



COURAGE CAMPUS - A PLACE OF HEALING & RE-DISCOVERY

Fig. 1 Cervantes, Bobby. (2010) .Soldiers self meditation.(Photo).

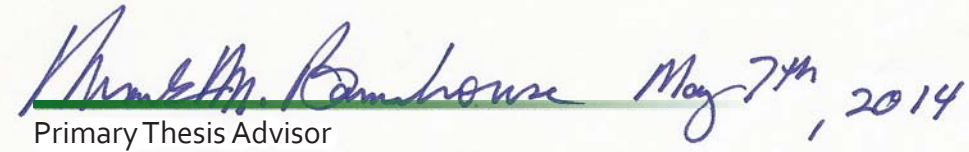
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by Matthew M. Avard

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

by
Matthew M. Avard

In partial fulfillment of the requirements
for the degree of Master of Architecture.

 *Mark M. Bamhouse* May 7th, 2014
Primary Thesis Advisor

 *Mark M. Bamhouse* May 7th, 2014
Thesis Committee Chair

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Fargo, North Dakota

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COURAGE CAMPUS – A PLACE OF HEALING & RE-DISCOVERY

This thesis will help develop a place where armed force members can begin to reconnect back to society. Architecture will be used to create a safe haven for service members and families who have been affected by horrifying and gruesome warfare. The perception is that architecture can foster a sense of place, while healing along side fellow comrades who have endured that same fight. The outreach/rehabilitation center is located in the Medina River Greenway, south of San Antonio, TX

Total Square Footage: 241,800 sq. ft.

Keywords

reestablish, combat, veteran, haven, reflection, healing

How can design help reintegrate combat veterans with physical and psychological needs strengthen their connections back into society?

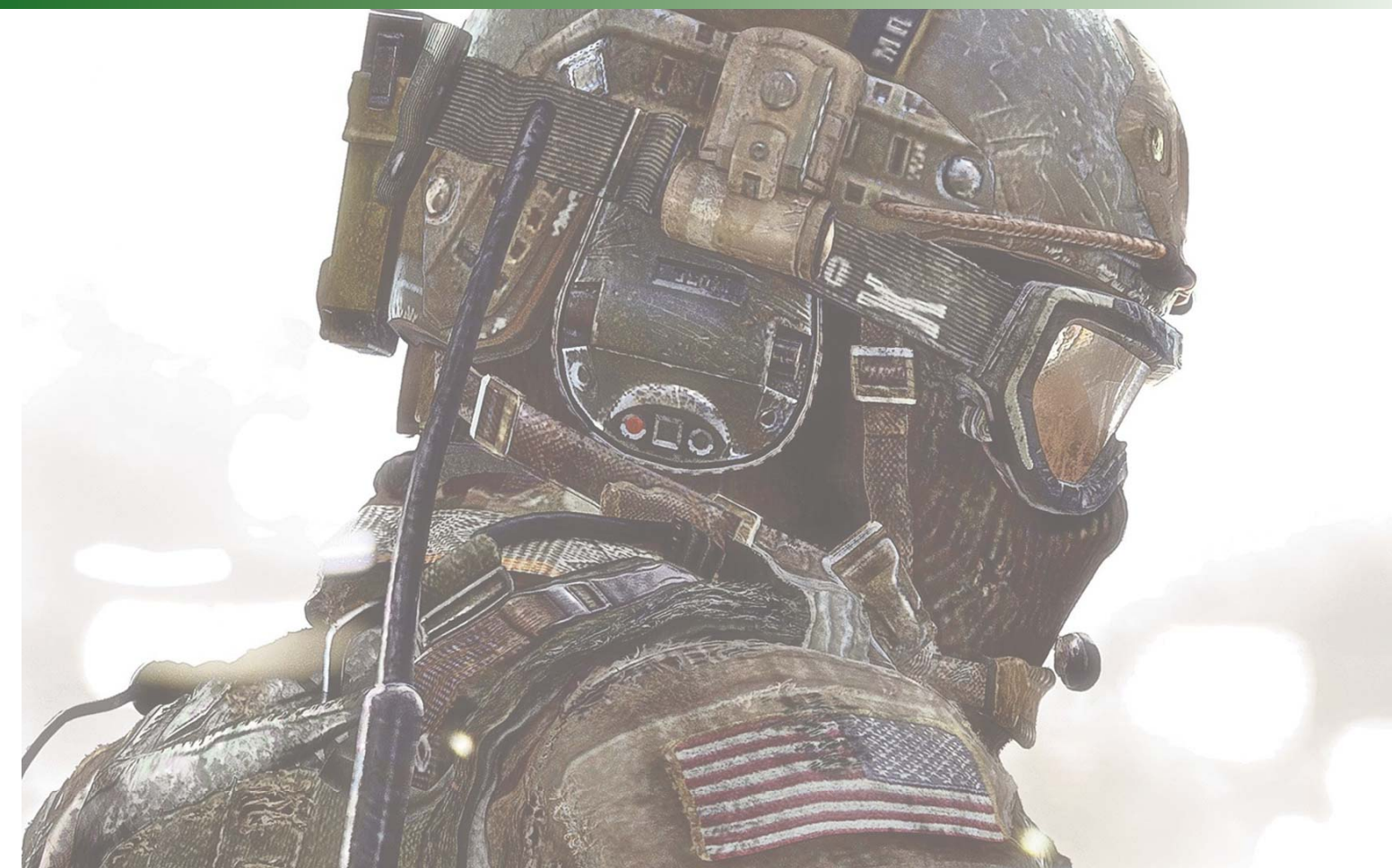


Fig. 2 Military Soldier.(2012). Data retrieved from www.wallm.com

Project Typology

A Staffed transitional living and reintegration center within the Medina River Greenway, San Antonio, TX area.

The Claim

Architecture can evoke and foster influences through compositional elements. Through this environment these architectural compositions' can aid wounded warriors with physical and psychological states to reintegrate them back into society.

The Premises

The environment that Architecture creates can encourage and stimulate well-being, influencing positive outlook for recovering veterans.

- ACTOR:** Characters involved are the staff that treat veterans and service members of all branches with physical and psychological needs which are held to a high standard in this project.
- ACTION:** A stimulating environment can reinforce the well-being of veterans. By connecting through their perception, emotion, and expectations will strengthen a positive recovery setting.
- OBJECT:** Creating a cohesive transitional living and reintegration center will aid wounded warriors in becoming more accepting of their physical and psychological states.

Theoretical Premise/Unifying Idea

By facilitating the veterans healing process using individual and family therapy to create a haven through architecture that positively impacts the physical and psychological changes for veterans. Each veterans experience using this reintegration will affirm the individuals grasp to regain their strength back into society. Mayo Clinic method for the treatment of PTSD (2011) found Psychotherapy in group therapy can offer ways to connect to others going through similar experiences.

Project Justification

Men and women of the armed forces' are called to serve and protect our country's ways of life through gruesome and horrifying combat. Veterans often return home in a different state of mind. Sometimes experiencing recurring nightmares of their tour duty which are easily triggered by daily activities Most combat veterans don't realize they don't have to fight the war in their mind alone. A transitional reintegration center will be a campus where combat veterans and their families are helped by other military families to be able to return to society.



16 Fig. 3 Avard, Matthew.(2013). San Fernando Cathedral. (Photo). San Antonio, TX

Narrative

This Thesis project is by no means the miracle design for these vets, but rather a place to reflect in a safe environment that can foster the proper support of staff, fellow soldiers and family. How can architecture evoke or foster influences through composition elements? The intention of the reintegration facility is to use ties to nature along with the support structure of staff, families, and fellow veterans to further strengthen veterans handle on their physical and/or psychological situation.

I have many ties to this thesis. First I myself am a veteran of the armed forces. I served 10 years between Active Army & the Army Reserves. I witnessed friends and fellow soldiers being deployed overseas. When they return their state of health had changed. They come back physically hurt or psychologically hurt from a long deployment in a combat environment away from family. Sec-

ond I come from a military family. Both my parents served in the active army. My dad served two tours in Vietnam. The first was towards the beginning and the second was when American troops left Vietnam. I understand the effects war and even just military training has on soldiers.

The readjustment to civilian life for men and women of the armed forces' that have been away for prolonged periods of deployment can be difficult. While they have been away people in their lives have carried on with their's. Then once the tour of duty is done home life has changed. The connections which veterans have are distant or some are lost. This is especially true if a service member has developed a mental disorder or incurred a physical disability from combat. Some common mental disorders can be PTSD (post-traumatic stress disorder), depression, anxiety, insomnia, irritability.

What affect do these have on veterans, and how does it impact their transition back to home life?

The built environment that architects create can provoke a sense of place for people. How can a space connect with users of this facility to promote health and well-being? More importantly how does the architecture and the built environment within which it is placed promote a sense of re-connection?

The building typology is a staffed transitional center for service men and women of the armed forces. The location is San Antonio, TX. The site chosen is in close proximity to military training facilities, the Audie L. Murphy VA Hospital, with retired military personal living in the surrounding San Antonio area.

What is the need for the reconnection of service men and women of the armed forces? Through my thesis I will examine how I can create an understanding for the need of this architectural typology, an environment that can reestablish service members acceptance to begin the healing process while articulating a well design through the Theoretical Premise/Unifying Idea. This architectural composition will establish a place for wounded warriors to reflect in order to move forward with providing services for mental and physical recovery, address issues of substance abuse and suicide rates among members of the armed forces, and provide outreach to further educate awareness to national and local communities.

User/Client Description

OWNER:	The owner, Victor Fredrickson was a World War I infantry Veteran. During his service he was diagnosed with shell shock. To better understand his diagnosis Mr. Fredrickson created an endowment to fund the beginning of his transitional center. His goal is to promote awareness of shell shock (also known as post traumatic stress disorder) and other physical and psychological disabilities.	PEAK USAGE:	All residences are occupied 24 hours a day . Staff areas are operated during normal hours or unless evening events take place.
MILITARY VETERANS:	Individuals who have had a variety of military backgrounds; each of their stories being different. Military veterans go through training and tours of duty which may lead to negative impacts on soldiers well-being. The mission of this facility is to assist these veterans in becoming stronger both physically and psychologically.	PARKING:	Limited parking will be provided for staff members according to building codes. Link by public transportation will be made available to limit the demand for staff parking. Along with public parking for Veterans and their families.
FAMILY MEMBERS:	It can be difficult for families to reconnect with service members returning from tours of duty. To help reunite families, the facilities services will aid in addressing these struggles.	PHYSICAL RESTRICTIONS:	This facility will comply with ADA guidelines to accommodate any users with physical limitations.
STAFF:	The staff include nurses, social workers, psychologists, psychiatrists. All health care professionals will be trained and certified to deal with specific military culture and combat-related trauma.	MEDICAL/MENTAL HEALTH ISSUES:	The majority users of this facility have either physical or mental issues. The design of the facility is to provide services to veterans and family to heal users.

Major Project Elements

- Administration:** Administration offices are the heart of the transitional facility. They will maintain daily operations of management, usage of facility, logistics, and facility maintenance.
- Residential Housing:** Housing is provided for services members and families, although service members can choose to live in private housing of their choice. The length of stay in housing units is one month to fourteen months.
- Staff Facility:** Includes offices, therapy rooms, overnight sleeping quarters, break rooms.
- Recreation Area:** Several smaller indoor recreation areas to aid in physical and mental healing process. There will be one larger recreation area to help with team building. In addition there will be outside recreation areas that can help wounded soldiers connect with nature, which can stimulate both physical and mental healing

- Healing Gardens:** Healing gardens will provide an environment that promotes healing through service members physical, mental, emotional, or even spiritual inner self. There will be several healing gardens located around the facility and within walking distance, in order to give different levels of experience to each individual.

South Central Region

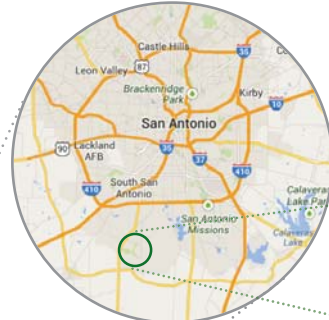


Fig. 4.1 Google Maps. (n.d.). Google. (2013). Retrieved from photo by www.maps.google.com

San Antonio, TX

The site is located within Bexar County, Texas. San Antonio is commonly referred to as “Military City”. While being a city that many military members love to retire to, or move to after their service ranking second only to Washington D.C. (The Chamber of Commerce, 2009) San Antonio offers a lively downtown atmosphere with the Riverwalk, several historical sites like the Alamo, and the oldest cathedral in the county, the “San Fernando Cathedral”, also Sea world, Six Flags theme park, and an extensive greenway park recreation trail covering Forty- one miles of developed trails with approximately 1,200 acres of property along San Antonio Creekways. (San Antonio Parks and Recreation, 2011)



Fig. 4.2 Google Maps. (n.d.). Google. (2013). Retrieved from photo by www.maps.google.com

Medina River Greenway

Located at 15890 Highway 16 South, just straight south of San Antonio. The Medina River Natural Park offers 10 miles of trails long the Medina River. This park allows access to 511 acres of park property visitors will explore the basic trees, native plants, mammals, geology, reptiles, birds and insects in this natural outdoor habit. (San Antonio Parks and Recreation, 2011)



26 Fig.5 Avard, Matthew(2013) (Photo) Medina River Natural Area

The emphasis of this thesis is to create an architectural composition that will stimulate users in positive ways. Helping veterans healing process with physical and psychological disabilities. It is pertinent to create an architectural environment to enable the users to reconnect with their lives. This will be a place to reflect, on how to move on with a more balanced life.

RESEARCH DIRECTION

Research will be conducted throughout the thesis process. The theoretical premise/unifying idea, project typology, historical context, site analysis and programmatic requirements will be investigated in this process.

Design Methodology

The design methodology will follow a mixed quantitative/qualitative approach. Quantitative and qualitative research will be conducted using a concurrent transformative strategy to better aid design. Through the theoretical premise/ unifying idea will direct further research on the thesis typology, historical context, site analysis, and programmatic requirements. Process work, ideals, and other content

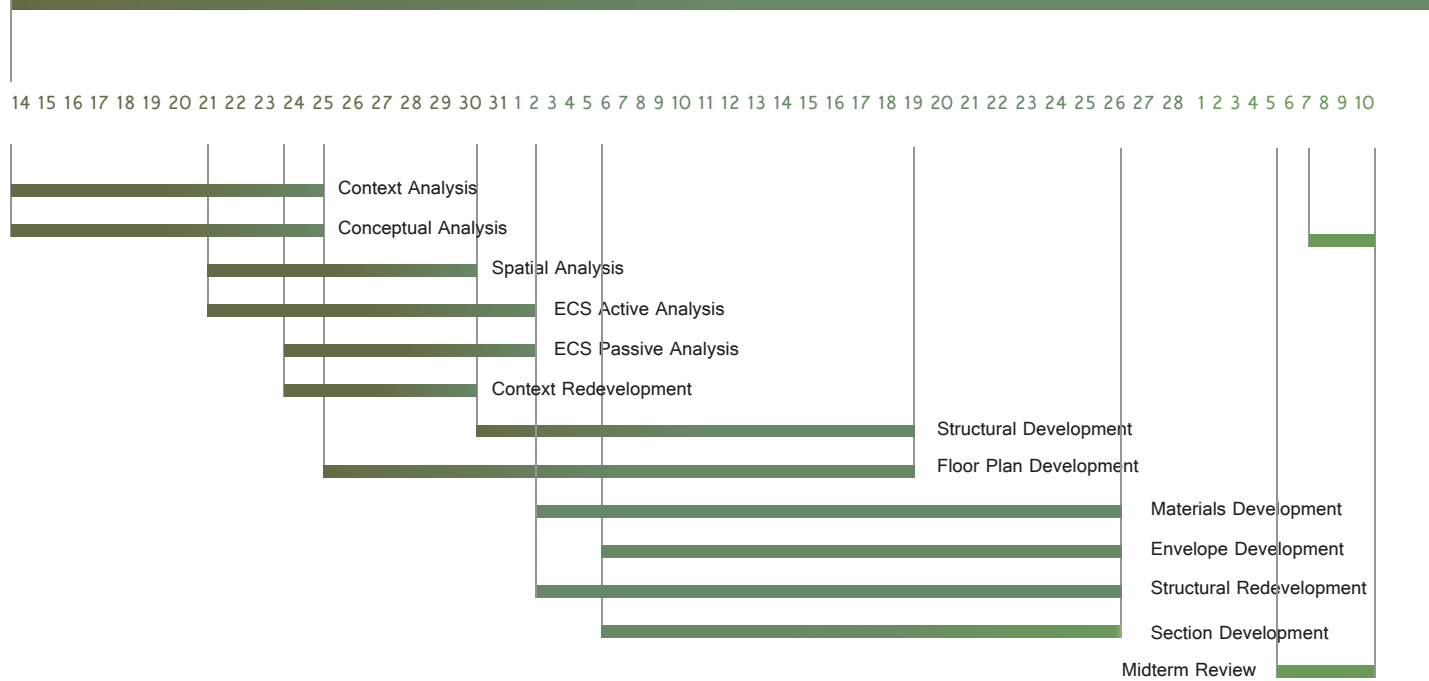
will be checked frequently to make sure all data comes back to the theoretical premise/unifying idea, ensuring quality control to maintain direction throughout the thesis project. Quantitative and qualitative data will be presented in text or graphic format.

My design process will be compiled in a digital format. Text documentation will be stored in word documents including list of references which will be backed up weekly or daily depending on work load. Drawings, process sketches, and physical models will be scanned or photographed and backed up weekly or daily again depending on work load. Documentation of the thesis will be made available to the institutional repository through the university library in a digital format.

January

February

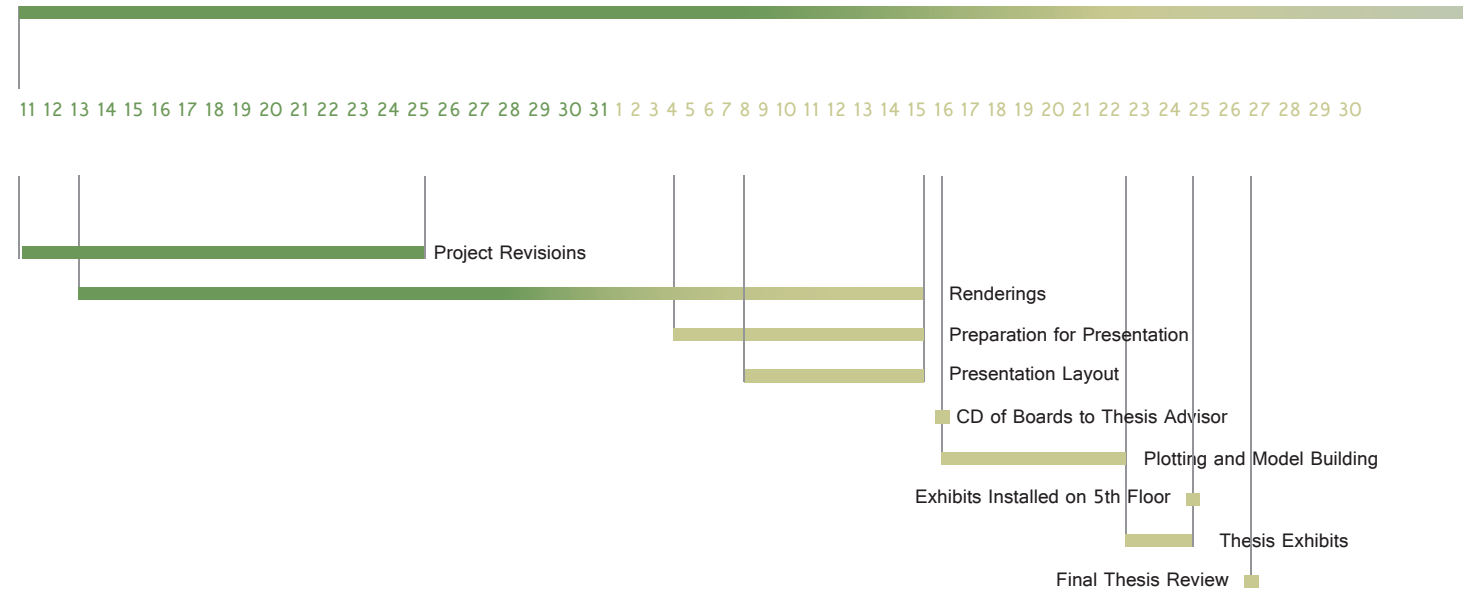
Project Documentation



March

April

Project Documentation



May

Project Documentation



Final Thesis Document Due

Commencement

2ND YEAR

- Fall 2010 - Joan Vonderbruggen
 - Tea House
 - Boat House
- Spring 2011 - Cindy Urness
 - Montessori School
 - Unconventional Dwelling

3RD YEAR

- Fall 2011 - Steve Martens
 - Research Facility
 - Masonry Guild Hall
- Spring 2012 - Rhet Fiskness
 - Presidential Library
 - Visual Art School

4TH YEAR

- Fall 2012 - Don Faulkner
 - High Rise
 - DLR Competition- Light and Dark
- Spring 2013 - Don Faulkner & Frank Kratky
 - Marvin Windows Competition - Ghana
 - Urban Design - Hopes Journey

5TH YEAR

- Fall 2013 - Regin Schwaen
 - Boston Competition



Fig. 6 Avard, Matthew(2013) (Photo) Natural Arch Bridge, TX

Fig. 5

Premise/Unifying idea - By facilitating the veterans healing process using individual and family therapy to create a haven through architecture that positively impacts the physical and psychological changes for veterans. Each veteran's experience using this reintegration will affirm the individuals grasp to regain their strength and more back into society.

Introduction

The severity of trauma to a wounded warrior varies in different extremes, each with their own unique background. Additionally the treatment of their physical and psychological disabilities varies in the length of time each individual needs for their particular road to recovery. Through this thesis I will stake claim to my approach as a designer and a veteran of the armed forces to create a place that will have a familiar home-like environment. The facility creating a responsive space that will

hopefully invoke the occupants' emotions of serenity, security, and a place of solitude. In my own experiences it is important to have access to such a facility that re-enforces the uniqueness of traumatic events from ones' time in service. Allowing wounded warriors to work towards reestablishing their foot-hold back on their lost civilian life and reconnect with family and friends is important. This facility will provide a place that can give these wounded warriors' that chance. Then comes the question, how does the architecture respond to these individuals in a manner to promote serenity, security, and a place of solitude?

To further help understand the needs of the occupants, several areas will be discussed in my approach to create this typology. The first is going to be defining what types of disabilities will be treated at this outreach/rehabilitation center. Second, will be discussing how nature can provide emotional healing to recovery. Lastly, how the

architecture of the exterior and interior typology can promote a familiar home-like environment. Throughout these areas I will include personal accounts of my own and other veterans time in service.

“The scars of war take many forms: the loss of a limb, the illness brought on by a battlefield exposure, and, for some, the psychological toll of encountering an extreme traumatic event.” (Andreasen, et al 2007)

Physical and Psychological Disabilities

What defines a person with disabilities? According to the Americans with Disabilities Act, it is any individual who has a physical or mental impairment that substantially limits one or more of his/her major life activities, or there is a record of such impairment, or an individual is regarded as having

such impairment. An important aspect of people with disabilities is exploring causes of the disabilities and what are the differences from personal injury, genetically related medical conditions, or chemical imbalance, and neurological (Phil, 2013). Serving one's country comes with high demands for performance in a service members job field. There are several risks involved that can cause personal injury, both physical and psychological, that can possibly result to loss of life.

I understood the risks of my time in the military service, which stretched for a little over 10 years. When I was at my first duty station at Camp Casey in Korea which was located 25 miles south of the DMZ (de-militarized zone), I realized what the effects of my own sacrifices to my country meant. During this time the Iraq war was just starting to gear up. I was assigned to the Dragon Force Crusaders of the 2-72 Armor Division Regiment the Dragon Force Crusaders. There, I spent 8 months

out of the year training just 5 miles south of the DMZ. I was fully aware that any day my unit could be called up to spend a year long deployment in Iraq. During my time in Korea, I learned that a few of my fellow brothers in arms were shipped to other duty stations that were in the process of being sent off to war in Iraq. One of my fellow brothers was KIA (killed in action) and another was wounded by shrapnel to the side of his face from an IED (improvised explosive device).

Since every veteran's disability is unique, each of them confronts their own awareness of their disability differently. It is important that veterans' can make connections within the environment they are recovering in, along with the staff responsible for treating them. To enable veterans', in starting their rehabilitative recovery, reinforcing positive change and healing in dealing with their own disability is vital. Some veterans' may never admit they have a disability out of self-pride

or because it might affect their status for duty or even their personal life.

I witnessed this first hand when I left Korea and headed to my second duty station in Germany. It was a smaller base with only one unit, the 1/1 Calvary unit, the Blackhawks located in Bünden, Germany. When I arrived the unit was deployed down range (down range meaning Iraq). A month later, they were assigned to come home after their year and a half long deployment in Iraq. Homecoming was bittersweet watching families being re-united with each other after all that time away from home. After a while, I began noticing some visible & invisible disabilities with some service members. Most of the visible disabilities were heard in stories from returning soldiers in the unit that other soldiers were wounded and sent state side to recover at Walter Reid Medical Center. The invisible disabilities were more clear in the weeks to come. Specifically, I noticed anxiety,

depression, and PTSD firsthand and how they dealt with these disabilities. There was drug and alcohol abuse, attempted suicide; in one case a brother in arms even took his own life. Some marital and non-marital relationships started falling apart which were caused by soldiers distancing themselves while trying to deal with their physical and/or psychological disabilities.

“So, for instance, a gruesome memory from combat can permanently alter brain chemistry or prompt the body to respond as if the event were recurring, even when none of the original stressors are present.” (Andreasen et al. 2007)

“Disabilities can be visible or invisible, physical or otherwise. Most can result either from hereditary conditions or pre-birth development issues; from injury, disease, from chemical imbalances,

or in some cases, from environmental factors,” (Phil, 2013). The response of the architectural design should promote a cohesive relation between veterans and the staff that provide care while encouraging a positive attitude in veterans' perceptions, expectations, and emotions throughout the recovery process. I realize that this is asking a lot and may be impossible. However the more this thesis addresses the needs of disabled veterans a greater awareness will be created that will help set the stage for their road to recovery.

“Many Traumatized veterans require active one-on-one counseling, including cognitive, behavioral, humanistic existential, and psychodynamic approaches (among others). With the involvement of other veterans, family members, and friends, these clients can discover positive meaning in their experience.” (Andreasen et al 2007).

Natures Healing

"A growing number of psychologists believe that many of the current problems facing people today - depression, anxiety, and stress - are due, in part, to our alienation from nature. In the 1980s, E.O. Wilson coined the term "biophilia" to describe humans' natural affinity for nature," (Kreitzer, 2009). The feeling of the sun and slight breeze of wind, smell of plants, sound of water, or even animals can be soothing. Using some of these characteristics from nature to create a warm environment with plenty of natural lighting and views of the outside scenery can help a person's well being. Despite an individual's medical state being in nature can have positive affects with their physical and psychological healing. During the industrial revolution the progression of medicines from nature converted into being synthetic. This brought fourth new changes in the design of healthcare facilities and their connection to the natural en-

vironment by designing facilities with sterile artificial environments. This is important in providing ways to add preventative control measures from the spread of disease and infections. However, this also negatively effects patients recovery time. Losing their connections to the natural environment could promote longer recovery times.

Increasing evidence suggests that contact with nature can foster human health, productivity, and well being. Three ideas articulate by landscape: relief from symptoms of illness, stress reduction, and improvement in the sense of overall well-being. The healing garden is emerging as a supplement to drug- or technology- based treatments (Guenther & Vittori, 2008). Healing gardens or therapeutic landscapes are by definition places of renewal. The therapeutic benefits derive from contact with nature because spatial experience encourages people to connect with a deeper part of themselves and with their natural surround-

ings. These deep connections, in turn, renew the spirit and help people find a strength that is a crucial part of healing. (Guenther & Vittori, 2008) The overall objective here is to create a natural atmosphere where there is access to therapeutic healing garden's with different levels of solitude for patients to reflect on individual thoughts. Allowing them to find their path of healing either in the internal or external boundaries of this outreach/ rehabilitation center. Specific benefits at the individual level include improved emotional functioning, improved attention capacity & feelings of self-worth, and reduced mental & physical stress. Social benefits are also evident from studies of recreational activities and gardening (Guenther & Vittori, 2008).

"I suddenly felt what I have often felt intensely before; but never thought to apply to my own time in hospital; that one needs open-air

hospitals with gardens, set in country woods... a hospital like home, not, a fortress or institution, a hospital like home--perhaps like a village" (Gerlach-Spriggs, Kaufman & Warner, Jr, 1998).

Being in a natural setting strengthens group ties & promotes pro-social behaviors. Many of these benefits have been found in both laboratory and field studies, and through active and passive contact with natural settings. However, not all nature is equally beneficial. Spaces with large trees, water features, birds, and a variety of shrubs & flowers are perceived more positively than spaces with only grass (Guenther & Vittori, 2008). There is also the staff's integration into the process of healing. While creating a warm and soothing environment with connections to nature, this can also encourage staff to perform better in their work atmosphere. Thus, strengthening closer connections

between the staff and veterans which facilitates the veterans' recovery.

“Whether that artistry derives from the soothing tones of a compassionate physician or nurse, or some felt beneficence of groups that share and commiserates on their common disorders, something of the ineffable has always been associated with healing and recovery.”
(Gerlach-Spriggs, Kaufman & Warner, Jr, 1998)

Design of Architecture

The facility will be a post acute care rehabilitation center providing outreach services for veterans and their families after primary care has been offered. The transitional center will create an inviting home-like atmosphere. The environment of

the facility is a major contributing factor to the values, expectations, and perceptions the veterans have on themselves, in addition to the personnel that care for them and the overall services provided. The design of typology impacts personnel and their involvement in the care of veterans at the facility. This outreach/rehabilitation center primarily focuses on the needs of patients and to feel less like an institutional setting. Veterans will be valued and treated as individuals in a familiar setting while establishing grounds for the wounded warriors to promote self-worth and belonging in a social community. Creating a warm enriched environment where both staff and patients will be able to connect allows them to form consanguineous bonds. The external grounds are included in the scope of this project as it is important to have views and physical access to the natural environment in which the architecture is placed. The layout of the structure will be sectioned out into different areas that are be connected to one another,

each having different levels of care depending on the need of the wounded warrior and their family. Connections between the interior and exterior elements will ground the overall design. Private healing gardens can be accessed from the veterans suite. This showcases the rehabilitation centers' relation to the surrounding natural setting. The rehabilitation center will also have several larger healing gardens for group therapy sessions or even used for other purposes as needed. Staff areas are centrally located within each section, while being openly connected to the surrounding context. Different sized recreational spaces will be provided for individual and group activates. The intention of offering a variety of recreation spaces is to provide different environments for wounded warriors which assists in their recovery process. Along with the healing gardens these recreation spaces will offer different levels of solitude and serenity based on the activities an individual chooses to par-take in.

Conclusion

A positive healing environment can be accomplished through the architectural design by understanding the users and addressing each unique disability while providing them with a comfortable home-like environment. Using alternative remedies in healing, like incorporating nature into the architectural design are preferred in this thesis project. Society has promoted patients healing ability through nature. By reopening that connection veterans can surround themselves with emotional healing vs. using medications. Only in special cases should the veteran be supplemented with medications. Then following up during later sessions to determine if they are able to be taken off the meds. This healing environment will be achieved by creating an inviting home-like atmosphere which will relax the veterans and decrease their physical and psychological stress.

Premise/Unifying idea - By facilitating the veterans healing process using individual and family therapy to create a haven through architecture that positively impacts the physical and psychological changes for veterans. Each veterans experience using this reintegration will affirm the individuals grasp to regain their strength back into society.

The topics discussed within my research lead in defining key areas to enhance the design aesthetics of this project. I describe in what ways a person is considered disabled while including personal accounts of veterans connection to their affiliations. The architectural design encourages natural and communal healing over synthetic health alternatives. The design starts to identify areas of architectural compositions that suggest an emotional connection to users.

Having a physical or psychological disability is hard for service members and their families to endure. What steps can be taken to ease the veterans and their families to ensure the smoothest possible recovery? Foremost ensuring the rehabilitation center is accessible to veterans with different disabilities which are required under the ADA guidelines hold high importance. While funding research to expand alternative health-care procedures that can improve the life quality of veterans and their families have is greatly beneficial as well. The patients relationship with the healing environment and staff can result in a smooth transition to their overall well being. By treating each veteran and their families as individuals in this cohesive home-like setting makes the environment familiar and not institutional. The rehabilitation center will give back to the veterans that have sacrificed life and limbs to protect our country.

Offering an integrative rehabilitation center that finds a balance between cutting edge medical treatments and natural healing alternatives is found to best suit patient needs. The importance of this is to limit any unnecessary medical treatments. It is still understood that some patients disabilities benefit with the ongoing advancements in modern medicine. The facility itself is placed in a natural setting allowing an inviting atmosphere for patients. Yet, it is still close to modern amenities for a comfortable lifestyle much like home for veterans and their families. The primary goal for veterans is to re-establish a familiar social setting allowing them to decide the necessary recovery time for integration into the community. While researching the needs of disabled veterans the objective changed from being a short term stay rehabilitation center to the veteran and family determining their stay. Rather than designing an in and out treatment center the facility strives in creating strong bonds between veterans, the staff and the rehabilitation center.

The response of architecture through researching should address how to form connections with the users. Some have been discussed earlier in the summary; such as finding balances, creating bonds, and designing an inviting atmosphere like home. The scale of the overall building can start to develop these general areas by designing elements to human scale. This is possible by limiting the height and spread of the building envelope. Even the choice of building materials can have positive effects on the users emotions. The relationship of spaces and the exposure to others impacts the users connections allowing them to form bonds in these settings. Applying these relations and exceptions of the premise/unifying ideal will provide a solid starting point to layout a balanced network within the rehabilitation center for all users.



Fig. 7 Avard, Matthew (2013) Abandoned homestead (Photo) Medina River Natural Area



Fig. 8 ArchDaily, 2013

Project Type: Rehabilitation Center
Architects: Kimmel-Eshkolot Architects
Location: Be'er Sheva, Israel
Size: 6,000 sqm
Year Built: 2008-2011

Located South of Israel the Beit Halochem Beer Sheva provides service to thousands of disabled Israel veterans and civilian casualties of terrorist attacks that have been raging in recent years ("Beit Halochem Centres in Israel," 2011). The rehabilitation center sprawls out over 6,000 square meters including a therapeutic wing, a wing for social activities that include a heated indoor, semi Olympic swimming pool, a therapeutic pool, a huge gym, a clinic and treatment rooms, physiotherapy and hydrotherapy centers, club rooms, recreational rooms, classroom, a shooting range, sports fields especially suited for the disabled, a restaurant and an auditorium.



Architect Kimmel-Eshkolot designed the Beit-Halochem Rehabilitation Center. Kimmel-Eshkolot's inspiration was a composite of five rock-like volumes that are grouped together. The rock-like spaces form intimate and quiet functions, while the negative space between them creates gathering areas, and defines the circulation in the building. Thin horizontal roofs link the rock formations together that creates an inviting and protected courtyard ("Beit-halochem rehabilitation center," 2013). The thick concrete walls work well in this dry climate, it blocks the extreme high temperatures from heating the interior spaces during the day and warms the spaces at night.

The dedication that a nation shows to their fallen veterans validates the true patriotism of that nation. The hospitable care given at Beit Halochem Rehabilitation Center addresses the concern to provide the necessary treatment for veterans and their families stricken by terrorism and war. The important part is the placement of the facility in a secluded area of town. This sets the stage to create a facility that promotes belonging and togetherness between veterans and their families and the community.

Fig. 8.2 ArchDaily, 2013

This case study will aid in the design of my thesis by studying the way in which this rehabilitation center treats Israeli veterans along with their families. This rehabilitation center provides an inviting atmosphere for the veterans and families to relax and focus their attention to begin the healing process. The layout of this case study allows the ease of access to all areas for veterans with almost any disability. The Beit-Halochem Rehabilitation Center ties closely to my Theoretical Premise/Unifying Idea due to the fact that the user clients are similar.



Fig. 8.2 Arch Daily, 2013

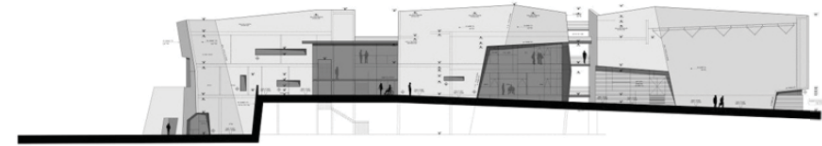


Fig. 8.4 ArchDaily, 2013



Fig. 8.5 ArchDaily, 2013

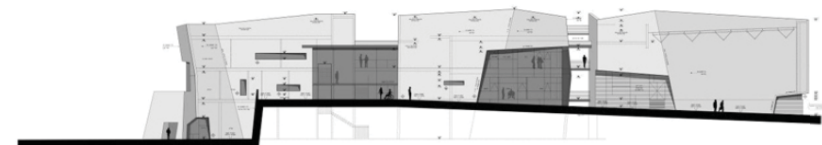
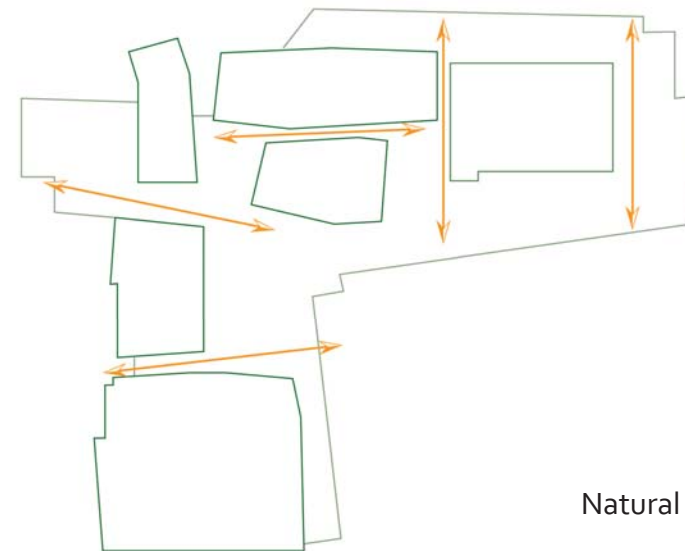


Fig. 8.6 ArchDaily, 2013



Natural Light



Natural Light

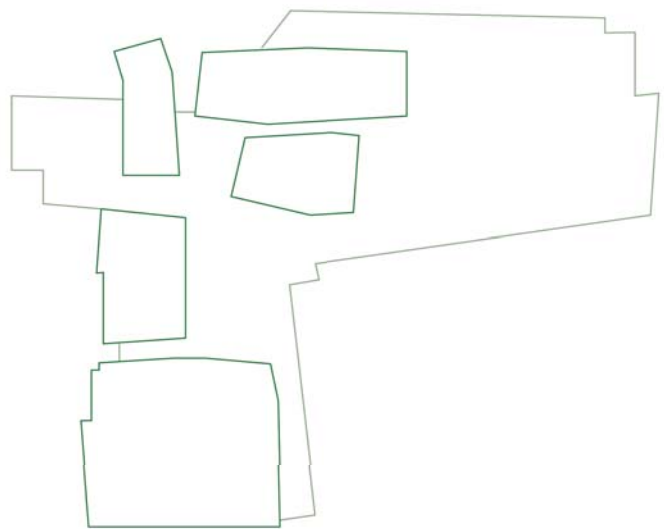


Structure

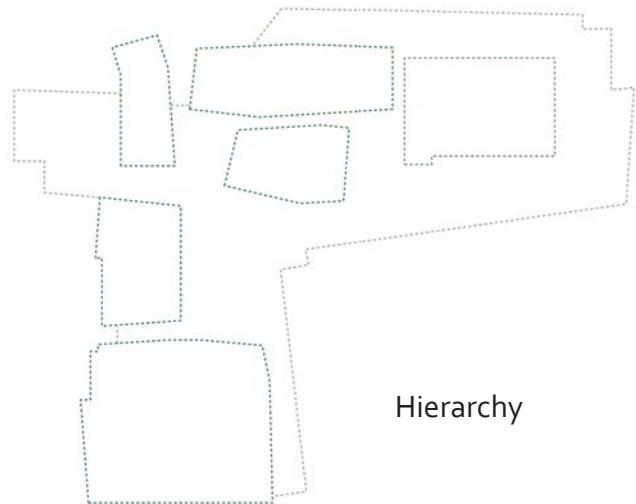
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Plan to Section



Plan to Section



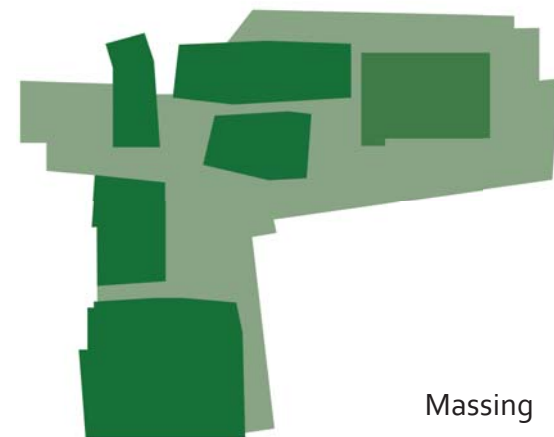
Hierarchy



Geometry



Circulation



Massing

Fig. 8.9 (All). Illustrations. Avard, Matthew(2013) Data retrrieved from <http://www.archdaily.com/126119>

Fig. 8.9 (ALL)

Case Study - Spaulding Hospital



Project Type: Spaulding Hospital
Architects: Perkins + Will
Location: Charlestown, Massachusetts
Size: 378,367 sq. ft.
Year Built: 2013

Spaulding Hospital located in Charlestown Navy Yard Massachusetts is a State-of-the-Art inpatient and outpatient Rehabilitation Hospital. Offering care for patients recovering from illness, injury, or surgery whether it be inpatient or outpatient. The hospital gives the flexibility in providing best possible care for a wide-range of patient needs. Besides the inpatient and outpatient care opinions the rehabilitation hospital offers long-term acute care and skilled nursing facilities to patients. The Spaulding Hospital continues to improve and research ways to treat patients. They have an extensive clinical research facility, with research projects including - aging, assistive technologies,

Fig. 9 ArchDaily, 2013

brain injury, burn injury, motion analysis, and spinal cord injury. It is in these clinical studies doctors are able to further evolve new approaches to treat patients. Leading patients to a faster recovery time or allowing more independence for patients with disabilities ("Spaulding rehabilitation network," 2013).

The site on which the Spaulding was built was a remediated brownfield in the Charlestown Navy Yard the hospital dedicated 75 percent of the first floor for public use and integration with the Boston Harbor Walk. Tied to the site's naval yard history, the facades are reminiscent of the military battleships and aircraft carriers berthed at the Yard for much of the 20th century. The architect incorporated reclaimed timbers that captures the Boston skyline and views of the waterfront. A trail that runs along the water front encouraging the healing process on a variety of landscape surfaces. The design of the hospital was divided into two sections - an eight-story patient tower and a three-story therapeutic gymnasium and pool. The best part of this building is that there is no back side and it can be viewed from every angle. This provides a



Fig. 9.1 ArchDaily, 2013



Fig. 9.2 ArchDaily, 2013

well integrated curtain wall design creating transparency and an abundance of natural light throughout the interior resulting in an open and inviting atmosphere. The overall design of the Spaulding Rehabilitation Hospital goes above and beyond conventional hospital design and ADA requirements, truly creating a hospital of the future. ("Spaulding hospital," 2013)

The innovations in design of this case study will provide valuable considerations to the approaches I will take during the design of my thesis project. The social connections the hospital has with the community strengthens the dedication to providing best possible care and treatment to patients. It also provides good examples of the selection in materials and spatial layout to establish new ways people interact within a healing environment. This ties to my Theoretical Premise/Unifying Idea of creating an inviting atmosphere that patients feel comfortable in.

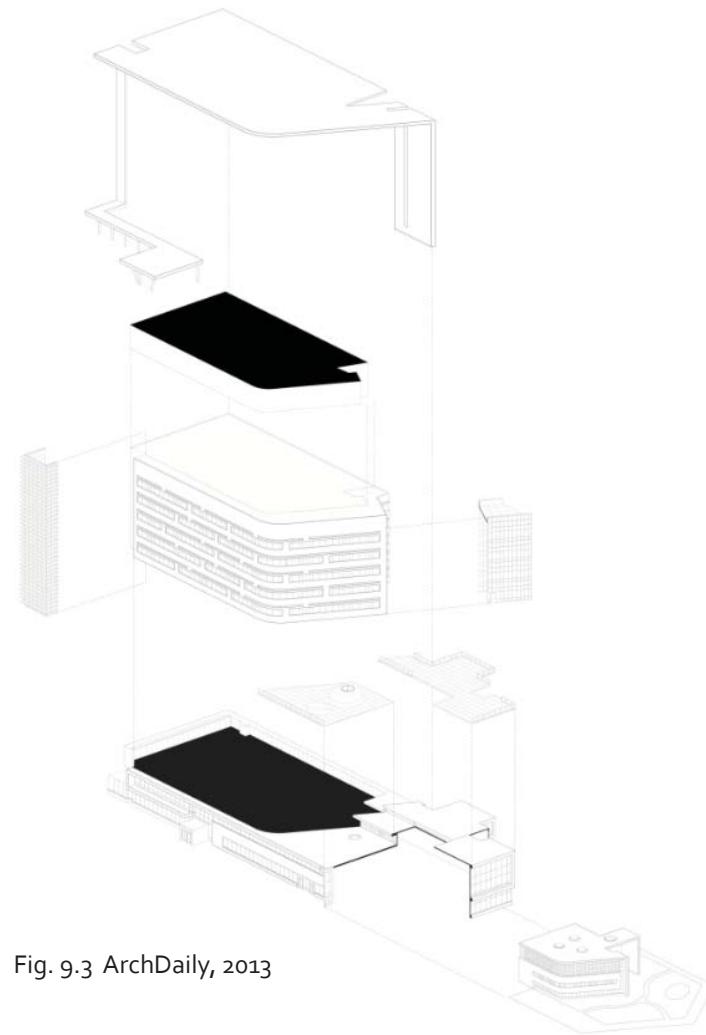


Fig. 9.3 ArchDaily, 2013



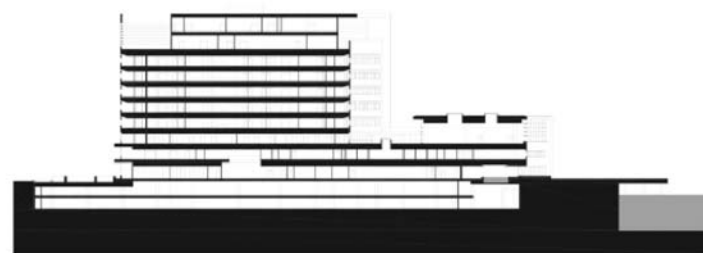
Fig. 9.4 ArchDaily, 2013



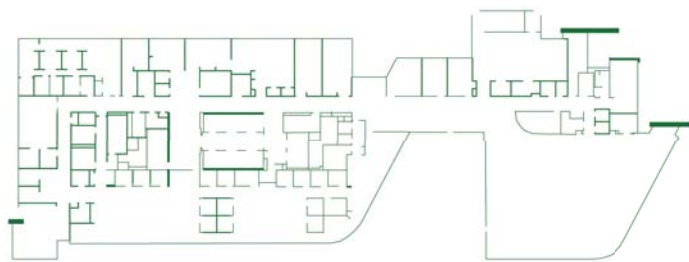
Fig. 9.5 ArchDaily, 2013



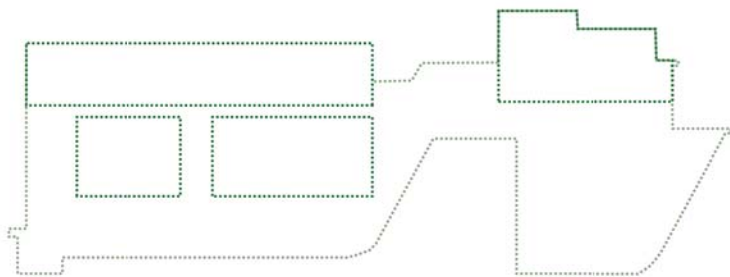
Fig. 9.6 ArchDaily, 2013



Plan to Section*



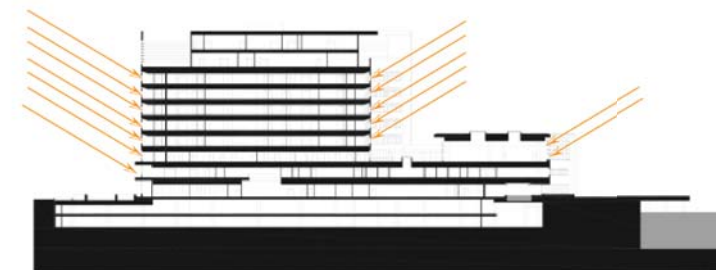
Plan to Section



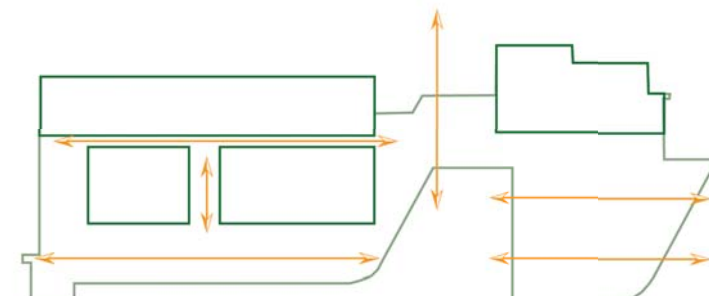
Hierarchy



Structure



Natural Light*

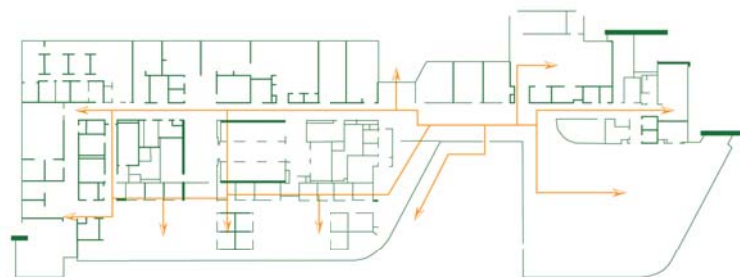
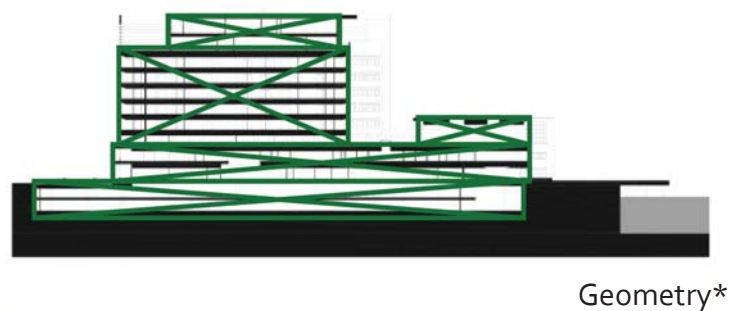


Natural Light

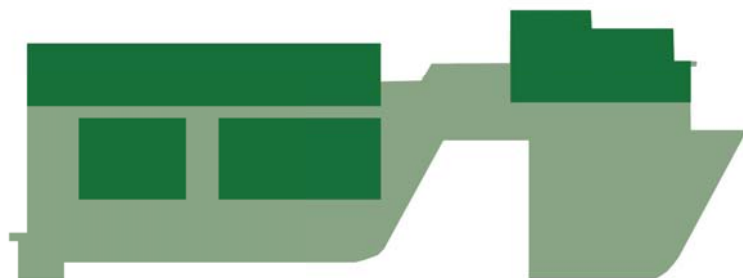
Fig. 9.9 (ALL)

Fig. 9.9 (ALL)

*Note: All images denoted with and asterisk in this case study have been provided from ArchDaily. All other images are illustrations done by Matthew Avard



Circulation



Massing

Fig. 9.9 (ALL)



Project Type: Ubuntu Centre
 Architects: John Blair/NOH Architects
 Location: Port Elizabeth, South Africa
 Size: 21,000 sq. ft.
 Year Built: 2006

On a flat bare plot of land in Port Elizabeth, South Africa, stands the Ubuntu Center. This \$6 million dollar, 20,980 sq. ft. community center that features a clinic for HIV and tuberculosis, a wellness center, career guidance and computer facilities, a soup kitchen, and multipurpose space. It is a beacon of hope for the forty percent of residents that are infected with HIV in this poverty-stricken suburb of South Africa. The center is a place to educate children giving them access to higher education and employment. Through the Ubuntu education fund prenatal and child healthcare, HIV testing, counseling, and treatment for mothers, along with initiatives such as after-school

Fig. 10 Architectural Magazine, 2009

programs, exam study sessions, university scholarships, and a variety of counseling services are provided ("The ubuntu center," 2009).

Architect Stan Field was awarded the contract to design the Ubuntu Center, Field practiced in Palo Alto, CA, although he was born in South Africa. Honored to be picked to design a structure back in his birth country Stan Field and his son Jess Field took a trip to Port Elizabeth to look at the site and township of Zwide. Stan looked at the way the township people

moved about the city, using random paths that cut throughout the township. Using the paths in the design of the Ubuntu center defined the program of the building. The structure itself was broken down into smaller components so as not to overwhelm the surrounding township. The design had to make good use of the consumption of natural resources and hardly relies on of the local infrastructure. The building used a folded concrete cast-in-place shell for the main structure uncommon to the area, yet

seemed to fit in the context of the local township. Gum poles were used for sun screening and security of the structure over the curtain walls, allowing for 90 percent of the building to receive natural lighting and ventilation. The use of red clay bricks defined the circulation between building at the center matching the red soil found around the area. The building stands for hope for locals to receive information regarding HIV and the preventative treatment within the Port Elizabeth township (Findley, 2011).

The awareness that this case study address will help in the design of my thesis. It shows how the building can be an extension of the community to promote understanding and healing. The environment of the Ubuntu Center relates well with the climate of my chosen site in Texas. The material palette blends well with the local building practices. The impact the building has on the surrounding community is important. This part is a vital link to reinforcing the Theoretical Premise/Unifying Idea of my thesis to make the community aware of services provided in helping veterans recover.



62 Fig. 10.1 Architectural Magazine, 2009



Fig. 10.2 Architectural Magazine, 2009

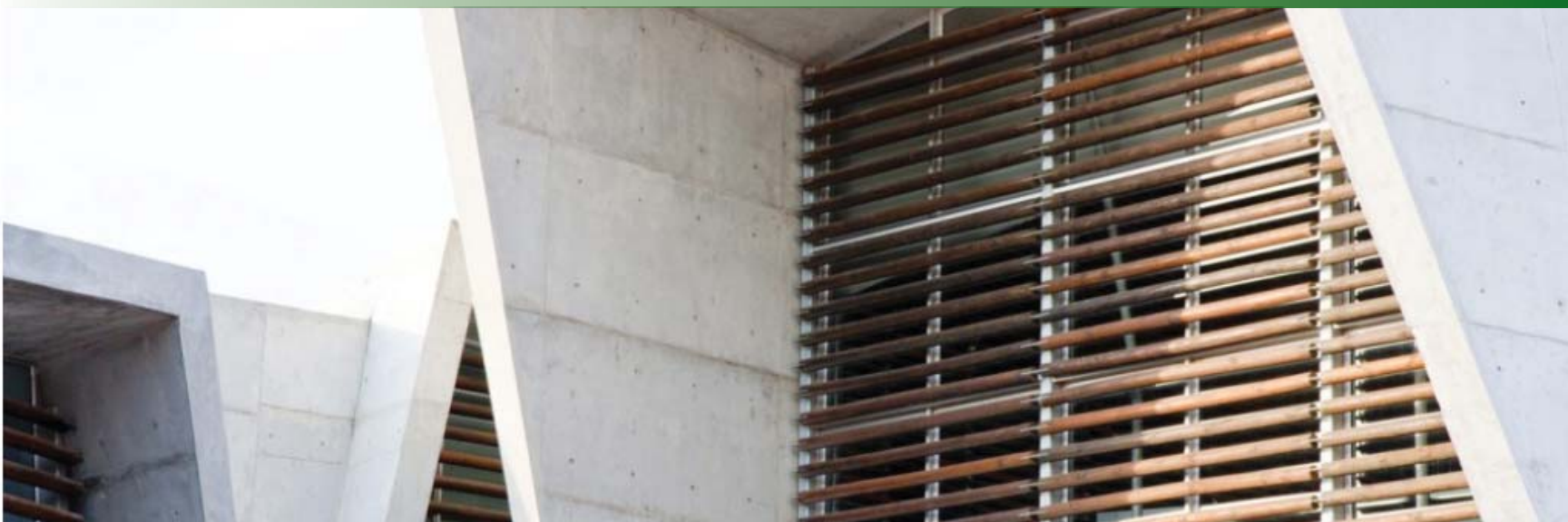


Fig. 10.3 ArchDaily, 2013

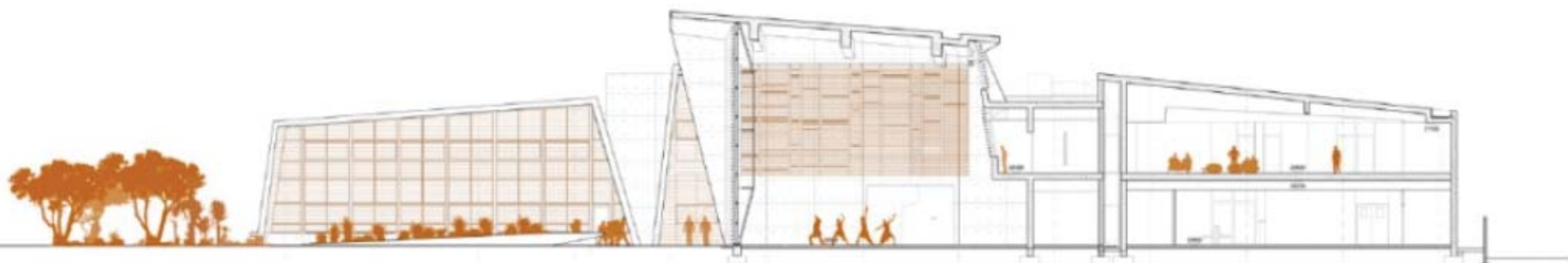
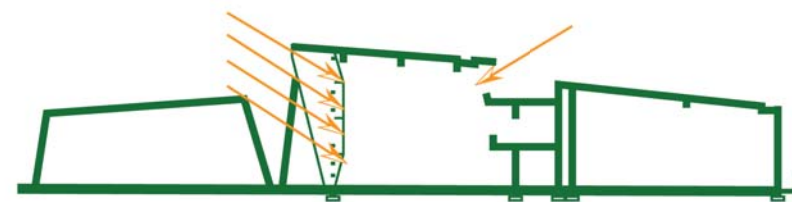
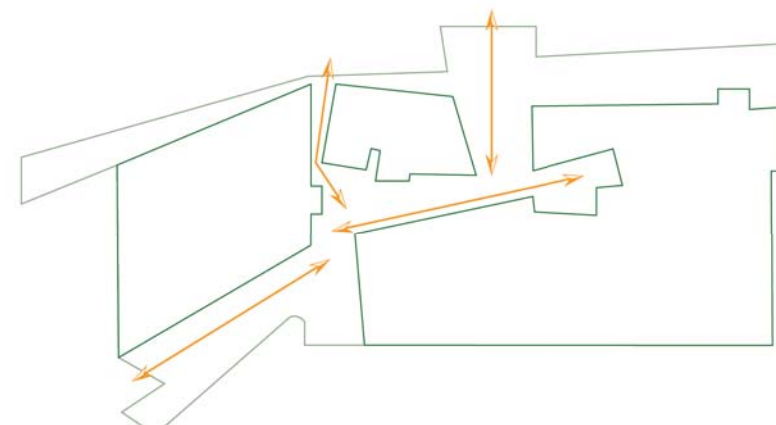


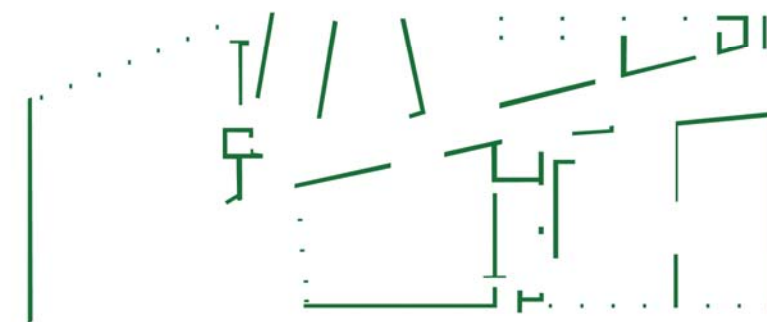
Fig. 10.4 Architectural Magazine, 2009



Natural Light

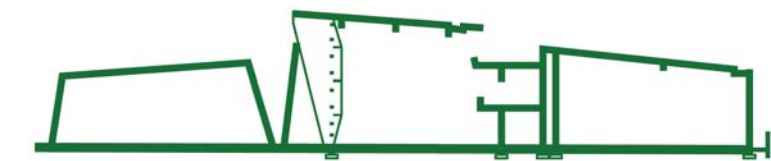


Natural Light

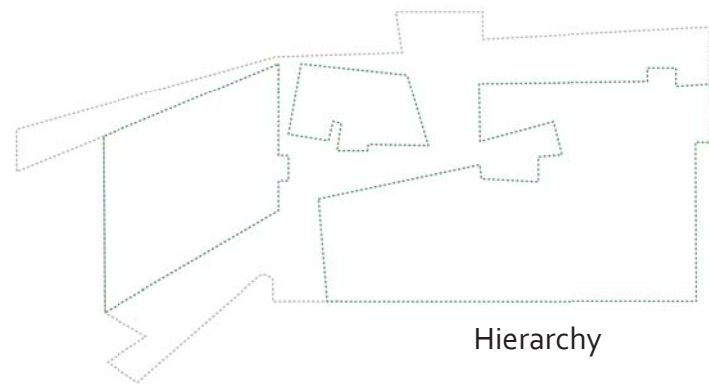


Structure

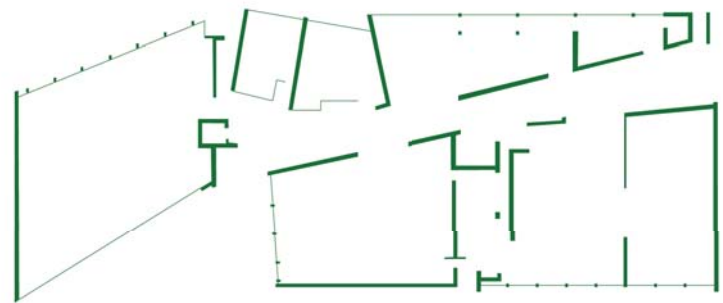
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Plan to Section

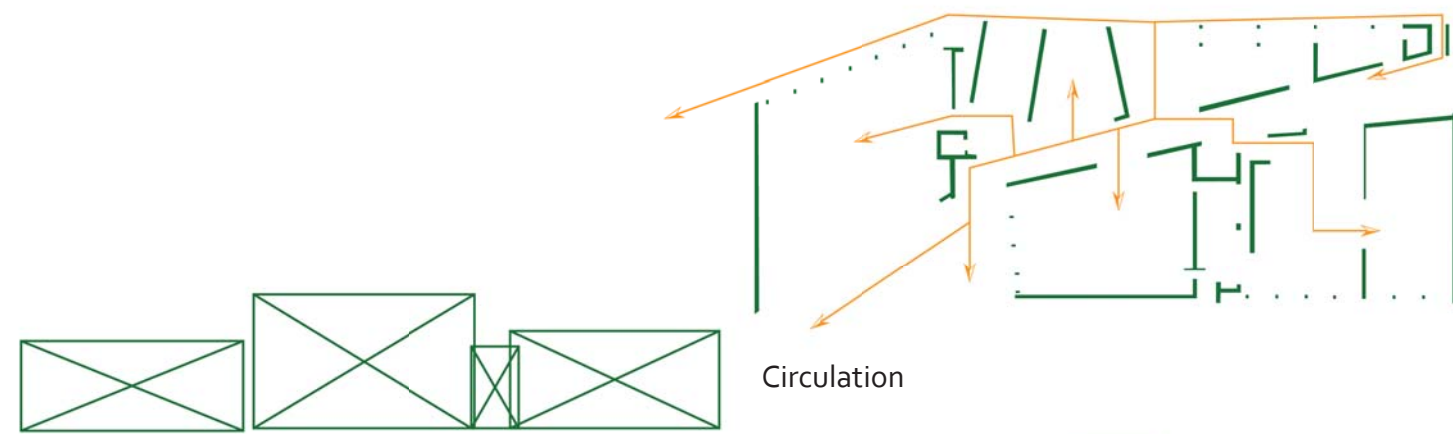


Hierarchy

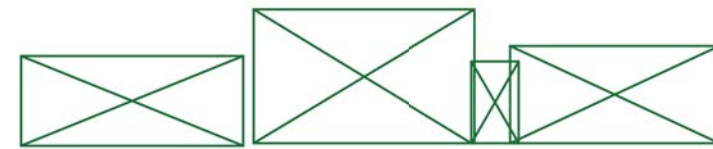


66 Plan to Section

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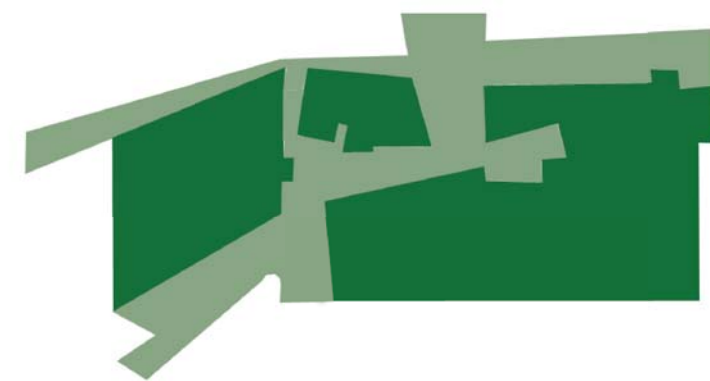


Circulation



Geometry

Fig. 10.8 (ALL)



Massing

Case Study - Summary



Fig. 8.7 ArchDaily, 2013



Fig. 9.7 ArchDaily, 2013



Fig. 10.6 ArchDaily, 2013

The selection of these case studies represents different approaches in healthcare - from rehabilitation centers dedicated to treating veterans similar in scope to my thesis to innovative hospitals of the future and research clinics on improving treatment for patients.

These case studies have affected my theoretical idea. These building have become extensions not only for the patients that receive care, but for informing and advocating new ways to promote healing and recovery for patients with a variety of illness and disabilities. I want to further look into these new ways of rehabilitation therapies and see how the architectural design can improve the therapy spaces to engage a more positive recovery for patients.

The graphical analysis provided insight in design with natural light, hierarchy of spaces, and circulation aspects of the case studies. All the case studies used almost 90 percent natural lighting. This aids in the design of my thesis project to create relations with the interior and exterior environments while using passive systems to create a natural environment for users. The circulation allows a natural path throughout each of these case studies and the relations of spaces with each other. The Beit Halochem Rehabilitation center used the circulation to create intimate gathering places for occupants. Even with such bold structures that surrounded the circulation paths these spaces were more human scale to create that intimacy. The hierarchy of spaces address the importance when looking at

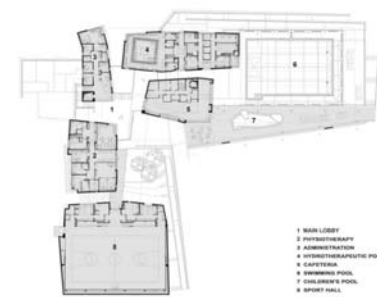


Fig. 8.8 ArchDaily, 2013

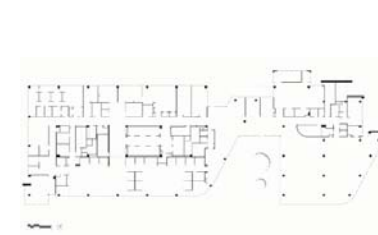


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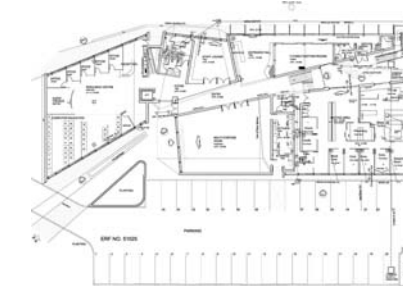


Fig. 10.7 Architectural Magazine, 2009

the relationship of spaces and how it relates to the circulation for the occupants.

Each of these case studies addresses theoretical ideals that will benefit the design of my thesis project. The Beit Halochem addresses the need to include family in the rehabilitation of Israel veterans, showing that the family is just as affected as the veteran. Carrying this over to my thesis will help strengthen ties between veterans and family improving the veterans well-being. The Spaulding Rehabilitation Hospital is an innovative approach to rehabilitation of patients. Providing the most up-to-date clinical

research to treat patients. The choice in materials the hospital used to connect with the history of the site is interesting and I would like to see how it would influence the architectural design of my project. The Ubuntu Center is a good example of using local resources for building. It also shows the extension a building has within the community, how the building advocates awareness to people, and how the services provided can create a better community for the future.



Fig. 11 Avar, Matthew(2013) The Alamo (Photo) San Antonio. TX

History of San Antonio, TX

The city of San Antonio, which grew out of San Antonio de Béxar Presidio, founded in 1718 with 5 Spanish missions located along the San Antonio river. The missions were all secularized by 1795, and San Antonio de Valero Mission later became a military barracks (known now as the Alamo). During the Texas Revolution, San Antonio was the site of several battles, including the siege of Bexar(December 1935) and the battle of the Alamo(March 6, 1836), which made it one of the most fought-over cities in North America.

After Texas entered the Union, the growth of the city was rapid and became the distribution center for the western movement in the United States. After the Civil War, San Antonio prospered as a cattle, distribution, mercantile, and military center serving the border region and the Southwest. The First United States Volunteer Cavalry was or-

ganized in San Antonio during the Spanish-American War, and in both world wars San Antonio was an important military center for the army and air forces. It has retained this status. Fort Sam Houston and Kelly, Randolph, Brooks, and Lackland Air Force bases were the city's leading economic generators for many years. By the nineteenth century San Antonio had become a favorite retirement spot for Texans who sought its mild climate, graceful ambience, and civilized amenities; it has continued as a favored military retirement site.

Tourism is one of the city's most important industries, for San Antonio's many attractions, including sports, draw tens of thousands of visitors every year. Among the most recent features is Fiesta Texas, a \$100 million, 201-acre family musical and entertainment theme park. Sea World in San Antonio is the largest marine-life theme park in the world. The famed Riverwalk, Paseo del Rio, consists of over 1½ miles of cool, shady, walks with

shops, cafes, restaurants, and clubs. HemisFair '68 left a number of permanent buildings, including the Tower of the Americas, which has an observation deck and restaurant on top. ("San Antonio, TX," 2013).

Military Present in San Antonio

San Antonio is known as Military city USA. The city has been occupied by Conquistadors, Texas Rangers, Confederate and Union troops, and served as Roosevelt's recruiting and training grounds for the Rough Riders, the military presence in San Antonio is unbroken for nearly 300 years ("History," 2013).

The first military barracks was the San Antonio de Valero, better known as the Alamo. After the siege of 1836, the Alamo lay in ruins it was returned to the Catholic Church in 1841. During the Civil War the Confederates used the buildings.

The end of the Civil War the United States government took control until 1876. After this time the Roman Catholic church disputed the custody of the Alamo between the Texan and US government. It was purchased by the Texan government in 1883 and placed under control of the Daughters of the Republic of Texas("History," 2013).

Several other military camps were established around the San Antonio area. These included Camp Bullis, Camp Stanley, Camp Travis , and Camp Wilson. The Air Force also had bases near San Antonio that included Brooks Field, Kelly Field, Stinson Field, Lackland Army Air Field, and Randolph Field were used to train Air Force cadets and officers. There was even an San Antonio Arsenal that was founded in 1859 to furnish arms and ammunitions to the frontier forts of Texas. Fort Sam Houston was established in 1849 which is the home to the Fifth United States Army. Sam Houston supports all National Guard and Army Reserve

installations in Texas and is the site of a National Cemetery and several museums("History," 2013).

Today one of the main focal points at Fort Sam Houston besides being a training command post for military medic personnel is Brooke Army Medical Center. This facility operated under the United States Army Health Services Command, provides primary, secondary, tertiary health care to its eligible personnel. Brooke Army Medical Center clinics cover most medical specialties and subspecialties. Covering a wide range of health care, postgraduate medical education, medical training, and medical research. There is even a burn center operated by the United States Army Institute of Surgical Research ("Brooke army medical," 2013).

Caring for US Veterans

As the war in Iraq and Afghanistan came to an

end soldiers started returning home. Many have been wounded or injured during these wars - the Watson Institute at Brown University reported that over 90,000 soldiers had serious enough injuries that required medical evacuation from the conflict. While a larger number of soldiers suffered from other injuries, ranging from brain injuries to hearing loss. To date, 650,000 Iraq and Afghanistan veterans have been treated in the Department of Veterans Affairs (VA) medical facilities for a wide range of medical conditions. Nearly 500,000 of these veterans are receiving compensation from the VA for injuries sustained or worsened during their military service. The US has already spent 32.6 billion in constant dollars providing medical care and disability benefits to these veterans ("Caring for U.S.," 2011).

We must care for the veterans that suffered injuries from past and current wars. The Veterans Health Administration (VHA) created by President Hoover in 1930 consolidated all veteran services.

VHA went through changes after it was established to create better facilities to service the U.S. veterans. The newly Veteran Affairs (VA) hospitals were affiliated with medical schools allowing the promotion of resident and teaching fellowships at VA hospitals. At the end of 1947 there was 97 hospitals in operation and 29 additional hospitals had been built. The promotion of the VHA to service members was almost non-existing until the mid-1990s. VHA underwent an extensive transformation to improve the quality and efficiency of care. It included doing away with unnecessary facilities and patient beds, revised eligibility rules, and expanded outpatient clinics to surrounding mid-sized communities. The reason for this transformation in the VHA system was the ability to track the performance of the VA facilities - including quality of care for service members and holding administrators accountable to these improvements in care. At the present time the VHA scope of their operations is vast. VHA, for instance, man-

ages the single largest integrated health care system in the United States. In 2005, at its 156 hospitals, 877 outpatient clinics, 136 nursing homes, 43 residential rehabilitation treatment programs, and 207 readjustment counseling centers, it provided care to approximately 5 million individual patients and hosted 54 million outpatient visits (Andreasen et al. 2007).

The care for veterans does not stop at the VHA through the VA hospitals etc. There are a variety of private organizations that pay tribute to and support those who have sacrificed so much for our nation. Some of the organizations include: Military Source One a military resource website providing resources to service members and their families in and transitioning out of the military. Military source one has local offices throughout U.S. cities. The wounded Warrior project whose mission is to raise awareness and enlist the public's aid for the needs of injured service members.

Most recently two state of the art facilities funded and built by the Intrepid Fallen Heroes Fund. The mission of the IFHF is to serve the military personal of the United States who have been injured in service to our nation, and their families. Supporting these heroes helps repay the debt all Americans owe them for the sacrifices they have made in service to our nation ("Intrepid fallen heroes," 2013). The Center for the Intrepid (CFI) located in San Antonio, Texas and the National Intrepid Center of Excellence (NICoE) located on the campus of Walter Reed National Military Medical Center in Bethesda, MD. The Center for the Intrepid is a 65,000 sq. ft. rehabilitation facility dedicated to treating amputees and burn victims. The rehabilitation center uses a combination of therapy, simulation and extreme sports for treating veterans. CFI is the ultimate joint venture between the American people and the armed forces according to the Intrepid Fallen Heroes Fund site. Although built with private dollars, the army now funds the

center's day-to-day operations. The goal of the CFI is to provide care to maximize the wounded warriors potential whether they choose to remain in active duty or to return to civilian life. The three missions of CFI include patient care, education and training, and research ("The center for," 2013). Eligible veterans from previous wars or who have sustained injuries in other operations, training exercises, and non-related combat situations can receive care at these facilities.

The National Intrepid Center of Excellence (NICoE) is a 72,000 sq. ft. facility dedicated to the research and treatment of military service members with traumatic brain injuries (TBI) and psychological health (PH) conditions. Primary patients of the NICoE are active duty service members that do not respond to conventional therapy. Once accepted into the program, the service member will stay at the NICoE up to three weeks for treatment at the dedicated Fisher House on Walter Reed

campus. A spouse or other family member may stay with the service member during their stay at NICoE. Once released back to duty a care plan will be provided to the service member for ongoing treatment through NICoE satellite centers. ("Intrepid fallen heroes," 2013). The data collected from these satellite centers on veterans will be sent back to the NICoE center to aid its ongoing research program. The data will be used to improve detection, diagnosis, and treatment of TBI and PTS. Patient care is held to the same standard for the NICoE satellite centers according to the main NICoE.

These standards include:

- Intake/Clinic area: includes psychiatric testing, chiropractic treatment, acupuncture, neuro psych testing rooms, and typical exam rooms.
- Physical Therapy: open gym layout with

standard physical therapy equipment including adjustable mat tables, parallel bars, treadmills, alter-G gait trainer, and other physical therapy items.

- Sleep Lab: one sleep room, equipped with the sleep system and ambient therapy music; and a control room, equipped with a computer monitoring system.
- Central Park: Similar to the Central Park space at NICoE, providing a calm atmosphere for patient and family member relaxation and family education, with a meditative feel and including ambient therapy music.
- Family Room: centrally located and adjacent to the outdoor patio, providing a reprieve space for patients and family to spend time together and take a break from the clinical treatment regime.

The different treatment opinions at these organizations allows for the most advanced care possible for returning military personnel suffering from TBI, PTS and related afflictions; which enhances the means of properly identifying and diagnosing these conditions; ensuring that continuous care is available for those veterans in need of treatment("Intrepid fallen heroes," 2013).

Project Goals

THE ACADEMIC

Academically, this thesis project will provide insight to a combined way of thinking in design. I am personally invested in this project telling some of my stories along the way. This helps in perusing a deeper knowledge throughout design of the project. I believe views will relate either from personal experiences or of others that have shared their stories.

I have gained valuable knowledge through the classes and teachers I have interacted with on past projects. With each new project I have been taught a new way of looking and thinking about design. In this thesis I have taken these new ways to evaluate and collect the right materials to present a strong project that will showcase skills as a designer. Overall I hope to preserve and reevaluate my research if necessary to make sure my design is the best possible solution for the users.

PROFESSIONAL

Professionally, this project will demonstrate to potential employers the quality and scope of work I am capable of doing. The interest I have in my thesis will be an avenue to use when seeking firms with similar projects. I would even see this project lending the way to opening up other job possibilities in the professional world of architecture. I hope this shows my dedication to well throughout designs that benefit the users while working to ensure the client is satisfied. Also, being able to look back having the appreciation for the work I have accomplished.

PERSONAL

Personally, this project gives me time to reflect on things from my past that I am still overcoming. In turn this project is like my own therapy being able to design something others can connect with. It

gives me and others hope that the community of people are always working towards bettering the surrounding environment. I want to be one of these people to do my best to give my 110% to those that have sacrificed so much more to preserve others way of living.



Fig. 12 Ayard, Matthew (2013) (Rock Photo) Narual Arch Bridge, TX

Narrative

Arriving in San Antonio in Mid-August, it is a hot and sunny day with temperatures reaching in the upper 90's. After settling in to my hotel I decided to walk along the River walk looking at all the southern architecture and beautiful scenery. Even with the hot temperatures it was cooler walking along the River. Once the temperature started to drop I walked back to the hotel and headed out to do some site reconnaissance.

Earlier in the summer I narrowed down sites on the outskirts of the city. Through a professor at NDSU that practiced around the Texas area he gave me insight of some possible locations. The Greenway Trails System of San Antonio is an ever growing network of multi-use hiking and biking trails that wind through the natural landscape of the cities creeks. This vast network of parks that cover over 1,200 acres for a current total of 86

Site Analysis Narrative

miles of trails with 44 miles still in the works of being complete in the near future. This would then circle the entire city of San Antonio for a total of 130 miles of trails (San Antonio Parks and Recreation, 2011). The Greenway System caught my attention of being the perfect start to find a suitable site for my project.

I headed out to the northwest side of San Antonio to Leon Vista park part of the Leon Creek Greenway System. I walk around the trails for about an hour. While this was close to amenities of the city I did not feel this was the best site for the project. I needed something a little more submerged in the seclusion of nature. I got on Interstate 410 that circles the city and headed south to the Medina River Natural Area. The light was fading from the sky as I pulled in to the parking lot at the Medina Natural Area. Unfortunately I was too late getting to the park. The park ranger was there waiting on the last of the hikers and bikers to come of the

trails and shut the park down for the night. So, I headed back to my hotel and got cleaned up after a hot day from being outside and headed back out to enjoy the nightlife that the city had to offer. The next morning I got up early and decided before going back to the Medina Natural Area I would check out two other location on the north-east side of San Antonio part of the Salado Creek Greenway System. I pulled into Lady Bird Johnson Park just east of the San Antonio Airport right off of Interstate 410. Heading to start my site reconnaissance of the trails in this area ended as soon as I got out of the car. Once again there was a Park Ranger she asked "did you stop here to fix the flat tire on your car". Looking back at the car, the rear passenger tire was completely flat. I guess that must have been a sign that this area was not the right place for my site. After, changing the tire and putting on the spare in the blistering heat. I drove and swapped cars back at the rental place.

Leaving the rental place I drove back down south of the city to the Medina River Greenway System. Existing off of interstate 410 onto highway 281 I followed the road around toward Mitchell Lake which brought me back to Medina Natural Area. Medina River Natural Area is part of the Greenway Trails System on the southern side of San Antonio. The site features over 10 miles of trails through large cypress, Oak and Pecan trees. Pulling into the parking lot at the park there were only four other vehicles. The Saturday afternoon sun beat down on the black asphalt lot as I made my way down to the head of the trail by the park rangers office. It felt cooler as I made way into the grove of mesquite trees along the trail. While walking I scouted a total of 4 miles throughout several trails. Reaching the half way point, I decided to turn back taking a different trail back to my vehicle. I left the river's edge walking up out of the thicket of trees to a clearing about one-to-two miles from the parking lot. Here I found my site

next to the trail just north of the river. To the north of the site is a agriculture farmland. The site had everything I was looking for a close tie to nature, a connection with the community, in close a proximity to a dense population of military veterans, and close to the amenities of a larger city. The public transportation routes even make stops along highway 16 just outside the park. The solitude the site selected offers for my thesis project will enhance the healing process for veterans and their families recovering from physical and/or psychological disabilities.

Views and Vistas

Nestled along the Medina River the site is surrounded by dense thickets of mesquite trees, cactus and grasslands. While to the north is wide-open agriculture farmland. Looking towards the south the jungle like mossy vines intertwine with Bald Cypress and Pecan trees loom above the river's edge. The only thing taller the Cypress and Pecan threes is an electrical line that runs from north to south across the western edge of the site.



Fig. 13 Illustration. Avard, Matthew(2013) Data retrieved from Google Earth



Fig. 13.2 Avard, Matthew(2013) (Photo) Medina River Natural Area

Built Features

Where the trails start is the park rangers building. Park rangers are staffed during normal business hours Monday through Friday and closed on weekends. The site itself is comprised mostly of walking, hiking, and biking trails, most being paved surfaces. Just before the 1/4 mile marker along the edge of the trail there is an abandoned home stead. Looking north of the site a mile or so you can see a vague outline of residential housing on the north side of Watson Road.



Fig. 13.1 Avard, Matthew(2013) (Photo) Medina River Natural Area

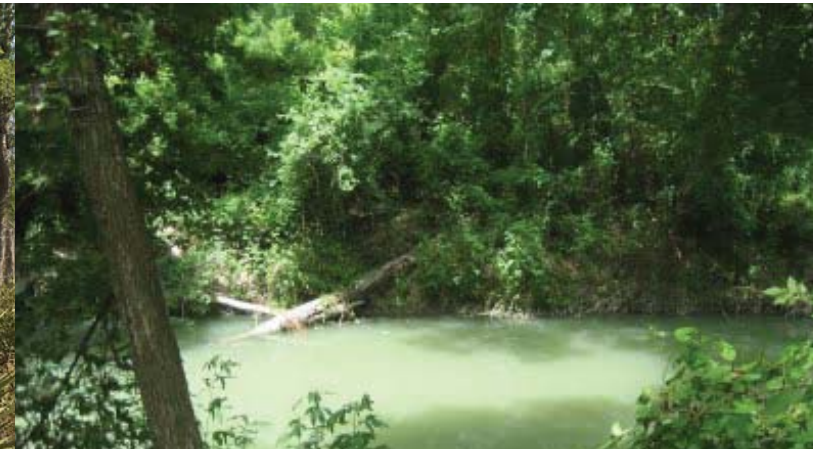


Fig. 13.3 Avard, Matthew(2013) (Photo) Medina River Natural Area

Light Quality

The quality of light is dependent on the time of day. While during the day the sun is shining with ample amount of light with some overcast of clouds. The dry environment radiates the sun off of the ground. During the morning and evening hours sun rays are blocked by the tree line providing shaded. Along the river the light is scattered from the Cypress and Pecan trees creating a soft glow onto the medina river.

Water

The site itself is to the north of the Medina River the main source of water within this area. Water on the site is a second source to supply the city of San Antonio. Yet, from the site itself there is no evidence of water away from the river.

Vegetation

The natural vegetation of the site consist mainly of Mesquite, Cypress, and Pecan trees, cactus, and grasslands. There is also a mix of small live oak, post oak, prickly pear cactus, catclaw, blackbrush, whitebrush, guajillo, huisache, cenizo, and other types of thickets that often grow very densely.



Fig. 13.4 Avard, Matthew(2013) (Photo) Medina River Natural Area



Fig. 13.6 Avard, Matthew(2013) (Photo) Medina River Natural Area

Wind

The site is protected by the tree line from the spring to fall winds that come out of the south-east. However, the site is wide-open to the northern winter winds. The site receives plenty natural ventilation throughout the year to cool the site down during the evening hours.



Fig. 13.5 Avard, Matthew(2013) (Photo) Medina River Natural Area



Fig. 13.7 Avard, Matthew(2013) (Photo) Medina River Natural Area

Human Characteristics

Human characteristics on the site include the park rangers office and information area at the entrance of the park. Mile markers along the hiking/ biking trails and the occasional pedestrian while I was walking the trails looking for a site.

Distress

There are signs of distress along the wooded area of the river. Some non-native species of trees are dead or dying. The park rangers have maintained the distress of vegetation along all trails throughout the park.



SITE MAP 



Fig. 14.1 Avard, Matthew.(2013). Photo-Grid.(Photo). Medina River Natural Area

90 Fig. 14 Illustration. Avard, Matthew.(2013). Data retrrieved from Google Earth



Fig. 15 Illustration. Avard, Matthew(2013) Data retrrieved from www.websoilsurvey.nrcs.usda.gov

Over 1000' running feet from the northern boundary of the site to the river there is an elevation change of 32'. The site slopes towards the south at approximately 5.2%.

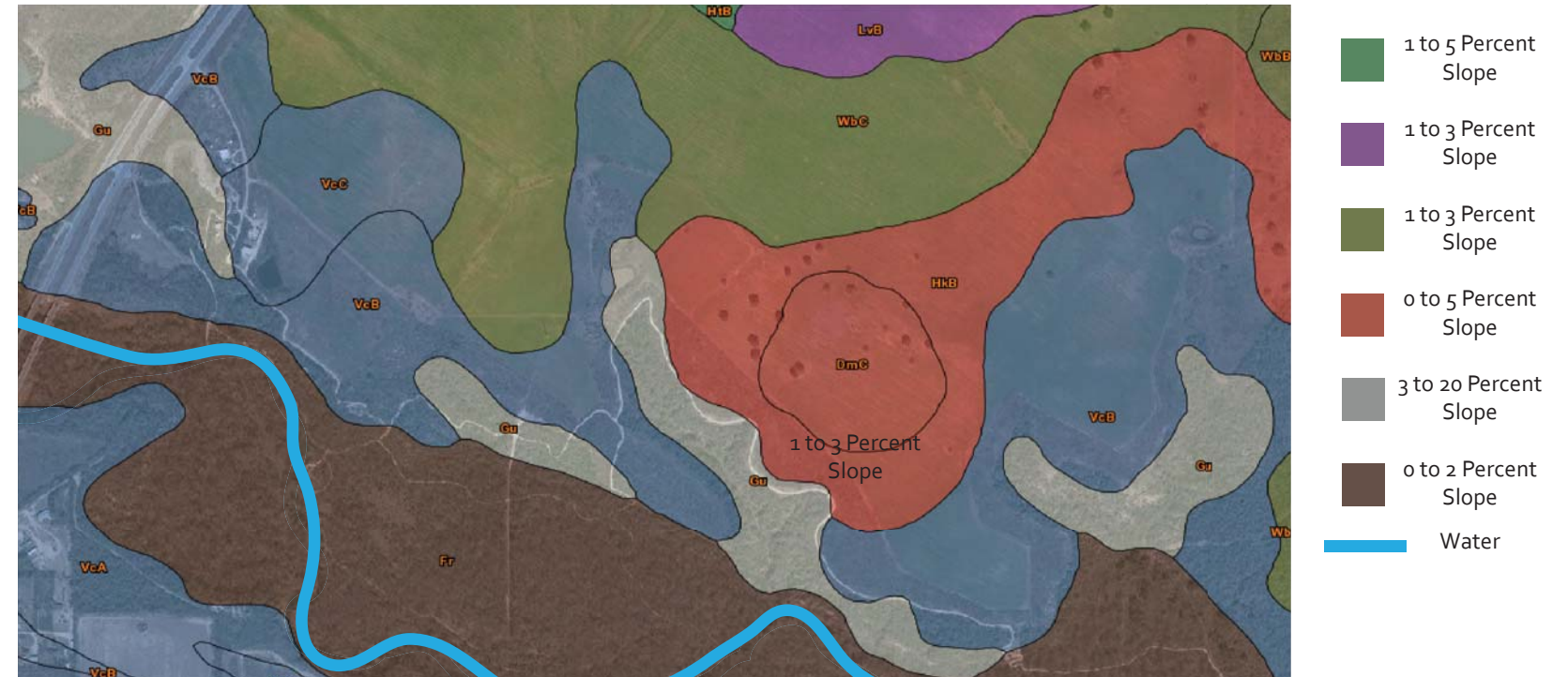
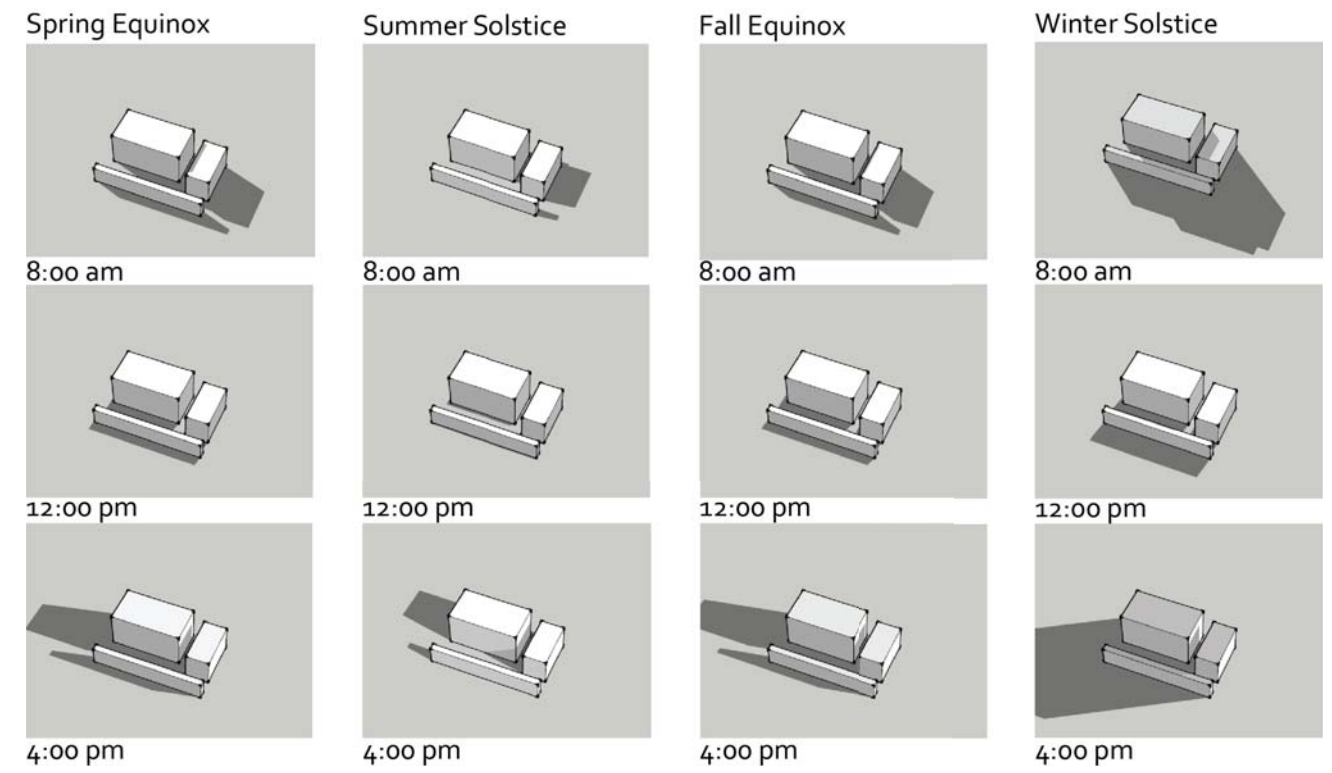


Fig. 15.1 Illustration. Avard, Matthew(2013) Data retrrieved from www.websoilsurvey.nrcs.usda.gov



-  Winter breeze
-  Summer breeze
-  Noise
-  Vehicle Traffic
-  Walking/ Biking Trails
-  Medina River



94 Fig. 16 Illustration. Avard, Matthew(2013) Data retrrieved from www.weatherspark.com

Fig. 17 Illustration. Avard, Matthew(2013) Data retrrieved from google SketchUp

Climate Data

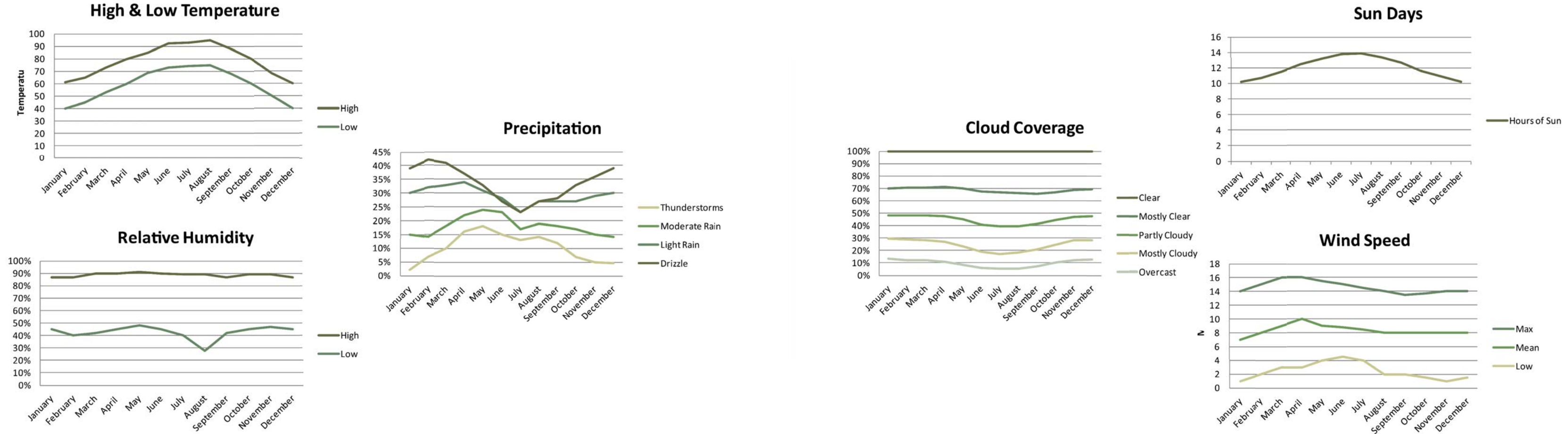
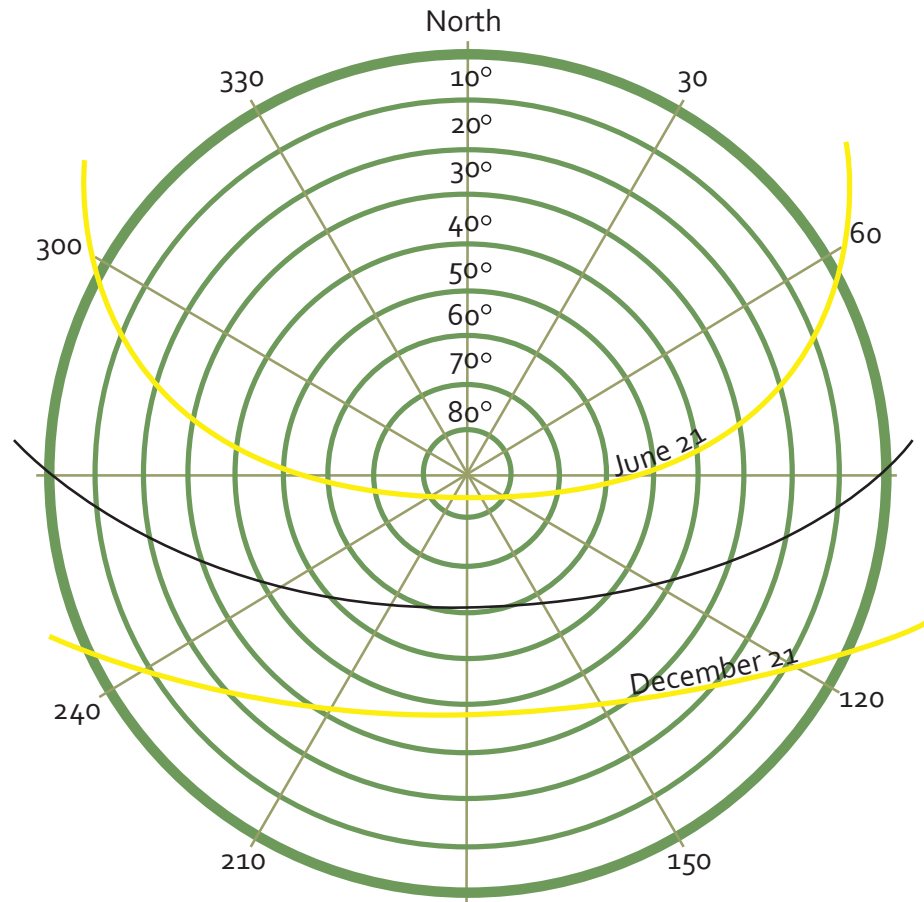


Fig. 18 Illustration. Avard, Matthew(2013) Data retrrieved from www.weatherspark.com

Fig. 18.1 Illustration. Avard, Matthew(2013) Data retrrieved from www.weatherspark.com

Sun Path



Wind Direction

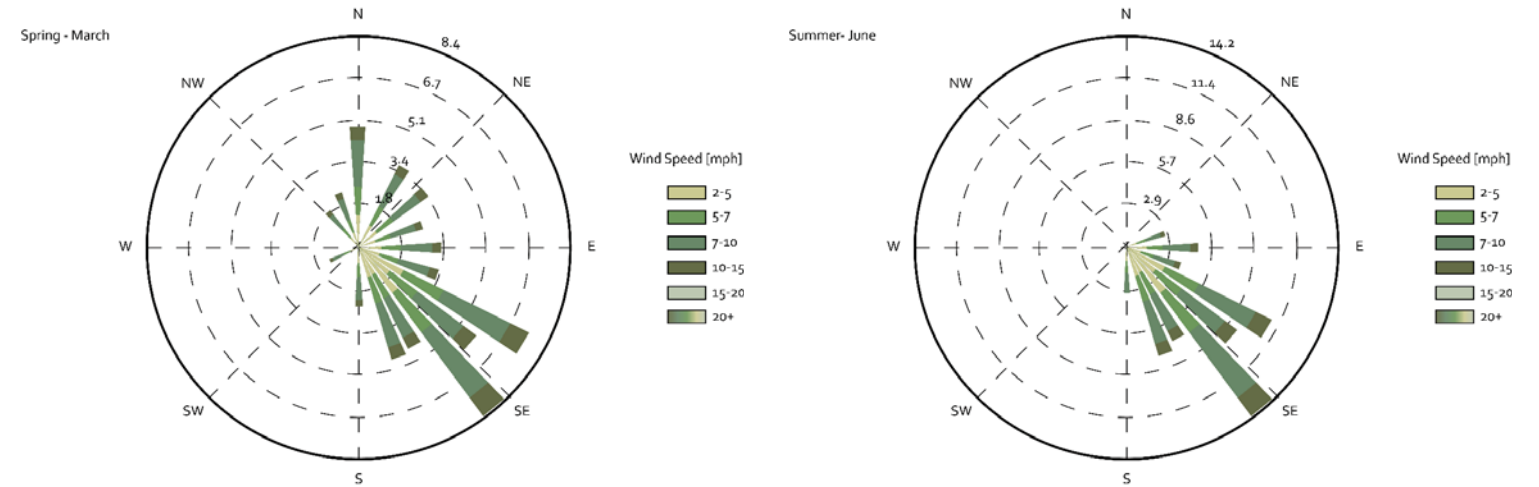


Fig. 18.2 Illustration. Avard, Matthew(2013) Data retrrieved from www.gaisma.com

Fig. 18.3 Illustration. Avard, Matthew(2013) Data retrrieved from www.mesonet.agron.iastate.edu

Wind Direction

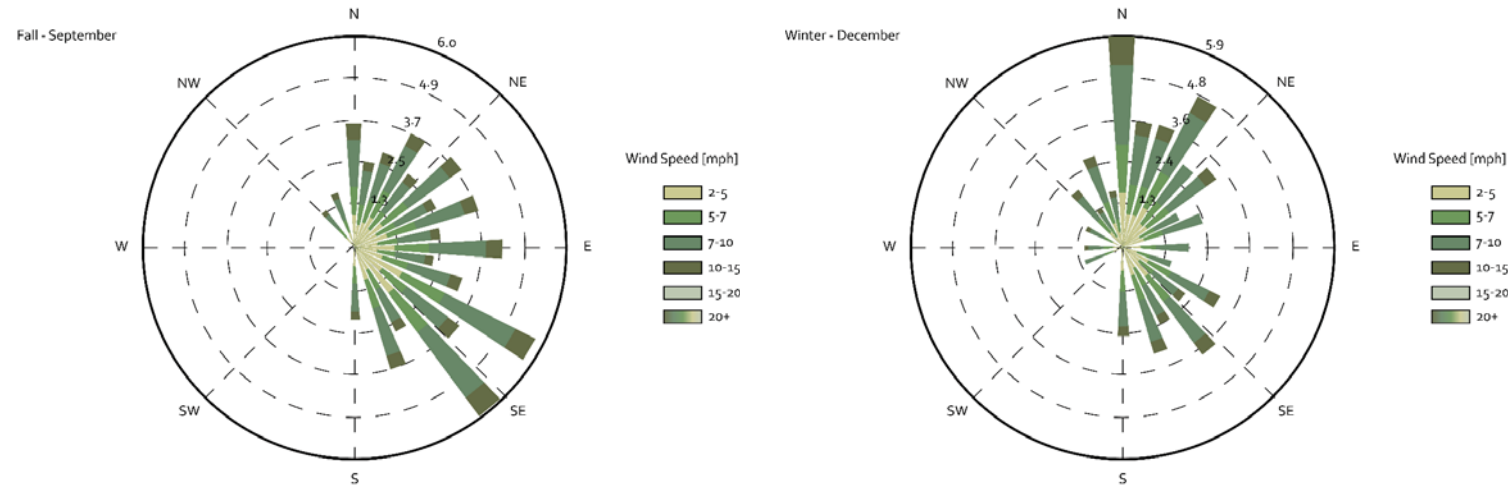


Fig. 18.4 Illustration. Avard, Matthew(2013) Data retrieved from www.mesonet.agron.iastate.edu

Family Housing

Foyer	80 sq. ft.
Stor./Mech.	160 sq. ft.
Living	300 sq. ft.
Kitchen	150 sq. ft.
Dining	100 sq. ft.
Bath	60 sq. ft.
Master Bedroom	250 sq. ft.
Master Bath	60 sq. ft.
Bedroom	2 @ 125 sq. ft.

Total 8 @ 1400 sq.ft.

Single Housing

Recreation Hall	9600 sq. ft.
Staff Offices	6 @ 230 sq. ft.
Laundry Area	1 @ ea. fl. 200 sq. ft.
Single Room	24 @ 300 sq. ft.
Common Area	12 @ 465 sq. ft.
Dining Area	4300 sq. ft.
Kitchen	700 sq. ft.
Storage/Prep Area	280 sq. ft.
Chapel	1200 sq. ft.
Theater	1200 sq. ft.
Outside Terraces	1400 sq. ft.

Total 33,440 sq.ft.

Programmatic Requirements

Main Entrance/ Clinic

Atrium	9650 sq. ft.
Waiting/ Reception	500 sq. ft.
In-Take	80 sq. ft.
Exam Room	6 @ 150 sq. ft.
Storage	120 sq. ft.
Individual Therapy	230 sq. ft.
Lab Research	300 sq. ft.
Lab Testing	300 sq. ft.
Group Therapy	2400 sq. ft.
Conference Room	300 sq. ft.
Breakroom	250 sq. ft.
Staff Offices	5 @ 150 sq. ft.
CEO Office	180 sq. ft.
CFO Office	210 sq. ft.
Staff Restrooms	140 sq. ft.
Mezzanine Lounge	13,600 sq. ft.
Mechanical Room	3,000 sq. ft.
Healing Garden	Undefined

Total 33,000 sq.ft.

Programmatic Requirements

Wellness Center

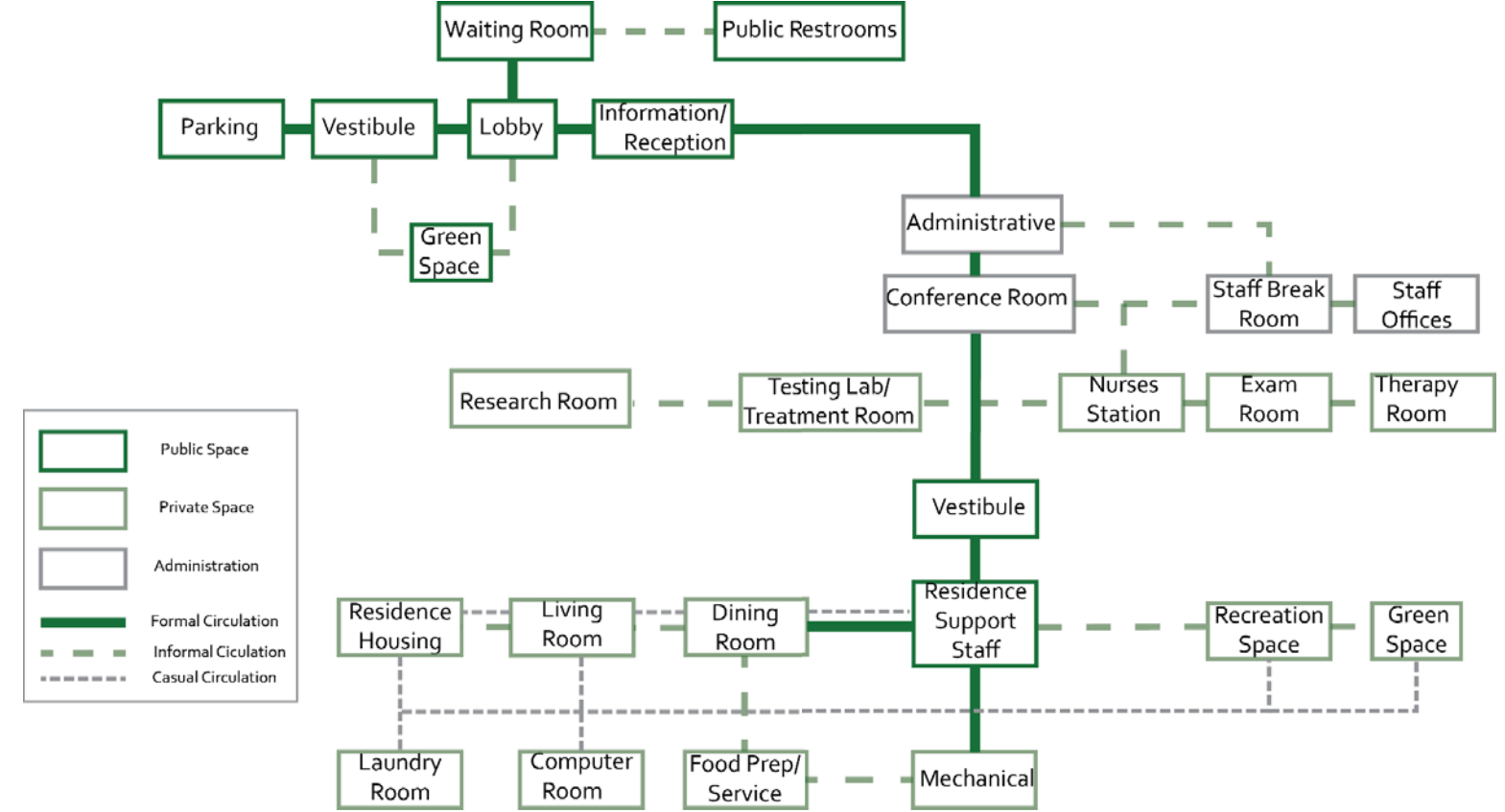
Lounge/Recep./Snack bar	5600 sq. ft.
Administrative office	200 sq. ft.
Staff Offices	4 @ 150 sq. ft.
Storage	500 sq. ft.
Rest Room	2 @ 800 sq. ft.
Mens' Locker Room	1900 sq. ft.
Womens' Locker Room	1900 sq. ft.
Family Pool	33000 sq. ft.
Lap Pool	24000 sq. ft.
Therapy Pool	4500 sq. ft.
Maintenance Area	9700 sq. ft.
Pool Filtration	650 sq. ft.
Message Area	2 @ 100 sq. ft.
Sauna	2 @ 200 sq. ft.
Hand Ball Court	4 @ 875 sq. ft.
Free Weights	5000 sq. ft.
Cardio Area	5000 sq. ft.
Gymnasium	15000 sq. ft.
Flex Room	4 @ 950 sq. ft.
Group Therapy	1500 sq. ft.
Small Classroom	2 @ 500 sq. ft.
Upper Lounge	6,000 sq. ft.
Mechanical Room	11,000 sq. ft.

Total 136,550 sq.ft.

Interaction Matrices



Interaction Nets



Final Board Layout

CARTER, EDWARD WELLNESS CENTER

- 1. Vestibule
- 2. Reception
- 3. Waiting Area
- 4. Nurse Station
- 5. Exam Room
- 6. Treatment Room
- 7. Physical Therapy
- 8. Group Therapy
- 9. Individual Therapy
- 10. Counseling
- 11. Support Group
- 12. Group Office
- 13. Conference Room
- 14. Reception
- 15. Waiting Area
- 16. Reception
- 17. Reception
- 18. Reception
- 19. Reception
- 20. Reception
- 21. Reception
- 22. Reception
- 23. Reception
- 24. Reception
- 25. Reception
- 26. Reception
- 27. Reception
- 28. Reception
- 29. Reception
- 30. Reception

COURAGE CAMPUS - A PLACE OF HEALING & RE-DISCOVERY

- 1. House
- 2. Day Room
- 3. Laundry
- 4. Kitchen
- 5. Bath
- 6. Storage
- 7. Storage
- 8. Storage
- 9. Storage
- 10. Storage
- 11. Storage
- 12. Storage
- 13. Storage
- 14. Storage
- 15. Storage
- 16. Storage
- 17. Storage
- 18. Storage
- 19. Storage
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- 28. Storage
- 29. Storage
- 30. Storage

PITTMAN, RICHARD CLINIC & SINGLE HOUSING

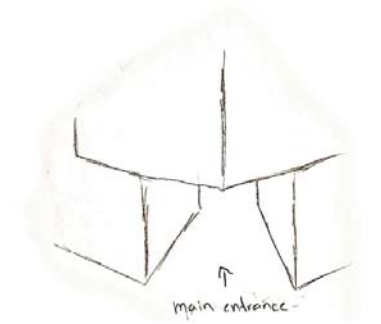
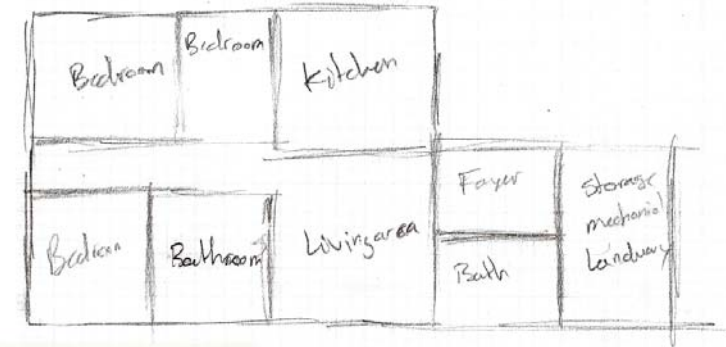
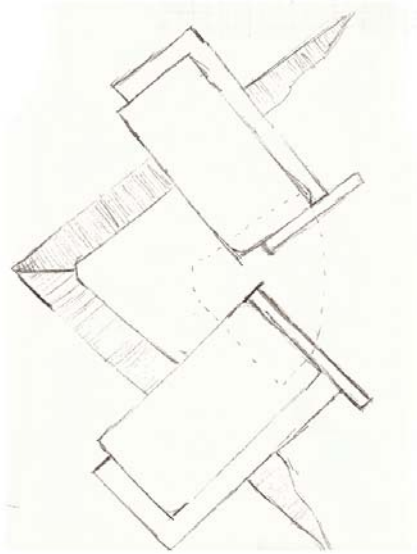
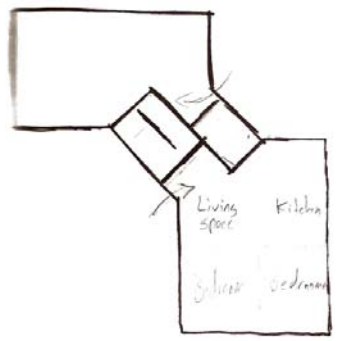
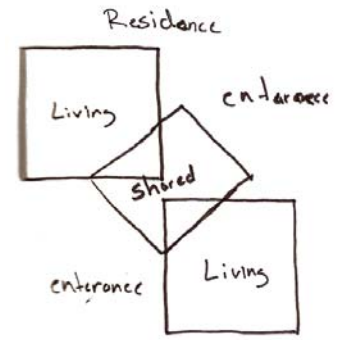
Concept



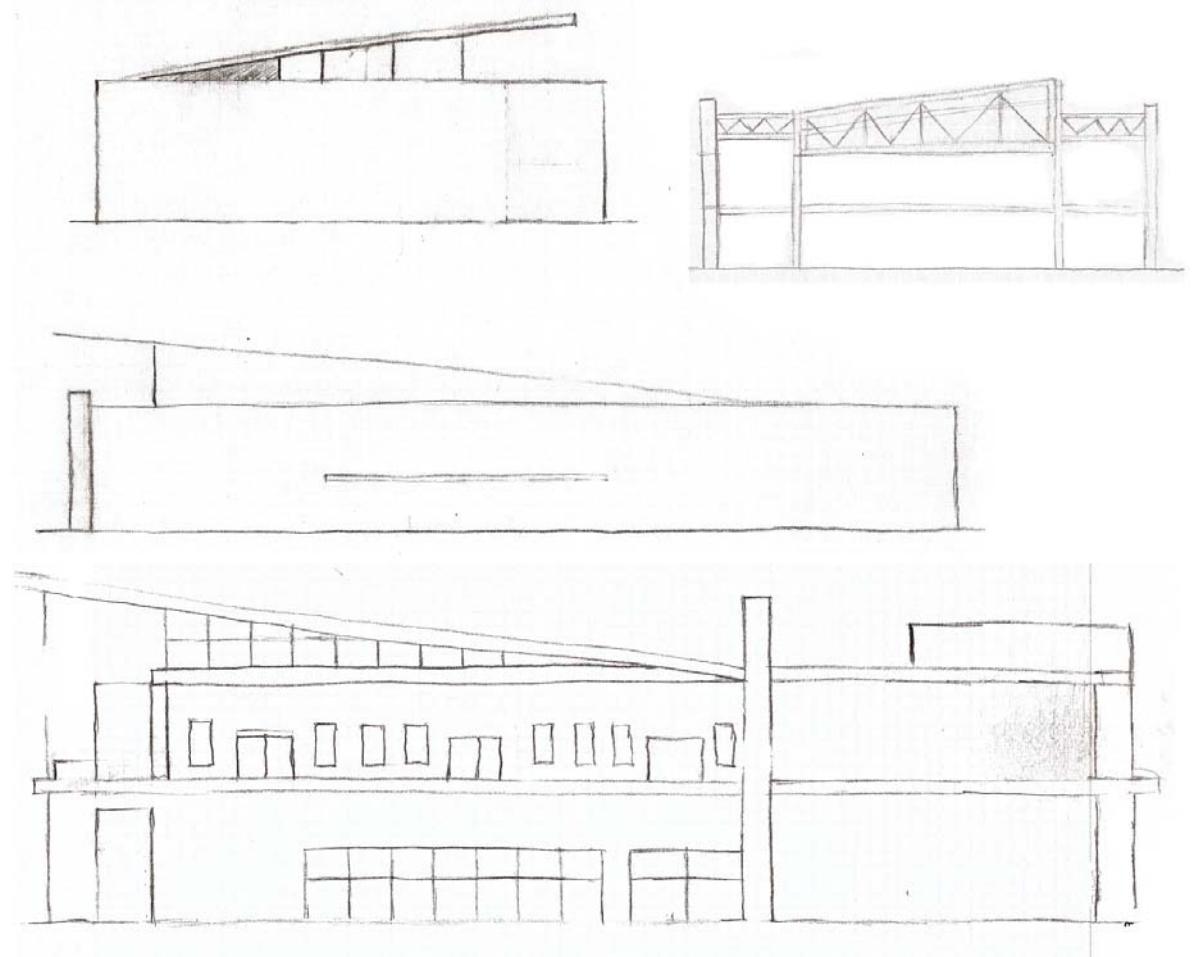
The cube is the representation of balanced human life; being physical, mental, emotional, social, financial, and spiritual. The rifts through the sides of the cube are the physical and psychological disabilities of the veterans. The sphere represents the veterans re-establishment back into society which the rods guide them to those connections. The sphere is not perfect which is betrayed by the cracked glass that reflects back to the cube in its balanced state. Allowing the veterans to continually work toward being balanced through and beyond their recovery.



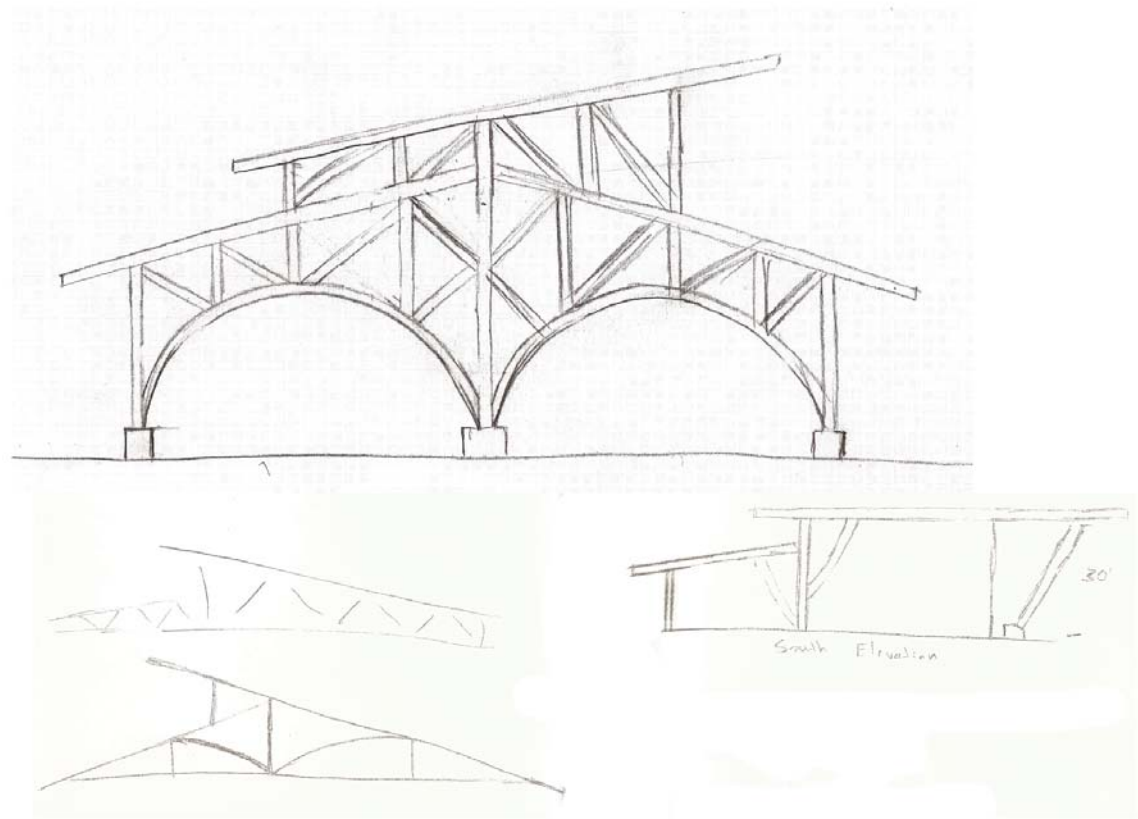
Spatial Studies



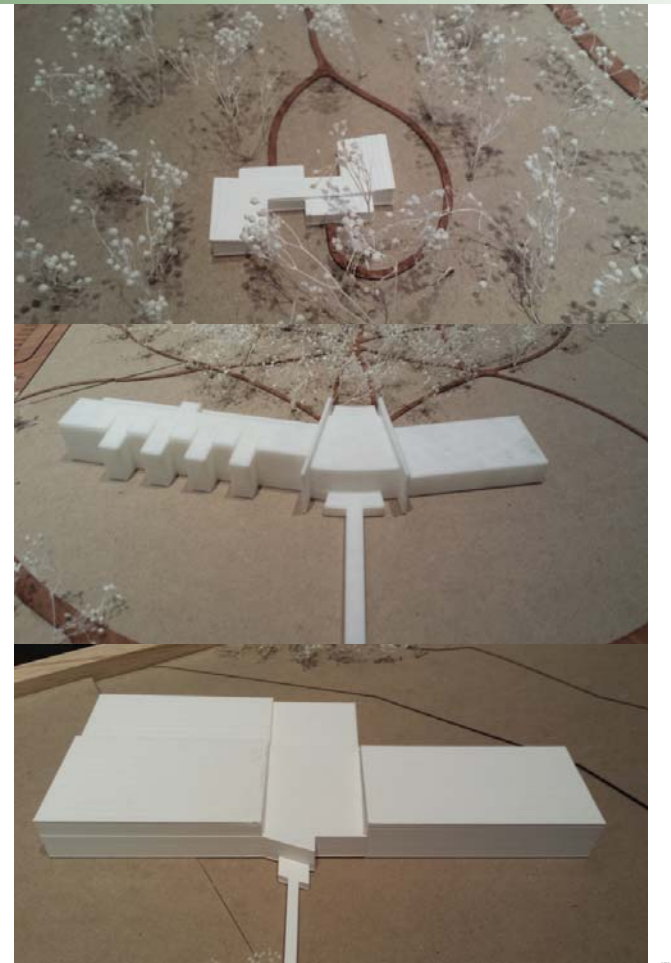
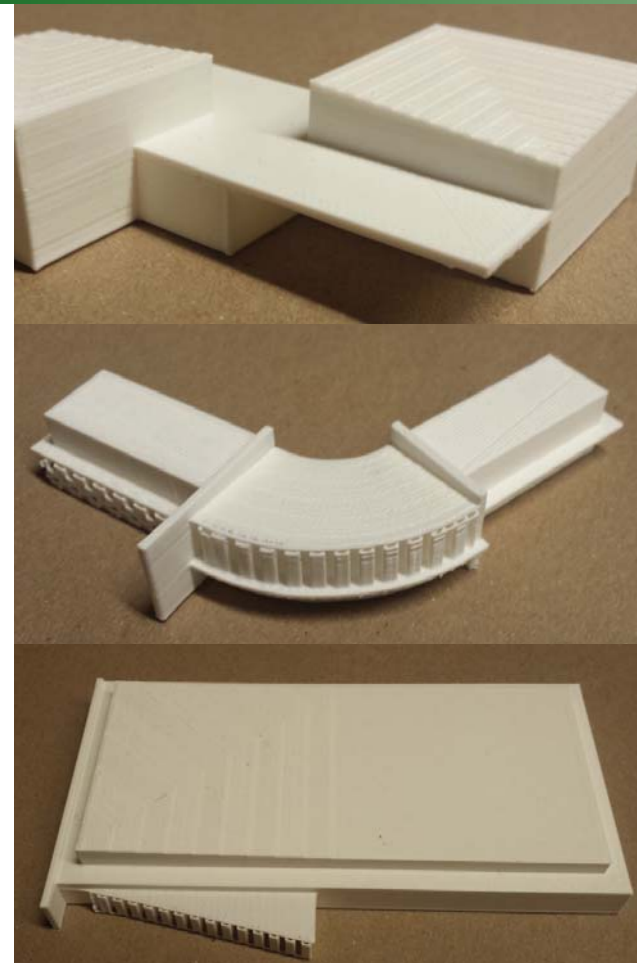
Elevation Studies



Structural Analysis



Process Models

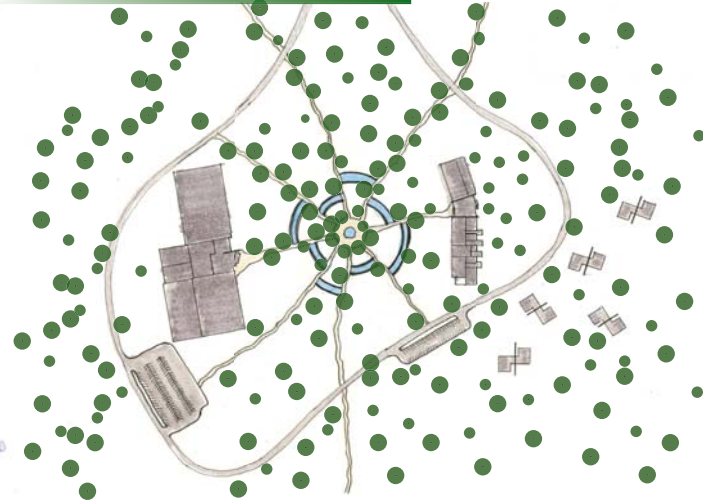


Site Design

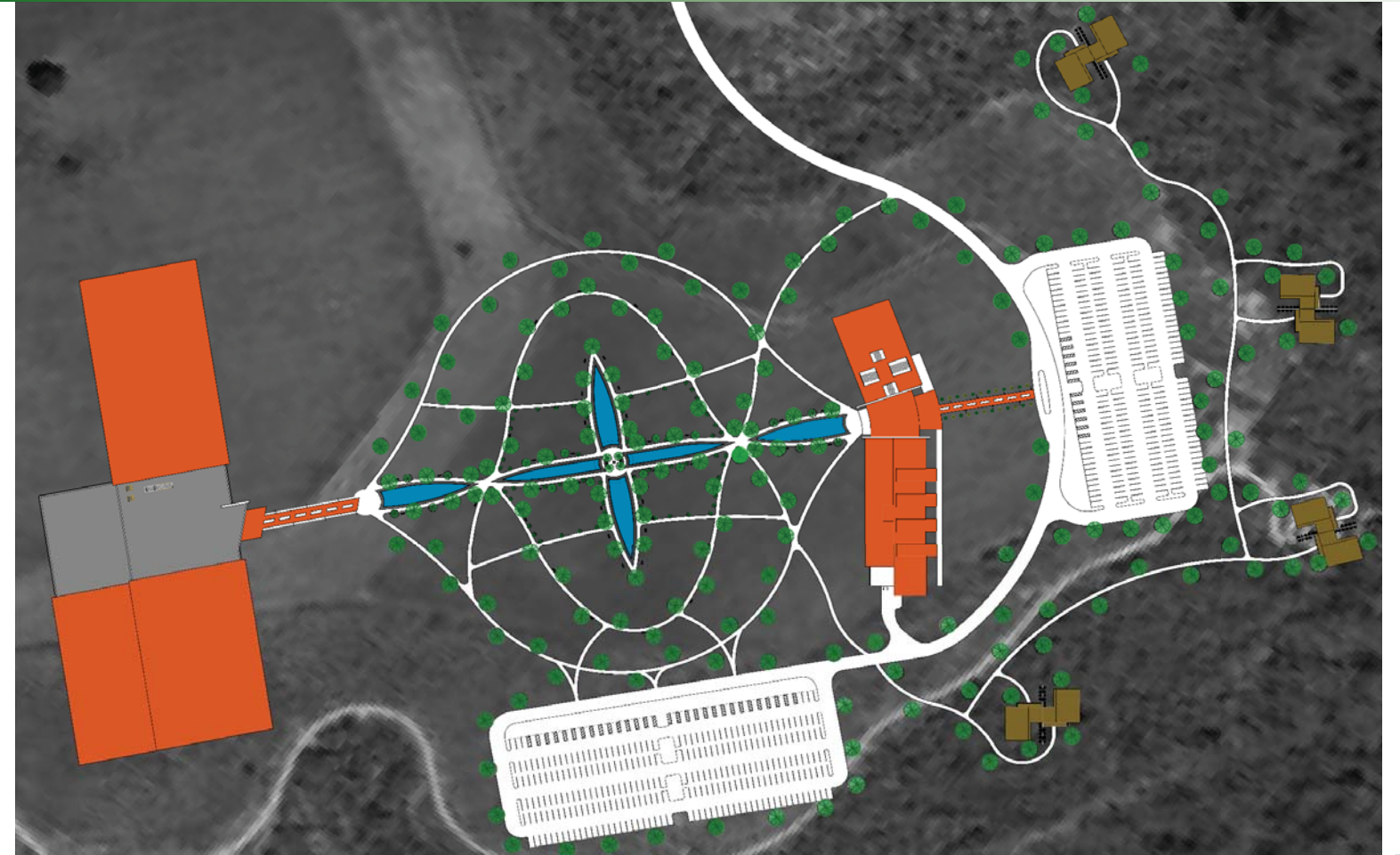
Option 1

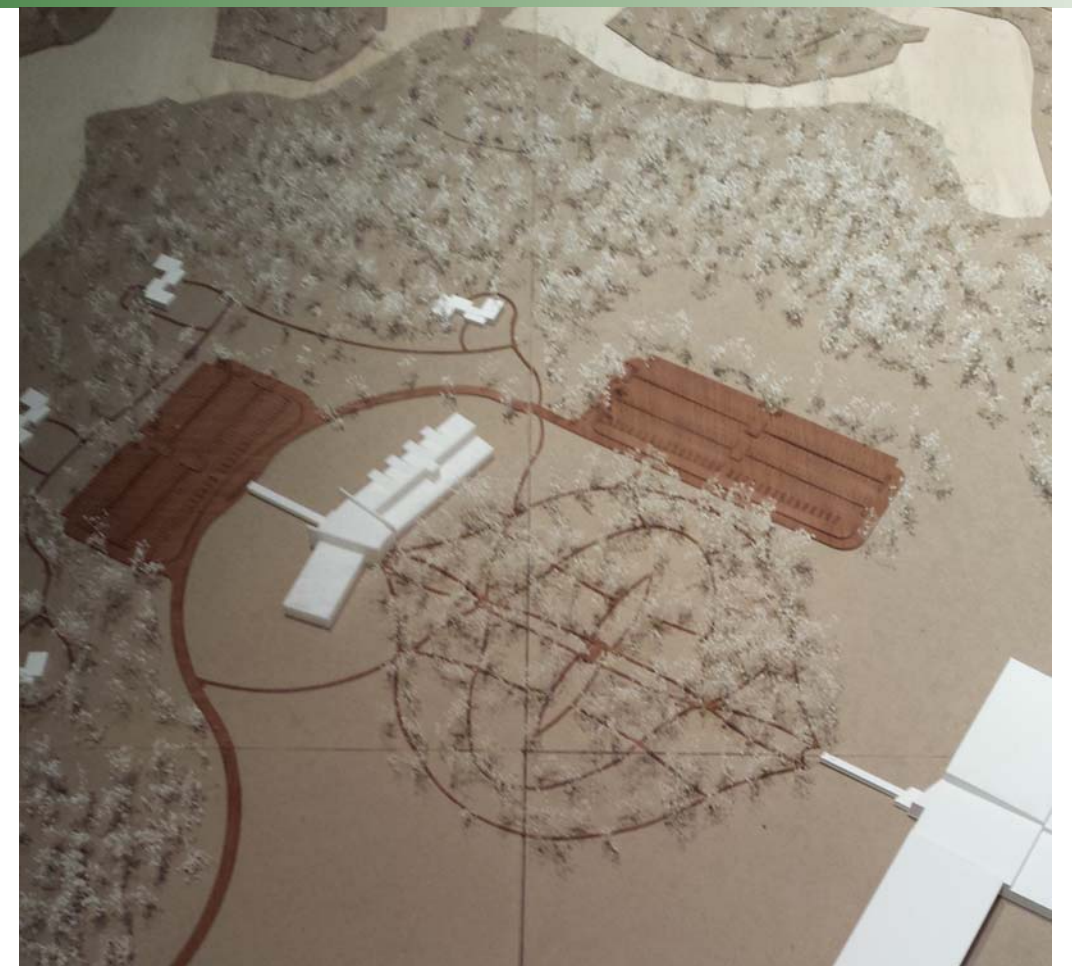
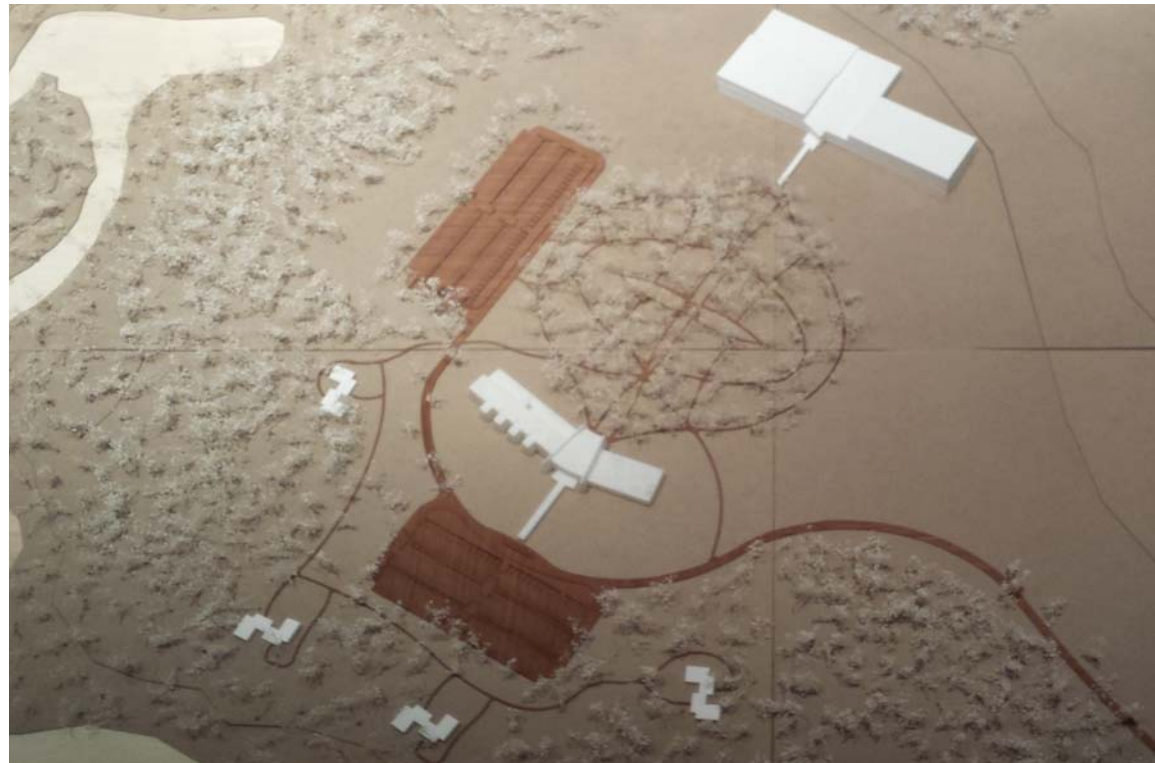


Option 2



Final Site Design





The campus is open to all branches of service. This includes rank structures of both enlisted and officers veterans. Even though within the service there is a separation between enlisted and officers. I hope this campus will change a way of life to strengthen all veterans healing process. This will help foster a cohesive treatment center for the betterment of every veteran.

Prior to veterans entering the rehabilitation campus. Veterans either have been through an evaluation process or are transitioning here from a post-acute care facility. This campus will then act as the final step for veterans healing process back into society. The campus is always open to former veterans whom have come and gone. The healing process will always continue. Just as the design of this campus will continue to change over time to fit the users of this typology and the treatment necessary for healing.

The site was chosen based on the close connection with nature. With the advancements in treatment options and more sterile environment being

required for germ control. Health care facilities have removed themselves from nature and the power that nature has for ones healing. This site allows that connection back to nature.

Even with the selection of architectural elements. These elements represent the most natural accruing materials in nature. Re-enforcing humans connection with nature, thus transitioning the clinical institutional feel, to an inviting home-like feeling for veterans. It was important to create a sense of community a brotherhood between staff, veterans, family, and friends. But it is always hard to predict what people will do. This is why my programming had to be so large. To offer as many options as possible for the connection of staff, veterans, family, and friends.

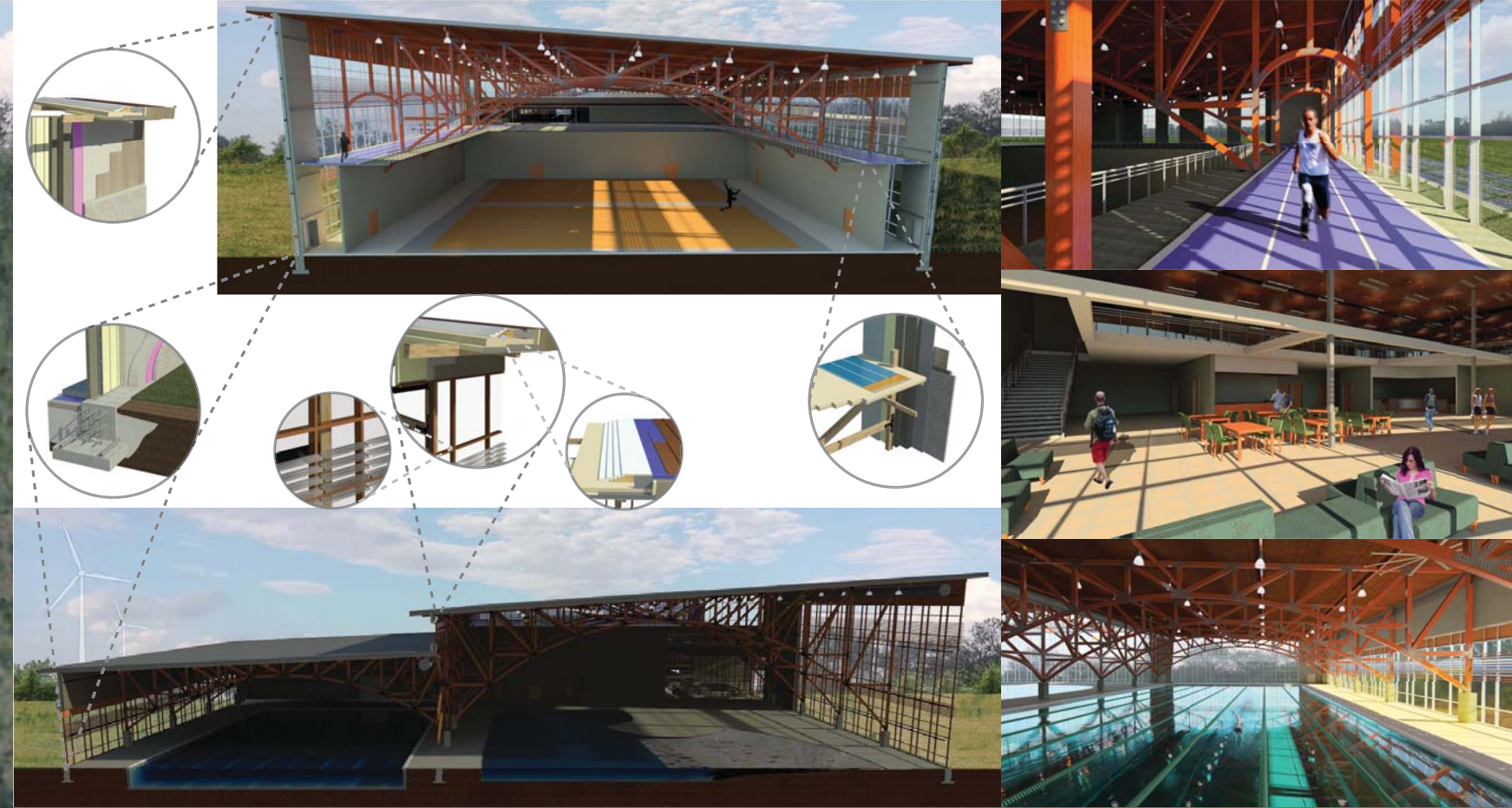
The wellness center was an add on at the beginning of spring semester after the initial version of the project documentation was completed. The reason for this addition was to offer more options to veterans and provide as many facets of healing for veterans and their families.



Campus Overview



Healing Garden



CARTER, EDWARD WELLNESS CENTER



- 1. Vestibule
- 2. Control Area/ Reception
- 3. Staff Offices
- 4. Storage
- 5. Restroom
- 6. Lounge Area
- 7. Public Restrooms
- 8. Snack Bar
- 9. Women's Locker Room
- 10. Men's Locker Room
- 11. Maintenance/Pool Stor.
- 12. Therapy Pool
- 13. Lap Pool
- 14. Family Pool
- 15. Pool Filtration Room
- 16. Sauna
- 17. Massage
- 18. Hand Ball Court's
- 19. Cardio Area
- 20. Free Weights
- 21. Gymnasium
- 22. Group Therapy
- 23. Classrooms
- 24. Flex Spaces
- 25. Running Track (above gym area)

- 1. Mezzanine Lounge Area
- 2. Mechanical Room



Lap Pool



Track



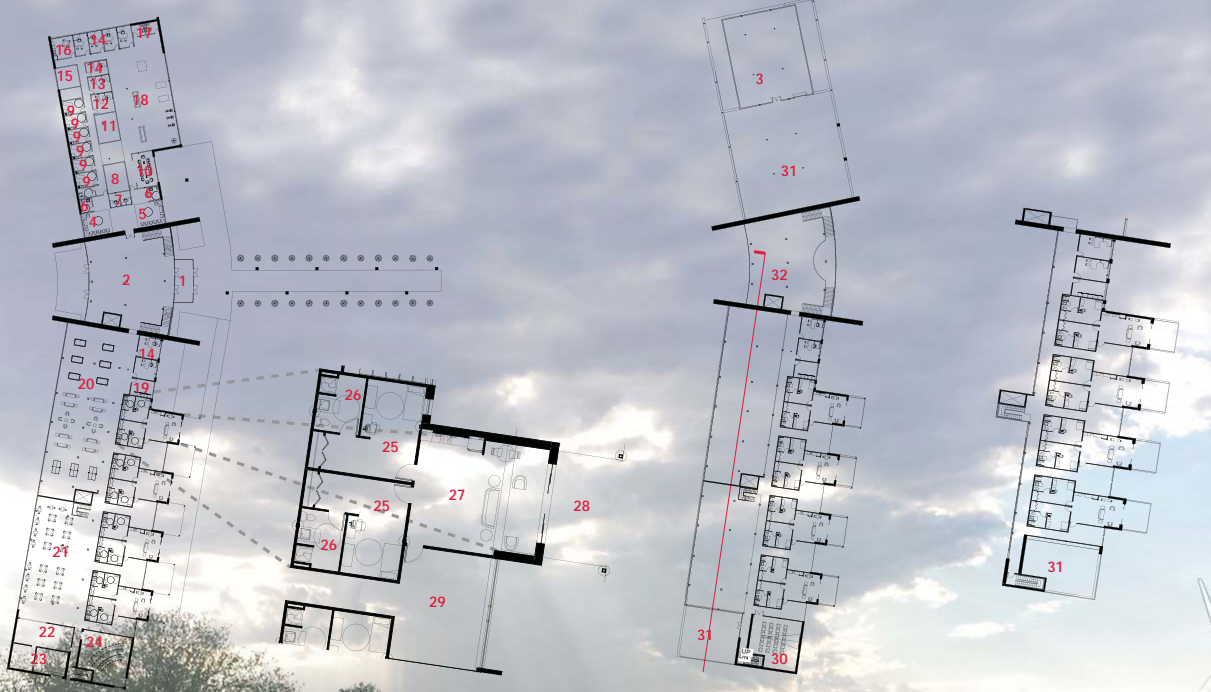
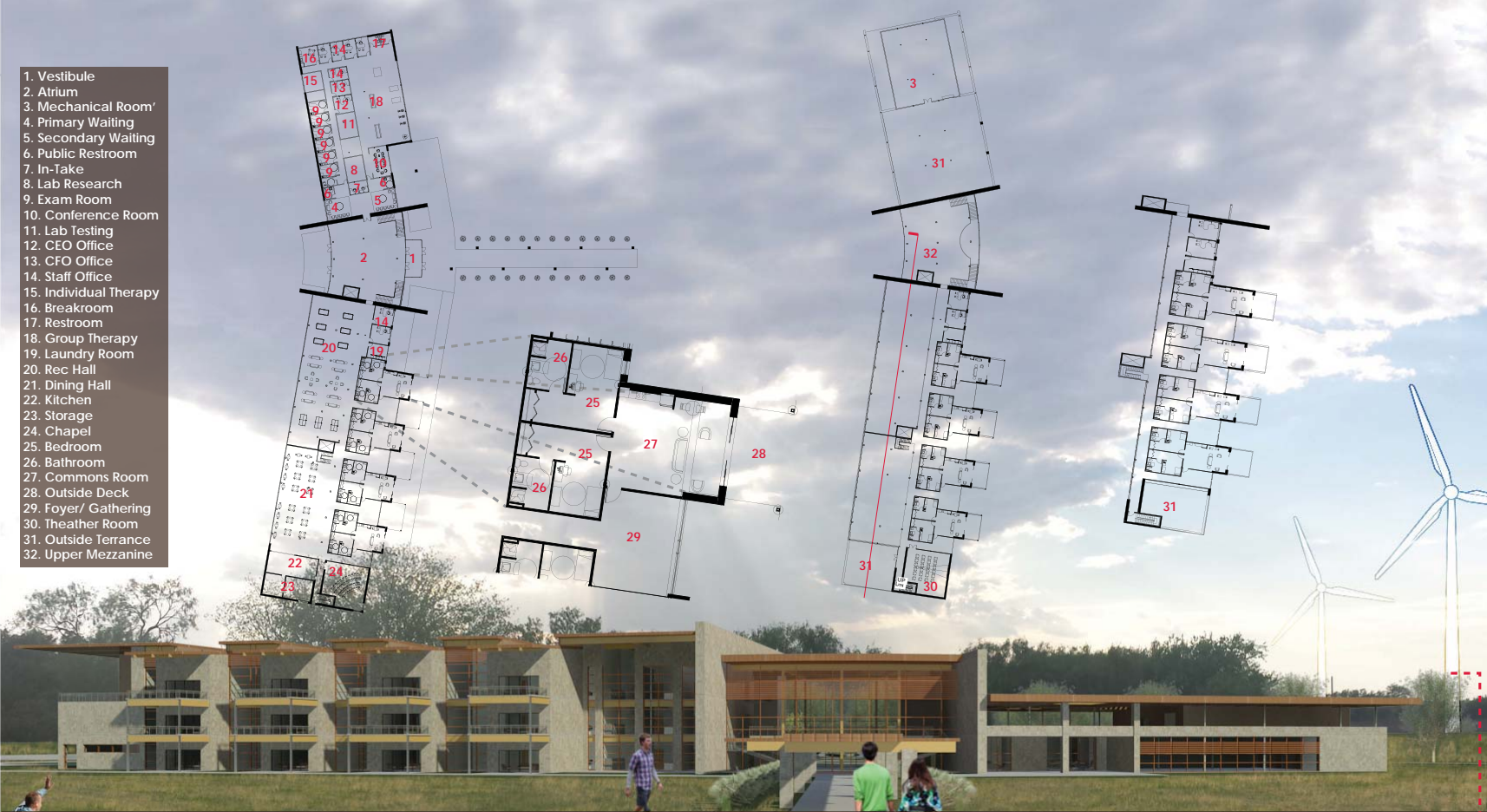
Lounge



- 1. Foyer
- 2. Stor., Mech., Laundry
- 3. Bathroom
- 4. Living-room
- 5. Kitchen/Dining
- 6. Master Bedroom
- 7. Master Bath
- 8. Walk-In
- 9. Bedroom
- 10. Bedroom/Office



FAMILY HOUSING

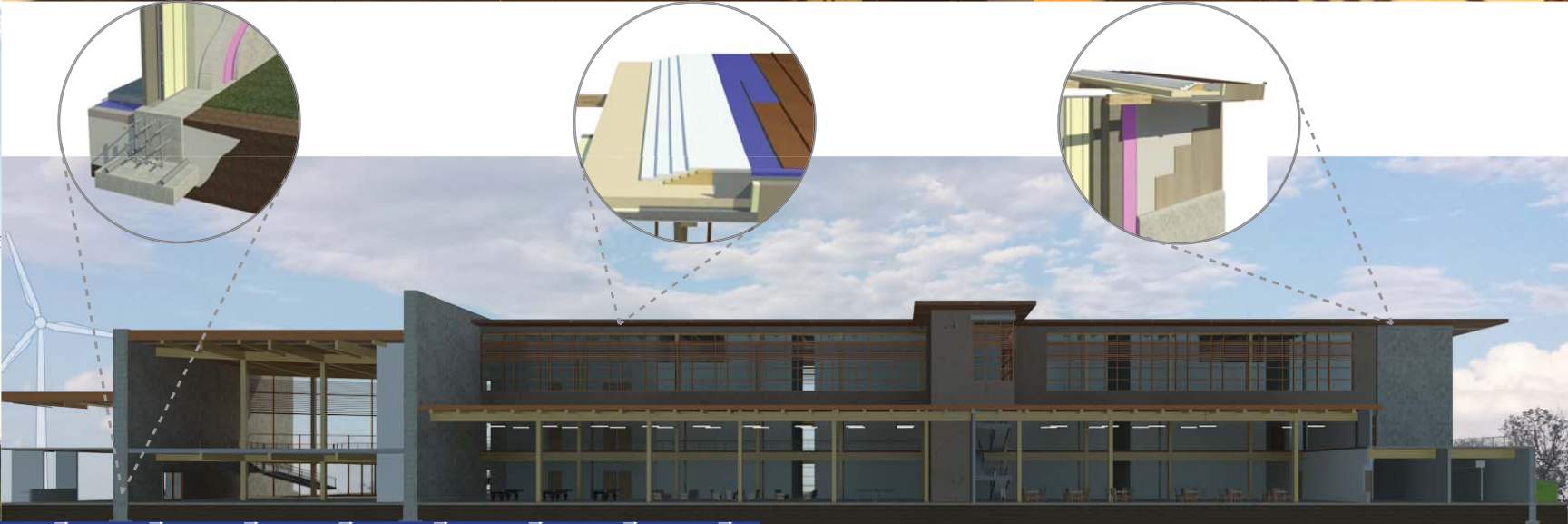


- 1. Vestibule
- 2. Atrium
- 3. Mechanical Room'
- 4. Primary Waiting
- 5. Secondary Waiting
- 6. Public Restroom
- 7. In-Take
- 8. Lab Research
- 9. Exam Room
- 10. Conference Room
- 11. Lab Testing
- 12. CEO Office
- 13. CFO Office
- 14. Staff Office
- 15. Individual Therapy
- 16. Breakroom
- 17. Restroom
- 18. Group Therapy
- 19. Laundry Room
- 20. Rec Hall
- 21. Dining Hall
- 22. Kitchen
- 23. Storage
- 24. Chapel
- 25. Bedroom
- 26. Bathroom
- 27. Commons Room
- 28. Outside Deck
- 29. Foyer/ Gathering
- 30. Theater Room
- 31. Outside Terrance
- 32. Upper Mezzanine



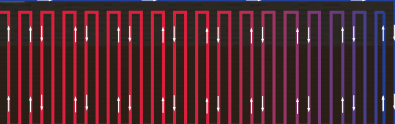
PITTMAN, RICHARD CLINIC & SINGLE HOUSING

ARCH 772 Design Thesis Spring Semester 2014, Matthew Avard, Advisor Mark Barnhouse Software used: Autocad, Revit, Autodesk Cloud, Photoshop CS5



GEO-THERMAL HEATING - OVER 400 WELL WILL BE USED TO REDUCE HEATING AND COOLING LOADS FOR THE CAMPUS.

WIND ENERGY - WIND TURBINES WILL BE THE PRIMARY SOURCE OF POWER FOR THE CAMPUS. SUPPLEMENTED WHEN NEED FROM THE POWER GRID.



Common Room



Recreation Hall



Group Therapy Room

Andreasen, N., Campbell, J., Cook, J., Fairbank, J., Green, B., Kilpatrick, D., Kroenke, K., & Kulka, R. (2007). PTSD compensation and military service. Washington, D.C.: National Academy of Science.

Beit Halochem Centres in Israel. (n.d.). Beit Halochem Canada | Caring for Israel's disabled veterans, victims of terror and their families. Retrieved December 6, 2011, from <http://www.beithalochem.ca/cntr-bs.html>

Beit-halochem rehabilitation center / kimmel-eshkolot architects . (2013, December 8). Retrieved from <http://www.archdaily.com/126119/beit-halochem-rehabilitation-center-kimmel-eshkolot-architects/>

Bennet, D. (n.d.). Directory of mental health resources. Retrieved from http://www.co.bexar.tx.us/Bexar County_DirectoryOfMentalHealthResources.pdf

Brooke army medical center. (2013). Retrieved from <http://www.tshaonline.org/handbook/online/articles/qnbo1>

Caring for u.s. veterans. (2011). Retrieved from <http://costsofwar.org/article/caring-us-veteran>

Cervantes, B. (2010, August 3). Texas Veterans Await New PTSD Rules | The Texas Tribune. Texas Veterans Await New PTSD Rules | The Texas Tribune. Retrieved from <http://www.texastribune.org/2010/08/03/texas-veterans-await-new-ptsd-rules/>

Findley, L. (2011, April). Ubuntu centre. Architect Magazine, 100(4), 100-106. Gerlach-Spriggs, N., Kaufman, R., &

Warner, Jr, S. (1998). Restorative gardens. Hong Kong, China: World Print.

Guenther, R., & Vittori, G. (2008). Sustainable healthcare architecture. Hoboken, NJ: John Wiley & Son.

History. (2013). Retrieved from <http://www.militarycityusa.com/index.htm>

Intrepid fallen heroes fund. (2013). Retrieved from <http://www.fallenheroesfund.org/Home.aspx>

Kreitzer, M. (2009, August 13). [Web log message]. Retrieved from <http://www.takingcharge.csh.umn.edu/taking-charge-blog/-healing-power-nature>

Outline map. (2013, December). Retrieved from <http://www.worldatlas.com/webimage/countrys/namerica/usstates/usa50out.htm>

Phil, R. (2013). Ensuring access for people with disabilities. Kansas: Kansas University. Retrieved from <http://ctb.ku.edu/en/table-of-contents/implement/physical-social-environment/housing-accessibility-disabilities/main>

San Antonio map. (2011, December 31). Retrieved from http://printable-maps.blogspot.com/2011_12_01_archive.html

San Antonio Parks and Recreation. (2011). Howard w. peak greenway trails system. Retrieved from http://www.sanantonio.gov/parksandrec/greenway_trails.aspx

San Antonio Parks and Recreation. (2011). Medina river natural area. Retrieved from http://www.sanantonio.gov/parksandrec/directory_medina_river.aspx

San antonio, tx. (2013). Retrieved from <https://www.tshaonline.org/handbook/online/articles/hdso2>

Savant, K. (2013, June 27). [Web log message]. Retrieved from <http://blog.militaryfamily.org/2013/06/>

Soldier combat stress reaction: a pocket guide for spouse and loved ones. (2012, January). Retrieved from http://permanent.access.gpo.gov/gpo27509/75_TA-056-0112.pdf

Spaulding hospital / perkins will . (2013, December 9). Retrieved from <http://www.archdaily.com/443408/spaulding-hospita-perkins-will/>

Spaulding rehabilitation network. (2013, December 9). Retrieved from <http://www.spauldingrehab.org/default.aspx>

The chamber of Commerce. (2009). Military city, usa. Retrieved from <http://www.sachamber.org/cwt/external/wcpages>

The center for the intrepid. (2013). Retrieved from <http://www.fallenheroesfund.org/About-IFHF/Fund-History/The-Center-for-the-Intrepid.aspx>

The ubuntu center. (2009, January). Architect Magazine, 98 (1), 62-65.

Transition assistance program. (2013, november 06). Retrieved from http://www.dol.gov/vets/programs/tap/tap_fs.htm

Personal Information



Matthew Mark Avard

726 30th Street North
Fargo, ND 58102
701.426.0490
matthew.avard@gmail.com

Hometown: maNDan, North Dakota

"Eventually everything connects - people, ideas, objects.
The quality of the connections is the key to quality per se." - Charles Eames

Fig. 19 Avard, Matthew(2013)River Walk
(Self portrait) San Antonio, TX