



Anishinaabe
[re-examining the past]

Anishinaabe

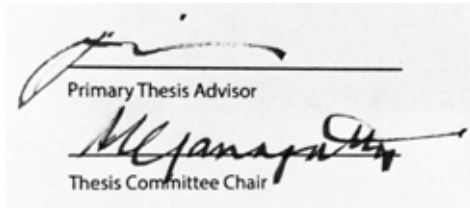
[re-examining the past]

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

By

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



Primary Thesis Advisor

Thesis Committee Chair

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“CONSERVATION seeks the proper
use of nature, while PRESERVATION
seeks protection of nature from use”
-John Muir

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T h e s i s A b s t r a c t

Nature and human history are the guiding forces to ensure a prosperous future for many generations. Native Americans have a rich history of living off the land and being in close contact with nature in all aspects of their lives. They thrived for thousands of years with nothing more than what nature could provide. Their techniques and ideas towards nature and site are timeless.

We, today, could learn many sustainable practices if we study the natives' traditions. Their history and ways of life must be reevaluated with today's technologies so that we may understand and learn from their ways.

My project is a Heritage Preservation and Environmental Conservation Learning Facility. The site sits on the White Earth Indian Reservation in North Central Minnesota. The main structure consists of a showcase space, learning facilities, class rooms and large gathering rooms. The external site is developed as a hands on learning experiment. Visitors can experience old native farming techniques as well as daily living routines.

P r o b l e m S t a t e m e n t

How can the history of the past
and its cultures influence how we
design and treat our sites today?

“No house should ever be on a hill or on anything. It should be of the hill. Belonging to it. Hill and house should live together each the happier for the other.”
- Frank Lloyd Wright

P r o p o s a l

N a r r a t i v e

Green, sustainable, environmentally friendly, healthy, viable, renewable or any other combination of the aforementioned words seems to be the going trend these days. Today, sustainability (or whatever word you prefer) is an everyday word that we, as a society, throw around all too freely. What is sustainable? To some it may be recycling cans and plastic bottles, to others it may be purchasing an electric car and to others it is a way of life. Is sustainability a new 21st century trend? Or is it a practice that has been around since human beings have been on this planet?

To me, sustainability is preserving the history of the cultures that occupied the land before us and conserving the nature that we have left. Throughout my thesis I will tell the history of the Anishinaabe tribe, how they lived and how they used the earth in all aspects of their lives.

The Anishinaabe people lived off the land of Northern and Central Minnesota for hundreds of years before the Europeans first came to the Midwest. Using only the materials that were readily available to them,

such as birchbark, maple saplings, the sun, the earth and the animals, the Anishinaabe thrived even in the harshest of environments.

They were able to create shelters, known as wigwams and teepees, that could sleep 8-12 people comfortably. These shelters were heated by the sun or fires and utilized rocks to hold radiant heat throughout the night. This is just one example of many “sustainable” designs that the Anishinaabe utilized. To them, it wasn’t about being sustainable, it wasn’t a fad or trend, it was their way of life, their belief and they thrived because of it.

Throughout my thesis, I will research and examine the sustainable techniques the Anishinaabe used and explore how their way of life can influence how we today treat the sites we are designing for. I will also be researching and showcasing the Anishinaabe culture so as to help preserve the history of this great culture for many generations.

“Go to Nature, thou builder of houses, consider her ways and do not be petty and foolish. Let your home appear to grow easily from its site and shape it to sympathize with the surroundings if Nature is manifest there, and if not, try and be as quiet, substantial, and organic as she would have been if she had the chance.”

- Frank Lloyd Wright

P r o j e c t T y p o l o g y

Heritage Preservation and Environmental
Conservation Learning Facility.

T y p o l o g i c a l P r e c e d e n t s

Part heritage preservation center and part environmental conservation learning facility, my project will require the two halves to meld seamlessly together.

P r o j e c t E m p h a s i s

This project seeks to re-examine the culture and lifestyle of the early Anishinaabe people and how their use of nature and sustainable practices could be used in architectural and site design today. Through modern technology, the early sustainable practices used by the Anishinaabe could lend useful information to how we see and incorporate sustainable practices today. This project will not only showcase the Anishinaabe culture in a cultural preservation setting, it will also teach people new sustainable practices through design.

M a j o r E l e m e n t s

S h o w c a s e -
Large display area for showcasing early Anishinaabe artifacts that show their way of life. Also space for local tribal members art to be showcased.

C l a s s r o o m -

C o n f e r e n c e R o o m -
From small business gatherings to larger group meetings, the conference room will be able to accommodate.

N a t u r a l O u t d o o r S p a c e -
Expansive outdoor space will be utilized

O f f i c e s -
Administrative and possible governmental offices will be provided.

C a f e -
Cafe to provide meals to school groups

Client/User Description

C l i e n t / O w n e r -
Owned and operated by the White Earth Reservation.

U s e r s -
Open to the public. Mostly used as an educational facility for class field trips for all ages. Conference, gathering and outdoor space could be used by the tribal members as places for meetings, pow-wows or other ceremonial events. Weddings, parties and any other sort of community gathering.

S t a f f -
Would need a full-time staff. Curators, custodians, docents, tribal members, Open year round during normal business hours. Open later upon request for gatherings.

P e a k U s a g e -
September through May for school groups. Would be open year round for special events. Capacity for anywhere between 1 and 300 but most suitable for groups of 15-30. Permanent parking for 2 buses, 6 staff spaces and 15 user spaces (handicap included). Extra parking for events will be handled on case by case situations.

Typological Research

C a s e S t u d y : 1
Laurance S. Rockefeller (LSR) Interpretive Center



Figure 1- LSR South (clbarchitects.com)

C a s e S t u d y : 2

Parrish Art Museum



Figure 2- Parrish Main (archrecord.construction.com)

C a s e S t u d y : 3
Magney House



Figure 3- Magney House (ozetecture.org/)

C a s e S t u d y : 4
Anishinaabe Wigwam



Figure 4- Anishinaabe Wigwam (shortstreet.net)

Typological Research

Case Study : 1



Figure 1- LSR South (clbarchitects.com)

LOCATION:

Grand Teton National Park, Moose, Wyoming

ARCHITECT:

Carney Logan Burke Architects

TYPE:

Interpretive Center

Laurance S.

Rockefeller (LSR)

Interpretive Center

I was lucky enough to get to visit the LSR Interpretive Center during the summer of 2013. The building had such an impact on me that I knew I would use it to some extent during my thesis planning. The LSR Interpretive Center is, in many ways, the ideal case study for me. The site took precedence over everything when it came to design. This is true for the native Anishinaabe people that my thesis will cover.

Completed in 2008, the LSR Interpretive Center was certified LEED Platinum later that year. It became the first building in Wyoming as well as the first National Park Service building to be certified as such. The program of the LSR Interpretive Center consists of a resource center, multimedia display galleries, and support services in a 7,000-square-foot, L-shaped building.

The LSR Interpretive Center is built on 1100 acres of land donated to the park service by the late Laurance S. Rockefeller. The land had been in the Rockefeller family since the 1920's, serving as their family retreat.

LEED SCORES NC VERSION 2 PLATINUM

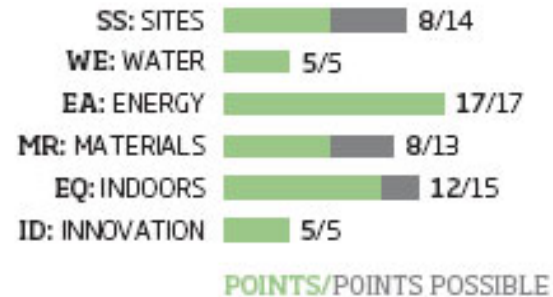


Figure 5- LSR LEED Score (greensource.construction.com)



Figure 6- LSR Entry (clbarchitects.com)



Figure 7- LSR Floor Plan (clbarchitects.com)



Figure 8- LSR Site Plan (clbarchitects.com)

Keeping with the Rockefeller family tradition of sustainability, the interpretive center and the connected hiking paths were all designed with the least amount of carbon footprint possible. The hiking paths are all dug up roadways that the Rockefeller family used to get around the property.

The interpretive center was designed to use as much natural lighting possible, so to reduce the need for secondary lighting during the daytime. The main building, along with three outpost restroom facilities have 45% of their electricity provided by a photo voltaic system mounted on the roofs of the restrooms.

MONTHLY ENERGY USE MILLION BTUS TOTAL



Figure 9- LSR Energy Use (greensource.construction.com)

Typological Research

Case Study: 2



Figure 2-Parrish Main (archrecord.construction.com)

LOCATION:

Water Mill, New York

ARCHITECT:

Herzog and de Meuron

TYPE:

Museum

Parrish

Art

Museum

The Parrish Art Museum was designed specifically for the site. The architects at Herzog and de Meuron took key attributes from the local architecture to help influence their design of the new Parrish Art Museum.

The low, elongated structure sits seamlessly on the site and fits in with the local barns and warehouses that surround the site. When viewed from the short ends, the architects state that it resembles the small garages that local artists convert into studios.

Relying on the immense natural day lighting of the East End of Long Island, the museum space is filled with skylights in order to bring light into the space.

The building is over 600 feet long, yet the space feels warm and inviting thanks to the lofted ceilings and the private gallery spaces. Drawing from a limited palette of materials, the architects were able to give the building a direct sense of place.

The streamlined, low set design and large overhang on both long edges allow the users of the space to get a unique experience each and every time they enter the space.



Figure 10-Parrish East (archrecord.construction.com)



Figure 11-Parrish Interior (archrecord.construction.com)



Figure 12-Parrish Floor Plan (archrecord.construction.com)

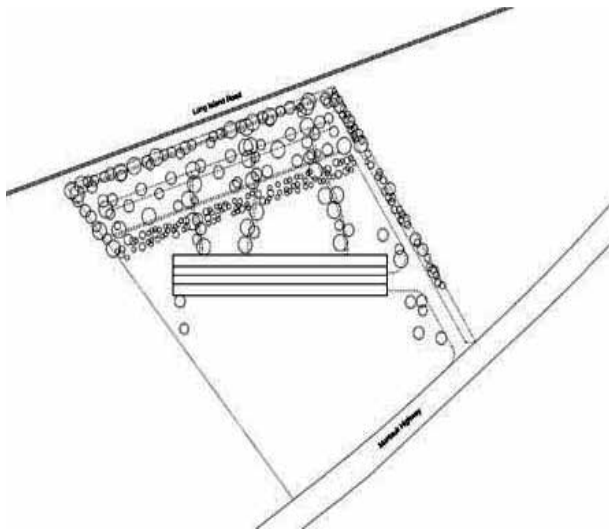


Figure 13-Parrish Site Map (arcspace.com)

The beautiful treatment of the site is something I really want to accomplish in my thesis design. The architects took the time to make the building fit the site and that's how the Anishinaabe treated the land.

"The landscape, an important aspect of the Museum experience, consists entirely of native plants. The design evokes the iconic features of the East End - meadow, wetland, scrub woodland, and long views of expansive sky and horizon."-Matthu Placek (for arcspace.com)

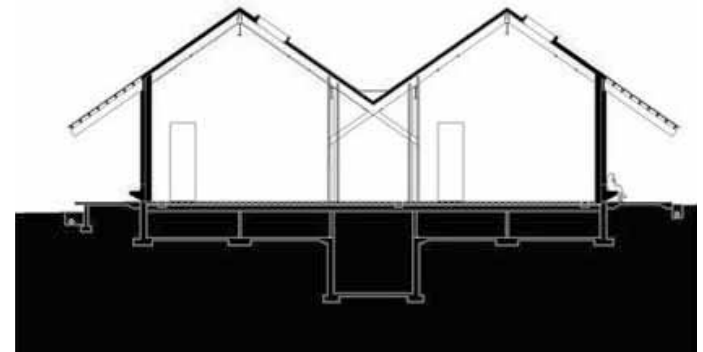


Figure 14-Parrish Section (arcspace.com)

Typological Research

Case Study : 3



Figure 3-Magney House (ozetecture.org/)

LOCATION:

Bingie Point, New South Wales, Australia

ARCHITECT:

Glenn Murcutt

TYPE:

Single family residence

Magney

House

Situated between the ocean and mountains, the client wanted the house to reflect its surroundings. The design consists of a single pavillion like structure divided in the middle by a centrally located court yard. The house is meant to be able to transform into two separate units if family or friends come to stay.

The homes structure consists of repeating bay forms. The house is divided by an implied corridor that houses a gutter which collects rain-water.

The house was specifically designed for the site. The north face is open, with a sliding screen system and operable sun shades. The roof design shades from summer sun but allows plenty of winter sun to flood the house. Winds from the south are blocked by the lower rear wall made of brick veneer.

The houses' structural system was designed both for the climate and form. The design uses tubular steel which gives the house a very light weight frame. The thin roof was designed to give a feeling of weightlessness.



Figure 15-Magney House & Site (ozetecture.org/)



Figure 16-Magney House N Wall(ozetecture.org/)



Figure 17-Magney House Site (ozetecture.org/)

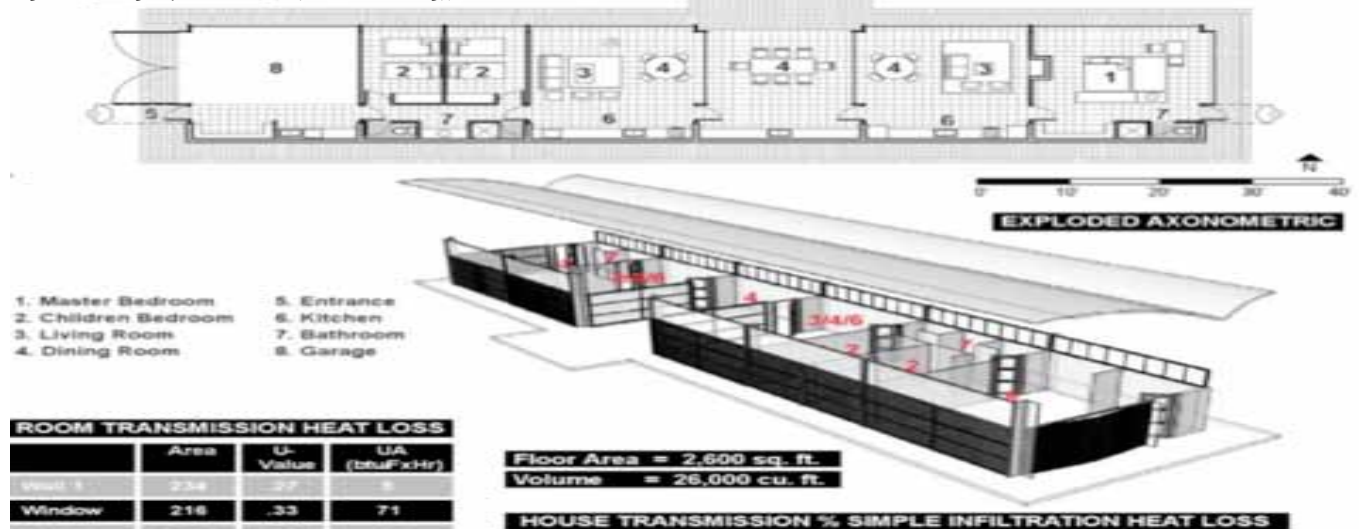


Figure 18-Magney House Floor Plan (ucfilespace.uc.edu)

The way Glenn Murcutt designs is beautifully brilliant. He blends such sophistication with uncommon materials. His designs are all very, very site specific. He is able to capture natural day lighting, rainwater, and views all while keeping wind and sun patterns at bay.

Typological Research

Case Study: 4



Figure 4- Anishinaabe Wigwam (shortstreet.net)

LOCATION:

Central and Northern Minnesota

ARCHITECT:

The Anishinaabe Native Americans

TYPE:

Dwelling

Anishinaabe

Wigwams

The wigwam was the main dwelling for the Anishinaabe people. Although teepees were also used during hunts and travel, the majority of Anishinaabe lived in semi-permanent wigwams.

Made of maple poles and covered in birchbark, wigwams were actually quite large and comfortable spaces. Wigwams were typically 8-12 feet in diameter and sometimes up to 20 feet. Whole families and even extended family members slept inside.

Even in the winter, the Anishinaabe came up with very creative ways to keep their wigwams warm. Setting the fire beneath grade and surrounding with rocks helped provide radiant heat throughout the night, even after the fire had died. Fresh air was also brought in through underground tubes (hollowed out logs).

These simple, yet functional structures used numerous sustainable features that we employ in our designs to this day. Yet to the Anishinaabe, these weren't about sustainability, they were about their beliefs, logic and way of life.



Figure 19- St. Croix Wigwam (s-media-cache-eco.pinimg.com)

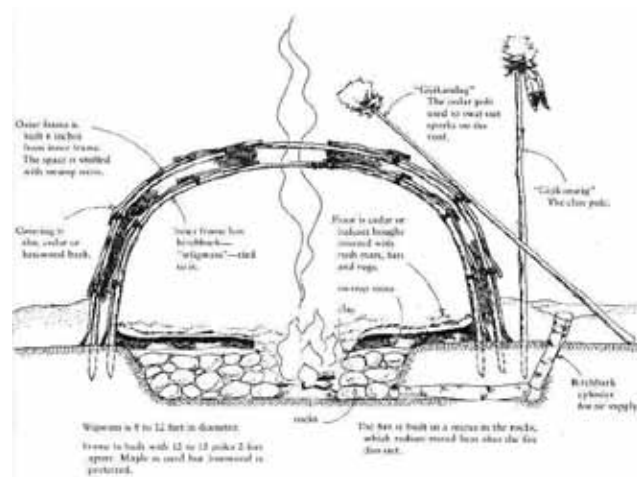


Figure 20- Winter Wigwam (s-media-cache-eco.pinimg.com)

Wigwam is the name of the basic structure. Although wigwams were used as home (a place to sleep and stay warm to the Anishinaabe), wigwams were also used as sweat lodges and medicine huts.



Figure 21- Chief & Wigwam (pinterest.com)

Typological Research Conclusion

After finishing the four typological case studies, I feel that they all had one major underlying theme; understanding the site is critical to design. With the four case studies I wanted to have one that covered the interpretive center side (LSR), one that covered the display aspect (Parrish), one that was directly related to the Anishinaabe culture (wigwams) and one that pushed the envelope of designing of the site (magney).

Going into the case studies I did not think that the four were going to have anything in common. While they were all very different, they were more the same then I could have imagined. Throughout all the research on the four as individuals, I found myself reading about "the site" over and over again and how crucial it was to properly respond to it. I feel that after all of my research, my theoretical premise was strengthened by what I found. Everything I was able to find clearly held the site as the main concept for design.

While the Laurance S. Rockefeller Interpretive Center is LEED Platinum certified and is very specific to its location within the mountains of Wyoming,

I feel that it is designed so thoughtfully with the site in mind that it could be placed anywhere else in the world and it would respond just the same.

As with the other three case studies, the LSR Interpretive Center is a beautifully designed, timeless piece that will suit the needs of its inhabitants and the site for generations.

The Parrish Art Museum responds both to the macro and micro environments that it is a part of. Its long, sleek appearance blends in with the trees and low hills of East End Long Island. Also, the architects drew inspiration from the converted beach garages that artists used as studios. This careful attention to detail and the sites in which the museum is a part of is why it will be a beautiful building for years to come.

The Magney House is an elegant example of site response, materiality and functionality. Murcutt is a master at responding to his sites. He is very meticulous yet his designs have a sense of grace. The Magney House is a direct response to its site. Sun, wind, rain, topography and views were all carefully taken into account.

Lastly, the Anishinaabe wigwams are the epitome of site specific design. Built using only natural materials that were readily available at any given site, the wigwams responded to both the site and weather conditions. The Anishinaabe people were able to employ many strategies that we today considered “sustainable”, but to them it was necessity.

S i t e



Figure 22- Map of Site (Google Earth)

Site Information-Macro



Figure 23- Map of MN (d-maps.com)

The White Earth Reservation is the largest reservation in Minnesota (based on land size). In total the reservation covers 1,093 square miles.

The site is located in northwestern Minnesota on the White Earth Reservation (white square). The White Earth Reservation occupies all of Mahnomen County as well as parts of Becker and Clearwater counties.



Figure 24- Map of White Earth Reservation (Google Earth)



Figure 25- Map of Lower Rice Lake WMA (Google Earth)

The site, in particular, is located within the Lower Rice Lake Wildlife Management Area. Which is a part of the White Earth State Forest System.

Located just off of County Highway 4 on BIA 16, the site is situated on a beautiful piece of land that borders pristine pine forests to the East, South and West. As well as prairie land to the South. The site also has a water feature in the northwest corner.



Figure 22- Map of Site (Google Earth)

Site Information-Micro

My site sits on 1,119,000 square feet (25.5 acres) of land. Situated within the Lower Rice Lake Wildlife Management Area and the White Earth State Forest, my site boasts open, rolling fields surrounded by lush forests. One key aspect of my site is that it will not require the removal of any trees or significant foliage.

Located 17 miles northeast of Mahanomen, 8 miles north of Naytawauash and 14 miles southwest of Bagley, my site is centrally located and easily accessible. Just off of County Highway 4, one turns east onto BIA 16. A short 1/3 mile drive down a beautiful birch, maple and pine tree lined gravel road brings you to the site.

This entry will be integral in the design of my site and building. I want visitors to feel removed from daily life and free to enjoy nature as it was intended to be.



Figure 26- BIA 16 Entry Road- Logan Kern



Figure 27- Site Looking North- Logan Kern

Surrounded on three sides by forests, my site feels like a welcome relief from daily life. Made up of rolling prairie hills with natural grass and vegetation, the site feels like it could have once been inhabited by the Anishinaabe.

The site will be held at the forefront of all major design concepts and will influence how my site will be layed out. There will be little in the way of destruction to the site and I will minimize the footprints of my building/s.

Wind, sun and other weather patterns will play a role in how my design is layed out upon the site. I will also use information found within my research of Anishinaabe settlements on how best to layout my spaces and buildings.



Figure 28- West Side of Site- Logan Kern



Figure 29- East Side of Site- Logan Kern

Thesis Project Goals

A c a d e m i c a l l y -

I hope to inspire others to take a more culturally challenging topic and make it their own. One of my goals is to raise awareness amongst my peers in hopes that they too may look into the Native American culture and raise awareness about it. I feel that the Native Americans do not get the proper credit they deserve for much of what is America today.

P r o f e s s i o n a l l y -

I hope that my thesis project will lead me to become more aware of my clients and the sites on which my designs are to be built. Also, I hope that the depth of my thesis will carry over into all of my future work. The time, effort and heart that is put into this thesis will pave the way for all my other projects to follow suit.

P e r s o n a l l y -

My goal for this thesis project is to gain further knowledge of the Anishinaabe culture and their use of land and site. I hope to gain further understanding in the vital role that research plays in producing a fully developed site, design and narrative. I hope that my research and conclusions will help inspire others and in turn, that will inspire me to continue to do such work. I also hope to raise awareness to a culture that all-to-often gets overlooked in their contributions to us as a society today.

Plan For Proceeding

1 Project Documentation	104	Jan 13 2015- Apr 27 2015
2 Conceptual Analysis	24	Jan 13 2015-Feb 6 2015
3 Spatial Analysis	14	Jan 13 2015- Jan 27 2015
4 Structural Analysis	14	Jan 20 2015- Feb 13 2015
5 Materials Development	5	Feb 11 2015- Feb 16 2015
6 Envelope Development	7	Feb 13 2015- Feb 20 2015
7 ECS Passive Analysis	10	Feb 16 2015- Feb 26 2015
8 ECS Active Analysis	5	Feb 16 2015- Feb 21 2015
9 Context Development	7	Feb 21 2015- Feb 27 2015
10 Context Analysis	3	Feb 26 2015- Feb 29 2015
11 Section Development	7	Feb 27 2015- Mar 6 2015
12 Midterm Reviews	7	Mar 13 2015- Mar 20 2015
13 Project Revisions	7	Mar 23 2015- Mar 30 2015
14 Preparation for Presentations	7	Mar 30 2015- Apr 6 2015
15 Presentation Layout	7	Apr 6 2015- Apr 13 2015
16 Plotting and Model Building	14	Apr 13 2015- Apr 27 2015
17 Exhibits Installed on the 5th Floor	3	Apr 27 2015- Apr 30 2015
18 Final Thesis Reviews	8	May 7 2015- May 15 2015
19 Final Thesis Document Due	1	May 11 2015- May 11 2015
20 Thesis Exhibit	20	May 15 2015- Jun 4 2015
21 Commencement	1	May 16 2015- May 16 2015

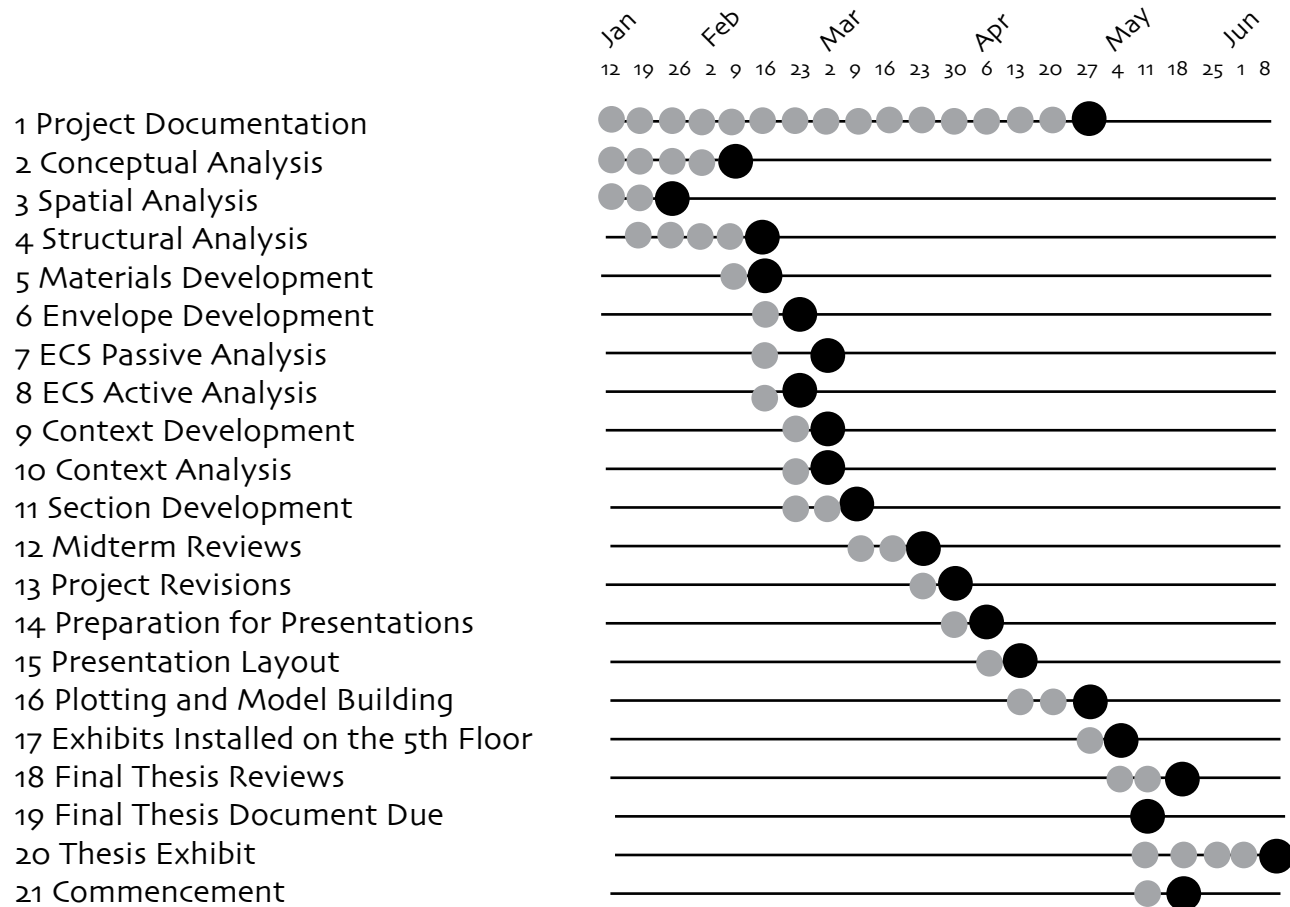


Table 1 -Plan for Proceeding (Logan Kern)

“The good building is not one that hurts the landscape, but one which makes the landscape more beautiful than it was before the building was built.”
- Frank Lloyd Wright

P r o g r a m

Unifying Idea Research

The goal of this thesis project is to re-examine the history of the Anishinaabe culture and how it can influence architectural design today. This thesis seeks to understand the relationship the Anishinaabe people shared with the earth and the sites on which they inhabited. Extensive research will be conducted to fully understand the link between the site and its inhabitants. This thesis will be aimed toward preserving the culture of the Anishinaabe while conserving the natural site on which the design is to be placed.

Cultural Preservation

The Anishinaabe people had lived in this country for centuries before the Europeans discovered it in the late 1400's.

"We the Anishinaabe people have a history that goes back 50,000 years on this continent, which is now known as North America, but which has been always known to us as Turtle Island. And 50,000 years is a long, long time".

-Eddie Benton-Banai, Midewewin Elder

They have always lived off of the land. Growing, harvesting, hunting and fishing. Their clothes were made from the animal furs the caught and killed, their houses were made of birch bark and maple poles and their canoes were made out of bark and branches. They didn't just live off of the land, they thrived.

T h e M e d i c i n e W h e e l

The Anishinaabe follow the teachings of their ancestors. Known as the medicine wheel, this is considered the sacred knowledge of where their people came from. Represented as a circle, divided into four equal parts, the medicine wheel holds vast amounts of sacred information.

Lillian Pitawanakwat, and Ojibwe/Powawatomí (Anishinaabe) Teaching Elder describes the medicine wheel on her website, fourdirectionsteachings.com as,

"There are Seven Sacred Directions. The Four Cardinal points on the Medicine Wheel are the Four Sacred Directions, represented among the Ojibwe by the colours yellow, red, black and white.



Figure 30- Medicine Wheel (netnewsledger.com)

Unifying Idea Research

Blue represents Father Sky in the upper realm, Green represents Mother Earth below, and purple represents the self, that spirit that journeys in this physical world, at the centre of the wheel.

The Seven Stages of Life are also found on this Medicine Wheel. They begin in the East and move across the Wheel to the West. The Seven Stages of Life are: The Good Life, The Fast Life, The Wandering Life, the stages of Truth, Planning, and Doing, and The Elder Life.

The Seven Grandfather Teachings are also located on this Medicine Wheel. They begin in the Northern direction and move down to the centre of the Wheel. These gifts are the teachings of Honesty, Humility, Courage, Wisdom, Respect, Generosity and Love."

THE SEVEN SACRED DIRECTIONS

The Seven Sacred Directions begin in the center (purple). This represents the fire that burns within all of us. We are responsible for our own fires, whether through knowledge or experiences, we must keep that fire burning. The next direction is the East (yellow). The East represents

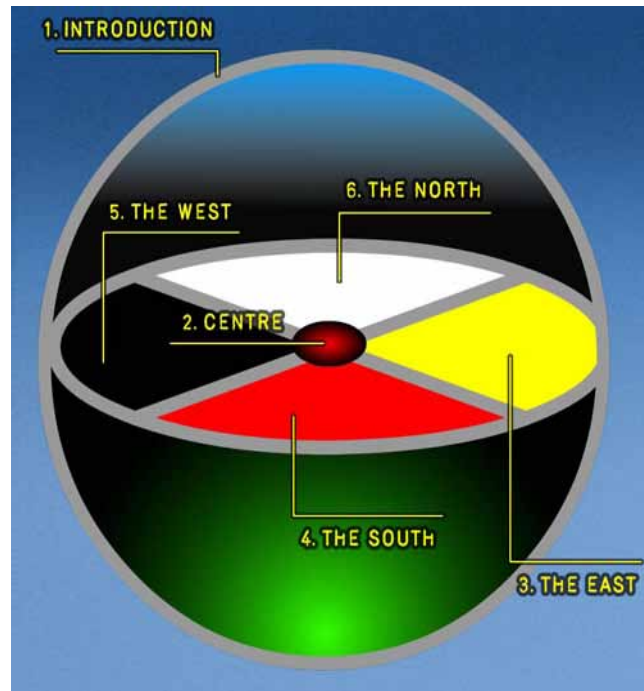


Figure 31- Medicine Wheel (fourdirectionsteachings.com)

life, springtime and the beginning of new things. The South (red) represents youth. This is where everything begins to grow and thrive. This is because summer resides in the South. The West (black) represents adulthood and the fall. This is the time of harvest and when life looks to cross back into the spiritual realm. The North (white) is a period of slowing down and death. This is where the elders reside and where they are remembered. Much wisdom comes from the North. Mother Earth is where everything comes from and Father Sky is the guardian.

T h e S e v e n S t a g e s O f L i f e

The Seven Stages of Life correspond with the Seven Sacred Directions. Beginning in the East, the first stage is called "The Good Life". This is a child's first seven years of life where they are instilled with the teachings of the Elders. The second stage is known as "The Fast Life". This is where they would learn from the men and women respectively and become prepared to enter adulthood after puberty. The third stage, known as "The Wandering Life", is where one finds themselves and contemplates and wonders about life's many mysteries. Next is, "Truth". This is where one reflects on what they've learned in the Wandering Life stage to establish who they truly are as a person.

Unifying Idea Research

After the Truth stage comes the "Planning" stage. This is where one plans on how to use the knowledge of the previous stages. Then comes the "Doing" stage. This is when the individual starts acting upon all of the previous stages. Lastly, is the "Elder" stage. This is where the circle of teaching begins over. The Elders now have all the knowledge of life and are ready to being teaching the young back at the "Good Life" stage.

The Seven Grandfather Teachings

"To cherish knowledge is to know WISDOM;
To know LOVE is to know peace;
To honour all of Creation is to have RESPECT;
BRAVERY is to face the foe with integrity;
HONESTY in facing a situation is to be brave;
HUMILITY is to know your self as a sacred part
of Creation;
TRUTH is to know all of these things."

-Eddie Benton-Banai, "Mishomis Book: Voice of the Ojibway"

These seven teachings are also found within the Medicine Wheel. Love is learned between the East and South, after "The Good Life" stage.



Figure 32- Medicine Wheel (all4teachers.wikispaces.com)

Courage is learned at the end of “The Fast Life” stage. Respect is learned in the beginning of “The Wandering Life” stage. Honesty is learned between the East and North, before the Elder stage. Humility and wisdom are learned throughout the stages and come full circle during the “Elder” stage.

Environmental Conservation

The Anishinaabe believe that, “to everything, there is a season”. Life for the Anishinaabe revolved around the seasons. They knew how nature worked, down to an almost intimate level. Their daily, weekly, monthly and yearly plans were based around nature. “Treat Earth and all living things with respect”, was a central teaching principal of the Anishinaabe culture.

S p r i n g t i m e

In the spring, sap from maple trees was collected and made into maple syrup and sugar. When the snow had fully melted, plants and berries began to be picked and eaten. After all the ice had left the rivers and lakes, birch bark canoes were used for fishing and travel. As the weather warmed, their wigwams, drums, winter clothing and blankets were repaired and/or built. Spring

Unifying Idea Research

S u m m e r

The summertime was a flurry of activity. Rocks were collected to make axes, arrowheads and other stone tools. Wild carrots, leaks and mushrooms were collected and eaten. Large amounts of berries and nuts are gathered, eaten and dried for winter. Fishing is a daily activity. When the animals came out of hibernation they were hunted with bow and arrow. Every part of the animal was used. Some of the meat was eaten and some was dried and stored for winter. The furs were made into clothing, hats, gloves, boots and many other things. The bones were used to make tools and knives and the fat was used in cooking, waterproofing canoes and clothing and also saved for winter.

F a l l

Fall was the time to begin preparations for the long, cold winters that lay ahead. Wild rice was harvested from the streams and river meadows and honey was gathered. Pemmican, a mixture of berries, dried meat and fat is prepared. Meat and fish were smoked and fruit was dried for use in the winter.

Also, medicinal plants were gathered in preparation for travel to their winter hunting grounds.

W i n t e r

Upon arrival at the winter hunting grounds, the wigwams and tipis are immediately erected. The fur clothing that was made during the spring and summer months is now put to great use. The hunters of the tribe (most always men) dress in the heavy fur clothing to hunt while the women, children and elders gather in their wigwams and tipis to tell stories. Small game such as rabbits and birds as well as deer are hunted. Using snowshoes and sleds made from branches and twigs, the hunters are able to traverse the snow with relative ease.

Unifying Idea Research

Philosophy Of Life

These central teachings of the Anishinaabe culture are not just stories and things to be thought of, they were and still are, words to live by. This was their way of life and it still is.

“Treat Earth and all living things with respect”. We’ve all heard the phrase, “Mother Earth”, to the Anishinaabe, Earth was and is their mother. They came from the Earth. They saw all of nature and every living thing as equal.

“Remain close to the Great Spirit”. The Great Spirit is their Creator. All wisdom was passed down from the Creator and they follow it throughout their entire lives.

“Show great respect for all other people”. Honoring relationships and family members is a big part of the culture. This applies to not only how you treat others but as to how you treat yourself as well.

“Work together for the benefit of all”. All personal prides were set aside. The Anishinaabe believe in doing what’s best for the collective. This is how they have survived through many hardships.

“Do what you know is right”. The Anishinaabe believe that looking at and listening to our inner selves will reveal all good and right things.

“Keep your body and mind well”. The Anishinaabe believe that we should listen and follow the rhythms of nature. Rising and falling with the sun and living in accordance to the seasons are a few of these rhythms.

“Be honest, always and take full responsibility for your actions”. The Anishinaabe believed in honesty at all times. If one is honest with themselves first, it is easier to be honest with others in all matters. The Creator is always watching and judging how we live.

Unifying Idea Research

S u m m a r y

This summary will examine the research presented and why preserving culture is important. It will also show how the research applies directly to my thesis.

Through the research presented as well as all research that is to be done throughout the design process, I hope to reach an understanding of how preserving a culture can impact architectural design. The research presented examines the Anishinaabe culture as a whole. How they lived off the land in the past and what they live for still to this day. The research reveals the culture of the Anishinaabe and why it is important to preserve. It also reveals how the Anishinaabe revered nature and Mother Earth and how their beliefs can benefit society still to this day.

Throughout the research presented, it is clear to see how important nature and the earth were and still are to the Anishinaabe people. The four colored Medicine Wheel, while it appears simple and rudimentary, is anything but. It reveals many things about the culture of the Anishinaabe and their belief system.

It not only tells the stories of the Seven Sacred Directions, the Seven Stages of life and the Seven Grandfather Teachings, it also reveals the hierarchy of tribes within the Anishinaabe culture and the personalities of the people associated with those tribes.

Another aspect revealed is the reoccurring presence of the number seven. This comes from the seven fires that were given to the Anishinaabe by the prophets as they set out on their Great Migration to find “the land where food grows on water”. Since there were seven fires given to the ancient Anishinaabe people, the number seven has been held in high regard.

In a speech in 2011 on the seven teachings of the Ojibwe, Richard Morrison said, “We believe everything to be circular and in the middle of that circle is our heart”. The Medicine Wheel represents that circular and how everything contained within it is related. The Elders pass on the stories of their ancestors to the children, those children grow to become the Elders and so the circle is repeated. The cycle of life, the changing of seasons and the rising and setting of the sun are all important to the Anishinaabe way of life. They never stop listening to the rhythm of nature .

Unifying Idea Research

S u m m a r y

The design of the building will reflect those aforementioned beliefs. Nature and the site will be held in the highest regard. The life cycle of the materials used in the design will also be carefully thought through. Natural, local and renewable materials will be used. The LEED rating system will also be used to further show how the design is sustainable, energy efficient and environmentally friendly.

Throughout the building program and design, this research will be constantly drawn upon. It will provide the foundation on which a design can take place. This thesis will show how and why preserving a culture such as the Anishinaabes' can be invaluable to designing of a site and not merely upon it.

Project Justification

Cultural Importance -

Preserving the past is vital to remembering who we are and where we came from. Preserving the past is how we, as a society, will be able to continue to grow and flourish. All-too-often people lose site of the past. This often leads to repeats of past failures. The Anishinaabe people lived here (on the site of the White Earth Reservation) for hundreds of years before European settlers came to America. They lived off the Earth. They used the Earth and all it had to offer to survive; and they thrived. They appreciated the Earth and treated it with respect. They took care as to how they set up their dwellings, based on wind and sun patterns. They planted crops where they would get the most daylight and rain. They treated the site with the utmost of care.

To me, we must preserve the past in order to conserve the future. We only have one Earth and we must do all that we can in order to ensure that it is able to sustain our future generations. Designing of the site and not merely on the site is the goal for this project. The Anishinaabe people did it and we must get back to putting the site and the Earth first.

P e r s o n a l I m p o r t a n c e -

I have lived in Minnesota for my entire life. I grew up an hour away from the White Earth Reservation and I have never lived more than 80 miles away from it. I have attended Native American Pow-Wows and been on numerous reservations. I have always respected the Native American culture. There is so much pride, honor and tradition. In recent history however, Native Americans have gotten a bad-rap. Poverty, crime, drug and alcohol abuse and high school dropout rates seem to be all we hear about in the news. In the beginning of our country, the government thought it best to take away the Native Americans traditions and way of life and make them into civilized people. This created a generation not knowing who they truly were and I believe that is the reason for the troubles associated with reservations. Through my thesis project, I wish to design a building that would bring back that pride, honor and tradition to a people who have been here long before us. To restore a sense of belonging that was taken away from them.

Historical Context

The Great Migration Story -

As the Anishinaabe migration story goes, the story of the Anishinaabe people begins on the East Coast along the modern day St. Lawrence River. Ancient stories say the Anishinaabe numbered in the 10's of millions, some saying as high as 40 million during their peak. Around the year 900 A.D., seven prophets came to the tribal elders and told them to start a great migration westward. Some of the 40 million naturally stayed, but many of the Anishinaabe set out on the journey.

Over the next 500 years, the Anishinaabe people spread west following the instructions of the prophets. The first major stopping point in the migration was at a place spoken of by the prophets; the Turtle Shaped Island (around modern day Montreal). After some time they set out again. The second stopping place was present day Niagara Falls. They again continued, stopping at the present day Detroit River (where Lake Huron and Lake Erie connect), Manitoulin Island on lake Huron and present day Sault Ste. Marie.

Here, the tribe split up. One group headed north around Lake Superior and the other headed south. They rejoined on Spirit Island, present day Duluth.

In roughly 1400, the Anishinaabe made it to modern day Minnesota, where the prophets said they would find, “the food that grows on water” (“mahnomen” or wild rice).

This was at least 200 years before the first Europeans settled in the area.

E u r o p e a n C o n t a c t -

From roughly 1400 until the mid-1600’s the Anishinaabe in Minnesota thrived and flourished on their own. In the mid-1600’s the Anishinaabe people encountered their first Europeans. They were French fur traders who immediately began trading guns, food, clothing and alcohol to the Anishinaabe for their beaver pelts.

The fur trade become a blessing and a curse for the Anishinaabe. The trade brought them goods and materials previously unavailable to them but it would eventually lead to the way future

Historical Context

political treaties and deals were handled by the US government.

T r e a t i e s -

The first treaty came in 1794. Following the Revolutionary War, the USA and Great Britain signed the Jay Treaty. This treaty, among other things, acknowledged and gave various rights to Native American groups on or near the US and Canadian border; allowing these tribes to cross the border at free-will.

On August 19, 1825 the Treaty of Prairie du Chien was signed by all the tribes, including the Anishinaabe, within the Upper Mississippi boundaries. Tribal warfare was disrupting the fur trade, so the government created the Treaty of Prairie du Chien in attempts to calm the warfare until treaties with each tribe could be negotiated.

A follow-up meeting between the US government and the Chippewa (Anishinaabe) nation was held in 1826, since some of the individual bands were not present in Prairie du Chien. This meeting was to ensure all Chippewa bands agreed to the treaty; they all did.

Beginning in 1837, the Chippewa nation began to cede chunks of its territory to the US government. In 1837 the Chippewa relinquished rights to the land east of the Mississippi River from present day Lake Mille Lacs to the north and present day Minneapolis to the south and stretching east into Wisconsin.

Many treaties would follow, beginning in 1847. The US government and the Pillager, Mississippi and Lake Superior Bands of Chippewa agreed to sell and cede their land in Central Minnesota around present day Detroit Lakes. Along with the sale of land, the peace between the US and the Natives was to be perpetual, or never ending.

Historical Context

After 1849, the year in which the Minnesota Territory was formed, the Chippewa owned land began to disappear rather quickly.

In 1854 the Lake Superior Band ceded all of their land up the north shore of Lake Superior to the Canadian border. The 1855 Treaty with the Chippewa took the biggest chunk out of the Chippewas land. The Mississippi, Pillager and Lake Winnibigoshish bands sold their land which extended from present day Moorhead to Grand Rapids and north to the Canadian border.

In 1858, Minnesota was granted statehood.

With the Treaty of 1864, 6 reservations were set up within the land ceded in the 1855 treaty. Each reservation was to be for a respective tribe of the Chippewa. However, 3 years later, the Treaty of 1867 put pressure on all Chippewa tribes to relocate onto one reservation around White Earth Village. Not all Chippewa tribes wanted to be forced onto this one reservation as it was never the home to any of the bands.

In 1887, the Dawes Act was passed. This act allotted each member of the reservation a given

acreage of land. Any Native American who accepted an allotment would be granted full US citizenship. All "excess" land within the reservation after the allotment was sold on the open market to non-native people.

The White Earth Reservation was allotted under the 1889 Nelson Act. The Nelson Act promised agricultural land to any Chippewa who resettled there. All land with valuable resources (i.e. timber) was to be owned by the community.

Quickly, however, in 1904 the Steenerson Act was passed. Due to the White Earth Reservations rich natural resources, Minnesota timber companies wanted to be able to harvest the trees on reservation land. The Steenerson Act allowed the allotment of these previously held communal lands to individuals; the individuals allotted these lands were usually ones who the timber companies knew would sell them their land. In conjunction with the Steenerson Act, the Clapp Rider Act was passed only one day later. This act allowed those individuals allotted the timbers lands to sell them to the timber companies.

Historical Context

Unhappy with the lengthy processes that came with the previous Steenerson and Clapp Rider Acts, the Burke Act of 1906 was passed by legislature to terminate the previously held 25-year trust period of the allotted reservation lands.

In 1920, the census of the White Earth Reservation showed 7,963 individuals resided there.

In 1924, the Indian Citizenship Act was passed. This granted all Native Americans full US citizenship.

Throughout all of this, the US government had an ulterior motive. They wanted the native Indians to assimilate into the American culture. The US government thought that if they took away the native Indians' land, culture and religion it would help them to assimilate into mainstream culture more easily. However, this took away from who they truly were. Riffs began to form between the elders and the young native children because they could no longer communicate in their native language.

The native population was essentially given a choice; assimilate or become extinct. Captain Richard H. Pratt said, "Kill the Indian in him, and save the man" (Official Report of the Nineteenth Annual Conference of Charities and Correction, 1892). It was also said that it, "cost nearly a million dollars to kill an Indian in warfare, whereas it only costs \$1,200 dollars to give an Indian child eight years of schooling" (Adams, 1995)

My thesis, while only scratching the surface of the Indian and US government relations is deeply rooted in history. At the time, the US government was scared of what may happen if the Indians were left alone. They thought that if the problem was, "taken care of", then all would be good in the country.

However, now in the 21st century, views are changing. People are being accepted for who they are. There are still a few people out there holding on to racist beliefs of the past but I believe now is the time to end all of that.

Historical Context

I want my thesis and design to be a beacon of hope for the people of the White Earth Reservation. A design that preserves the past and looks towards a new and hopeful future.

I believe President Barack Obama, in a speech on December 2, 2011, summed it up perfectly.

"I believe that one day, we're going to be able to look back on these years and say that this was a turning point. This was the moment when we began to build a strong middle class in Indian Country; the moment when businesses, large and small, began opening up in reservations; the moment when we stopped repeating the mistakes of the past, and began building a better future together, one that honors old traditions and welcomes every Native American into the American Dream."

- President Obama



Figure 33- Arrival (Logan Kern)

Qualitative Site Analysis

The site I have chosen for my thesis project was not my first choice, nor was it my second, third or even fourth choice. Rather, I stumbled upon it by chance. Once there, I knew immediately that it was, as the saying goes, “the one”.

You approach the site from the southwest on a small, winding gravel road. Lined with Birch, Spruce and Maple trees, I immediately felt a sense of calmness. I could hear birds chirping, I could see the sunlight and tree shadows were dancing before me on the gravel and I could hear the wind rustling the leaves and branches of the trees.

After a short drive, one you wished could go on forever, the trees open to reveal a vast prairie of slight rolling hills and natural grasses. This is my site. A memory of reading Henry David Thoreau’s *Walden* comes into mind.

“I went to the woods because I wished to live deliberately, to front only the essential facts of life, and see if I could not learn what it had to teach, and not, when I came to die, discover that I had not lived.”- Thoreau



Figure 34- Arrival (Logan Kern)



Figure 35- View South of Site (Logan Kern)

Only a short drive from the main highway, the site feels like a world apart. There is no man-made noise pollution, only nature. The views, as well, are unobstructed by anything man-made except for one, round hay bale.

It's a beautiful fall day, slightly overcast but calm. The leaves have just begun to fall and there is a crispness in the air. Bright colors of orange and yellow grace the trees and their leaves as they fall to the ground. The grasses are still green, with faint hints of brown beginning to appear. Looking out I see a small, moss and algae covered swamp in the northwest corner of the site.



Figure 29- East Side of Site (Logan Kern)

The sun begins to disappear as the cloud cover thickens, but the site is still beautiful. The rich smells of trees and grass and dirt are present but the air feels cleaner here.

The views to the south, east and west are of the beautiful, dense forests. An uncountable number of trees of all varieties can be seen, swaying ever so gently in the breeze. To the north, the site is open and mostly flat, with natural grasses. In the distant small bluffs of trees can be seen. Further, beyond my site, the forest again can be seen wrapping around.

The site itself is amorphous. There are no predetermined grids that the trees or grasses must follow. They just grow and live as they please.

The site is well protected from the winds coming from the south, east and west. The trees absorb most of the wind. From the north however, a strong wind will be felt coming over the open prairie. This, like all places, will be affected by the changing of the seasons and weather patterns of the area.

As mentioned previously, the only man-made object visible is a hay bale. It looks a season old at least. The southeast corner of the site looks to have been used to create this hay bale as the natural grass is shorter than is found on the rest of the site. Aside from the hay bale, the site is pristine. It is nature in the raw. The trees look strong and old.

I feel that this is the perfect site for my thesis. I almost feel that it chose me. The Anishinaabe people of this area lived off of the earth and treated it with respect. I plan to have my design reflect that and treat the site as they would have.



Figure 36-Site View North (Logan Kern)



Figure 37- West Side of Site (Logan Kern)

Quantitative Site Analysis

S o i l S t u d y

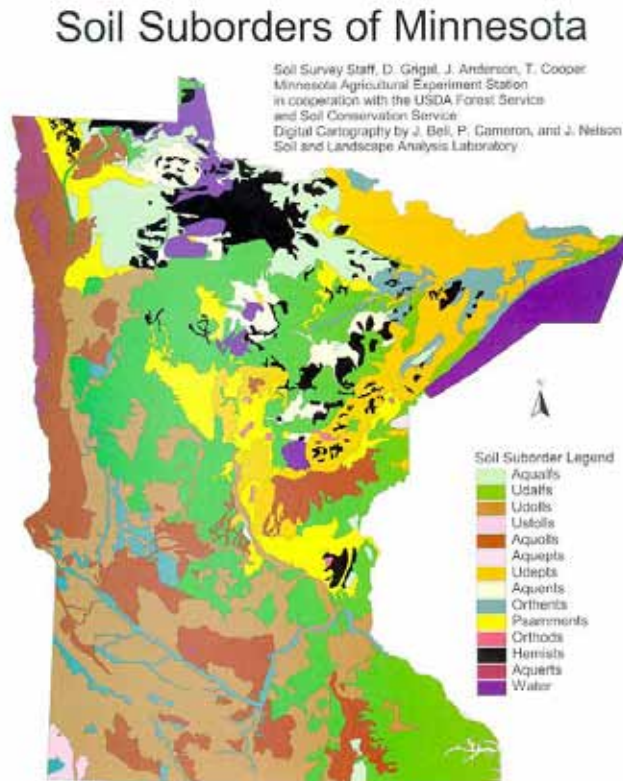


Figure 38-Soil Map- (swac.umn.edu)

My site has 3 classifications of soil within its boundaries. The majority of the site, from the center to the eastern border (where my design will be placed) is classified as Nebish Loam. Its dominant order is alfisols; which make up 90% of all orders soil. The dominant suborder is boralfs which also make up 90% of all suborder soils. The middle slice of soil is classified as Beltrami Loam. This type of soil is unique to this part of Minnesota. Its dominant order is alfisols and its dominant suborder is boralfs; both make up 90% respectively. The piece of land surrounding and containing the swamp is classified as Cathro Muck. Its dominant order is histosols and its dominant suborder is sapists. Again both make up 90% of their respective soils.

Quantitative Site Analysis

"The Nebish series consists of very deep, well drained soils formed in calcareous loamy glacial till on glacial moraines and till plains. These soils have moderate permeability. They have slopes of 2 to 40 percent. Mean annual precipitation is about 23 inches. Mean annual temperature is about 42 degrees F." (soilseries.sc.egov.usda.gov)

"The Beltrami series consists of very deep, somewhat poorly drained soils that formed in calcareous loamy glacial till on moraines. These soils have moderately rapid or moderate permeability in the upper part, and moderate or moderately slow permeability in the lower part. Slopes range from 1 to 3 percent. Mean annual precipitation is about 24 inches. Mean annual air temperature is about 42 degrees F."

(soilseries.sc.egov.usda.gov)

"The Cathro series consists of very deep, very poorly drained organic soils moderately deep to loamy materials. They formed in organic material 16 to 51 inches thick overlying loamy glacial deposits on ground moraines, end moraines and others. Permeability is moderately slow to moderately rapid in the organic material and moderately slow or moderate in the loamy material. Slopes range from 0 to 2 percent. Mean

(soilseries.sc.egov.usda.gov)

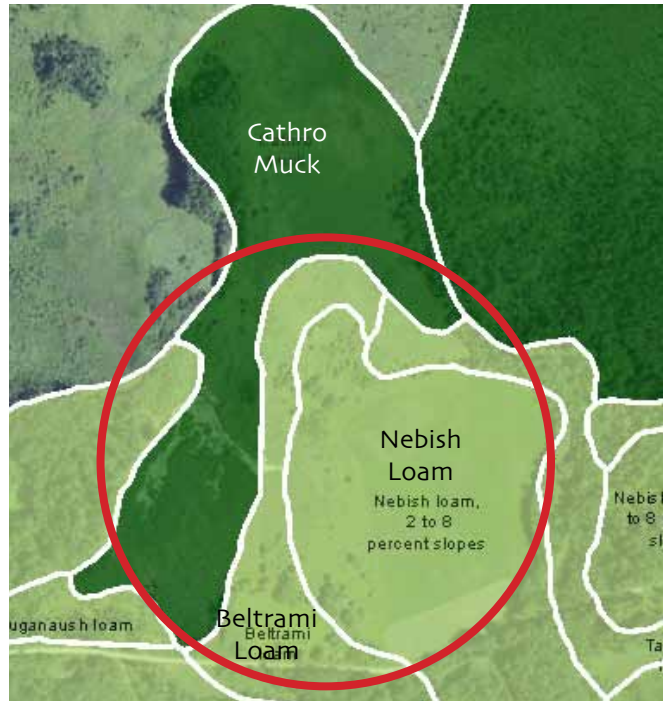


Figure 40- Site Soil Map (hydro_bm.esri.com and Logan Kern)

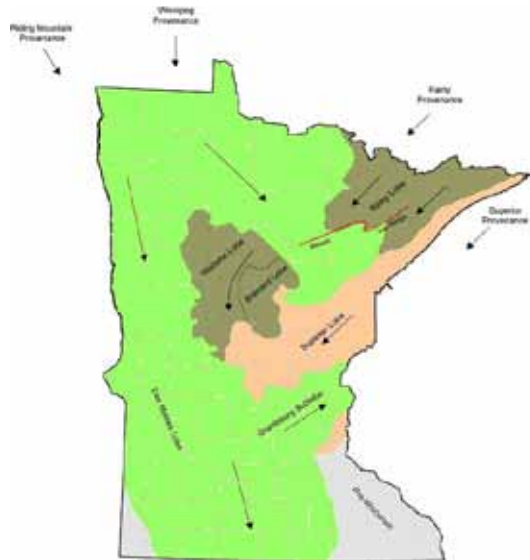


Figure 41-Drainage Map (mngs.umn.edu)

annual precipitation is about 32 inches. Mean annual air temperature is about 43 degrees F."

According to the MN DNR Ground Water Provinces Report, my site is within province 4, Central Province. The report states that the Central Province has, "Sand aquifers in generally thick sandy and clayey glacial drift overlaying Precambrian and Cretaceous bedrock."

My site sits on a rather soft mix of sandy and clayey soil. The water table in the area is rather close to the surface; anywhere between 0 feet (the swampy area) and 50 feet.

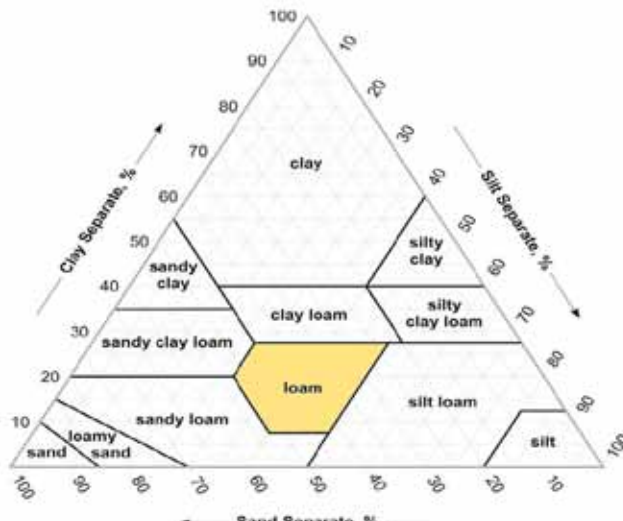


Figure 42- Soil Pyramid (hydro_bm.esri.com)

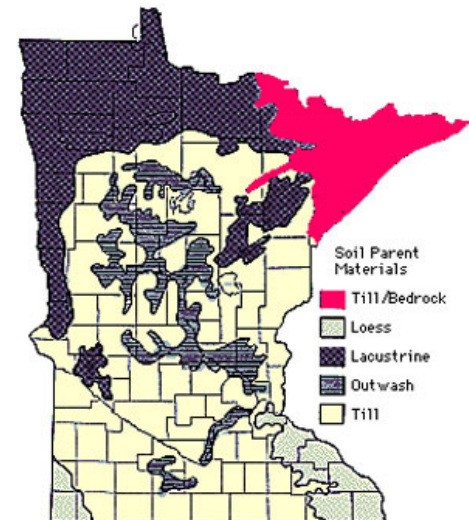


Figure 43- Soil Materials (extension.umn.edu)

Quantitative Site Analysis

Utilities/PedTraffic/VehicleTraffic

The main artery road leading to my site is County Highway 4. This is average county highway; two lanes of traffic (one in each direction, north and south). It is used by cars, semis and tractors. The gravel road leading off County Highway 4 to my site is currently a minimum maintenance road. Meaning in the winter time it is not always plowed and it is subject to being unfit to drive on. It is currently used very little (by my observations) as I was the only one on it for several hours.

There are currently no utilities of any kind on my site. No pedestrian traffic is currently taking place on my site.



Figure 44-Arrival View West (Logan Kern)

T o p o g r a p h i c S u r v e y

My site is flat. This is because it sits with the Chippewa Plains ecoregion.

“The Chippewa Plains ecoregion is located on the northeastern portion of the White Earth Reservation. This ecoregion is characterized by a mostly level landscape that has forest, crops, and pasture, as well as many lakes”.

With less than a 4% grade across the entirety of the site. The eastern most, main building site has, by my observation, a 1% or less grade. As you head to the west, towards the swamp, the grade slightly lowers; this is where most of the 4% occurs. Little to no grading will have to occur on my site.

P l a n t C o v e r

My site is rich in natural vegetation. The second growth forests to the south, east and west and thick and full of life and color. The site is filled with native prairie grasses and small shrubs.



Figure 45-Site View North (Logan Kern)



Figure 46-Site View East (Logan Kern)

Quantitative Site Analysis

Site Character

My site has natural character. To me, the main characteristic is the approach and how the site seems to open up from within the forest. The forests contain many species of trees of all sizes. The amplitude of natural daylighting is another characteristic of the site that I plan to take full advantage of. The only man made signs of change is the presence of the lone hay bale and signs of the mowing that took place to make it.



Figure 47-Panorama West to North (Logan Kern)



Figure 28-Site West (Logan Kern)

Quantitative Site Analysis

Topography Map



Figure 48-Site Topography (Logan Kern)



Figure 49-Arrival View (Logan Kern)



Figure 36-View North (Logan Kern)



Figure 50-View West (Logan Kern)

Quantitative Site Analysis

C l i m a t e D a t a

Average Annual High Temp: 51.41 degrees F

Average Annual Low Temp: 30.5 degrees F

Mean Annual Temp: 40.96 degrees F

Record High Temp: 110 degrees F in 1936

Record Low Temp: -53 degrees F in 1996

Monthly Mean Temperature

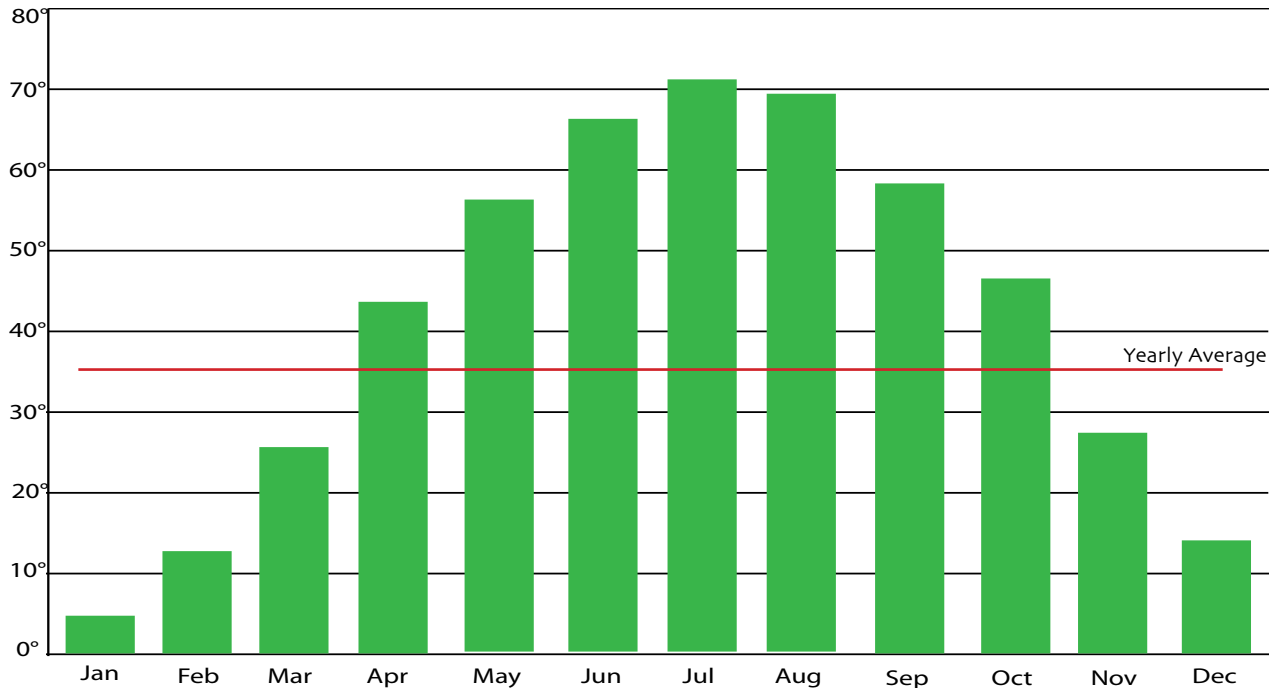


Table 2-Temperature Table (Logan Kern)

Average Annual Wind Speed: 14.66 MPH

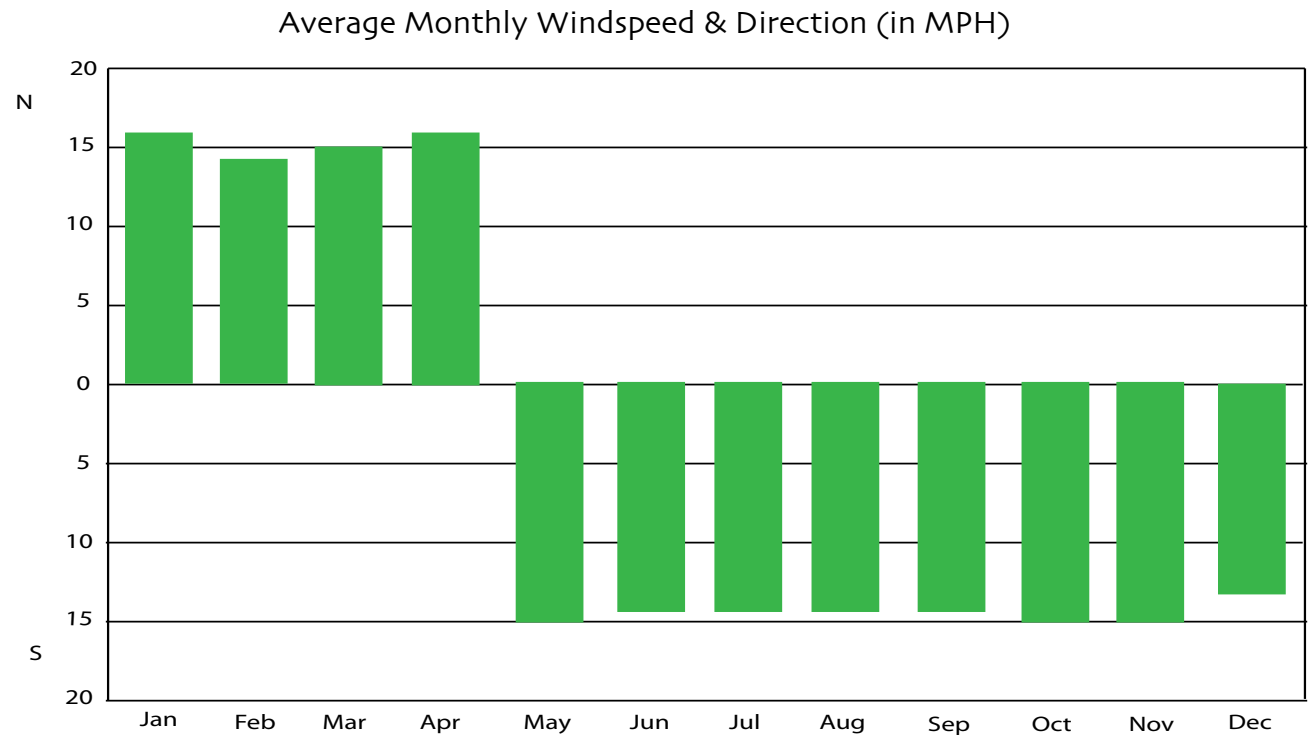


Table 3-Wind Table Logan Kern)

Quantitative Site Analysis

Average Annual Rain Precip: 19.1"

Average Annual Snow Precip: 37.96"

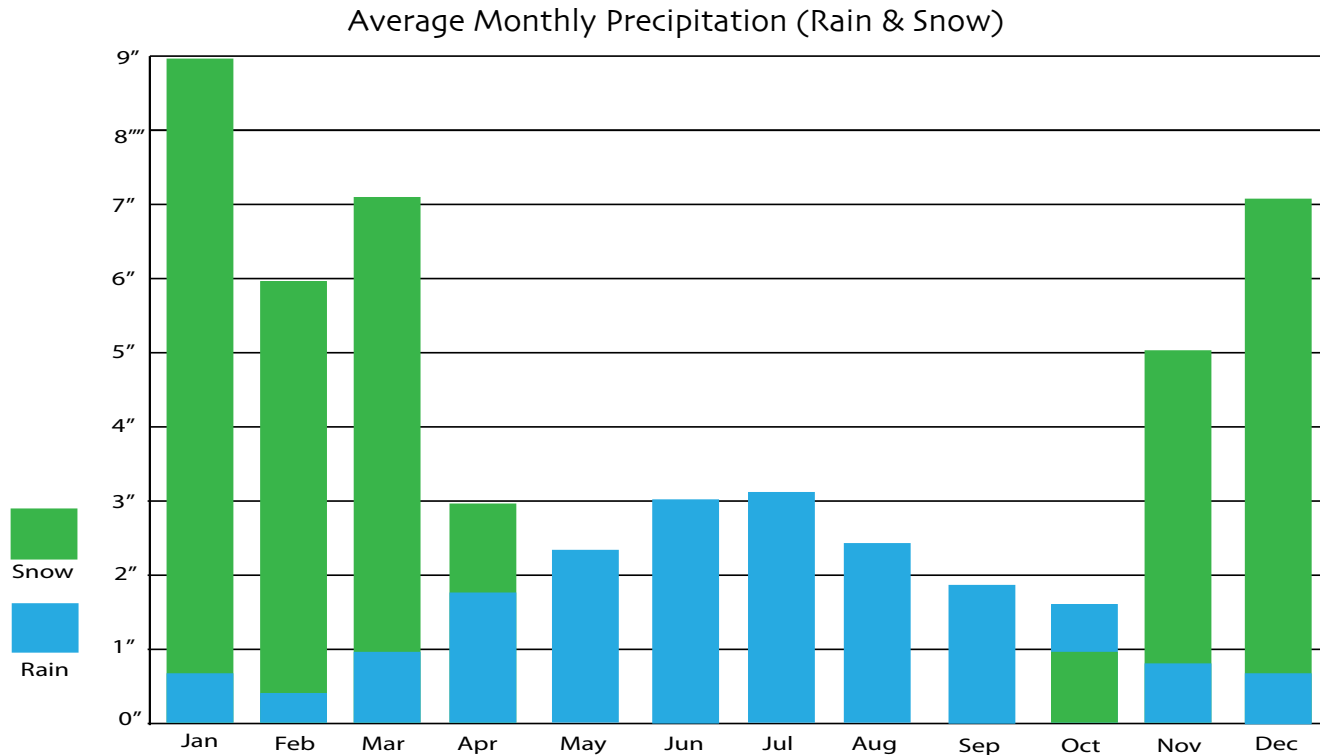
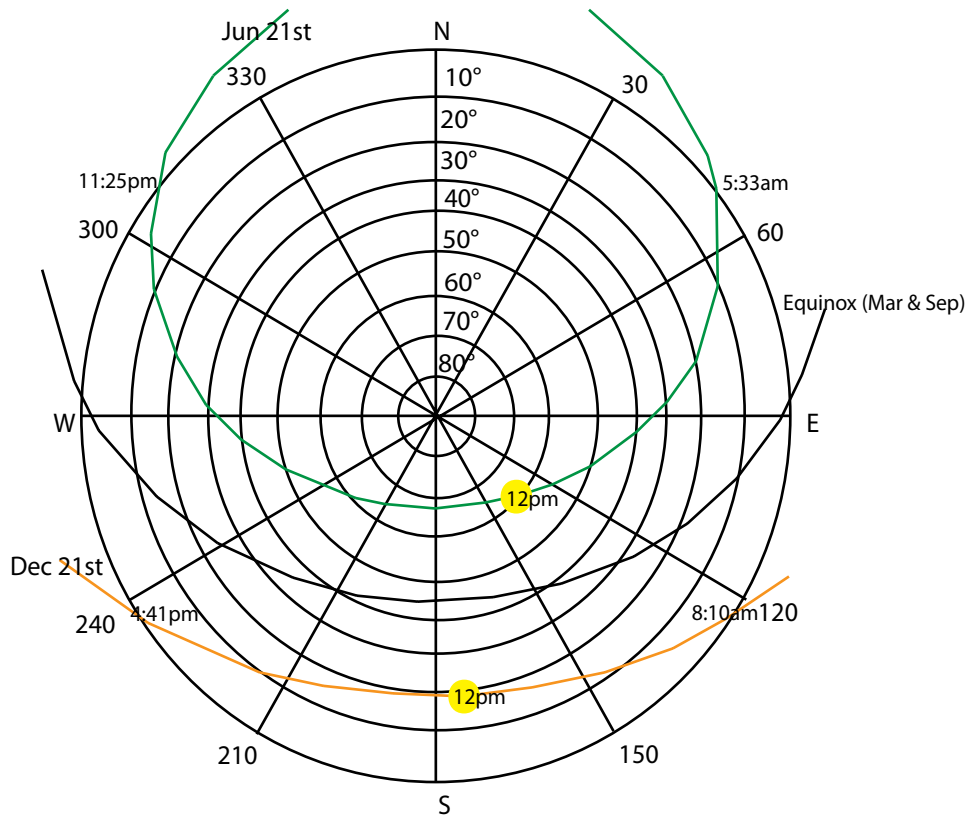


Table 4-Precipitation Table (Logan Kern)

Average Monthly Sky Cover:

- Overcast: Jan-Jun & Sep-Dec
- Scattered Clouds: Jul & Aug



Sun Path Diagram

Table 5-Sun Path Diagram (Logan Kern)

Quantitative Site Analysis

Mean Monthly Humidity

Average Yearly: 63.16%

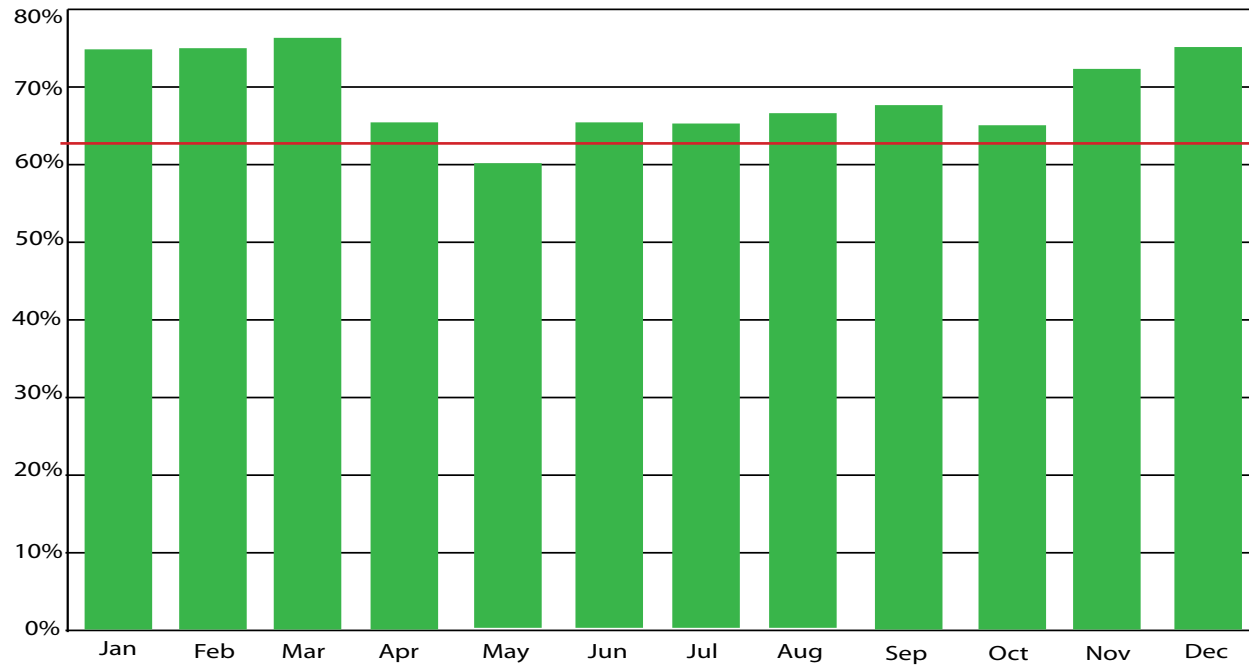


Table 6-Humidity Table (Logan Kern)



Figure 51- View North (Logan Kern)

B u i l d i n g P r o g r a m

P u b l i c S p a c e s -

Administration

- Reception

Exhibition

- Galleries

- Displays

- Breakout Spaces

- Learning Center

Cafe

- Seating/Tables

Breakout Spaces

- Throughout building

Library

- Stacks

- Computer Lab

- Seating

Restrooms

- 1 per 50 Occupants

Outdoor Space

- Pathways/Trails

- Displays

Parking Lot

- Public Parking

P r i v a t e S p a c e s -

Administration

- Employee Lounge

- Storage

- Meeting Rooms

Offices

- Employee Offices

- Volunteer Offices

- Government Offices

Mechanical

- Plumbing

- Electrical

Maintenance

- Janitorial

- Garbage

- Recycling

Learning Center

- Classrooms

- Presentation Rooms

Banquet Hall

- Ballroom

Green Roof

Parking Lot

- Staff Parking

E x h i b i t i o n -			MaxOccupancy
	Gallery/Display Areas-	10,000SF	300
	Learning Center-	3,000SF	100
	Breakout-	1,500SF	30
E d u c a t i o n -			
	Classrooms-	3,000SF	60
	Learning Center-	3,000SF	100
	Library-	2,000SF	80
	Computer Lab-	1,000SF	25
	Breakout-	1,500SF	30
	Presentation Rooms-	1,000SF	40
C o m m u n a l -			
	Cafe-	1,000SF	25
	Banquet Hall-	10,000SF	300
	Restrooms-	1,200SF	20
P r i v a t e -			
	Offices-	1,200SF	16
	Administration-	1,000SF	20
	Mechanical/Plumbing/Electrical-	1,000SF	N/A
	Maintenance-	500SF	N/A
	TOTAL SF-	49,000SF	
MAX OCCUPANCY-			1,126

Building Program

Interaction Matrix

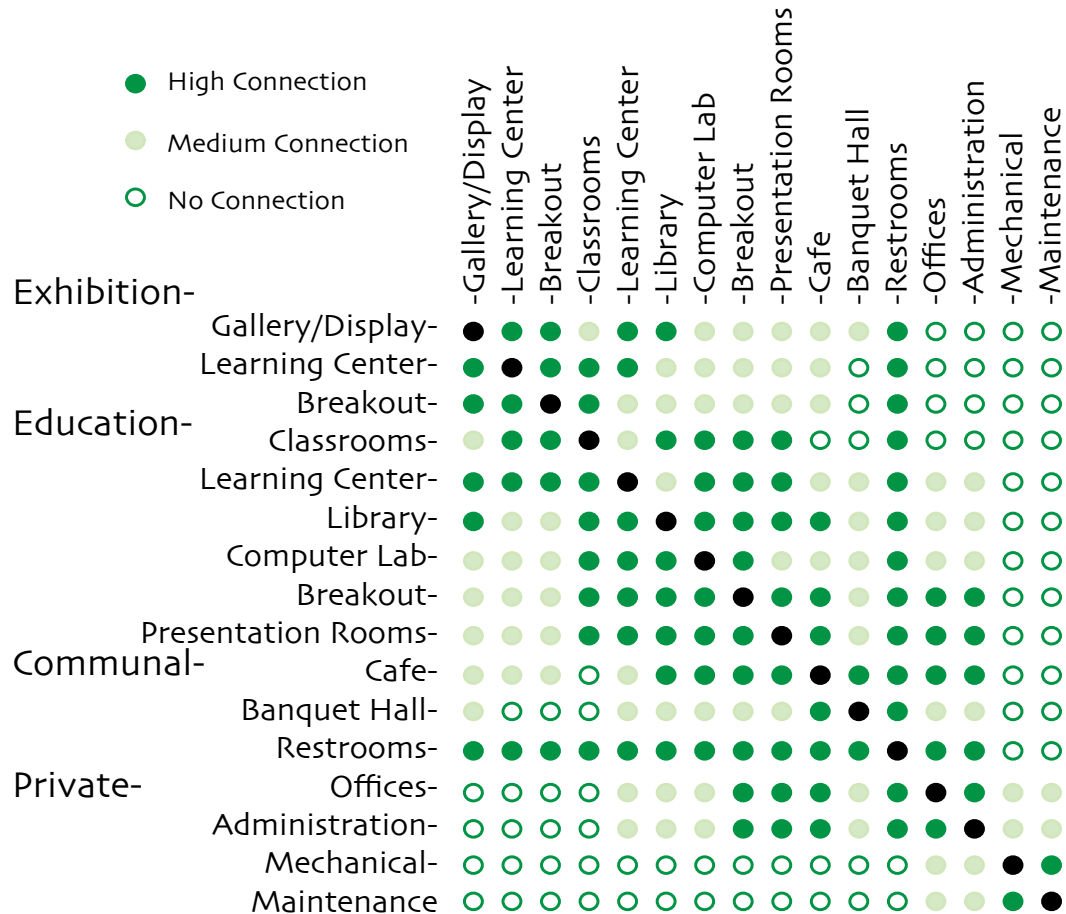


Table 7-Interaction Matrix (Logan Kern)

Building Program

Interaction Net

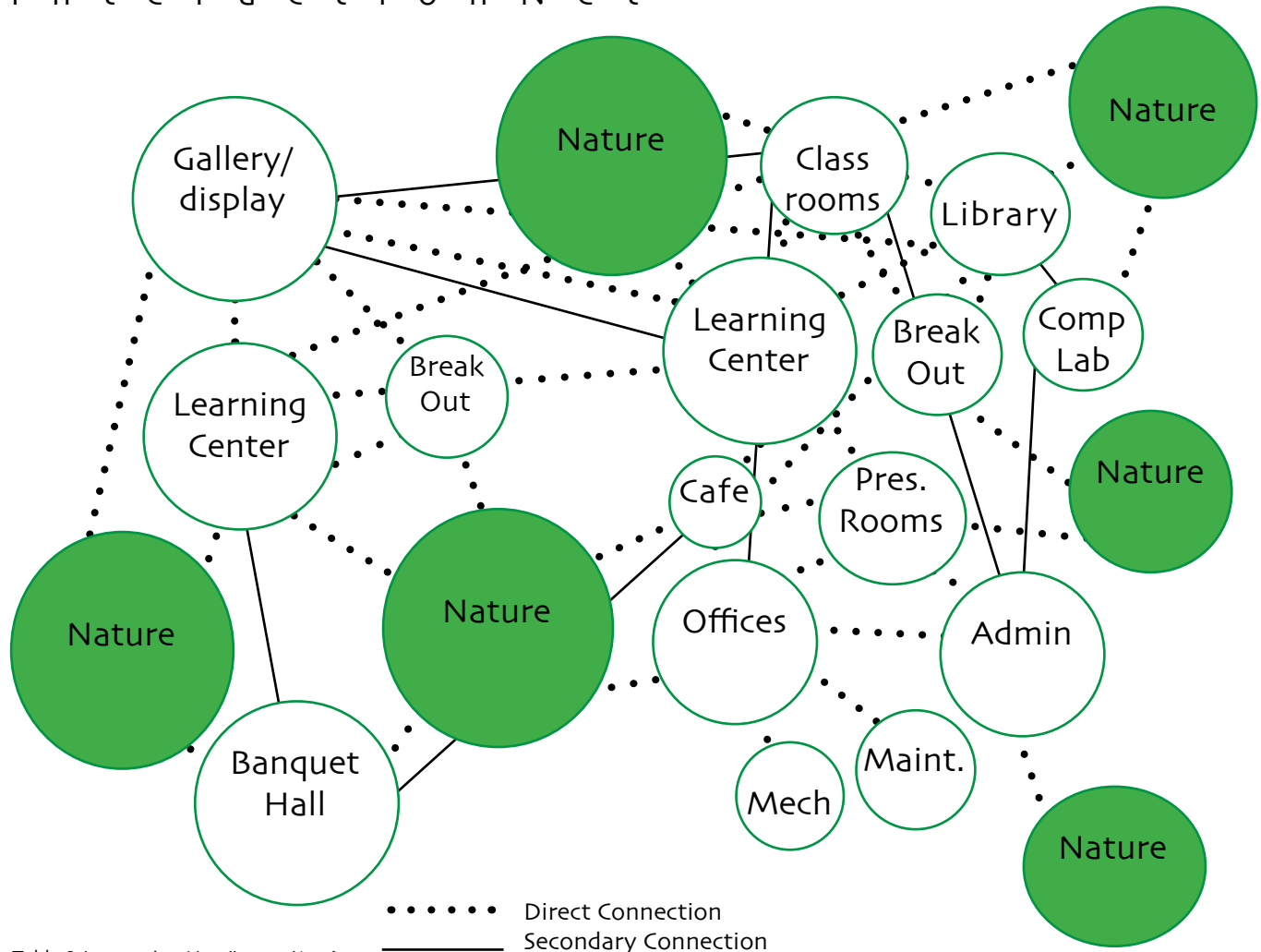
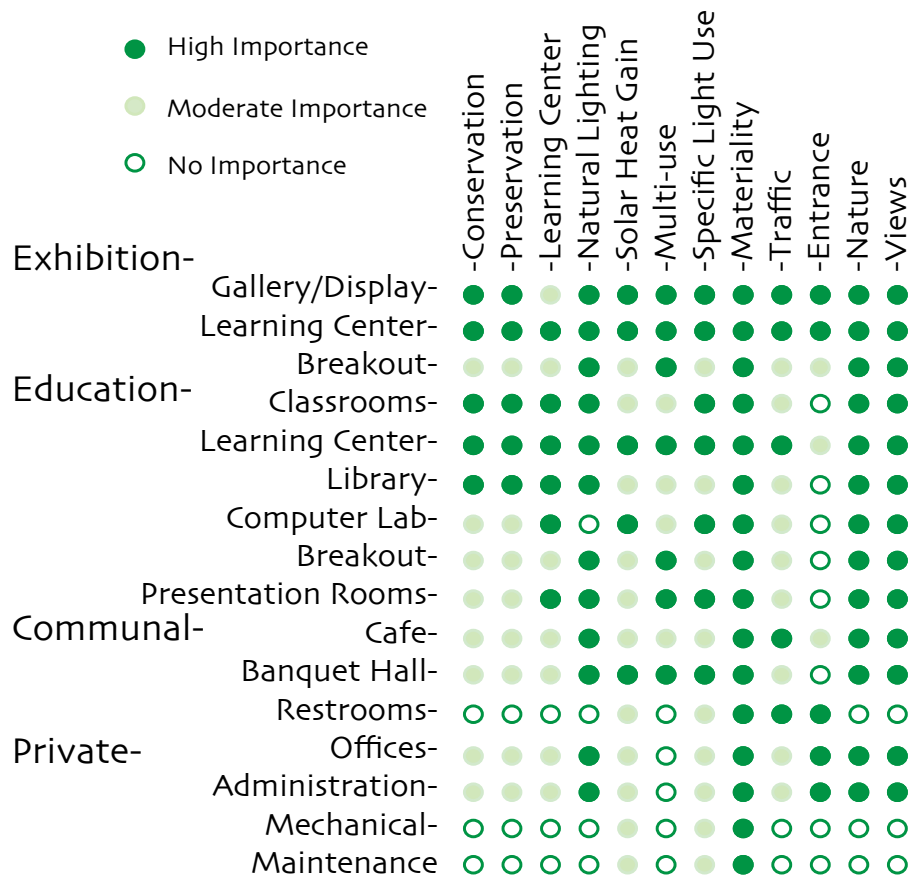


Table 8-Interaction Net (Logan Kern)

Building Program

Environmental Data



B u i l d i n g P r o g r a m

C o s t A n a l y s i s

Sustainable/Alternative Energy Strategies-

- Maximize Natural Day lighting
- Geothermal Well Field
- Wind Energy
- Rain Water Collection
- Gray Water Re-use
- Recycling
- Composting
- Photo voltaic Energy

Monetary Figures-

- Construction Cost
\$9.8 million (\$200/SF)
- Outfitting Exhibition Space
\$2.4 million (\$150/SF)
- Yearly Operating Cost
\$1.96 million (\$40/SF)
(will be lowered based upon
sustainable/alternative energy)
- Total Construction & First Year Cost
\$14.16 million

B u i l d i n g P r o g r a m

S u m m a r y

The design and spatial layout of the building are to provide the most natural day lighting and site views possible. Four core groupings will take place; Exhibition, education, communal and private. The exhibition, education and private cores core spatial will be interconnected through the communal spaces. The connection to nature and the site will be visible throughout the building.

The arrival to the site will be key. On the winding gravel road, the visitors will have a chance to break free from the daily grind of life and become in-tune with the natural surroundings. Upon arrival, I want the site to be the first thing that engages them; not the building. The entry walk will be filled with natural grasses and trees.

Upon entering the building, the first thing guests will experience is a light-filled, open space that is the arrival lobby. The building will flow freely from one space into the next, creating a sense of freedom for the visitors; allowing them to choose their path.

Natural materials and expansive views of the site will be experienced throughout the building. The building, as a whole, will be thought provoking. The visitors will get a sense of the pride, honor and tradition of the Anishinaabe culture and way of life.

The gallery/display spaces and the learning centers will be interactive. In a sense, the visitors will feel that they are a part of the building and not just in one.

The sustainable energy strategies and materials will be evident throughout the building.



Figure 52-South Rendering (Logan Kern)

D e s i g n S o l u t i o n

Process Documentation

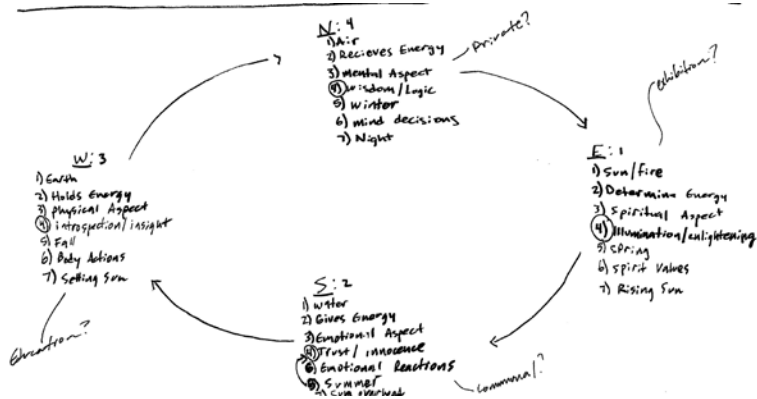


Figure 53- Medicine Wheel Study (Logan Kern)

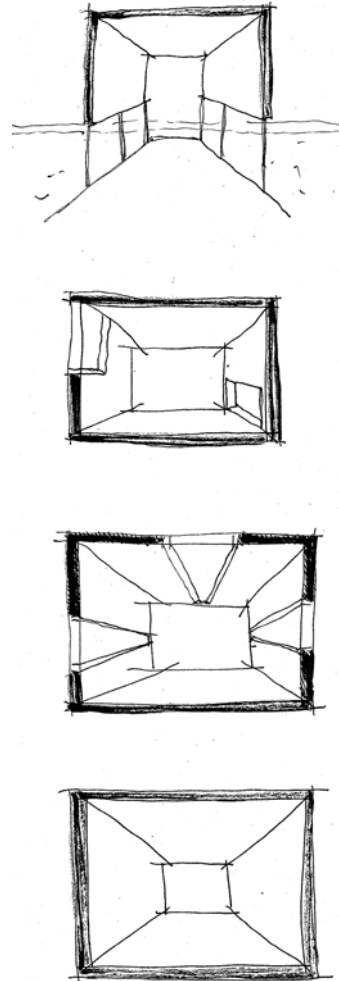


Figure 54- Light Studies (Logan Kern)

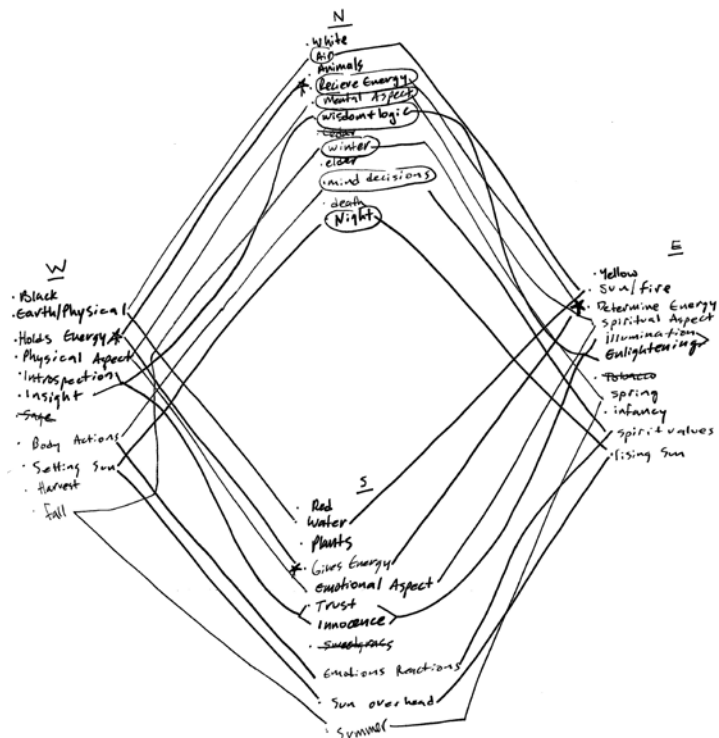


Figure 55- Medicine Wheel Connections (Logan Kern)

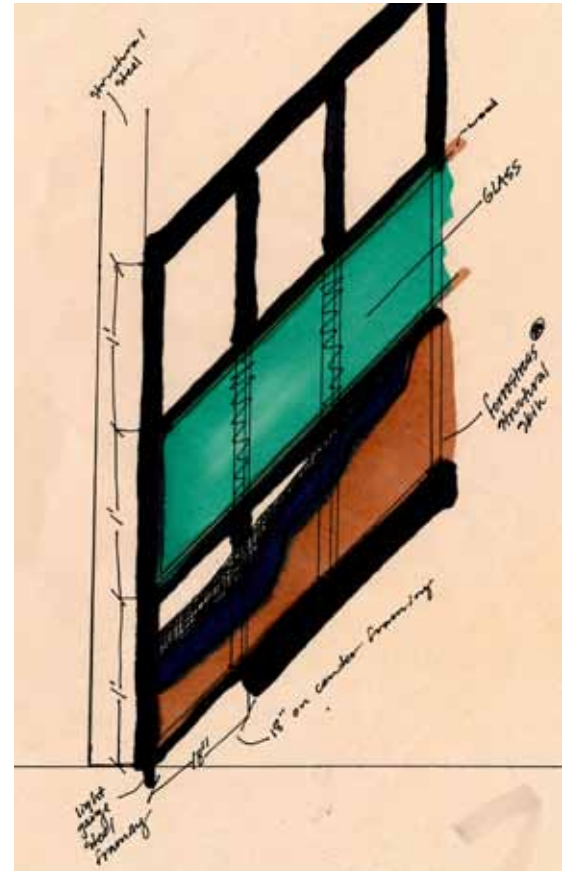


Figure 56- South Wall Construction (Logan Kern)

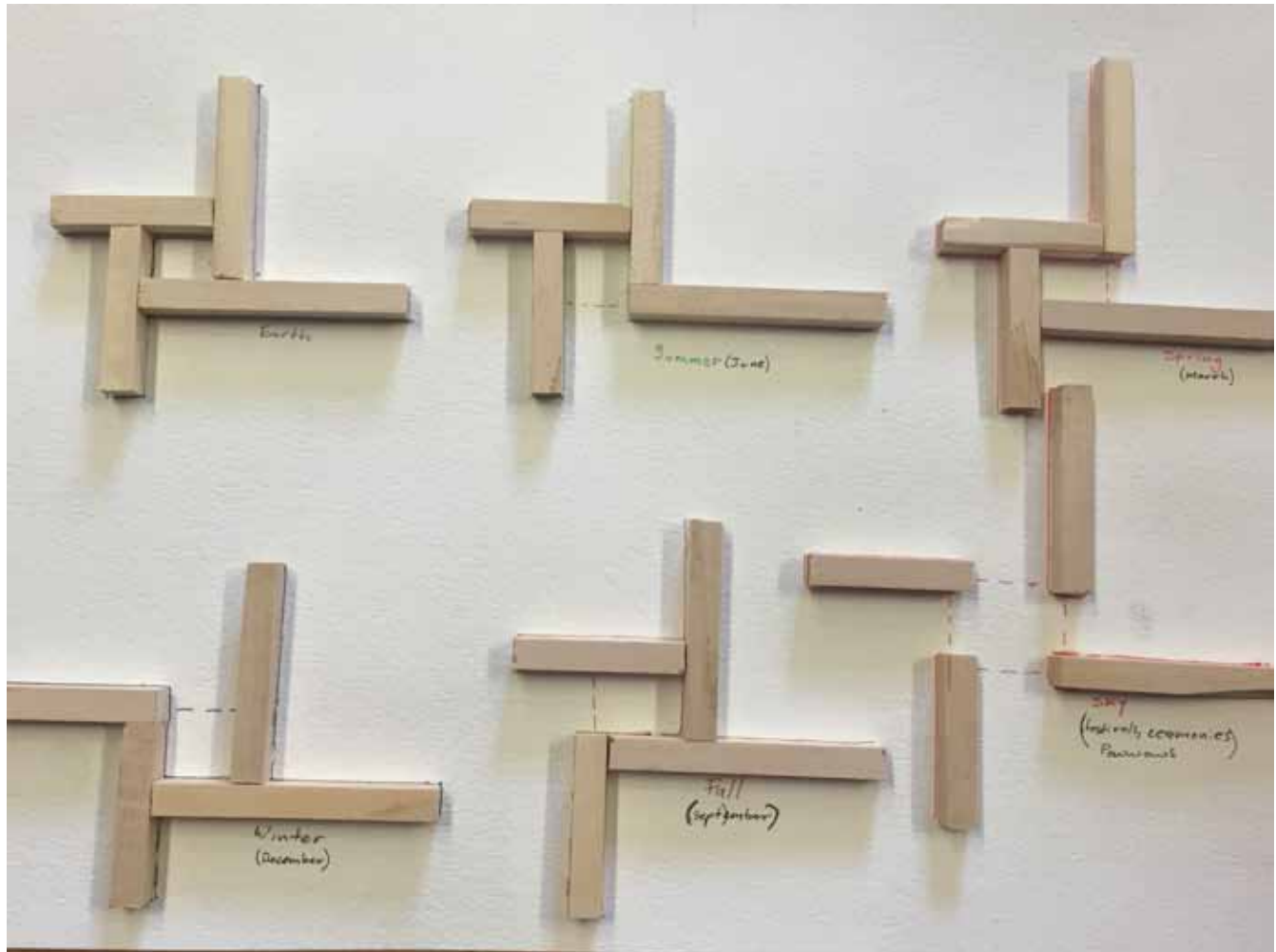


Figure 57- Early Orientation Study (Logan Kern)

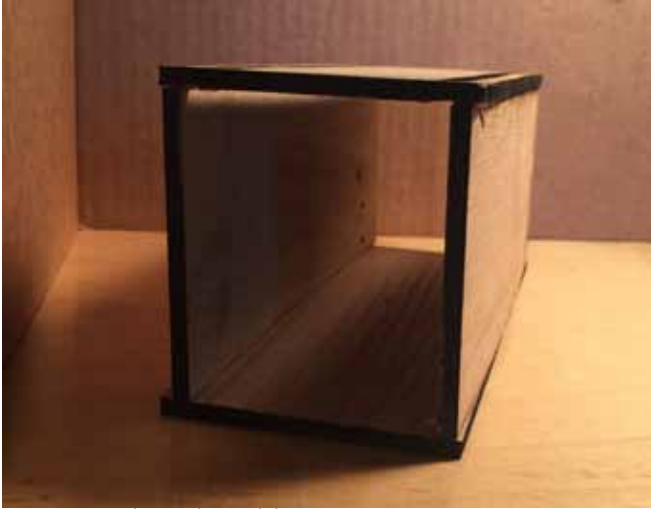


Figure 58- Light Study Model (Logan Kern)



Figure 59- Light Study Model (Logan Kern)



Figure 60- Light Study Model (Logan Kern)

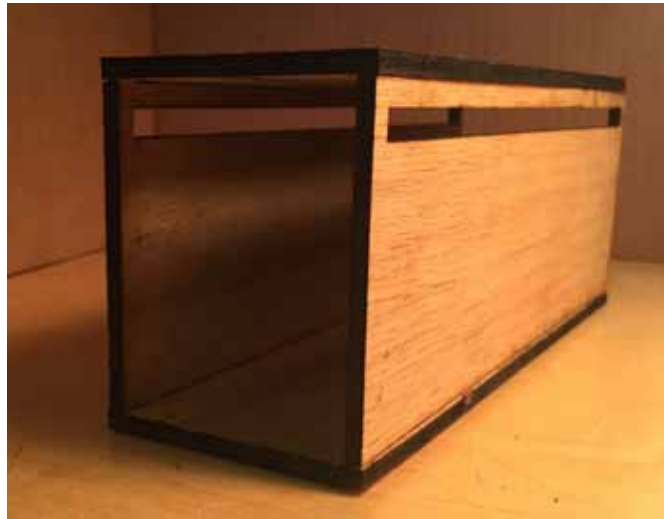


Figure 61- Light Study Model (Logan Kern)



Figure 62- Light Study Model (Logan Kern)

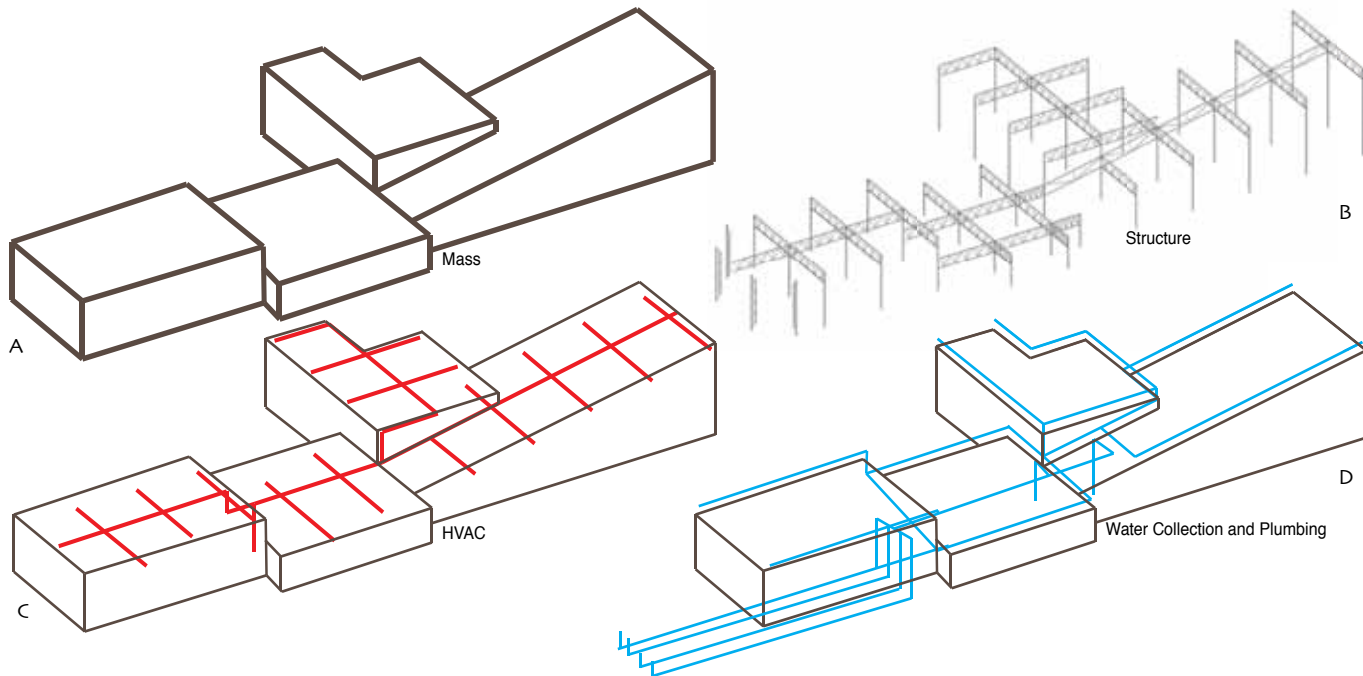


Figure 63- Light Study Model (Logan Kern)



Figure 64- Light Study Model (Logan Kern)

ProjectSolutionDocumentation



- A) Figure 65- Mass Model (Logan Kern)
B) Figure 66- Structure Model (Logan Kern)
C) Figure 67- HVAC Model (Logan Kern)
D) Figure 68- Water Collection and Plumbing (Logan Kern)

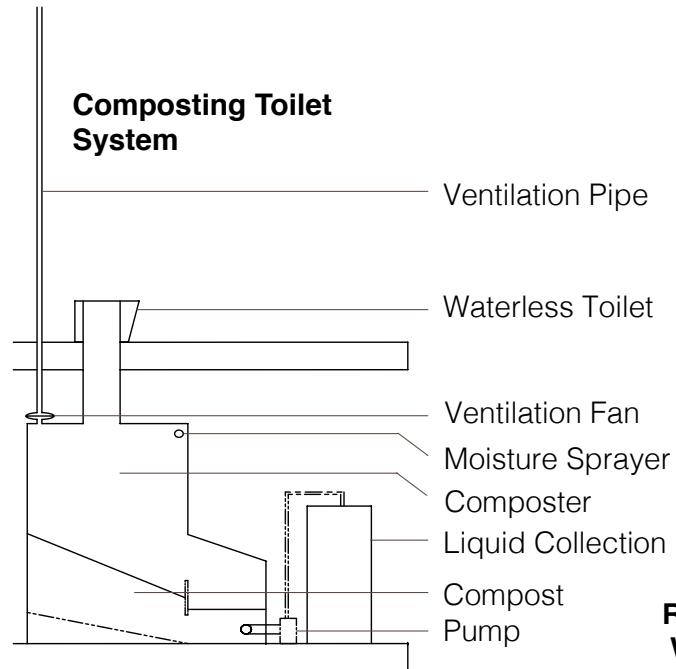


Figure 69- Composting Toilet System (Logan Kern)

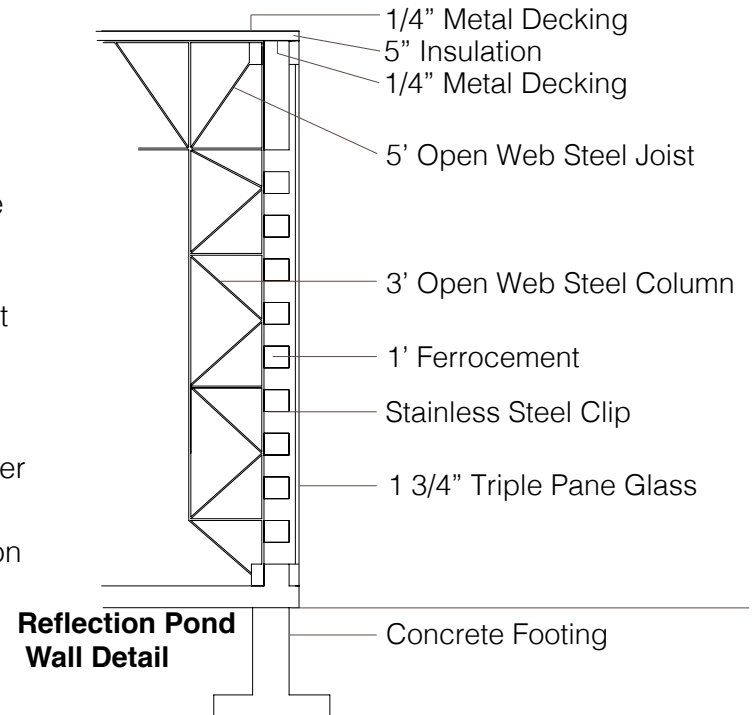


Figure 70- South Wall Detail (Logan Kern)

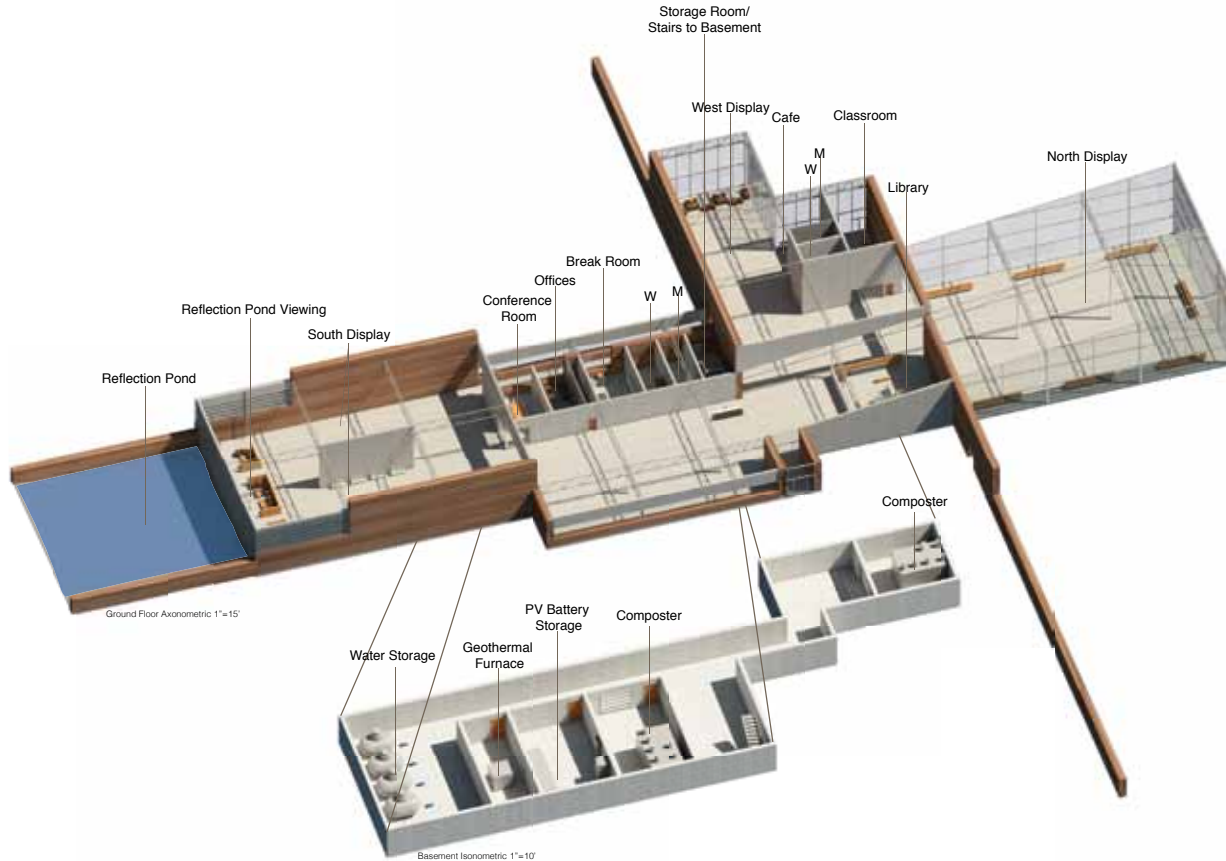


Figure 71- Axonometric Floor Plan (Logan Kern)

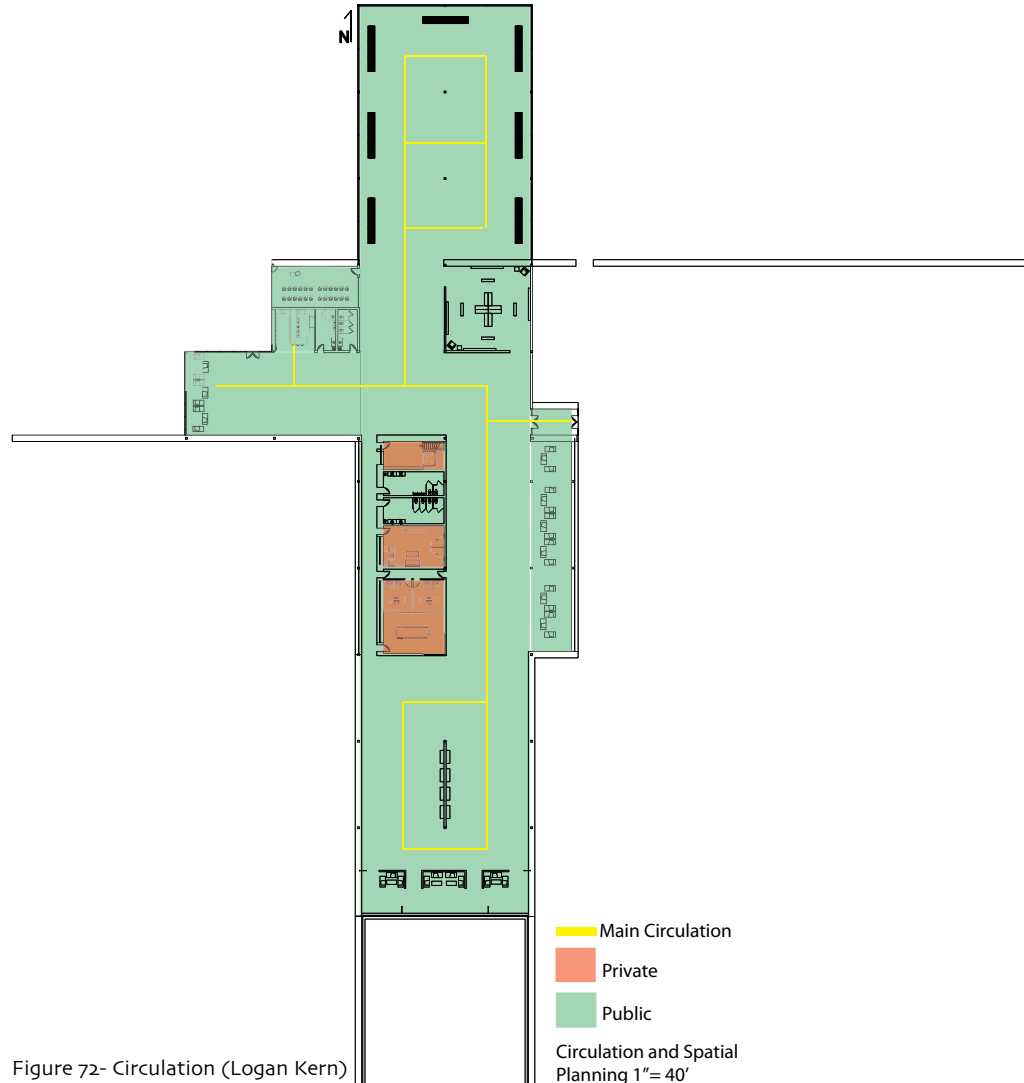


Figure 72- Circulation (Logan Kern)

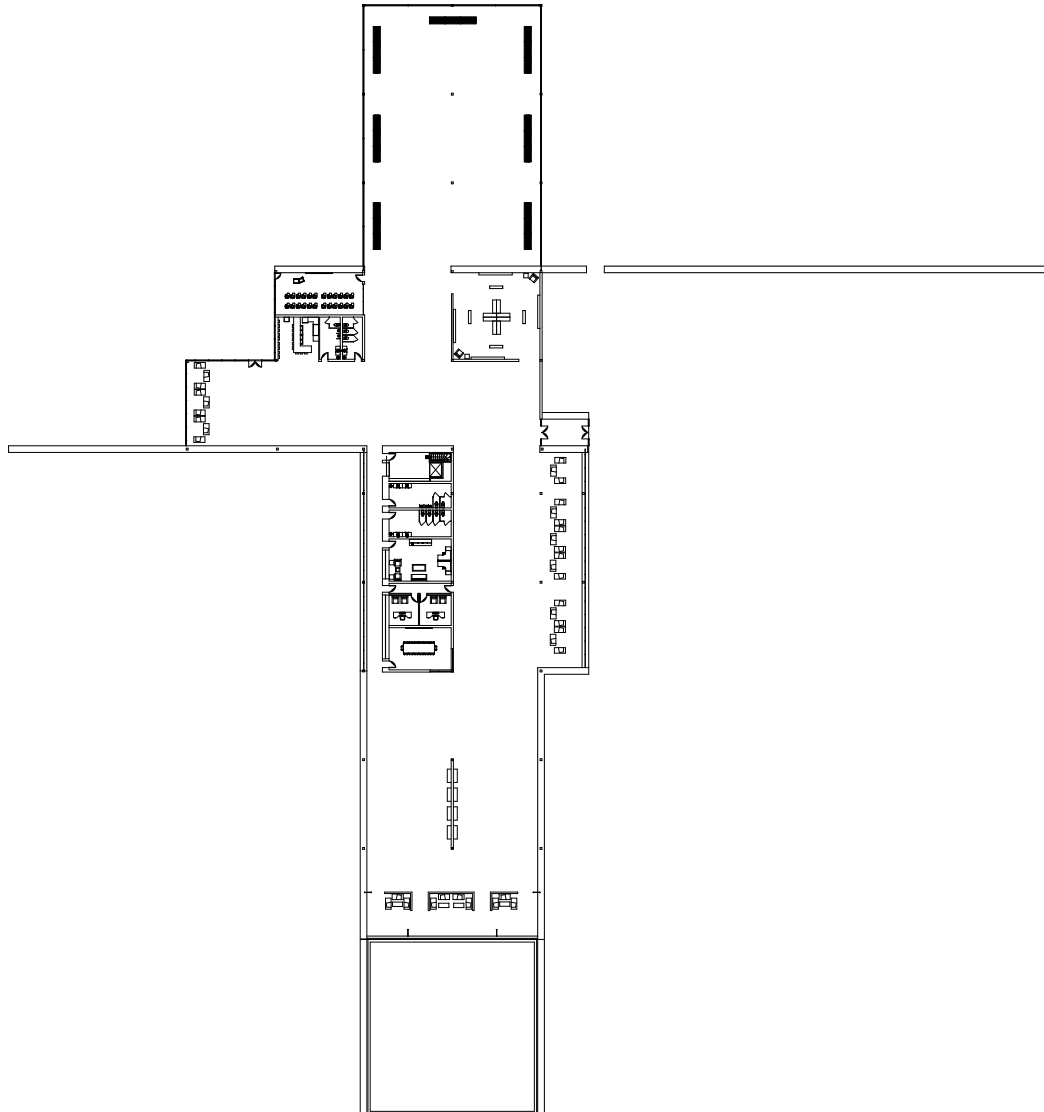


Figure 73- Main Floor Plan (Logan Kern)

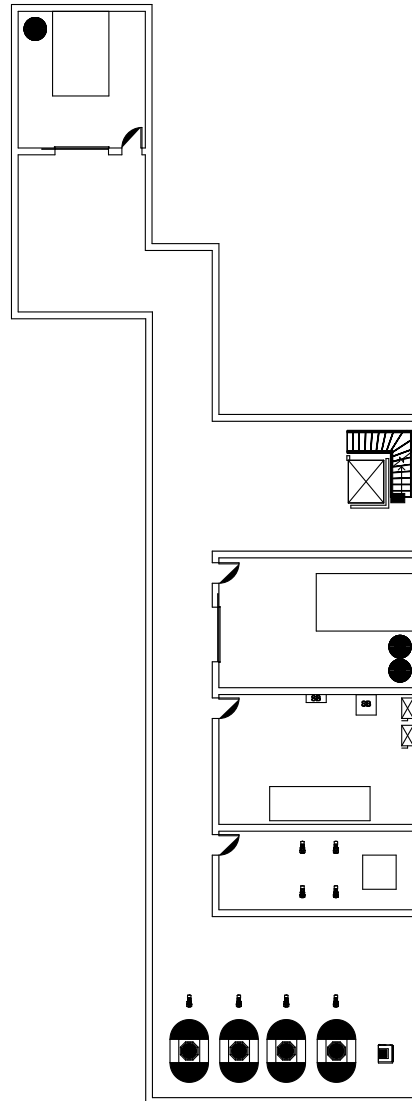


Figure 74- Basement Floor Plan (Logan Kern)



Figure 75- Longitudinal Section (Logan Kern)

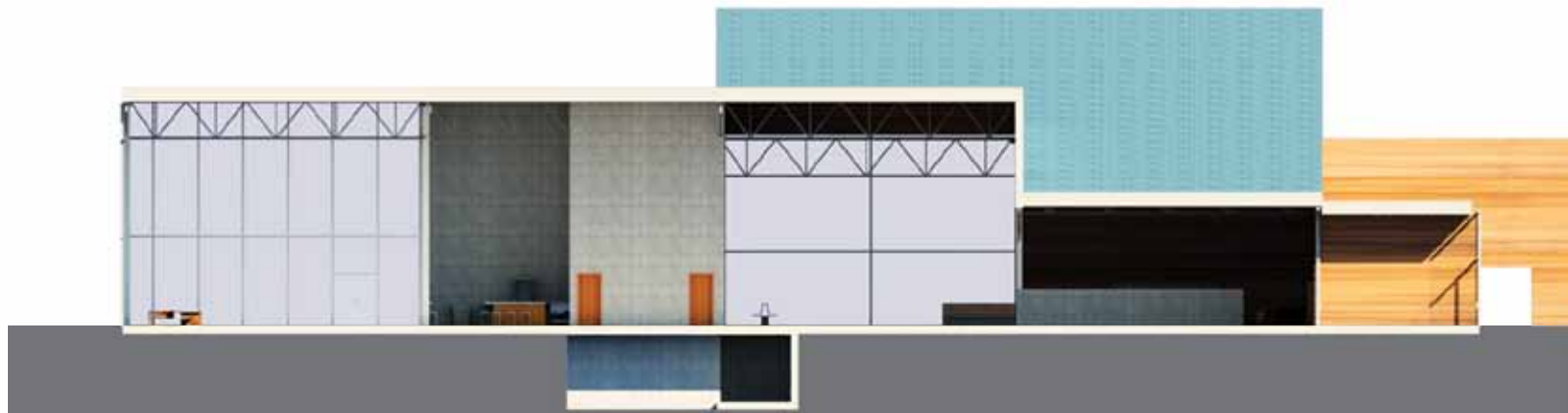


Figure 76- Transverse Section (Logan Kern)



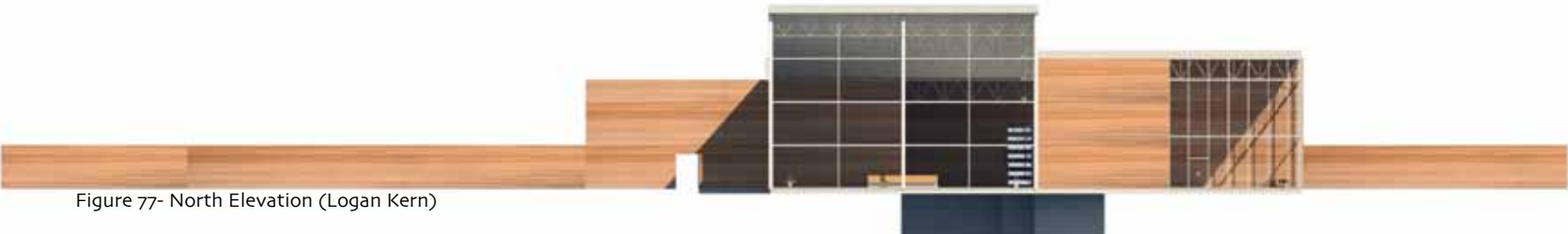


Figure 77- North Elevation (Logan Kern)



Figure 78- West Elevation (Logan Kern)



Figure 79- South Elevation (Logan Kern)



Figure 80- East Elevation (Logan Kern)

Sustainable Solutions

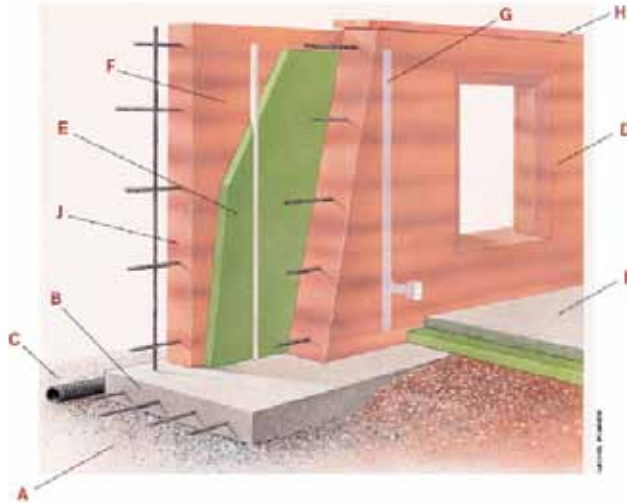


Figure 81- SIREWALL www.sirewall.com

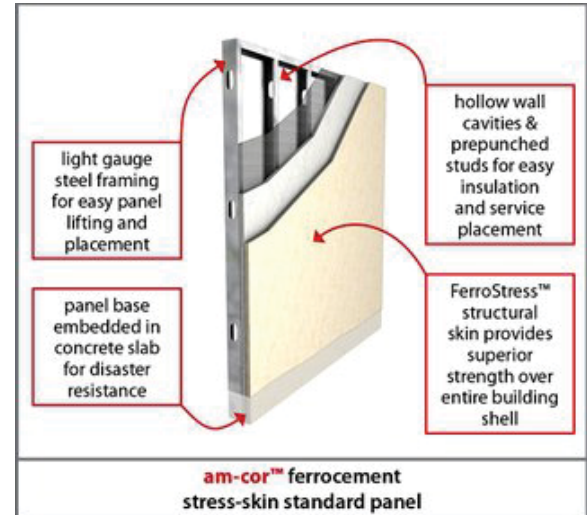


Figure 82- Am-Cor Ferrocement www.am-cor.com

SIREWALL Building System

- Stabilized Insulated Rammed Earth
- R-value of R33
- Thermal mass stores energy for 24-48 hours
- 13.5 times the insulation value of concrete at the same thickness

Am-Cor Ferrocement

- 40-60% smaller carbon footprint than concrete of same size
- 1/8 the amount of cement used
- outer shell made from 100% recycled materials



Figure 82- Clivus Multrum Composting System www.clivusmultrum.com

Clivus Multrum Compost System

- No water use
- Low energy use
- End product used as fertilizer
- Saves 10 gallons of water per person per day

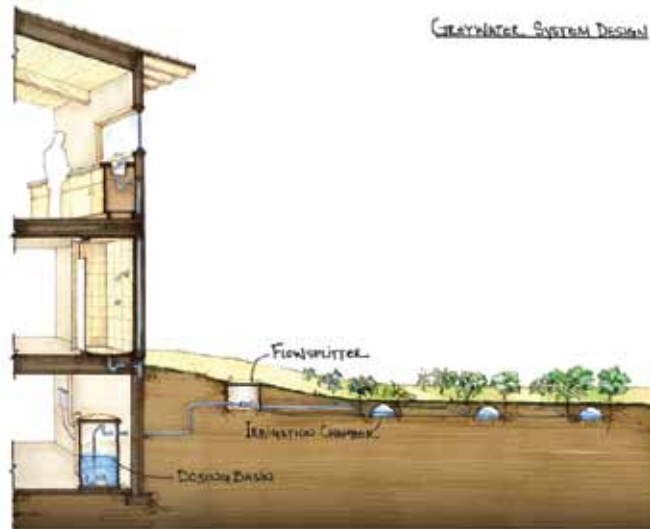


Figure 83- Integrated Graywater System www.clivusmultrum.com

Integrated Graywater System

- Used in conjunction with the composting system
- Rain water collection system
- Used for urinals, sinks and irrigation

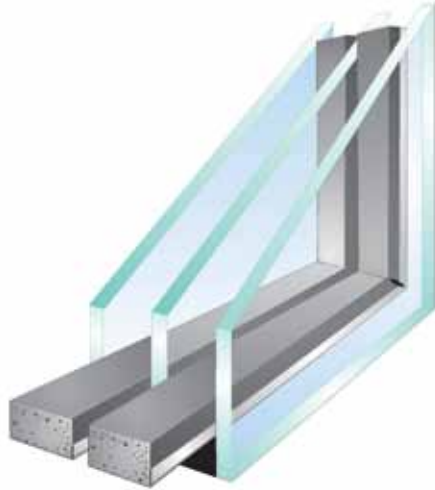


Figure 84- Fibertec Triple Pane Glass www.fibertec.com

Fibertec Low-E Triple Pane Glass

- Lower U-Value than double pane glass
- High Durability
- Great in climates with varying weather



Figure 85- Dow PowerHouse Solar Shingles www.dowpowerhouse.com

Dow PowerHouse Solar Shingles

- Pays for self over time
- 12 watts generated per square foot
- Creates 100% sustainable energy

Response To The Site



Figure 86- Site Section (Logan Kern)



Figure 87- Early Site Model (Logan Kern)



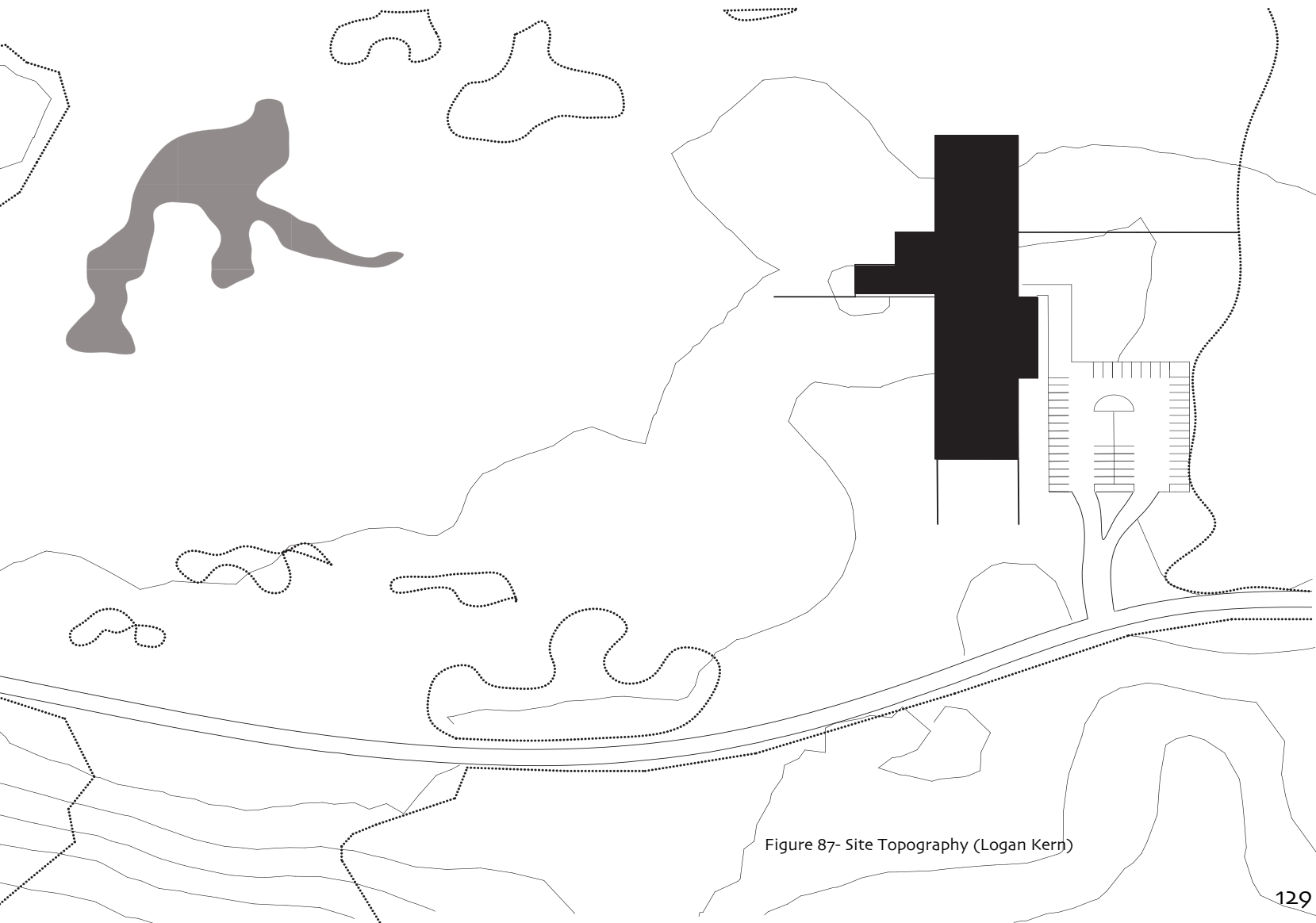


Figure 87- Site Topography (Logan Kern)

R e n d e r i n g s



Figure 88- Arrival Waiting Space (Logan Kern)



Figure 89- Office Hallway (Logan Kern)



Figure 90- Connection Detail (Logan Kern)



Figure 91- North Rendering (Logan Kern)



Figure 92- Reflection Pond Seating Area (Logan Kern)



Figure 93- Arrival View (Logan Kern)



Figure 94-South Rendering (Logan Kern)



Figure 95-North Display (Logan Kern)

Digital Presentation

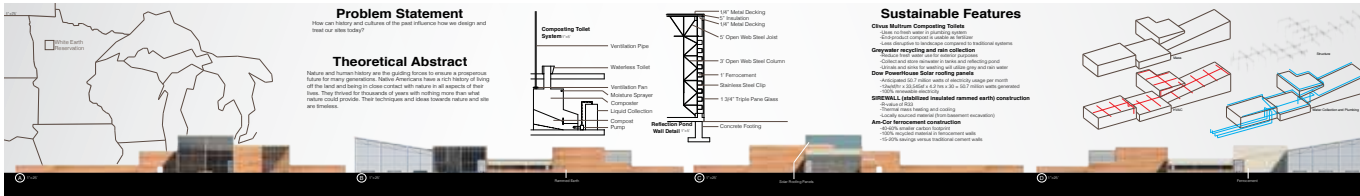


Figure 96-Final Presentation Boards (Logan Kern)

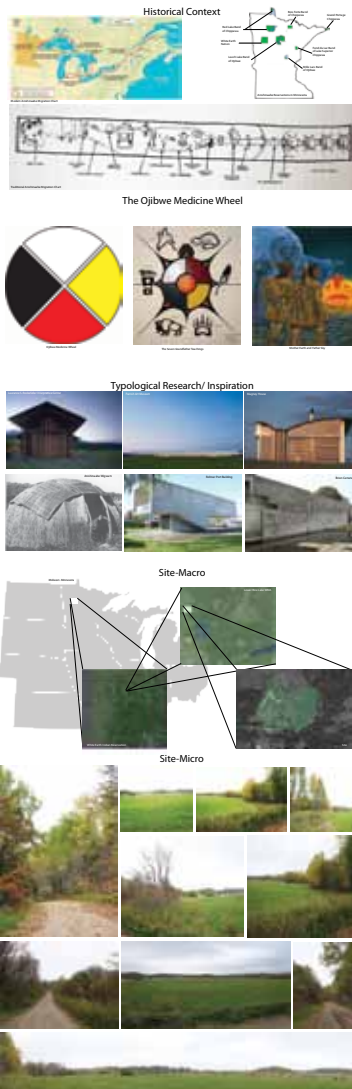


Figure 98-Final Presentation Boards (Logan Kern)

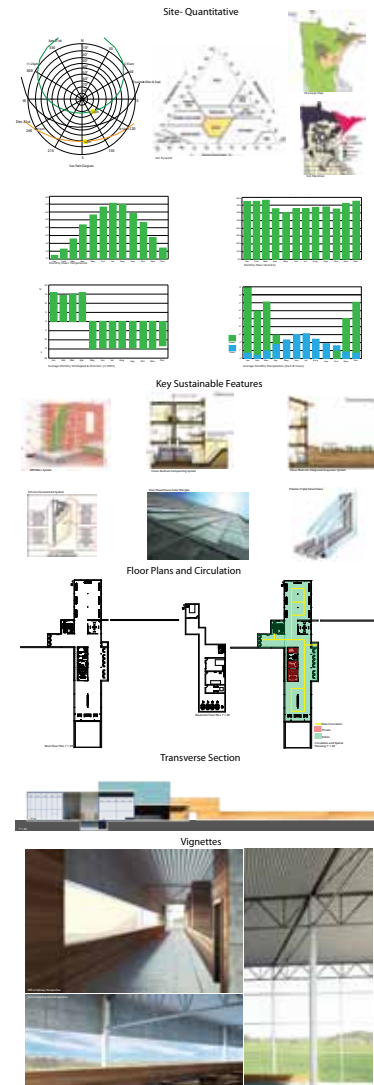


Figure 99-Final Presentation Boards (Logan Kern)

I n s t a l l a t i o n



Figure 100-Final Installation (Logan Kern)

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Previous Studio Experience

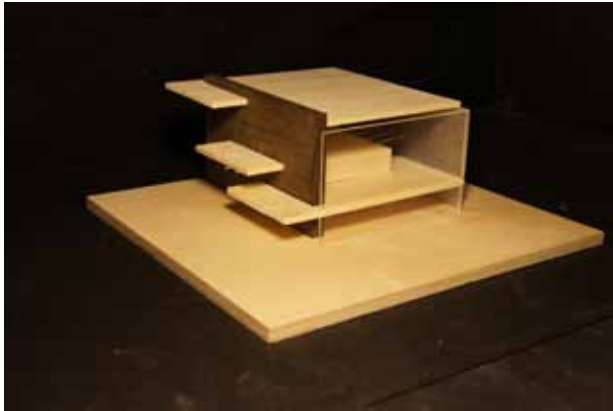


Figure 101- 2nd Year Music Hall



Figure 102- 4th Year Williston Urban Renewal



Figure 103- 3rd Year Urban Infill Loft



Figure 104- 2nd Year Home for Twins



Figure 105- 5th Year Wetlands Lab



Figure 106- 5th Year Wetlands Lab

2 n d Y e a r

Fall, 2011: Joan Vorderbruggen
-Tea House / Boat House

Spring, 2012: Stephen Wischer
-Home for Twins / Music Hall

3 r d Y e a r

Spring, 2012: Frank Kratke
-Faith United Methodist Church Remodel

Fall, 2013: Milt Yeargens
-Oil Museum / Urban Infill Loft

4 t h Y e a r

Fall, 2013: Don Faulkner
- H i g h r i s e

Fall, 2014: Don Faulkner
-Williston Urban Renewal Project

5 t h Y e a r

Spring, 2014: Mark Barnhouse
-Wetlands Research Facility

Personal Information

A d d r e s s -
1012 9th Street South
M o o r h e a d , M i n n e s o t a
5 6 5 6 0

P h o n e N u m b e r -
2 1 8 - 7 7 9 - 3 0 2 2

E m a i l A d d r e s s -
l o g a n . k e r n @ n d s u . e d u
l o g a n . k e r n 8 9 @ g m a i l . c o m

H o m e t o w n -
E a s t G r a n d F o r k s , M i n n e s o t a



Figure 107- Me (Nolan Kern)