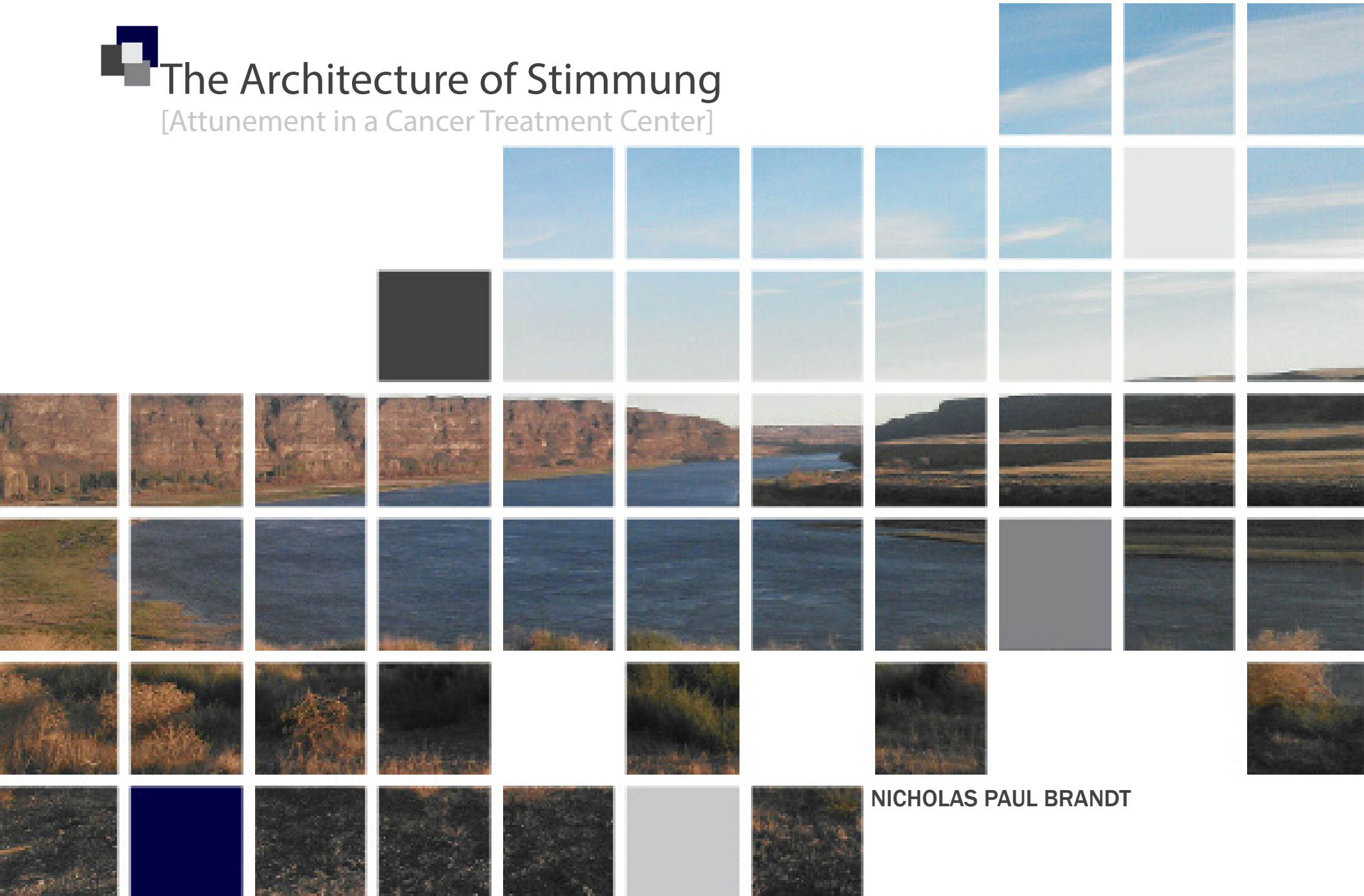
The Architecture of Stimmung

[Attunement in a Cancer Treatment Center]



NICHOLAS PAUL BRANDT

The Architecture of Stimmung

[Attunement in a Cancer Treatment Center]

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

By

Nicholas Paul Brandt

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

Primary Thesis Advisor

Thesis Committee Chair

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[There is new life in the soil for every man. There is healing in the trees for tired minds and for our overburdened spirits, there is strength in the hills, if only we lift up our eyes. Remember that nature is your great restorer.]

-Calvin Coolidge, speech, July 25, 1924

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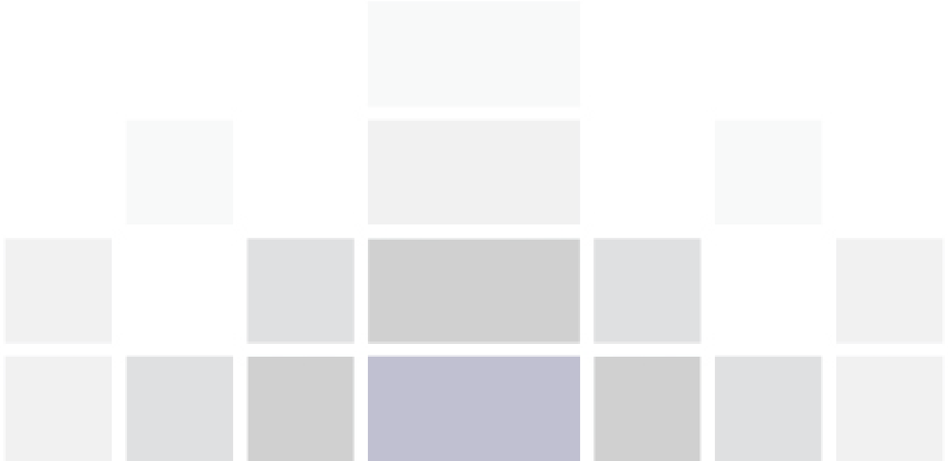


[I think that I cannot preserve my health and spirits, unless I spend four hours a day at least..... sauntering through the woods and over the hills and fields, absolutely free from all worldly engagements.]

-Thoreau

Abstract

This thesis examines the environment, atmosphere and experience of patients who have undergone treatment for or who have been affected by cancer. The design is inspired by Martin Heidegger's concept of "Stimmung" (mood, atmosphere or attunement) in which mood constitutes how we as individuals experience the world as it is directly related to our feelings, thoughts and understandings. According to the writer Matthew Ratcliffe, being in some mood or another is essential to the distinctively human way of "belonging to the world."

Located in Quincy, Washington, the rural cancer treatment and recovery center will help the patient reconnect with the world and their surroundings. Exploring the synesthetic dimension of experience, which emphasizes the interconnection of all the senses, my design will attempt to aid in the healing process and overall health and wellness of the patient. Seeking analogies between musical harmony, architectural space and the human body it is my intention to set the stage for the clinical treatment of patients within an environment conducive to healing.

[Key words] *Environment Atmosphere Stimmung Health Treatment Cancer Mood Healing Biophilia Eco-Therapy Harmony Recovery*

Problem Statement

How can architecture and the natural elements work together to create an experience that helps in the healing process of cancer patients?

Statement of Intent

Typology
Cancer Treatment and Therapy Center that focuses on the healing of the being as a whole

Claim
Architecture and the natural elements have the ability to positively affect patients and provide an oasis during their battle against cancer.

Premises
A persons health can be influenced by architecture and the surrounding environment. Both the built and natural environments have the potential to impact how a person positively or negatively experiences a space.

Architecture in collaboration with the natural landscape should promote hope and positivity in patients during one of the scariest journeys of their lives.

Theoretical Premise/ Unifying Idea
The relationship between the built and natural environments should be created in a way that creates a positive atmosphere and promotes healing and ultimately, hope in the battle against cancer.

Project Justification
Patients battling cancer often feel alone and afraid. It is crucial that patients stay positive because they are not alone. With the help of architecture and the surrounding natural environment, they can experience positive stimmung or a place of hope and positive energy.

The Proposal

[Everything that slows us down and forces patience, everything that sets us back into the slow circles of nature, is a help.]

-May Sarton

Narrative

THE ARCHITECTURE OF STIMMUNG:
"ATTUNEMENT IN A CANCER TREATMENT CENTER"

Every year, over 1 million new people are diagnosed with cancer in the United States. These individuals face tough questions and answers, exhausting treatments and a roller coaster of emotions. My thesis examines the environment, atmosphere and experience of patients who have undergone treatment for or who have been affected by cancer and how architecture can help aid in the healing process.

How can Architecture and the surrounding natural elements create moods [STIMMUNG] conducive to healing for cancer patients?

By looking back on the history of healthcare facilities and how they influence our health and well-being along with how they affect our mood and our senses, we can gain a better understanding for how healthcare facilities should be designed to promote a natural equilibrium or balance for patient health.

The evolution of healthcare facilities in the western world ranging from the home, to the church, to centers of scientific excellence has been influenced by numerous social and cultural developments. The tradition of nursing developed during the early years of Christianity when the outreach of the church included not just caring for the sick, but also feeding the hungry, caring for widows and children and clothing the poor. Monasteries began to add wards, where care was meant to give comfort and spiritual sustenance. The Hotel-Dieu de Paris is regarded as the oldest hospital in the city of Paris, France, which catered to the poor and the sick, providing both food and shelter in addition to medical care. This was the only hospital in Paris up until the Renaissance.

During the early Renaissance, Universities in Italy and Germany became facilities for the education of medical practitioners. By the eighteenth century, medical and surgical treatments had become paramount in the care of the sick and hospitals had developed into more medicalized spaces rather than religious.

In 1751, Benjamin Franklin was the founder of the Pennsylvania Hospital, the first institution to treat medical conditions in the U.S. During the nineteenth century, only the poor or socially isolated received medical care in institutions. If middle- or upper-class people became ill, their families nursed them from the comfort of their own homes.

As society became more industrialized, and as medical practices grew in their sophistication and complexity, there became a shift toward the professionalization of health-care practices which took place in hospitals. With this development, medical facilities also began to grow in size. Large hospitals, sometimes consisting of a thousand beds or more, emerged during the nineteenth century, providing housing and care for wounded soldiers during war.

Today, medical facilities are typically designed to facilitate the interchange between patients and the doctors or nurses. Hospitals and other healthcare facilities are designed to be as efficient as possible and provide patient turnover at a high rate. On average, most medical appointments with a doctor or specialist tend to last only a few minutes and there is minimal face-to-face interaction with a physician prior to major surgery.

With healthcare facilities today being based on the most immediate results, little thought is taken into consideration when creating the overall environment, the mood/atmospheres in which the treatments occur.

A big part of the problem with individual health and the architectural design of health care facilities today is that it is approached through the realm of the “specialist”, the application of the objective information in the design of a building and the administration of health. These types of facilities fail to consider the experience of the body in relation to its healthy equilibrium or how the body perceives the architectural space it inhabits.

In Hans Georg Gadamer’s book “The Enigma of Health – The Art of Healing in a Scientific Age”, Gadamer says that health can be characterized as “natural equilibrium”. In the conclusion of his essay “On the Enigmatic Character of Health” he states,

“We ourselves are part of nature and it is this nature within us, together with the self-sustaining organic defense system of our bodies, which is capable of sustaining our “inner” equilibrium. This is the unique interplay of functions which constitutes life. We can only oppose nature through being a part of nature ourselves and through being sustained by nature.”

When imbalance occurs within this state of natural equilibrium, we have a tendency to seek out a “specialist” to treat our problem, in hopes of providing a quick fix. Even though when we may receive some form of immediate treatment, we do not always fix the overall problem. Today we are more focused on receiving those immediate results rather than taking a look at ourselves and the environments we occupy, which are the real causes of most problems.

Conventional medicine practices are extremely important in helping aid in the treatment of cancer patients today, but their facilities typically do not promote positive stimmung. My thesis project proposes a cancer treatment center that uses both conventional medicine practices and integrative medicine practices in perfect balance to focus on the patients overall health and well-being.

Healthcare facilities should create a positive atmosphere/ stimmung within the environment of the patient. Martin Heidegger was a German philosopher who believed that mood “stimmung” contributes greatly to the sense that we have of belonging to a world. An individual can find a sense of belonging to a world by becoming fully immersed within it, rather than looking out upon it.

It is the heightening of emotions which in music and with cathedrals and concert halls is a common goal. Musicians are often taught the six basic moods – sadness, joyfulness, fearfulness, tenderness, love and anger. Emotional articulation is the purpose for music and architecture.

Moods help define the range in which things are able to matter to us. With this understanding of mood, it is possible to create architectural spaces or environments that make the patient feel a certain way.

Mood happens in an instant. Take this room for example, the moment you entered it, you immediately experienced a mood. Whether it was the temperature of the air that hit your skin, the amount of light quality, the noises you heard, or the size of the space, these aspects all helped to create a mood within you.

We experience atmospheres/moods through the use of our senses in a synesthetic manner, which emphasizes the interconnection of all the senses. A walk within a forest is invigorating and healing due to the constant stimulation of all our senses. The eye collaborates with our bodies and our other senses. An individual’s sense of reality is strengthened and articulated by the constant interaction of the senses.

Juhani Pallasmaa states in “The eyes of the skin” that,

“Architecture is essentially an extension of nature into the man-made realm, providing ground for perception and the horizon of experiencing and understanding the world”. Architecture is not meant to isolate our feelings and imagination; it is a vessel that directs our attention to the bigger picture, through the stimulation of our senses simultaneously. The sense of touch helps us relate our bodies to our environments with a greater understanding of our being “in a world”.

The Vitruvian figure is a drawing by Leonardo da Vinci based on the works of architect Vitruvius describing the ideal human proportions. The figure depicts a man in two superimposed positions with his arms and legs apart and inscribed in a circle and square. The drawing by da Vinci demonstrates the aspiration for a harmony between the world, architecture and man.

Architecture and the human body have always been connected. Early cathedrals were designed by the basic proportions of the body because man was seen as God’s most perfect creation. Traditionally proportions have been viewed as something “out there”. It is perhaps only for God to recognize them. If we are to pursue an existing model of how we might identify with those proportions, at best we might follow the logic of the “Phaedrus”, a book written by Plato, where he argues that when we sense something harmonic, our souls recognize the fundamental order of the universe.

Nature and the entire world appear to be nothing less than a perfect music and musical harmony. Harmony is described as a diversity of moving parts and consonances, brought together with variety. Harmony is a thing of reason; it only emerges through an activity of the soul/mind. It is not an attribute that is freely and immediately sensible.

The stars in the heavens or the sky are separated like the strings of an instrument. Kircher says that when a man is perfectly healthy, the motion of spirits in the liver chime with the movement of the heart at the interval of an octave.

“The nerves and muscles in the human body are moved by music like the strings of an instrument. We experience joy when the spirits of life are extended, and sorrow when they are contracted.”

Health is a state of complete harmony of the mind, body and spirit. When one is free from physical disabilities and mental distractions, the gates of the soul open.

German scholar Athanasius Kircher said that,

“The passions of the soul vibrate sympathetically to music by analogy to a vibrating string. The harmonic results of a vibrating string can be compared to the rhythms of a well-proportioned building.”

Music and architecture have been intimately joined by a cosmic connection, the idea that they both are generated by an underlying code. This order, revealed by mathematics and geometry, was first espoused by Pythagoras. This idea led to many Greek temples designed on proportional principles revealing not only supreme beauty but ‘the music of the heavenly spheres’ – either God or nature.

Today, music and architecture still have a strong connection. In 2011 at the Music in Architecture – Architecture in Music (MIA-AIM) Symposium at the University of Texas at Austin, composer Ellen Fullman performed her work titled “Tracings” in Battle Hall. Designed by architect Cass Gilbert in 1911, The hall provides an extraordinary acoustic environment for the composer’s instrument.

“Tracings” was composed specifically for the historic building, regenerating ratios found in the design of the building to produce tuned musical intervals.

Like the change from one note to another, my architecture will create a space that changes the mood of patients and visitors. Considering evidence from my research of hospital design, and noting arguments made by Gadamer, Heidegger and Pallasmaa, I am approaching the design of my cancer treatment center based on the balance achieved through typical modern clinical/medical approaches and integrative medicine practices which occur within an environment conducive to healing of the “whole” person.

Major Project Elements

Reception/ Patient Check-in/ Community Gathering Room
There will be a large open space connected to the entry and reception area. This space is crucial for group interaction and a space for gathering of the patients and their families. One of the main focal points in the building, patients can interact with one another and their families in a space that highlights nature indoor and outdoor as well as natural lighting. A stone hearth will be the center of this room.

Infusion Treatment
This will include a medical facility with a lab, pharmacy and exam rooms along with an infusion treatment space that will be fully equipped and will be accessible between 6 am and 9 pm to meet the patients treatment requirements.

Patient/ Family Overnight Rooms
The patients rooms will be laid out like a small home floor plan instead of traditional hospital rooms. Each room will have an attached bedroom where family can stay to help the patient feel “safe” and keep a home like feel to the facility.

Well Being Areas/ Gardens
With eco-therapy being the main focus of this project, it is crucial to focus on the relationship with the architecture and the natural environment. There will be both indoor/ outdoor gardens, a butterfly garden and outdoor activity areas for the patients.

Cafe
A cafe and dining hall will serve to the patients and their families. The cafe area will also serve as another space for social interaction between patients and their family members.

Major Project Elements

Spirituality Space
Area designated to self reflectance

Support Spaces/ Reading/ Resource Area
Library and media room to help educate the patients on the journey they are about to embark on. Break out rooms for group discussions. There will also be trained psychologists available for additional support.

Administration
Area that will house administration who will oversee the facility and ensure that medical staff is fulfilling patients needs.

Medical Staff Quarters
Rooms specifically for medical staff who will be working overnight to be on call for patients needs.

Therapy/ Wellness
Massage therapy and acupuncture rooms will be available along with both an indoor/outdoor pool and other spa treatments.
A fitness room and yoga space will also be available for patients who would like to continue working out while receiving treatments.

Major Project Elements

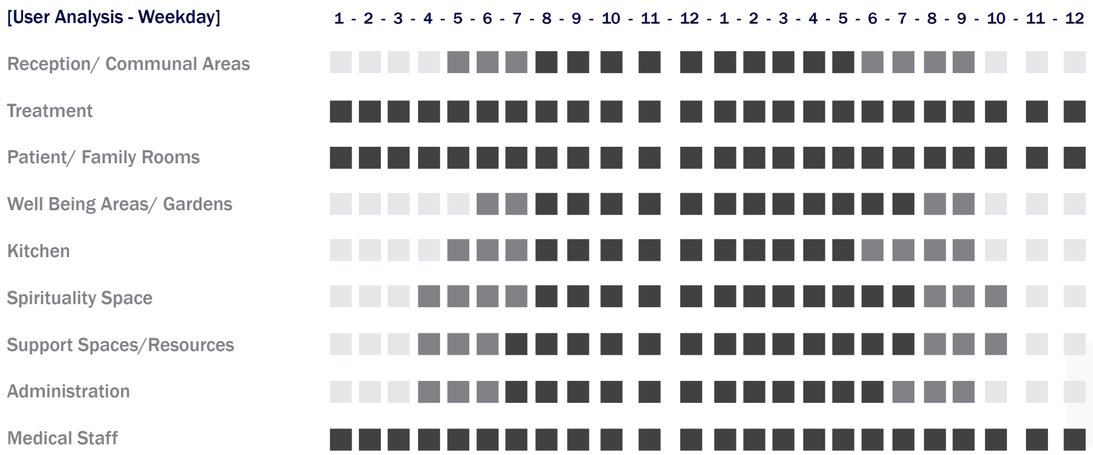


Table 1.0 User Analysis Graph

[KEY]

- Low Usage
- Medium Usage
- High Usage

Major Project Elements

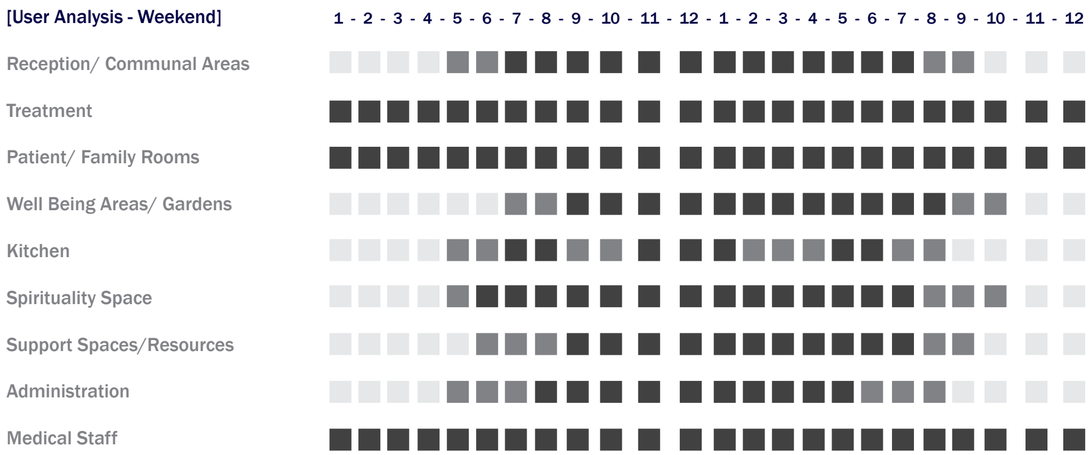


Table 1.1 User Analysis Graph

[KEY]

- Low Usage
- Medium Usage
- High Usage

User/Client Description

The purpose for this project is to help provide a positive environment for cancer patients and their families. The facility will fluctuate in the number of patients it can hold at one time, but will not exceed more than twenty patients at a given time. The building will also account for the medical staff and family members who wish to stay with the patient.

Owner
The owner of the project will be a private, non-profit healthcare entity that will partner with a major hospital in Spokane or Seattle, Washington.

Patients
The people who will use the treatment facility will be of all ages who were diagnosed with any type of cancer and in any stage. The types of patients will include the full spectrum from individuals who are in need of support, information about cancer and treatment options or families with patients that want to get away. Patients will have full access to the facility twenty-four hours a day.

Medical Staff
The main responsibility of the medical staff will be to treat, diagnose and provide a positive and caring environment to its patients. Staff will have twenty-four hour access to ensure that the patients needs are met.

User/Client Description

Administration
The administration group will make sure that all medical staff are fulfilling the patients needs and also to ensure that the best quality of care by medical staff is being practiced. The group will also make sure all facility policies are being followed. They will be in charge of the money and work with the families from all financial backgrounds to make sure no child is turned away.

Visitors
Family, relatives, and friends will all have the opportunity to visit the patient at all hours of the day. With eight patient/family over night rooms, guests are able to spend the night with the patient to help make the environment more positive and keep the patient feeling safe.

Site Information [Macro]

Region

Located on a small island on the Columbian River in Central Washington. Washington is located in the Pacific Northwest states region of the United States. Washington is bordered by Canada to the north, Idaho to the east, Oregon to the south and the Pacific Ocean to the west.

Figure 2.0 Region Map

City

The location of the site is 7 miles west of Quincy, Washington. Quincy is a small city in Grant County, Washington that has an area of 5.04 square miles. Quincy also has a population estimated close to 7,242 by the 2013 census. Quincy started as a railroad camp during the construction of the Great Northern Railway. Tourism is a major part of the cities economy. The Gorge Amphitheater draws anywhere from 3,000 to 20,000 people per concert. Crescent bar resort attracts many tourists with its abundance of vineyards, golf courses, water activities, camping parks, hunting, fishing and boating. The base of Quincy's economy is provided by agriculture related industries, with over 200,000 acres of irrigated land under production with fruits and vegetables.

Figure 2.1 County Map

Site Information [Micro]

Figure 2.2 City Map

Figure 2.3 Image of Site

Site Information

Address: 8878 Crescent Bar Rd. NW
Quincy, Washington 98848

Site Area: 240,000 Square Feet
(5.5 acres)

Boundaries: The site is bounded by the Columbian river to the West, an empty lot to the North, a golf course to the South and condominiums to the East.

Site Importance

This site is important because of its location within the region. It is centrally located between Spokane and Seattle. Crescent bar island is located right on the Columbian River and nice sand bars, surrounded by towering basalt cliffs in all directions. The site is far enough from the big city life, but close enough to be affiliated with a bigger hospital. The peaceful landscape of the site provides a positive healing environment. The surrounding landscape creates a natural haven where patients can escape and be one with the natural environment.

Project Emphasis

This project will identify how both the built and natural environments can have a positive impact on patients battling cancer and give them a sense of hope. I believe that architecture and its surrounding landscape have the ability to direct a persons mental state in one direction of another. My project will emphasize biophilia, the relationship between the built environment, the natural environment and the people connected to them in order to create positive stimmung for healing.

The best way to accomplish biophilia is to lose the barriers that separate nature from architecture. Architecture should be done in a way that includes the natural environment within it, making the two work together in unity.

Plan for Proceeding

Research Direction
Research for this thesis project will be continuously conducted throughout the entire course of the thesis process. Research will be done in greater depth early in the thesis process to build a stronger foundation of the projects typology, historical context, the theoretical premise, unifying idea, site analysis and program requirements. Books, magazines, online journals, case studies of existing buildings and interviews with individuals related to the building typology on a personal level will all be used as resources.

Design Methodology
During the design process and over the course of the research process, I will use the mixed method design approach. This design methodology includes the analysis of both quantitative and qualitative research. I will focus on information that is based on a unifying idea. Researching statistics and other data will make up the quantitative data I will use in my thesis project. I will conduct interviews and visit existing children's hospitals to observe for myself and gather information for my qualitative data. I will analyze and interpret the results of my research in the form of text, diagrams, and both hand and digital graphics.

Design Documentation
Documentation of both my research and design process will be done weekly over the course of the calendar school year. My documentation will be organized and then made accessible in the institutional repository.

Plan for Proceeding [Schedule]

[Task]	[Work Days]
Project Documentation	126 Days
Project Progress Review	54 Days
Site/Context Analysis	21 Days
Conceptual Analysis	28 Days
Spatial Development	12 Days
Floor Plan Development	28 Days
Digital Model Development	84 Days
Structural Development	12 Days
Envelope Development	25 Days
Material Development	31 Days
ECS Passive Systems Analysis	14 Days
ECS Active Systems Analysis	14 Days
Midterm Reviews	7 Days
Renderings/ Digital Development	25 Days
Finalizing images for Presentations	30 Days
Presentation Layout	24 Days
CD of boards for thesis advisor	1 Day
Model Building	14 Days
Test Plot Boards	5 Days
Install Presentation	1 Day
Thesis Exhibit	18 Days
Final Thesis reviews	8 Days
Final Documentation of thesis due	1 Day
Spring Commencement	1 Day

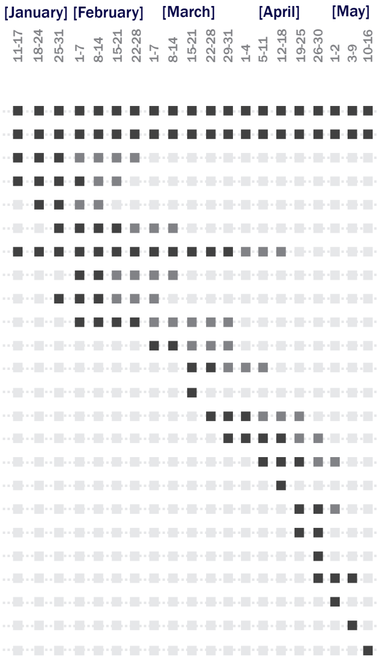


Table 2.0 Scheduling

[We are part of the natural world, and it is part of us.]

-Anonymous

Previous Studio Experience

5th year

Fall 2014:
- Regin Schwaen: Instructor
- Hello Nature Design Competition: Project

4th year

Spring 2014:
- Steve Martens: Instructor
- Historic Preservation : Project
- Little Free Library: Competition - 1st Place

Fall 2013:
- David Crutchfield: Instructor
- HighRise: Project

3rd year

Spring 2013:
- Milt Yergens: Instructor
- Oil Interpretive Center: Project
- Clock Building - Craft: Project

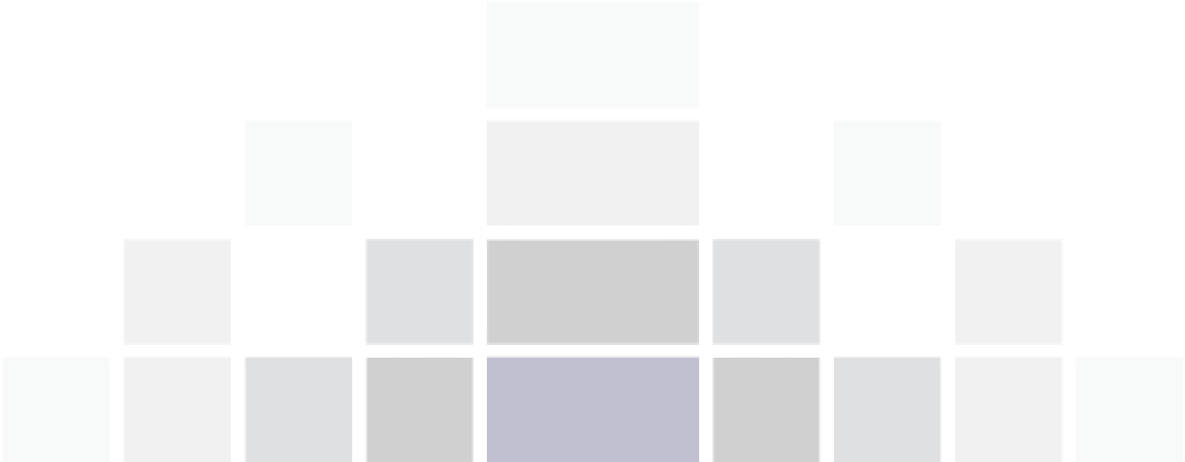
Fall 2012:
- Steve Martens: Instructor
- Funeral Home: Project
- YMCA Camp Cormorant: Project

2nd year

Spring 2012
- Joan Vorderbruggen: Instructor
- Dwelling: Project
- Dance Studio: Project
- Bird/ Architect Competition: Project

Fall 2011
- Darryl Booker: Instructor
- Minneapolis Rowing Club: Project
- Tea House: Project

Figure 3.0 Watercolor Image of Site



Vendsyssel Hospital

Project name: Vendsyssel Hospital - Extension and Renovation
Architect: C.F. Moller Architects
Location: Hjorring, Denmark
Size: 269,000 Sq. Ft.
Expected completion year: 2019

The Danish architecture firm C.F. Moller has won a design competition with a proposal for an addition that will add 269,000 square feet to the existing hospital. The new renovation will include a treatment center, a ward for mothers and children, and a children's playground on the roof. The new addition was spatially layed out surrounding big courtyards and uses large installments of windows to display paths of circulation throughout the hospital. This technique makes navigating through the large facility easier for its occupants.

Hospital Entrance

Figure 4.0 Vendsyssel Hospital

The facility has secluded outdoor spaces located on the third floor, which provide great views to the outdoors and allow large quantities of natural sunlight. This allows the architecture and natural environment to play a key role in the healing aspect of the patients undergoing treatment.

Layout Diagram

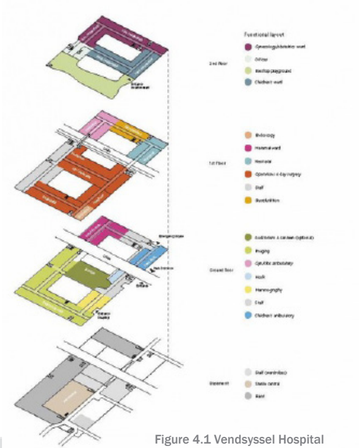


Figure 4.1 Vendsyssel Hospital

Landscape Diagrams

Figure 4.2 Vendsyssel Hospital

The design of the exterior spaces for the hospital extension pay special attention to the healing process, just like the interior spaces. The landscape architects came up with a landscape design scheme with plant and paving designs that include storm water handling and runoff that will help reduce the environmental impact of the design. The building once completed, will receive a certified silver ranking from the Denmark Green Build Council. The building will require less than 25 kw/m2 in terms of energy use.

Bed Ward

Figure 4.3 Vendsyssel Hospital

Ground Floor Plan

Figure 4.4 Vendsyssel Hospital

First Floor Plan

Figure 4.5 Vendsyssel Hospital

Second Floor Plan

Figure 4.6 Vendsyssel Hospital

Site Context/Plan

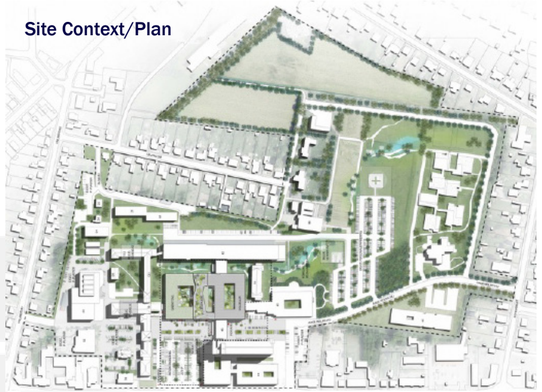


Figure 4.7 Vendsyssel Hospital

Lausanne University Hospital

Project name: Children's emergency unit at Lausanne University Hospital
Architect: GMP Architekten
Location: Lausanne, Switzerland
Size: 422,278 Sq. Ft.
Expected completion year: 2019

The architects at Gerkan, Marg and Partners (GMP) teamed up with JB Ferrari to design a new children's emergency unit at the University of Lausanne Hospital in Switzerland. The facility will house 85 hospital beds and have a terraced inner courtyard with a conservatory. The inner courtyard will act as a protected outside play area for children, which will offer natural light and space for plants and other vegetation.

The concept of the six story hospital is to provide areas within the building where natural light can pour into designated areas through large amounts of glazing to view vegetation and the natural environment. There is a lower two story part of the hospital will include waiting areas and play areas for children. Branching off from the two story section of the building are the examination and treatment areas. The room will serve as a public terrace with planted vegetation that will be used for both recreational purposes and play areas for children.

Figure 5.0 Lausanne University Hospital

Figure 5.1 Lausanne University Hospital

Outdoor Green Space

Figure 5.2 Lausanne University Hospital

Hospital Lobby

Figure 5.3 Lausanne University Hospital

Site Plan

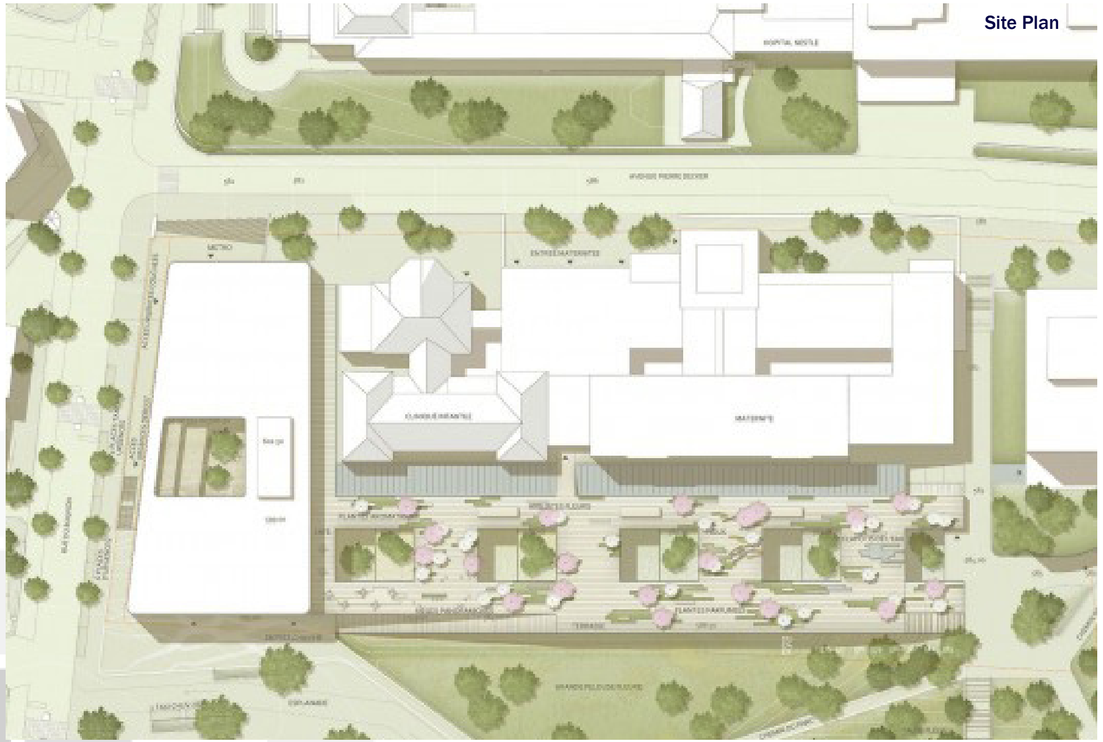


Figure 5.4 Lausanne University Hospital

Children's Hospital Zurich

Project name: Children's Hospital Zurich
Architect: Herzog & de Meuron
Location: Zurich, Switzerland

The architects at Herzog & de Meuron designed a wooden three story hospital that creates a flexible and positive environment for children. The childrens hospital will also be connected to a facility for teaching and research within the new medical facility. The two building typologies will work together to not only treat and examine children, but also provide a place for teaching and learning.

Figure 6.0 Children's Hospital Zurich

The children's hospital is designed around a number of courtyards that combine both architecture and nature. Both in patients, out patients, and their relatives can move throughout the facility with ease from one area to another. The interior courtyards are surrounded by large sets of windows to allow natural day lighting throughout the building.

Figure 6.1 Children's Hospital Zurich

Even though the children's hospital and the center for learning and teaching are not physically connected, they are still located on the same health campus. The two separate buildings are connected architecturally however, both being made of rectangular and circular planes overlaying one another. Within the square geometries of the children's hospital, circular patters are used to break up the right angles and highlight key areas within the hospital. Inside the circular learning center, all of its walls and rooms are oriented with 90 degree angles.

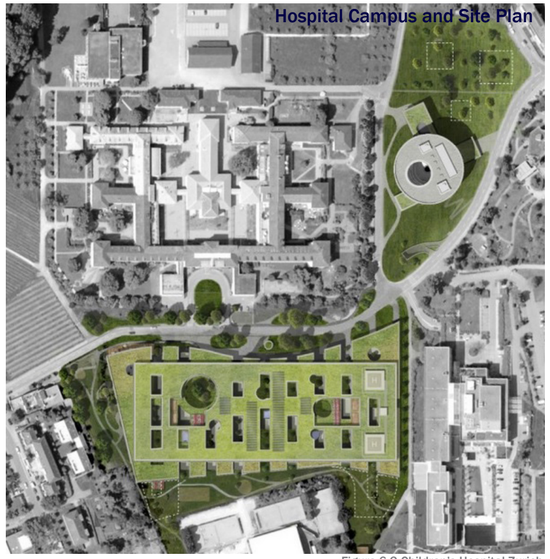


Figure 6.2 Children's Hospital Zurich

The main hospital has three distinct floors, and each of those is reserved for its own individual function. The ground floor, because of its easy access, provides the examination rooms, treatment rooms, laboratories, therapeutic facilities and a restaurant. The first floor is layed out strictly for doctor's offices and the top floor houses all of the patient rooms.

The use of wood for a majority of the exterior facade and interior design throughout most of the hospital was intended to create a more home like setting for the children using the hospital as well as their families and the staff. Wood was also used in this project to reflect the natural surrounding of the site.

Figure 6.3 Children's Hospital Zurich

Figure 6.4 Children's Hospital Zurich

Daeyang Gallery and House

Project name: Daeyang Gallery and House
Architect: Steven Holl
Location: Seoul, Korea

"Water is the foundation for art. Music, poetry, painting and sculpture is the foundation for the merging of a domestic life."

There were two driving factors in Holl's Inspiration for the gallery and house, one was from a drawing he discovered in a John Cage book of a 1967 musical score of Hungarian-Canadian composer, Istvan Anhalt's "Symphony of Modules." The most important inspiration for the design was the way a body moves through space and the feeling you get. The building is divided into three spaces, each separated by a reflecting pool.

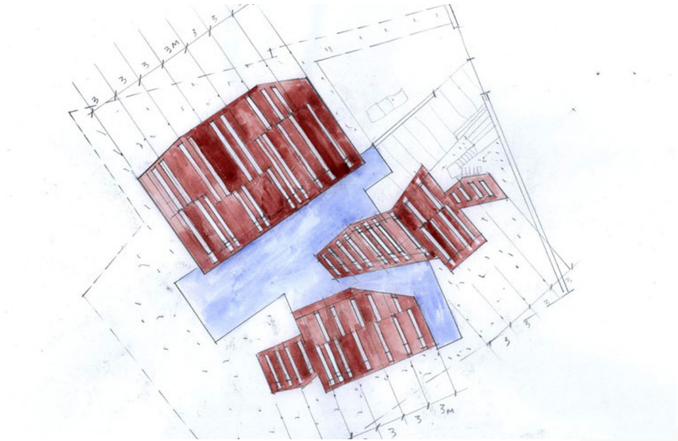


Figure 7.0 Daeyang Gallery and House

Holl describes the project as "music in the form of the graphic score, which was a heuristic (approach to problem solving) device provoking the three-pavilion concept piercing the sheet of water." Upon entering the building on a split-level, you have the option to take stairs down, or up ramps to three gallery spaces. The focus of the project was to make the occupant be aware of the inside, but to focus more on the outside. Within the project there are 59 linear skylights parallel to each other and staggering over the roof planes, bringing into the interior spaces an abundance of daylight.

Figure 7.1 Daeyang Gallery and House

Many of the skylights are set inside the reflecting pool, allowing light to trickle through water before it enters the gallery spaces below, which then appears to dance across the floor and walls. The skylights cut through the roof like (musical) staff lines, allowing sunlight to change the spaces daily and seasonally, appearing as if the sun plays the music with light and space.

Figure 7.2 Daeyang Gallery and House

The fluctuation of light within the spaces also relates to the fluctuation of the physical spaces themselves. The score of “Symphony of Modules” was never actually performed in concert, but Holl appears to have found a way to play the music with the use of natural light. The gallery and house design represents “frozen Architecture.”

“Architecture can change the way you feel, like music. Playing a piece of music when you are sad can bring you into another world” Steven Holl

Figure 7.3 Daeyang Gallery and House

Typological Summary

I chose an infusion treatment center with an emphasis on biophilia for my thesis project because I wanted to create a positive environment for patients to experience while they are going through treatments for cancer. Connecting with nature is a great tool to use during a period of self reflectance and being in nature also helps create a positive atmosphere. I think nature and other green spaces should be incorporated into treatment center design. I chose three case studies to start my typological research that I thought had many similarities to early ideas I had for my thesis project.

The Vendsyssel Hospital in Denmark was a project I chose because of its natural lighting techniques within the facility. This particular hospital used very large openings of windows throughout the building to help take advantage of natural daylight. Not only do these large windows allow sunlight to fill entire spaces within the hospital, they also allow the patients occupying the hospital to view nature up close and feel like they are connected with nature. The Vendsyssel Hospital also designed the facility in a way that is focused on the child's happiness. The architects focus was on creating a positive environment for children and their families who are going through treatments. They incorporated gardens and other vegetation uses inside and outside of the hospital for the patients to interact with. A playground installed on an outdoor roof deck also allows children a chance to run around and play while they are staying at the hospital receiving treatments to help teach the kids that they can still enjoy life and not allow cancer to take over their lives.

The second case study was the Lausanne University Hospital in Switzerland. This case study also used large window openings to allow natural light to flood into every room within the hospital. I really enjoyed the fact that the architects at GMP partners decided to incorporate central courtyards surrounded with glass in the hospital because it helps create a moment where nature and architecture work together to create a space where people can go and be a part of nature.

Typological Summary

The last case study I chose to use for my initial typology research was the Children's Hospital Zurich in Switzerland. This hospital also uses a lot of natural light and gardens throughout the facility. Perhaps my favorite part of this project was the learning facility that was also incorporated in the design of the medical campus. I like this idea because not only does the facility help provide treatments for children with cancer, it also allows a place for professional research, personal research and a facility where professionals can speak with the children and their families about the situations they are in. This is a good way to not only inform the kids and family members, but allow a place for them to talk with one another and turn the treatments into a positive situation. The other thing that I liked about this hospital was the use of wood materials on the exterior facades and the interior designs. Using wood instead of white painted walls helps create an environment that better resembles their own homes and a more safe place to be.

Goals for the Thesis Project

[Academic]
This thesis project marks the closing of my college architecture education. My project is a reflection of the knowledge and skills I have accumulated throughout my time at North Dakota State University. The goal for my thesis project is to push me outside of my comfort zone as a designer and test my skills as I redesign the idea of an infusion treatment center and focus my design around the comfort and happiness of the patients. I hope to come up with a design that represents everything that I stand for as a designer and a professional.

[Professional]
My professional goals as a designer include both short term and long term goals. My short term goals include going out and searching for an architecture firm where I can begin my career in the architecture profession. I will look for a firm that strives to better their surrounding communities with both good design strategies and is involved in community activities. My hope is that through the thesis process, I will gain a better understanding of how to help relate architecture to a specific client and create a positive environment for that client. A long term goal of mine would be to someday become a partner in a firm or possibly start my own design firm.

[Personal]
Studying architecture and becoming an architect has been a personal goal of mine since I was in junior high school. I grew up with a construction background, so for as long as I can remember I have always had a passion for drawing floor plans and designing buildings. After graduating from Dunwoody College of Technology with an associate's degree in architectural drafting and design, I realized that I was not completely satisfied with just getting a drafting degree. I realized that I wanted to do more with my career, such as making a positive impact on communities through architectural design. It is my intention to connect people through architecture and create positive environments where people enjoy visiting. Since thesis is a time to really put everything you have into a project and explore your own desires and passions, this thesis project will allow me to design a space for cancer patients who are going through the treatment process and create a positive healing environment.

Unifying Idea Research

[A Healing Environment]

People are exposed to and experience architecture on a daily basis, and most never give any thought to how the design and the surrounding environment can have an impact on us as individuals at a physical, emotional, mental, and spiritual level. Do we pay attention to our surroundings and understand how they affect us as individuals? Today we seem to only focus on what is visually stimulating, not really taking into account how design also affects our lives on a mental, emotional and spiritual level. Our surrounding environment have the power to keep us in balance as individuals, as well as it has the ability to take us out of balance. Depending on how individuals let things influence themselves or decide how to live their lives has the ability to determine whether we are kept in balance or forced out of it. Sometimes, these things that influence our lives can lead to large amounts of stress, which can detach us from our connections with our environments. These connections associate our health and well-being to the society within an individual develops. Each of us as individuals grows from this connection to society as it is links us with families and communities that help to bring joy and fulfillment to our lives. When these connections separate us from our surrounding environment, it affects our natural state of being. When our natural state of being is intact, it makes it possible for our body to be in a healthy state.

Today, western medical practices does not tend to focus on healing sickness in the way that holistic medicine practices does. Western medicine practices main purpose is to cure the sickness or disease, not caring about the individual or social response that an individual needs in order to start the recovery process.

Figure 8.0 Ospedale dell'Angelo

Health is our state of complete physical, mental, social and spiritual well being. Many factors have the ability to break this natural state of being, which causes the overall break down of our natural healing forces. The first step to consider when creating a healing environment is to identify the negative barriers that disrupt the healing process and eliminate them. These negative barriers relate to an individuals attitude, emotion, financial state and physical impairments. There are other types of barriers which are considered as stressors, these are stressors relating to family situations, self-esteem, work, and changes in lifestyles. All of these stressors can also contribute to the imbalance of our own natural state of healing which stimulates vitality and growth. It is important to understand that we as individuals are able to create and facilitate our own healing environments. With this, we are able to create and place ourselves in settings that promote health and healing. Healing environments should be created with certain qualities in mind, these qualities being: stimulate positive awareness of ourselves, enhance our connections with nature, culture and people, allows privacy, causes no physical harm, provides meaningful stimuli, encourages relaxation time, allows interaction, and contain a balance between flexibility and familiarity.

[Designing for all our Senses]

Sight, hearing, smelling and touch are sensory styles that play a key role in an individuals spatial perception, which is the ability for a person to recognize geometric structures of their surrounding environments their awareness of self-location in surrounding environments and they ability to determine the locations of nearby items in terms of their direction and depth. Each of the five senses uses different signs for exploring the surrounding environment which features a different range of perception. Taste, touch and smell provide different information on near space, while vision and hearing are capable of yielding order representing objects in far space. The different roles of the human body are crucial in understanding spatial formations. When the eye works in connection with the rest of the human body, an individuals senses of reality are strengthened by the interaction with all of the senses. When experiencing architecture turns to a multi-sensory experience, then all of the senses are experiencing the quality of the space or environment at the same time. This experience will be strengthened dramatically due to the human body's use of all the senses at the same time.

Our individual memories and experiences are crucial for our ability to take in what the surrounding environment wants us to feel. The built environment has the ability to affect all of our senses at the same time, even if the response between each sense is delayed. Our five senses interact with one another through several dimensions of the sensory experience.

Figure 8.1 Five Senses Grid

Sense of Sight

The most dominant sense that we have as individuals is our sense of sight. It is one of the senses that we are constantly using, and yet we tend to forget how much we really rely on it. Sight allows us to recognize different surface and texture materials that we see, and then relate them automatically to touch. Our sight is also affected by the way we view light and the contrast to objects around the individual.

Sense of Smell

The sense of smell is defined by the size of the space and the types of materials which were used to create it. The most common memory of a space is remembered by its smell. Smell is a unique sense, people have the ability to detect over 10,000 different odors. Within an architectural space, the sense of smell will detect a distinct odor and trigger a certain feeling or understanding of the space.

Sense of Hearing

A space can be better experienced by understanding how the amount of background noise in a space can be directly influenced by the amount of acoustical treatment within a space. Buildings have the ability to produce sound and reflect sounds which bounce off of different parts of the building and travel back to the ear. These reflected sounds also work in relation with the other senses that can become associated with an individuals past experience to help determine the feeling of the space.

Sense of Touch

Touch is one of the most important senses in experiencing a space to its fullest potential. Most of the time, we experience touch through our hands and the bottom of our feet. Besides physically experiencing an object by touching it with our hands and feet, we can experience the sense of touch by our skin interacting with the temperature of the space, or feeling the strength of wind blowing against the skin.

Sense of Taste

Taste is probably the most intimate of all the senses an individuals body can experience. Taste can be experienced through all of the other senses, but taste is most commonly related with the sense of smell.

[Designing with Nature]
Taking a walk outside and being connected with nature is found to have both health benefits for an individuals body and soul. Within the last 20 years, researchers have become aware of a new and effective kind of therapy. Many researchers have found that Eco-therapy, also know as (green therapy, nature therapy and earth centered therapy) can have regenerative powers which help improve mood while also eliminating stress, anxiety and depression. Medical practitioners have began giving their patients “nature prescriptions” to help them treat a variety of medical conditions such as diabetes, high blood pressure, obesity and post cancer fatigue.

It is no secret that plenty of natural light within architecture has the ability to ease depression and seasonal affective disorder (SAD). In 2007, the University of Essex in the U.K. did a study which resulted in findings that a walk in nature can reduce depression in 71% of their participants. The researchers also found that spending even as little as 5 minutes in a natural setting, whether it be taking a walk in the park or spending time gardening in the back yard, can improve mood, self-esteem and motivation.

Breast Cancer Survivors and Nature

Anywhere from 30% to 40% of breast cancer survivors have felt fatigue following their treatments. To help patients learn to manage their fatigue, holistic programs have been created to help manage stress and improve diet and exercise, as well as incorporate nature in part of their healing process.

Even though breast cancer patients have said that they don’t have the energy for gardening following their treatments, doctors still prescribe that patients spend at least 5 minutes outside in their gardens, at the very least weeding their gardens. Even cancer patients who are not into gardening, doctors tell their patients that they should find a near by park to sit in or take a walk around their neighborhood.

Kids Health and Nature

Other health care professionals have also found that being in a natural environment has many health benefits. Schools are finding that many more kids are becoming overweight and are having type 2 diabetes, usually because kids do not spend enough time outdoors. Doctors are trying to get kids more active to help decrease the chances of them becoming overweight and getting diabetes, so they are prescribing the kids and their families to take time to go outside as a family and enjoy nature, whether it be going for a walk, playing in a park, or just spending time sitting in nature.

Clearing Your Mind

Being outside is found to not only improve physical health, but it also offers mental clarity as well. When people are active, they are able to trigger their minds and engage in more activity and conversations. Researchers have found that the elements experienced in the outdoors such as the sound of a running stream or river, the scent of trees and fresh cut grass as well as the scenery of a wooded area can help with relaxation and also helps lower stress and blood pressure levels.

Unifying Idea Summary

My research for my theoretical premise/unifying idea has given me the positive feed back that I was hoping to find in relation to my claim that nature can be a major influence to an individual during their healing process. The research I did helped me find that our surrounding environments can provide a healthy place for patients to heal. I also found that natural surroundings can also be designed to best suit the patient in the healing process. The main focuses of my research were healing environments, ways to design for our senses, incorporating nature into our architecture designs and the healing process for cancer patients.

Some of the strongest factors that influence healing in patients are stress, anxiety, nature and lighting. Hospitals and other healthcare facilities have not typically been know as aesthetically appealing buildings as their main focus has normally been on the functionality of the space. My main idea for this thesis project is not to change the healing process, but to create a more positive environment where healing can take place.

My goal will be to design a facility which has more of a homely feel, which will help the patients feel like they are in more of an institutional type facility, and more of a positive environment that promotes healing in a way that incorporates family, friends and others in the process, which will in turn make the patients feel more at ease during their treatments.

Historical Context

[Columbia River - Washington State]

This thesis project is situated in the Columbian River Gorge, surrounded by towering basalt cliffs. The location of the site is neighbor to the Crescent Bar Resort, nestled right along the edge of the Columbia River. The Columbia River is the largest known river in the Pacific Northwest Region of the United States. The Columbia River starts in the Rocky Mountain chain in Alberta, Canada, flowing in the northwestern direction into British Columbia before flowing south west into Washington state, where it eventually emptys into the Pacific Ocean. The river is 1,243 miles long and the largest river that stems from it is the Snake river, which travels south east towards Twin Falls, Idaho. The drainage basin of the river is comparable to France in size, also extending into seven U.S. States and one Canadian province. When it comes to overall volume, the Columbia River ranks fourth largest in the U.S.

The Columbia River is known as a snow-charged river, which fluctuates in volume due to the seasons where snow fall is common. On average, the river discharges nearly 160 million acre-feet of water, with the highest volume coming between April and September and the lowest from December to February. The source of the river is 2,650 feet above sea-level and fluctuates between 2 to 5 feet per mile annually.

In the most scenic part of the river, which cuts through the cascade mountain range, the river creates a 100-mile long and 3,000 foot deep Columbia River Gorge. The river used to cascade over the basalt cliffs and rapids within the Gorge, but today, dams helped create a nearly sea-level river that flows through the mountain range.

Figure 9.0 Columbia River Map

Figure 9.1 Columbia River

The Columbia River is also known as the most hydroelectrically developed river system in the world. Today, there are 56 dams built exclusively for hydro-power in the Columbia River basin. Hydro-power today supplies nearly 50% of the electricity used northwest region of the U.S. Along with the hydro-power dams, there are also 77 other multiple purpose projects in the basin that include hydro-power production. Some of the benefits provided by the dams include navigation for barges, irrigation to farms in the drier parts of the region, launch areas for recreational activities and also flood control.

Along with the benefits of the Columbia River which I listed above, I believe that the river could also help provide a good source of hydrotherapy to my thesis project.

[History of Hydrotherapy]

For thousands of years, people have used water as a healing and a cleansing agent. Historical studies have found that most cultures have used warm water for its therapeutic properties. Over the years people have discovered that using water helped reduce pain, as well as helped them relax.

The oldest recorded spa or mineral bath is over 5,000 years old, and can be found in Merano, Italy.

Around the year 500 B.C., mineral and thermal baths were being built near natural hot springs and volcanoes. Hippocrates is known to many as the founder of medicine, and it is believed that he studied the practice of hydrotherapy as a treatment for many different disorders.

The Romans also believed in using water as a means of therapeutic relief and healing. More often however, the Romans considered using mineral tubs as a form of recreation and a way to care for personal hygiene. The Romans designed stone tubs as elaborate series of aqueduct systems which carried mineral water between public rooms, private rooms, and steam rooms.

In 305 A.D. the largest of the Roman baths, the Diocletian, was completed covering approximately a 130,000 square yard area. The Romans had a certain process they followed when they used the Diocletian bath. The first step of the bathing or cleaning process was to go to the Unetuarium where they applied an oil on to their skin to prepare the skin for cleansing. Once this step was completed, they would proceed to a warm room similar to a sauna called the Tepidarium. In this room they would lay around in the heated room, allowing the hot temperature to act with the oil to cleanse the body. After this step they went to the Calidarium or (hot bath) where they would sit and sweat, while scraping at their skin with a metal tool to remove the dead skin. Once the body was cleaned with the tool, the last step in the process is to jump in a Frigidarium or cold bath.

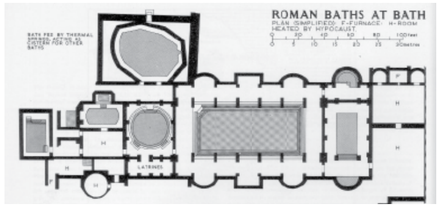


Figure 9.2 Roman Baths Floor Plan


Figure 9.3 Roman Baths Main Pool

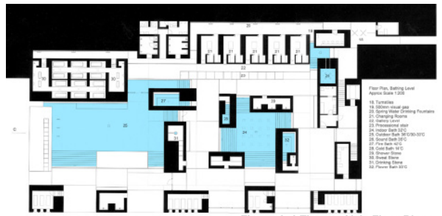


Figure 9.4 Therme Vals Floor Plans


Figure 9.5 Therme Vals Cool Bath

[Peter Zumthor's Therme Vals]

The first modern form of hyrdotherapy in the U.S. started in the 1930's as one of the most effective known treatments for polio epidemic. Hydrotherapy is know to be one of the main causes of polio patients being able to regain their ability to walk.

A modern idea of hydrotherapy architecture is Peter Zumthor's take on healing baths called the Therme Vals, hotel and spa located in Switzerland. Zumthor's Therme Vals spa provides a unique experience which includes all of an individuals senses. The cave/ quarry inspired hotel and spa opened in 1996 to replace the existing hotel. The building was carved into the side of a hill, reusing the carved out valser quartzite slabs as the main inspiration for the walls of the spa.

"Mountain, stone, water - building in the stone, building with the stone, into the mountain, building out of the mountain, being inside the mountain - how can the implications and the sensuality of the association of these words be interpreted, architecturally?"
- Peter Zumthor

The Therme Vals were designed as a way for visitors to rediscover the ancient beliefs on bathing, Zumthor uses a combination of light & shade, open and closed off spaces and linear elements create a highly sensuous experience for the individual.

[Biophilic Design in Architecture]

The term “Biophilia” literally means “Love of life or living systems.”

The biophilia hypothesis suggests that there is an instinctive bond between human beings and other living systems. Edward O. Wilson introduced and popularized the hypothesis in his book, Biophilia (1984). He defines biophilia as “the urge to affiliate with other forms of life.”

Biophilic Design is an innovative way of designing the places where we live, work, and learn. We need nature in a deep and fundamental fashion, but we have often designed our cities and suburbs in ways that both degrade the environment and alienate us from nature. Because of its tremendous impact on human psychology, biophilic design plays a vital role in healthcare and healthcare delivery. The current healthcare system contains many flaws, especially in its physical spaces. Hospitals, clinics, and offices are high-stress environments for patients, visitors and families, and healthcare professionals alike. Integrating nature into healthcare facilities has numerous benefits for many groups.

One well-known study by Ulrich looked at patients after surgery. One group of patients had windows with a tree view; the others’ windows faced a brick wall. The patients with windows facing trees “had shorter hospital stays, received fewer negative comments from the nurses, required less moderate and strong analgesics, and had slightly fewer postoperative complications.” The underlying reasons for this discrepancy are biological. For our ancestors, “a capability for fast recovery from stress following demanding episodes was so critical for enhancing survival chances of early humans as to favor individuals with a partly genetic predisposition for restorative responding to many nature settings.”

Figure 9.6 Thorncrown Chapel

Site Analysis [Narrative]

Choosing a site for a project can be one of the most crucial steps in the design process. The site helps create the environment people will first connect with upon arrival to the site. The environment surrounding the site needs to be researched and analyzed thoroughly to ensure the correct site was chosen for the design. The Pacific Northwest region of the United States, more specifically, Washington state is an area full of nature, abundant with trees, rivers, lakes, wildlife, rolling hills and mountains.

An estimate of 10,500 new cancer cases are expected among children (ages 0-14) in 2014. Since this thesis project puts on emphasis on using our senses to experience our surroundings, along with focusing on the effects nature can have in the healing process for childhood cancer patients, it was important to me that I pick a site with a strong emphasis on nature. The site that I chose is on an island, nestled down in the Columbia River Gorge, next to the Crescent Bar Resort 7 miles from Quincy, Washington.

The location of this site sits on an island in the Columbia River Gorge with basalt cliffs surrounding from all directions. The site lacks trees, which could work in my advantage as I can then design the site with a layout of trees to provide shade for exterior garden spaces. This will also allow me to strategically place trees throughout the site, helping frame different views of the picturesque surrounding natural environment.

Since this is a healing facility for kids, the location of the proposed site also has amenities in the surrounding area which are child friendly and open to the public. These amenities include: tennis courts, basketball courts, boat and jet ski rentals, golf courses, camping areas and hiking trails. The site is an old golf course driving range, so the site is relatively flat and cleared of rocks, trees and other vegetation, providing a place of endless design opportunities. The site provides breath taking views in all directions. Standing on the site looking North, you would see off in the near distance a camp site, the Crescent Bar restaurant, condominiums and the tops of the basalt cliffs. To the East, across the street from the site are the tennis courts with towering basalt cliffs behind them. To the South, behind the golf course, one can see down the river with the Gorge Amphitheater barely in sight, cliffs also towering over the river. In the western direction, you can look out across the Columbia River to a vineyard and more basalt cliffs.

Another key benefit to choosing this site is that there will be very minimal environment impact upon designing the cancer facility. One issue that will need to be addressed about the site is its location in relation to the river because the Columbia River is a snow-charged river, the gorge has a tendency to flood every couple of years. Designing of the site and the facility will need to consider the potential of flooding of the site and to make sure the building could continue to run in such a situation. Another issue to consider would be soil types on the site. With the site being situated so close to the river, there is a chance that some of the soil on the site may not be sturdy enough to build upon. This site could provide a perfect location for a treatment facility, with an emphasis on using nature as a means of therapeutic relief.

Site analysis

[North]

A view to the north of the site looks at the river cut off that separates the island from the main resort. Beyond that lies the Crescent Bar Resort facilities and the towering basalt cliffs.

Figure 10.0 View from site to north

[South]

To the south of the site you can see down the Columbia River Gorge with beautiful views of the basalt cliffs. Further down the river is where the Gorge Amphitheater is located.

Figure 10.1 View from site to south

[East]

Looking east across the street from the site are a group of condos with a swimming pool and tennis court access. Tall basalt cliffs sit right behind the condos.

Figure 10.2 View from site to east

[West]

Looking west of the site visitors have access to views of the calm Columbia River and basalt cliffs on the other side of the river. Sand bars are visible and accessible when the river is low enough.

Figure 10.3 View from site to west

[Material Textures]

Old tree stumps line the northern edge of the property, separating the proposed site from a minimum maintenance road and the resort.

Figure 10.4 Site textures - stumps

[Textures]

Since the site is cleared of all vegetation besides a few trees lining the perimeter, the sand bar to the west of the site, which could be considered in the design process has rocks along the edge and soft sand further in towards the river.

Figure 10.5 Site textures - sand bar

[Light Quality]

The site is completely bare right now, which allows me to strategically design the building as well as the site to take advantage of natural sunlight and provided shade in needed areas.

Figure 10.6 Site - Light Quality

[Vegetation]

Trees line the north and south property lines of the site. They trees are believed to be black cotton-woods. They provide minimal shade to the side.

Figure 10.7 Site - Cotton Woods

[Water]

The Columbia River is the main water source near my site. When I was there the water was lower, about 350 feet from the property line. When the river is higher, it is about 100 feet from the property line.

Figure 10.8 Columbia River

[Wildlife]

Hawks, owls, ducks, geese, white tail deer, mule deer, coyotes, and jack rabbits have been known to make appearances to the site. Salmon, Chinook, and white sturgeon are the most common fish in the river.

Figure 10.9 View towards river

[Human Characteristic]

The site is neighbor to the Crescent Bar Condominiums and the Crescent Bar Resort.

Figure 10.10 Crescent Bar Condo Sign

[Soils]

Most of the base layer soil on this site is Burbank sandy loam, with a mixture of Ephrata sandy loam.

Figure 10.11 Site - Soils map

[Vehicular Traffic]

Crescent Bar Road is the main road access in an out of the resort. Crescent Bar Road runs along the east direction of the proposed site.

Figure 10.12 Crescent Bar Rd.

[Existing Structures]

Along with the resort restaurant, the site is surrounded by condominiums, small retail shops and shower and bathroom structures for the campground.

Figure 10.13 Crescent Bar Condos

[Pedestrian Traffic]

Pedestrian sidewalks follow along the Crescent Bar Road. Sidewalks also outline the condominium sites and lead to the resort restaurant.

Figure 10.14 Crescent Bar Rd & Sidewalk

Climate analysis

[Temperature]

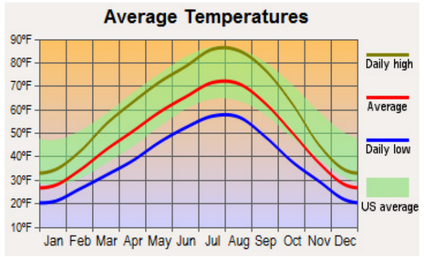


Figure 11.0 Temp Graph

[Cloud Cover]

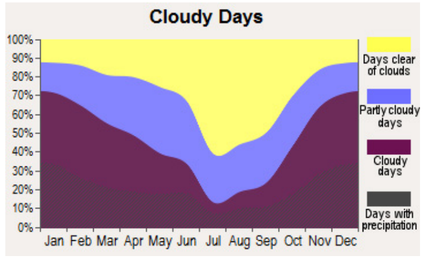


Figure 11.2 Cloud Cover Graph

[Precipitation]

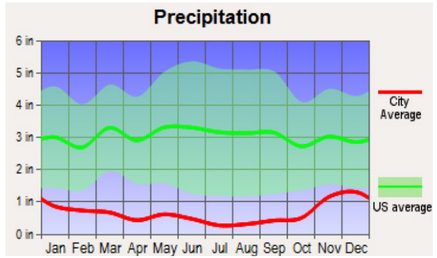


Figure 11.4 Precipitation Graph

[Wind Speeds]

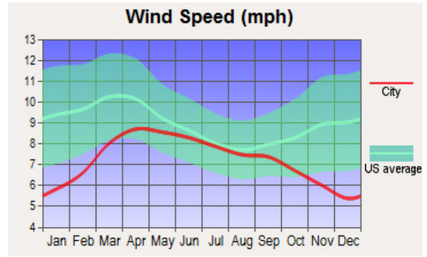


Figure 11.6 Wind Graph

[Sunny Days]

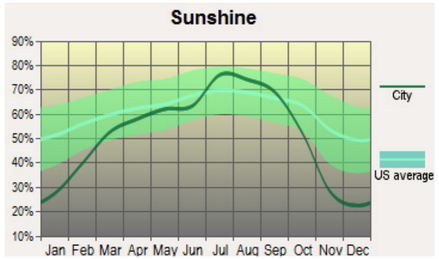


Figure 11.1 Sun Days Graph

[Humidity]

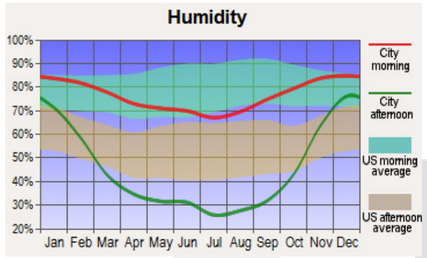


Figure 11.3 Humidity Graph

[Snow Days]

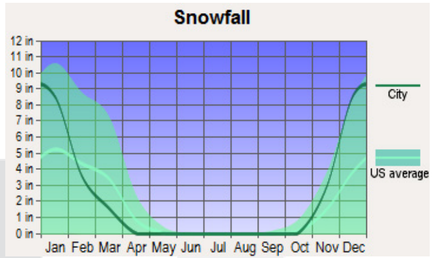


Figure 11.5 Snowfall Graph

[Sun Path Diagram]

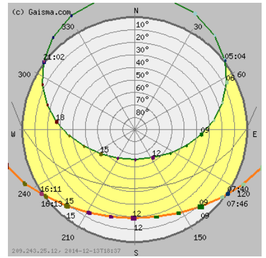


Figure 11.7 Sun Path Diagram

Building Program

[Private Spaces]	[sq/ft]
1. Maintenance Office/Janitorial	300 sq/ft
2. Administrative Offices (3)	700 sq/ft
3. Exam Offices (3)	650 sq/ft
4. Mechanical Room	500 sq/ft
5. Consultation Rooms (2)	200 sq/ft
6. Storage	350 sq/ft
7. Utility Room	1000 sq/ft
8. Records	200 sq/ft
9. Lab Space	800 sq/ft
10. Community Lounge	1444 sq/ft
11. Overnight Rooms	7360 sq/ft

[Public Spaces]	
8. Waiting Lounge	350 sq/ft
9. Reception Area	200 sq/ft
10. Community Center	2300 sq/ft
11. Hearth	225 sq/ft
12. Restrooms (4) (12x12)	576 sq/ft
13. Infusion Treatment	4080 sq/ft
14. Cafe	836 sq/ft
15. Piano Space	484 sq/ft
16. Library	1000 sq/ft
17. Family/Counseling	1344 sq/ft

[Staff]	
13. Locker rooms (M/F) (2)	300 sq/ft
Showers (5) (4x4)	20 sq/ft
Restroom	100 sq/ft
Lockers	80 sq/ft
Break room	480 sq/ft

[Therapeutic Area]	[sq/ft]
14. Therapeutic Room/Yoga Room	800 sq/ft
15. Locker Rooms (M/F) (2)	1000 sq/ft
Showers (12) (4x4)	48 sq/ft
Restroom	500 sq/ft
Lockers	400 sq/ft
16. Indoor Pool	850 sq/ft
17. Acupuncture/Stone Room (2)	520 sq/ft
21. Exercise Room	1400 sq/ft
22. Sauna	560 sq/ft
24. Massage Room (2)	1040 sq/ft
Circulation (15%)	4950
Building Total	32997 sq/ft

[Exterior]	
25. Outdoor Pool	3400 sq/ft
26. Courtyard	1500 sq/ft
27. Patio (3)	350 sq/ft
28. Rooftop Pool	800 sq/ft
29. Healing Garden	3000 sq/ft
30. Parking	41600 sq/ft
Exterior Total	50650 sq/ft
Program Total	83647 sq/ft

Spatial Arrangement

[Pre-Design]

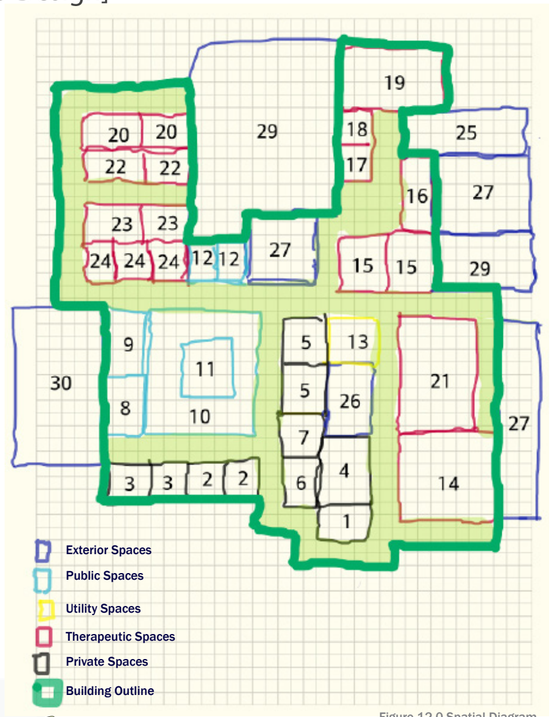


Figure 12.0 Spatial Diagram

Design Process

Inspiration through an Artefact

Figure 13.0 Artefact

An important step in my design process was the exploration and creation of an artefact. After doing my research and coming up with my theoretical premise, my next goal was to create an architectural space which represented those same principles. The artefact was the first step in transitioning my design from a thought to a physical object. Through the first attempt at an artefact, my intention was to play a harmonious chord, which is the interaction between different notes played together at the same time. This harmonious chord represented the transition from the sickness of an individual to the progression and achievement of overall health and well-being.

Figure 13.1 Artefact

Figure 13.2 Tracings

An inspiration for my artefact was a video I watched titled “Tracings”. In 2011 at the Music in Architecture – Architecture in Music (MIA-AIM) Symposium at the University of Texas at Austin, composer Ellen Fullman performed her work titled “Tracings” in Battle Hall. Designed by architect Cass Gilbert in 1911, The hall provides an extraordinary acoustic environment for the composer’s instrument.

Figure 13.3 Tracings

“The nerves and muscles in the human body are moved by music like the strings of an instrument. We experience joy when the spirits of life are extended, and sorrow when they are contracted.”

To further understand the change from one note to another, I attempted to play a chord with a violin. This experiment helped my understand the change from one note to another and how harmony in music works.

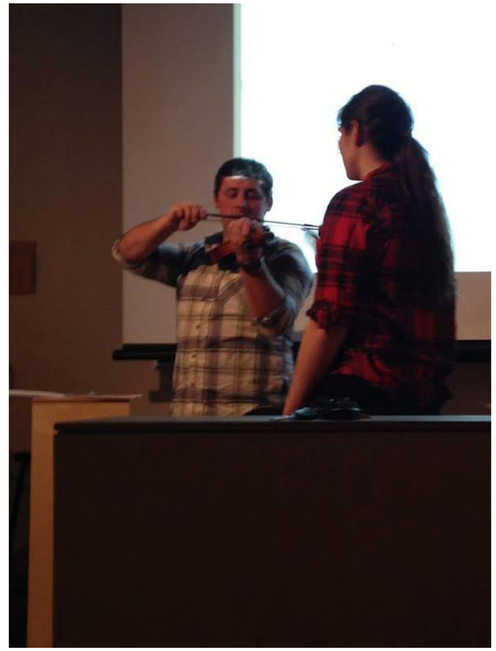


Figure 13.4 Playing Violin

Designing through Models

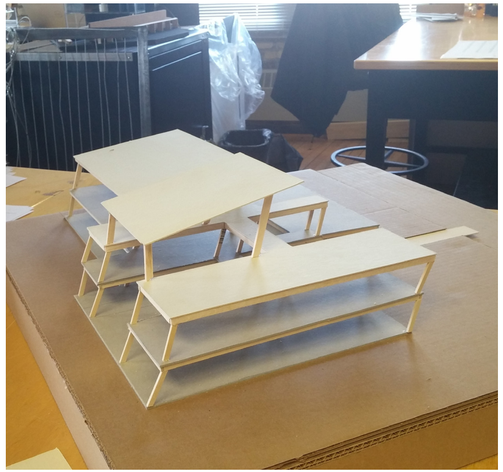


Figure 14.0 Model Exploration

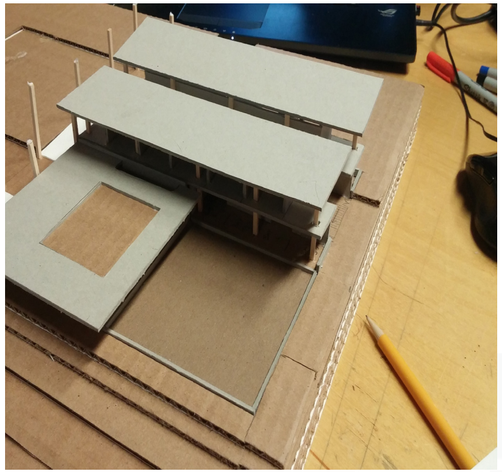


Figure 14.1 Model Exploration

Following the creation of my artefact, I began to create a series of physical models using wood, card board and hard board to explore the physical design of a work of architecture that would embody the same poetic qualities as my artefact. Beginning the process through exploration of physical models before starting the design with plan drawings allowed me to feel my way through the design of the building. This helped create a better design which creates positive stimmung and is conducive to healing. Building the physical models on a site which showed the connection to the Columbia River was an important aspect of my design. Playing with overlapping planes, which changed in elevation was one way I wanted to show harmony through the physical appearance of the building.

[Further design exploration through physical models]

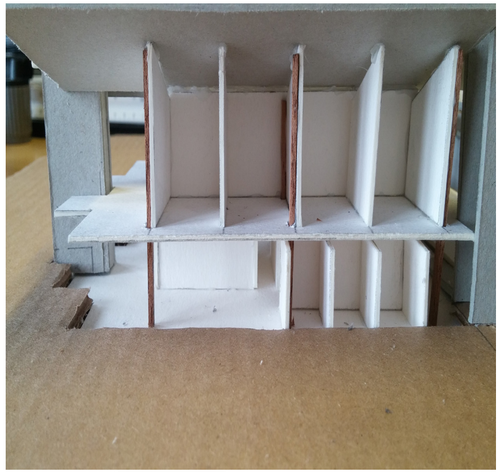


Figure 14.2 Model Exploration

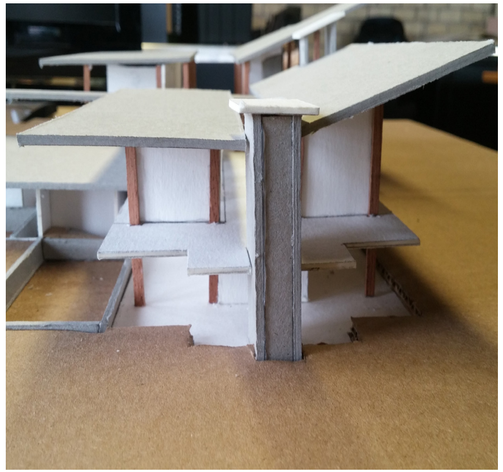


Figure 14.3 Model Exploration

The model above was an attempt to show volumes of spaces and help develop initial spacial arrangements. This model also showed me how different spaces throughout the building are related or can be connected to one another. The image on the right shows the infusion areas sunken into the ground looking out on a large pool of water. The room above the infusion spaces is connected to the pool below by the framing of the horizon with the overhanging roof plane. Within that same room above, light reflecting off of the pool shimmers on the overhanging ceiling, allowing the patients to feel more closely connected with the water below and the river beyond.

Final Design

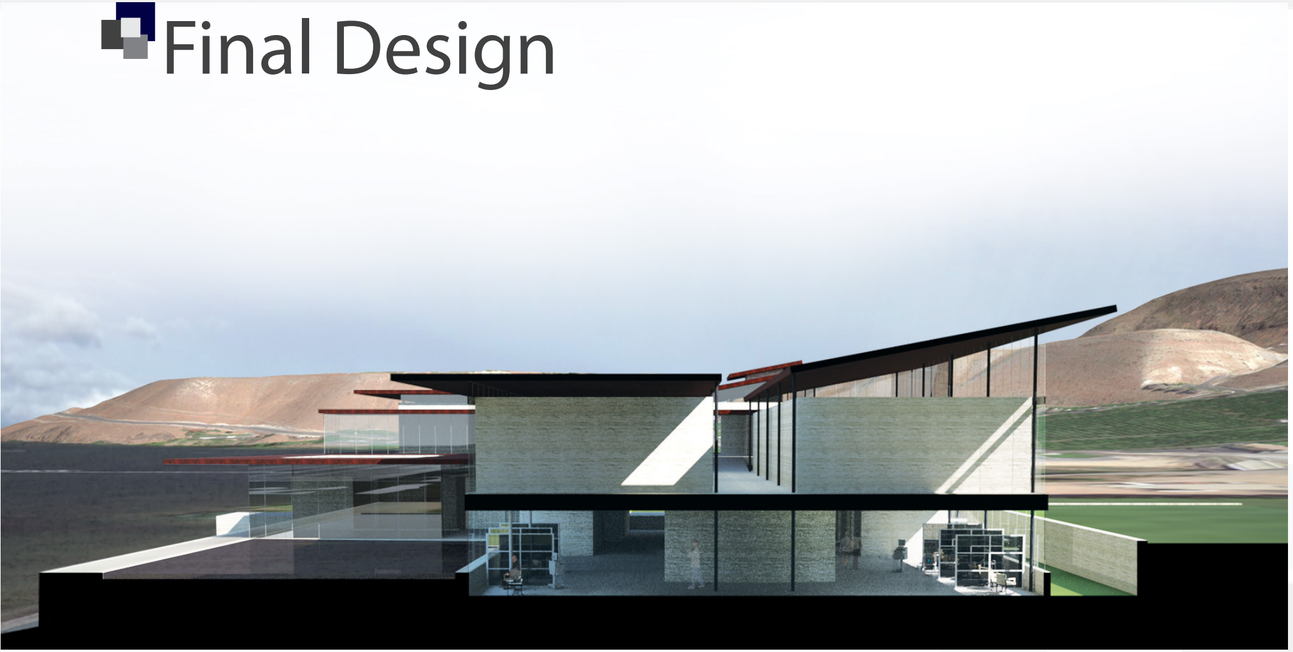


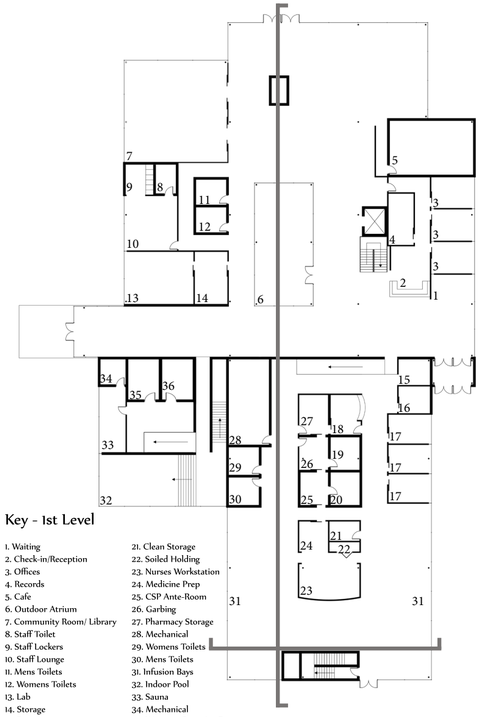
Figure 15.0 Building Section

Building Section

The architecture brings forth a datum between the towering basalt bluffs and the low river, serving as a mediator between sickness and health.

Figure 15.1 Site Plan

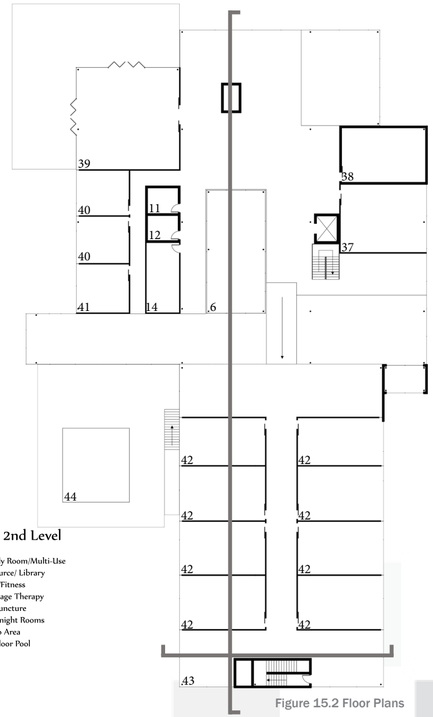
Site Plan



Key - 1st Level

1. Waiting
2. Check-in/Reception
3. Offices
4. Records
5. Cafe
6. Outdoor Atrium
7. Community Room/ Library
8. Staff Toilet
9. Staff Lockers
10. Staff Lounge
11. Mens Toilets
12. Womens Toilets
13. Lab
14. Storage
15. Refreshments
16. Storage
17. Exam Rooms
18. Pharmacy Technician
19. Clean Room
20. Chemo Clean Room
21. Clean Storage
22. Soiled Holding
23. Nurses Workstation
24. Medicine Prep
25. CSP Ante-Room
26. Garbing
27. Pharmacy Storage
28. Mechanical
29. Womens Toilets
30. Mens Toilets
31. Infusion Bays
32. Indoor Pool
33. Sauna
34. Mechanical
35. Womens Changing Room
36. Mens Changing Room

Main Floor Plan



Key - 2nd Level

37. Family Room/Multi-Use
38. Resource/ Library
39. Yoga/Fitness
40. Massage Therapy
41. Acupuncture
42. Overnight Rooms
43. Piano Area
44. Outdoor Pool

Upper Floor Plan

Figure 15.2 Floor Plans

Floor Plans

Figure 15.3 Entry

Entry Perspective

On axis with the Columbia river bluffs, the architecture brings what is far, near. The patients experience an overlapping between materiality and views which may create tension between inside and outside.

Figure 15.4 Outdoor Atrium

Outdoor Atrium

An outdoor glass atrium in the center of the building blurs the line between inside and outside, bringing the surrounding natural environment to the interior of the building.

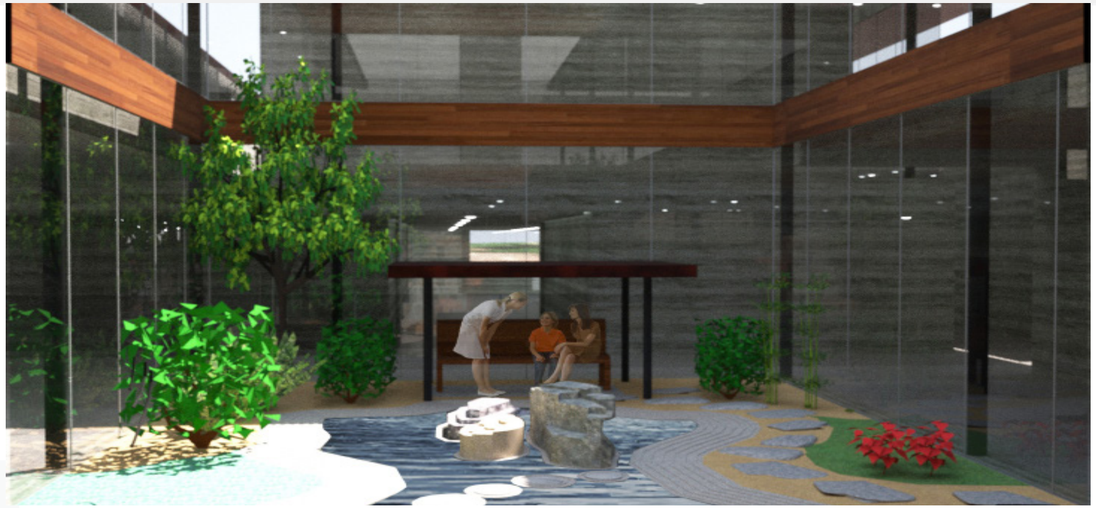


Figure 15.5 Outdoor Atrium

Outdoor Atrium / Contemplation Space

The outdoor atrium at the heart of the building brings all of the surrounding natural elements together in a microcosm, a small world within the larger macrocosm of the surrounding site, which provides a place for contemplation.

Figure 15.6 Cafe

Community Gathering Space / Cafe

A hearth and cafe provide a gathering space for conversation and relaxation. The texture and materiality of the interior walls allow one to touch the distant surfaces of the bluffs with their eyes.

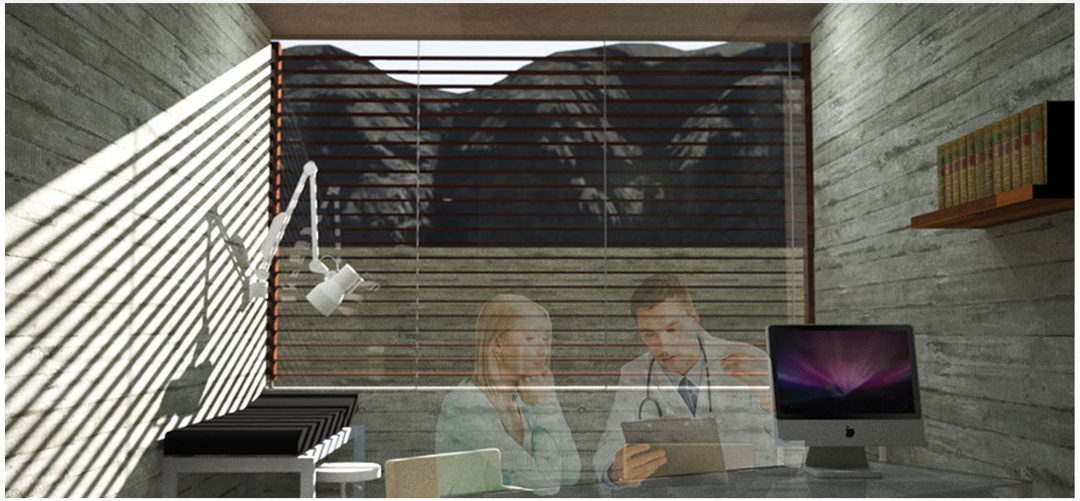


Figure 15.7 Exam

Exam Room

While in the exam room, patients will have a view towards the sky and the towering landscape. The texture of the walls echo the nature of the bluffs beyond.

Figure 15.8 Infusion Center

Synesthetic Treatment

The architecture positions the body within a healing environment which is in a chord with the landscape. The space is lowered into the ground to bring the patient eye level with a shallow pool of water, extending the line of water to the horizon on the basalt bluffs.

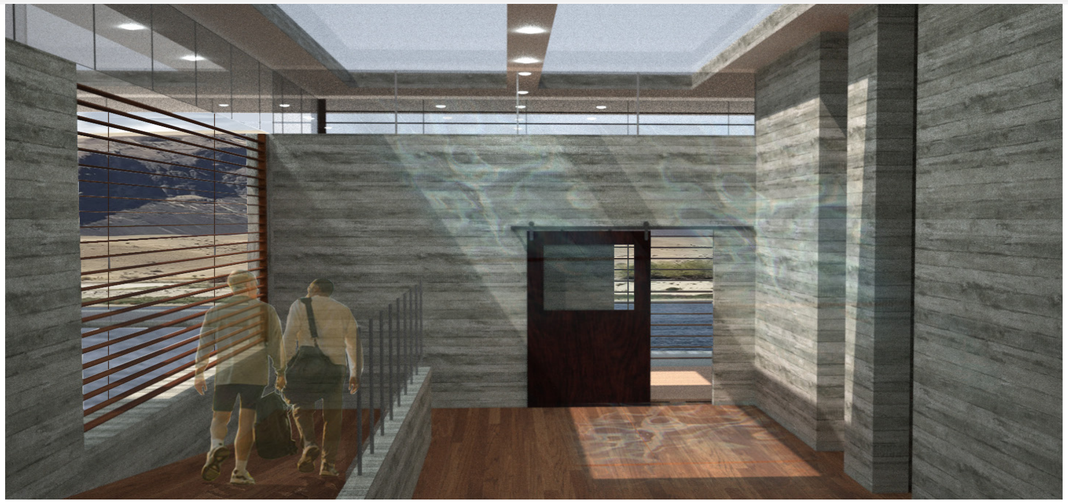


Figure 15.9 Sauna

Sauna Entry

While in the exam room, patients will have a view towards the sky and the towering landscape. The texture of the walls echo the nature of the bluffs beyond.

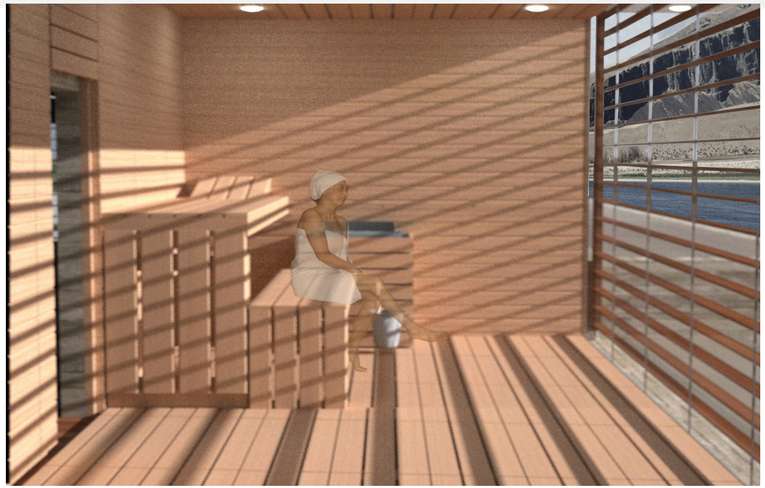


Figure 15.10 Sauna

Sauna overlooking the Columbia

The architecture positions the body within a healing environment which is in a chord with the landscape. The space is lowered into the ground to bring the patient eye level with a shallow pool of water, extending the line of water to the horizon on the basalt bluffs.

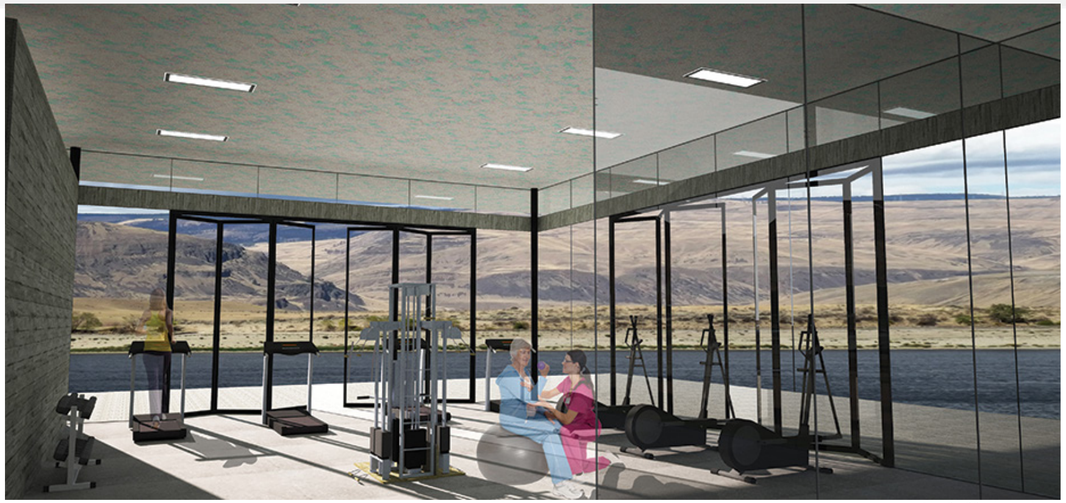


Figure 15.11 Fitness Room

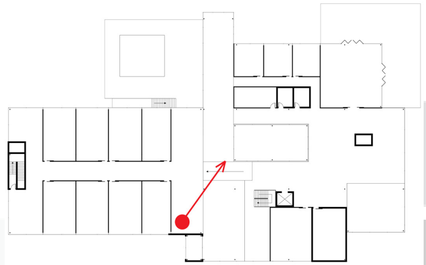
Fitness Room

Areas of the building which focused on health and recovery suspend visitors and patients not only between interior and exterior but also between sickness and health. The fitness room provides views to the exterior landscape on three sides, creating a continuous chord with the bluffs and river.

Figure 15.12 Corner Seating

Corner Seating Space

A seating area on the second level provides an opportunity to observe the roof planes of the building like notes on a music staff as they overlap each other and step downward (modulate) between the bluffs and the river.



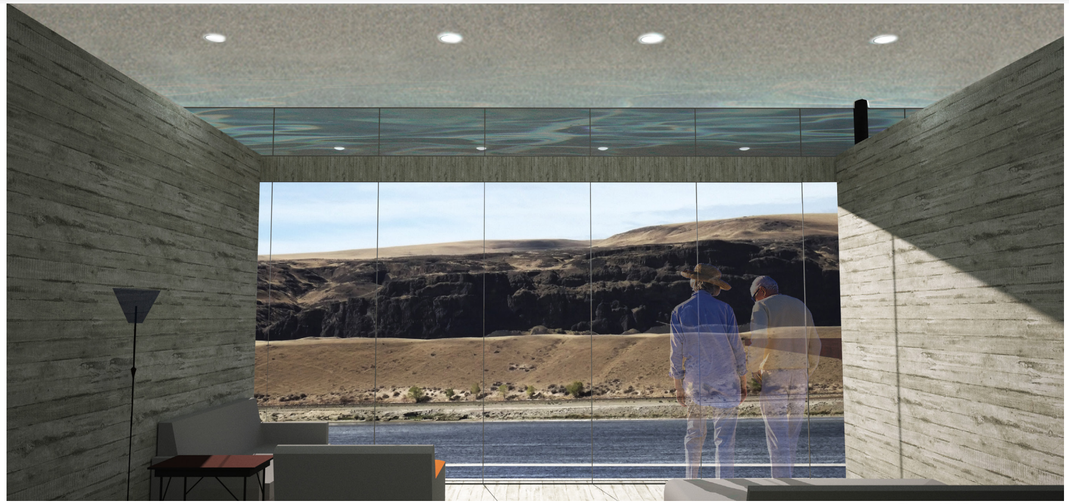


Figure 15.13 Overnight Room

Overnight Room

The light reflection on the overhanging ceiling from the pool below creates an experience where the patient feels connected with the river. The reflection of the water also blurs the line of where clouds and sky end.

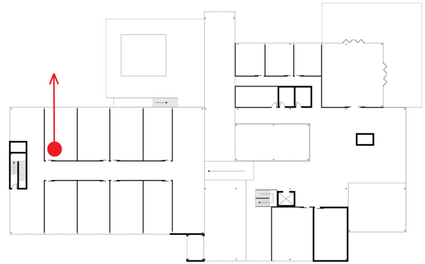
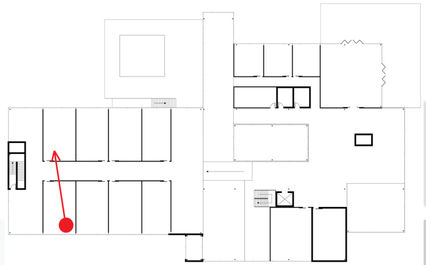


Figure 15.14 Overnight Room

Interior View Overnight

Figure 15.15 Piano Space

View from hallway into overnight room and piano space



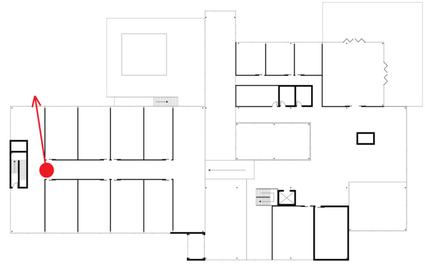


Figure 15.16 Building Section

Building Section

Figure 15.17 Building Envelope

Building Envelope Section

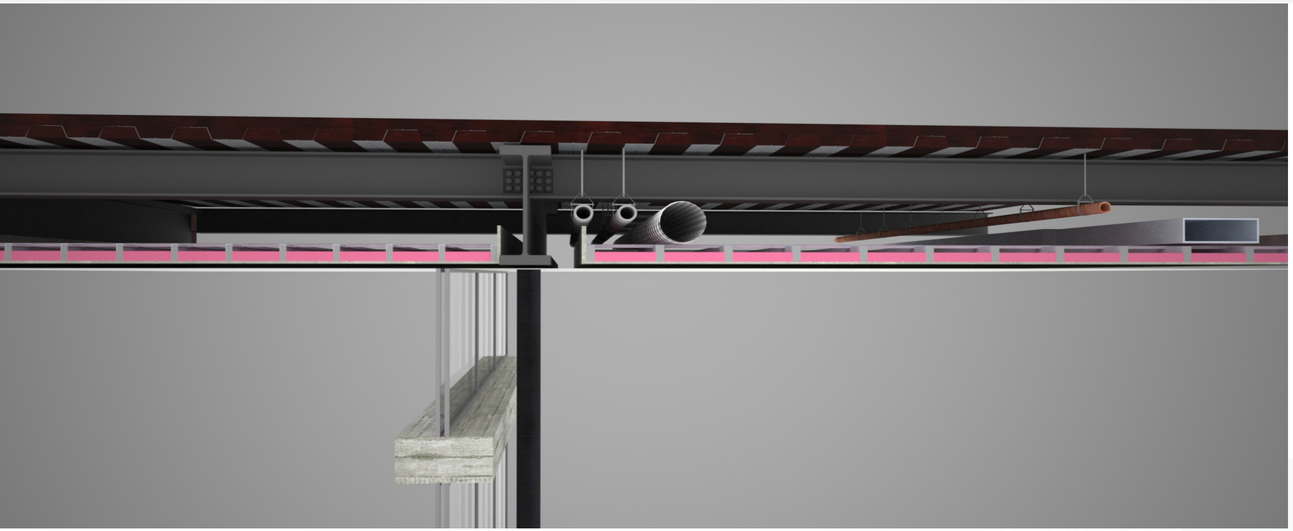
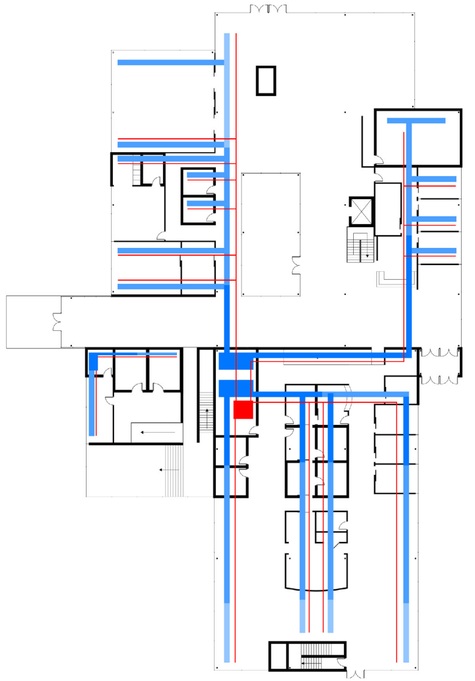


Figure 15.18 Building Section

Connection Detail



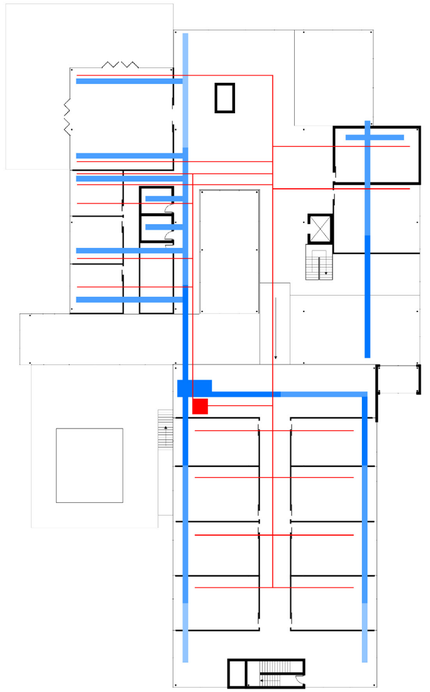


Figure 15.19 HVAC Diagram

HVAC Plan

Final Model and Boards

Figure 16.0 Final Presentation

Figure 16.1 Final Setup

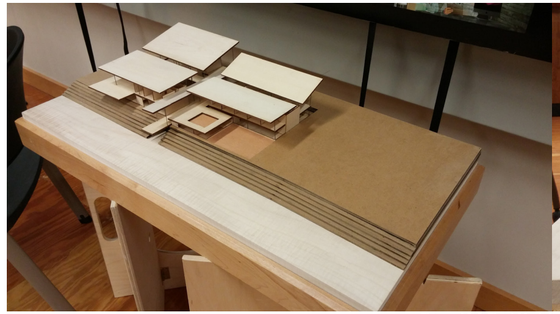


Figure 16.2 Final Model

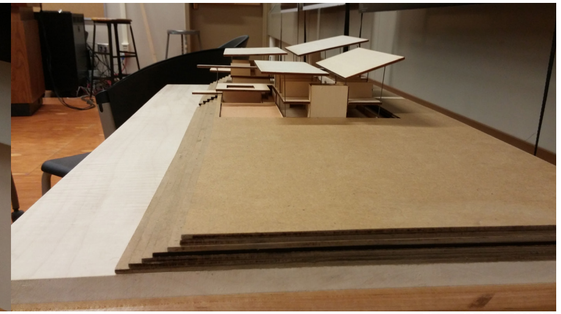


Figure 16.4 Final Model

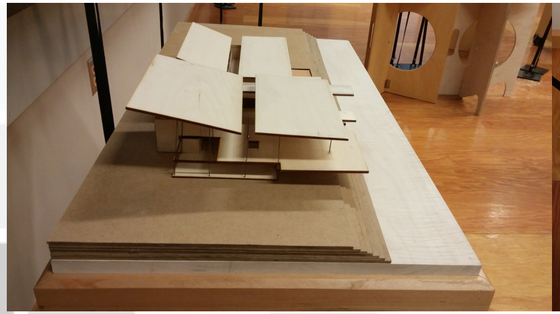


Figure 16.3 Final Model

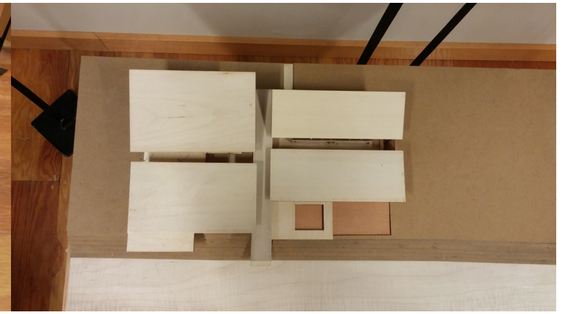


Figure 16.5 Final Model

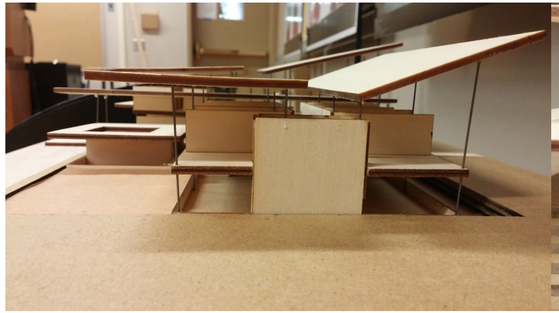


Figure 16.6 Final Model

Figure 16.8 Final Model

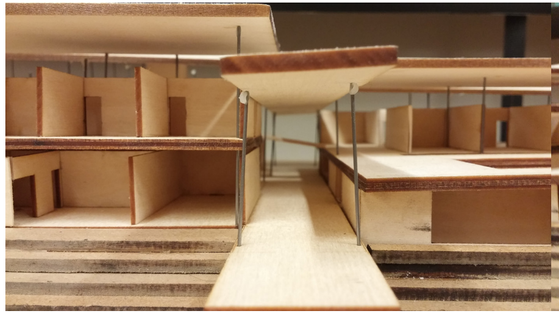


Figure 16.7 Final Model

Figure 16.9 Final Model

Performance Analysis

[Response to the Site]

I was able to design my cancer treatment center in a way that responded positively to the site and its natural surroundings. Located in between the bank of the Columbia River and the basalt cliffs, the treatment center was able to respond to the dramatic changes in elevation with overhanging roof planes that step downward in elevation as the building nears the river.

The roof plans on the east side of the building are tipped upward towards the bluffs to allow maximum natural light in the morning as well as to help frame views of the sky and the basalt bluffs.

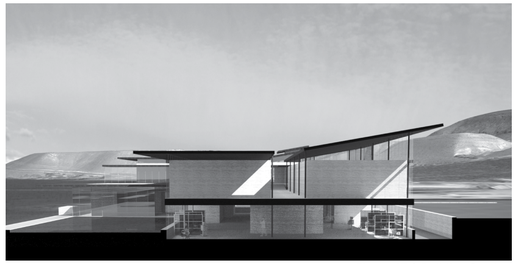


Figure 17.0 Building Section

Performance Analysis

[Typological Research & Program]

Figure 17.1 Maggie's Center

The typological research done on Maggie's Centers as well as concept hospital designs helped me in exploring how healthcare facilities could be designed to promote a place of positive stimmung and healing. The building program for Maggie's Centers allows a place for not just medical treatment, but therapeutic treatment and relaxation as well. This new program for a cancer treatment center allows the patient to focus on not just physical healing, but mental and spiritual healing too, enhancing the life of the patient as a whole.

Performance Analysis

[Response to Goals and Project Emphasis]

This project identified how both the built and natural environments can have a positive impact on patients battling cancer and give them a sense of hope. I believe that my architecture design and its surrounding landscape have the ability to direct a persons mental state in one direction or another. My project emphasizes the idea of biophilia, the relationship between the built environment, the natural environment and the people connected to them in order to create positive stimmung for healing.

The way my project aimed to accomplish the connection with biophilia was to lose the barriers that separate nature from architecture. My architecture was done in a way that includes the natural environment within it, making the two work together in unity.

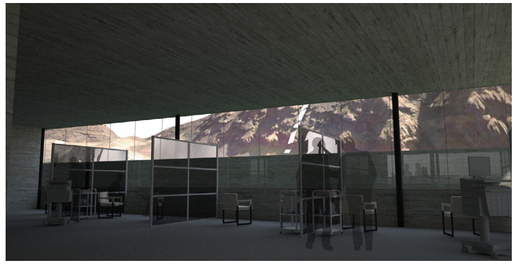


Figure 17.2 Treatment Space

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Figure 18.0 Personal Photo

BRANDT ARCHITECTURE

Figure 18.1 Personal Logo