



re•**INTEGRATE**

by sarah lawley



re•**INTEGRATE**  
study of architecture's effects of PTSD in returning veterans  
by Sarah Lawley

This thesis submitted to the faculty of  
**TEXAS A&M UNIVERSITY**  
in partial fulfillment of the requirement for the degree of  
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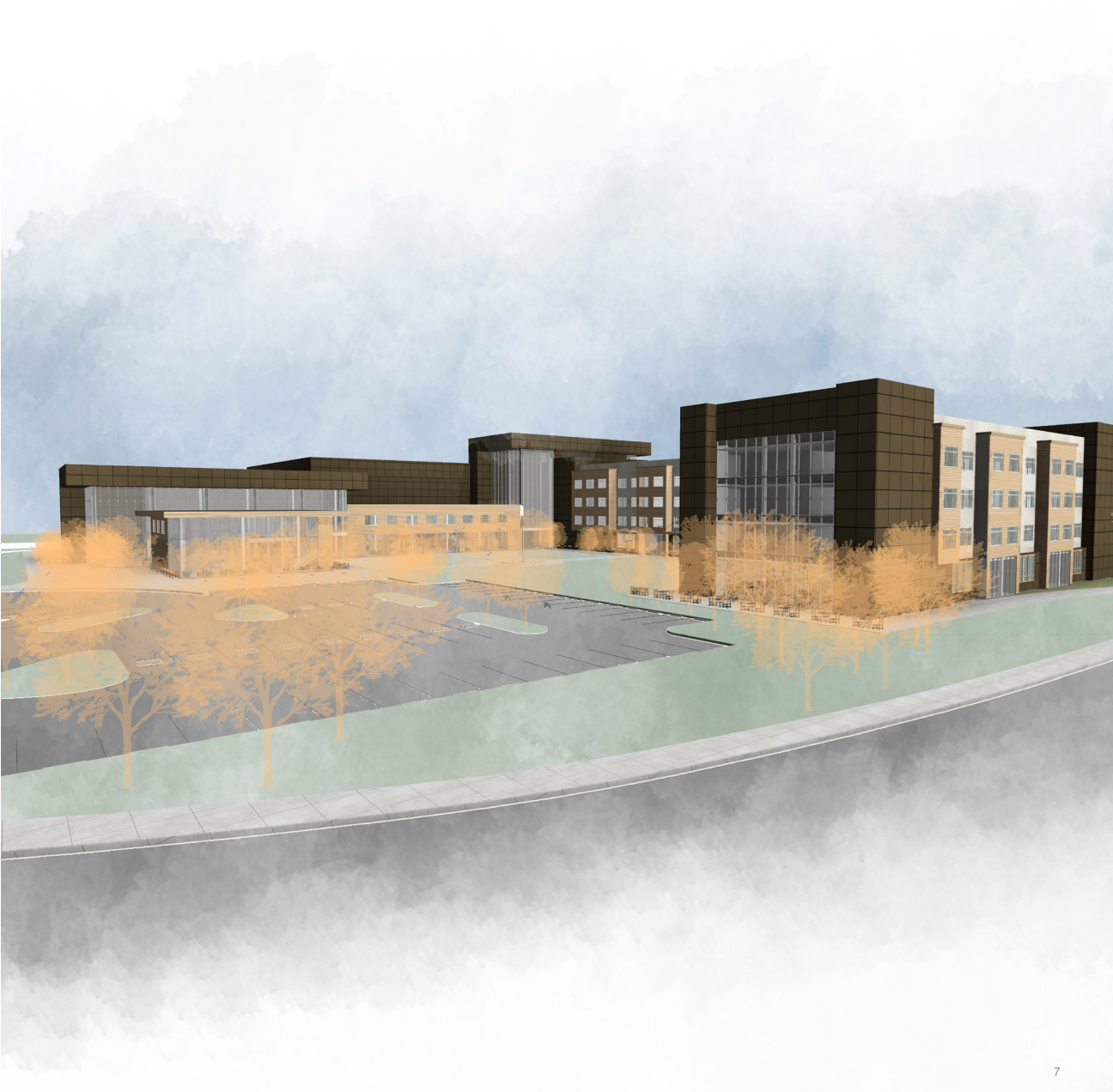
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## re•**INTEGRATE**

re•INTEGRATE is a support center for returning soldiers, that aims to ease the transition between military and civilian life by providing: a **support network** of residents in similar situations, a **controlled environment** to begin civilian interaction, and **transitional services** to increase veteran confidence during the community integration.



**project** ***RESEARCH***



# 21,800,000

## Veterans in the United States

more than  
**1 million**  
Service Members  
will transition from  
the military in the  
next

**5 years**  
that is  
**200,000**  
per year



**CA, FL, TX, PA, NY, OH**  
are the 6 states with the highest  
number of veterans, they make up

**36%** of total vet pop.

**1.4 million**  
veterans are at risk of  
homelessness due to  
**POVERTY,**  
**LACK OF SUPPORT,**  
**OVERCROWDING, and**  
**MENTAL ILLNESS**

**1 in 5**  
veterans from Iraq and Afghanistan have



**50%**  
of all  
homeless  
veterans have  
a serious  
mental illness

**PTSD**



**50%**  
of those with  
**PTSD** do NOT  
seek treatment



**56%**  
transition veterans  
are unemployed for  
more than a month  
after leaving the  
military

**11%**  
of the adult  
homeless  
population  
are  
veterans

**70%**  
of all  
homeless  
veterans deal  
with  
substance  
abuse

**42%**  
of transitioning service members  
wish they could go back to the military

**Many**  
veterans  
feel that their  
military skills  
are not  
valued in  
civilian life

**2/3**  
of new veterans report having  
difficulty transitioning to civilian life

**40,000** veterans are homeless  
on a given night



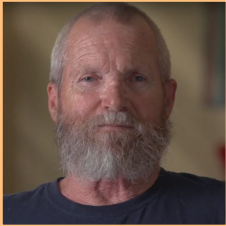
## living with **PTSD**

The National Center for PTSD defines Post Traumatic Stress Disorder as “a mental health problem that some people develop after experiencing or witnessing a life-threatening event, like combat, a natural disaster, car accident, or sexual assault”. PTSD affects each patient differently but the four major symptoms of PTSD are: flashbacks, avoidance, negativity or numbness, and hyperarousal. Treatment of PTSD varies by case, but it is often treated with talk therapy or exposure therapy. However, the stigma that veterans with PTSD are weak and uncontrollable leads 50% of veterans with PTSD to forgo treatment in favor of self-medication.

When left untreated PTSD can lead to substance abuse, depression, and suicide. The link between PTSD and substance abuse is substantial, 1 out of 3 veterans with a substance abuse problem also suffers from PTSD.

This is also responsible for an increase in the veteran suicide rate. In a 2016 report done by the Department of Veteran Affairs states that there was an average of 20 veteran suicides every day. This makes up 18% of adult suicides in the United States, while veteran population only accounts for 8%

The Department of Veteran Affairs offers treatment to veterans who return with PTSD. Often these veterans are unable to see a problem until their PTSD has made a major impact on their lives. AboutFace is a program sponsored by The Department of Veteran Affairs where veterans that suffer from PTSD and have made it through treatment share their stories in hopes of helping others who are suffering without treatment. The following is their take on what it is like to live with PTSD.



"It was so bad that I was living in an apartment with no furniture, no electricity, and I would just do my drugs and my alcohol and climb in the closet and hope and pray to god I would die."

- Curtis Creekbaum US Army 1972 - 1979



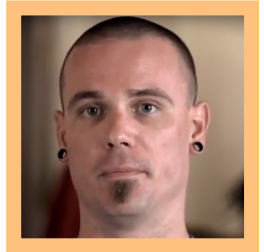
"Sometimes, I really can't leave my house... going to the gym and being around people again, it's too overwhelming. Way too overwhelming because people are going to be in my space. They might touch me. I have to be aware of who's behind me, where the exits are. It gets really exhausting..."

- Tia Christopher US Navy 2000 - 2001



"I would have nightmares, I still have nightmares occasionally, night sweats, such to the point that I would get up, put a towel down, then I would get up again at night and change clothes, and then I would get up again at night and go sleep on the couch, or the floor, or wherever I could find that was dry. And the lack of sleep, uninterrupted sleep during all that just, it kind of escalated stuff even more so."

- Lee Norris US Air Force 1993 - 2010



"...I became just this incredibly prickly, insane, hostile person where everything pissed me off, everything. I did not like being around people, didn't like seeing people... and it really affected how I saw other people and how I saw even myself because that was not how I was beforehand at all."

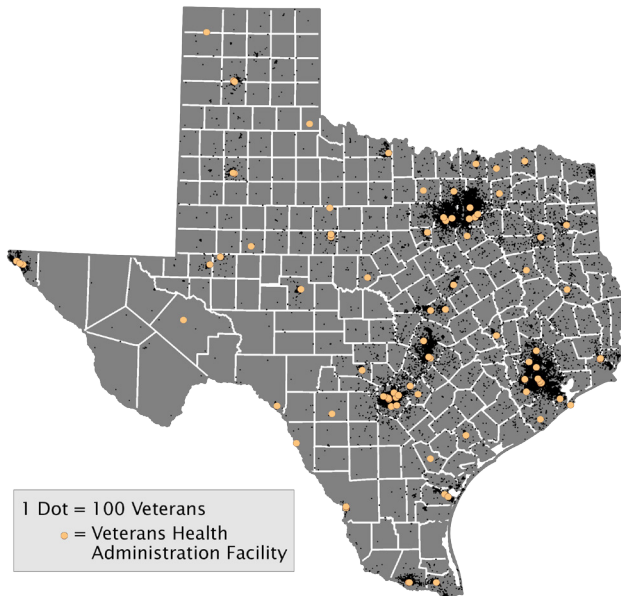
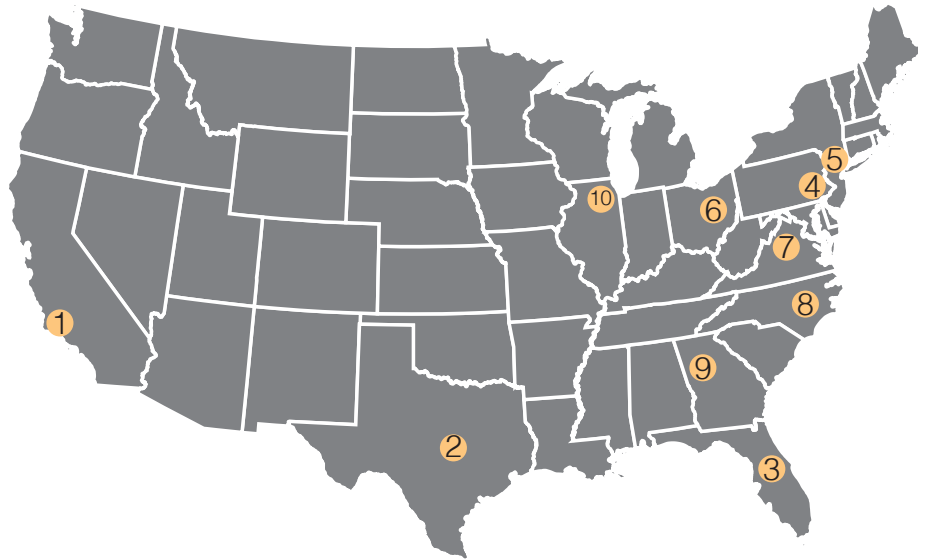
- Tyler Jones US Marine Corps 2002 - 2006



"I'm scared to go anywhere by myself. I would sleep with the TV on. I constantly am checking the windows and doors, thinking that there's somebody watching me from the outside... I would be completely paranoid the whole time I was by myself. And I have nightmares if I slept. I would get up in the middle of the night, not being able to go back to sleep..."

-Laura Hendrixon US Marine Corps 2003 - 2007

# where do VETERANS live?



There are over 20 million veterans living in the United States. Of those 20 million 50% reside in the top 10 states with the most veterans. California comes in at the top with just under 2 million veterans, followed by Texas with over 1.7 million, and Florida with 1.5 million. Texas also has over 100,000 active duty service members and 54,000 reservist that live on and around the states 31 military bases.

Military City USA, better known as San Antonio, houses 25% of the active duty population in Texas, the largest Department of Defense medical center, and over 150,000 veterans. That is why it was chosen to house the site for re INTEGRATE. In Texas, the majority of veterans gather in three areas: Dallas-Fort Worth, Houston, and San Antonio. The 13-county region that surrounds San Antonio, also known as the Alamo region, holds over 200,000 veterans and became home to the near 7,000 active duty service members who transitioned to civilian life from the Joint Base San Antonio in 2016, as well as, the over 100,000 active duty service members in the city.



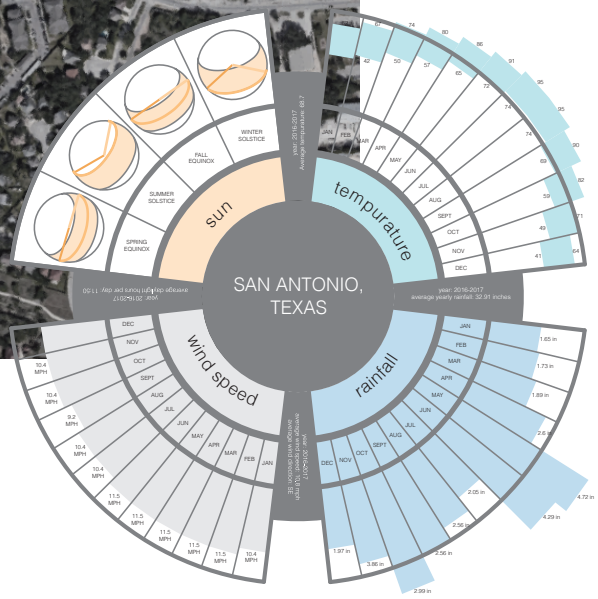
The goal when choosing a site was to serve a less centralized area of San Antonio encompassing veterans who live in the rural outskirts or suburban neighborhoods surrounding the city. It also gives veterans who live on site a quieter less stressful atmosphere. With that in mind the Hollywood Park neighborhood was chosen. Just a 20-minute drive from the city center an undeveloped nine-acre lot sits where residential neighborhoods and commercial buildings converge. This became the perfect site to introduce an all-inclusive support/community center.



**pre design** ***PLANNING***



The site is a 9-acre lot in the Ridgewood Office Park. This site becomes the meshing point for the land use around it. Surrounding the northwest of the site are commercial land uses such as, office buildings, schools, and retail shops. To the southeast of the site are more residential programs like, apartment buildings, neighborhoods, and churches. The major traffic is on the north side of the site, while less used roads are on the south side of the site. These are the most important considerations when layout the building on the site.



## project **PROGRAM**

The goal when developing the program for the re INTEGRATE complex was to create an all-inclusive complex. Everything needed for beginning the transition from military life should be available on site. The program should also draw the public onto the site to create opportunities for interaction between the veteran residents and the civilian public. The program for this all-inclusive complex covers four major areas: clinical, residential, community, and fitness.

The clinical and residential pieces are mainly for residents and other veterans. These areas include a full mental health clinic with a variety of different therapies offered, that range from talk and group therapy, to art and virtual reality. They also include anger management, massage therapy, and light and sound therapies. There is also a full transitional services office where customized transitional plans are created for education, employment, housing, and more. The residential area holds apartments for over 90 veterans, as well as resident only entertaining spaces and lounges. Security codes and keys are required for entry to each residential floor and check in is required for any transitional or mental health services.

The community and fitness areas are used to bring the public onto the site. They are made up of a large fitness/rehabilitation area, including a swimming pool, basketball courts, and a rock climbing wall. It also holds multiple community gathering spaces, such as an event center and small café. This block is designed to push veterans outside of their comfort zone more. While still secured with a check in desk at the main entrance, the public moves more freely through this section of the complex.



## list of **SPACES**



waiting area	4,500 sqft	1	15,000 sqft
counseling room	150 sqft	6	
counselor office	100 sqft	6	
group therapy	500 sqft	2	
light/sound/aroma therapy	300 sqft	3	
massage/acupuncture suite	1,250 sqft	1	
virtual reality suite	1,000 sqft	1	
anger management	625 sqft	1	



one bedroom apartment	800 sqft	90	90,000 sqft
lounge space	3,000 sqft	3	
entertainment space	3,750 sqft	1	

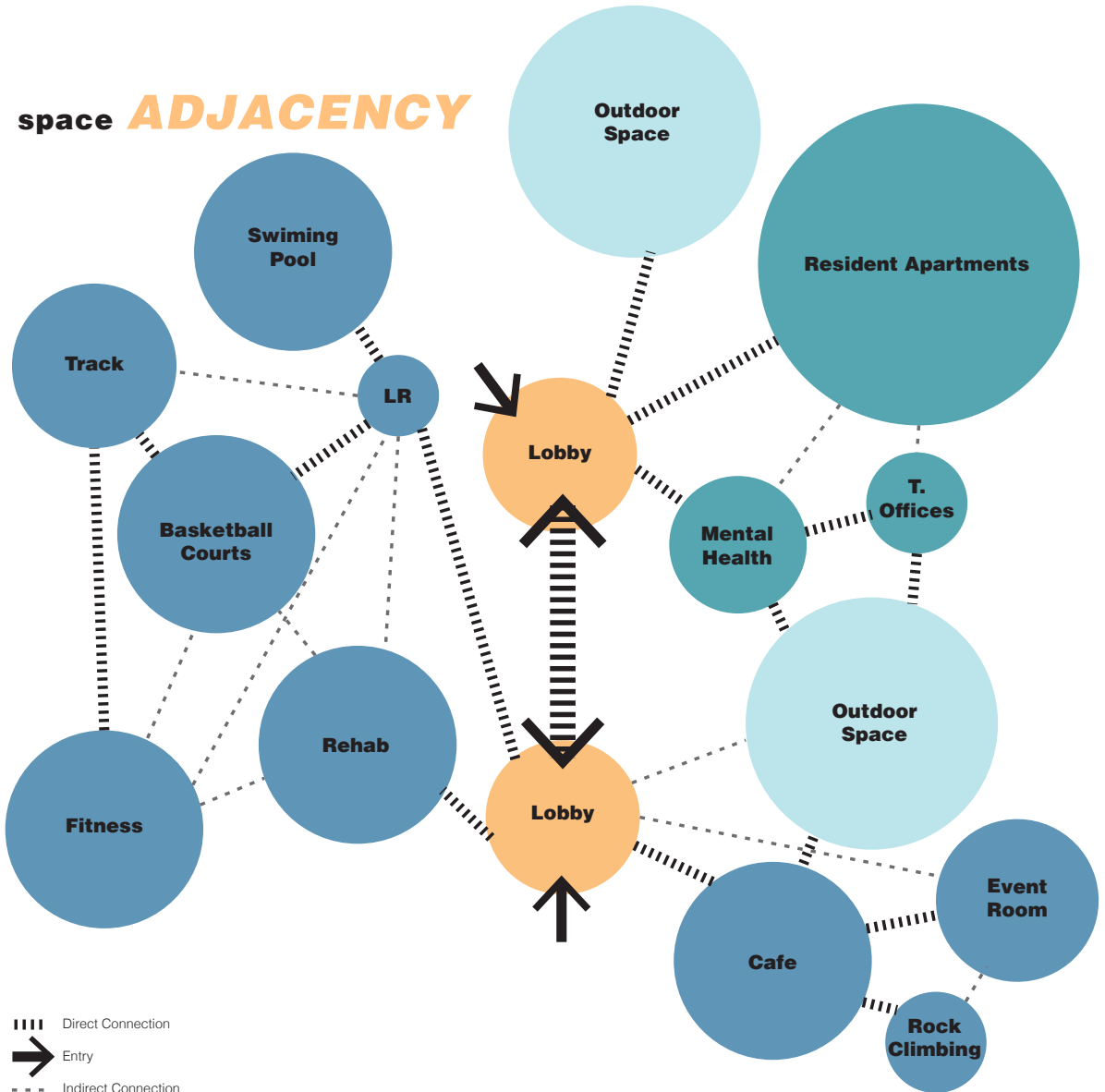


cafe	8,000 sqft	1	18,000 sqft
lounge space	6,000 sqft	1	
event room	4,000 sqft	1	

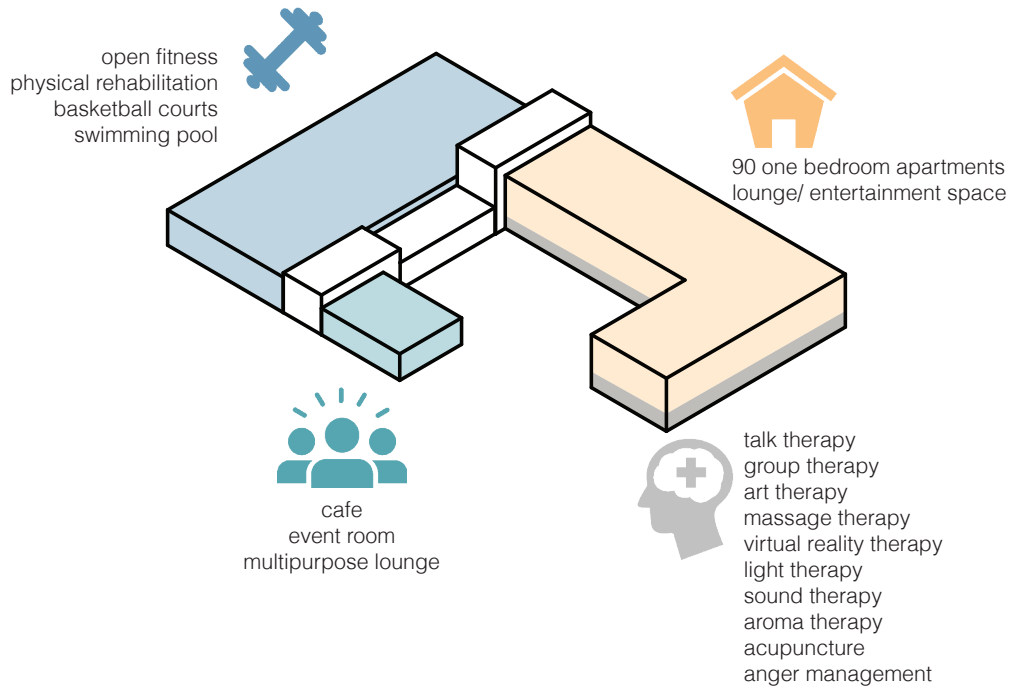


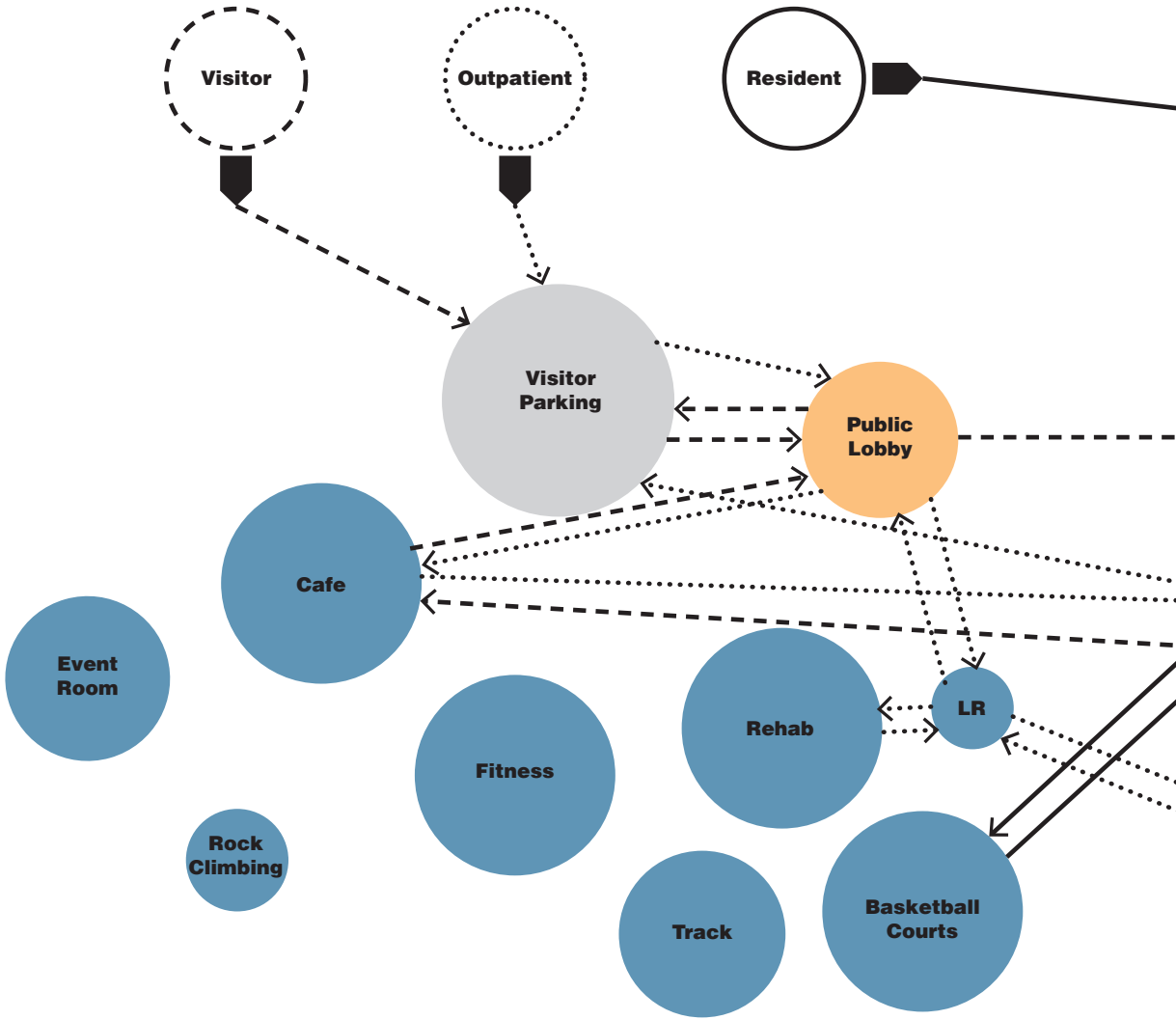
physical rehabilitation	7,500 sqft	1	46,000 sqft
open fitness	12,000 sqft	1	
basketball courts	7,000 sqft	2	
swimming pool	12,000 sqft	1	
running track	7,500 sqft	1	

# space *ADJACENCY*

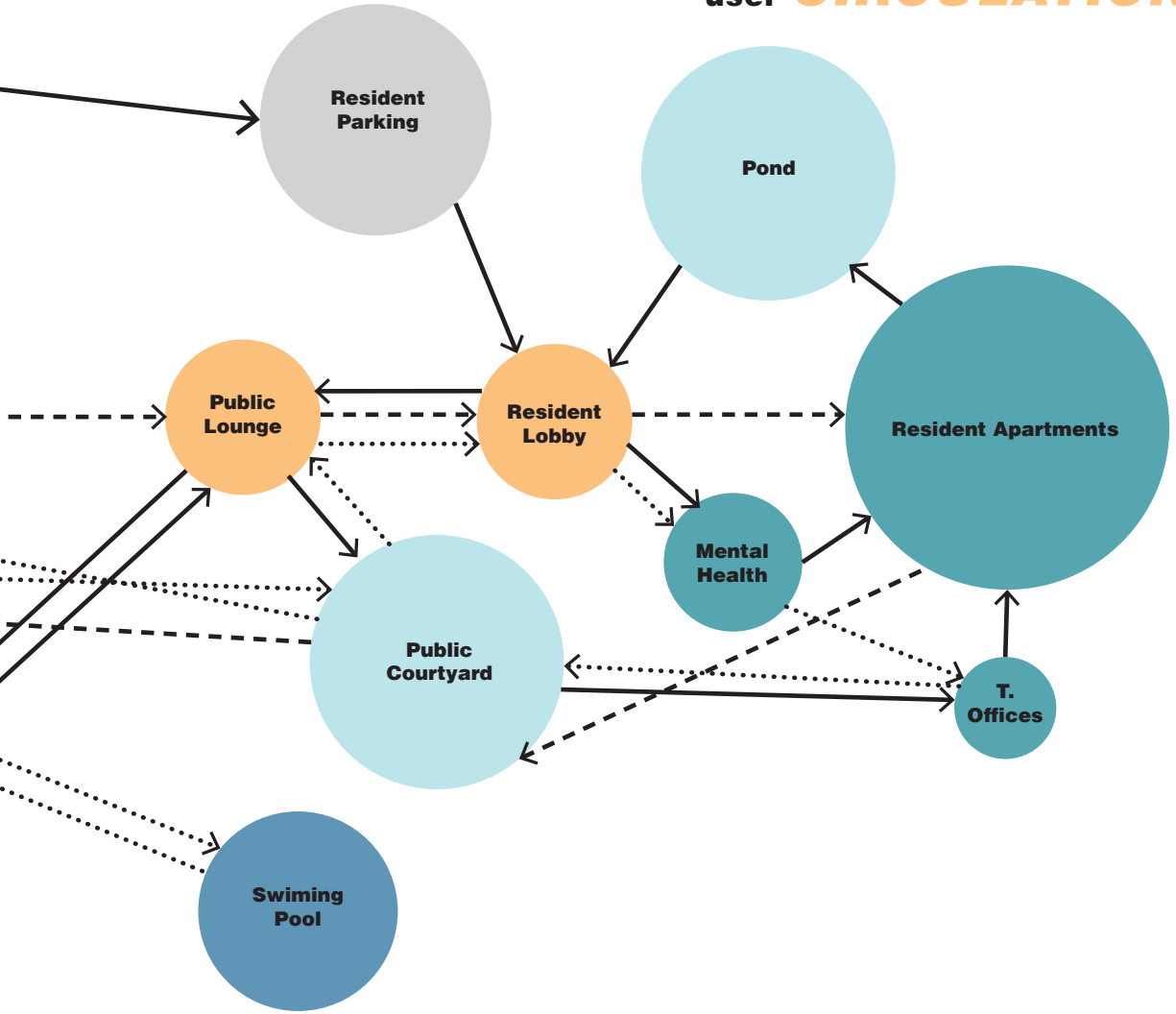


# space **MASSING**

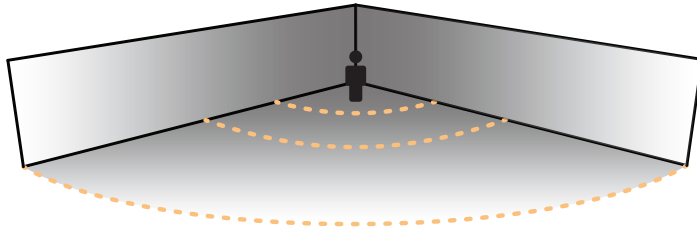




user **CIRCULATION**



**design** ***SOLUTION***



## dominant position

being in the best position to defend against the unknown

The design of the center is based on the idea of finding the dominant position, a skill taught in the military where a soldier looks for high ground, clear sightlines, and protective coverage. This is done to ensure safety and control of any situation. This project looks at the idea of finding both the physical and mental dominant position. The building is designed taking physical dominant positions into account looking at the following design considerations: security, visibility, connection to the outdoors, pedestrian traffic, privacy, and building scale. Every space is designed with these six considerations in mind. In some spaces these considerations are used to give a more dominant position, helping a veteran's feel in control. In other spaces they are used to deliberately take away a veteran's sense of control and make them feel uncomfortable. The goal, by the end of a veterans' stay on site, is that they will have learned why they feel uncomfortable in certain spaces and know better how to deal with that situation.



security



connection to  
the outdoors



privacy



visibility



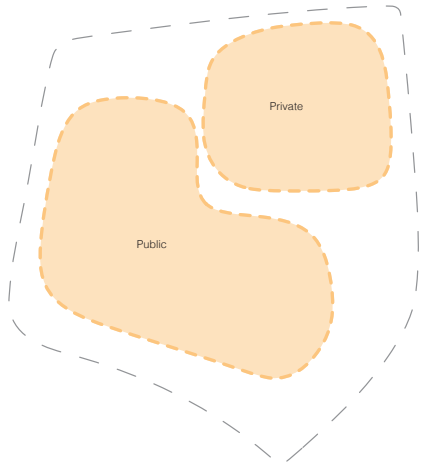
pedestrian traffic



building scale

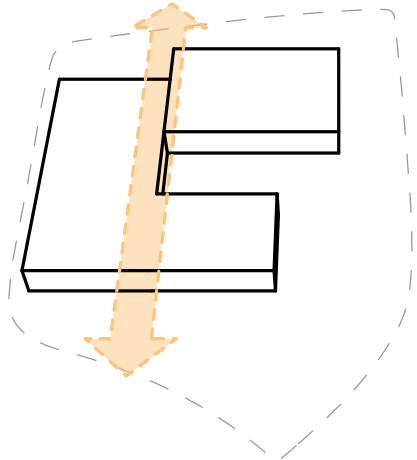
## 1. PROGRAM AREAS

The first moves made on site deal with creating program areas. The surrounding land use helps decide where certain programs will go on site. The more private parts of the program will go towards the back of the site, where they will be surrounded by apartments and neighborhoods. The public program goes towards the front of the site where there is an adjacent school and office complex.

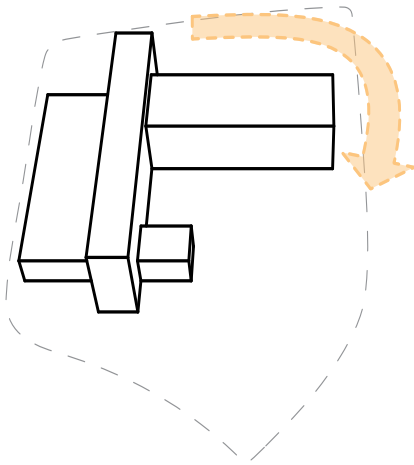


## 2. CIRCULATION

The next step was to include a major circulation route through the site. This gives connection to the public and private spaces in the complex and also contains all of the circulation to one hallway.

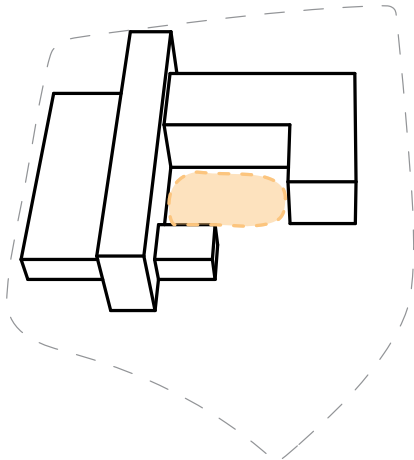






### 3. VISIBILITY

When dealing with the private block visibility of the surroundings is important. By bending the arm of the private block, it gives better visibility from the building to the site. It has the added bonus of creating more privacy around a centralized space.



### 4. COURTYARD

The negative space that is created when the massing is form is in the perfect location for a connection to the outdoors. By adding a courtyard in the middle of the complex it gives all of the program surrounding it a visual or physical connect to nature and its healing properties.

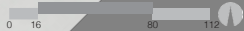
## site **PLAN**

The main feature of the site plan are the two separate entrances to the re INTEGRATE complex. The main public entrance is on the north side of the site and opens out to an entry plaza and public parking lot. This public entrance is the only way to enter the building without a security pass or code. Once a member of the public has checked in at the security desk in the entrance they are able to travel more freely throughout the complex until they check out at the end of their stay. The second entrance is on the south side of the site and is a private entrance for residents only. This entrance has direct access to the residential apartments, the mental health clinic, and the private residential parking lot in the back of the site.

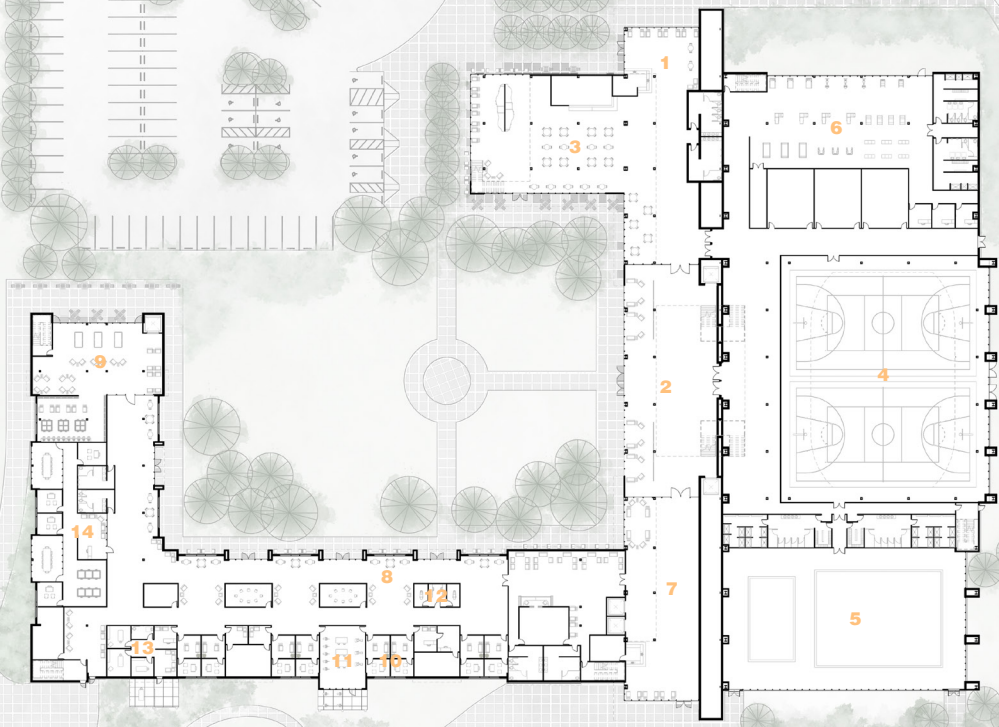
The site plan also features two major outdoor spaces. The first being the courtyard that is directly in the middle of the site and is surrounded by the complex. This courtyard is the more formal of the outdoor spaces and can be used for gathering, eating, or community events. The second outdoor space is more private and used mostly for residents. It is the more active outdoor space with a pond, multiple walkways, raised gardening planters, and expanded outdoor therapies. These outdoor spaces mimic the idea of a front and back yard in residential design.



Site Plan



# first **FLOOR PLAN**





### 1. PUBLIC LOBBY

The public lobby holds the main public entrance to the center, and a mandatory security check in desk. It is also the first piece of the circulation spine.

### 2. PUBLIC LOUNGE

The public lounge is the second piece of the circulation spine. It holds the main vertical circulation for the public area, as well as the entrance to the fitness center and exit into the formal courtyard.

### 3. CAFE

The café is one of the main gathering spaces in the building. It holds a rock climbing wall and a community event space above. It also has a direct connection to the public lobby and formal courtyard.





#### 4. BASKETBALL COURTS

Two NBA sized basketball courts are centered in a triple story space with surrounding elevated running track.

#### 5. POOL HOUSE

In the pool house there is a 20-meter swimming pool that can be used for laps or recreation, as well as a rehabilitation pool that can be used for physical rehabilitation.

#### 6. PHYSICAL REHABILITATION

A rehabilitation center is on site for veterans with physical disabilities to become stronger and heal.



## 7. RESIDENT LOBBY

The resident lobby is the last piece of the circulation spine.

It holds a private resident entrance, security desk, and the entrance to the Mental Health Clinic.

## 8. CLINIC HALL

The main circulation through the Mental Health Clinic connects the assorted therapies to the formal courtyard. It also has connects to the transitional services suite.

## 9. RESIDENT LOUNGE

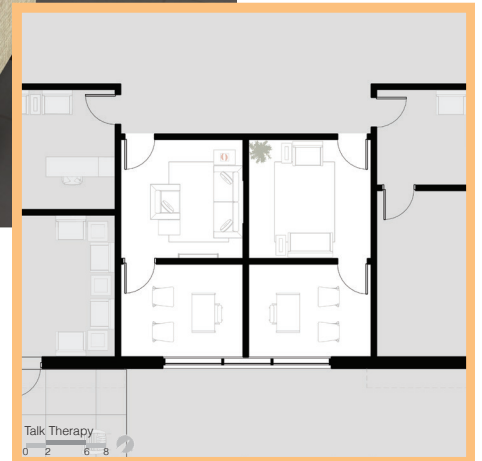
The resident lounge is one of the main gathering spaces for residents. In the lounge there is access to computers, a small library, and other recreation for residents of the complex.



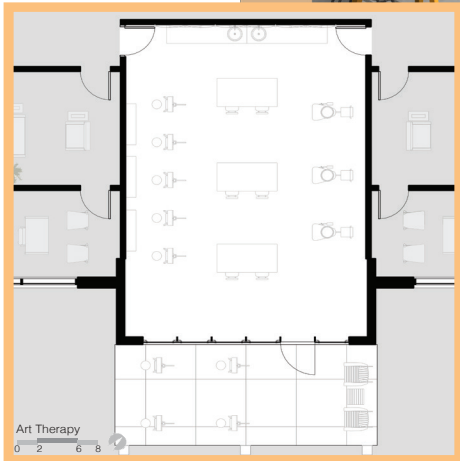


## 10. TALK THERAPY

Talk therapy is the most common treatment for PTSD. The goal of talk therapy is to help a person process the traumatic experience through different techniques. The most common types of talk therapy used to treat PTSD are Prolonged Exposure (PE), Cognitive Processing Therapy (CPT), and eye-Movement Desensitization and Reprocessing (EMDR). PE involves talking through the trauma and experiencing things that have been avoided since the trauma. CPT teaches to reframe the negative thoughts associated with the trauma. EMDR involves reliving parts of the trauma in hopes of desensitizing to associated triggers. By focusing and talking about the trauma a person learns how to control the associated triggers and heal from the traumatic event. Talk can be used alone or paired with other types of therapies for PTSD.

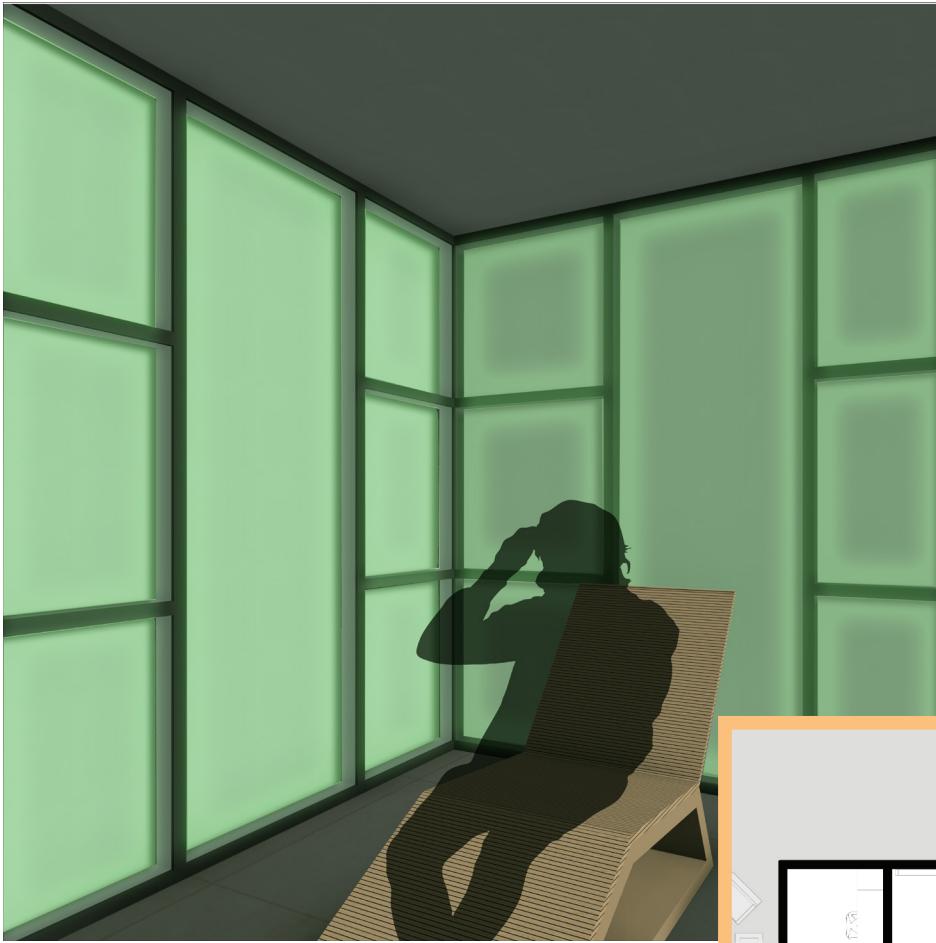






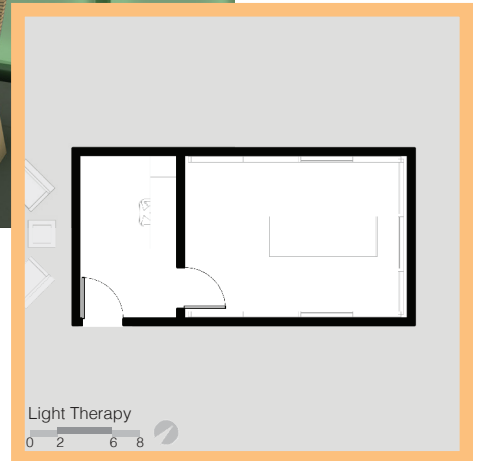
## 11. ART THERAPY

Art therapy uses creative mediums to process traumatic events. Often times people are able to better express themselves through drawing, painting, or sculpture, than through talk therapies. Those who have difficulty finding the words to express themselves can create a piece of art that expresses the emotions they are feeling. This can create a healing environment without words being needed.



## 12. LIGHT THERAPY

Light therapy has roots in ancient color healing. Where different colors were used to heal different conditions. It is known in the natural health field to cure physical symptoms but can also ease mental problems. Different colors of light can put the mind to rest in different ways. A red light is associated with power and energy and can combat lethargy. Orange enhances energy and stimulates creativity. Yellow can affect a person's attitude, often cheering them up. Green is a balancing color, it can give feelings of contentment. Blue, indigo, and violet are soothing colors, they relax and have a calming affect on people. When undergoing light therapy a person will experience the color alone, in an empty room and let the light color surround them.





### 13. MASSAGE THERAPY

Massage therapy can help with stress, anxiety, and depression. It also has many physical benefits for veterans returning from combat. In some cases, massage therapy can give a veteran a more coherent sense of self and may give them feelings of comfort and safety. Massage therapists can also teach self-care strategies to clients to give them the ability to cope with their anxiety, depression, or dissociation when it arises.





## 14. TRANSITIONAL SERVICES

The transitional services on site include: education, legal, employment, housing, and family services.

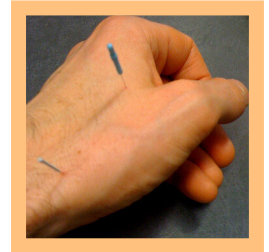
These are available for veterans to use during their transition to improve their new civilian life. In the transitional suite classes are held to give tips on looking for employment, going back to school, or reconnecting with your children. These services are there to ease the transition from military to civilian life. By creating one centralized location for all services it is more likely for residents to make use of the services.





## VIRTUAL REALITY THERAPY

Virtual Reality Therapy is a type of exposure therapy where a patient is exposed to their traumatic memories through a VR headset. VR can create sights and sound that simulate the trauma in ways other psychotherapies cannot. By exposing a patient to their trauma multiple times, it helps them become desensitized to the trauma and associated triggers.



## ACUPUNCTURE

Acupuncture treats PTSD by stimulating the points in the body that control different brain areas to control nervous functioning and stress levels.



## ANGER MANAGEMENT

Aggressiveness is one of the most common symptoms of PTSD. The anger management suite is to be used in combination with talk therapies. This room is to express anger and aggressiveness on inanimate objects, under therapist supervision as a way to release the emotion before getting to the root of the problem.



## AROMATHERAPY

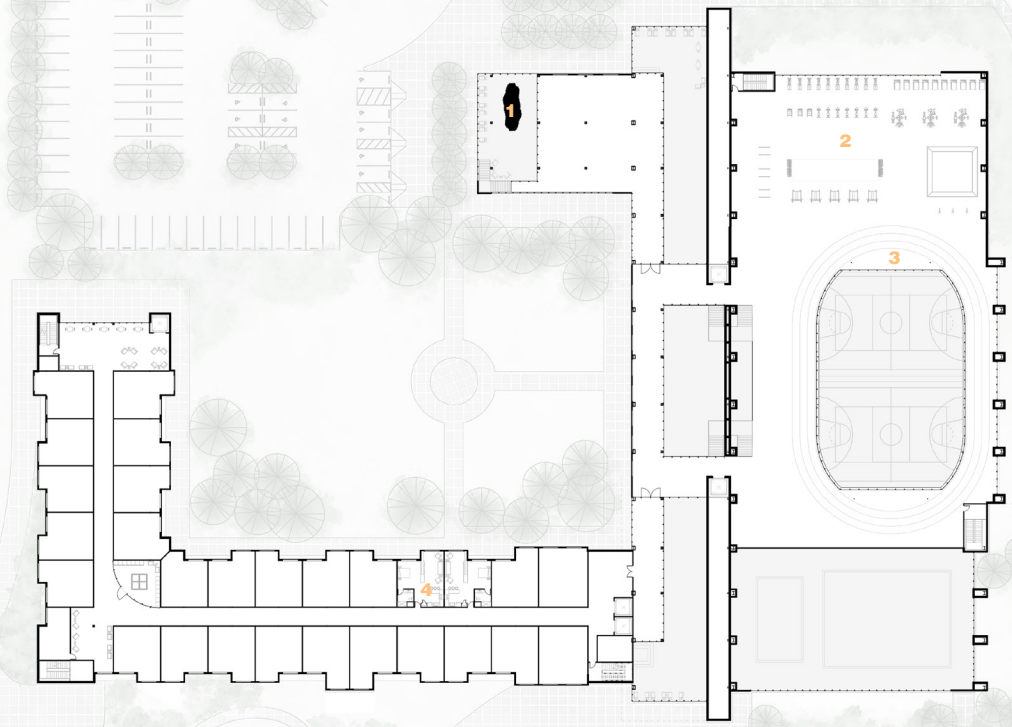
Aromas are one of the most intense triggers for PTSD patients. Certain smells can take a veteran right back to battle while other, like lavender helps alleviate fear and anxiety.

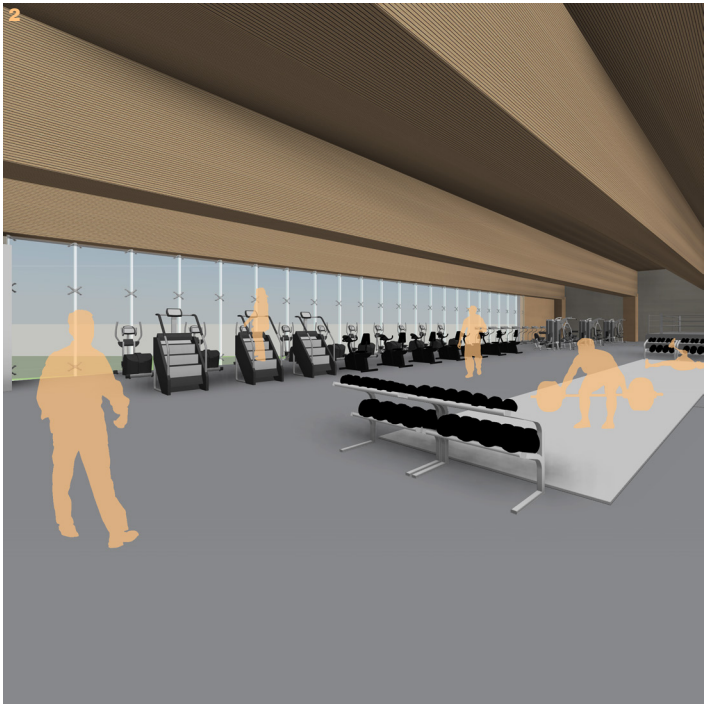
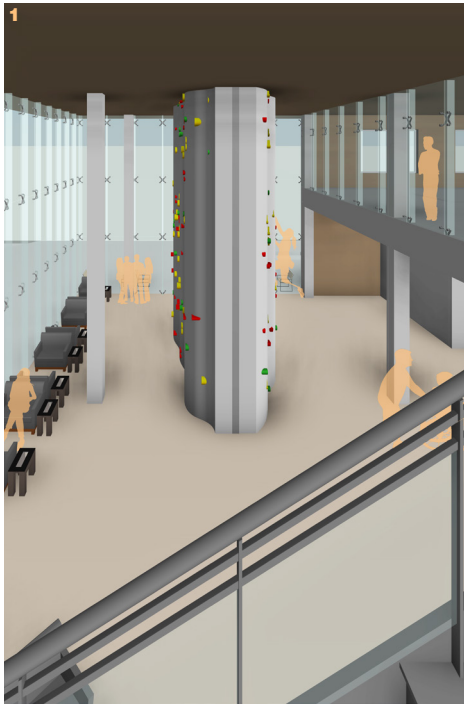


## GROUP THERAPY

The brotherhood mentality is important in the military. The idea that no matter what your brother has your back can easily translate to veterans. By giving veterans a community of like-minded individuals, they are more likely to speak about their trauma in group therapies and support groups.

# second **FLOOR PLAN**





### 1. ROCK CLIMBING

In the most public part of the center the community event center overlooks the 30 foot rock climbing wall adjacent to the café.

### 2. FITNESS CENTER

Recreational fitness center features machines, free weights, a boxing ring, and an adjacent track.

### 3. RUNNING TRACK

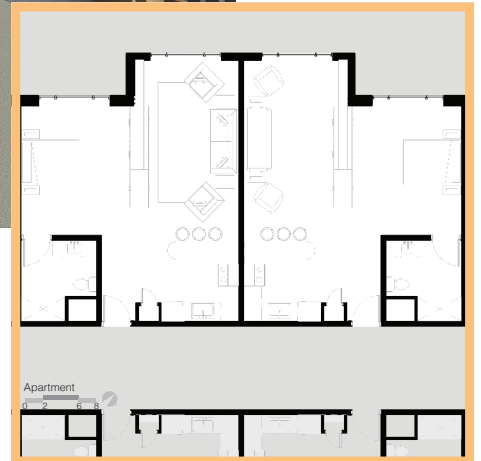
A raised 200-meter track overlooks the basketball courts.





#### 4. RESIDENT APARTMENT

The residential block houses over 90 veterans on 3 floors, each veteran has their own 700 square foot studio apartment. These apartments are ADA compliant and offer views into major outdoor spaces and full interior visibility. Designed entertainment wardrobe units are customizable for each unit. This area of the center is completely secure. Security codes and keys are required for entry to each residential floor and check in is required for any transitional or mental health services.



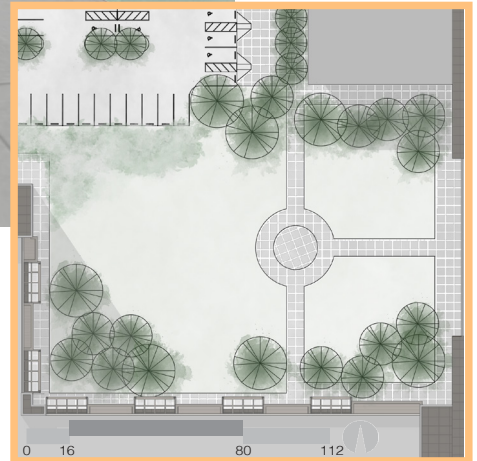


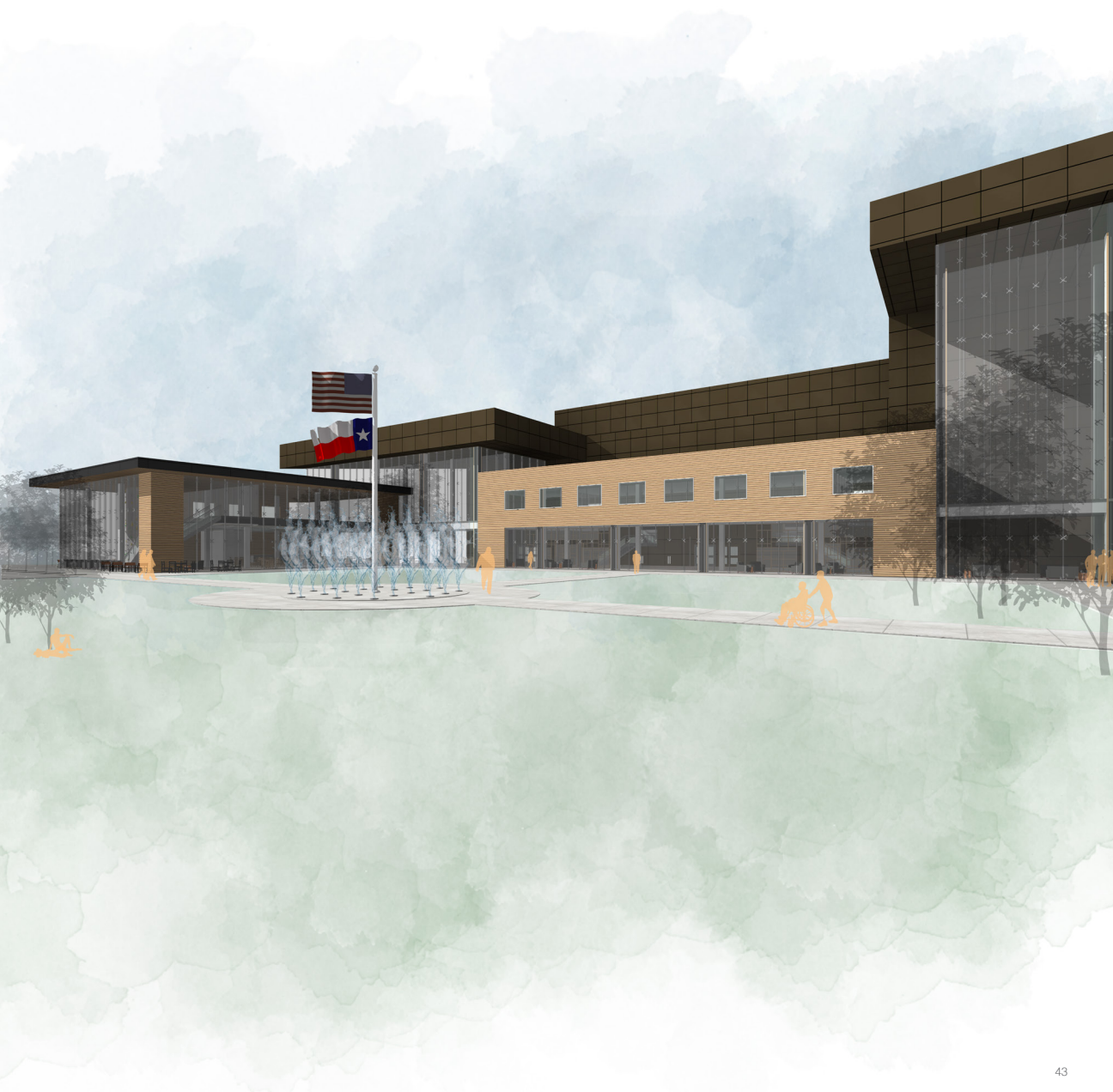




### FORMAL COURTYARD

This formal space can be used as an area for the public and veterans to interact. It contains outdoor café seating, a splash pad and a large amount of green space. The courtyard could also be used to host community events, like a farmer's market or concerts.







### POND AREA

In this area there is a small pond with walking trails surrounding it. There is also a dock used for fishing and several garden plots to be used by the residents. This more private outdoor space is surrounded by trees to block activities from the road or adjacent parking lot. It gives veterans another option for outdoor space without the pressure of a more public open space.





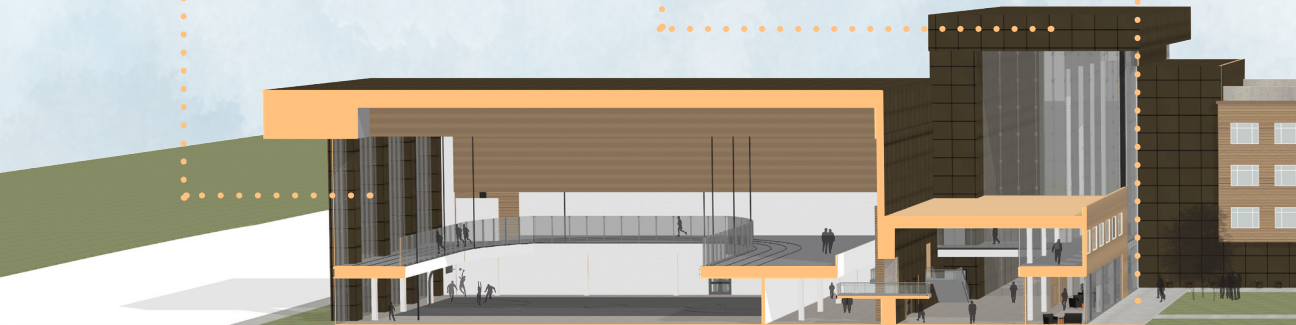
Structural Glass System



Slate Paver Sidewalk



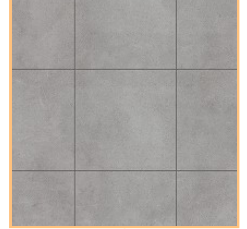
BENCHMARK Porcelain Stone



Derako Bamboo System

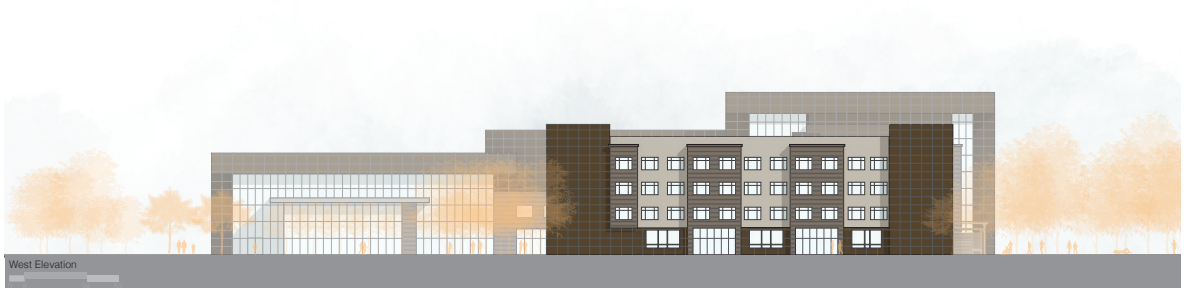
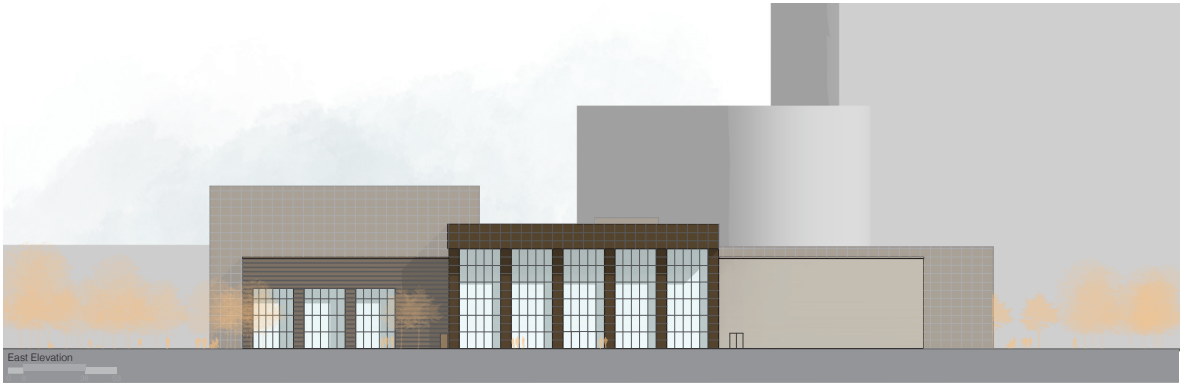


Concrete Sidewalk

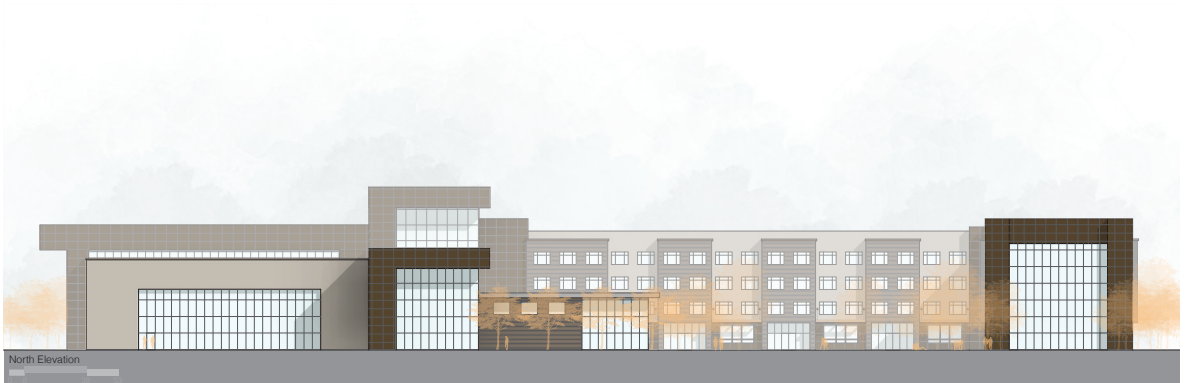


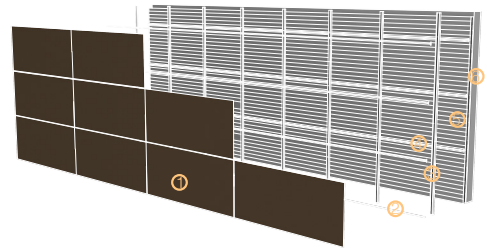
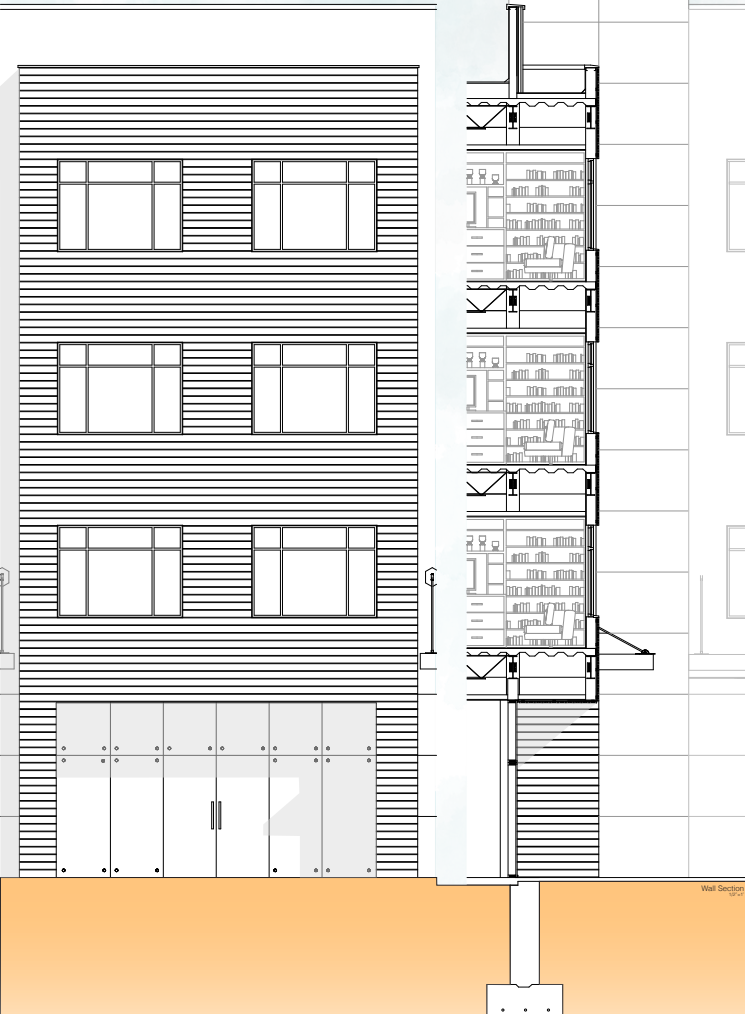
Stucco









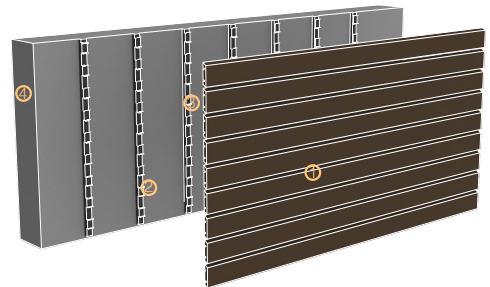


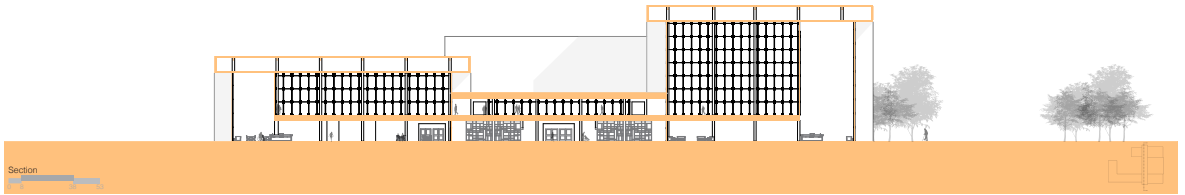
1. Porcelain Stone façade panel
2. BX horizontal rail
3. Subgirt secondary rail
4. BENCHMARK By Kingspan CarrierRail
5. BENCHMARK By Kingspan Insulated Metal Panel
6. Structural framing

#### BENCHMARK PORCELAIN STONE FAÇADE SYSTEM

#### DERAKO SOLID WOOD FAÇADE SYSTEM

1. Solid Wood Slat
2. SLR Clip
3. SLR Profile
4. Structural Framing







## re•**INTEGRATE**

Transitioning from the military can be confusing, painful, and stressful. Many service members who have gone through the process report that they have had difficulty finding a job, translating their military skills into civilian life, or interacting with non-military friends and family. While some plan to leave the military others are forced out due to injury or mental status. According to the Center for Military Health Policy Research over 20% of veterans will return from service with a mental illness or disorder; and those who return with a physical injury are more likely to suffer from mental illness.

re INTEGRATE examines mental illness in veterans and its' causes, triggers, and treatments to influence the space around them and use architecture to improve the lives of transitioning veterans diagnosed with PTSD.

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