

Water; the spirit of life
Ward Briggs






water; the spirit of life

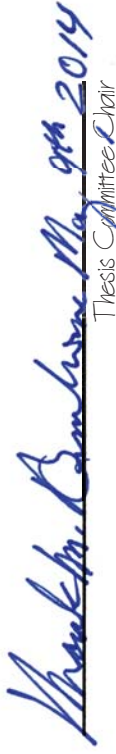
A Design Thesis Submitted to the
Department of Architecture and Landscape Architecture
of North Dakota State University

By

Ward Briggs

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


Mark M. Bamber, May 9th 2014
Primary Thesis Advisor


Mark M. Bamber, May 9th 2014
Thesis Committee Chair

May, 2014

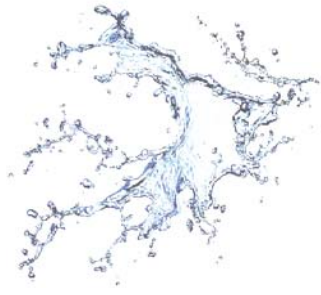
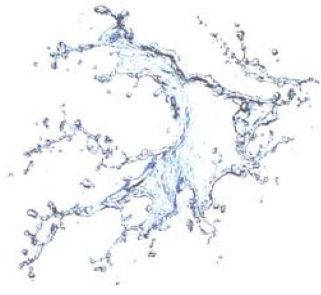
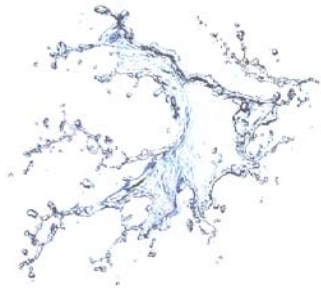


table of contents

4-5	table of contents
6-7	list of tables & figures
9	thesis abstract
11	problem statement
13-15	statement of intent
17-29	proposal
18-19	narrative
20	user/client description
21	major project elements
22-23	site information
24	project emphasis
25	plan for proceeding
26-27	thesis schedule
28-29	previous studio experience
31-83	program
32-39	unifying idea research
40-41	unifying idea research summary

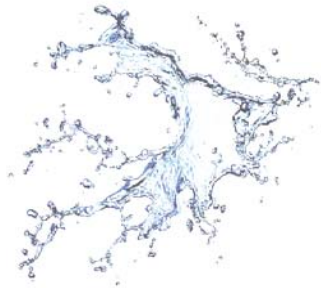


43-60	case studies
44-48	naked stables private reserve case study
50-54	park hotel hyderabad case study
56-60	hotel endemico case study
62-63	typological research summary
64-69	historical context for thesis typology
70-71	the goals for this thesis project
72-73	site analysis - qualitative
74-75	site analysis - quantitative
76-80	climate diagrams
82	space matrix
83	interaction net
85-90	final design process
93-106	final design solution
107	final thesis exhibit
108	references
109	personal identification

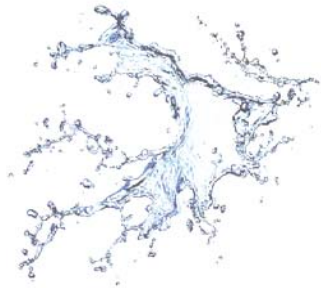


list of tables and figures

Table/Figure #	Description	Author
Figure 11	Personal Identification Picture	Ward Briggs
Figure 21	Regional Map - Site Information	Ward Briggs
Figure 22	City Map - Site Information	Ward Briggs
Figure 2.3	Close-Up Map - Site Information	Ward Briggs
Figure 31	Thesis Schedule Graphic	Ward Briggs
Figure 41	Naked Stables Circulation	Ward Briggs
Figure 42	Naked Stables Plan to Section	Ward Briggs
Figure 4.3	Naked Stables Structure	Ward Briggs
Figure 4-4	Naked Stables Natural Light	Ward Briggs
Figure 51	Park Hotel Massing	Ward Briggs
Figure 52	Park Hotel Plan to Section	Ward Briggs
Figure 5.3	Park Hotel Hierarchy	Ward Briggs
Figure 54	Park Hotel Geometry	Ward Briggs
Figure 5.5	Park Hotel Natural Light	Ward Briggs
Figure 61	Hotel Endemico Plan to Section	Ward Briggs
Figure 62	Hotel Endemico Massing	Ward Briggs
Figure 6.3	Hotel Endemico Circulation	Ward Briggs
Figure 71	Climate Diagram - Cloud Cover	Ward Briggs
Figure 72	Climate Diagram - Humidity	Ward Briggs
Figure 7.3	Climate Diagram - Noise	Ward Briggs
Figure 7.4	Climate Diagram - Precipitation	Ward Briggs
Figure 7.5	Climate Diagram - Daily Sun Hours	Ward Briggs
Figure 7.6	Climate Diagram - Temperature	Ward Briggs
Figure 7.7	Climate Diagram - Air Movement	Ward Briggs
Figure 7.8	Climate Diagram - Wind Direction	Ward Briggs
Figure 7.9	Climate Diagram - Wind Speed	Ward Briggs
Figure 81	Space Matrix	Ward Briggs
Figure 82	Interaction Net	Ward Briggs



<u>Table/Figure #</u>	<u>Description</u>	<u>Author</u>
Figure 9.1	Final Design Proc. - Views Study Model	Ward Briggs
Figure 9.2	Final Design Proc. - Solar/Wind Study Model	Ward Briggs
Figure 9.3	Final Design Proc. - Building Layout Exploration	Ward Briggs
Figure 9.4	Final Design Proc. - Building Form Exploration	Ward Briggs
Figure 9.5	Final Design Proc. - Typical Hotel Units	Ward Briggs
Figure 9.6	Final Design Proc. - Dining & Kitchen	Ward Briggs
Figure 9.7	Final Design Proc. - Preliminary Floor Plan	Ward Briggs
Figure 9.8	Final Design Proc. - Preliminary Floor Plan	Ward Briggs
Figure 10.1	Final Design Sol. - Site Plan	Ward Briggs
Figure 10.2	Final Design Sol. - 3 Main Floor Plans	Ward Briggs
Figure 10.3	Final Design Sol. - Main Floor Plan	Ward Briggs
Figure 10.4	Final Design Sol. - Lower Floor Plan	Ward Briggs
Figure 10.5	Final Design Sol. - Upper Floor Plan	Ward Briggs
Figure 10.6	Final Design Sol. - Transverse Sec. Persp.	Ward Briggs
Figure 10.7	Final Design Sol. - Longitudinal Sec. Persp.	Ward Briggs
Figure 10.8	Final Design Sol. - Structure	Ward Briggs
Figure 10.9	Final Design Sol. - Fill Wall Detail	Ward Briggs
Figure 10.10	Final Design Sol. - Parapet Detail	Ward Briggs
Figure 10.11	Final Design Sol. - Floor Slab Detail	Ward Briggs
Figure 10.12	Final Design Sol. - Peaked Glass Roof Detail	Ward Briggs
Figure 10.13	Final Design Sol. - Gutter Detail	Ward Briggs
Figure 10.14	Final Design Sol. - Rendering	Ward Briggs
Figure 10.15	Final Design Sol. - Rendering	Ward Briggs
Figure 10.16	Final Design Sol. - Rendering	Ward Briggs
Figure 10.17	Final Design Sol. - Isolated Cabin Plan	Ward Briggs
Figure 10.18	Final Design Sol. - Isolated Cabin Sec. Persp.	Ward Briggs
Figure 10.19	Final Thesis Exhibit	Ward Briggs

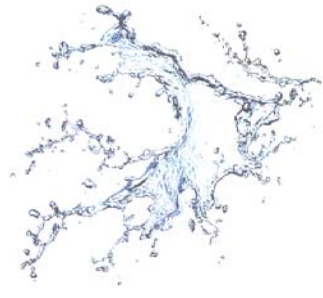




thesis abstract

This thesis will investigate the correct balance between water and architecture that creates a serene environment for the public. Water is seen in today's day and age as a raw material that we humans always have at our fingertips. With the rising population of our country, water is becoming more and more scarce, and it is only a matter of time until our societal norms will need to be reformed to accommodate for the lack of water on our planet. This thesis will show visitors the true beauty of water and its physical characteristics with the purpose of making visitors realize how important water truly is to our health, happiness and survival. The typology used for this thesis is a complex of condos situated on Tall Lake. The project justification is that water is an extremely underrated raw material in today's world that does more than just serve as a necessary resource.

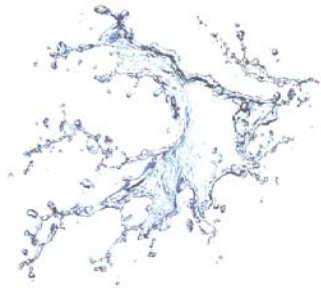
Keywords: water, resource, physical characteristics, Tall Lake, complex of condos, underrated, serene environment





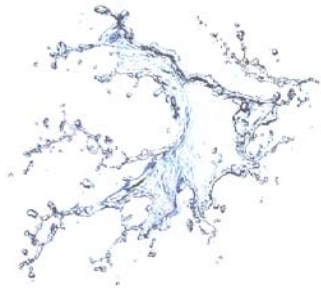
problem statement

What is the balance between water and architecture that creates a serene environment for the public?





statement of intent



problem statement

THE PROJECT TYPOLOGY

Lake Condo Resort

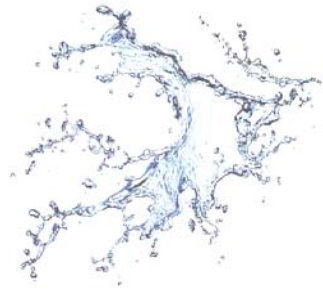
THEORETICAL PREMISE/UNIFYING IDEA

CLAIM: Architecture is a tool that can be used to express both the physical characteristics and beauty of water and its overlooked importance in many different aspects of human lives.

ACTORS: Architecture is a beautiful tool for expression because anyone can view it at any given time. Residents around Fall Lake, tourists to the Lake Condo Resort, and simply just people passing by will all be able to understand water in new ways because of this facility.

ACTION: Learning to understand the physical characteristics of water that make it beautiful will prove to be very advantageous to today's world. People need a new outlook on water and what it can do to their happiness, health and mood.

OBJECT: "If you gave me several million years, there would be nothing that did not grow in beauty if it were surrounded by water" (Jan Erik Vold). Water is the most beautiful, useful raw material on the planet; the visitors and residents at the Lake Condo Resort will learn to understand that.



PROJECT JUSTIFICATION

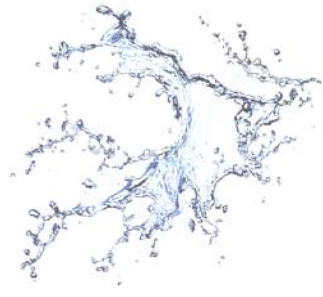
In the last one hundred years the concern for water availability in the future has drastically risen due to the way we have previously and presently been treating our water. The need for clean, potable water will only get greater during the next century. If people had a better understanding of how important, beautiful and serene water can be, they will start realizing the importance of water in our lives and will therefore contribute energy to the water conservation plans.

UNIFYING IDEA

Understanding the beauty, importance and impacts that water has on our lives will greatly benefit the water conservation efforts in the future.

SITE INFORMATION

Fall Lake, Ely, MN





proposal

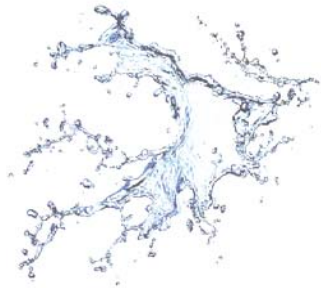


narrative

Water is an under-rated raw material in today's day-and-age. We worry intensively about the conservation of it and other raw materials, but we don't seem to put much emphasis on water, a natural material that is at everyone's fingertips at the touch of a button. We need water every single day of our lives, but we act as if it will always be there, no matter what decisions we make with it.

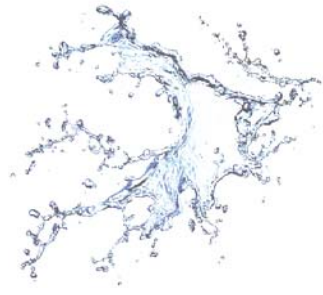
I have grown up around water my whole life. When I was a little boy, I used to go to Pelican Lake and Lake Eunice, both in Minnesota and both about an hour away from Fargo. At both of these lakes, residents used the lake for many different uses such as swimming, canoeing, paddle boating, irrigation, or cooling experience during the hot summer days and also water sports of all kinds. The lake has been used in this manner for quite some time and it is still in prime condition. Through the years, the residents of these lakes have changed their types of activities with very slight differences such as the types of boats they use and the sheer amount of people on the lake; yet the water still stays clean and just as useful and safe for the next generation.

I have found this lake and many other lakes in the area as a safe-haven from the life in the city. When you live around these lakes, water is seen as such a special addition to our lives, not just a raw material there for our needs. We lake residents choose to swim in the lake versus showering inside the cabin; we pump water from the lake for lawn irrigation instead of pumping from the well; we sit on a deck over the water and enjoy the sight of the sun's beams striking and reflecting off the water as it dips below the horizon. On a hot day, we swim to cool off and it seems as though the water has the ability to always be the correct temperature. There are a lot of people who haven't experienced water in such a way and I believe that if more people had the chance to experience water in a different environment like this, their outlook on water would change dramatically.



Certain areas in the world are still great examples of water conservation and preservation. Fall Lake, in Ely, MN, is a prime example of this. Ely, MN is a small town of about 3,500 people. It is located about 100 miles north of Duluth, MN, right next to the border of the Boundary Waters; half of Fall Lake is actually located within the Boundary Water's limits. This lake is a prime example of how water should be treated by all people. We use the water of Fall Lake in so many different ways, but the key is that we leave the water the same way it originally was: CLEAN

Because of the resort on Fall Lake, people would have the opportunity to visit the serene landscape of Fall Lake and experience water in this unique way just like the residents of Pelican Lake and Lake Umbagog. The guests at this resort would stay right on the lake, and during their stay, would learn to understand how great water truly is. This would also make them realize that water is one of those raw materials that we can't live without and we must focus now on conservation and preservation.



user/client description

Only three main groups will interact with each other at the facility: the owner, the guests and the workers.

OWNER:

Local private investor interested in tourism and water conservation and preservation.

GUESTS:

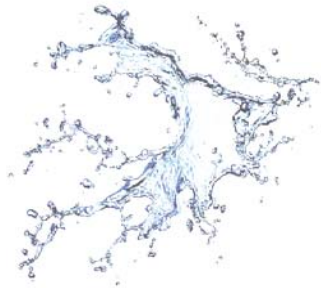
Many people from all over the world will be visiting this facility; locals looking for a quick getaway, tourists from across the country/world, and researchers/scientists looking into water conservation inspiration.

WORKERS:

Local residents around the area looking for an occupation dealing in the tourism industry.

IMPORTANT TO NOTE

- There will be a peak usage at this facility during the summer months; therefore, part-time additional employment may be necessary at that time.
- There will be no physical restrictions for employees and guests
- Guests will be required to follow the Fall Lake rules and regulations set forth by the Boundary Waters Association.



major project elements

HOTEL

The hotel will accommodate for any given amount of time determined by the guests. The hotel will be connected to the restaurant and bar for easy and convenient access for the guests at that time.

RESTAURANT & BAR

The Restaurant/Bar will serve the local residents of the area along with the guests at the resort. The restaurant/bar will contain:

- Chefs Kitchen
- Dining Area
- Lounge Area (outside/inside)

ACTIVITIES/FACILITY MANAGEMENT

With all the different activities that water can be used for, a building is necessary in order to house equipment and the necessary workers to organize all the guests and their specified activities for that day. This building will contain:



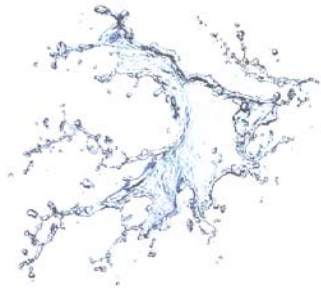
site information



Figure 21 - Ward Diggs



Figure 22 - Ward Diggs



REGION IN THE US

The site is located in the northeast corner of Minnesota, not far from the border of Canada. This area of Minnesota is known for its camping commodities and its protected waterways.

Fall Lake & Ely, MN

Fall Lake is located right by Ely, MN. In this area of landscape, there are many lakes all over the area and the land is lush with trees and vegetation of all sorts. Half of Fall Lake is located within the limits of the Boundary Waters, a protected national park.

Specific Site - Fall Lake Resort

The specific site for this thesis project is located on the north side of Fall Lake. It is not within the limits of the Boundary Waters due to building regulations in that area. The site is on a peninsula-like beach where the winds come crashing in from the south, but the west-most beach is calm water in a bay filled with animal and plant life.

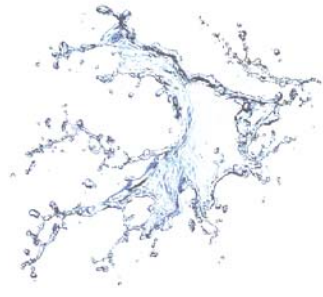
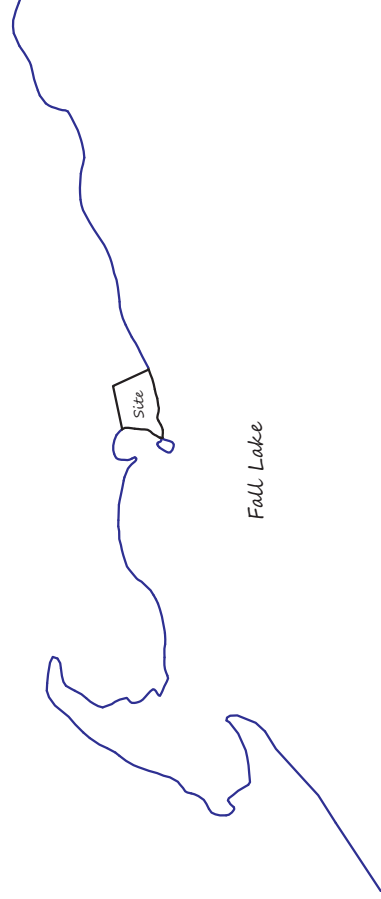
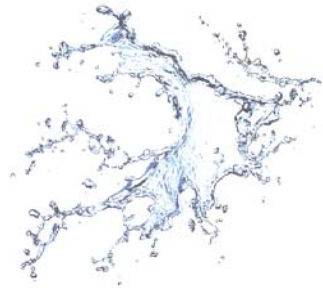


Figure 2.3 - Wind Driggs

project emphasis

This project will focus on the interaction of water and architecture that creates a unique environment emphasizing the beauty of water. The architecture itself will display water in a unique way; along with the architecture stimulating the water of the landscape in a way that encourages people's interaction with it.



plan for proceeding

RESEARCH DIRECTION

Research for this thesis project will be conducted from start to finish. It will be conducted in mainly five areas which are:

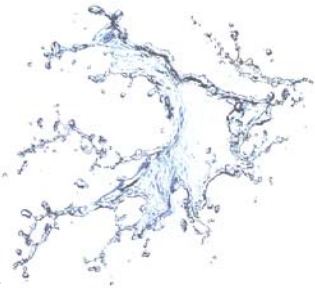
- Theoretical Premises/Unifying Idea
- Project Typology
- Historical Context
 - Site Analysis
- Programmatic Requirements

DESIGN METHODOLOGY

The design methodology for this thesis will be following a mixed method approach including quantitative and qualitative research. This research will be conducted using a transformative strategy which will be guided by the Theoretical Premises/Unifying Idea stated previously. Analyzing, interpreting, and reporting of results will occur throughout the entire research process and will be represented through the use of text and graphics.

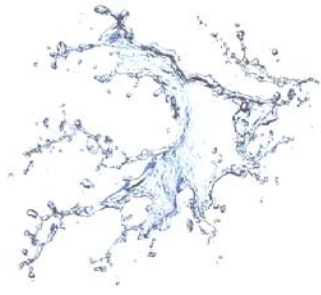
DESIGN PROCESS DOCUMENTATION

Documentation of the design process will occur throughout the entire research and design portion. All digital files will be saved in a folder with chronological organization for later review; and all physical drawings and models will be documented through photos and scanning of images and saved in the same folder.



thesis schedule

<u>Task</u>	<u>Days</u>	<u>Date Ranges</u>
Project Documentation	189	8/27/13 - 5/16/14
Conceptual Analysis	9	1/4 - 1/24
Spatial Analysis	12	1/16 - 1/31
Context Analysis	10	1/20 - 1/31
Floor Plan Development	14	1/31 - 2/19
Context Redevelopment	5	2/5 - 2/11
Structural Development	14	2/10 - 2/27
ECS Passive Analysis	21	2/10 - 3/10
ECS Active Analysis	41	2/17 - 4/14
Section Development	36	2/24 - 4/14
Envelope Development	6	3/3 - 3/10
Materials Development	6	3/3 - 3/10
Midterm Reviews	5	3/10 - 3/14
Project Revisions	10	3/24 - 4/4
Structural Redevelopment	5	4/7 - 4/14
Model Building	11	4/14 - 4/28
Presentation Layout	5	4/14 - 4/18
Preparation for Presentations	14	4/14 - 5/1
Thesis Exhibit in Digital Copy to Thesis Advisors	1	4/24 - 4/24
Plotting	4	4/24 - 4/29
Exhibits Installed on the 5th Floor	1	4/28 - 4/28
Thesis Exhibit	3	4/28 - 4/30
Final Thesis Reviews	6	5/1 - 5/8
CD Due to Thesis Advisors	1	5/12 - 5/12
Final Thesis Document Due	1	5/16 - 5/16
Commencement	1	5/17 - 5/17



previous studio experience

ARCH 272 - Architectural Design Studio 1 (Fall 2010)
Joan Vorderbruggen

Projects
Tea House
Boat House

ARCH 272 - Architectural Design Studio 2 (Spring 2011)
Danyil Booker

Projects
Montessori School
Dwelling

ARCH 371 - Architectural Design Studio 3 (Fall 2011)
Regin Schmaen

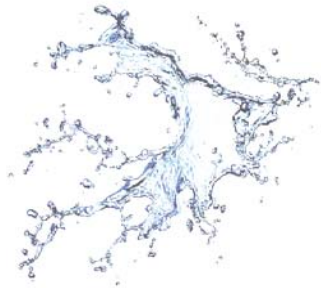
Projects
Zombie Safe House Competition

ARCH 372 - Architectural Design Studio 4 (Spring 2012)
Mike Christenson

Projects
Multiple Iterations

ARCH 471 - Architectural Design Studio 5 (Fall 2012)
Cindy Ulmess

Projects
High Rise

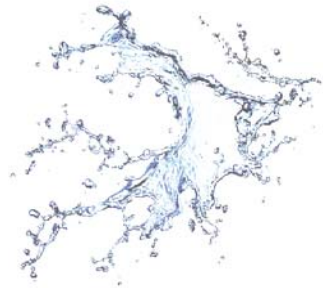


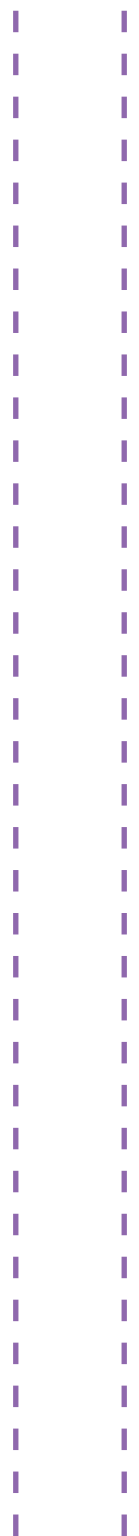
ARCH 472 - Architectural Design Studio 6 (Spring 2013)
Don Faulkner

Projects
Ghana School
Lego Structure

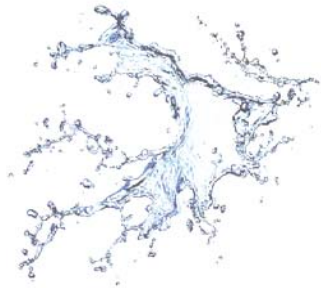
ARCH 771 - Architectural Design Studio 7 (Fall 2013)
Mark Barnhouse

Projects
Water Research Facility





program



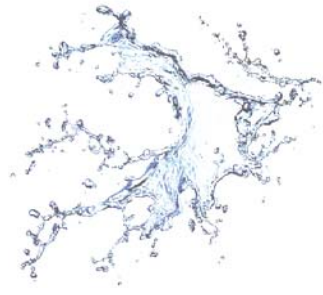
unifying idea research

The main goal of this thesis is to express water to the tourists in a unique way that makes them understand the true beauty of water. Water is a raw material that is completely under-rated in the world today; yet at the same time, water conservation is more important now than ever before.

In today's world, we are doing whatever it takes in order to find water, including digging a thousand feet or more to reach underground aquifers. These aquifers will supply water for us now, but we will use up this water faster than it will be replaced (Water, 2006, Pg. 85). We need to realize the effects that these kinds of actions have on our planet and the consequences that they will cause for the future.

According to (Water, 2006, Pg. 24), there are approximately 1.4 billion cubic kilometers of water, liquid and frozen form, on earth; or about 330 million cubic miles. If you were to spread this amount of water evenly across the earth, it would cover it up to 2.7 km thick; or about 1.6 miles thick. However, only about 2.5% of this water is freshwater, available for human consumption. We might feel like water is a raw material that is always at our fingertips, but this will not always be the case.

This thesis will create a resort that will show the tourists/guests exactly how important water is to us. Water can be used in many different ways, and it also has many different characteristics that make it unique to anything



else. Water is defined as a colorless, transparent, odorless, tasteless liquid that forms the seas, lakes, rivers and rain and is the basis of the fluids of living organisms (Free Online Dictionary, 2013). Everyone knows the fact that water is colorless, transparent, odorless and tasteless; and everyone knows that water makes up our seas, lakes, rivers and rain; but the fact that water is the basis of the fluids of living organisms is a harder pressing argument to the importance of water conservation.

The idea of water conservation has been around ever since the beginning of time. Any people that lived in an area where the resource is limited learn to use it wisely. The Anasazi, an ancient Pueblo community, were the first to show great inventions for rain catchments as early as 1300 CE. But the idea of integrating water conservation into the U.S water planning has been promulgated for only about sixty years (The Water Information Program, 2013). For example, in the 1950's, A Water Policy for the American People was published by the Water Resource Policy Commission. It stated,

We can no longer be wasteful and careless
in our attitude towards our water resources.

Not only in the West, where the crucial value
of water has long been recognized, but in
every part of the country, we must manage,
and conserve water if we are to make the

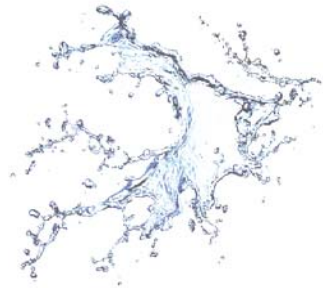


best use of it for future development (Woff
& Gleick, 2003, p. 16).

This idea of water conservation was brought into attention in the U.S and has been on the rise ever since. However, the key to water conservation is about getting all the people of our planet to believe in this idea and take the necessary actions. Organizations and groups of people can believe in it and integrate it into their daily lives as much as they want, but if the majority of the people don't follow along, the problem of water misuse will still persist. This is where my thesis project will come into account.

I believe that people don't see water as vital, unique, or scarce in our world. They see it as ordinary, invaluable, plain; or it goes unnoticed altogether. I want to use my thesis project as a way to raise awareness to how graceful, forceful, beneficial and impacting it is on our daily lives.

We use water for many things such as health (drinking), cleanliness (bathing), food production (irrigation), safety (fighting fires), etc. However, water is more than just a "tool" to us. Water has been used as a sense of meditation for quite some time. Many people don't get the opportunity to experience water in this way as a meditative, stress-releasing tool. The dean of Buddhist studies at the San Francisco Zen Center says, "Moving water is 'white noise', in which you can hear many things. Each individual may hear a different song in the water. Just listening to the sound—not tying it to anything, just letting sound

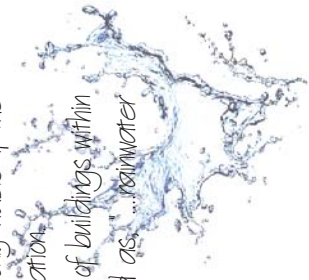


wash over you—is a way of letting go of your ideas and directly experiencing things as they are” (Psychology Today, Water’s Wonders, 2013). In other words, water is great for the mind and the soul, no matter if you simply sit back and listen to it, or if you indulge in it by swimming, taking a bath or sitting in a sauna. But how do we get people to understand this idea that water is important and we need to conserve?

The Environmental Protection Agency (EPA) has set up several guidelines, plans, steps to follow in order to make it easier for people to following the water conservation plan. According to the EPA, there are five main steps to creating a building-specific ‘Proper Water Management Plan’ (Greening EPA, 2013):

1. Operation and Maintenance
2. Utility Information
3. Facility Information
4. Emergency Response Information
5. Comprehensive Planning

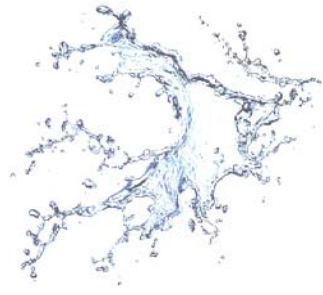
All of this information is necessary in order to create a water management plan for a building; but again, this information is only viable if the client or building owner is already interested in water conservation. More thought is going into landscape design and the location of buildings within sites in order to not do things twice. Storm water is defined as...rainwater



and melted snow that runs off streets, lawns, and other sites. (Greening EPA, 2013) For example, the idea behind stormwater management these days is using underground pipelines in order to get water off the site as fast as possible. This water is transported to a nearby stream or river in order to either be passed on further down the river, or to be taken in by the city water plant and then transported back to the houses/sites that the stormwater was just taken from (Greening EPA, 2013). So why take the water off the site and later transport the water back to the same site for use by the occupants?

With more thought process going into site design and landscape techniques, we can use this storm water immediately on the site, without transporting it to a main water way and then back to the site. The Greening EPA calls this type of site design Predevelopment Hydrology, which is defined by them as, "The combination of runoff, infiltration, evapotranspiration rates and volumes that typically existed on a site before human-induced land disturbance occurred (e.g. construction of infrastructure on undeveloped land such as meadows or forests). (Greening EPA, 2013)"

Not only is there concern for the wasted energy of moving water back and forth and transporting it to areas which it has already been, there is also concern for the effects that stormwater runoff has on the land when it is NOT soaked into the earth. When stormwater hits undeveloped land, it is normally absorbed by the earth and replenishes underground aquifers or

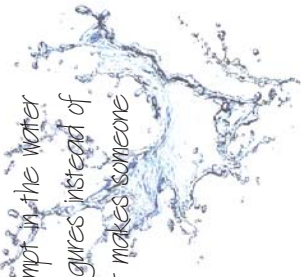


naturally navigates to a nearby stream or river, but when there is impervious materials in a developed area, such as concrete, the stormwater is no longer absorbed into the earth. "Instead, the water runs rapidly into storm drains, sewer systems, and drainage ditches and can cause: (Greening EPA, 2013)"

- Downstream flooding
- Stream bank erosion
- Increased turbidity (muddiness created by stirred up sediment) from erosion
- Habitat destruction
- Changes in the stream flow hydrograph (a graph that displays the flow rate of a stream over a period of time)
- Combined sewer overflows
- Infrastructure damage
- Contaminated streams, rivers, and coastal waters

All of these issues are very serious and must be dealt with, which is why there is an increased importance on stormwater management.

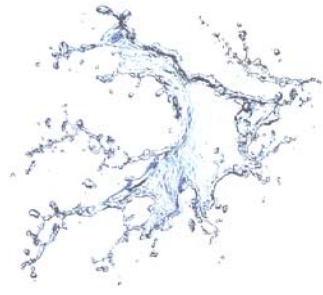
The problem with the way that water conservation is being dealt with is that there are just more numbers and facts and figures being reiterated to the public. Even the Greening EPA, who is making a major attempt in the water conservation efforts, is dealing more with facts and specific figures instead of looking at the public themselves and thinking more about "What makes someone



love water and realize how important water is to them?"

The Greening EPA is creating many different guidelines and regulations in order to attempt to help with the water conservation efforts. For example, they are replacing or retrofitting lavatory faucets Agency-wide with high-efficiency faucets, eliminating single pass cooling in certain facilities, and conducting irrigation audits and optimizing irrigation systems where EPA has them using the recommendations from professionals who are certified by a WaterSense labeled program. (Greening EPA, 2013) These are all great opportunities to change the way we use water; however, to the average public they are simply just numbers that don't matter to them because someone else will fix the problem. If a family has the money to pay their water bill and the infrastructure to get as much water as they want, they don't NEED to care much about the water conservation efforts because it doesn't affect them.

When it comes to people's minds, it is a complete different brain process when someone sees something beautiful compared to seeing something important. Importance and beauty are two completely different things when it comes to our brain. (Beauty and the Brain, 2007, Pg. 7) The effects that both have on our brain are different too. Beauty has a greater impact than importance does. Two particularly important areas of our cortex (which is made up of the layers and layers of neurons that allow us to make memories and have higher thinking functions like attention and planning) that are activated when



we're making a judgement about beauty is the orbitofrontal cortex, which doesn't seem to be activated at all when we're judging [other characteristics]" (Beauty and the Brain, 2007, Pg. 14).

But the next question to acknowledge is beauty itself; What is beauty? How do we judge/measure beauty? Is beauty something that is universal or something that is based on personal interests and personal minds. When we see something that we believe is beautiful, endorphins are released in our brain. Something that is beautiful in our eyes automatically becomes important to us because of the happiness that it gives us. Therefore, I would like to argue that beauty = importance.

Can Beauty be understood through scientific experiments and studies? Can we better understand beauty by looking at scans of the brain when looking at beautiful objects? Some would argue yes; but some would argue no. "A philosopher Immanuel Kant argued that beauty is not a property of an artwork, or of the natural world, but is a feeling of pleasure that comes from within us" (Johanna Kieniewicz, 2007, Pg. 2).

When beauty becomes something that we attempt to understand through scientific figures, it loses its beauty. Beauty is something that can't be understood or measured. It has no limits and no boundaries for everyone sees beauty in a different way.



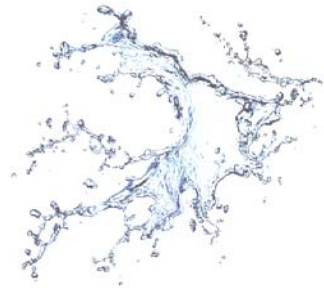
unifying idea research summary

Water is something that can be understood both through science and through art/culture. It is something that we need in order to sustain life. We need it to irrigate, we need it to drink, we need it to bath; however, at the same time, water is something greater.

There are characteristics to water that are unique to it more than any other raw material on our planet. It can be frozen, liquid, gaseous; it even expands when it freezes compared to everything else that, when frozen, contracts. I believe that the focus that we as a society put on water is merely the scientific figures about how much water the average person uses on a daily basis. We say, "if only we spent less water when we were bathing and brushing our teeth, we then wouldn't have to worry as much about water conservation and water scarcity throughout the world." But I believe that we need to stop thinking about this in a scientific manner. We need to look at work for the qualities that it has and the beauty within it.

With the way that our human minds work and the relationship that our minds have with something "Beautiful", we need to put the importance on the beauty of water. If people put importance in the things that they find beautiful, then show the world how water can be beautiful.

There are certain aspects about water and the conservation efforts that we can't control. When it comes to the polar ice caps and the massive

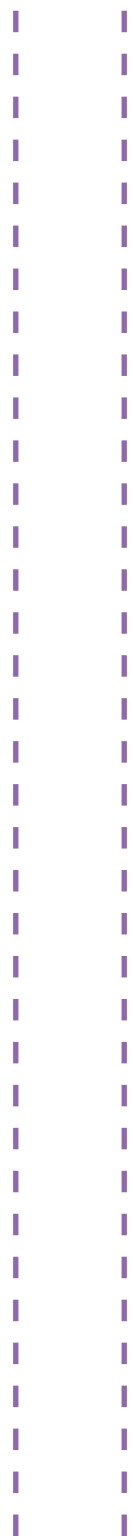


amount of water that is held within them; or the oceans and seas and the massive amount of water that is held within them, yet untouchable due to the salinity of the water; we need to learn to look first at the things that we can control.

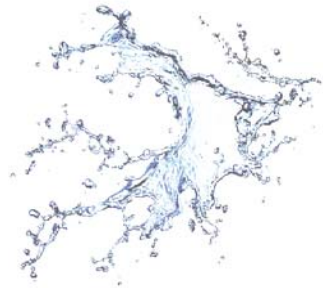
Society is correct in the thinking that if everyone just saved a tiny bit of water every day, that as a whole, we would save massive amounts of water. This is the best way to go about water conservation, piece by piece, action by action, resolution by resolution. But in order to get people to follow along with water conservation efforts, we must show them water in ways that a lot of people don't get the opportunity to see. Some people grow up around water their entire lives and they get to see water in many different settings; swimming, bathing, drinking, cooling off in the summer, watching the sun reflect off the water, etc... I would argue that people that have seen water in these kinds of settings have an entirely different look on water than others who have grown up in the city their entire lives and use water only for the necessities that they need.

A resort such as the one that I am proposing will take all of these things into consideration when attempting to give other people the opportunity to see water in these different settings. The resort will have activities so guests can understand that water is fun; there will be prime views from certain locations in order to see the sunset over the water, or the moon reflecting on the water in the middle of the night; and ways for guests to sit "face-to-face" with water and learn to love it.





CASE STUDIES



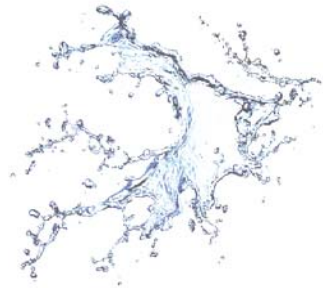
naked stables private reserve



The Naked Stables Private Reserve is located in a secluded valley between two mountains. It is about two and a half hours by train from Shanghai. This valley is filled with bamboo forests, tea plantations, and tiny farming villages. The resort is about 60 acres in total area and is a resort for adults only. There are about seventy eco-friendly bungalows creating the entire resort.

The scenery contains a mixture of thatched roofs, cowhide rugs, and hilltop views. The use of materials from the area is immense. The design team used mud, bamboo, and reclaimed wood to create these high-tech bungalows. Due to the sustainable techniques used by the design team, LEED Platinum was achieved for this resort.

The resort is set up as a summer get away camp for adults. There are many different activities at this resort that guests can take part in such as kite flying, calligraphy, horseback riding, tea picking, woody paths and heated pools. Many of the guests will get experience dealing with a mix of other corporate guests and Chinese and Shanghai residents of the area that are getting around via the use of solar-powered golf carts as their main means of transportation.



naked stables private reserve

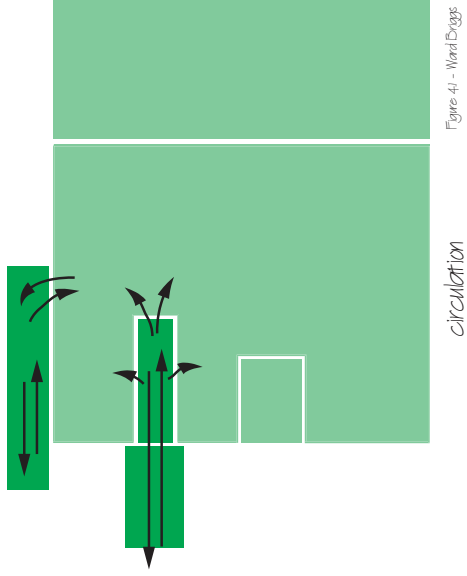
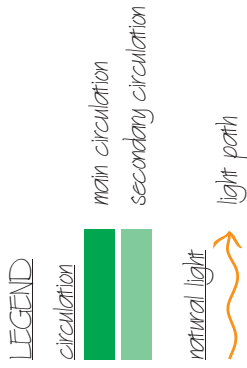
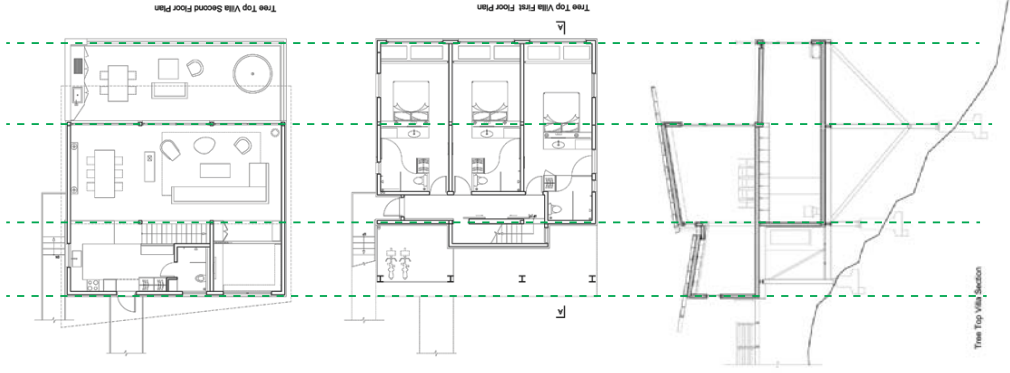
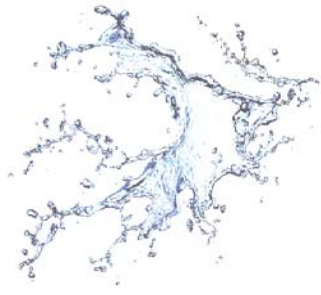


Figure 41 - WardExggs



plan to section

Figure 42 - WardExggs



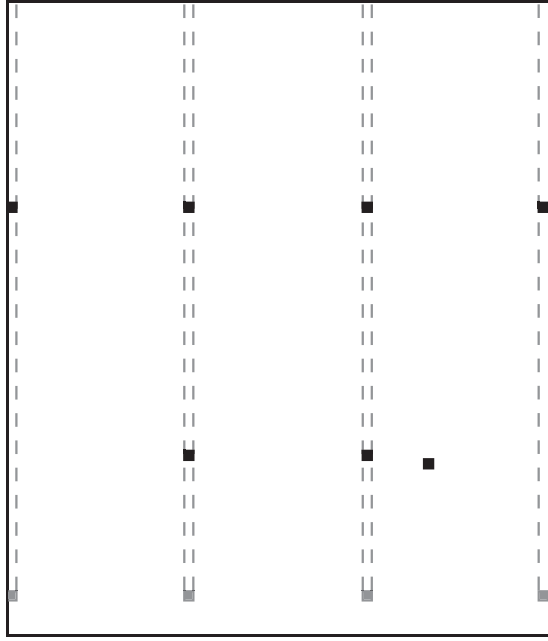


Figure 4.5 - Ward Driggs

STRUCTURE

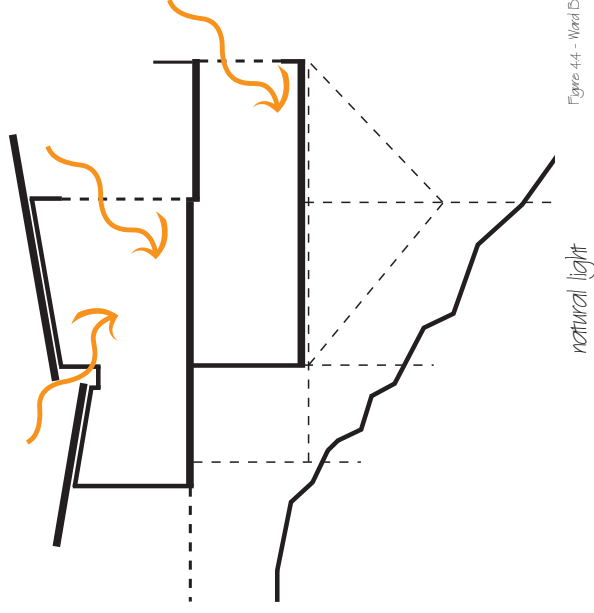
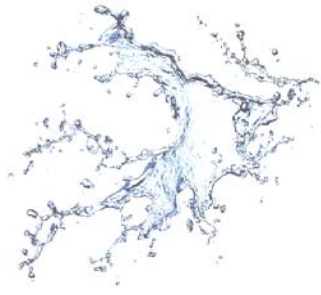


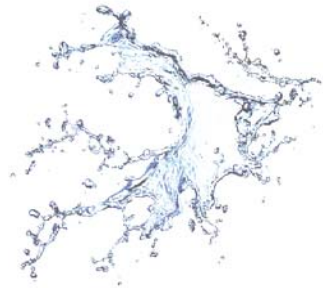
Figure 4.4 - Ward Driggs



naked stables private reserve

With the design of the Naked Stables Private Reserve bungalows/huts along the hillside of the valley, the owners wanted the huts to be an extension of the landscape. Something that was as natural as possible perched along the hillside; less intrusive than most man-made structures. The bungalows are curved along the hillside and take a shape of a personal tree-top villa.

On the north side of the site, there are more common gathering spaces for the guests of the resort. There is an educational facility and a cultural facility right next to each other; this is where the teahouse and the pottery studio are located. These even larger structures are also bamboo clothed and contain thatched roofs like all other structures on the site.





park hotel hyderabad



The Park Hotel in Hyderabad is a fairly bold architectural statement compared to most hotels financed by the Park Hotel group. The owner wanted to create a landmark-like hotel centered in the middle of the city. This hotel exemplifies the two dualities of India:

1. It is across the street from a busy, noisy railroad station
2. But overlooks the serene Hussain Sagar Lake

It therefore has the accommodations necessary for the two main types of guests that they will have; the vacation go-ers and the business men and women of the city.

The hotel is located on a very tight site that only covers about 2.5 acres of land. This is especially small for a hotel that contains 270 rooms.

The building was designed by SOM's New York Office. The design team felt as if the most important influence on the hotel from around their area of India was the traditional jewelry making of the citizens of Hyderabad. With so many people in the area in the jewelry making business, along with artists of all kinds, the owner made sure that the interiors of the building would reflect the contributions of the local artisans and artists.



park hotel hyperabad

- LEGEND**
- massing
 - major masses
 - secondary masses
 - natural light
 - light path
 - hierarchy (floor specific)
 - major components
 - secondary components

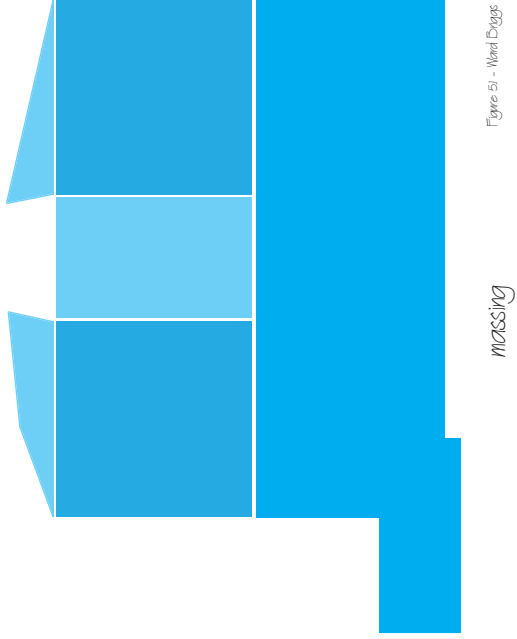
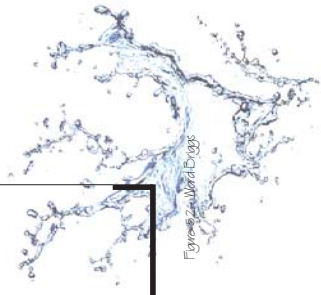
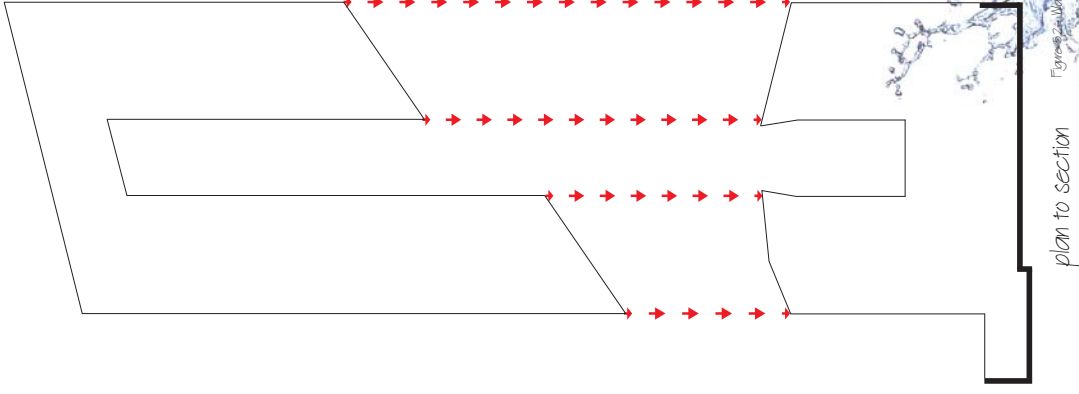
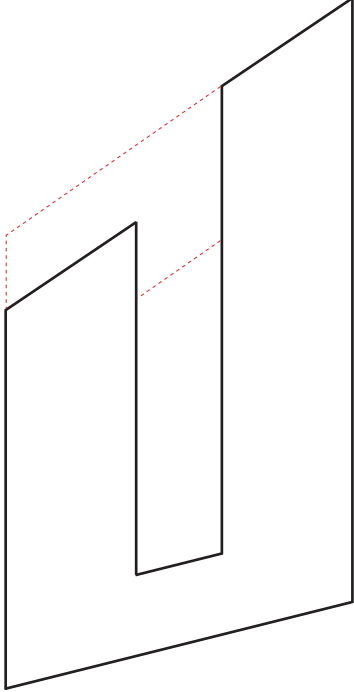


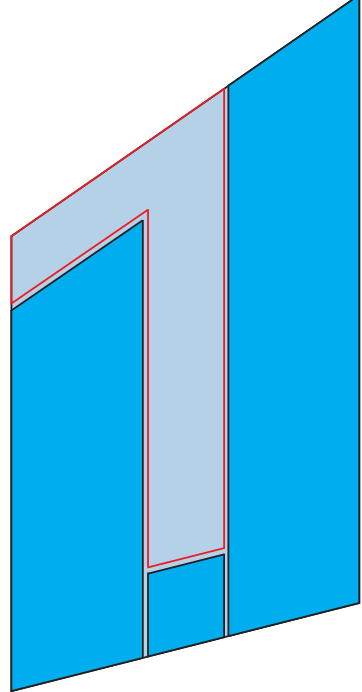
Figure 51 - Wind Dieggs





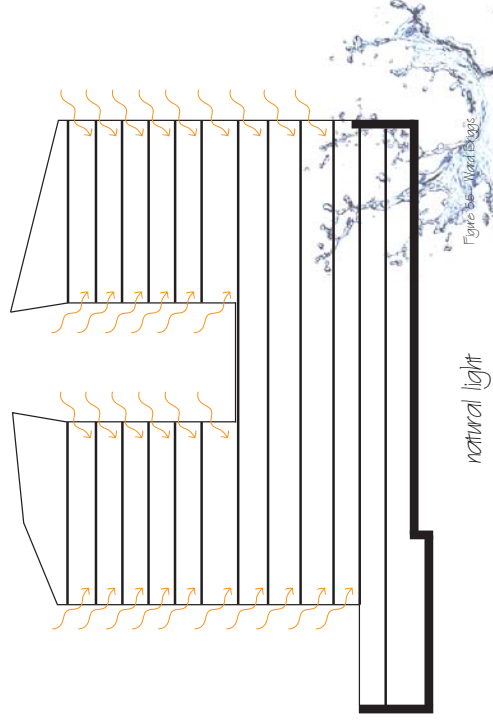
hierarchy

Figure 5.3 - Ward Diagram



geometry

Figure 5.4 - Ward Diagram



natural light

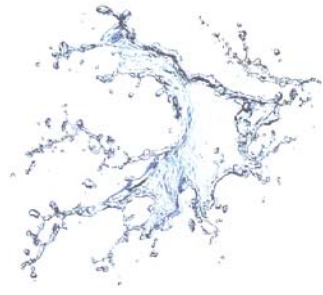
Figure 5.5 - Ward Diagram

park hotel hyderabad

The main trapezoidal form was informed by local zoning codes, height restrictions and the limited space on the site. There are three levels of parking below grade, and six levels of hotel space above grade. They decided to have the first three floors with the same square footage as the foundations below, and then for the top three floors, they simply cut out the center portion of the structure in order for the third floor to have an open rooftop courtyard.

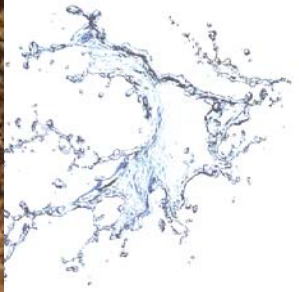
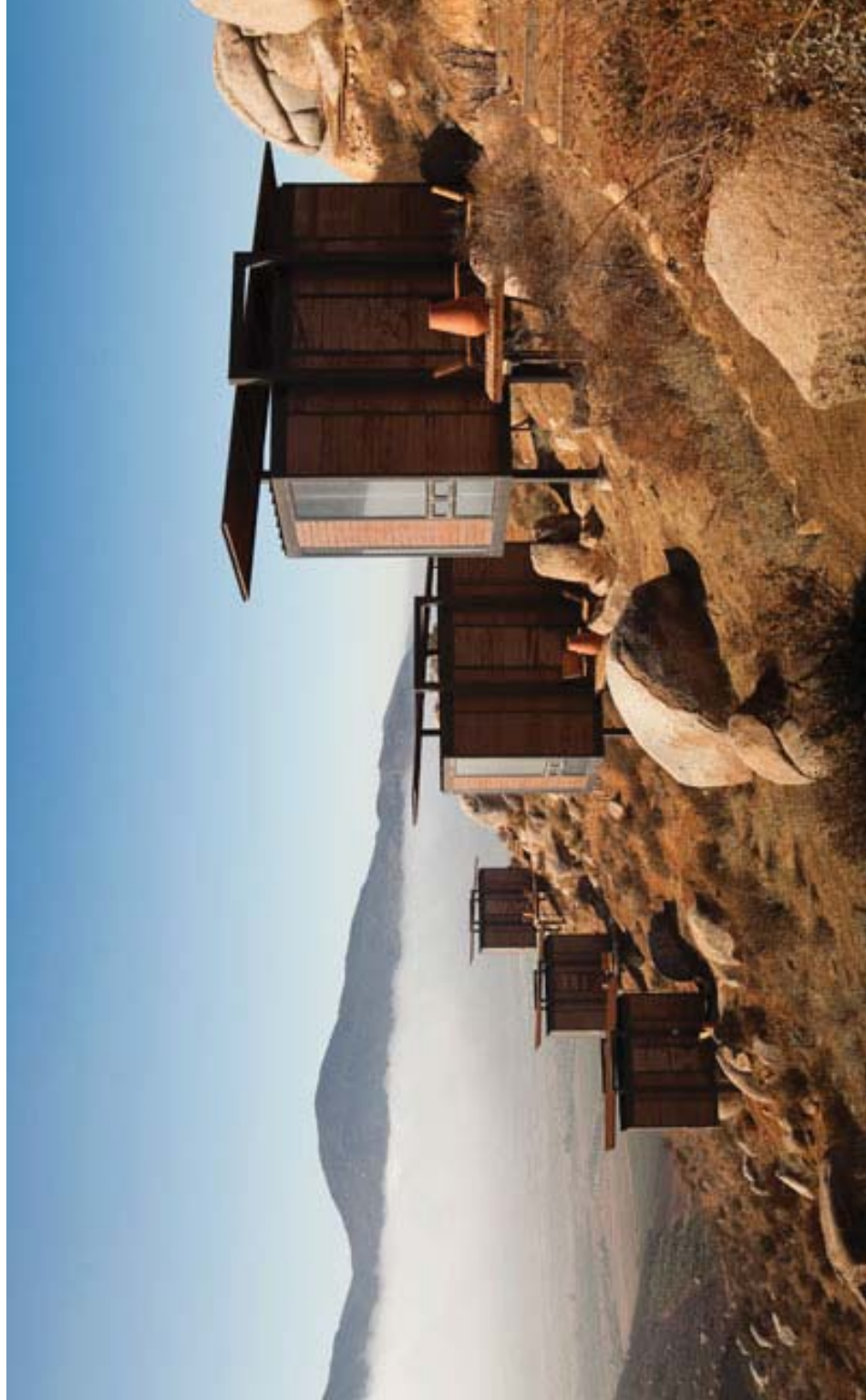
The location of the top three floors that was cut out was determined by climactic data. With three sides of the courtyard being covered by the other top three floors of the building, the open courtyard will be protected from the heavy winds during India's monsoon season, yet at the same time will allow for cooling breezes during the hot summers. There is an infinite pool on top of the podium where visitors have a great view over the lake. The pool is shielded from the hustle and bustle of the railroad station, yet at the same time, peers over the lake and acts as an extension of the body of water itself.

As for the exterior skin of the building; in order to ensure lower amounts of solar radiation and reflectivity, SOM looked into the local metalworking to configure an outer skin of glass composed of LOW-E glass panels that were custom configured in order to provide more than efficient views out for their guests.





hotel endemico

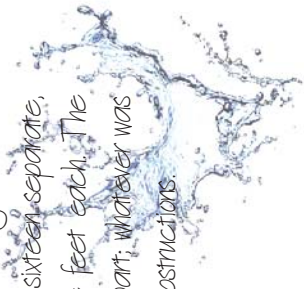


Located in the Valle de Guadalupe, Mexico, most vacationers in this area are drawn strictly to the sun and arid beaches along the ocean; but Hotel Endemico is a critically designed alternative to that type of vacation. This resort accommodates for the societal norms but at the same time accommodates for the sophisticated travelers.

Designed by a Tijuana Architect from Gacia Studio, the architect says, "I conceptualized them as camping tents with all the comforts of a luxury hotel ... They're sealed boxes in this aggressive nature" (Architectural Record). The site contains about 232 acres with cabins popping out of the hillside all over that 232 acres. The site also contains many, many small vineyards and a 19,400 square foot wine-production facility that houses a wine tasting room and a restaurant.

This is another type of getaway from the hustle and bustle of everyday work lives. Guests are encouraged to leave their suits and stilettos at home, for the whole experience of the resort is about sitting out on your own personal terrace and enjoying the view and the wine of that area.

The conglomeration of cabins along the hillside were thought out with their main component to be the views. There are a total of sixteen separate, small, one-bedroom cabins that are only about 200 square feet each. The cabins are located between 30 feet apart and 600 feet apart; whatever was necessary in order to get the best views without any other obstructions.



hotel endemico

- LEGEND**
- massing
 - major masses
 - secondary masses
 - circulation
 - major circulation spaces
 - secondary circulation spaces
 - circulation paths
 - natural light
 - light path
 - hierarchy (floor specific)
 - major components
 - secondary components

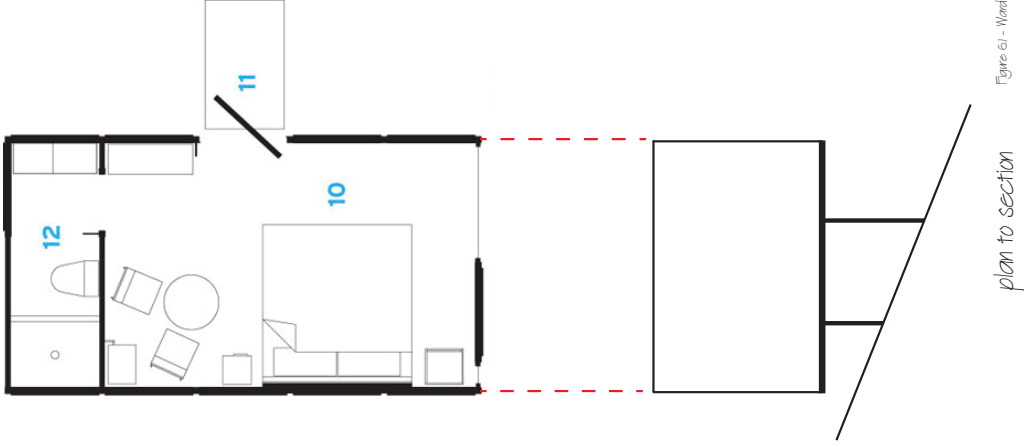
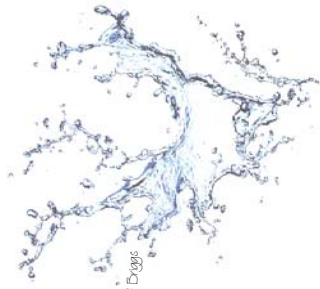


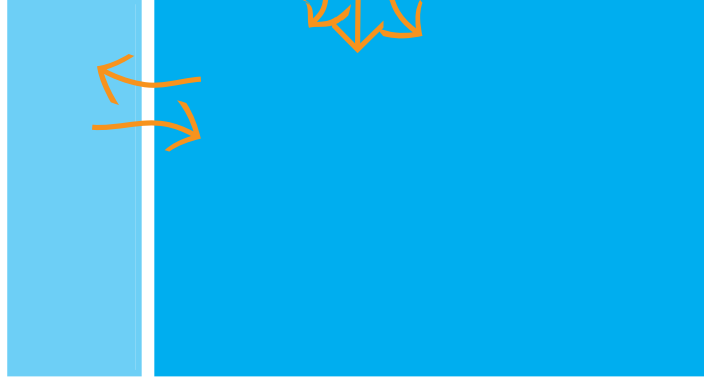
Figure 6 - Ward Briggs





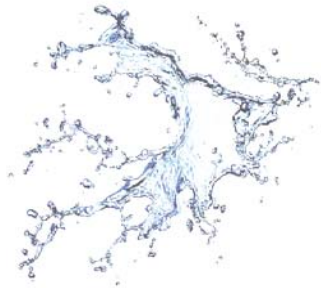
massing

Figure 6.2 - Ward Briggs



circulation

Figure 6.3 - Ward Briggs

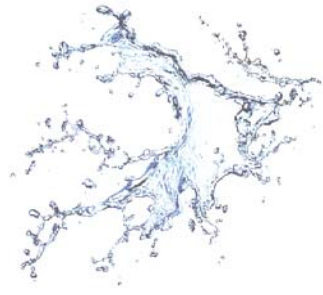


hotel endemico

When it comes to the cabins themselves, they would appear to be clad in wood panels, but they are actually rusted, weathered metal panels. Metal panels seemed appropriate due to the extreme temperature changes on the daily basis between night and day. The metal panels are fixed to a steel frame that was custom cut at a location just 130 miles away from the site.

Throughout the design and construction process, extreme measures were taken in order to create the least amount of destruction to the nature as possible. With there being an immense amount of tree cover, a rugged terrain, and the lack of electricity in this area, both the designer and the tenants need to tread lightly. No motor-vehicles are allowed on the site; so when guests check in to the resort, they are given a radio in order to call for a ride, on an off-road vehicle a flashlight and an emergency whistle.

Although the private cabins do have hot water, heating and cooling, this place is not for everyone. This is a very close second to actually walking out to the hillside and pitching a tent on the side of the hill.





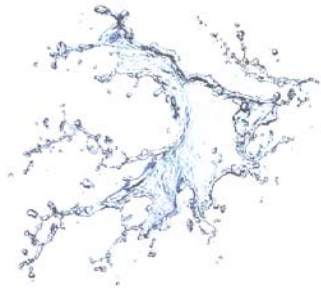
typological research summary

Resorts are a special type of typology compared to all others. When it comes to resorts, they are not just a hotel; or just a restaurant; they are a conglomeration of it all. A resort contains a hotel, a restaurant, private cabins, public open space, educational facilities, activity facilities, etc... And all of these important components are in order to support the one main goal of the resort:

Remove the guest from whatever they are trying to get away from!

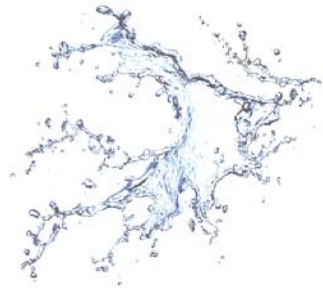
When it comes to these case studies that I have chosen, they all have that one main goal in common. With the Park Hotel in Hyderabad being the one outlier in the sense that it contains less components than either of the other two, they still all have the same goal.

An important component learned through these case studies is the relationship that the components have to all others. For example: What is the relationship between the separate cabins? This question is answered in different ways depending on the site itself. In Hotel Endemico, there is no set rule on how far apart the cabins need to be from each other. The relationship between the cabins is not about the distance, it's about the views around them. You don't want to look out your vacation home into the rear of the vacation home neighbor. For those cabins that are as close as thirty feet, the only time that the guests will notice is when approaching the cabin.



Another thing to think about when designing a resort like this, in relation to the space between separate private cabins, is the amount of space that the entire resort is located on. The Park Hotel encompassed about 2.5 acres compared to the Hotel Endemico that encompassed about 232 acres. In comparison to my site, I am looking at about a fine middle between the two. So what does that mean then? If Hotel Endemico was 232 acres, with sixteen cabins, and the views out of each were phenomenal, and if I cut the total square footage in half, maybe I can only accommodate for about half of the private cabins. What is more important to me then; the private cabins or the main hotel itself?

As for infrastructure, how do we take a completely blank site and provide the adequate utilities such as electricity, heat and cooling without disturbing the land? In the Hotel Endemico, this included the use of extremely large cranes. If Hotel Endemico conquered the problem on a very steep, rocky hillside, my site in Ely, MN is possible too.

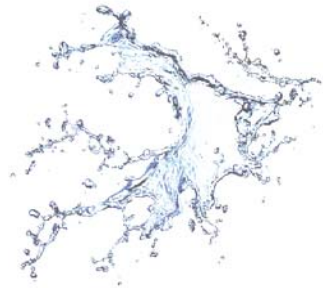


historical context for thesis typology

Resorts have been around since the beginning of time. Their origins can be traced all the way back to the second century B.C when roman baths were being constructed. These baths were the ancient resorts. The same idea was behind these ancient resorts as the modern ones now: Relaxation. The term 'resort', according to the Free Dictionary, is defined as, "A place frequented by people for relaxation or recreation" (Free Dictionary, 2013).

Even back then, resorts still contained multiple different "facilities" within the one "resort". A lot of times, there was even snack bars, gyms and libraries. These resorts very rarely had an entrance fee, for they were built using the public's expenses most of the time. It was seen as a public immensity.

The first ever resort, comparable to ones that we know today in the modern age, would be traced back to 1326 in Belgium. A very sick ironmaster was cured of a long-term illness when he bathed in iron-rich waters near Liege. After his invigorating experience, and new found health, he opened

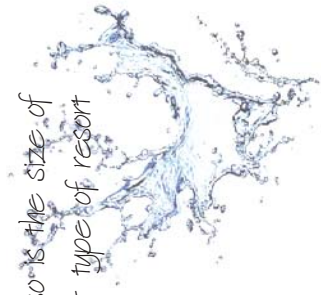


a resort at these waters.

Although our modern way of thinking of resorts is somewhat different than in the past, relaxation is still the main key behind all of it. Today we pay lots and lots of money in order to go to resorts. Resorts have a different kind of importance to us now, for it seems that the focus, while it might still be on relaxing, is more about the weather while relaxing. Back in ancient times, baths were created anywhere and warm water, steam, and lights were used to create a relaxing environment. This is not as common any longer.

With resorts gaining popularity, and the focus being on weather, many resorts don't need a purpose or a main reason for their resort besides the type of climate that they are in. Resorts used to be all about healing and the advantages that the specific area had to a healing process; whether this type of healing was physical or spiritual or mental.

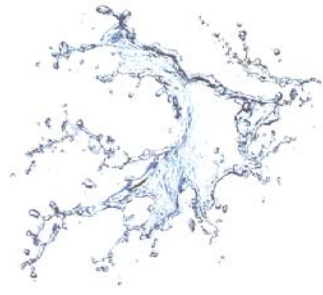
With the focus of resorts changing, so is the size of these resorts. With ancient baths, the first type of resort



ever, being only large enough for around 20-30 people to be in at one time. We are now looking this day to have resorts that hold thousands. If the owners can afford to build such a massive structure in order to hold this many people, then why not because people will be there at the lobby waiting to stay there. But I find this ironic that we stuff our resorts full of people, when ultimate relaxation is normally seen as NOT being surrounded by a bunch of people. How do we still relax when we are surrounded by so many strangers? That's when the idea of resorts and relaxation goes back to the weather and the location. Relaxation is seen as something different today.

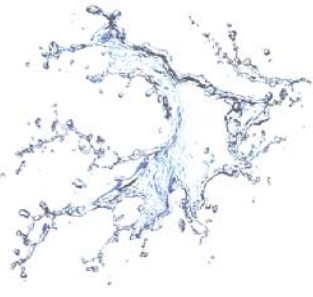
The term 'relax' is defined as, "To relieve from tension or strain" (Free Dictionary, 2013). This will never change; the term will always stay the same, but people can relax in different ways now. Not everyone relaxes in the same way.

Along with the ideas of relaxation and size of resorts changing, the way we build these resorts is also changing. The idea of sustainability is always an issue in today's world;



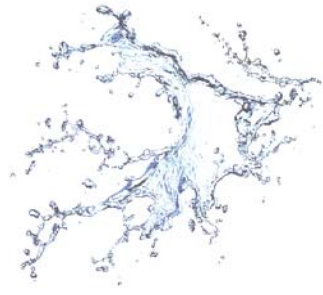
which it never was before. Historically, resorts were massive mazes of infrastructure in order to get whatever the guest wants, wherever the guest wants it (going along with the relaxation idea and treating the guests like royalty); it still is today. But with the new sustainability movement approaching and gaining popularity, more resorts are attempting to diminish the affect that they have on the earth.

In today's world people work way too hard. Money is everything in people's eyes today, and there are many consequences that go along with this. When people work all the time, they stress all the time and never get a chance to relax and enjoy the life they are living. This is in contrary to the way that society worked in the ancient times. People still worked extremely hard in order to provide for their family, but things such as family and religion always came first. They took the time out of their day in order to relax and enjoy life, and this idea of relaxation has left us. However, some smaller, rural towns still have the right attitude when it comes to relaxation and work.



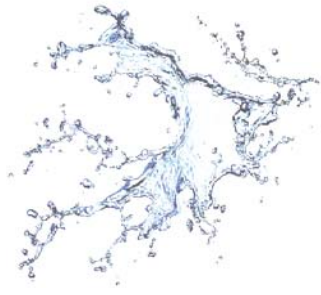
Smaller, rural towns aren't quite as industrialized as larger cities are; therefore, relaxation, fun, enjoyment, and family are all still important to them. I believe that Ely, MN is one of those smaller towns that enables residents, even visitors to get lost in this small town feel of relaxation and enjoyment of the little, basic things in life.

Ely, MN, or Fall Lake, is a great place for people to come to and relax and enjoy water. Water will be treated like it used to be treated in the ancient times; as something that is a blessing, scarce, and sometimes related to royalty. Guests will come to this resort and there will be no main focus for them besides relaxing and not worrying about the very things that they left behind. This resort will accommodate many different people because of the weather. Most resorts these days are always one extreme; they are celebrating the sun and the heat, or they are celebrating the snow and all that goes along with it. The unique thing about the resort on Fall Lake is that there will be four full seasons and guests will be able to choose when they want to come based on what kinds of experiences and activities they want to be engaged



in.

The site itself is very welcoming to the celebration of water. Water is the main component on the site. The resort itself will use the weather in order to harvest any rain water that it possibly can, and will also use Fall Lake for celebration of water. Bodies of water provide many different ways to enjoy water which includes swimming, boating, fishing, etc...



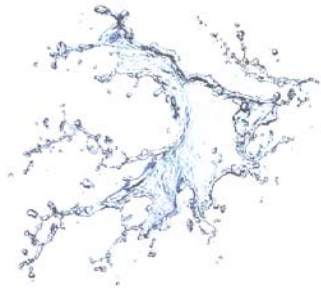
the goals for this thesis project

ACADEMICALLY

In the realm of academics, I am completing my thesis design project to obtain a Masters Degree in Architecture from North Dakota State University. In order to obtain this degree, you must show, through your thesis work, that you can think comprehensively in all aspects of design. You are not expected to know all of the answers about all little details, but you must show that you have the knowledge basis to understand what all it takes in order to create proposals, design buildings, and construct buildings in the real world.

PROFESSIONALLY

Professionally, this thesis is the beginning of it. It is the beginning of my professional architecture career. This thesis will challenge the ideas of a real world problem; water conservation. In the professional world of architecture, water conservation is a major problem and many of the professional projects around the world are dipping into the bucket of sustainability and exactly how to achieve this idea of water conservation.

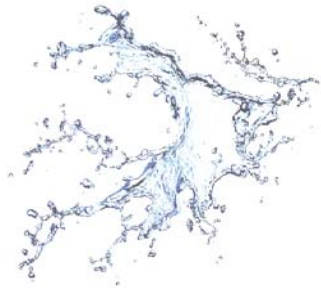


PERSONAL

Water has been an important part of my entire life. It has for everyone. But I am special in the sense that I realize how important water is in my life beyond the extents of the average person.

Water, in most people's lives, is a necessity of life. It is a raw material that we drink to sustain thirst, we use to bath and achieve cleanliness, and we irrigate with water to create food and greater aesthetic values of the landscapes around us. However, there are certain people in this world that are lucky enough in order to see water in a different way.

I believe that because of my past of growing up at the lake and enjoying water in many different ways other than the norm, I have a different kind of respect for water than others. Water isn't just a raw material for me, it is something that you can enjoy through the summer months. Whether it is a cooling technique, a play-time tool for water balloons, or simply enjoying the sun reflecting off the water as the sun lowers below the horizon, it doesn't matter, they are all unique ways to enjoy water. And I believe that if others learned to see water in this unique way, the conservation efforts for the future would be a lot easier achieved.



Site analysis

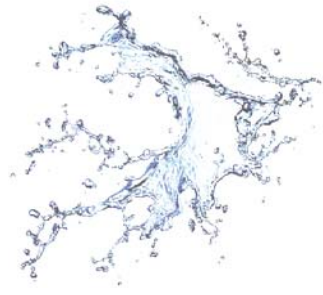
qualitative

The building site located on Fall Lake, Ely MN is an extremely forested area right along the water's edge. Visits to the site were actually through a canoe on the water instead of traveling on land.

When it comes to human characteristics on this site, the affect that humans have had in this area is very minimal. Like I mentioned earlier, roads to the site are non-existent and you must travel at minimum a quarter mile from the nearest road to get to the site. The lot next to the site includes an old lake cabin that looks as though it has been vacated for many years. This cabin is also very small and only one story; therefore, the disturbance from others is minimal. The only impact that humans will have on this site is through the lake front. Once a road to the site is determined/distinguished, it will be a declared a private drive so the only ones allowed will be guests that are navigating specifically to the resort itself.

There are many different types of vegetation on the site ranging from full size oak, birch and coniferous trees, to reeds along the water's edge and many different kinds of flowers and grasses. The trees are very thick, dense, and tall (around 30 - 40 feet) in this area, so the light quality on this site is extreme along the water's edge, but very diffused further inland from the water.

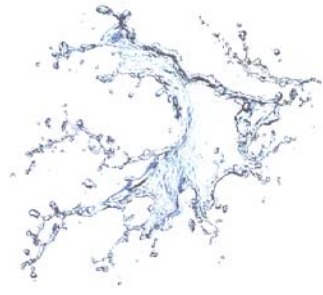
As for the water itself, which is one of the highlights of this site, the water is a great body of water, about 2200 acres. The water is very clean,



unpolluted water, but due to the high amounts of clay on the bed of the lake and the high amounts of clay runoff in that area, the water is very reddish-brown in color, and the clarity is only about 4 feet deep.

When it comes to the wind, this will be very significant in this area from the lake. Winds from the lake will be very humid and very cooling during the summer months. But at the same time, this place will be used during the winter months as well. The site is located to the West of the lake, so the only place that the winds could come from would be the East. In other words, during summer months, when the wind is coming from the Southeast, these winds will be cooling to the residents in the resort.

Views from the site will mainly be reduced to the East also. Due to the dense forestry that the resort will be located within, the main "views" will only be to the water. However, many people are intrigued by the woods and the denseness of them. Some guests will choose to look out their window into the depths of the forest instead of looking over the lake. Both choices will be available to the guests.



Site analysis

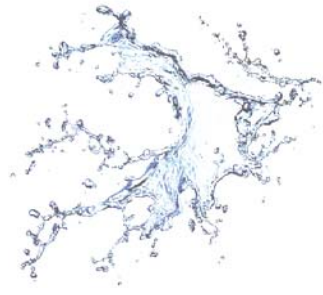
quantitative

When it comes to utilities, this site does seem to be somewhat of an issue. The location on Fall Lake is a decent distance from the nearest town of Ely, MN. However, other cabins on the lake, personal, private cabins, are nearby so the city must have already run utilities out to this area. The resort will be as self-sustaining as possible through so that the need/demand for typical, commercial, active utilities will be as minimal as possible.

Vehicular traffic on this site is non-existent at the moment. There are no roads on the site. The only vehicular traffic will be in the future because of the road access that will be needed to get to the resort. On the contrary, boat vehicular traffic on the water will need to be dealt with. The resort will need some sort of swimming/boating boundary buoys for safety.

Pedestrian traffic will also be very minimal. On land, the forests are so dense that there is no access. Therefore, the guests will be the only pedestrians that would be walking around. However, for the future of the resort, once it gains popularity, a fence/boundary line of some sort may need to be distinguished to prevent unwanted visitors.

The site is located on a forested hill on the edge of the water. Therefore, the topography/slope on the site is different in many parts. In the steeper, hilly areas, the slope of the hill increases to about a 20% slope. This is considered steep for a human to traverse; however, proper placement of paths and material choices, along with a little excavation and earth movement, this will



not be a problem. Some of the more private cabins will be located on these steeper slopes though, which would limit the opportunities for some guests to use these private cabins. Again though, with proper design, some private cabins can be made handicap accessible.

From almost 80% of the site, you see forest. But this is from the point of view at the current time without any built structures. With the removal of a certain amount of trees and built environment that heightens guests points of view, they will be able to overlook Fall Lake through many different parts of the site. View is important to the experience and certain cabins will have certain views and that will be something that will be distinguished when the guests arrive.

Plant cover is immense in this area. The entire site is covered with grasses of all kinds, along with 30-40 foot tall trees located on the hillside whose roots help immensely with erosion of the hillside. Along the water's edge there are many different kinds of aquatic plants and flowers. In order to make some of this space accessible for guests, the vegetation at the waterfront will need to be tamed down to specific lengths, density, and location; which is no different than what will need to be done with the massive amounts of trees further inland from the water.

The character of the site is very lively, naturalistic, beautiful and habitable. The trees are in healthy condition, wildlife is roaming and spawning, water is unpolluted and enjoyable for people, and the thick, dense forest has done a great job preventing erosion from the stormwater runoff in the area.



climate diagrams

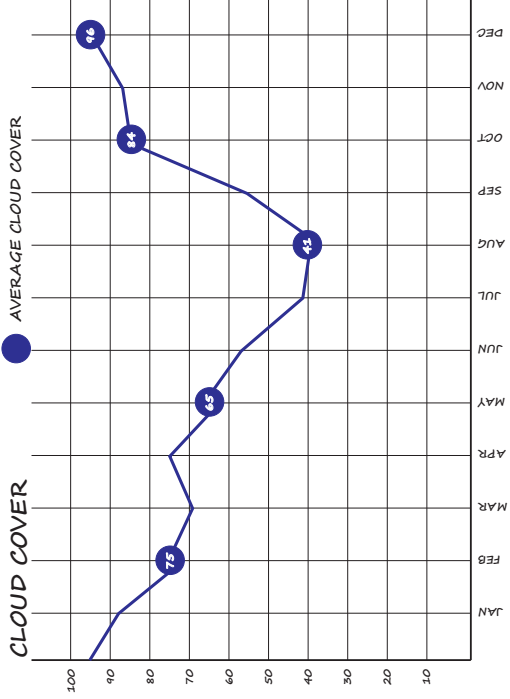


Figure 71 - Ward Briggs

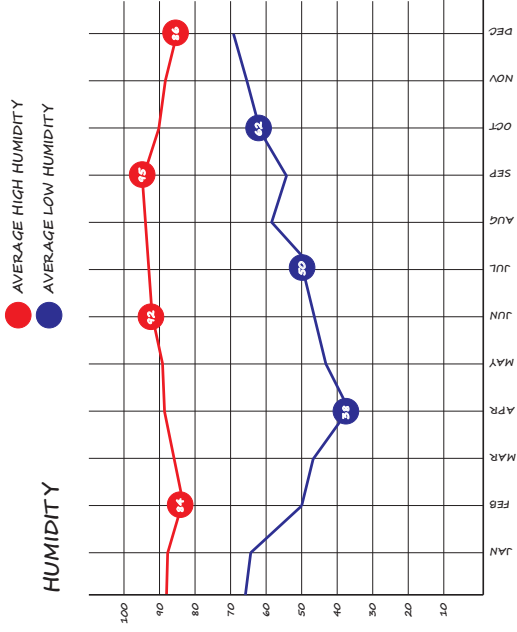
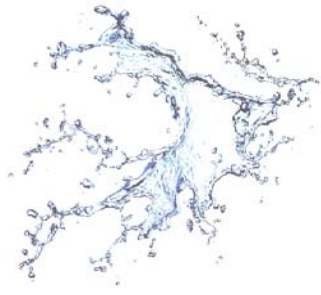


Figure 72 - Ward Briggs





NOISE

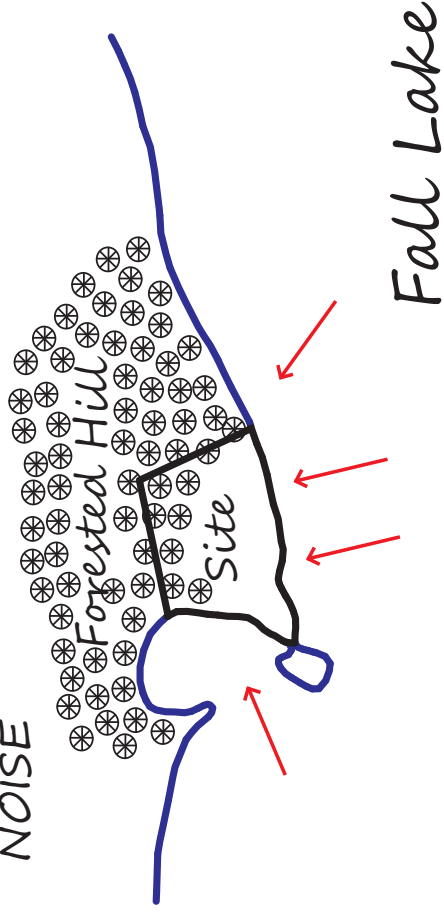


Figure 7.5 - Warel Doggs

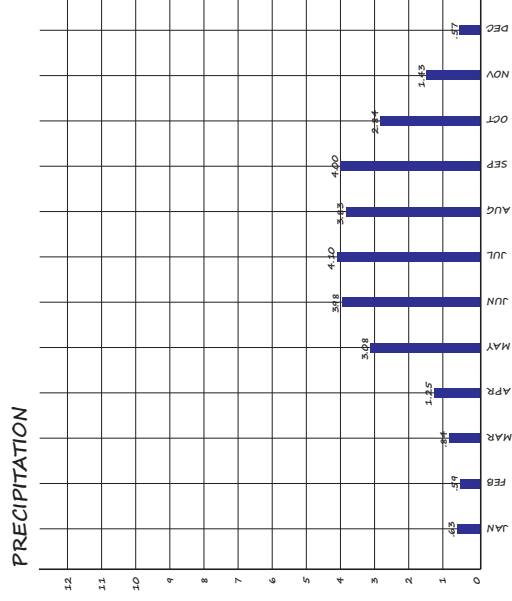
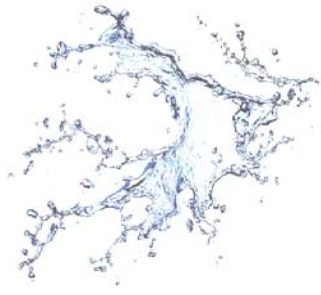


Figure 7.4 - Warel Doggs

77



climate diagrams

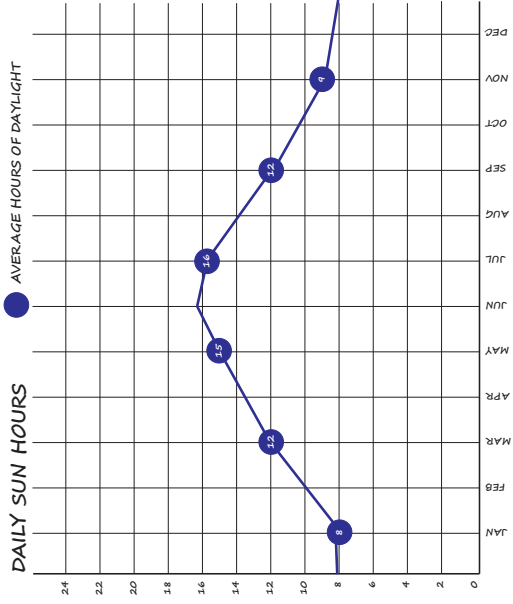


Figure 7.5 - Ward/Diggs

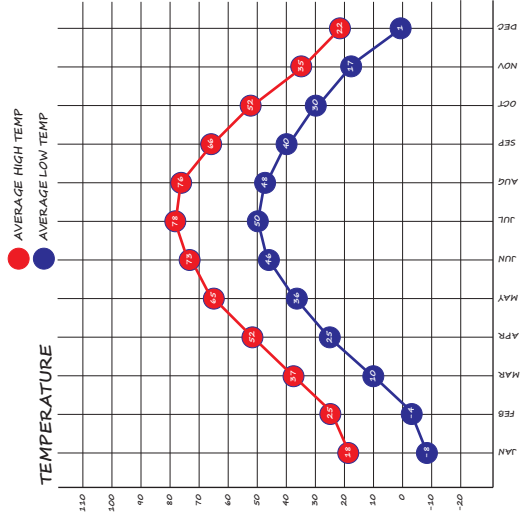
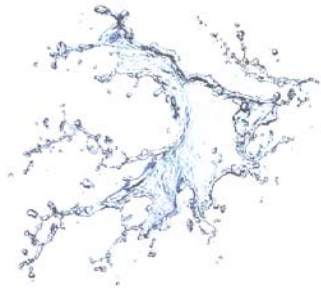


Figure 7.6 - Ward/Diggs



AIR MOVEMENT

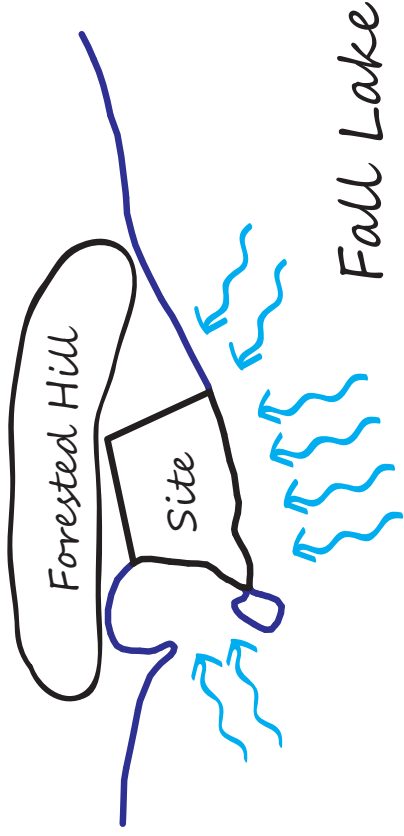


Figure 7.7 - Wind Drifts

WIND DIRECTION

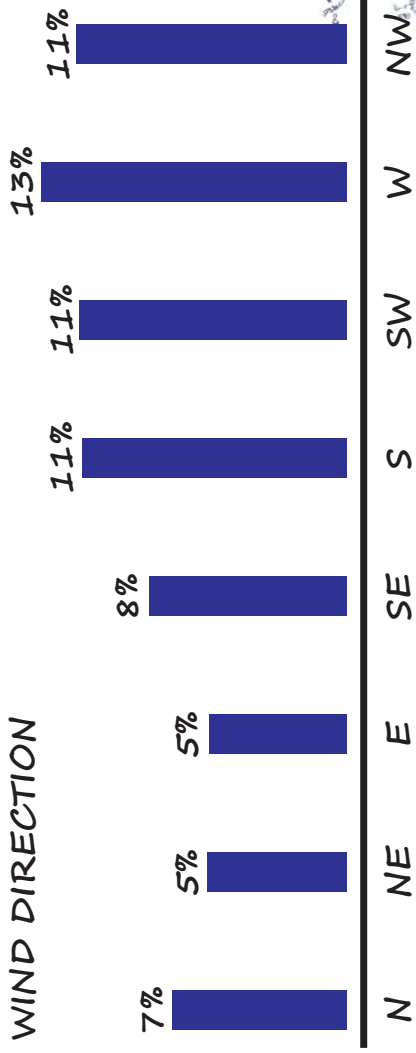
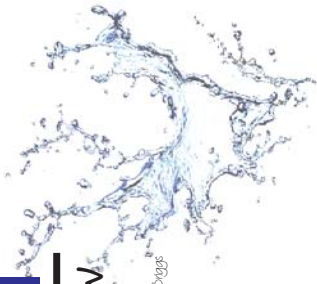


Figure 7.8 - Wind Drifts



climate diagrams

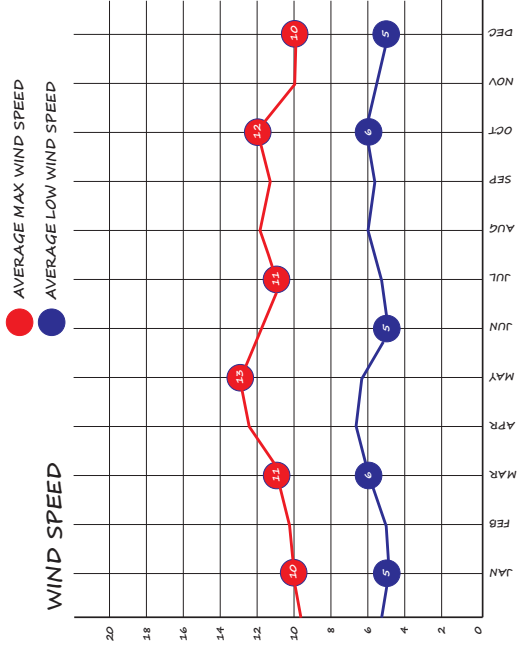
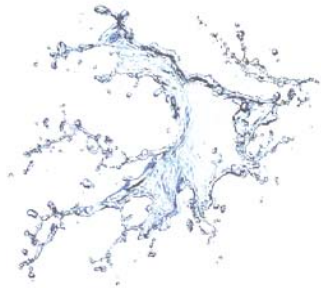
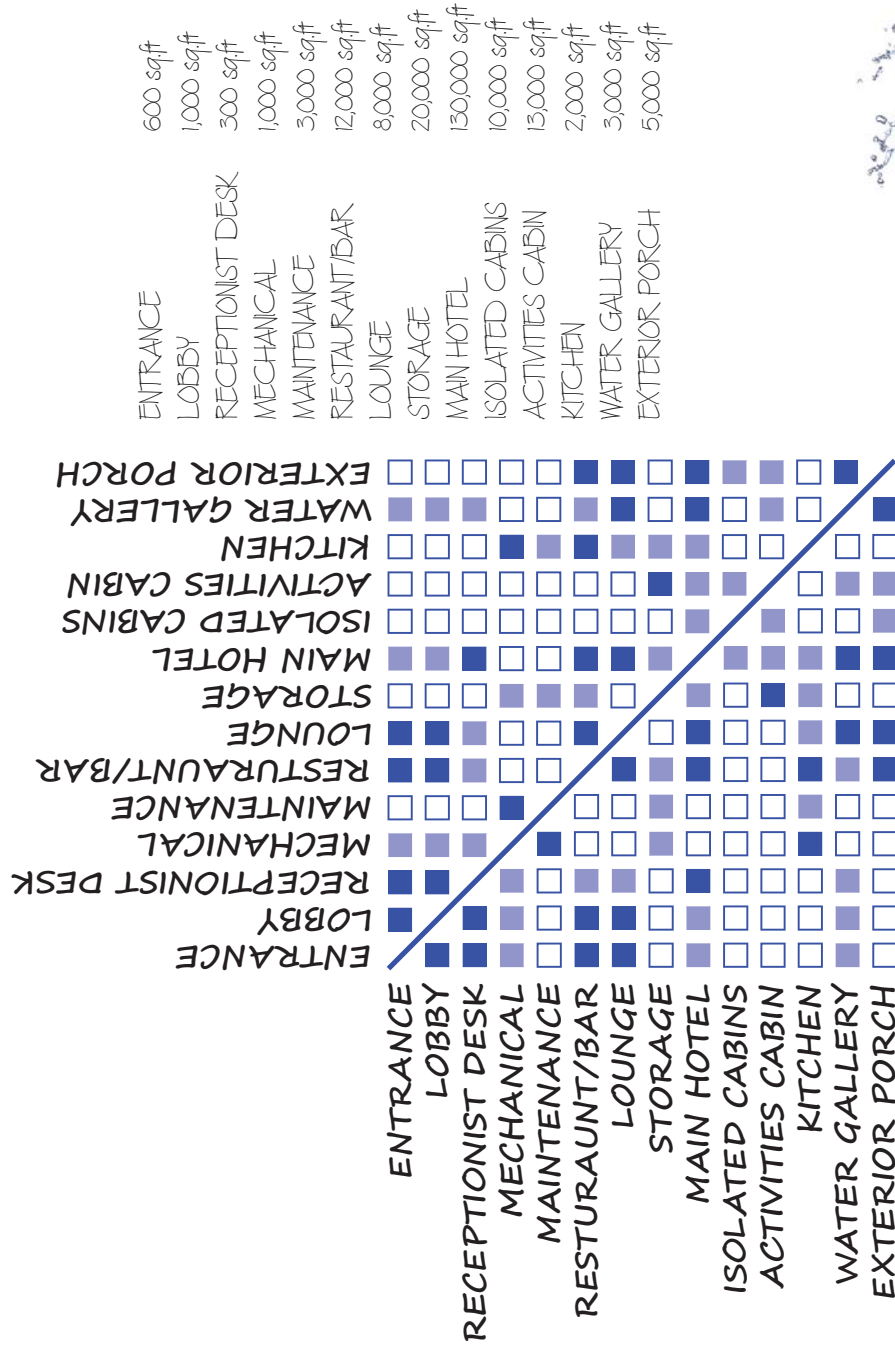


Figure 7.9 - Ward Eggs





space matrix



- CLOSELY RELATED
- SOMEWHAT RELATED
- NOT RELATED

ENTRANCE 600 sqft
 LOBBY 1,000 sqft
 RECEPTIONIST DESK 300 sqft
 MECHANICAL 1,000 sqft
 MAINTENANCE 3,000 sqft
 RESTAURANT/BAR 12,000 sqft
 LOUNGE 8,000 sqft
 STORAGE 20,000 sqft
 MAIN HOTEL 130,000 sqft
 ISOLATED CABINS 10,000 sqft
 ACTIVITIES CABIN 13,000 sqft
 KITCHEN 2,000 sqft
 WATER GALLERY 3,000 sqft
 EXTERIOR PORCH 5,000 sqft

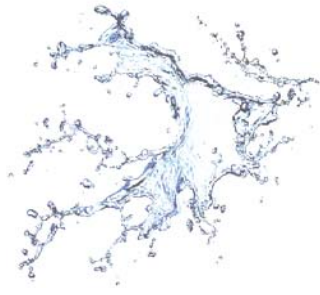
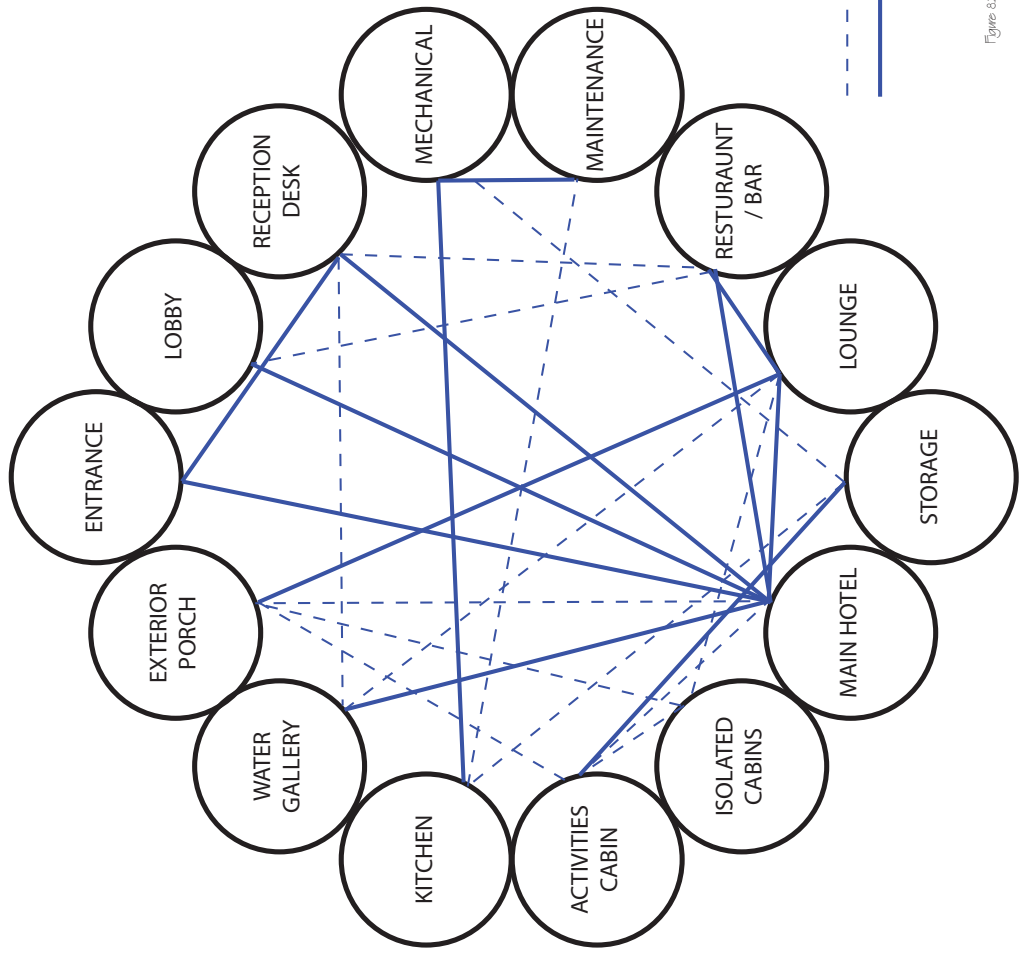


Figure 81 - Ward Duggs

interaction net

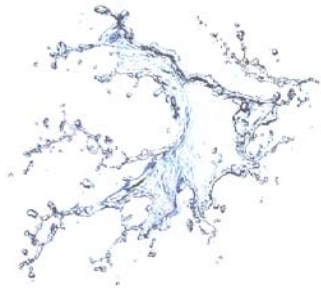


--- DIRECT CONNECTION
— INDIRECT CONNECTION

Figure 82 - Ward Diggins



final design process



final design process

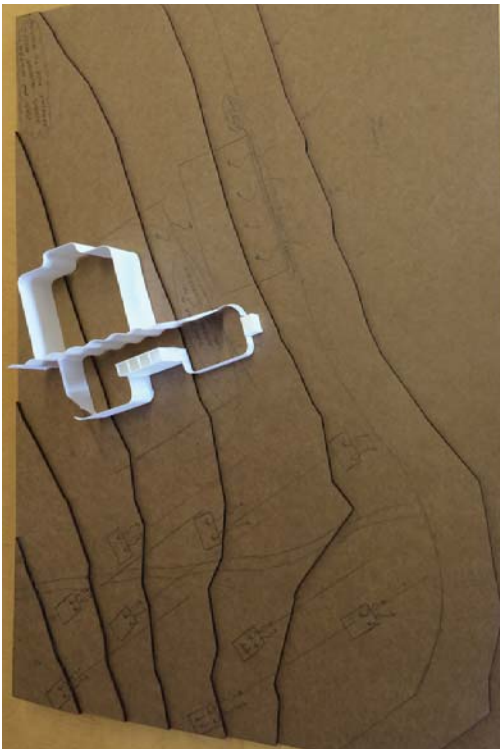


Figure 92 - Mand Egge

solar / wind study model

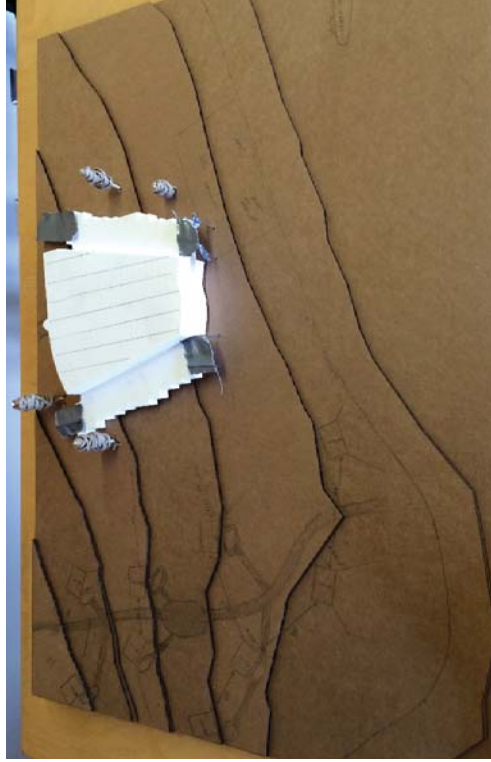
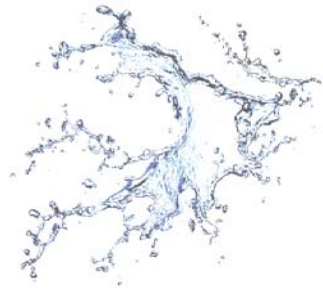


Figure 91 - Mand Egge

views study model



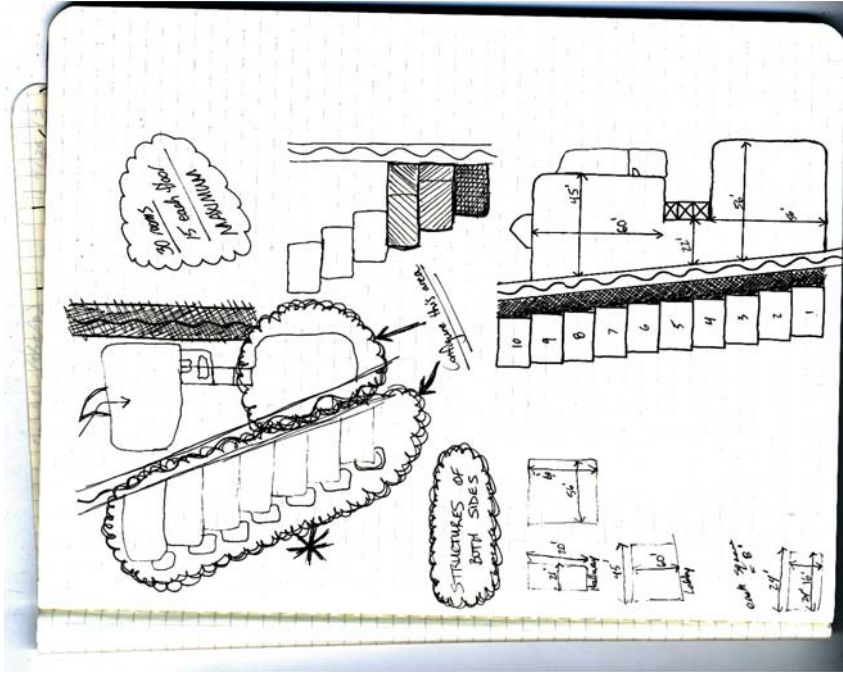


Figure 94 - Ward Briggs

building form exploration

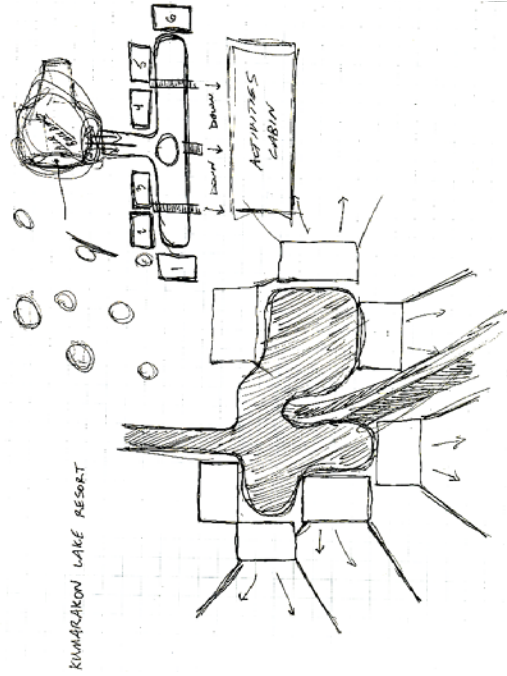
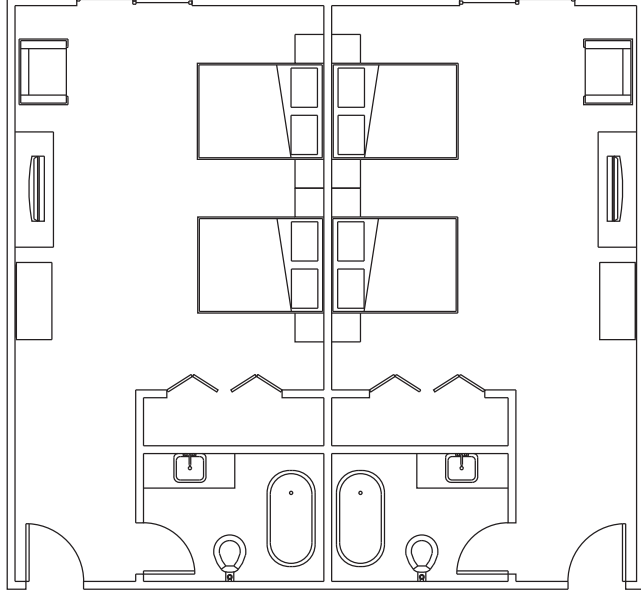
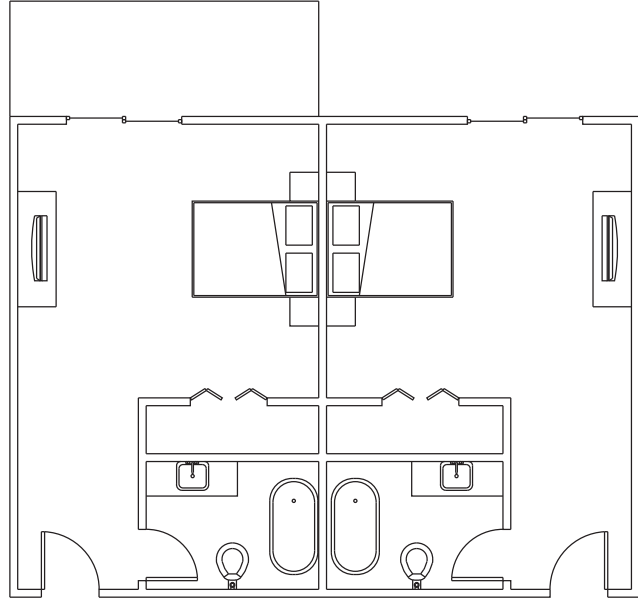


Figure 93 - Ward Briggs

building layout exploration

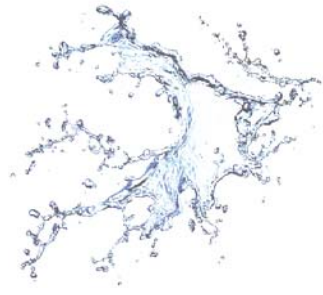


final design process



typical 1 & 2 bedroom units designed separately from other spaces

Figure 95 - Ward Eggs



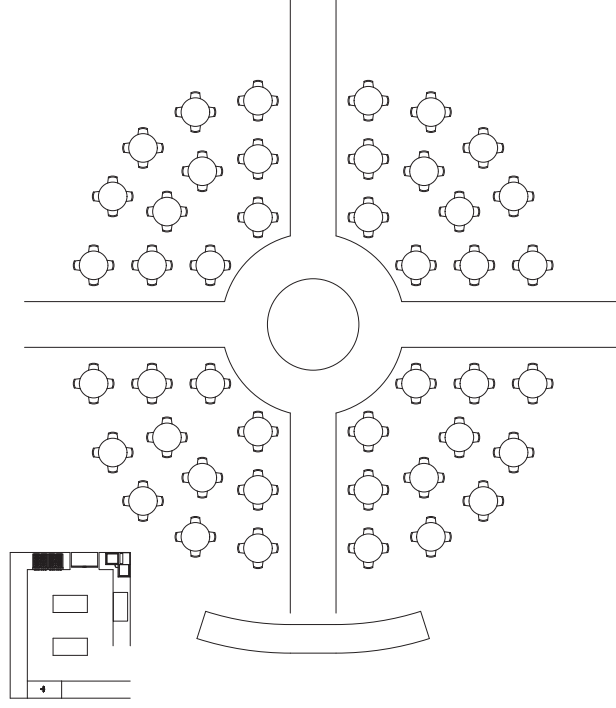


Figure 96 - Ward Briggs

dining area & kitchen designed separately from other spaces



final design process

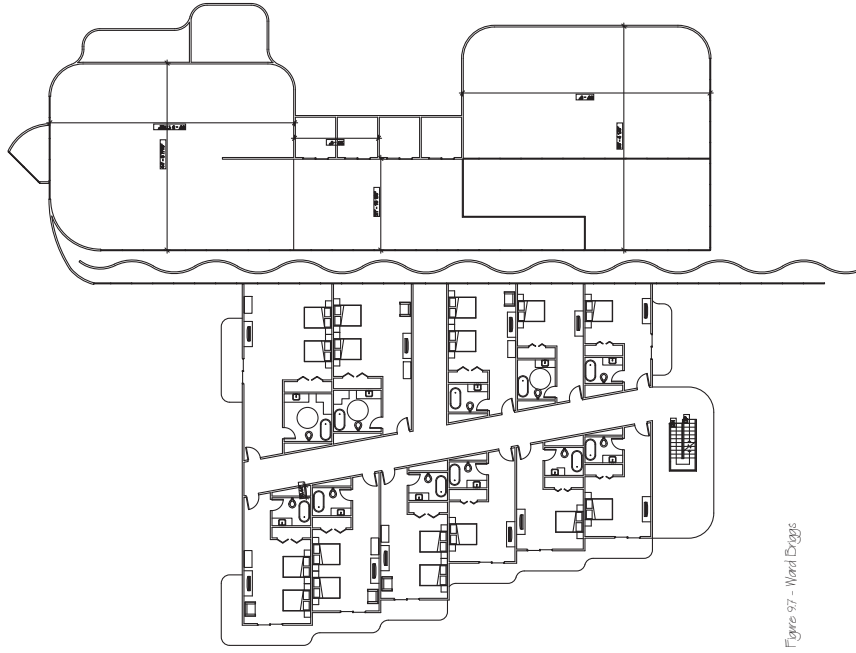


Figure 57 - Ward Duggs

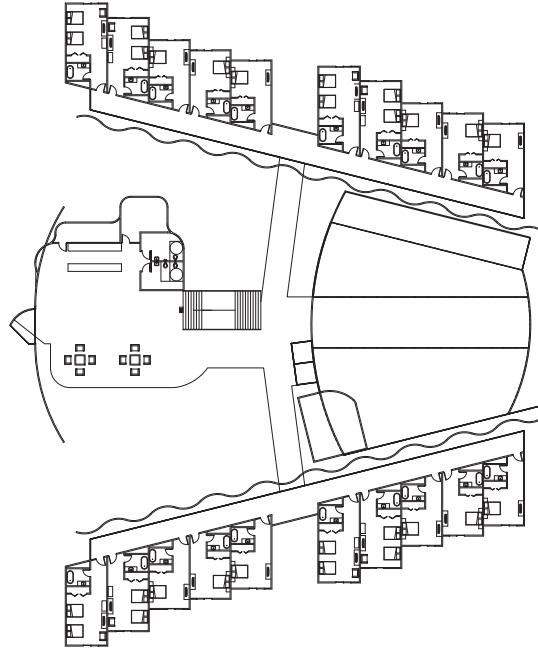
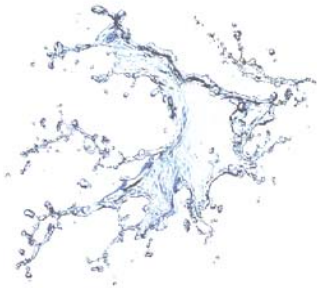


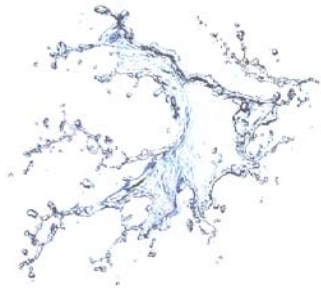
Figure 58 - Ward Duggs

combination of individual separate components into one building form





final design solution

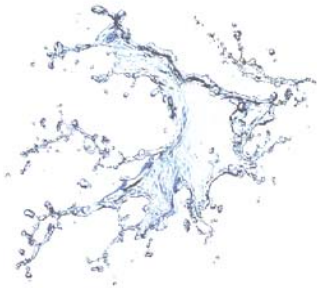


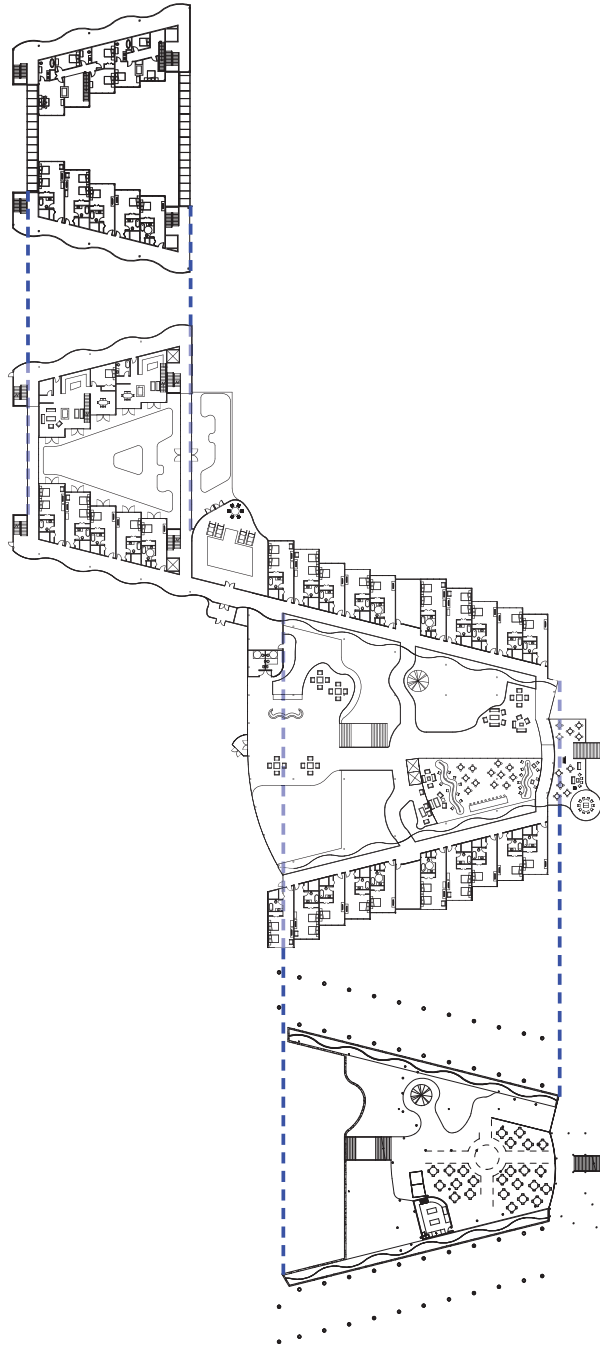
final design solution



site plan

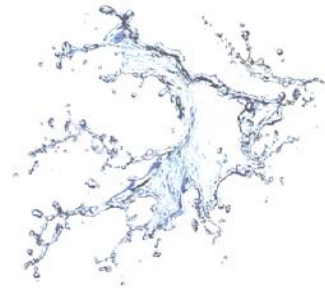
Figure 101 - Ward Diggs





Floor Plans

Figure 02 - Wind Brigs



final design solution

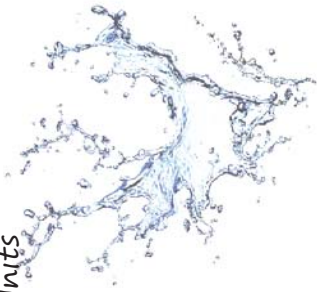
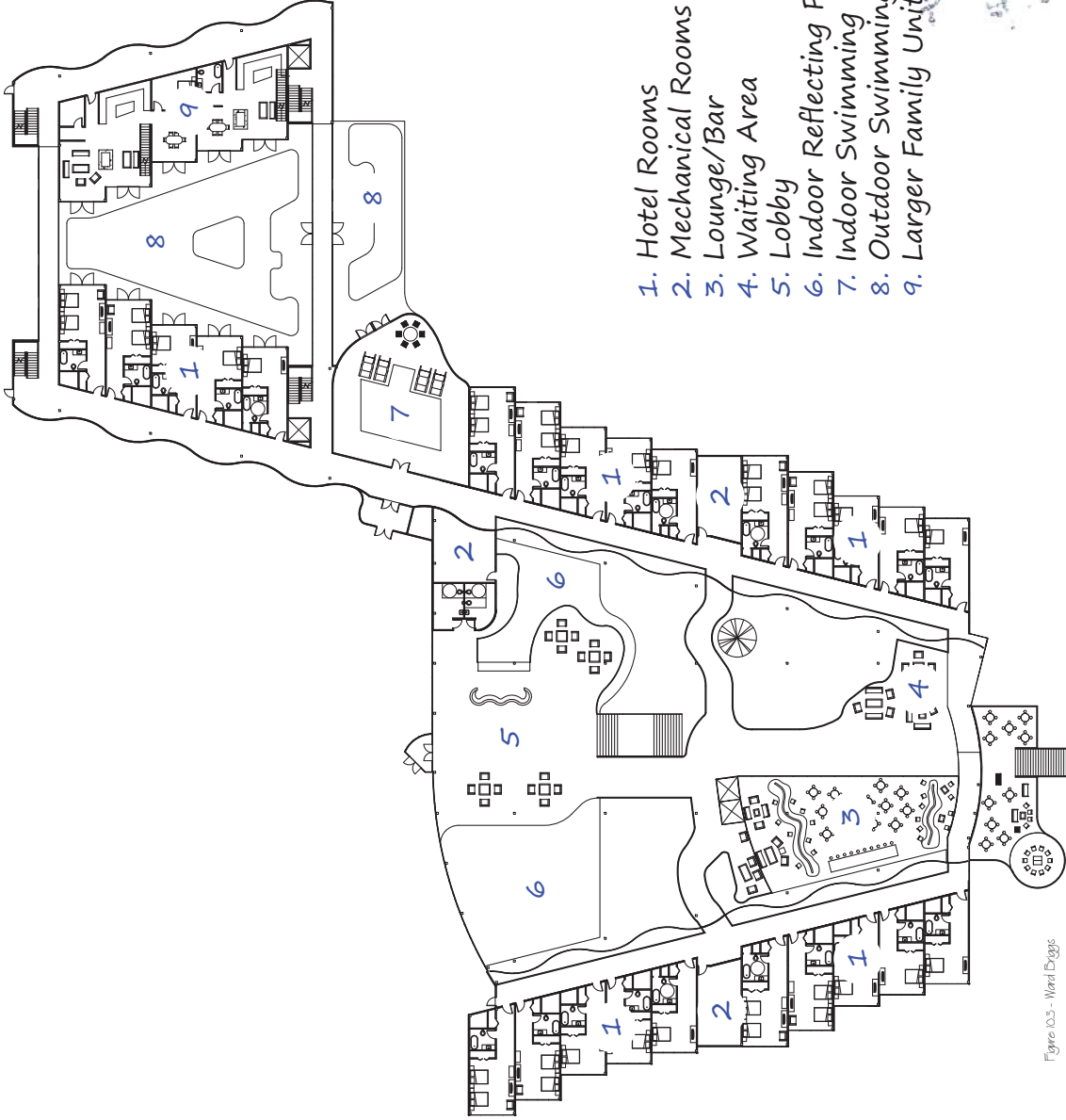


Figure 0.3 - Ward Leggs

Main Floor Plan



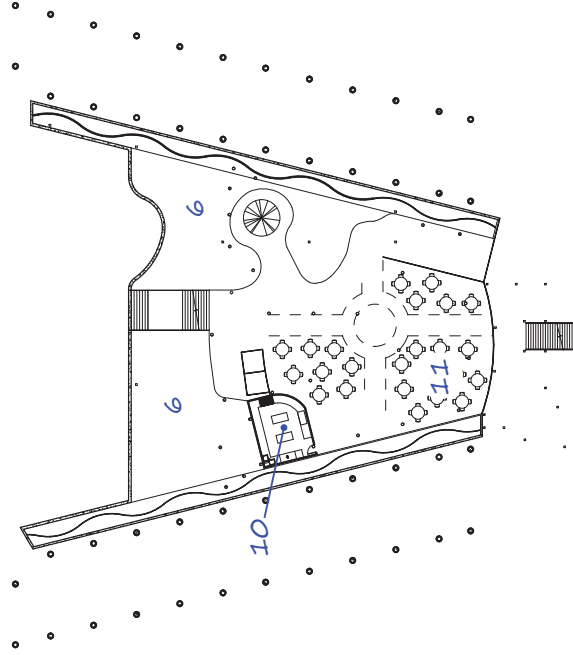


Figure 104 - Ward Briggs

- 6. Indoor Reflecting Pool
- 10. Kitchen
- 11. Restaurant

Lower Floor Plan

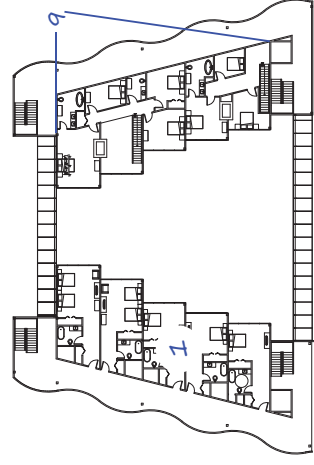
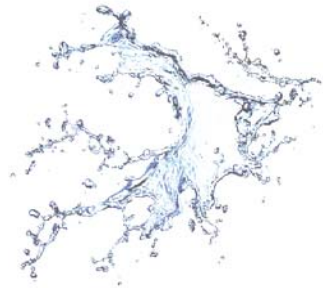


Figure 105 - Ward Briggs

- 1. Hotel Rooms
- 9. Larger Family Units

Upper Floor Plan



final design solution



Figure 06 - Wood Eggs

Transverse Section Perspective

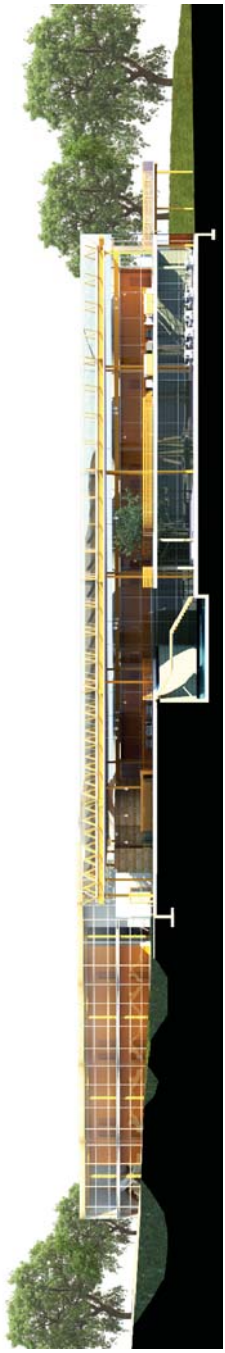
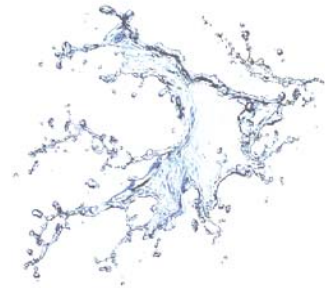
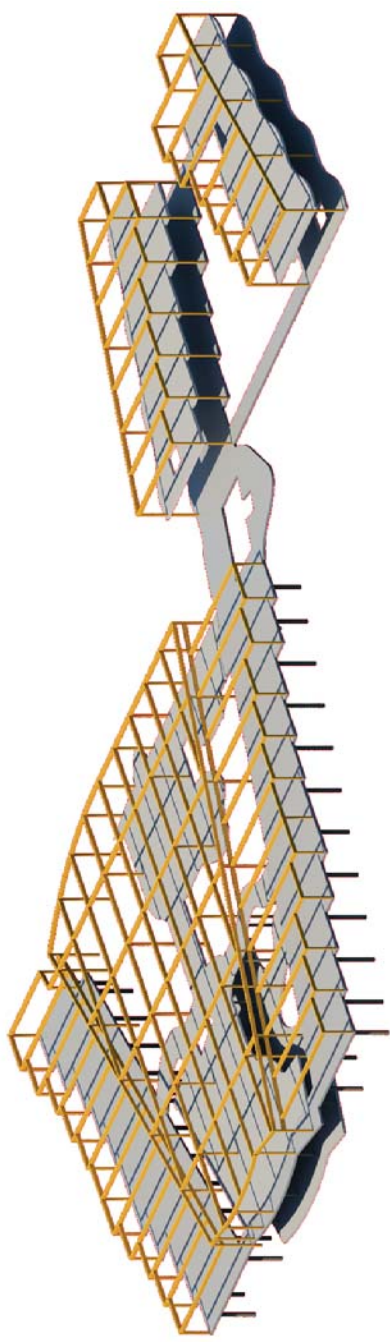


Figure 07 - Wood Eggs

Longitudinal Section Perspective





Structure

Figure 10.8 - Ward Eggs



final design solution

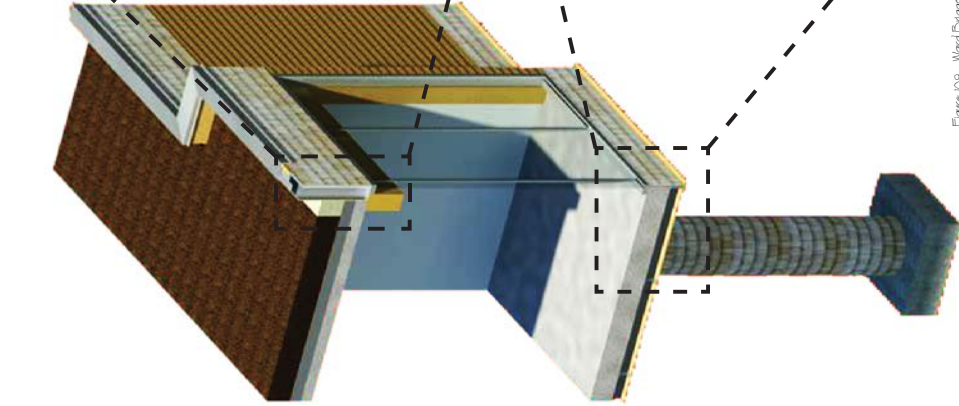


Figure 109 - Wall Details

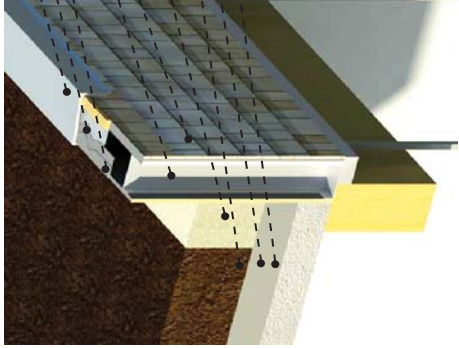


Figure 100 - Wall Details

- Parapet Cap
- Flashing
- Roof Membrane
- 6" Mtl Studs w/ Insul
- Western Red Cedar Shingle Veneer
- 6" Gravel Bed
- 1'-0" Earth
- Sloped Rigid Insul
- 8" Rigid Insul Base Layer

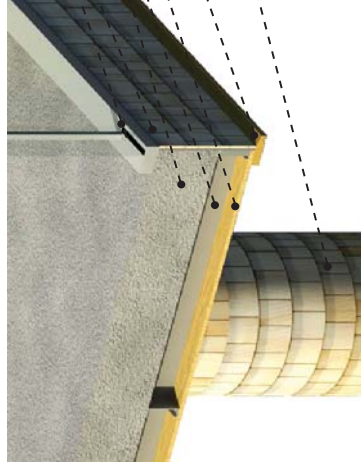
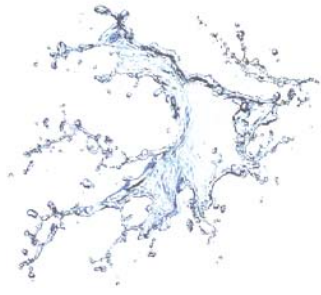


Figure 101 - Wall Details

- Glazing System
- Western Red Cedar Shingle Veneer
- 1'-0" Concrete Slab
- 6" Mtl Studs w/ Rigid Insul
- 3/4" Exterior Grade Plywood
- 2x6 Cedar Water Table
- 1'-6" Concrete Column w/ 4" Rigid Insul & Shingle Veneer



Wall Details

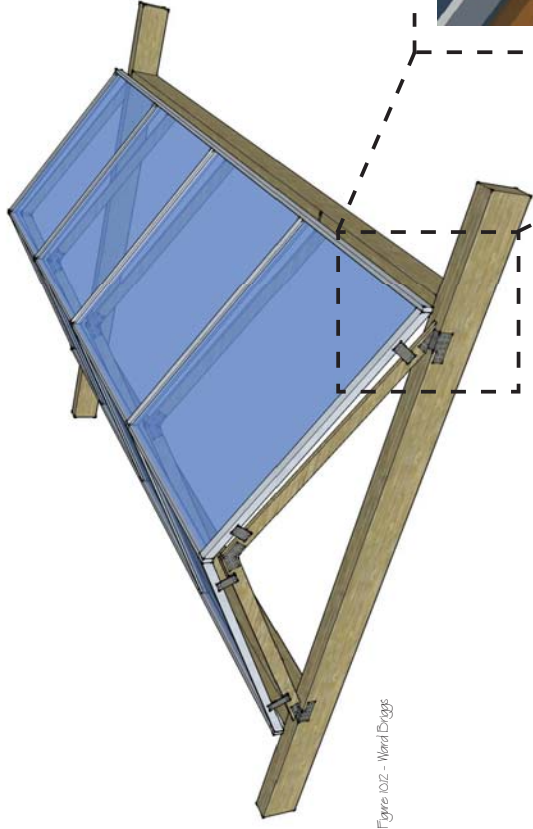


Figure 10.2 - Ward Diggs

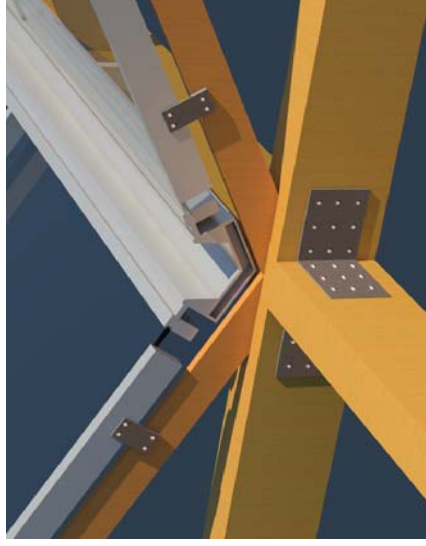
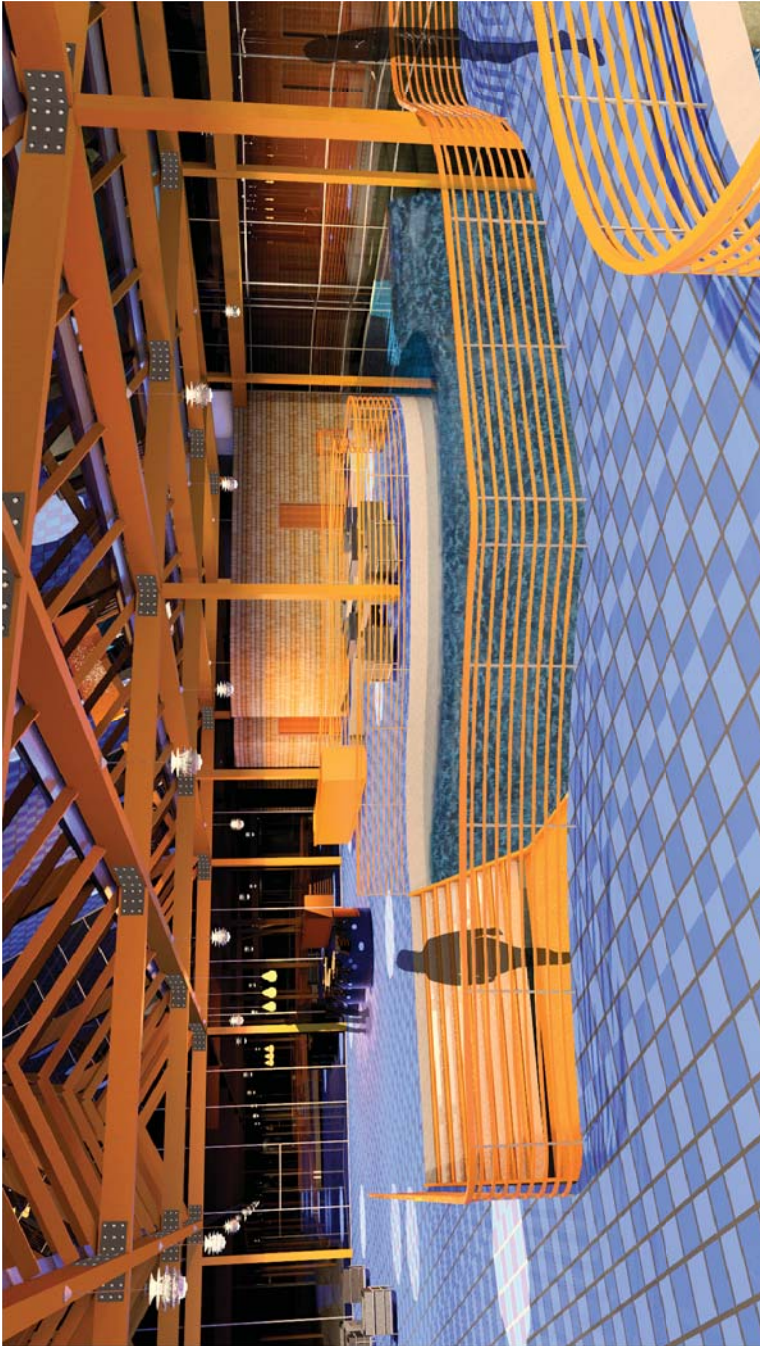


Figure 10.3 - Ward Diggs



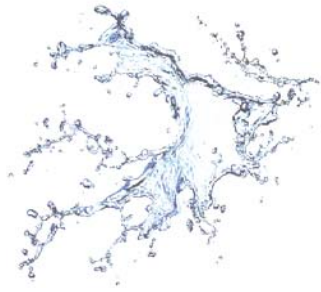
Roof Details

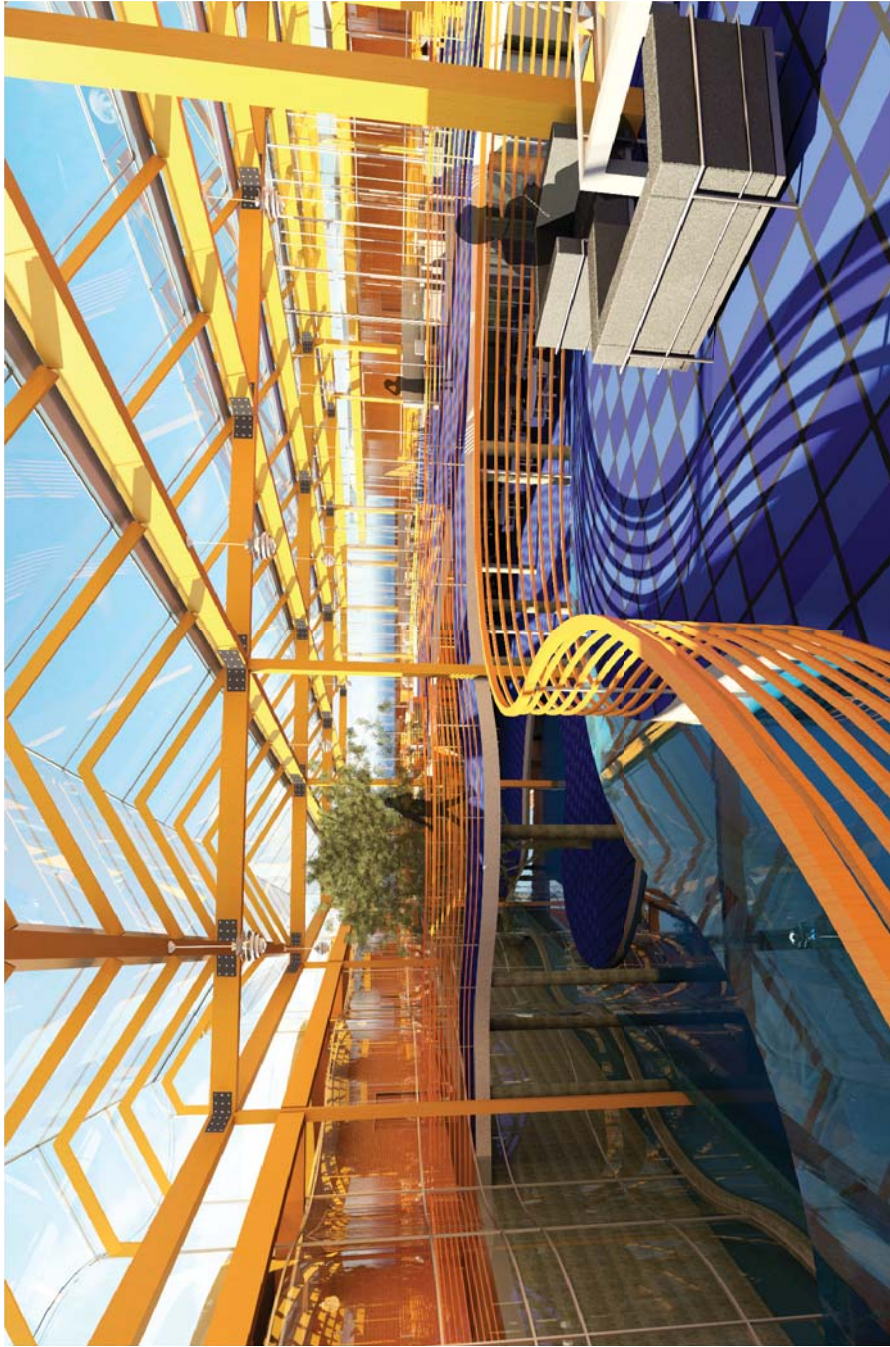
final design solution



View

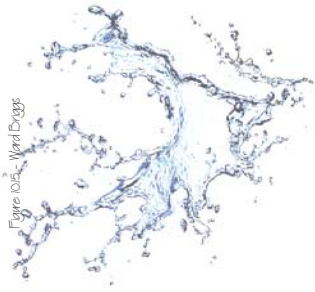
Figure 014 - Wood Eggs





View

Figure 0.2. Word Eggs



final design solution



View

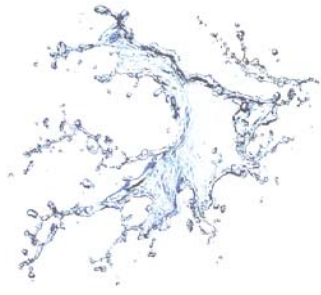




Figure 107 - Ward Biggs

Isolated Cabin Plan

1. Entrance
2. Living Room
3. Kitchen
4. Bedroom
5. Bathroom
6. Outdoor Shower
7. Back Patio
8. Natural Swimming Pool

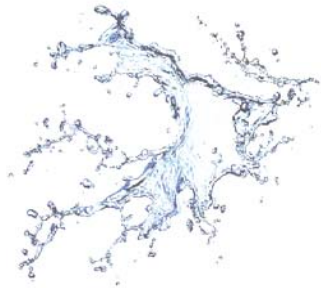


final design solution

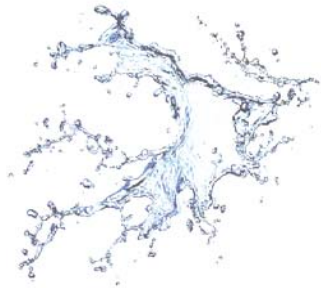


Figure 10.8 - Ward Briggs

Isolated Cabin Section Perspective

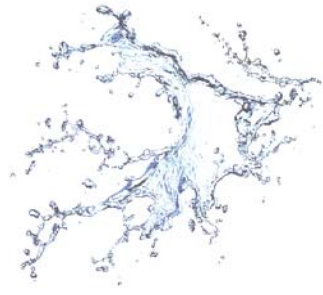


final thesis exhibit



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personal identification

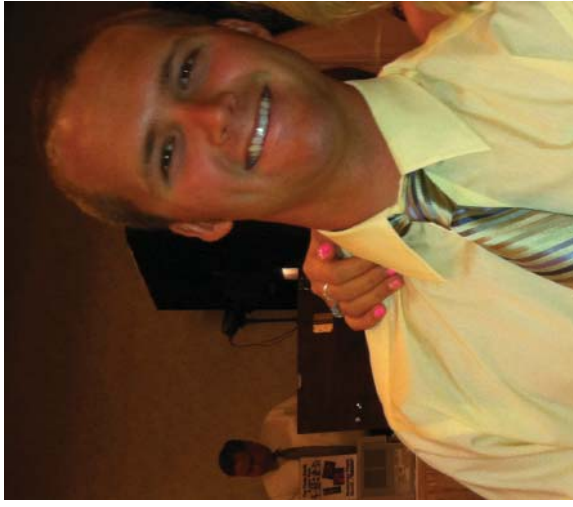


Figure 11 - Briggs, W.

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