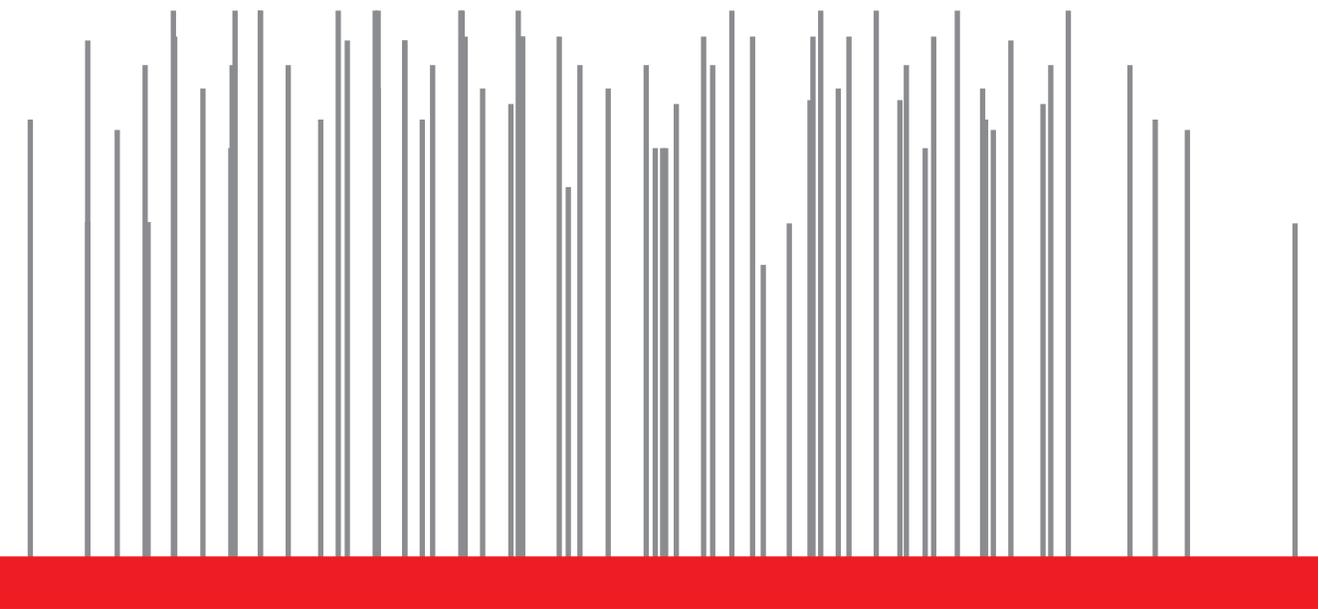


BENEFICIAL ARCHITECTURE



Andrew John Suby



BENEFICIAL ARCHITECTURE

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

By Andrew John Suby

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


Primary Thesis Advisor


Thesis Committee Chair

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TABLE OF CONTENT

Abstract	1
Problem Statement	2
Proposal	9
Narrative	13
User/ Client Description	14
Site Information	15
Project Emphasis	17
Previous Studio Experience	18
Plan to Proceed	19
Project Document	20
Theoretical Premise/ Unifying Idea Research	23
Summary	33
Typology Research	35
Case Study #1 Harbonnieres Residintioal	39
Case Study #2 Rehabilitation Centre Groot Klimmindaal	43
Case Study #3 Children's Center for Psychiatric Rehabilitation	47
Summary	51
Historical Context	53
Site Analysis	61
Programmatic Requirements	87
Reference List	115
Personal	118

fig. 1.1	Site Map	15
fig. 2.1	Thesis Schedule	20
fig. 3.1-5	Harbonnieres Residential Photographs	39
fig. 3.6-12	Building Graphic Analysis	42
fig. 4.1-4	Rehabilitation Center Photographs	43
fig. 4.5-11	Building Graphic Analysis	46
fig. 5.1-6	Children's Center Photographs	47
fig. 5.7-13	Building Graphic Analysis	50
fig. 6.1-5	Site Reconnaissance	65
fig. 7.1	Soil Analysis	71
Fig. 7.2	Site Slope Analysis	72
fig. 8.1-6	Site Maps	73
fig 9.1-6 C	Climate Data	75
fig. 9.7	Sun Path	78
fig. 9.8-11	Wind Direction map	79
fig. 10.1	Site Slope Analysis	81
fig. 11.1-12	Shading Analysis	83
fig. 12.1	Topography and Air Movement	85
fig. 12.2	Noise Map	86
fig. 13.1	Interaction Net	91
fig. 13.2	Interaction Matrix	93
fig. 14.1-15	Process Images	97
fig. 15.1-11	Fianl Images	103
fig. 16.1-3	Project Display	113
fig. 17.1	Personal Photograph	118

LIST OF
TABLES AND
FIGURES



ABSTRACT

How can architecture enhance the occupants mental health, and inner tranquility? The typology is a Extended Stay Rehabilitation Center for people with Post Traumatic Stress Disorder (PTSD). Through architecture it is possible to have a building that has a positive affect on one's mental health and inner tranquility. The project is located on the shore of Lake Superior in the township of Beaver Bay, MN in norther Minnesota. Mental health has many different aspects that can contribute to the illness anywhere from anger management, reliance, and self esteem (Mayo Clinic Staff, 2012). As the worlds population grows there is a need for architecture that will not have a negative affect on the occupants.

post-traumatic stress disorder
rehabilitation center
Lake Superior
Beaver Bay, MN



How can architecture enhance the occupants
mental health, and inner tranquility?

THESIS
PROBLEM
STATEMENT

STATEMENT OF INTENT





TYPOLOGY

Extended Stay Rehabilitation Center for Patients with Post Traumatic Stress Disorder (PTSD).

CLAIM

Through architecture it is possible to have a building that has a positive affect on one's mental health and inner tranquility.

Actor: Individuals

Action: Improving individual's mental health, and inner tranquility, through the architecture.

Object: Creating a space in which person can interact with architecture that has a positive impact on their mental health, and inner tranquility.

The occupant is capable of a feelings, and self awareness.

PREMISES

Stress and confusion come from one's thoughts and feelings about themselves caused by the outside pressures.

Architecture is a viable means to contribute to the mental health of individuals.

THEORETICAL
PREMISE/
UNIFYING IDEA

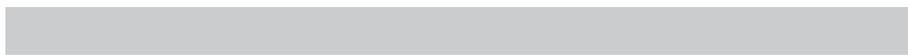
Architecture has the ability to affect the physical, mental health, and inner tranquility of people. Therefore it is our responsibility as architects to provide an architecture that dose not have any adverse effect on a person's emotional or physical well being.

Mental health has many different aspects that can contribute to the illness, anywhere from anger management, reliance, and self esteem (Mayo Clinic Staff, 2012).

PROJECT
JUSTIFICATION

THE PROPOSAL





NARRATIVE

Mental health and inner tranquility is a concern of mine for a few different reasons; First of all the experience I had while visiting the North Shore, and the second being of the increase of returning veterans from the war in Iraq with disabilities.

The experience I had is one that I believe everyone should be able to experience. I was near the shoreline of Lake Superior and the Temperance River delta. I had just finished a backpacking excursion in the area and camping the night at the Temperance State Park when I had experienced this moment. I was allowed to just slow down and enjoy the soothing sounds of the waves breaking on the rocky shoreline as I gazed at the river's current battled the lake's current. As a city kid who does not get to sit and take in nature I found myself incredibly relaxed and comforted. I was engulfed by what was happening around me. I stopped feeling like I was sitting on a rock but began to feel like I had become apart of the rock, a living organism that attached it's self to this rock

for survival. I believe that this experience I had was a moment in my life where I have achieved inner tranquillity with the nature around myself.

In the last three wars that the United States has been involved in: Vietnam, Gulf War, and Operations Iraqi and Enduring Freedom. It is thought that 10% or even up to 30% of returning veterans could have PTSD (U.S. Department of Veteran Affairs, 2012). Mental illness going untreated can cause many problems, these soldiers have sacrificed great amounts for us and we should take care of them in return.

Being an architecture student I have a desire to create architecture that can enhance the mental health of the occupants, possibly allowing architecture to become an important part of the treatment of mental illness.

USER /CLIENT DESCRIPTION

The client will be the individuals with Post traumatic Stress Disorder (PTSD). There will be room for 15-20 residents at a given time, with on site housing provided to the residents as they proceed through the various programs. The goal of the facility is to treat PTSD and eventually have the resident able to move into a place of there own and live in the general population. The staff of the facility will be comprised of many different members from the medical community, from medical doctors, psychologist, nurses, and medical assistance. The owner maybe a partnership with Essential Health out of Duluth, MN and the North-Eastern Area of the United Stats National Guard, and United States Department of Veteran Affairs.

MAJOR PROJECT ELEMENTS

The facility will be comprised of two different typologies. It will have a wing for housing of the residents and staff. With another wing of clinical psychiatry.

Residents will have their own individual spaces for living with all the amenities of living, sleeping, food preparation, and bathing.

There will also be an space for an employee to stay overnight. They will have sleeping, bathing, and living.

The **Clinic** will have clinical examination rooms, individual counselling rooms, group counseling rooms, recreational areas, nondenominational reflection room, and office for the psychologist, and other staff rooms.

SITE INFORMATION



fig. 1
Google. (Photographer). (2012). *Google maps*. [Web Photo]. Retrieved
from <http://maps.google.com/maps?hl=en>

The site location is on the Beaver River on the north end a township of Beaver Bay. The site is an essential part of this project for the many different reasons. I feel it is necessary for the rehabilitation center to be close to a river that is large enough to run year round and with in hiking distance of Lake Superior. The views given of the river, bay and lake are also a valuable part of my design. The site is located on the north west side of the major artery Highway 61 running north south, and the east side of a secondary road Lax Lake Road or County Highway 4. The area is in a medium to high forested area along the banks of the Beaver River, with the forestry I hope to have a secluded site with the trees muffling the highway noise of 61.

PROJECT EMPHASIS

The emphasis of this project is to discover ways to create architecture that can influence the occupants mental health and inner stability. In doing so the occupant can be treated for the disorder known as Post Traumatic Stress Disorder (PTSD). I feel this is important because, architecture and the environment can become more than just spaces that we occupy. I believe they can become tools in relaxation techniques, or even be implemented various ways around a medical center, becoming apart of an counseling tool.

Research Direction; through the exploration of the theoretical premise/ unifying ideas I will find the usefulness of my problem statement. Also using the project typology,historical context, site analysis, and programmatic requirements.

Design Methodology; technique I will be using is mixed method, quantitative qualitative analysis. They will be implemented with both quantitative and qualitative data will be gathered concurrently. Priority will be given to the requirements of theoretical/unifying idea. Data will be integrated at several stages in the process of research will also depend on the examination of the theoretical premise. Presented in graphics and text, analyzing, interpreting, and reporting will occur throughout the research process.

Documenting Design Process; As I proceed through the design process of the project I will be very careful to document the drawing and physical models, and computer models to be reflected on or to refer back to that point. It will be preserved through digital media such as camera or scanner. I will intent to reflect on these digital images or even physical models and I present the project reflecting to the different major parts of the design process.

PLAN TO
PROCEED,
AND
DOCUMENTING
DESIGN
PROCESS

PREVIOUS
STUDIO
EXPERIENCE

2ND YEAR

Fall 2009- Darryl Booker

tea house

boathouse

Spring 2010- Joan Vonderbruggen

montessori school

birdhouse

dwelling

3RD YEAR

Fall 2010- Paul Gleye

golf learning center

firestation

Spring 2011- Mike Christenson

Thom Mayne 6th st. house iteration

4TH YEAR

Fall 2011- Bakr M. Aly Ahmed

high rise

Spring 2012- Ronald Ramsay

power plant

5TH YEAR

Fall 2012- Mark Barnhouse

water treatment station

THESIS SCHEDULE

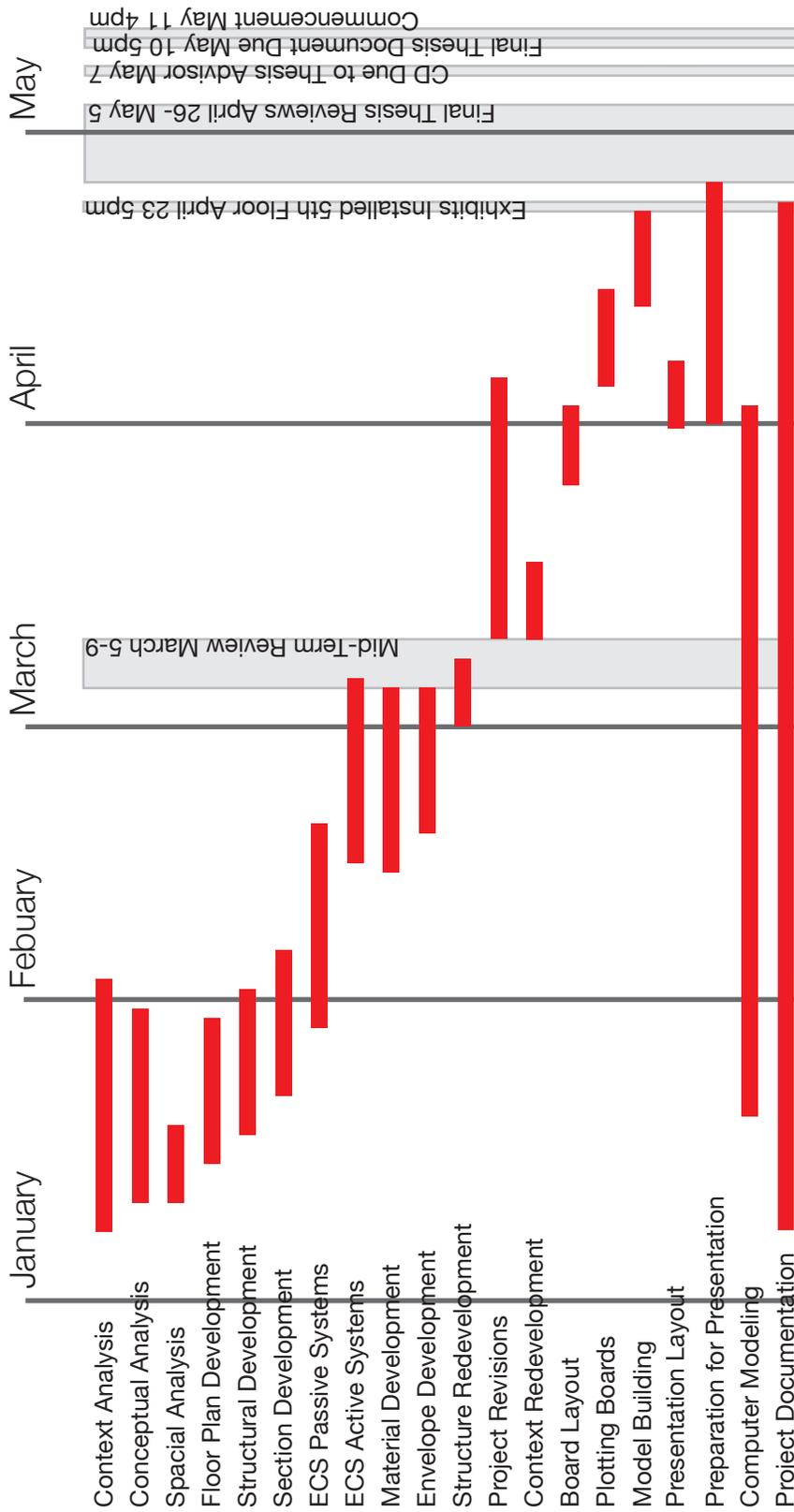


fig 2.1

PROGRAM DOCUMENT



THEORETICAL
PREMISE/
UNIFYING IDEA
RESEARCH

In this research portion of my thesis I narrowed the research fields down into three categories; the first is the occupant. The person that occupies the space that is subject to the feelings the space provides. Second is more about the individual at the facility, information about Post-Traumatic Stress Disorder (PTSD) and treatment for PTSD. Lastly are the ways architecture enhances the experience of the occupants. Answering the question; how can architecture affect the physical, mental health, and inner tranquility of its occupants?

Our psyche is made up of complex systems or super systems with the subsystems of; id, ego, and superego (Barry, 2002). The id, ego and superego are from Freud's Structural Model. According to Freud we are born with the id, it is at the bottom of our every need and its sole responsibility is to achieve what it needs. For example a baby will cry when it needs anything such as; food, changing, attention, ect. it does not take others into consideration. That aspect of a person's personality will develop into what is known as the ego. The ego provides the id with an understanding of others, and that they have needs also. It also understands that it could be harmful for them to be impulsive or selfish. The ego is there to keep the id in check with the reality of the situation. Lastly the superego develops, supplying the morals to one's personality. It is influenced by the

surroundings of upbringing (AllPsych, 2011). If one of these subsystems were to fail it could result in a mixture of personality disorders; if the id was the strongest then the individual would have impulsive, to selfish behavior, or if the superego was substantially stronger the individual would suffer from high morals and judgmental behavior with limited achievements for one's self. The ego subsystem needs to be the strongest so that there is a good mixture of all three keeping a balanced personal and social life (AllPsych, 2011). The occupant is also subject to thoughts and feelings which in return become personal emotions, how one perceives oneself to be. As Dr. Rock has stated a factor in a person's self-esteem can come from one's "status among their peers" (Rock, 2009). He describes the brain as a subconscious rolodex of your rank to one another of your peers. Attributes of the "pecking order" (Rock, 2009) are victories that could come from small arguments, or even receiving a promotion at work over a coworker. With all of the complexities of the human psyche.

"Post-traumatic stress disorder is a mental health condition that's triggered by a terrifying event. Symptoms may include flashbacks, nightmares and severe anxiety, as we have uncontrollable thoughts about the event" (Mayo Clinic Staff, 2011). The traumatic event that causes symptoms of Post-traumatic stress disorder can

occur from any of the following; terrorism, war, disasters, violence, and abuse (PTSD, 2012). For some individuals the event doesn't have to take place first person, they maybe a witness to the event (Mayo Clinic Staff, 2011). In America around 60% of males and 50% of females experience trauma, of those 8% of males and 20% of females are diagnosed with Post-traumatic stress disorder (PTSD, 2012). For patients with Post-traumatic stress disorder the symptoms are not identical, and can emerge and recede. Symptoms can also be arranged into three groups; "intrusive memories, avoidance and numbing, and increased anxiety or emotional arousal (hyperarousal)" (Mayo Clinic Staff, 2011). In the grouping of "intrusive memories" (Mayo Clinic Staff, 2011) symptoms are typically flashbacks or dreams of the traumatic event "Avoidance and emotional numbing" (Mayo Clinic Staff, 2011) can include feelings of hopelessness, memory and concentrating problems, not enjoying activities they once did, and being distant. Symptoms of "anxiety and increased emotional arousal" (Mayo Clinic Staff, 2011) can include guilt, anger, easily startled, and hallucinations (Mayo Clinic Staff, 2011). Symptoms of Post-traumatic stress can be "triggered" from a multitude of influences. Triggers can be either internal or external; a patient could have one or multitudes of triggers (Tull, 2008). Internal triggers can be any of the following; anger, pain, memories, muscle

tension, racing heart beat, anxiety, and feeling abandoned or lonely (Tull, 2008). External triggers may be as follows; places, smells, specific dates (holidays, anniversaries), news articles or movies that are similar to patients trauma (Tull, 2008).

Treatments for Post-traumatic stress disorder are much like it's symptoms in the sense that there is not one right way of treatment. Therapy can be any of the following; Cognitive-Behavioral Therapy, Eye Movement Desensitization and Reprocessing Therapy, and even various forms of group therapies. In any therapy it is good to know the history and procedures (Mayo Clinic Staff, 2011).

Cognitive-Behavioral Therapy was initially developed for treatments of depression but was later redeveloped into a treatment for anxiety (Rothbaum, Meadows, Resic & Foy, 2000). "Cognitive Therapy is based on the theory that the interpretation of an event, rather than the event itself, is what determines mood states. Thus, interpretations that are negatively biased lead to negative mood states. These erroneous or unhelpful interpretations, generally referred to as automatic thoughts, are typically seen as either inaccurate or too extreme for the situation that prompted them" (Rothbaum, Meadows, Resic & Foy, 2000). During

the process of Cognitive Therapy the patient is able to identify the exaggerated negative feelings, and replace with more appropriate positive to neutral feelings. This process is done as follows; (1) Repeated imaginal reliving (2) Process of deliberately confronting (3) Reliving the trauma (4) Focusing on the prolonged trauma memory (5) Process of imaginal reliving and (6) Prolonged repeated living of the traumatic event (Rothbaum, Meadows, Resic & Foy, 2000). Thru this process the patient is able to lower anxiety. Face the traumatic memory. Relive the event in a supportive, therapeutic, and safe environment. Isolate the traumatic event from the nontraumatic events. Modify the symptoms of Post-traumatic stress disorder into trophies of courage. Focus on smaller central to negative details, and modifying to neutral. (Rothbaum, Meadows, Resic & Foy, 2000) Through these steps it is possible to free a patient from Post-traumatic stress disorder.

Eye Movement Desensitization and Reprocessing is another form of treating Post-traumatic stress disorder process of treatment goes as follows; (1) Patient history (2) Preparation (3) Assessment (4) Desensitization and reprocessing (5) Installation of positive cognition (6) Body scan (7) Clouser (8) Reevaluation (Chemtob, Tolin, van der Kolk & Pitman, 2000). Thru this process the patient is able to be evaluated for symptoms, readiness, illness

characteristics, and set up a plan of action for the Eye movement desensitization and reprocessing. Form a clinician patient relationship, and education about the therapy. Begin collecting the traumatic events in specific order. Hold the thoughts, feelings and sensations of the event while the clinician waves a finger across the vision field, breath, and supply feedback in how the thoughts feelings and sensations changed. Steps repeat themselves with the added positive cognition, possibility of repeating this step multiple times. Patient checked over for physical tension and tension. Relaxation techniques at end of emotional session. Evaluation of the process, keeping an eye on the therapy goals (Rothbaum, Meadows, Resic & Foy, 2000). Eye movement desensitization and reprocessing was developed by Dr. Francine Shapiro (Rothbaum, Meadows, Resic & Foy, 2000). She realized that eye movement can be used to reduce the awareness of a dark or troubling thought (Rothbaum, Meadows, Resic & Foy, 2000). By having the patient focus on a finger as it moves back-and-forth the stress and tension of the recollection of the traumatic event can lessen, hence the desensitization. The reprocessing area of the treatment is of the positive cognitive thought and the eye movement, associating the neutral to positive correlation instead of the original one (Rothbaum, Meadows, Resic & Foy, 2000).

Group Therapy settings are another form of treatment for Post-traumatic stress. Often they are used along side other one-on-one counseling treatments (Foy, Glynn, Schnurr, Jankowski, Wattenberg, Weiss, Marmar & Gusman, 2000). A Support Group is set up with little focus on the details of the trauma, but rather gives the patients a system of a “family resemblance.” The topics covered primarily are of mid range symptoms of PTSD; sadness, hurt, frustration, and happiness. While dealing with the extreme symptoms; fear and, anger. “Supportive groups may incorporate structured material, the purpose of such information is generally to enhance the comfort level of the group in contrast to the use of content in cognitive-behavior skills training” (Foy, Glynn, Schnurr, Jankowski, Wattenberg, Weiss, Marmar & Gusman, 2000). It is often used for addition with other forms of therapy (Foy, Glynn, Schnurr, Jankowski, Wattenberg, Weiss, Marmar & Gusman, 2000). Psychodynamic Group Therapy is a group focused on the meaning “what it means to have been exposed to trauma and to have reacted the way he or she did (Foy, Glynn, Schnurr, Jankowski, Wattenberg, Weiss, Marmar & Gusman, 2000).” By doing so it allows the survivor to face affects of surviving the event. Looking into the “lessons learned” this group requires an accurate telling of the pre and post happening of the traumatic event. The descriptions of the event stir up emotions that are also used to talk about

how the survivor is coping, and how others in the group can experience thru other's experiences. Cognitive-Behavioral Group Therapy-is for patients that have a desire for a better life that is not controlled by their symptoms. It is set up to allow the patients greater control of the chronic symptoms of the daily life. "The approach challenges members to adopt realistic goals of living fuller lives while managing risks of periodic symptoms exacerbation" (Foy, Glynn, Schnurr, Jankowski, Wattenberg, Weiss, Marmar & Gusman, 2000).

Architecture can influence the occupants of the space by giving them an experience that only they can perceive. Architecture is experienced differently by everyone but if one would stop and smell the roses it would be thought of differently. "Architecture holds the power to inspire and transform our day-to-day existence. The everyday act of pressing a door handle and opening into a light-washed room can become profound when experienced through sensitized consciousness. To see, to feel these physicalities is to become the subject of the senses (Holl, Pallamasmaa, Perez-Gomez, 2006)." Architecture involves most of our senses; sight, touch, smell, hearing. Imagining the feeling of walking into that room feeling the warmth of the space on your skin the physical temperature difference, being momentarily hard

of sight waiting for your eyes to adjust.... Also “we must free ourselves; our ordinary lives are laden with devices which divides our attentions, and cajole our desires, (Holl, Pallamasmaa, Perez-Gomez, 2006)” with the growth of technology we have lost the enjoyment of the little things, thus losing the ability of smelling the roses. What would happen if one relearned how to live simple, and encounter things that would be over looked?

“Every touching experience of architecture is multi-sensory; qualities of matter, space, and scale are measured equally by the eye, ear, nose, skin, tongue, skeleton, and muscle. Architecture involves realms of sensory experience which interacts and infuse each other (Holl, Pallamasmaa, Perez-Gomez, 2006).” The senses do not only mediate information for the judgment of the intellect; they are also a means of articulating sensory thought (Holl, Pallamasmaa, Perez-Gomez, 2006).” Using the senses architecture is able to manipulate subconsciously feelings and emotions to the people occupying the space, by using different materials creating spaces for one’s senses to partake in a subconscious dialog. Space matter and time of an architectural experience become a single dimension, of one’s being allowing it to become a part of the conscious. “We identify ourselves with this space, this place, this moment and these dimensions as they become ingredients of our very

conciliation (Holl, Pallamasmaa, Perez-Gomez, 2006).”

In conclusion the human personality is shaped between several different unconscious factors. Much like a patient with post-traumatic stress, one can not control how it happens, or how it will affect them. With several different treatments recovery is to a life that is closer to normal is achievable. As designers it is possible to influence how people see the space they are encountering by bringing awareness to certain aspects. Architecture will always be there it will be for the viewer to choose to see and experience if they choose to open their eyes.

SUMMARY

As I began my theoretical premises/ unifying idea research for the problem statement of how can architecture influence mental health and inner tranquility? I was tasked with giving a level of priority to each of the researched elements. I decided to look into; what makes up a person's psyche, and how does it develop? When the psyche is affected do to a traumatic event resulting in post-traumatic stress disorder, what is post-traumatic stress? What are some of the ways that post-traumatic stress can be treated? How can architecture be of an affect to the occupant? I decided to organize the research into this format because with the growth of a patient's pre trauma psyche (any normal person). Until they are unfortunately affected by a trauma causing post-traumatic stress disorder (becoming a patient with PTSD). Following the trauma treatment would be necessary, and an investigation on how architecture has the ability to be perceived. I decided it would be the natural progression of any patient that would encounter my typology being a facility for rehabilitation of Post-Traumatic Stress Disorder.

Going thru the therapy to treat post-traumatic stress is not a short and easy process. During the actions of the procedures patients become face to face with many feelings that they are trying to suppress and escape from on a day-to-day basis. During a counseling session the patient can feel incredibly open and vulnerable, the architecture needs to speak to this and show the patient that they are actually safe and this is a professional setting where these feelings are

allowed, and can be overcome here also.

The triggers and symptoms are different from case to case of PTSD, but “architecture holds the power to inspire and transform our day-to-day experience (Holl, Pallamasmaa, Perez-Gomez, 2006).” I feel that it is possible to design a space, in my case a space that will house a rehabilitation center for patients with PTSD, to allow the occupants to have the pressures of the outside world lifted. By doing so the actions of processing through the different stages of therapies will be easier on the patient; and the therapy could potentially form the spaces of the architecture.

For some post-traumatic stress sufferers the symptoms are triggered by external influences. I believe that if we allow the architecture to be straight forward and not hide things it may have a positive influence on the patients. By keeping certain consistencies it would allow them to be excepting of these elements, in return being triggered less. However it is impossible to create a fool proof plan one always has to design a buffer, because “every touching experience of architecture is multi-sensory; qualities of matter, space, and scale are measured equally by the eye, ear, nose, skin, tongue, skeleton, and muscle. Architecture involves realms of sensory experience which interacts and infuses each other (Holl, Pallamasmaa, Perez-Gomez, 2006).” By creating these “multi-sensory” opportunities we are also giving the opportunity for a PTSD symptom to be triggered.

TYPOLOGY RESEARCH





CASE
STUDIES

#1

PROJECT **Harbonnieres Residential**

LOCATION **Harbonnieres, France**

ARCHITECT **Chartier-Dalix**

#2

PROJECT **Rehabilitation Center Groot Klimmindaal**

LOCATION **The Netherlands**

ARCHITECT **Architectenbureau Koen van Velsen BV**

#3

PROJECT **Children's Center for Psychiatric
Rehabilitation**

LOCATION **Hokkaido, Japan**

ARCHITECT **Sou Fujimoto Architects**



Harbonnieres Residential

Harbonnieres, France



fig 3.1

ArchDaily, 2012

Harbonnieres Residential is a home for disabled people to live. It is located in Harbonnieres, France and is a 21,807 ft², with the ability to accommodate 36 residents. A few distinguishing characteristics of this building is the roofline, it is pitched due south to pick up solar energy with its roof mounted solar panels. By doing so it has created an “up-and-down profile of the ridge tiling (ArchDaily, 2012).” The building is also a green garden in the center with ribbons of windows on both floors looking in and onto this space. The program is laid out well with day-living and night-living. All the sleeping rooms are clustered together on the north side of the building and buffer zones of public and private area at the entrance. Each sleeping room has two residents sharing. This building is an addition to the campus of the Notre Dame care home facility. Concrete is used for the superstructure and is very prevalent. It looks like the few wood details are around the window. The space looks rather institutional and cold in parts but really warms up around the windows and on the landscape as you view out.

Harbonnieres shares commonalities with the other

case studies by the materiality inside the facility. In the pictures the materiality of the walls and floor are a stark white and semi gloss floor. There is a really nice demonstration



fig 3.2

ArchDaily, 2012

of hierarchy as you walk in the main entrance and as you walk into a two story lobby.

At every exterior wall there is an opening responding to the landscape outdoors. Every sleeping room has its own window giving the resident “their own view” of the surroundings. The building is very transparent as to where it ends and where the outside begins. It is nice design that is very open and inviting to coming into or exiting out of a space. It responds well to the social

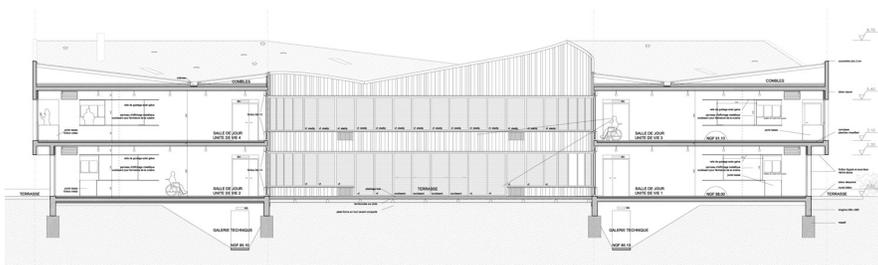


fig 3.3

ArchDaily, 2012



fig 3.4

ArchDaily, 2012

aspect of what is happening in the space well. The program calls for private sleeping areas and public living areas, to separate these area they use a four day room that gives views and access to the patio and also providing a space for group activities.

This project is beneficial to my thesis project because it is housing a care facility for patients that have been disabled. I believe that the patients that will be in my facility may have physical disabilities that are adjoining their mental health.

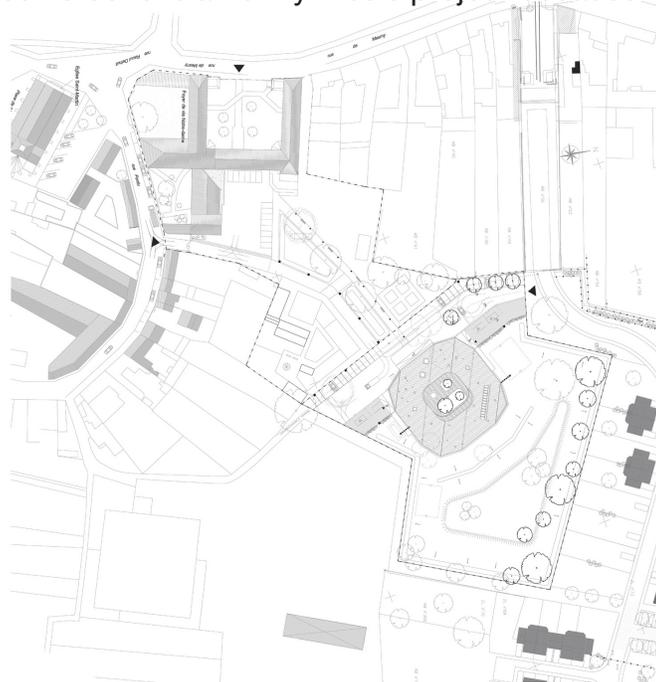
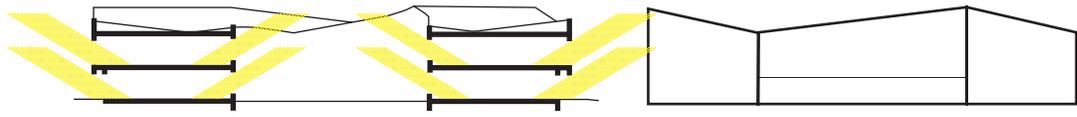


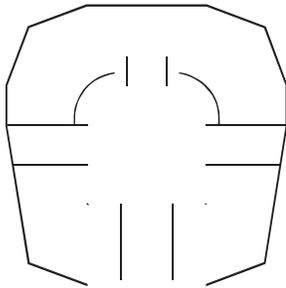
fig 3.5

ArchDaily, 2012

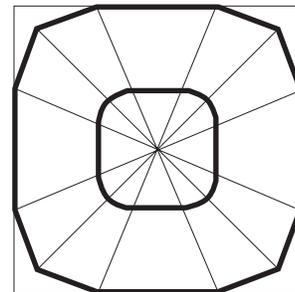


Natural Lighting

Hierarchy



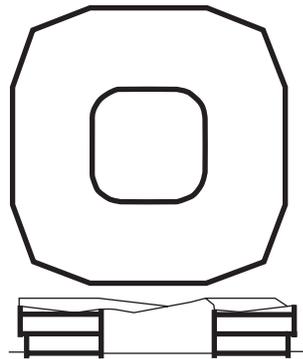
Structure



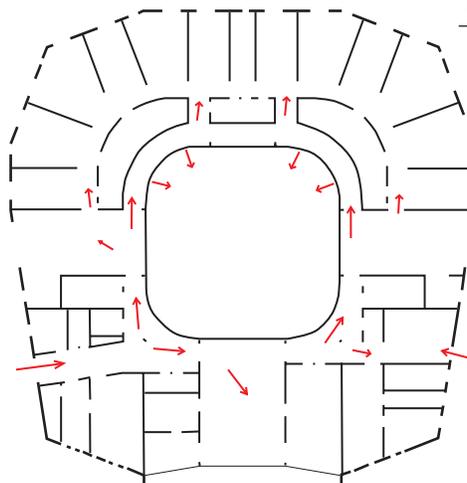
Geometry



Massing



Plan to Section



Circulation

fig 3.6-12

Rehabilitation Center Groot Klimmindall

Arnhem, Holland



fig 4.1

Rehabilitaion Centre Groot, 2012

Groot Klimmindaal Rehabilitation center is designed by Architenbureau Koen van Velsen BV, it provides care to children to adults that have suffered an accident or illness. It has a small footprint in the forest with a total square footage of 126,000 ft². It is located in Arnhem, Holland and is a part of a greater master plan with two other high density buildings in the park. The building's program consists of facility offices, clinical areas, sporting facility, pool, restaurant, theatre, and Ronald McDonald Houses. This building had been awarded The Building of the Year 2010 by the Dutch Association of Architects, and winner of the first Hedy d'Ancona Award 2010 for excellent healthcare architecture.

This building does a wonderful job of blending in with its surroundings. Its success might be due to the small footprint and the permeability and openness of the building. The entire first floor is a double height with glazing and it is capped with the upper levels of a aluminum anodized giving the building a copper coloring. This aspect of the design blends in the building with the surroundings. An important

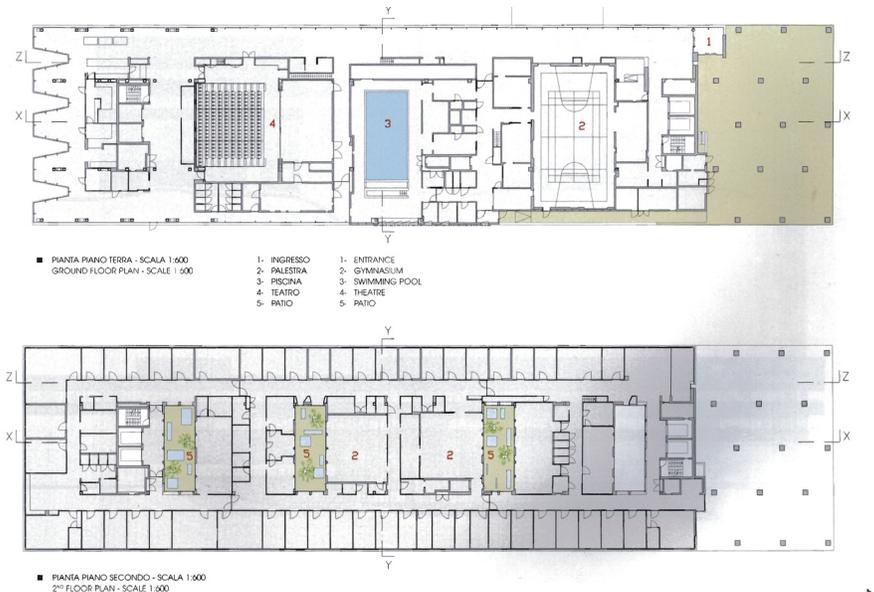


fig 4.2

Rehabilitaion Centre Groot, 2012

aspect of the other case studies researched, would be the relationship to its surroundings. All the case studies are transversive and want to blend the outside into the inside. This building does it really well because it doesn't only do that with the architecture but it also is able to do it with the program. Anybody on the site can walk in and enjoy the architecture of the building.

This building has been designed to be a part of this park making it a node for the park. Not only for the park but it is also a community center. In designing this building the architects encourage flexibility, sustainability, and ease of maintenance. The building has a small volume that requires less energy; that is generated by a energy-efficient mechanical and electrical plant. The building



fig 4.3

Rehabilitaion Centre Groot, 2012



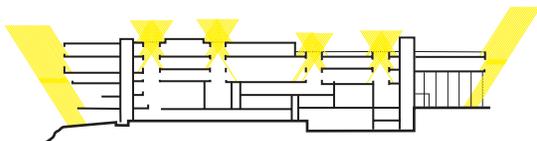
fig 4.4

Rehabilitaion Centre Groot, 2012

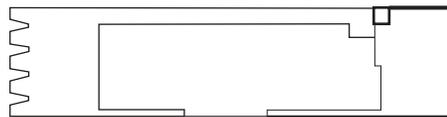
deciduous trees. It is also designed with the future in mind creating spaces that can be flexible for what may be the next occupants of the space. The building is also open and encourages use from patient, patient's family, and even the general public.

A common characteristic of the building with the others is that it also “utilizes thermal storage reducing energy necessity (Rehabilitation Centre Groot, 2012).” Another part of the design that I like is the vertical circulation. It has been addressed as something more than a piece of the puzzle to get from here to up there, but has been seen as a visual stimulant creating a “visual relationship from roofgarden into the valley (Rehabilitation Centre Groot, 2012).”

This case study is beneficial to my research along the lines of my typology for a couple of different reasons. The first being site location in a forest amongst trees, and the materiality choices of the designer to allow the building to become a part of the surroundings. My site being in an area similar I believe that using similar techniques I may be able to blend the building and the site. The voids were created by the designer for light wells from the roof into lower interior spaces. These are all things that can help my design for my facility for post-traumatic stress disorder.



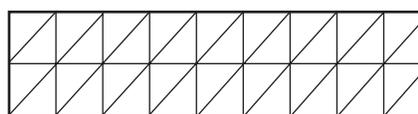
Natural Lighting



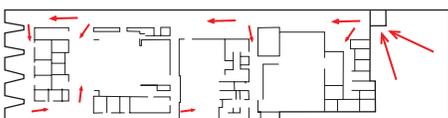
Hierarchy



Structure



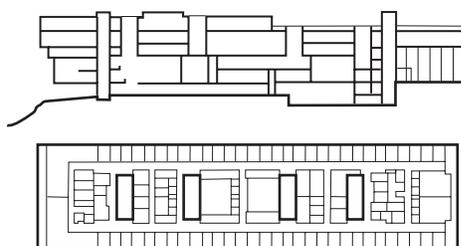
Geometry



Circulation



Massing



Plan to Section

fig 4.5-11

Children's Center for Psychiatric Rehabilitation

Hokkaido, Japan



fig 5.1

ArchDaily, 2012

The Children's Center for Psychiatric Rehabilitation is a treatment center for children with mental disturbances. It is located in Hokkaido, Japan was was designed by Sou Fujimoto Architects. The facility is 22,824 ft² with a program requirements of lodging for children, livingroom, kitchen, dining room, playroom, study room, counseling rooms, mental healing rooms, office, ect. This facility must wear many different hats as it is not only a rehabilitation center but it is also a housing center.

The design planning of the spatial organization is blocks scattered around. This allows spaces in the voids, creating supportive spaces to the major spaces. In the major building blocks the essentials of the program live and occupy (housing, counseling, washrooms), with the supportive elements filling in the gaps (living, multi-purpose, dining rooms). In the images of this facility it is very monochromatic with white walls that reach up to the double height ceilings in the voids, and hardwood



fig 5.4

ArchDaily, 2012



fig 5.5

ArchDaily, 2012

is seen as something much more than that,(truly rich life space that requested in origin like a large house and also like a small city, the intimacy of a house and also the variety of the city. This is a proposal of a loose method (ArchDaily, 2012).”

From this case study I have had my eyes opened. I find my-self asking these questions; why do we need to interact with the environment? Is it possible to create everything someone would need to be successful in treating a mental disability? To these questions I am perplexed and I find my-self a little bit intimidated, for I have researched two buildings prior to this one and they both emphasized nature and encouraged nature to become a part of the building. Why does it seem this one has done the opposite? The building is abrasive and turns away from the site.

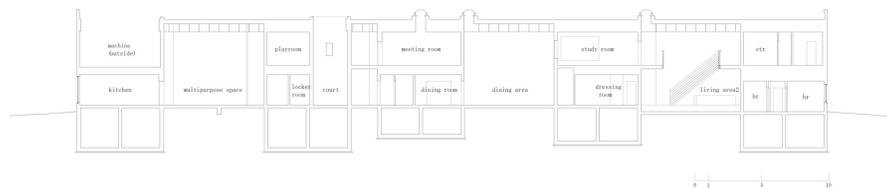
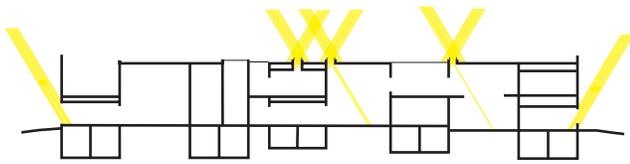
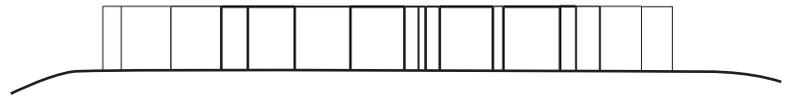


fig 5.6

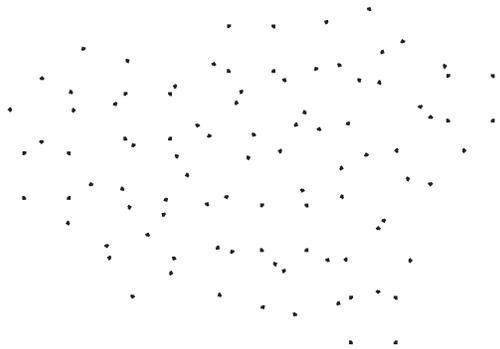
ArchDaily, 2012



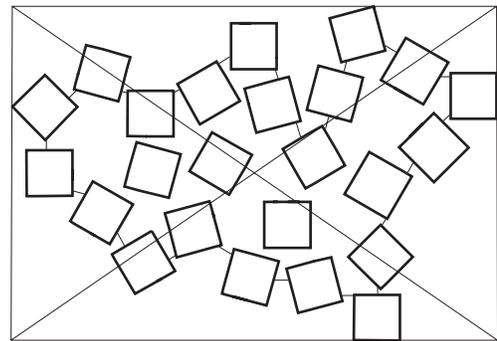
Natural Lighting



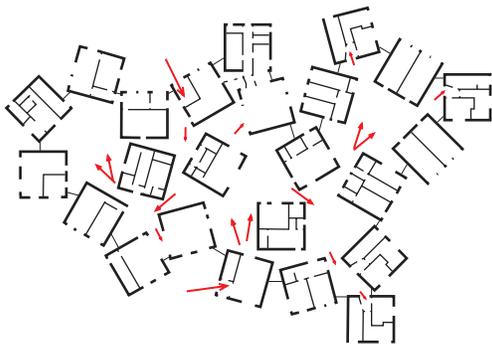
Hierarchy



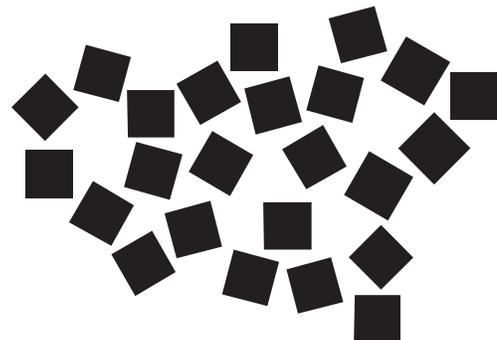
Structure



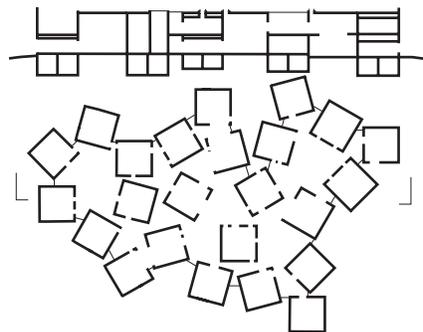
Geometry



Circulation



Massing



Plan to Section

fig 5.7-13

SUMMARY

In the selecting the building case studies to be investigated, I approached them with this list of things in mind.

- Does it pertain to healthcare architecture?
- In healthcare architecture, is it focused on therapy, and rehabilitation?
- In therapy and rehabilitation, is it focused on mental health, or psychiatry?
- In the building program do patients stay/live there?

I feel that if a building is able to fit three of the four I found a case study that would allow me to investigate and extract information from it that would be beneficial to my project. As I looked into the case studies I looked for aspects of natural light, connections to the site, and material choices. I believe that natural light, site interactions, and material can influence how a person perceives the environment they encounter.

As I continued my investigations in the case studies I found that the way natural light was more than welcome to come in and influence the way we see or perceive the space was important. Even on the less open Children's Psychiatric Center the light that came in was able to play with the surroundings and show voids in-between the boxes. Light wasn't the only commonalities of the buildings, the materials remained similar throughout the studies also. In the Groot Kimmindaal and Children's Psychiatric facilities the floors and walls were almost identical, the walls were blank single color with nothing hanging and clouding it up. While the flooring is hardwood floors, I believe that the hardwood gives the spaces a feeling of richness, and warmth that could be beneficial to a patient with mental disorder.

Two of the three case studies were very focused on the site and the third was rather introverted onto its self. My research into the treatment for post-traumatic stress disorder disclosed that nature can help and sooth the stress The investigation of Groot Kimmindaal, and Harbonnieres showed that bringing nature into the building was an important aspect of their designs. In the Groot Kimmindaal the building is able to blend into its surrounding in its material choices, and applications of the material. Having a similar site to the site in the Netherlands; if I implement some of the same design techniques and similar materials the design of my thesis project could become assimilated into the site as well.

The way sun plays with the building and how it is camouflaged into the site are not the only things that will influence the design. As I looked into the case studies the special organization was equally important. Having a typology with a complex program that has a rehabilitation center and also living areas for the patients, the special organization and relationships are important. In the Children's Center for Psychiatric the spaces are in the same facility. The way that the spaces are laid out is that the housing area is around each other and in a separate part of the facility are the therapy rooms and counseling rooms. It would not be a good lay out if you put the two separate elements of the program together when it is not necessary. I have also noticed that all the sleeping rooms are not single but have multiple beds in them. However this is designed for children and I will be designing for adults.

HISTORICAL CONTEXT

North Shore Region

“From Duluth north and east to the Sault,, the Wilderness still prevails; only a few villages and three cities have sprung up –Grace Lee Nute 1943 (Historical Society 2001).” The north eastern part of Minnesota has been through various stages of change in the last seventy years. A town just five miles north of Beaver Bay is now known as Silver Bay. As you pass through on Highway 61 it is no secret that it is a mining town, with the taconite factories right in between the lake and highway. Mining for iron ore is one of the main industry and employer of this area since the mid fifties. In the 1870’s an explorer and geologist was hired by a group out of Duluth, MN and Ontonogan, MI to look into mineral deposits, what he found was “an iron mountain 12 miles long and ½ mile wide (Historical Society, 2001).” Into the 1940’s the land was mainly wilderness with scattered fisherman cabins, but land was being bought with cash up front with no word what was going to happen by the Reserve Steel Company. In 1944 Armco and Republic Steel started planning to build a plant in this location capable of processing 10,000,000 tons of taconite a year; each company now owned 50% of the

Reserve Company (Historical Society, 2001). The town and plants construction had begun in 1951 and finished in October of 1955. On May 1, 1954 the Reserve Steel Company announced the name of the town along the shore line as Silver Bay.

In 1956 the plant was fully operational and sent out its first shipment of pellets (Historical Society, 2001). Since the growth of this town happened so quickly the need for a new elementary school was fulfilled the same year (Historical Society, 2001). With a high school following two years later named after Reserve Steel's first president William Kelly High School. With another expansion construction project announced in 1960 to expand the plant by 40% of its production; making 400 new jobs, along with more city buildings, stores, and another elementary school (Historical Society, 2001). "Rocky Taconite came to symbolize Silver Bay as the Taconite Capital of the World in 1964 (Historical Society, 2001)."

With all the good comes bad; Reserve faced heavy pressure from dumping waste rock into Lake Superior,

resulting in a long legislative trial. At the end of the trial Reserve got permission to construct a tailing storage basin; being 7 miles inland from Silver Bay it became known as Mile Post 7(Historical Society, 2001). However two years after the completion of the basin the demand for steel was shrinking and people were getting laid off, and the facility closed on July 31, 1986 (Historical Society, 2001). “Over its 30 years of operations, Reserve shipped almost 219,024,410 tons of pellets (Historical Society, 2001).” In ten years from 1980 to 1990 the town’s population went from 2,917 to 1,894 (Historical Society, 2001).

For the next three years the plant remained empty with no buyers, until 1989 two companies became interested; one out of Colorado, and one out of Ohio. In the end of the bidding war Cyprus Mineral out of Colorado won with a \$680 million offer (Historical Society, 2001). However in the fall of 1994 Cleveland Cliff out of Ohio bought the plant from Cyprus North Shore Mining.

PTSD, War

In our society war has been a part of our country's growth. Many can name someone involved in any of the past wars, whether it be a brother, sister, uncle, grandpa, or great grandpa. For those who fought in combat it is almost a guarantee that they experienced fear, fear is an emotion that goes with combat (Van Ells, 2005). "Fear moves swiftly in battle, strikes hard with each shell, each new danger, and as long as there's action, you don't have time to be frightened. But this is a slow fear, heavy and stomach filling. Slow, slow... all your movements are careful and slow, and pain is slow and fear is slow and the beat of our heart is the only rapid rhythm of the night... a muttering drum easily punctured and stilled (Van ells, 2005)." Studies have shown motivations for combat soldiers in battle is that respect for their buddies is stronger than patriotism for their country, building bonds with each other, and eventually having to lose a close friend in battle can be incredibly difficult. Events like this can create "survivors guilt" (Van Ells, 2005). Survivor guilt is what makes someone question why they were able to escape the certain event

and someone else wasn't able to.

Having mental and physical breakdowns during war wasn't an uncommon act either. In World War I it was thought of a "shell shock" and World War II "battle fatigue" (Van Ells, 2005). Soldiers that suffered from this had been thought to be cowards or had psychological problems that had been predisposed. During World War II army psychiatrist believed that a man could experience 180 day of combat, after that amount of time their "fighting effectiveness" would lessen (Van Ells, 2005).

In 1980 the term "post-traumatic stress disorder" was coined, and blanketed both "shell shock" and "battle fatigue". Symptoms would be listed under three categories, being persistent reliving of trauma, intensified physical responses, and avoidance of stimuli (Van Ells, 2005). Most combat veterans would experience symptoms in these categories, but to be diagnosed with Post-Traumatic Stress Disorder you would have to have symptoms in all three categories (Van Ells, 2005).

"Some aspects of war are timeless. The emotional



trauma it causes is one of them (Van Ells, 2005.)” Emotional traumas in combat situations cannot be avoided; unfortunately this is a fact. In 1990 a government-funded report stated, that about 15 percent of Vietnam veterans are still suffering from “war-related mental health issues” (Baran, 2010). With more recent reports from soldiers returning from Iraq; 8.5 percent to 14 percent now returning with “serious functional impairment” that will affect their lives (Treatment Centers, 2010). These figures have sparked an interest in resolving post-traumatic stress before it begins. The Veterans Health Research Institute are working at a way to get these soldiers affected with post-traumatic stress disorder treatment, and also create a new program that will prevent it. Deployment Anxiety Reduction Training (DART) is a program design to treat soldiers that have recently been affected by a traumatic event (UCSF, 2010). The program is being launched in Afghanistan.

GOALS FOR THESIS PROJECT

Academic

My goals academically for this thesis project are to challenge my understanding of how architecture influences an occupant's mental health and inner tranquility through the concepts and ideas surrounding it. I believe that I can achieve this by performing at the level of a graduate student. As a graduate student I will produce conclusive research that will increase interest in readers and their desire for more knowledge in this area. I will apply the developed skills that I have acquired over the last 5 years here at NDSU to further achieve my academic goals. In recent years, I believe that a good design comes from thorough investigations throughout a design process. My overall purpose for this project is for it to be easily understood and exhibit its content as a well-thought out document.

Professional

Professional, I would like this project to move me toward the direction of design within a specialty field. I have an interest in the design field of institutional and healthcare architecture. I look forward to learning new ideas of how architecture can possibly become a tool to incorporate

techniques in design for future building ideas. I think this is another opportunity to use professional software programs in my design process. I trust in doing so, I will produce a project worthy of a place in my future portfolio.

Personal

My personal goals are to overcome my struggle with dyslexia and to produce a project document to a high level of well researched and written material. I would like to gain a better understanding of how architecture influences patients with mental health disorders. In verifying my success, I wish to engage in a conversation with someone who has been diagnosed with a mental health disorder. In talking with that person I would mention aspects of my project and how I think architecture could have a positive effect on their personal life.

SITE ANALYSIS

QUALITATIVE ASPECTS



SITE NARRATIVE

It had been a cold rainy weekend in the middle of May 2012. I had just finished a short backpacking excursion thru a small section of the Superior Hiking Trail with my father. We were out there for 4 days and the only day we were dry was the day we departed from the first car. We were exhausted, cold, and very soggy. We had checked the weather when we got back to the second car and with any luck we would be dry by night, so we figured we would camp one last night and pack up and drive home in the morning. We camped at the Temperance River State Park at the mouth of the Temperance River and Lake Superior, there we had dry clothes and warm showers and a real meal. Well we weren't so lucky as the rain hung with us. However when we woke up the next morning the rain had stopped over the course of the night, so I decided to go on a little walk down to the shore of Lake Superior and over to the mouth of the river. There I sat on the rocks just listening, watching the rivers current battle against the tides of the lake. I felt so comforted and at ease sitting on this rock. I then decided this should be a part of my upcoming thesis project.

All I knew was I wanted my thesis site to be along the shores of Lake Superior with a river delta within a short walking distance. Not being able to return to the North Shore until the following October, and wanting to

be able to spend time searching for a site and at my site I desired, I decided I would drive across the state on a Friday after class camp and drive up and down Highway 61 until I found my site, however being on a college student budget I thought I could save money and camp (at Temperance State Park) Friday night and find my site on Saturday. Only having the bare essentials for camping (tent, foam pad, and spring sleeping bag) I figured I could do it... Well let's just say over the course of the night I found myself shivering with the clothes I had and my jacket on and in my sleeping bag, and still didn't think I was going to make it through the night (that nights low was 36 degrees). I spent the next morning driving north to Grand Marais, and back down to Two Harbors. I found many sites that fit my criteria, but one felt right to me. I decided to locate my site on the north end of the town Beaver Bay and just south of the Beaver River. I choose this site due to the size of the river where it will have water flowing year round.

The site is also placed an hour north of Duluth, allowing a connection for the urban setting of my therapy, but also having enough buffer zone for less connection. This is a desired location for a treatment center because it can have focuses in nature but also be grounded by the community around it and into the extended community of Duluth.

SITE
RECONNAISSANCE



Photo One

Suby, 2012 fig. 6.1



Photo Two

Suby, 2012 fig. 6.2



Photo Three

Suby, 2012 fig. 6.3



Photo Four

Suby, 2012 fig. 6.4



fig. 6.5
Google. (Photographer). (2012). *Google maps*. [Web Photo]. Retrieved
from <http://maps.google.com/maps?hl=en>

SITE QUALITIES

LIGHT

On the afternoon I was visited my site it was a cool overcast day. Having a monochromatic sky against the lake.

VEGETATION

The vegetation is of a heavy to medium deciduous forest. The color are of greens with some white birch trees. With iron in the earth the ground has a red hue.

WATER

With Lake Superior off to the east and Beaver River running adjacent to the site it is full of fresh water.

WIND

The tree cover in the area helps to knock down on the wind from the lake.

HUMAN CHARACTERISTICS

Leading down from the parking lot to the river there are several foot trails. In the parking lot I noticed other vehicles other than my own. With an occasional vehicle passing on highway 61.

DISTRESS

There was the normal amount of down trees amongst the trees. Some had been draped into the river and others were decomposing where they fell at the bottom of the other trees.

SITE ANALYSIS

QUANTITATIVE ASPECTS





SOIL ANALYSIS

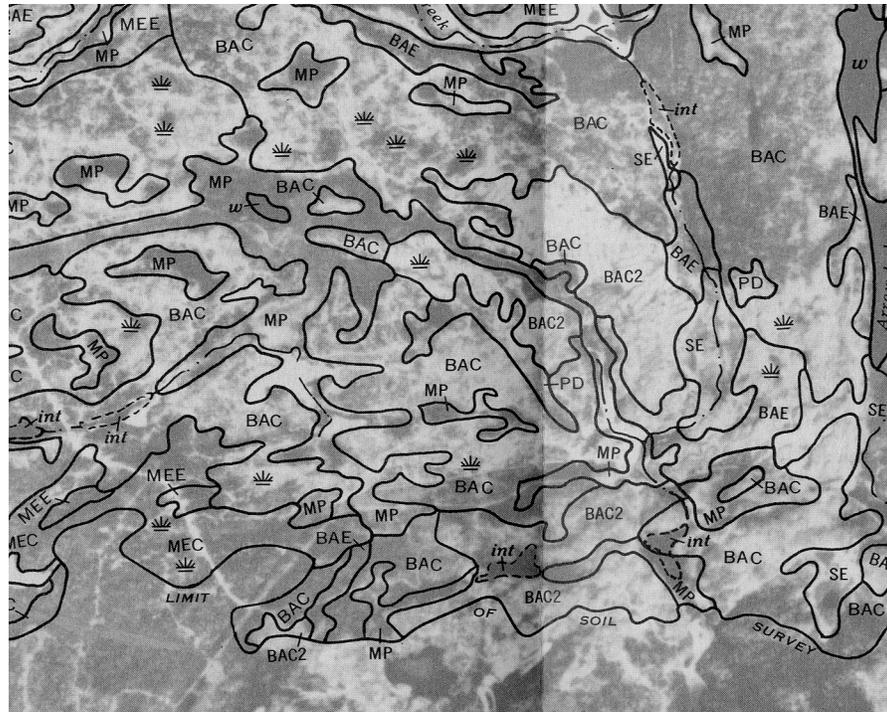


fig 7.1

- BAC- Barto gravelly coarse sandy loam, on sloped 2 to 8 percent slope
- BAC 2- Barto gravelly coarse sandy loam, on slopes 2 to 18 percent slope
- BAE- Barto gravelly coarse sandy loam 18 to 35 percent slopes
- MEC- Mesaba gravelly sand loam, 2 to 18 percent slopes
- MP- Mucky peats
- PD- Poorly drained loamy soils
- SE- Seelyeville muck

SITE SLOPE ANALYSIS

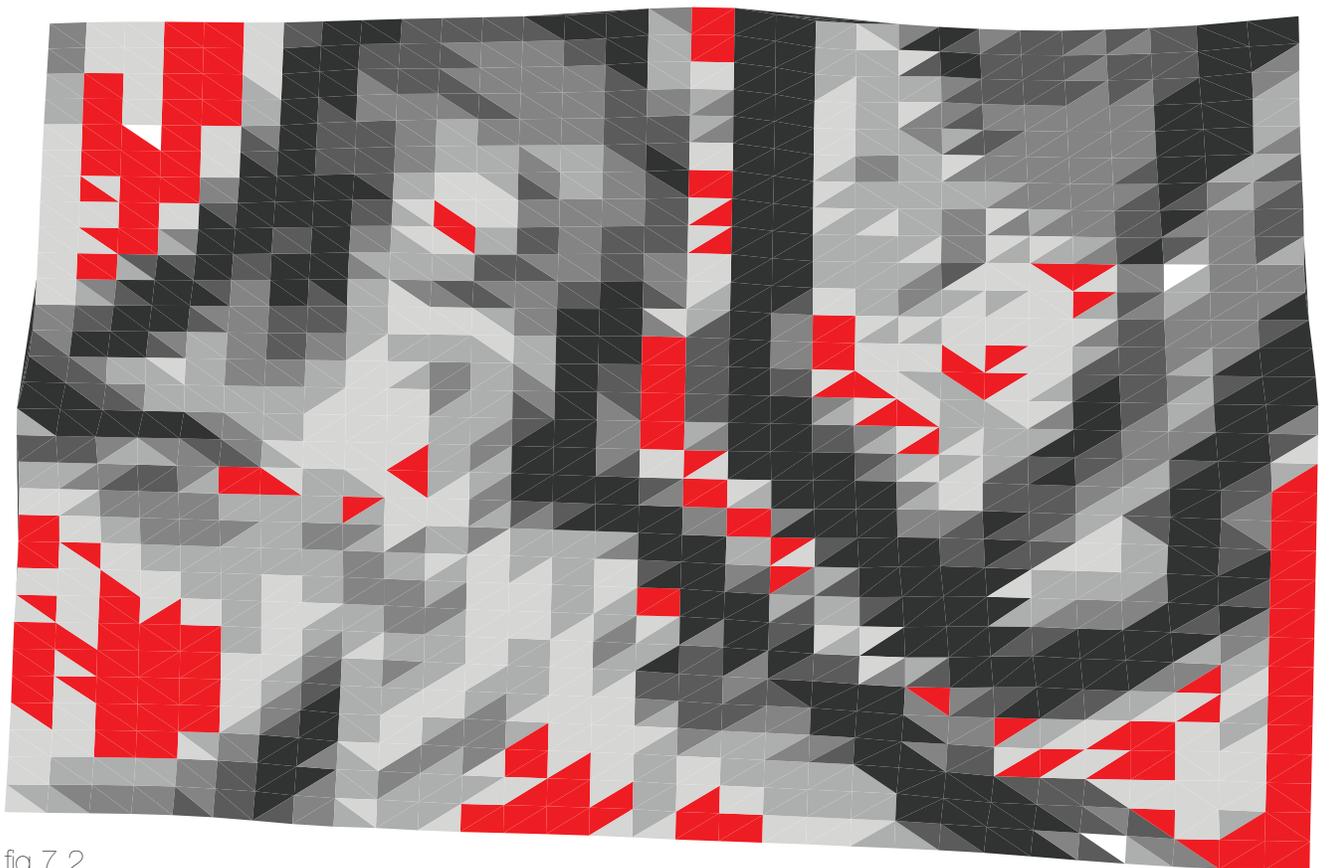
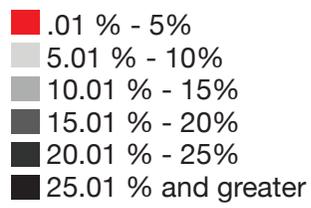


fig 7.2

WATER

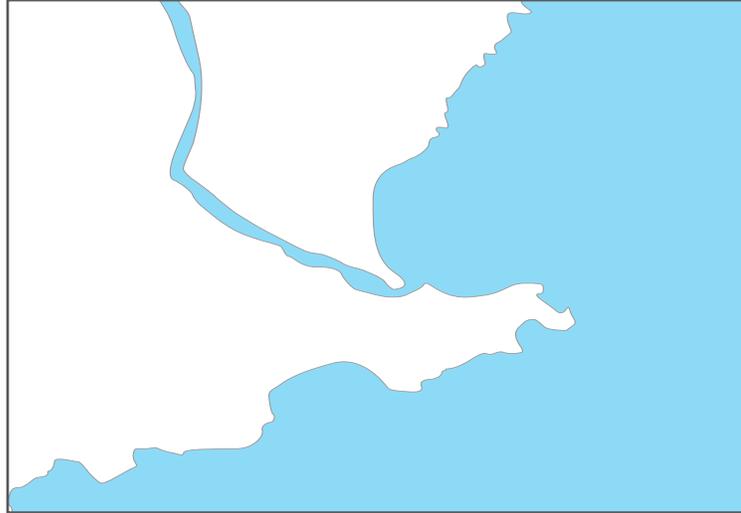


fig. 8.1

BUILDINGS

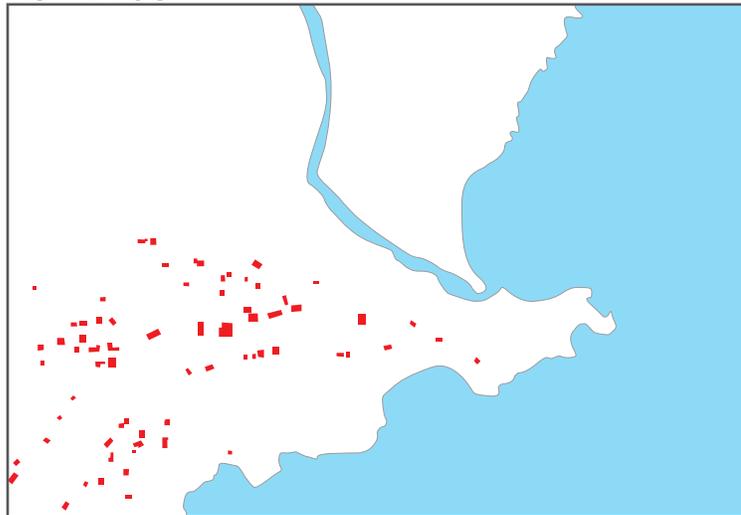


fig. 8.2

ROADS



fig. 8.3

BOUNDARIES

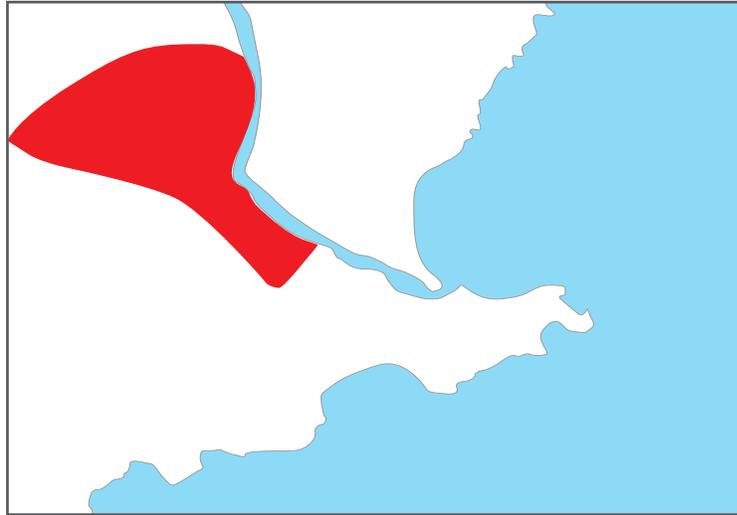


fig. 8.4

TREE COVER



fig. 8.5

UTILITIES

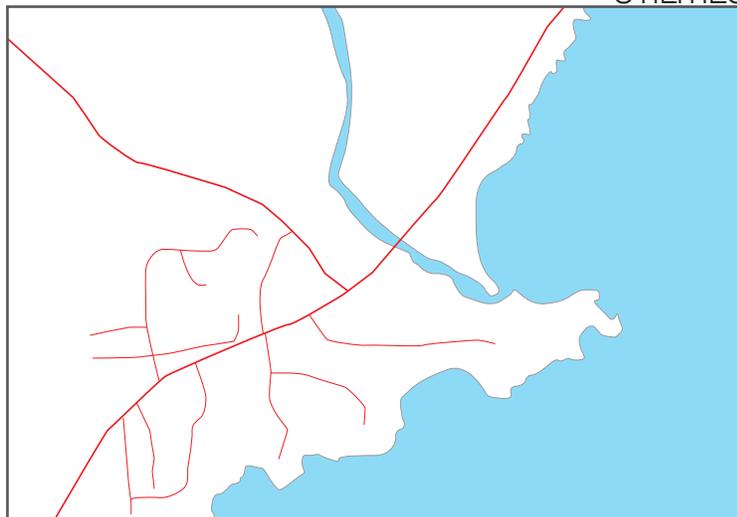


fig. 8.6

CLIMATE DATA

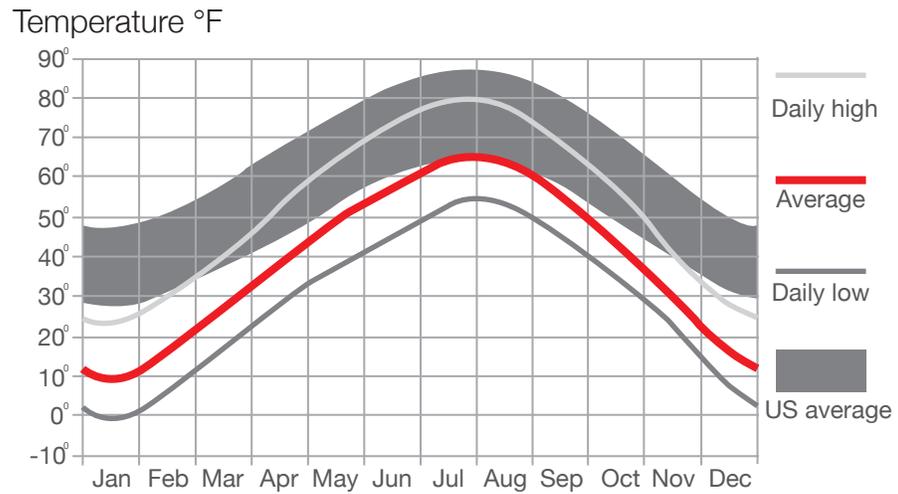


fig 9.1

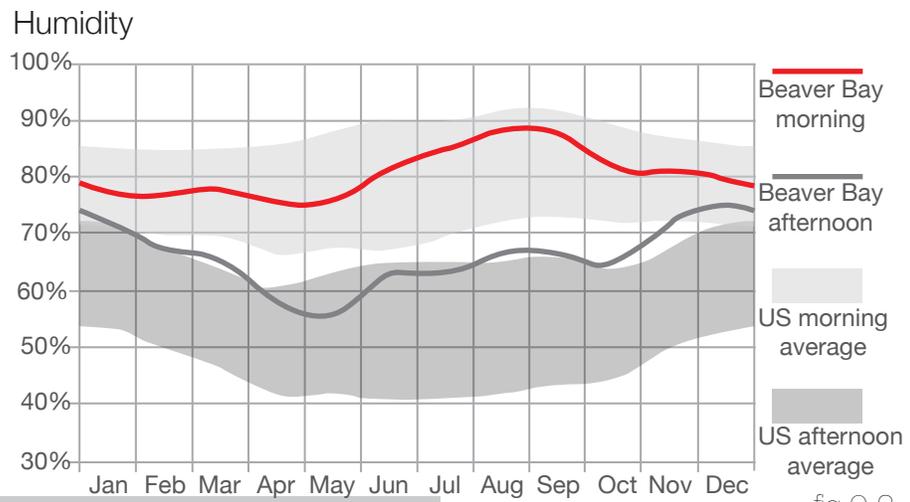


fig 9.2

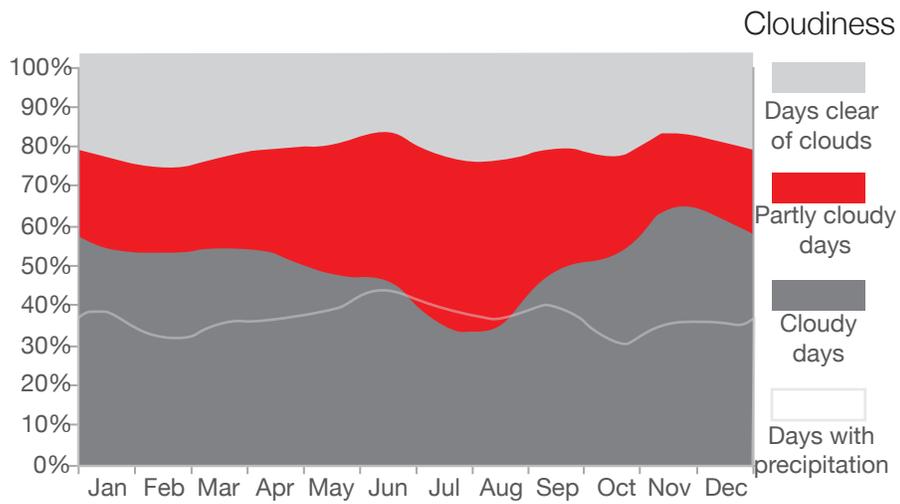


fig 9.3

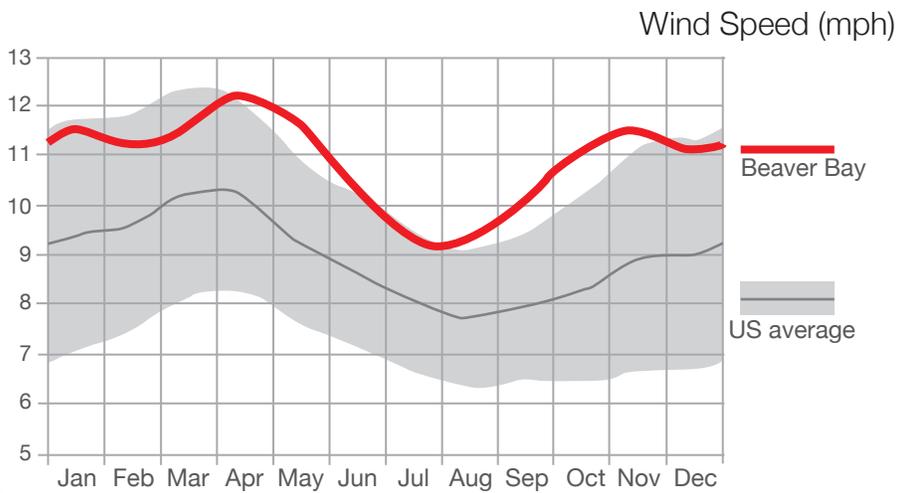


fig 9.4

Precipitation (in.)

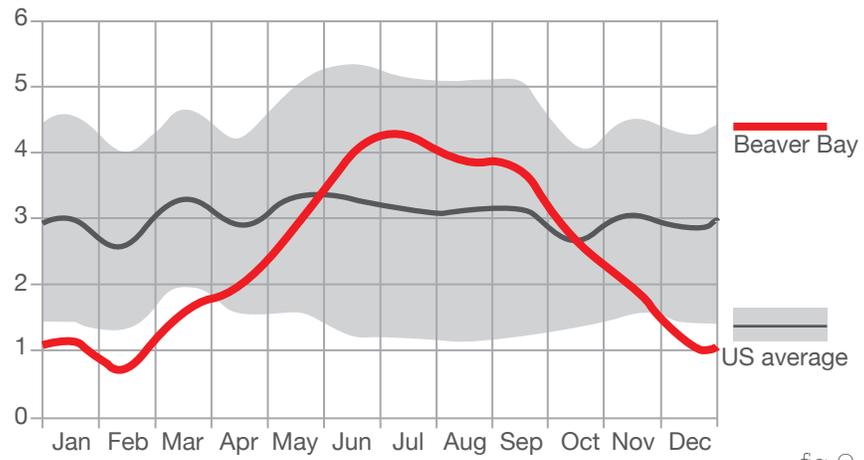


fig 9.5

Snow Fall (in.)

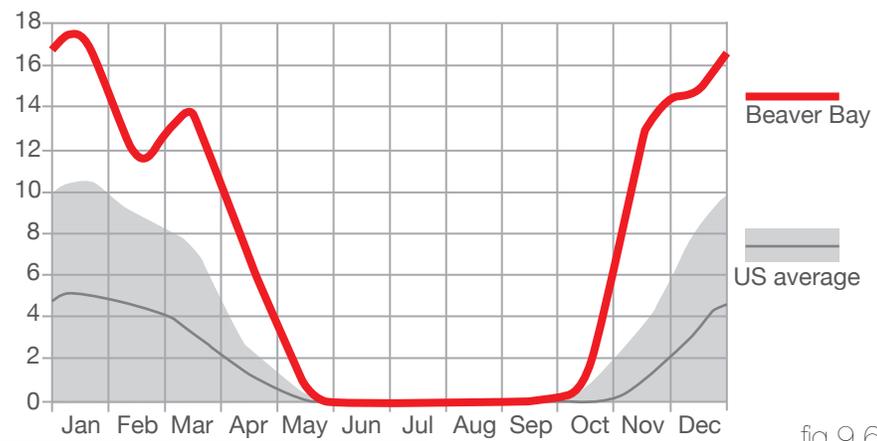


fig 9.6

SUN PATH

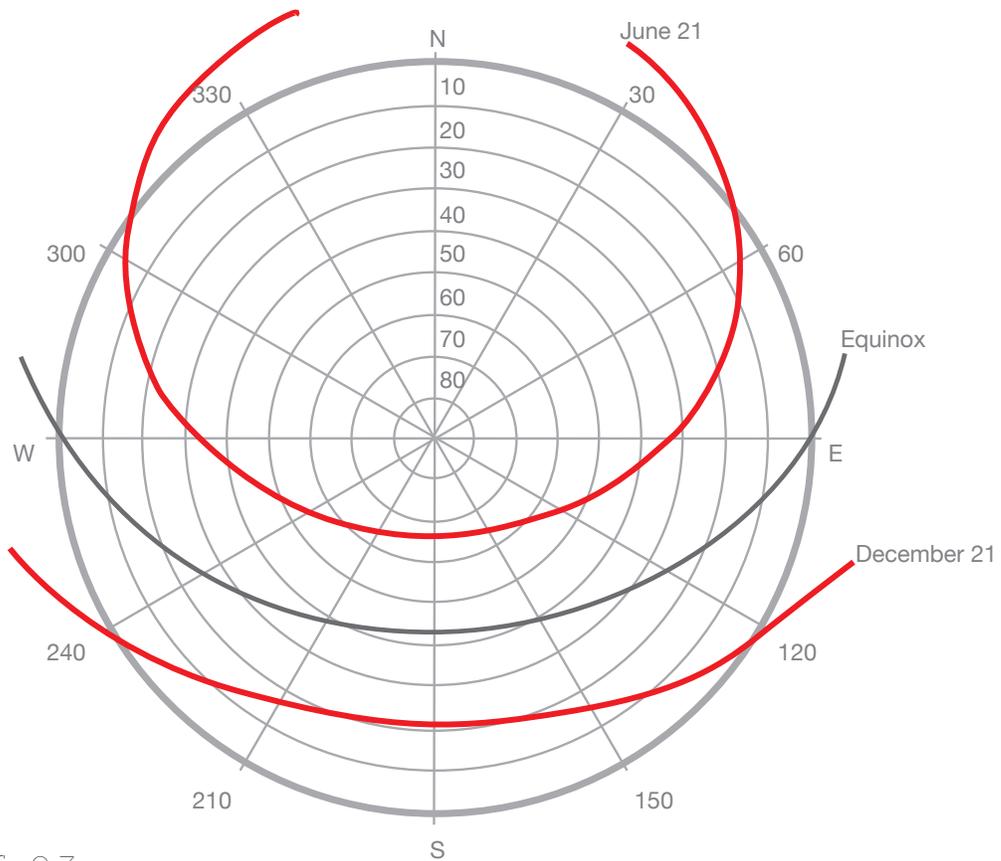
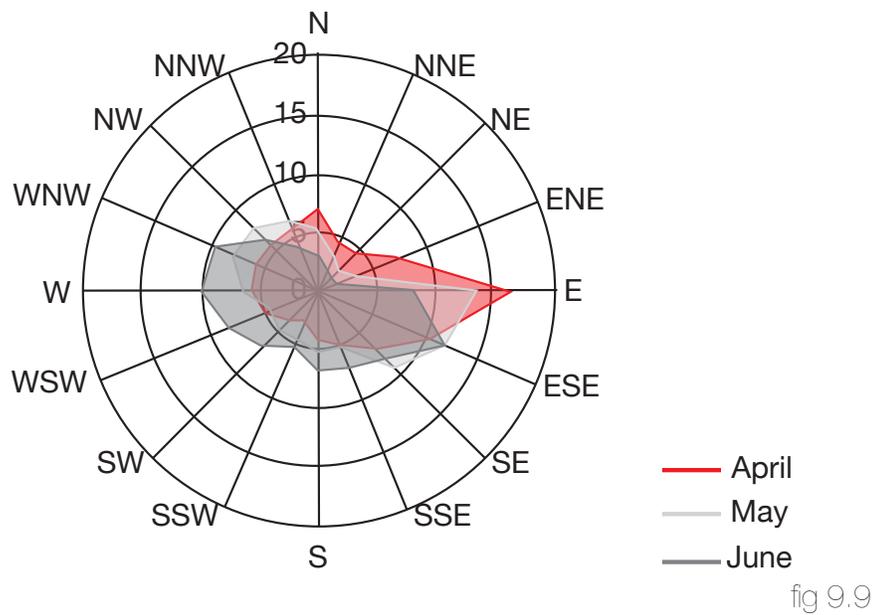
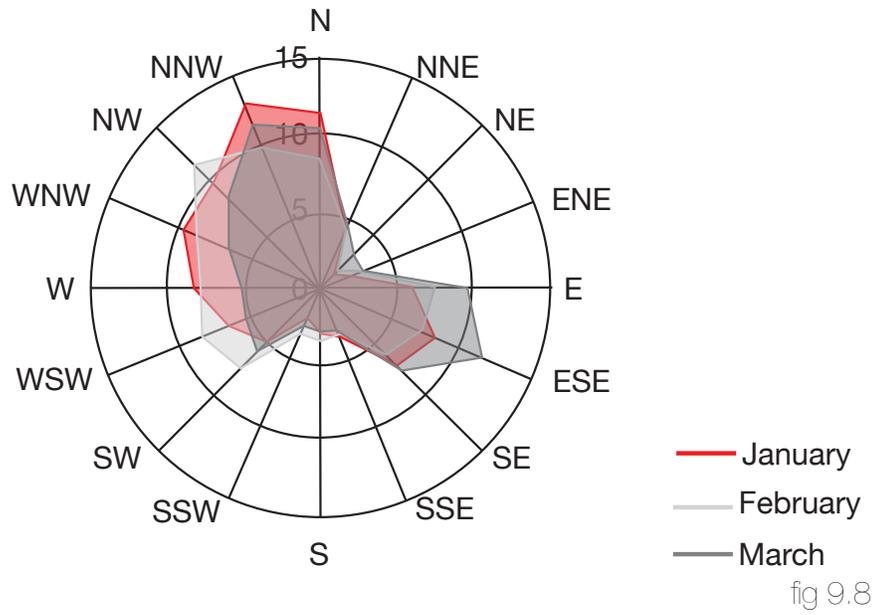


fig 9.7

WIND DIRECTION



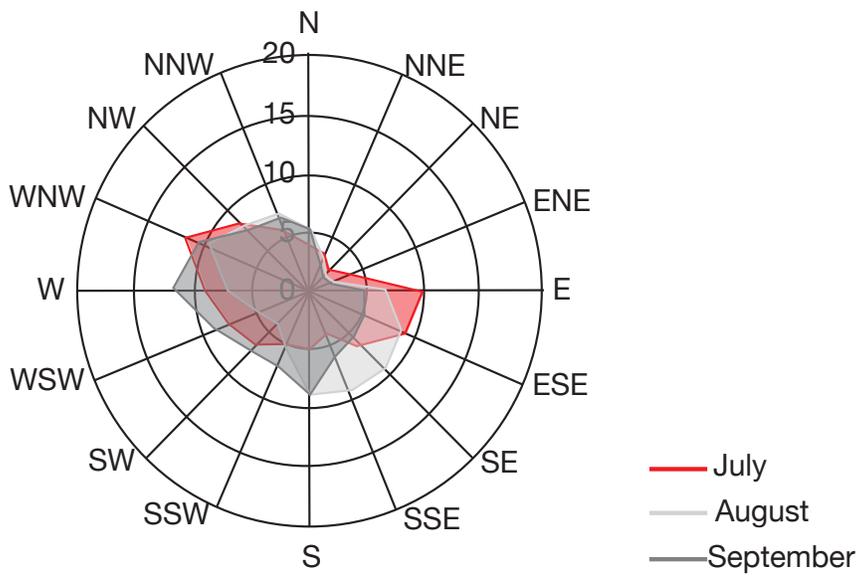


fig 9.10

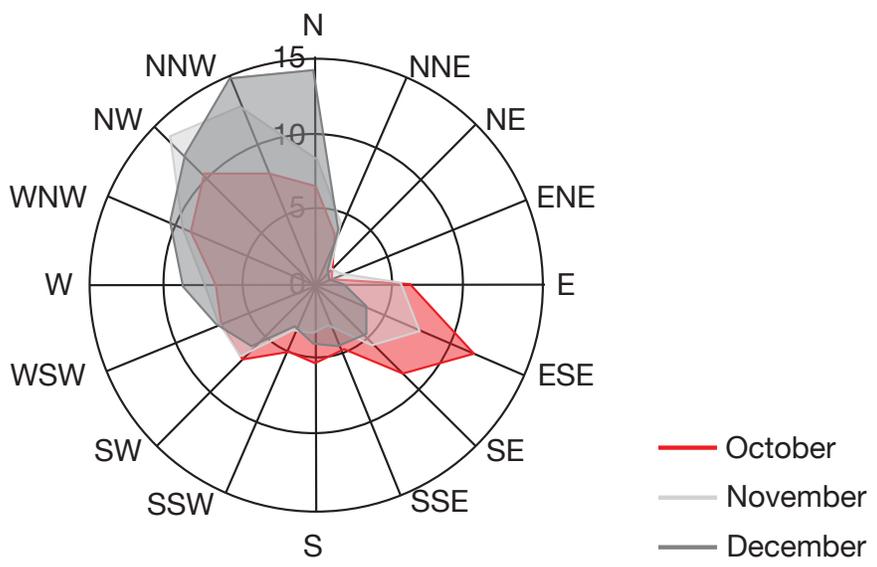


fig 9.11

SITE SLOPE

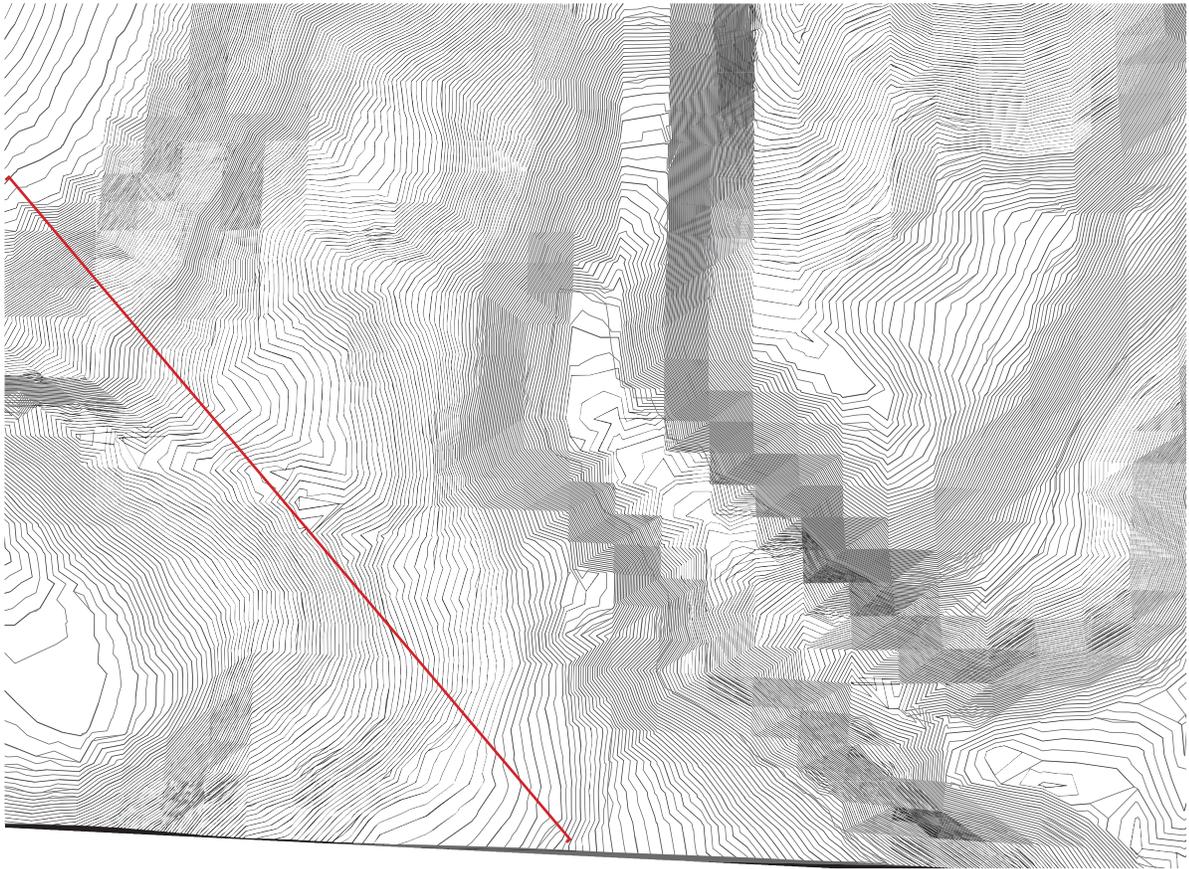
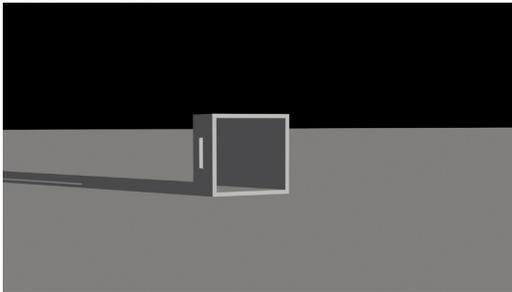


fig. 10.1

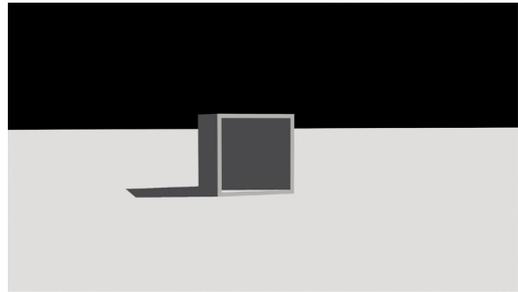


SHADOW ANALYSIS

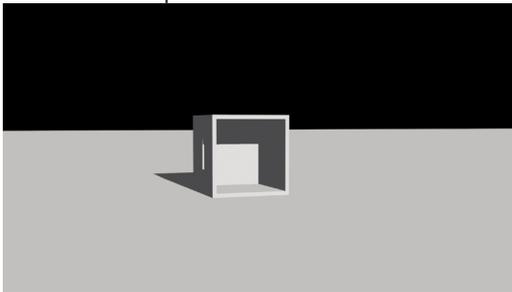
Dec. 21 9 am



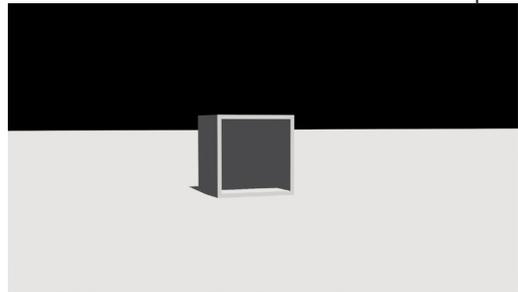
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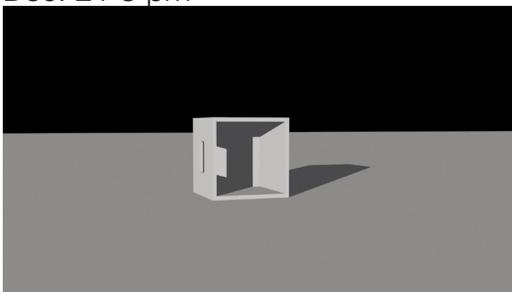
Dec. 21 12 pm



June 21 12 pm



Dec. 21 3 pm



June 21 3 pm

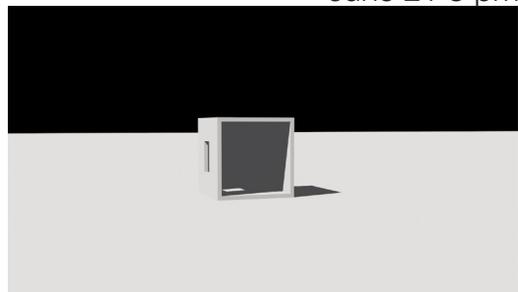
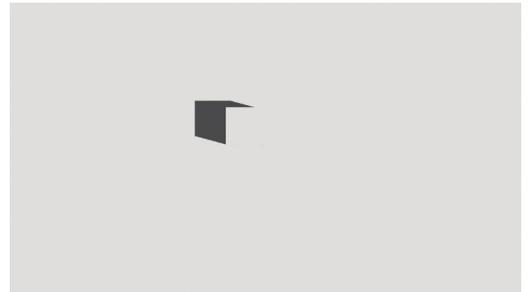


fig 11.1-12

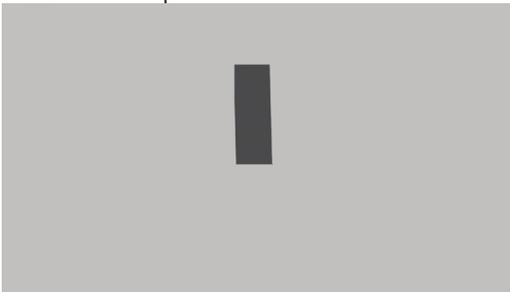
Dec. 21 9 am



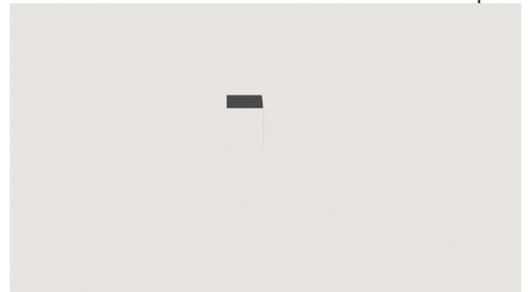
June 21 9 am



Dec. 21 12 pm



June 21 12 pm



Dec. 21 3 pm



June 21 3 pm



TOPOGRAPHY
AND AIR
MOVEMENT

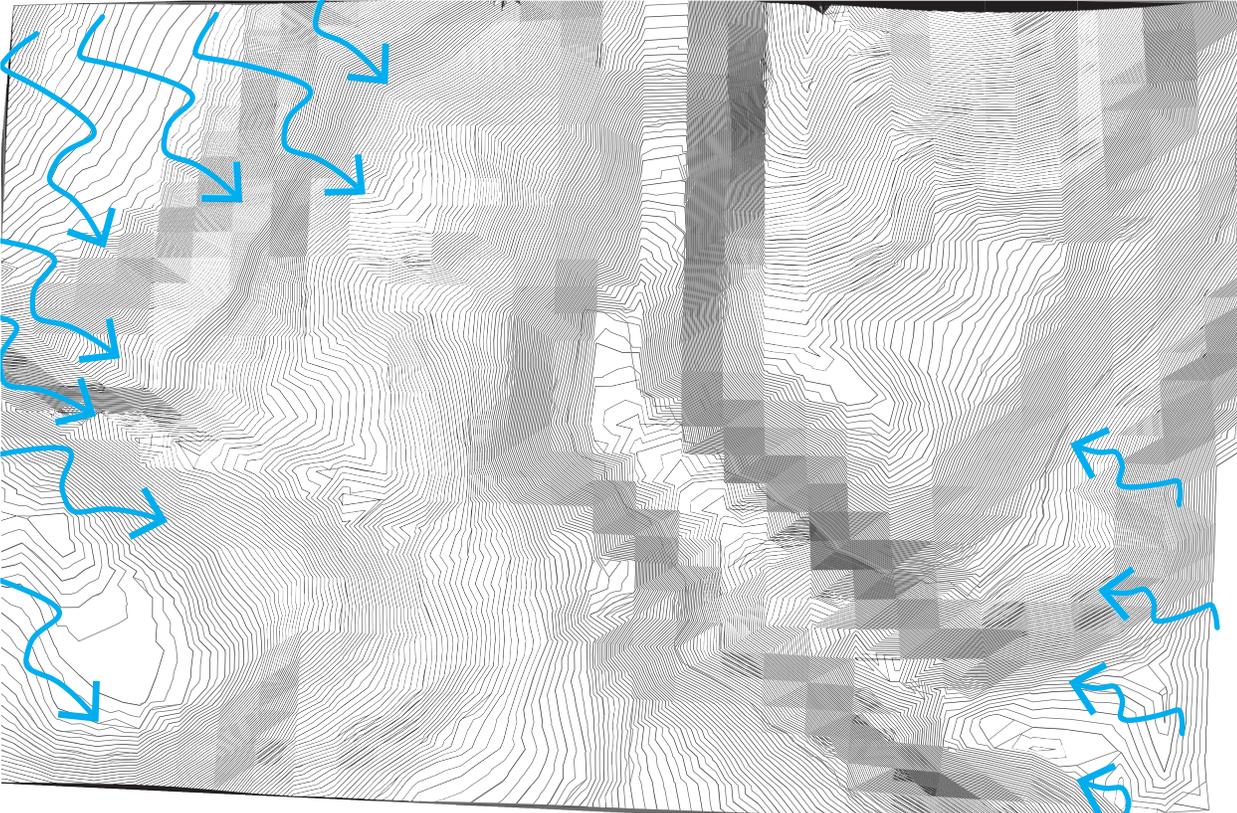


fig 12.1

NOISE

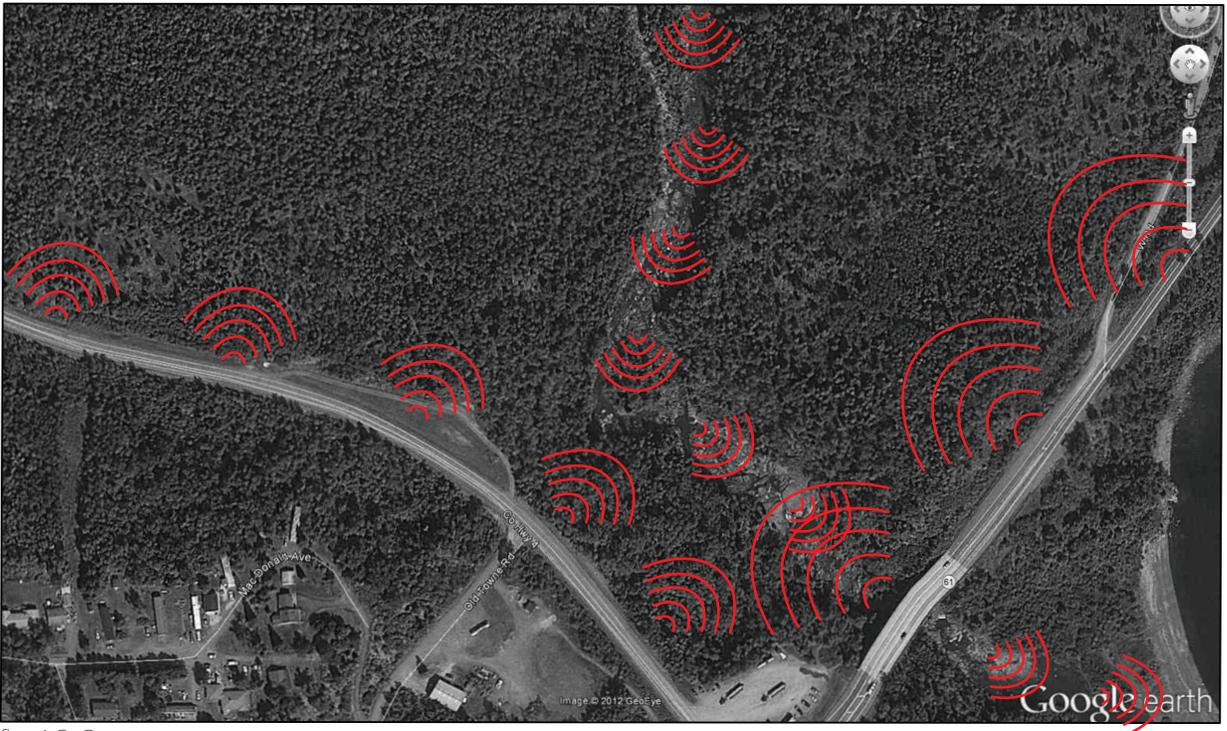


fig 12.2

PROGRAMMATIC REQUIREMENTS

QUANTITATIVE





SPACE
ALLOCATION

Public Parking	N/A
Public Entrance	1 @ 75 sq. ft
Information/Reception	1@ 100 sq. ft
Green Space	4@ 450 sq. ft
Reflection Area	4@ 300 sq. ft
Pharmacy	1@ 400 sq. ft
Library	1@ 300 sq. ft

Cognitive Processing Therapy

Waiting/Reception	1@ 200 sq. ft
Offices	3@ 800 sq. ft
Counseling Room	3@ 420 sq. ft
Group Counseling	2@ 600 sq. ft
Flex Space	1@ 300 sq. ft

Prolonged Exposure Therapy

Waiting/Reception	1@ 200 sq. ft
Offices	3@ 800 sq. ft
Counseling Room	3@ 420 sq. ft
Group Counseling	2@ 600 sq. ft
Flex Space	1@ 300 sq. ft

Eye Movement Desensitization and
Reprocessing Therapy

Waiting/Reception	1@ 200 sq. ft
Offices	3@ 800 sq. ft
Counseling Room	3@ 420 sq. ft
Group Counseling	2@ 600 sq. ft
Flex Space	1@ 300 sq. ft

Group Counseling	2@ 600 sq. ft
Flex Space	1@ 300 sq. ft

Selective Serotonin Reuptake Inhibition

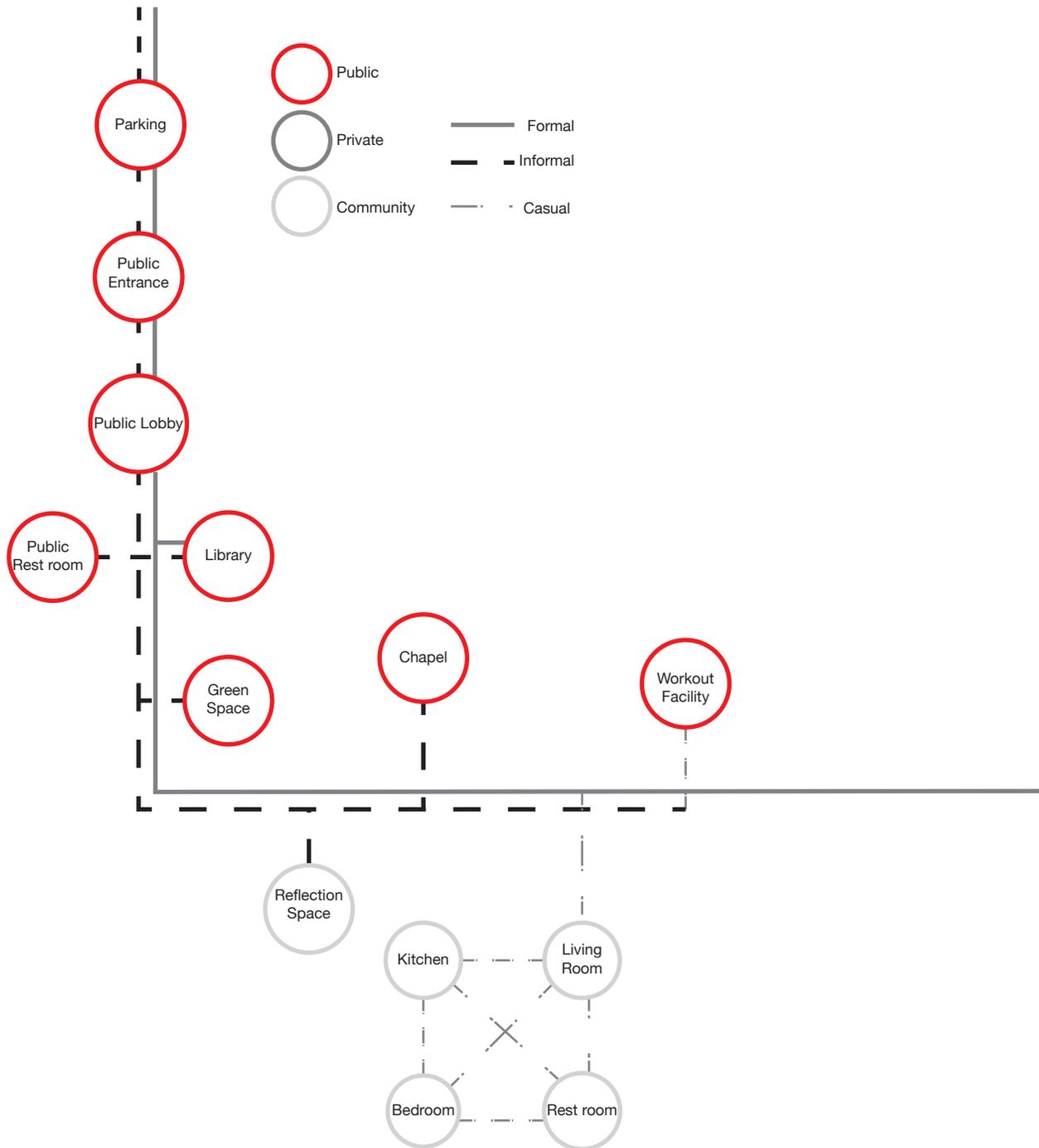
Waiting/Reception	1@ 200 sq. ft
Offices	3@ 800 sq. ft
Counseling Room	3@ 420 sq. ft
Group Counseling	2@ 600 sq. ft
Flex Space	1@ 300 sq. ft

Residential

Kitchen	5@ 600 sq. ft
Bedroom	20@ 2000 sq. ft
Living room	5@ 1,750 sq. ft
Restroom	25@ 500 sq. ft

Total	15,955 sq. ft
-------	---------------

INTERACTION NET



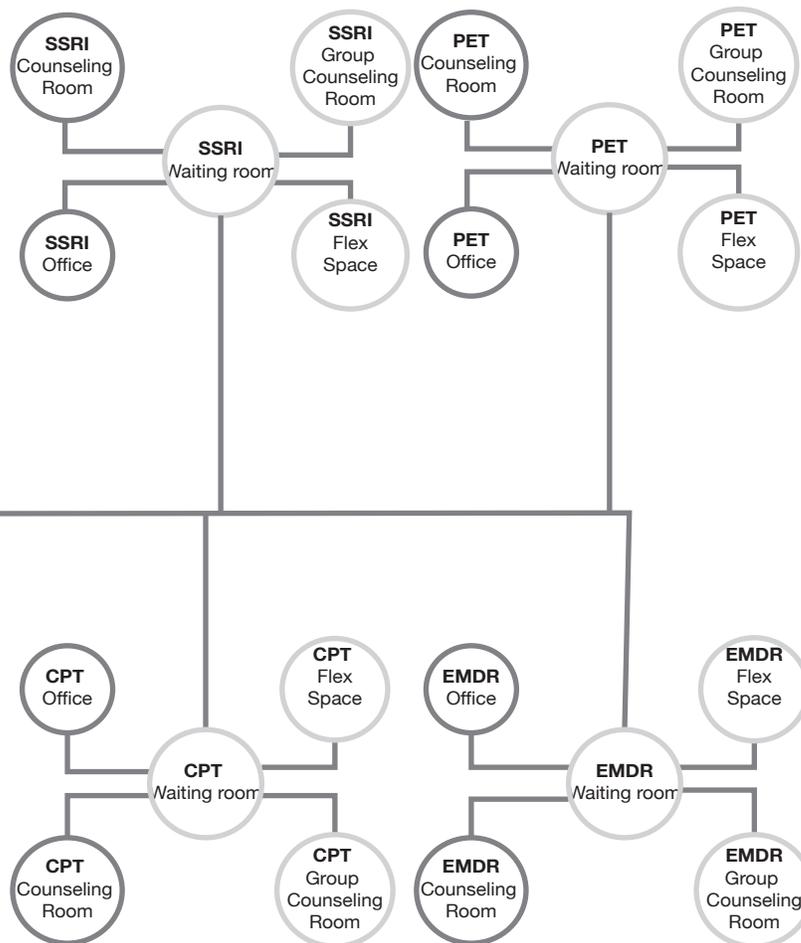


fig 13.1

INTERACTION MATRIX

● Necessary
● Desired
● Not Necessary

	Parking	Public Entrance	Public Lobby	Information/Reception	Public Restrooms	Green Space	Reflection Space	Cognitive Processing Therapy	Offices	Counseling Rooms	Group Counseling Rooms	Flex Space	Waitingroom	Prolonged Exposure Therapy	Offices	Counseling Rooms	Group Counseling Rooms	Flex Space	Waitingroom	Eye Movement Desensitization and Reprocessing	Offices	Counseling Rooms	Group Counseling Rooms	Flex Space	Waitingroom	Selective Serotonin Reuptake Inhibitors	Offices	Counseling Rooms	Flex Space	Waitingroom	Residential	Kitchen	Bedroom	Living Room	Restroom	Common Space	Library	Workout Facility	Chaple			
Parking		●	●	●	●	●	●																																			
Public Entrance	●		●	●	●	●	●																																			
Public Lobby	●	●		●	●	●	●																																			
Information/Reception	●	●	●		●	●	●																																			
Public Restrooms	●	●	●	●		●	●																																			
Green Space	●	●	●	●	●		●																																			
Reflection Space	●	●	●	●	●	●	●																																			
Cognitive Processing Therapy																																										
Offices	●	●	●	●	●	●	●																																			
Counseling Rooms	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Group Counseling Rooms	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Flex Space	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Waitingroom	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Prolonged Exposure Therapy																																										
Offices	●	●	●	●	●	●	●																																			
Counseling Rooms	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Group Counseling Rooms	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Flex Space	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Waitingroom	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Eye Movement Desensitization and Reprocessing																																										
Offices	●	●	●	●	●	●	●																																			
Counseling Rooms	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Group Counseling Rooms	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Flex Space	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Waitingroom	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Selective Serotonin Reuptake Inhibitors																																										
Offices	●	●	●	●	●	●	●																																			
Counseling Rooms	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Flex Space	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Waitingroom	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Residential																																										
Kitchen	●	●	●	●	●	●	●																																			
Bedroom	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Living Room	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Restroom	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Common Space																																										
Library	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Workout Facility	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
Chaple	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

fig 13.2



ARCHITECTURAL THESIS 772





PROCESS

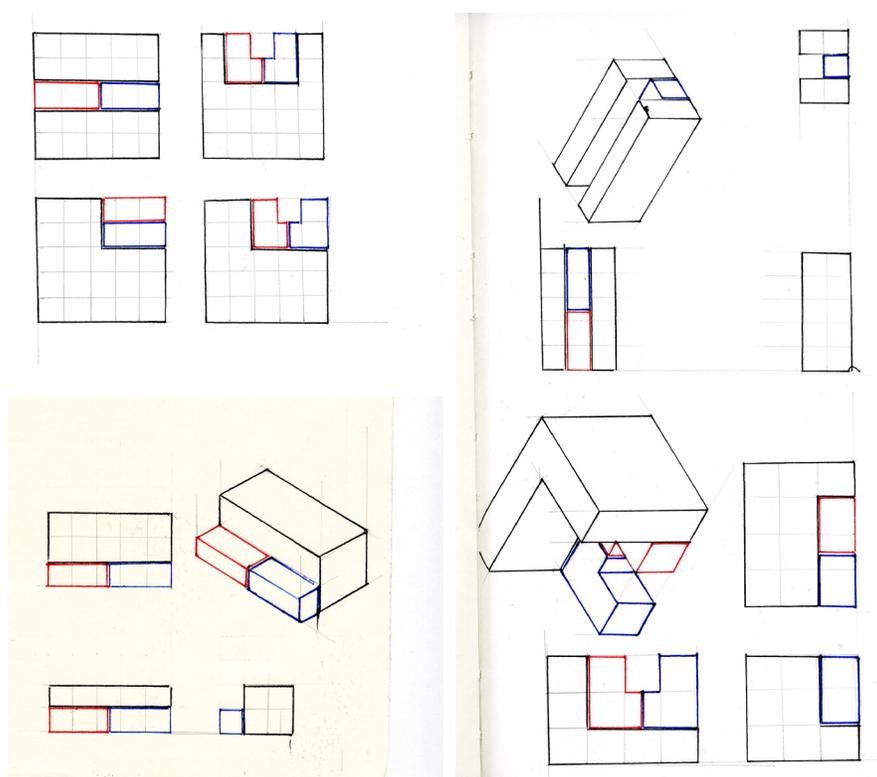
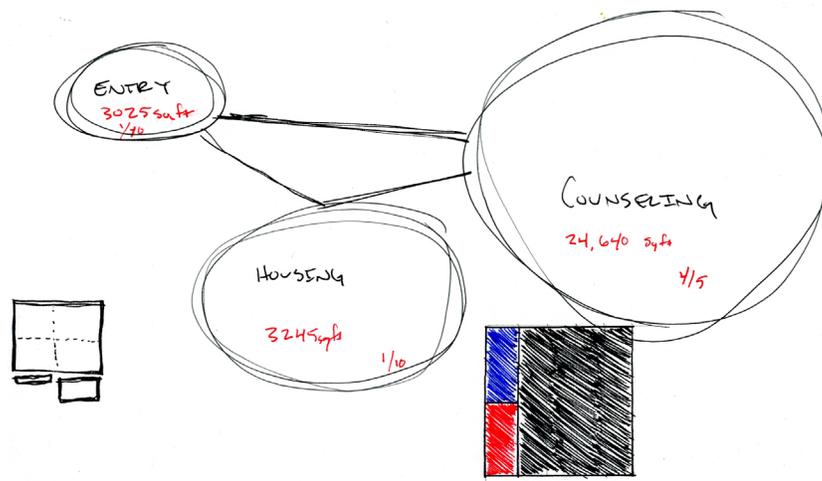


fig 14.1-4

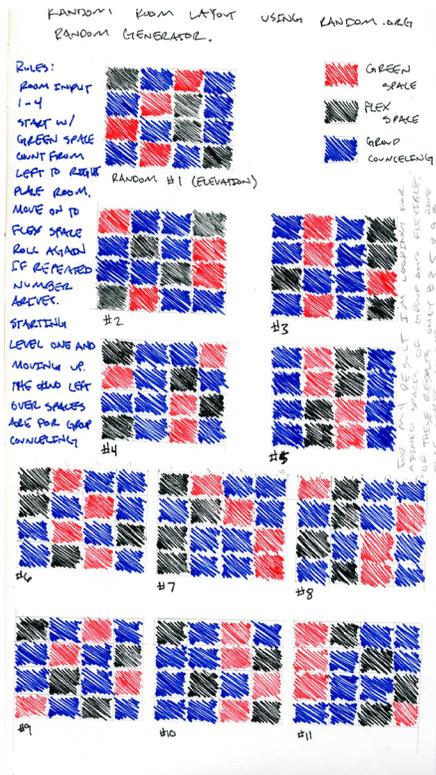


fig 14.5-6

Through out my design process I worked with iterations. I would perform a task repeat changing a small aspect and investigate the transformation of the two results. In many cases I would repeat the designed task many times and inspect. During inspections i would look for similarities that continued throughout the

entire iteration, as well as the differences. I choose this images of my process because these sketches of the different aspects of my design I used this method of investigation.

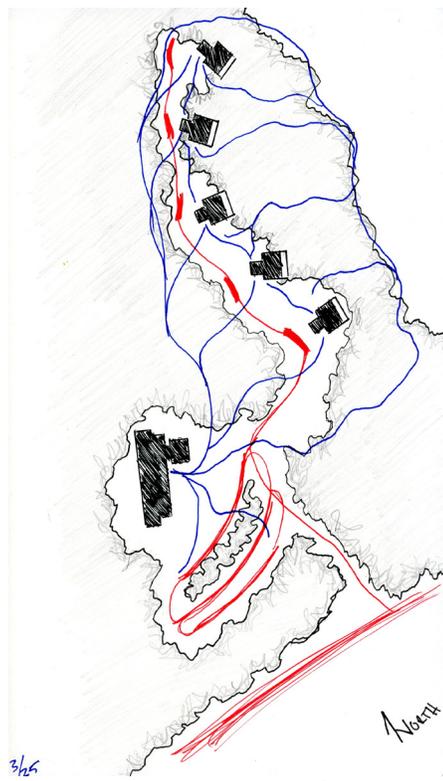
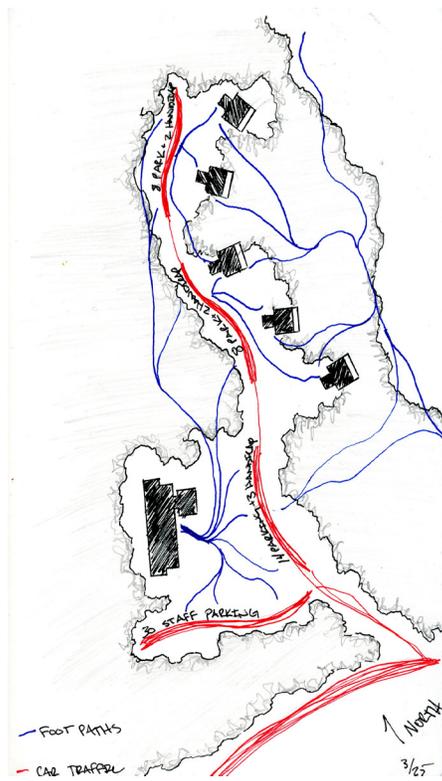


fig 14.7-8

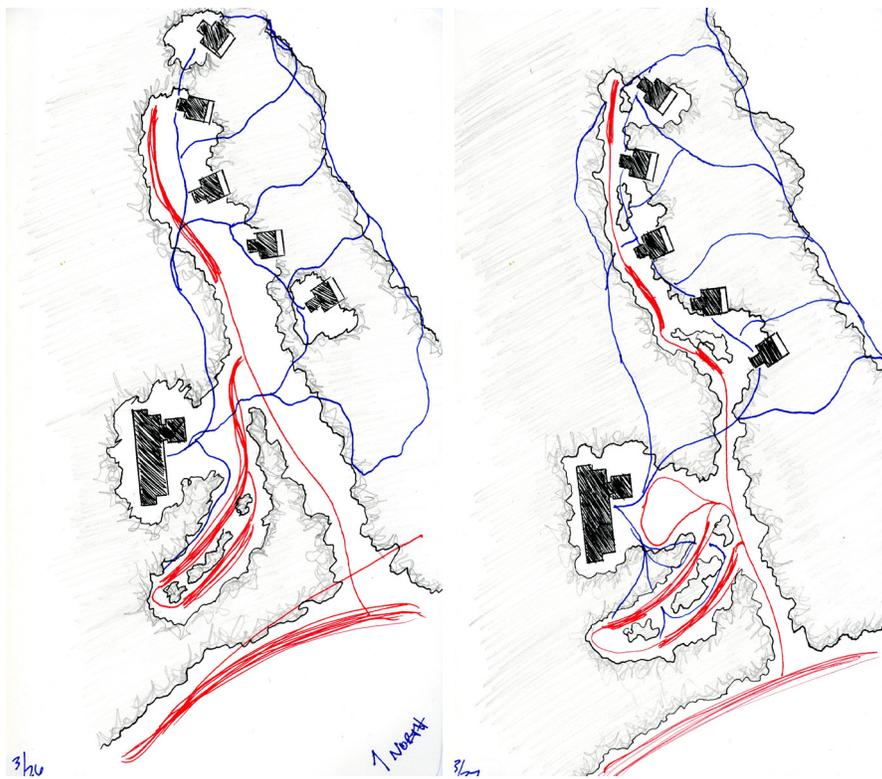


fig 14.9-10

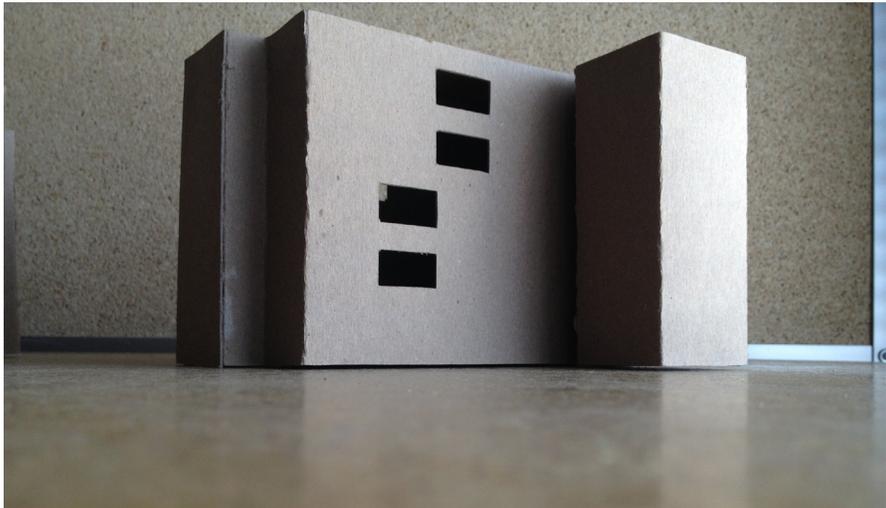
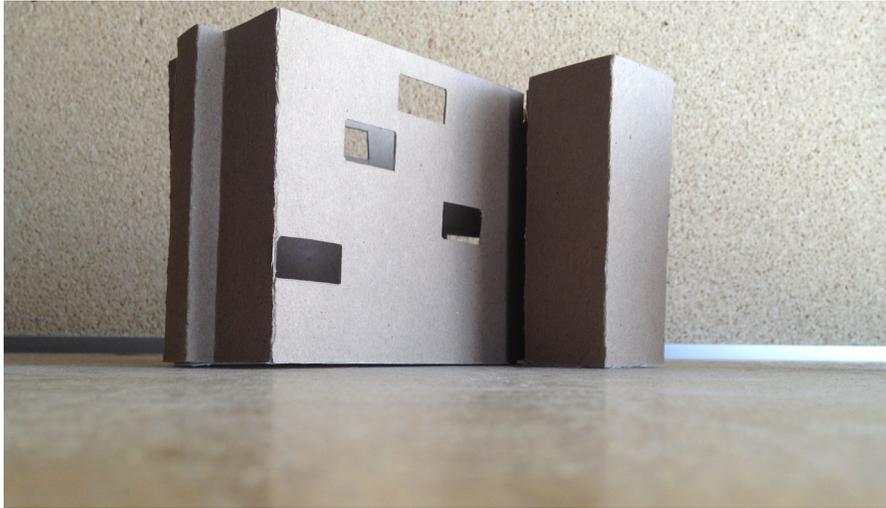
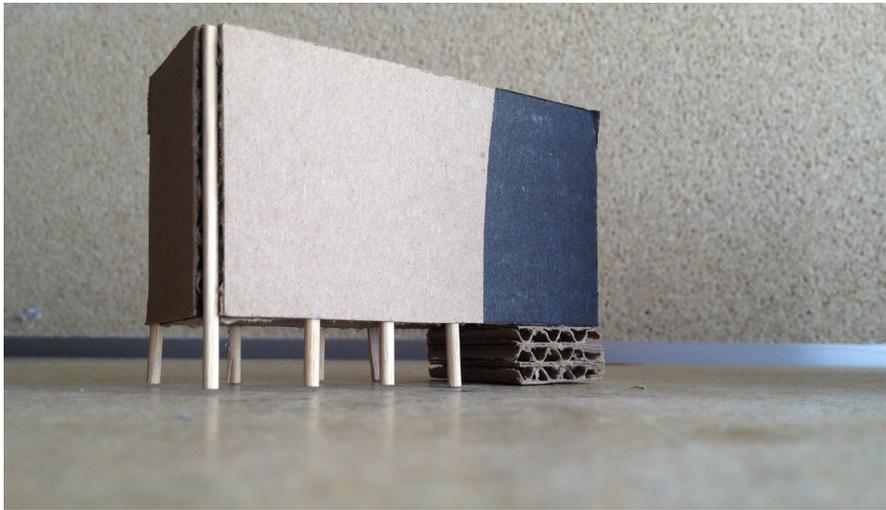


fig 14.11-13

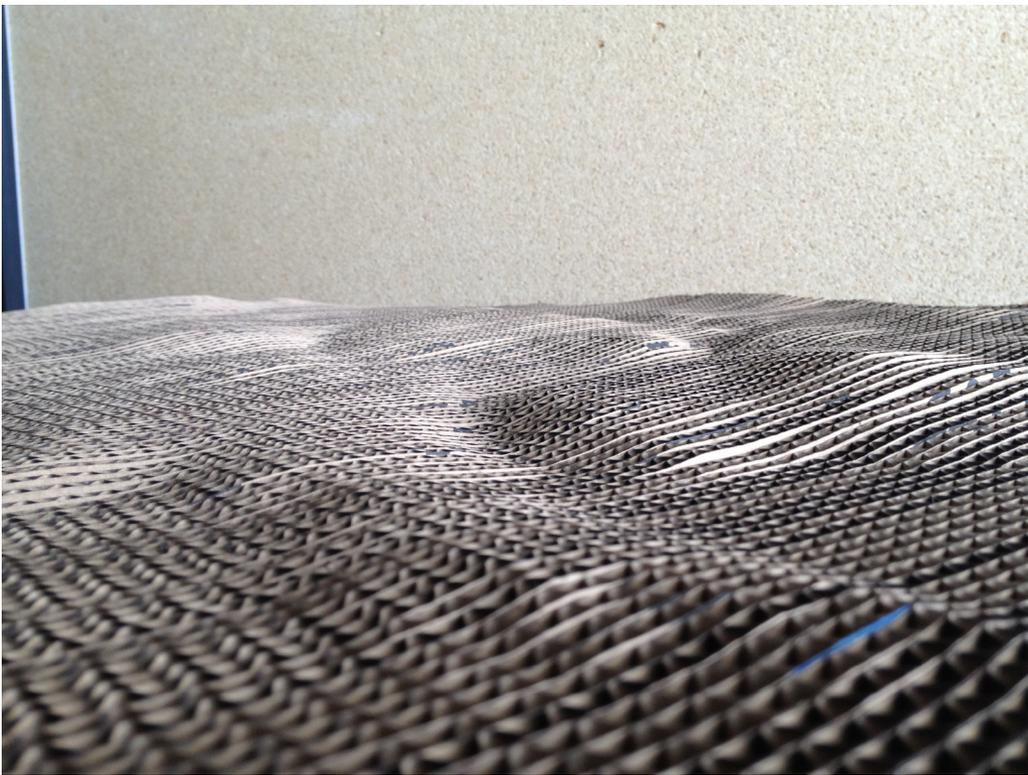
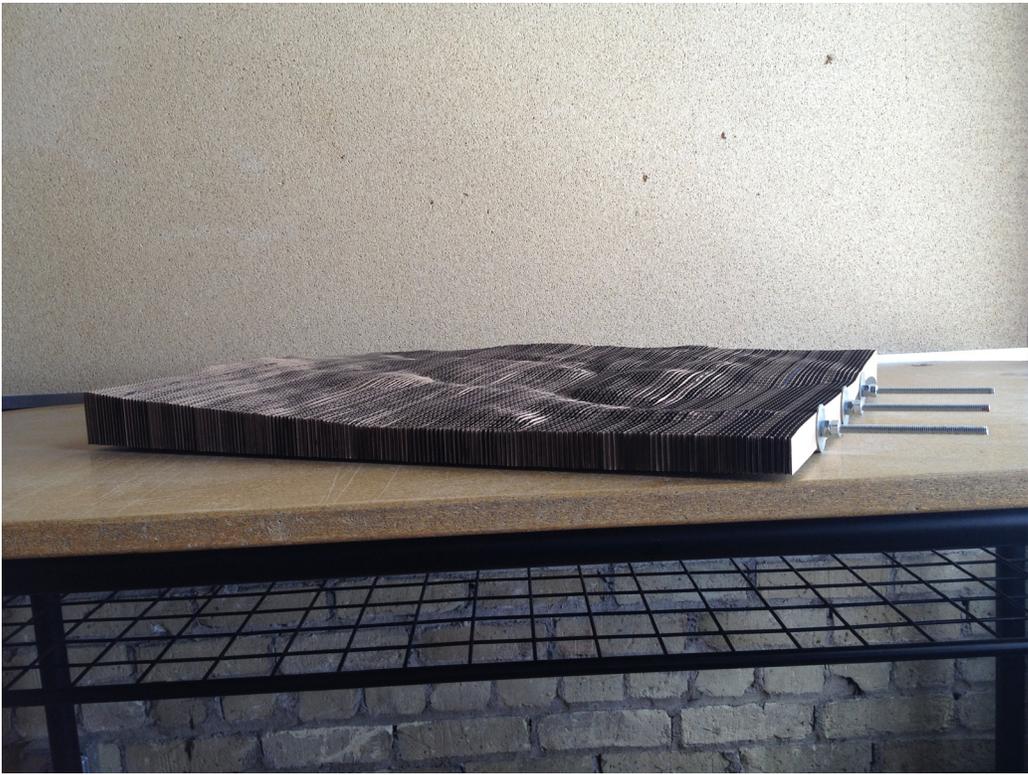


fig 14.14-15

FINAL IMAGES



Exterior perspective from parking area.

fig 15.1



Exterior perspective from Green Roof Deck
onto Resident tower.

fig 15.2



Entrance into Clinic Building.

fig 15.3



Waiting room in Clinic Building looking onto the Resident Towers.

fig 15.4

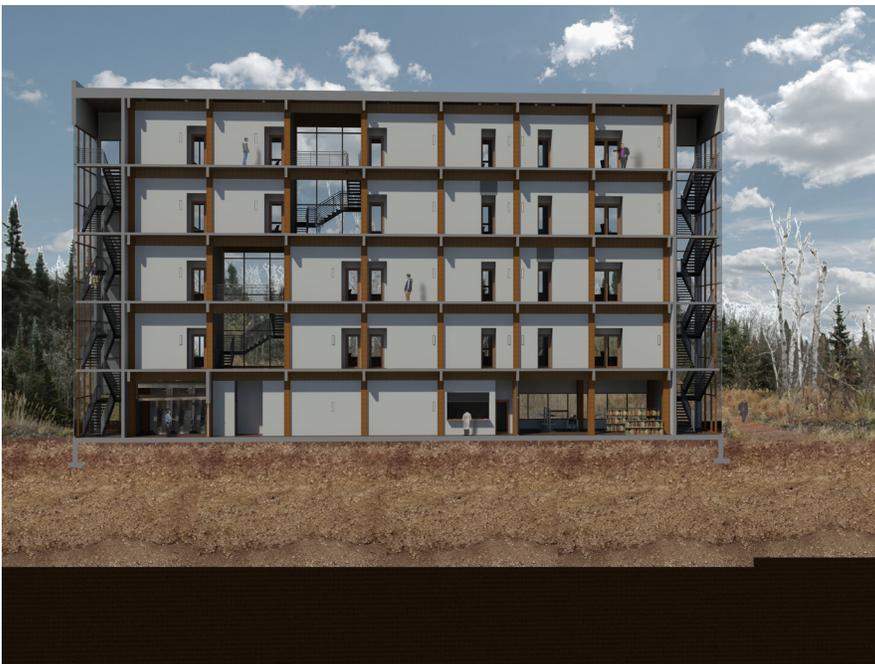


Section perspective of Resident Tower.

fig 15.5



Short section perspective of Clinic Building.



Long section perspective of Clinic Building.

fig 15.6-7



Site plan of facility

fig 15.8



View up river valley from Highway 61 bridge.

fig 15.9

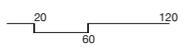
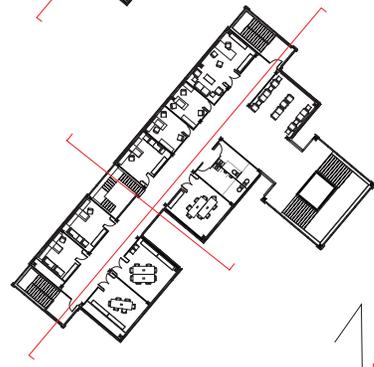
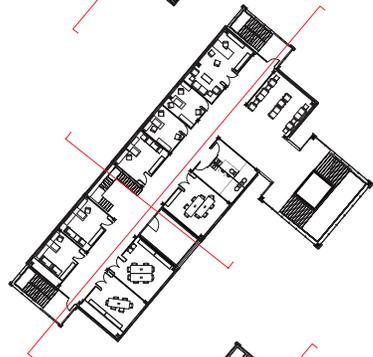
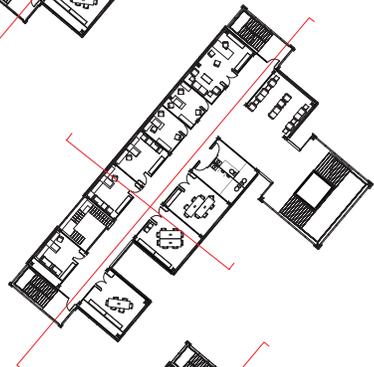
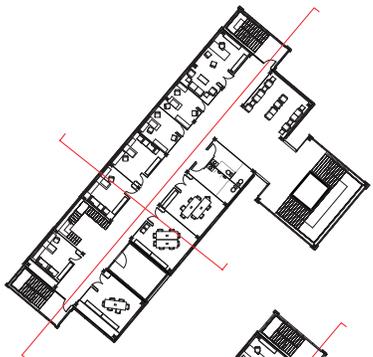
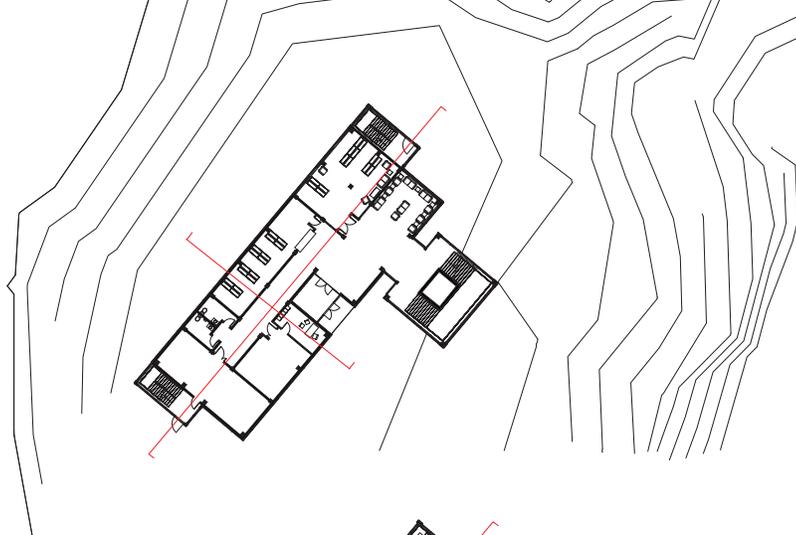


fig 15.10

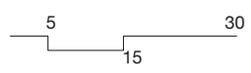
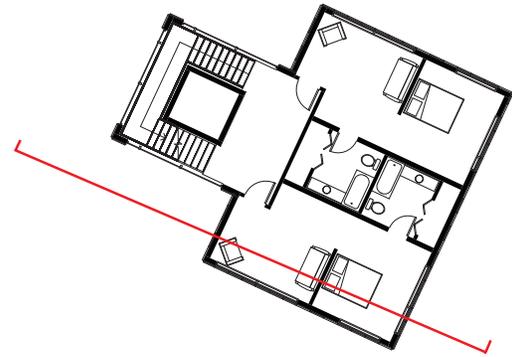
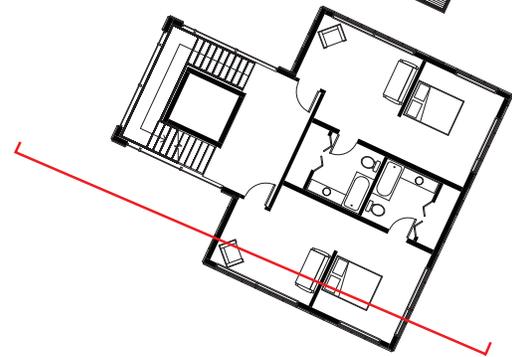
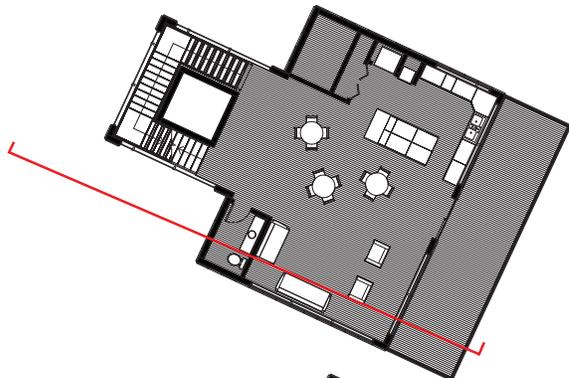
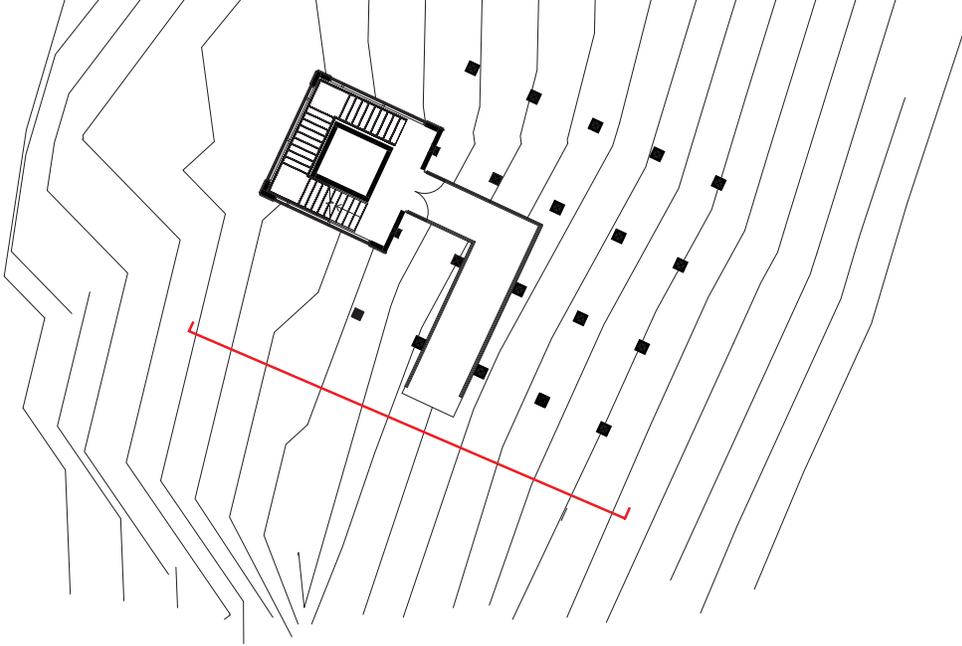


fig 15.11

PROJECT
DISPLAY



fig 16.1

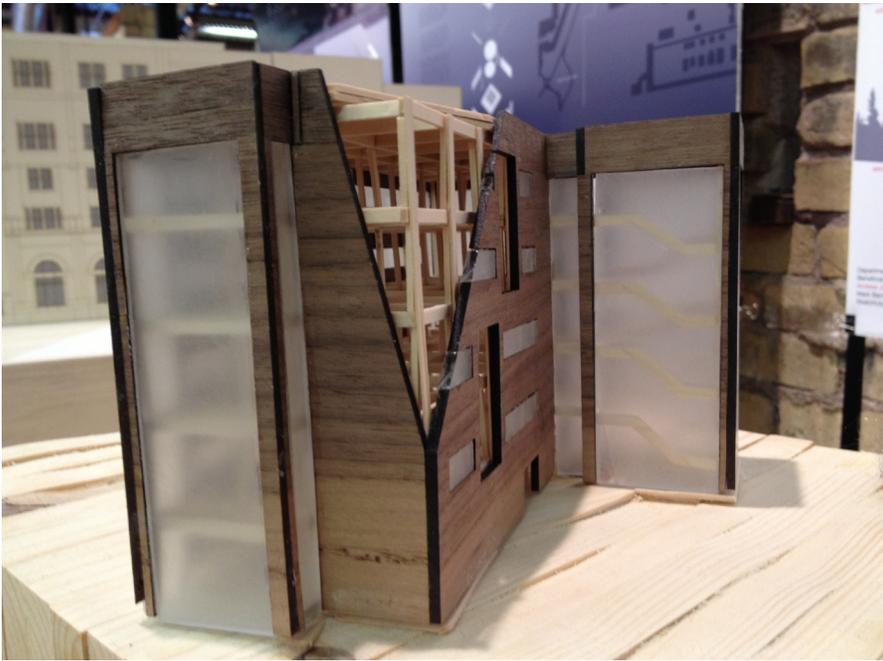


fig 16.2-3

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PERSONAL

“Ah no, the one in Fargo.”



Specht, 2011 fig. 17.1