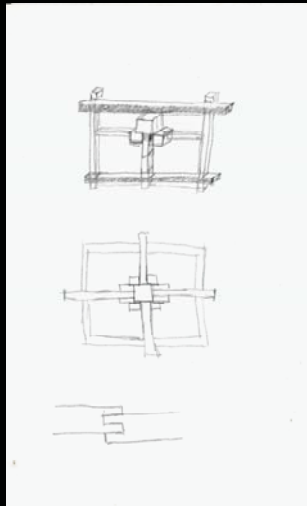
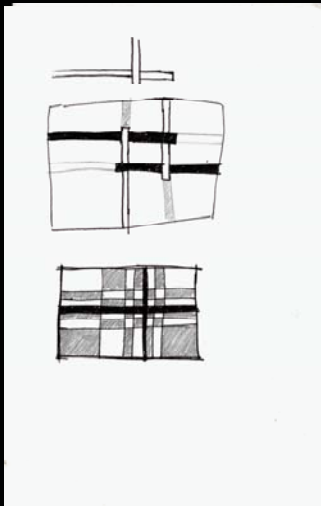
Finally, I looked at the windows and exterior doors used. As the connection points between the inside and the outside, as well as a focal point of each space, I saw this as a detail that I could use to add a final layer of comfort for the residents.

I worked through many window variations, finally deciding that a few simple, customized windows would make the spaces feel most like a special and comforting home.

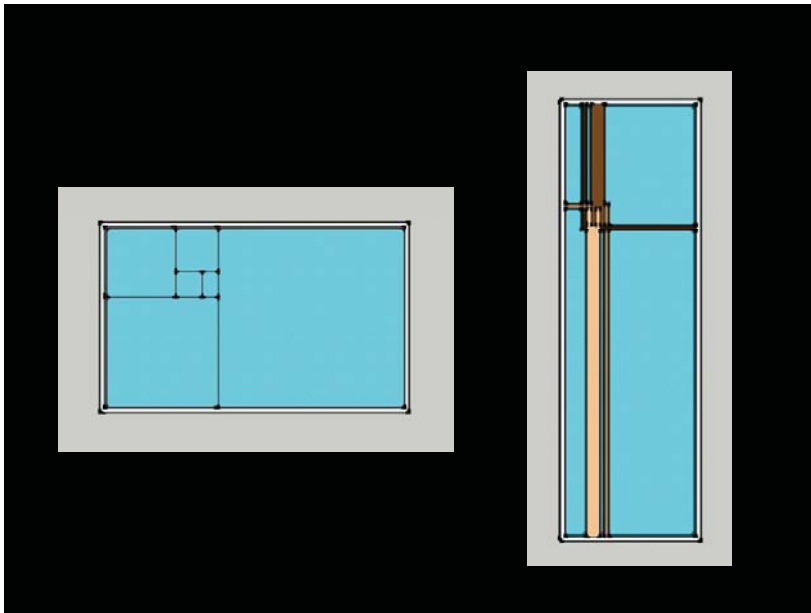
The main window used has mullions based on the golden section dividing it and creating various frames for the views. It is operable like a European window as both a casement window and an awning window depending on the weather and amount of ventilation desired. The Exterior doors are comprised of four sections, with the dividers based on my parti. The biggest section is the door panel, with the smaller window above it also being operable to allow for varying degrees of ventilation again.



Window Placement  
And Design  
Explorations

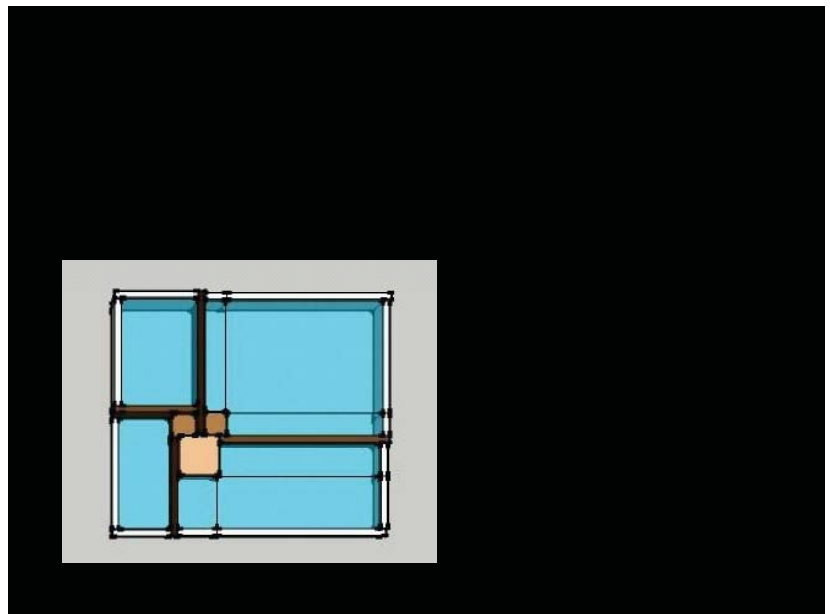






Finally, the only interruptions to the regular, cardinally oriented walls are the distinctive window seats in each bedroom. With their three-dimensional windows offering views of nature and a personal space of peace and reflection, these seats cradle their inhabitants in a world set apart from the monotony and hardship of reality.

Based off a simplified interpretation of the floor plans each window contains 4 independent panes, four interior framing members, and three modules all intended to give a sense of human scale or something of a size you could handle with your hands. Two of the openings are operable, allowing fresh air in, and



they are arranged in such a way to create a specially framed view when one is seated. The varying depths of the window create interesting shelves for plants, pictures, books, or even just a refreshing cup of tea. Still directed in to create a sense of being held, the seats themselves are proportioned to fit a seated person, and vertically at the height of a wheelchair to allow them to accommodate those with disabilities as well. There is a small shelf or container carved in the largest of the three blocks. Here sits paper and a pencil or pen. It can be used for journaling in the quiet, meditation time, to perhaps write a note of encouragement to the next family staying in the room, or to write one of the hardest letters one may ever have to write.

# Final Project

When one receives an organ, especially in the case of a deceased donor, they often do not know who the donor was. Unless the family of the donor wishes the recipient to know, which is rare, little connection is made between the two parties. However, a transplant is perhaps the ultimate gift to give or receive and recipients are encouraged to write a letter in thanks to the donor's family to be delivered via the center. I remember my grandpa struggling to write this letter after his second transplant. What can you say to a family grieving the loss of a loved one to thank them for their generosity that has allowed you to continue living? It may take months or years to finally find the words to express such gratitude. This transplant house seeks to provide a space of comfort and healing even down to the smallest detail of providing a quiet, private space with the simplest feature containing paper and pencil. Even this tiny and seemingly insignificant connection may be just what a person faced with hardship needs to restore the balance in life.

So with this design of a house, a home, connections are made, defined and explored. It does not stand independent. It cannot be isolated from its context for which and in which it was designed. To do this would be to only discuss it in terms of its physical aspects and remove it from the context of humanity. Its function is to serve people affected by organ failure and transplantation. Its architecture seeks to always be conscious of this as it can be their home away from home.



Understanding this, I gave it the name Matilda's House in memory of my grandfather who used the name as a nickname for his granddaughters. The name itself means "strength in battle," a fitting name for a house of healing.



# Final Boards



The ritual and underlying idea is one of the interdependent relationship between balance and connections. Throughout the project I aim at the idea and focused on such connection at every level of design.

The ideas of Feng Shui, with a focus on bringing nature into the spaces where we dwell, strengthen our's connection with nature and its healing powers. The green balconies throughout the design focus on natural light and ensure proportional rooms, lack of long hallways, earthier materials and colors, and organic arrangement of spaces are some of the ways this system approach is embodied in the design.

A sense of place, a connection with the built environment is strengthened through the use of two strong, core walls, oriented to the four cardinal directions. They offer not only a reference point throughout the entire house and outside, but also vital structural supports and containers for mechanical, electrical, and plumbing equipment. Every corner of the house is somehow connected to one, as if they are the vital organs of the house.

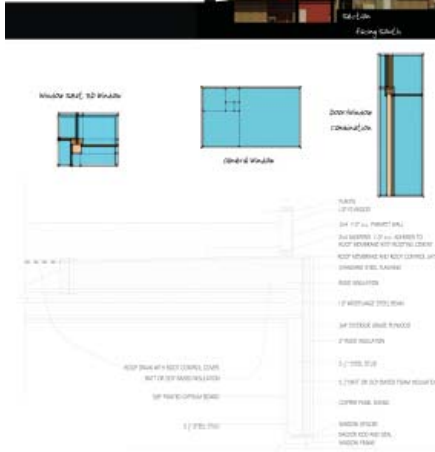
The only interruptions to the regular, carefully oriented walls are the architectural window walls in each bedroom. With their three-dimensional windows offering views of nature and a personal space of peace and reflection, these walls create their inhabitants in a world not apart from the necessary and healthy of reality.

Every detail of the design have been to promote the healing of its inhabitants. It allows not stand alone in its quest, but rather in the connections with its surroundings and the people who call a home to achieve such a goal.

## Matilda's House: A Home Away from Home

Matilda's House is a home away from home for transplant patients and their families in Minneapolis, Minnesota, near the transplant center at the University of Minnesota Medical Center. It is intended to be an alternative to an impersonal, expensive hotel for short or long term stay before, during, and after an organ or tissue transplant. It can also be used as a refuge or gathering space for families and patients in need of support but not necessarily in need of a place to spend the night.

The house contains eight bedrooms (including one for a host if necessary) and two private apartments meant to provide a separate space for families with children, who are often not allowed to travel together because of the sensitive operational condition of patients undergoing transplant procedures. Also incorporated are a large communal kitchen, dining room, library room, and various gathering, activity, and quiet spaces.





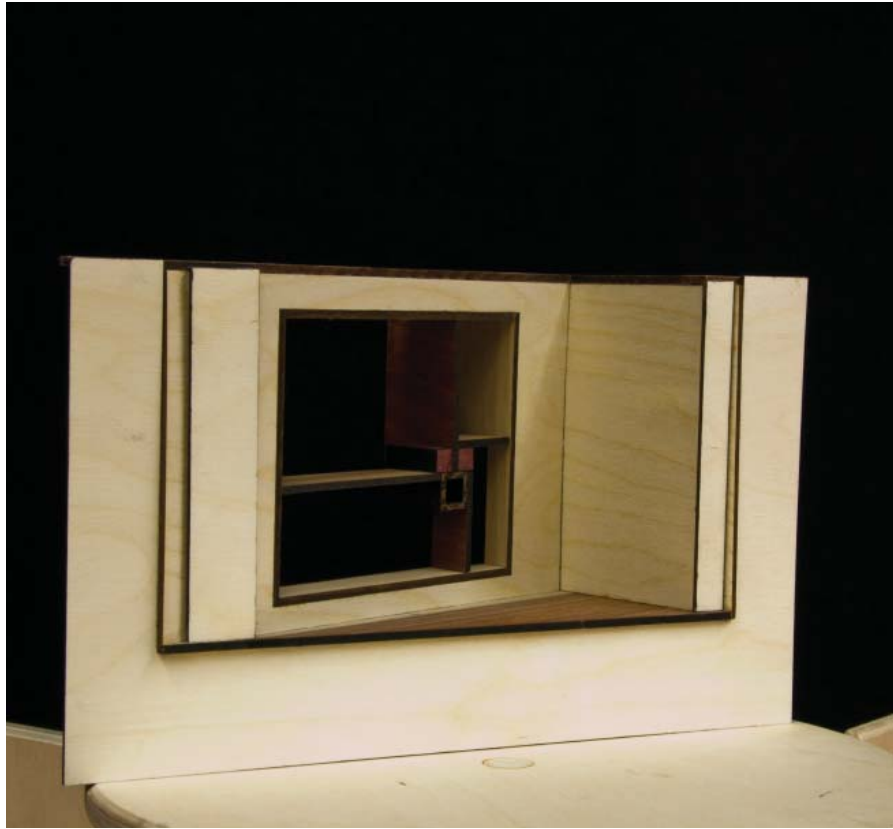
# Final Models



# Site and Mass Models



Final Model





# Window Model



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All photos were taken by the author except where otherwise noted.

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Personal Information

All fine architectural values are  
human values, else not valuable.  
-Frank Lloyd Wright

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