

**BRIDGING THE GAP:**  
ADDICTION RECOVERY

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ADDICTION RECOVERY**

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Thesis submitted to the faculty of the Virginia Polytechnic Institute and State University  
in partial fulfillment of the requirements for the degree of

Master of Architecture  
in  
Architecture

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# BRIDGING THE GAP: ADDICTION RECOVERY

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## ABSTRACT

This thesis explores the mental, physical, and emotional healing benefits of nature and the built environment to oneself. Strategically located across from downtown Wilmington, North Carolina, along the Cape Fear River, the site serves as a social and active place that promotes engagement with the natural surroundings while healing the individual. The addiction crisis in the United States is deadlier than ever. The number of overdoses, hospitalizations, and relapses is at an all-time high. Rehabilitation centers, sober housing, and transitional living programs are failing to provide the mental and physical stabilities in which patients wish for in sobriety. Most rehabilitation centers in the country create an isolated environment in which patients primarily focus on detox and therapy while being disconnected from societal engagements for weeks or months on end. Mental well-being is a prominent cornerstone of those institutions, but what about incorporating education, life, and building career proficiencies? According to the SAMHSA, “work is one of the best predictors of positive outcomes for individuals with a substance abuse disorder.”<sup>1</sup> Wilmington is one of the strongest addiction recovery communities in the southern region. Unfortunately, as a result, Wilmington thus faces a higher rate of drug and alcohol relapses. By providing educational resources and career-building programs, recovering addicts are better equipped to reengage in society while finding purpose in sobriety.

This thesis creates spaces for recovering addicts with programs that promote healing and provide education within a nurturing atmosphere to create a foundation for one’s journey to sobriety. Natural lighting, ventilation, materiality, vegetation, and views of the landscape engage the mind and body by activating the five senses: the auditory, visual, olfactory, somatosensory, and gustatory. Winding, natural pathways on the ground create an intimate and direct interaction with the landscape, whereas the elevated pathways above the landscape create a dynamic and social interaction with the surrounding trees and nearby pedestrians throughout the calendar year. The design creates a therapeutic community that accommodates the social, educational, or therapeutic needs of each individual resident.

A transitional living development focused on being a place of learning, growing, and recovering in Wilmington generates a stronger sense of community between the recovering addicts and the city. My thesis focuses on the master plan development of the site, as well as developing the boathouse and boat building facility, where individuals learn the process of building and restoring boats. This boathouse is a safe space for collaboration and creativity; therefore, offering the tools used to exercise one’s mind and body while contributing to Wilmington’s historic boating destination. The boathouse is one facet of the overall master plan, providing a foundation to reconnect with the environment, engage the five senses, and find purpose beyond sobriety.

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## GENERAL AUDIENCE ABSTRACT

This thesis explores the mental, physical, and emotional healing benefits of nature and the built environment to oneself. Strategically located across from downtown Wilmington, North Carolina, along the Cape Fear River, the site serves as a social and active place that promotes engagement with the natural surroundings while healing the individual. The addiction crisis in the United States is deadlier than ever. The number of overdoses, hospitalizations, and relapses is at an all-time high. Rehabilitation centers, sober housing, and transitional living programs are failing to provide the mental and physical stabilities in which patients wish for in sobriety. Most rehabilitation centers in the country create an isolated environment in which patients primarily focus on detox and therapy while being disconnected from societal engagements for weeks or months on end. Mental well-being is a prominent cornerstone of those institutions, but what about incorporating education, life, and building career proficiencies? According to the SAMHSA, “work is one of the best predictors of positive outcomes for individuals with a substance abuse disorder.”<sup>1</sup> Wilmington is one of the strongest addiction recovery communities in the southern region. Unfortunately, as a result, Wilmington thus faces a higher rate of drug and alcohol relapses. By providing educational resources and career-building programs, recovering addicts are better equipped to reengage in society while finding purpose in sobriety.

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I would like to thank Marcia F. Feuerstein, Tuwanda Green, and Paul Kelsch for guiding me and teaching me values beyond architecture that I will instill in my life forever.

To my parents, my boyfriend, my family and friends, and all the people that have supported me on this journey, I greatly appreciate every encouraging phone call, text message, and email I received. I could not have done any of this without your love and support.

To my uncle, aunt, and cousin, I hope by shedding some light on this disease it will encourage future designers to think about balanced design and programming for recovery.

Uncle Billy and Auntie Nancy, I hope I have made you proud in heaven.

Congratulations to all my fellow cohorts. It has been quite a ride getting our Master's degree during a pandemic, but we did it!



“Every Flower is a soul blossoming in nature.”<sup>1</sup>  
- Gerard De Nerval

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1 (A quote by Gérard de Nerval) <https://www.goodreads.com/quotes/311980-every-flower-is-a-soul-blossoming-in-nature>

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## BACKGROUND

Addiction affects millions of families every year. My family is one of those millions that has been affected. From when I was young child to now being a young adult, I have seen a few of my family members struggle to overcome his and her addiction. My uncle, aunt, and cousin have been affected by this deadly disease. I have seen them at their highest and lowest points. It is difficult to understand from an outsider's perspective how mentally damaging addiction can be to them and their loved ones. They are constantly fighting to stay sober every single day. When they relapse, it can be the most challenging to get them back on their feet and on the right track again. Jobs are lost. Lies are told. Addiction can bring out the worst in people. Rehabilitation played a major role in their path to recovery; however, they ended up relapsing a few months after leaving. Being isolated in a center did not help their recovery when they finished the program. They came back with no job and no sense of direction and passion. If there were educational and career building programs, they would have had more stability and motivation to stay on the right path. My cousin is currently sober because she now has a job that she loves going to every day. The lack of educational and job training in rehabilitation centers is evident across the country. There needs to be a change in addiction rehabilitation programming.

Unfortunately in 2012 and 2015 I lost my aunt and uncle to addiction. They will always have a place in my heart and I will cherish the good memories I had with them. I dedicate my thesis to them. They inspired me to want to create something that may shed light on the gap in recovery programs.



# THESIS PROPOSAL

Individuals' healing process in treatment and recovery can vary in many ways. Socio-economic factors can mental health disorders can hinder recovery. Although each individual's experience with substance abuse may vary, a common symptom is failing to meet responsibilities at work, school, or home. Substance abuse impacts individuals, families, and communities by contributing to a loss in productivity, greater incidence of criminal justice involvement, and an increased burden on the health care system. Employment is an important element for remaining sober and maintaining financial independence. The goal of treatment and recovery should be to give the individual the best all-around therapy and education to succeed.

## A GAP IN ADDICTION TREATMENT

Employment has been pushed aside in treatment. It has not been a stated goal of substance abuse treatment. The standard procedure has been to take care of mental health. It's promoted that by focusing on the improvement of mental health, employment would therefore take care of itself. This is not always accurate. Career and education services have not been readily available.

## LACK OF LIFE SKILLS

Lack of life skills is one reason why most people relapse when returning home from treatment. Decision making is lost when a person cannot control his or her decisions about substance usage. When they return to their usual lives and relationships, they are going to be overwhelmed by the same negative influences that negatively affected them before entering rehabilitation.

## ISOLATED TREATMENT CENTERS AND PROGRAMS

When those in recovery are isolated from a familiar support network, boredom and depression can result, greatly increasing the risk of relapse. Community involvement gives those in recovery a place of non-judgement, as well as encouragement to stay on the recovery path. Real life events and situations do not take place in isolated treatment centers, so how will a person learn how to cope when released?

## 1 TO RECOVER LOST LIFE SKILLS AND RELATIONSHIPS

To stay sober when they leave rehab, they need to be above a make-break point of personal and interpersonal skills. They need to be self-aware and honest with themselves and others. When they have reached a firm baseline of these skills, they can return to their usual lives and continue to grow and mature as human beings.

## 2 TO EASE THE HEALING JOURNEY

With the help of these design principles, this thesis aims to create a transitional living development with a focus on healing, and education and career-building programs. The purpose is to bridge the gap in addiction treatment and provide programs that will reduce substance abuse, lessen mental health symptoms, and improve quality of life.

RESEARCH

**addiction**

*noun*

a chronic disease characterized by substance seeking and use that is compulsive, or difficult to control, despite harmful consequences

**recovery**

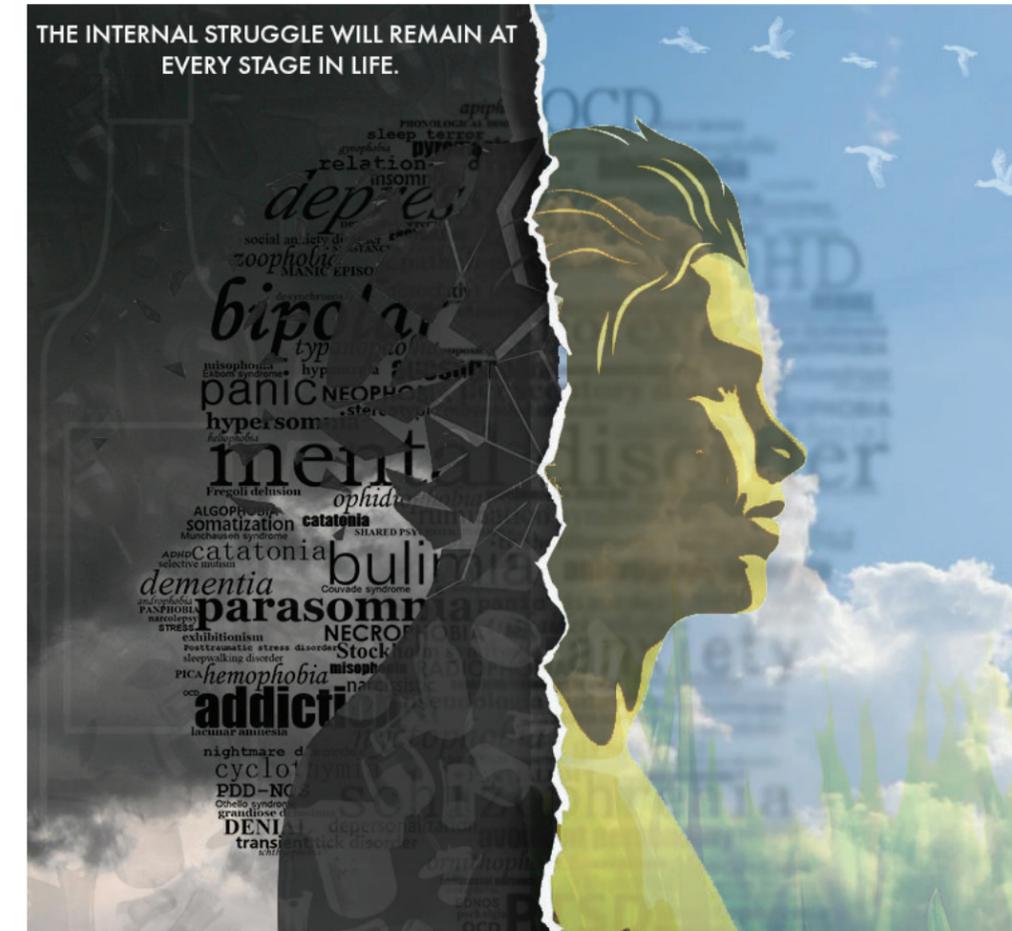
*noun*

a process of change through which individuals improve their health and wellness, live a self-directed life, and strive to reach their full potential

**relapse**

*noun*

when you begin abusing or become addicted to drugs or alcohol after a period of recovery and sobriety from either exposure to stress, environmental cues which result in cravings, associating with people who continue to abuse substances, emotional distress, relationship problems, and career and financial issues



There is an internal struggle that a person will deal with on a daily basis after seeking treatment. Understanding how substances can negatively affect the brain is one of the first steps in learning how to dim any negative thoughts and live a more peaceful life.

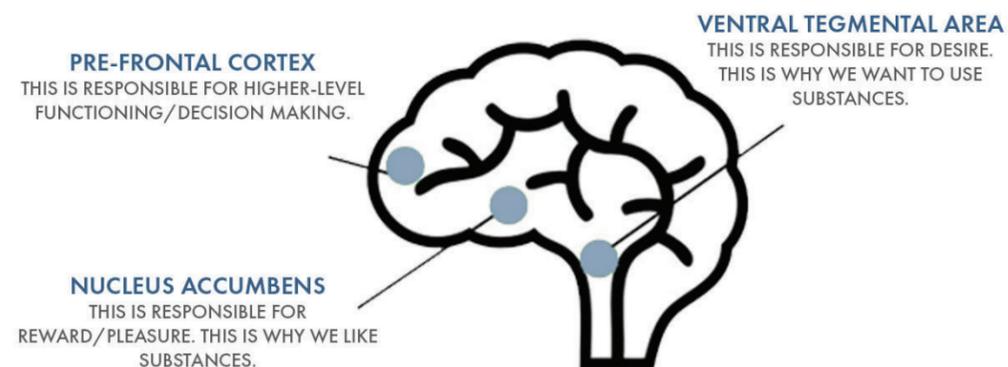
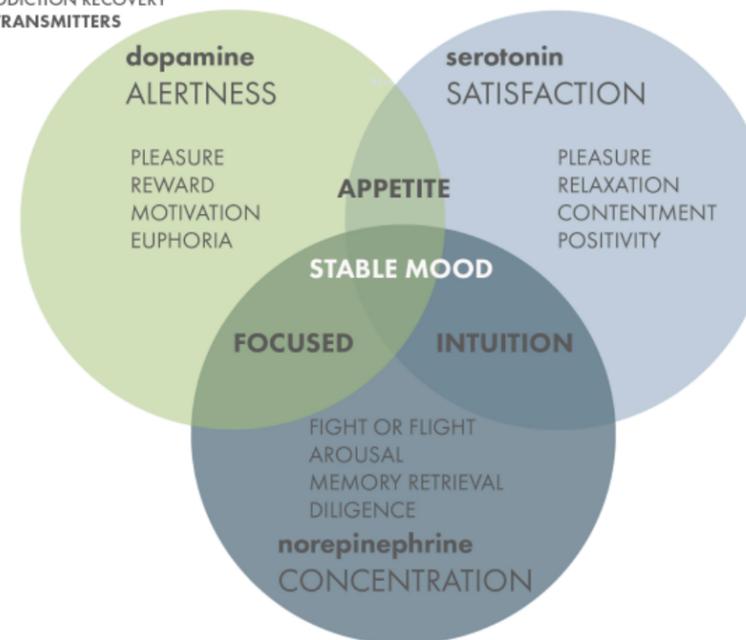


Fig. 1: How addiction affects the brain

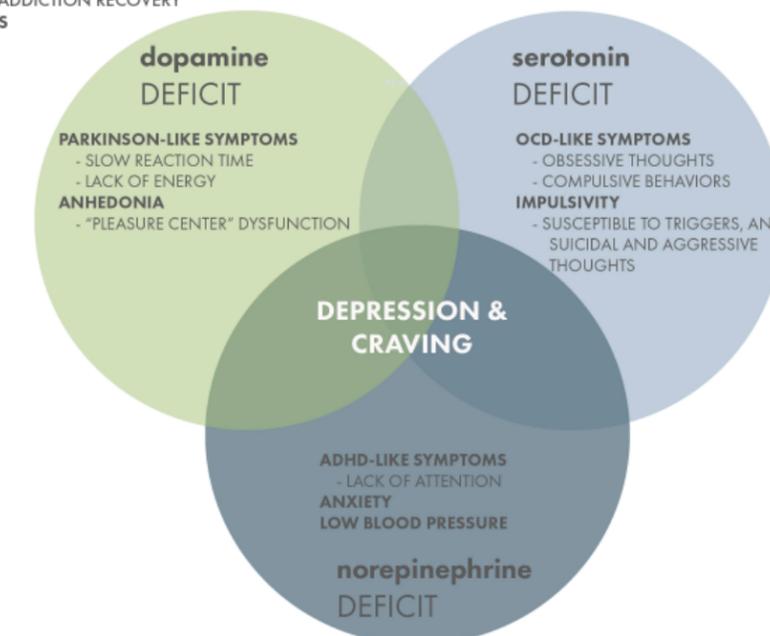
The use and abuse of alcohol and drugs numbs parts of the brain, which often results in not remembering events and details, slurring words, and acting abnormally. Certain substances cause chemical changes in the brain that have long-lasting effects and damages to the brain. These changes can make it harder for a person to perform basic memory tasks and causes bad decision making.

Intoxication, withdrawal, and anticipation are the three-stage cycle of addiction. The cycle occurs when there is repeated exposure to the substance over time causing changes to the nervous system and brain chemicals.

BRIDGING THE GAP: ADDICTION RECOVERY  
THREE MAIN NEUROTRANSMITTERS



BRIDGING THE GAP: ADDICTION RECOVERY  
ADDICTION DEFICITS



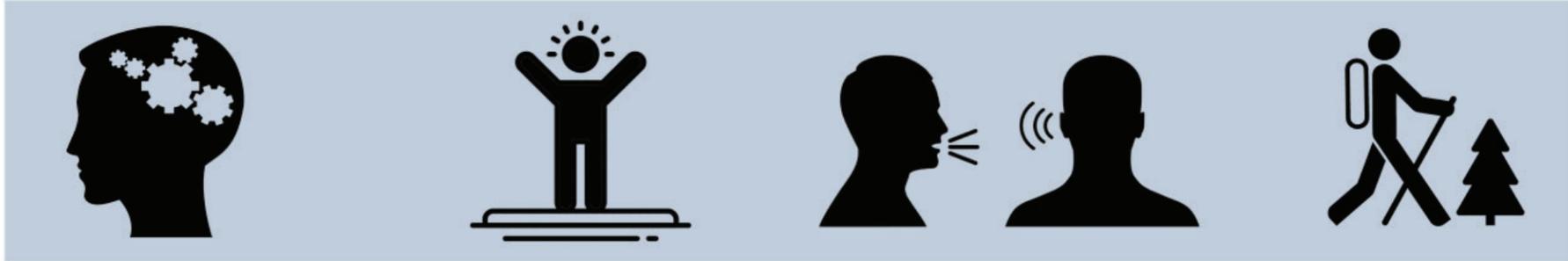
There are more than 40 neurotransmitters in the human body that are often referred to as the chemical messengers.

Typically, neurotransmitters have a positive affect on a person's mood.

After repeated substance abuse, the brain starts to adjust to the surges of dopamine, serotonin, and norepinephrine. The number of receptors begin to reduce. When not taking the substance, the neurotransmitters go into deficits. Depression, anxiety, and negative feelings take over. These deficits make a person want to take the substance again in order to feel good. Thus addiction to the substance occurs.

# HEALING OUTCOMES ORGANIZED BY HEALING CHARACTERISTICS

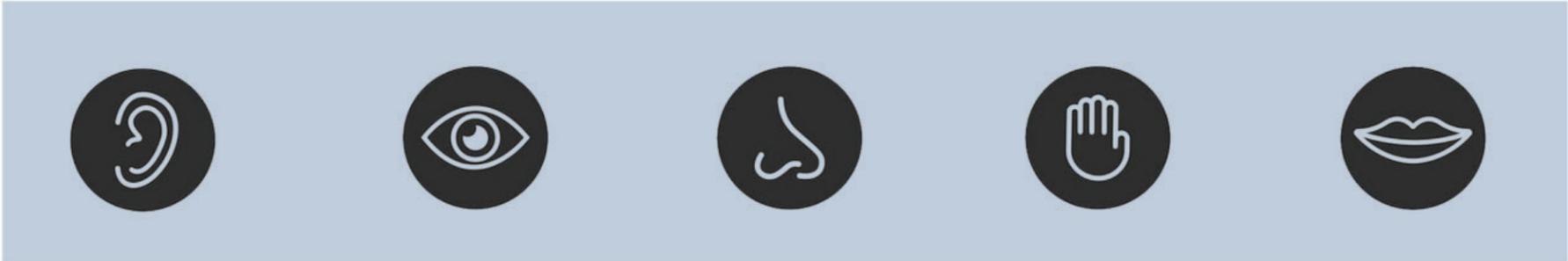
There are four characteristics that create healing outcomes: psychological, self-efficacy, social, and functional. The goal is to minimize harm and avoid triggers for the residents. Each characteristic wants to promote overall wellness.



PSYCHOLOGICAL	SELF-EFFICACY	SOCIAL	FUNCTIONAL
- MOOD	- AUTONOMY CONTROL	- TRUST	- WELL-BEING
- ANXIETY	- FREEDOM	- SENSE OF DIGNITY	- QUALITY OF LIFE
- STRESS	- PATIENT/RESIDENT EXPERIENCE	- ISOLATION	- DAILY ACTIVITIES
- SATISFACTION			- PAIN
- RELAXATION			- SECURITY

# SENSITIVITY TO THE SENSES

Architectural spaces have the power to support people along their healing journey. Different architectural elements, designs, and construction materials can impact the five senses. Each sense affected is significant in a person's mood and mental well-being. Using the correct materials and design strategies, can significantly increase a recovering addict's time in recovery.



AUDITORY	VISUAL	OLFACTORY	SOMATOSENSORY	GUSTATORY
- NATURE MUSIC/NOISE	- VIEWS OF NATURE	- PROPER VENTILATION	- NATURAL MATERIALS	- NATURAL & NUTRITIOUS FOODS
- SOFT NOISE	- AMPLE NATURAL LIGHTING	- NATURAL SCENTS	- SOFT MATERIALS	
	- CALMING COLORS AND TEXTURES	- AROMATHERAPY		
- OPERABLE WINDOWS, LARGE SLIDING DOORS, AND GARAGE DOORS	- OPERABLE WINDOWS AND GARAGE DOORS FACING WATER	- OPERABLE WINDOWS AND GARAGE DOORS	- WOOD	- ENCOURAGING HEALTHY EATING WITH AMPLE KITCHEN SPACE
- PLANTS AND VEGETATION ENCOURAGE WILDLIFE	- NATURAL WOOD COLORS	- PLANTS, TREES, & FLOWERS	- WATER	
	- PLANTS, TREES, AND VEGETATION		- STONE	
			- PLANTS, TREES, AND VEGETATION	

# SUBSTANCE ABUSE IN WILMINGTON, NORTH CAROLINA

Wilmington, North Carolina is an area with a large substance abuse recovery community and one of the largest one in the southern region of the United States. Since it is an area with a large recovery community, the relapse rates are high. Wilmington ranks number one in the nation for opioid abuse, according to the Castlight Health study. There are close to 300 twelve-step meetings a week and over two-hundred halfway and sober living homes. There is an attraction for treatment in Wilmington because it is on the coast and many people come to the water for healing.

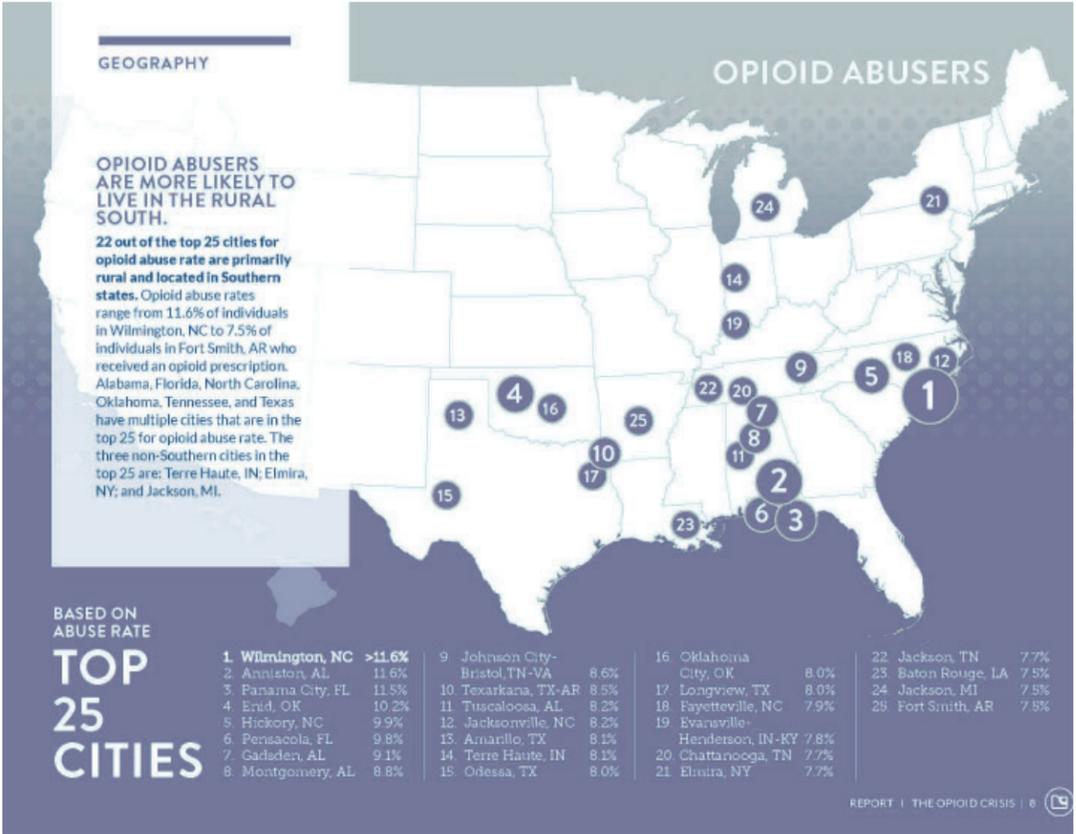


Fig. 2: Castlight Health Study

In North Carolina, overdose deaths rose nearly 40 percent between April 2020 and April 2021. There was a mental health crises and a lack of funding in substance abuse services before 2020. An increase in isolation, anxiety, and brain health challenges has led to an increase in overdoses, hospitalizations, drug use, and alcohol consumption. North Carolina has been ranked as one of the highest risk states for substance abuse because of the lack of funding, high numbers of uninsured people, and higher unemployment rates.

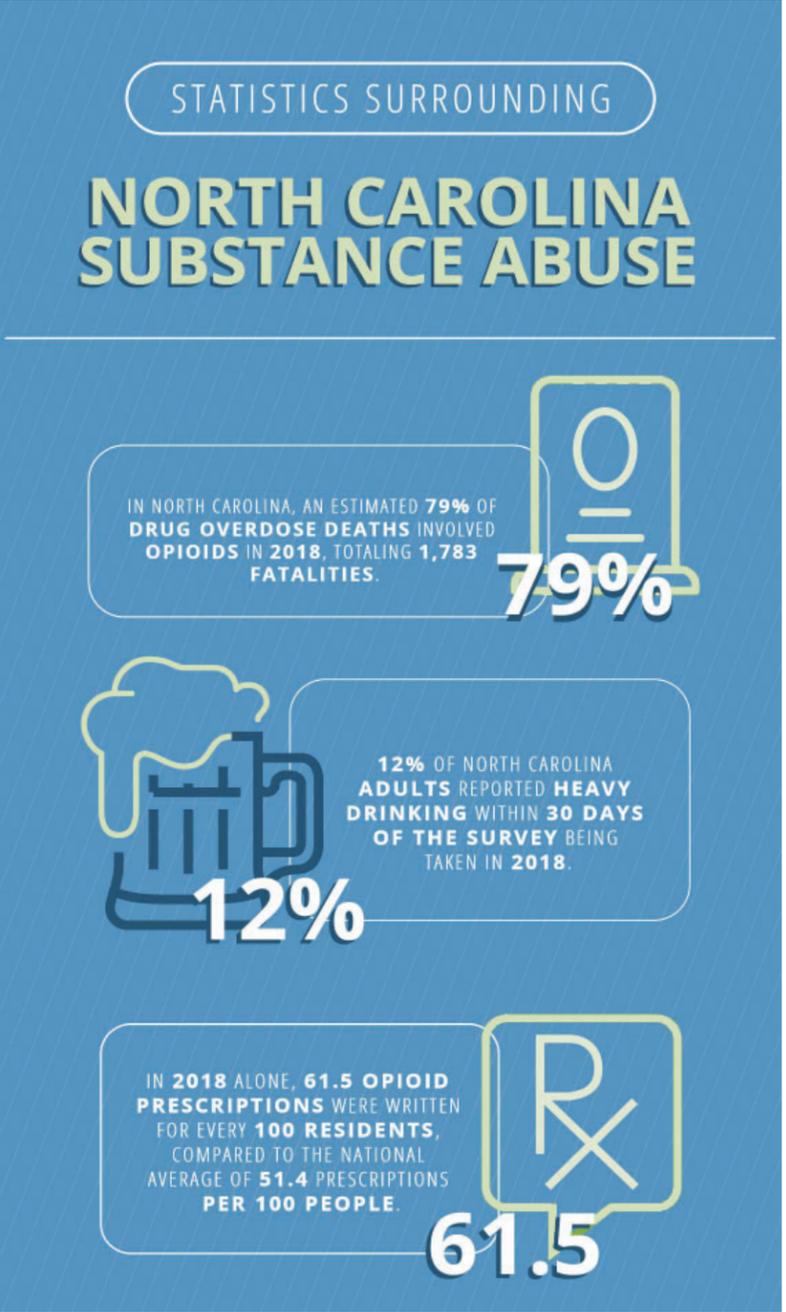


Fig. 3: North Carolina Substance Abuse Statistics

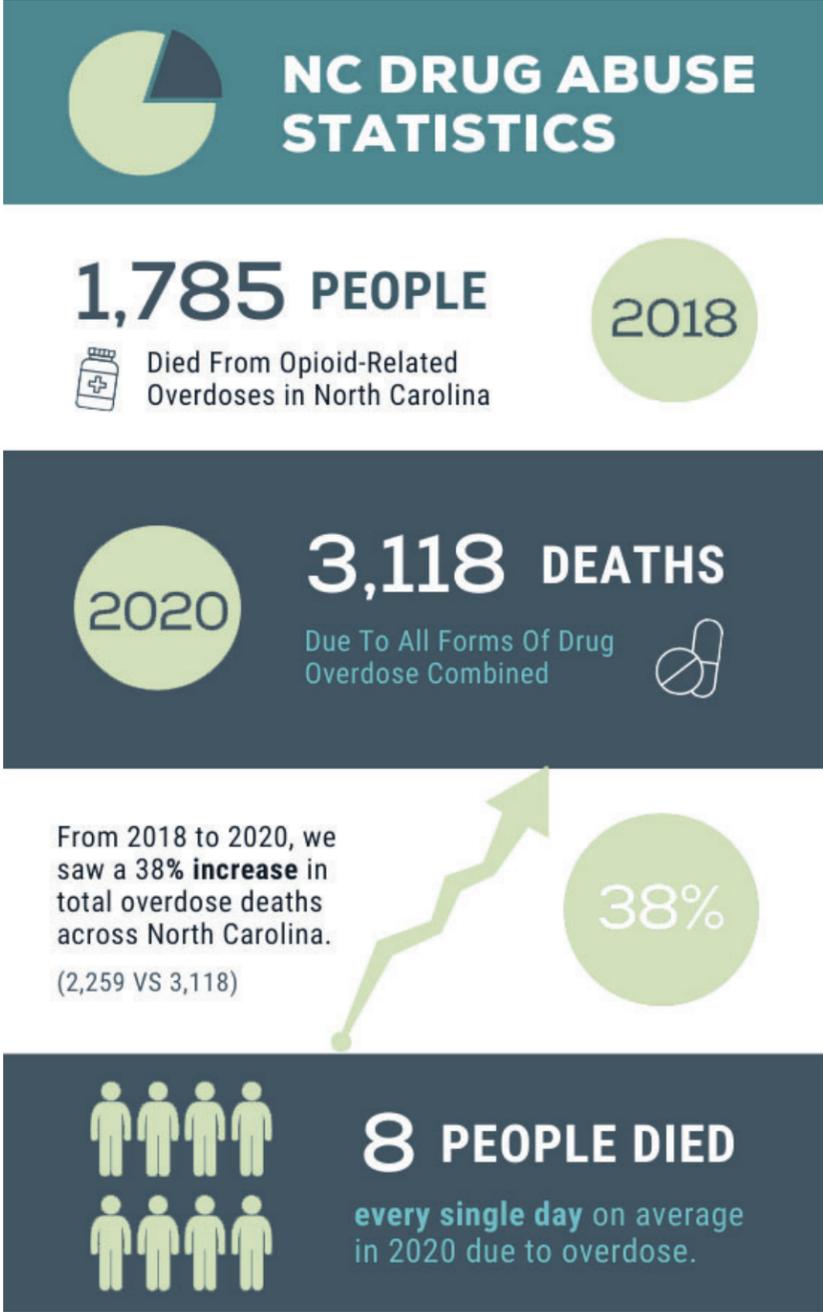


Fig. 4: North Carolina Drug Abuse Statistics

# TRANSITIONAL HOUSING

## THREE TYPES OF CONTINUED RECOVERY CARE OPTIONS

### SOBER LIVING

Requirements to live here are holding a job and paying rent. Lowest housing option with rules.

### HALFWAY HOUSE

There are a list of rules determined by the house manager, who may or may not live in the house. Rules include a curfew, random drug and alcohol testing, attending a minimum number of AA meetings, and connecting with a sponsor a certain number of times a week.

### TRANSITIONAL LIVING

Offers programs on site that teach life skills and give the resident the tools he or she may need to transition from treatment to society.

## OXFORD HOMES

### WILMINGTON, NORTH CAROLINA

The Oxford Homes are a sober housing option for individuals in recovery. There are over 280 homes in North Carolina with an average of 8 beds per house. There are some house rules in order to stay in the house, which include completing a treatment program, having a job or being able to financially support oneself, and electing house officers every six months.

These homes blend in with other homes in the area. They look like a typical single family residential home. They try to create as normal of a living environment as possible.



Fig. 5: Oxford Home



Fig. 6: Oxford Home

## CASE STUDIES

### WILMINGTON TREATMENT CENTER

WILMINGTON, NORTH CAROLINA

The Wilmington Treatment Center is one of the leading treatment centers in North Carolina. It is located north of Wilmington's downtown. The surrounding area is isolated with a busy road filled with gas stations, healthcare buildings, and warehouses.

It offers many treatment programs, including a recreational program. The recreational programs takes the residents off the campus for day trips, where they take part in fun activities. This is the only program where they go off the campus.

Although there are several programs, it seems that there is a lack of educational programs that are much needed. With unemployment and poverty rates being high, there are still reoccurrence rates.



Fig. 7: Building Exterior



Fig. 8: Resident Lounge



Fig. 9: Resident Bedroom

## CASE STUDIES

### DESTINATIONS

WOODLAND HILLS, CALIFORNIA

Destinations provides treatment to teenagers and young adults struggling with substance abuse. It specializes in providing educational help to keep them on track to finish high school, getting into college, or getting a job offer. They help to prevent any triggers and stress from school, so that they can also focus on their therapy and treatment.

The Destinations treatment program has become one of the more successful programs in the area because of the focus on education. The relapse and reoccurrence rates are below 5 percent.



Fig. 10: Building Exterior



Fig. 11: Living Room



Fig. 12: Learning Center



Fig. 13: Resident Bedroom

## CASE STUDIES

### **NORTHWEST SCHOOL OF WOODEN BOATBUILDING** PORT HADLOCK, WASHINGTON

The Northwest School of Wooden Boatbuilding is an educational institution where students learn how to restore and build boats. One program has attracted veterans suffering from PTSD and substance abuse. It is a 12 week program that teaches them about boatbuilding in which they get a certificate at the end.

One former veteran, Jon Ferguson, went through the program and has now become a teacher there. He suffered from PTSD and alcoholism, but has stated that working on boats has transformed his life and helped him deal with his disorder and disease in a positive way. Many people end up going through the program to deal with their own emotions and then end up helping the next group of students.



Fig. 14: Jon Ferguson



Fig. 15: Boat Workshop



Fig. 16: Boat Workshop

## SITE ANALYSIS

## WILMINGTON, NORTH CAROLINA

Wilmington is a historic city located on the southeastern coast of North Carolina. The heart of downtown Wilmington is the walkable and lively Riverwalk. The Riverwalk is nearly two miles long connecting stores, restaurants, galleries, and the Waterfront Park. During the spring, summer, and fall the two mile long dock walkway is filled with people and live music. The elevated Riverwalk is located above the water level preventing it from being flooded during any storm. Over the past twenty years, Wilmington has continued to grow rapidly. More people are moving here from different parts of the country, which is creating more jobs and opportunities every year.



Fig. 17: Riverwalk North View



Fig. 18: Riverwalk South View



Fig. 19: Downtown Wilmington Aerial View

## 1551 POINT HARBOR ROAD

Located on the Cape Fear River in Wilmington, North Carolina, the site is over 29 acres with over 1,200 feet of waterfront access and views. Accessibility and visibility from the Isabella Holmes Bridge and US Hwy 421 benefits the site. It is less than a five minute drive over the bridge to downtown and a short boat ride from the site dock to the downtown marina.

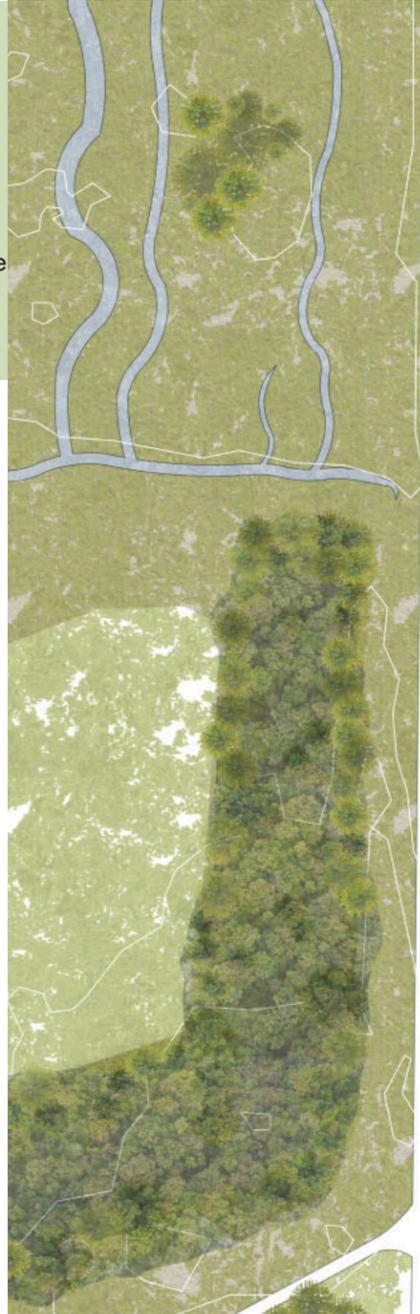


Fig. 20 (top), Fig. 21 (bottom): Site Aerial View

## SITE PHOTOGRAPHY



When looking at different sites in Wilmington, most of them were located in rural areas outside the historic downtown area. The location needed to be easily accessible to society and not isolated. This site, located directly across from the downtown area was ideal for being close to the community, but also being able to get away if needed. It's a transitional space that serves both needs of quiet and excitement.

## SITE SECTION



## SITE COLLAGES



The site did not change over numerous site visits during different seasons. The only change was the color of the grass. It is very overgrown and the buildings are falling apart. There are only two trees within the property line, while the rest of the trees are on the outskirts by the bridge and the highway. The tall grass by in the wetlands and marsh were an inspiration. They were tall during the summer months. They provided an enclosure and acted as a wall of safety. It seemed peaceful.

While looking at pictures of the site, I started collaging and analyzing the site. I saw different patterns and textures from the landscape that created natural, winding paths. The wood siding and docks were distressed and old. The docks and one of the buildings was halfway in the water. All the buildings were facing toward the water and were on stilts. It made sense to have the buildings elevated, but also keep a natural path weaving through the overgrown landscape that currently exists.

On the following pages are a series of narrative montages of a possible future design. I began with the site and then used this method as the project progressed. Each narrative tells a sensory experience from a resident's perspective.

## MOVEMENT



I'm out of breath. I want to stop, but I can't. I'm so close. This breeze feels so refreshing right now and helps with the humidity being so high in the summer months. The breeze makes it a vibrant place. Everyone is outside.

## EVOLUTION



This is my getaway. It's so wonderful seeing the plants, flowers, vegetables, and fruits grow and prosper every day. I love having the ability to provide fruits and vegetables to use in our meals. The taste of the vegetables and fruits are so fresh and savory. It's unique. The fruits and vegetables fuel the energy I need to work throughout the day. I feel good.

## REFLECTION



Nature is surrounding me on all four sides. I am in a place of solitude. It's one of the quietest places on the site. I can think and reflect without being disturbed by loud noises. I listen to the sound of the birds and the tall salt grass blowing in the wind.

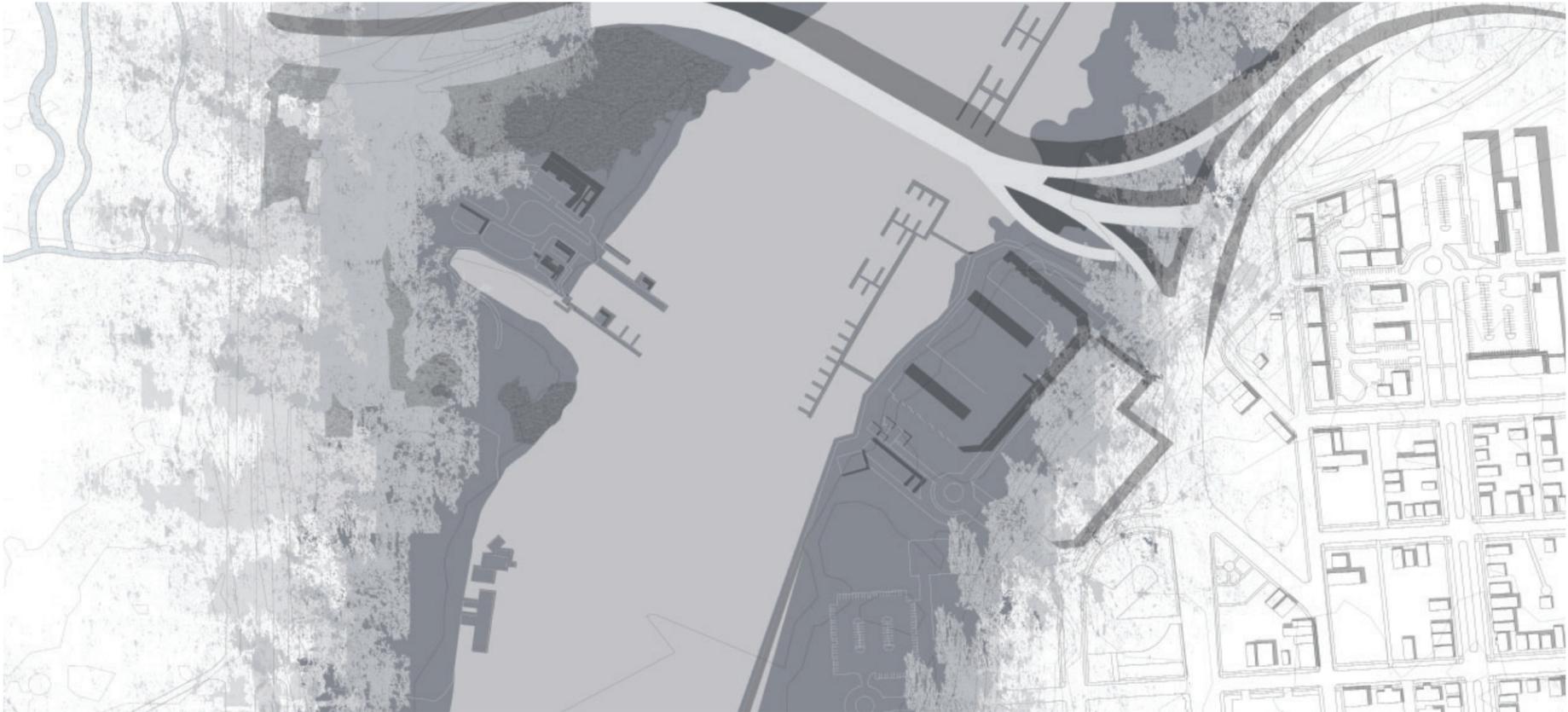
## EDUCATION



I smell the wood from all the boat materials being stacked and stored. The scent reduces any anxiety I had before working. It brings on earthy and warm feeling. I feel focused.

# FLOODING DIAGRAMS

## FLOODING PLAIN - YEAR 2100



- > 5 FEET OF WATER
- 2-5 FEET OF WATER
- < 2 FEET OF WATER

The site slopes up from the river to the highway gradually. The median water level height is 35 feet from the bed of the river. It is 5 feet below the shore line on the site.

Currently, the site does not flood. With climate change and an increase of hurricane activity each year, the river water level is rising. The site will eventually start flooding after a big storm and hurricane. The future buildings will be elevated to prevent any damage to the structure, exterior, and interior.



LOW TIDE



HIGH TIDE



FLOOD LEVEL PREDICTION - YEAR 2100

## STANDARD



I come out here to paint and get inspiration. I love being surrounded by nature. I can get so close to it. The colors of each blade of grass, each flower petal, and each tree bark vary. I try to paint each unique appearance. I observe how each flower and plant changes over the seasons. My mind is overwhelmed with inspiration. I appreciate the importance of nature.

## OVERFLOW



It is quiet. It has been raining off and on for two days now. The river is starting to overflow at the edge of the land. I can get so close to it. Seeing the water overflowing, creates an interesting image. I try to paint each unique image. I observe how the grass becomes lost underneath the water. I find it serene. Nature is so beautiful.

## FLOOD



I love to come out here to paint and get inspiration after a storm. I love being surrounded by nature. I love feeling the water droplets on the leaves. A storm changes the paintings' mood. I feel and see how each plant and tree absorbs the water. It changes the color of the plants and tree bark. It is great inspiration.

## STANDARD



It is calm. I have found a great place to read underneath this tree with a view of the river and Wilmington's downtown. I feel very relaxed here. The water is still. I look at it when I take a break from reading. I could sit here all day. I feel safe and comfortable.

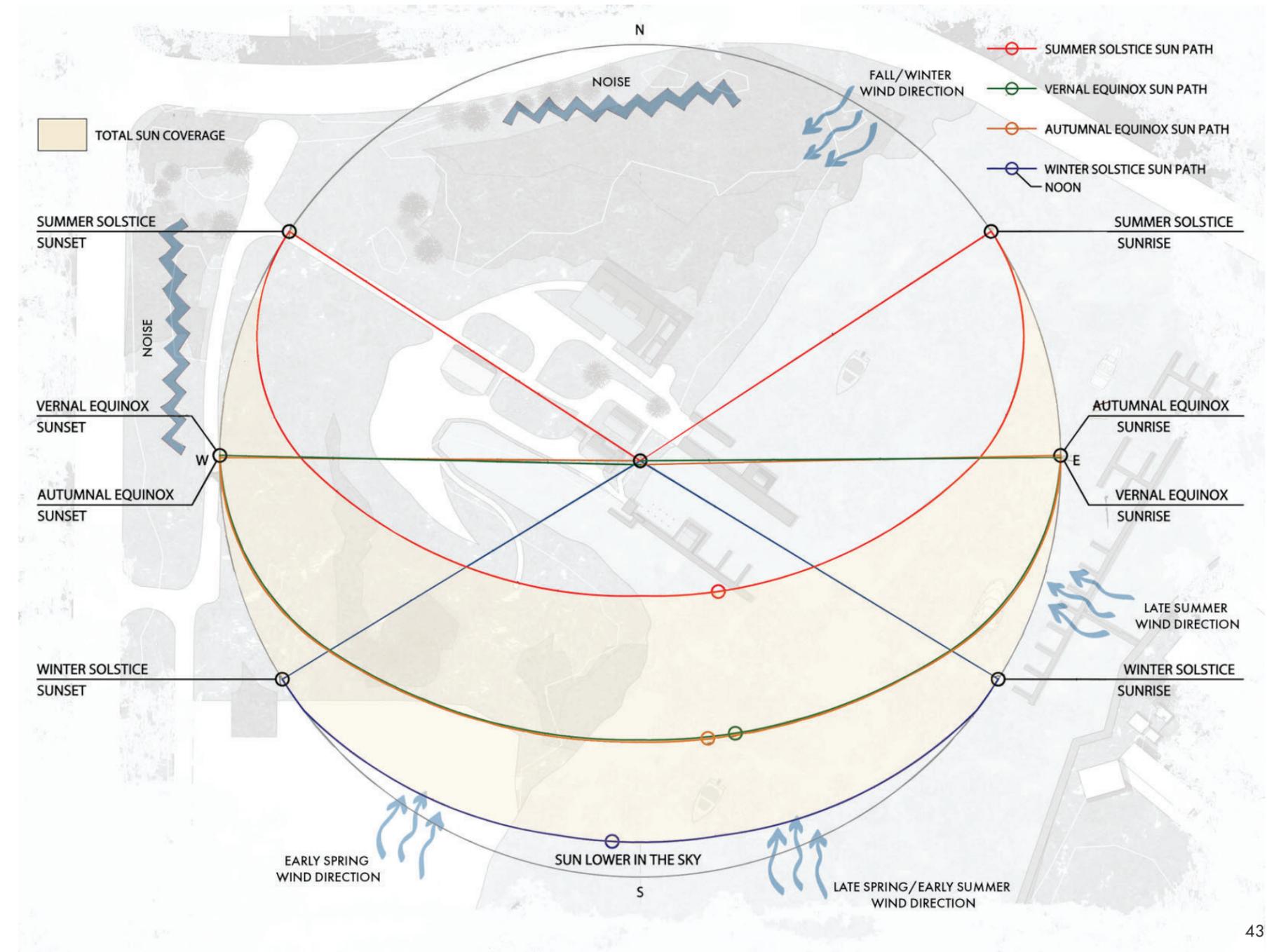
## FLOOD



The storm is leaving. A small portion of the site has flooded, but it is beautiful. I feel protected from the storm by being under the tree and on higher ground. The unobstructed views are still breathtaking. This is my refuge. I feel safe here. It's hidden, but I don't feel alone.

## SITE ANALYSIS

Human comfort is critical in the residents' healing process. Before designing the site and buildings, I identified where the five senses would be enhanced in the most positive and effective way. The residences and private meditation spaces need to be located where it is quiet, so the resident can relax, unwind, and rest. The workshop, fitness center, and studio spaces do not need to be located where it is quiet; however, these spaces would need to be located near the river, a parking lot, and the road.



EXISTING SITE MATERIALS & VEGETATION



WOOD



CORRUGATED GALVANIZED STEEL



METAL SIDING & ROOFING



VINYL SIDING & CEDAR SHAKE



MORNING GLORY



SPIKE/ SALT GRASS

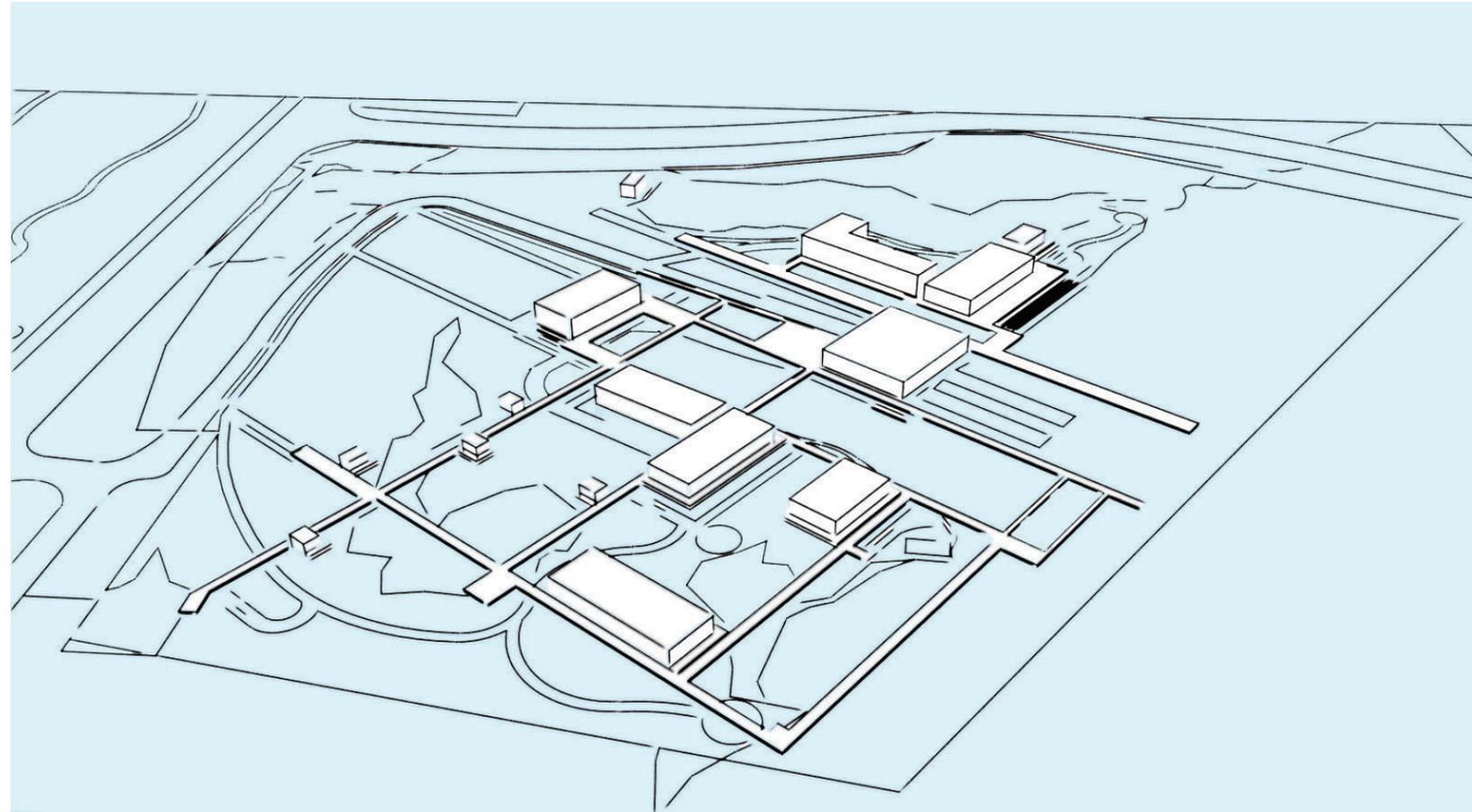


CAPE FEAR SHINER

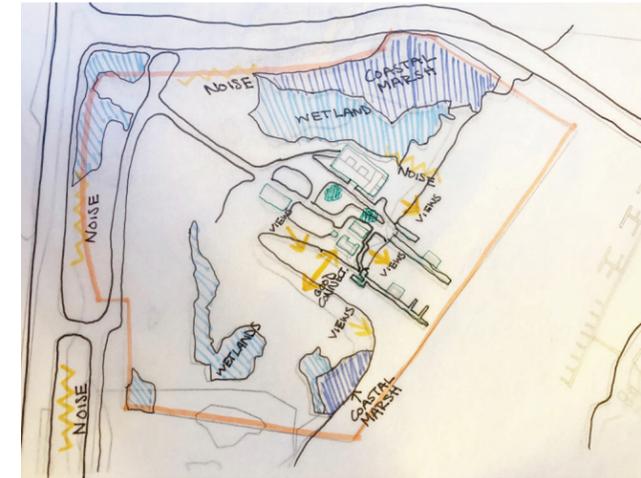


BOX, SPOTTED, MUD TURTLES

## DESIGN PROCESS



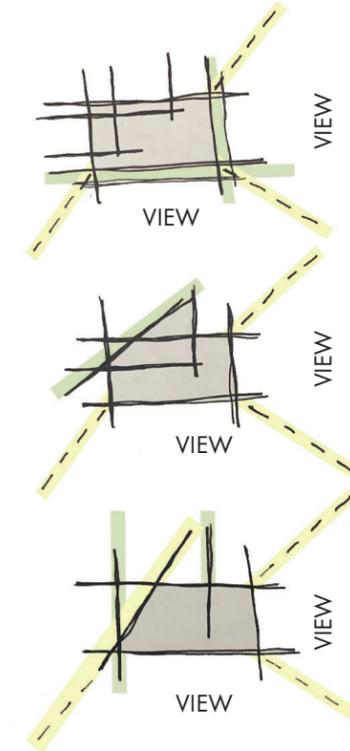
## SITE OBSERVATIONS



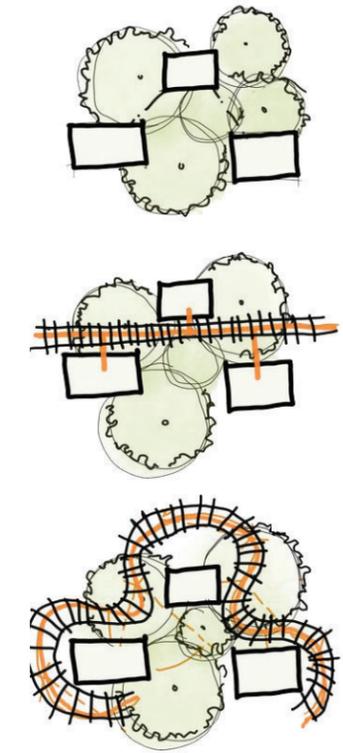
SITE ANALYSIS



WELLNESS



VIEW SKETCH



CIRCULATION TYPES

Fig. 22: Circulation Diagram

During the early design phase, I started looking at notes I gathered from physically walking on the site and researching from different resources. I took note of views, noise, wind, vegetation, water levels, temperature, and natural light. Thinking about the comfort and health of the resident living on the site was the main focus.

# CASE STUDIES

## RIVERSIDE MASTERPLAN IN SHENZHEN

SHENZHEN, CHINA  
VENHOEVENCS

The Riverside Masterplan was designed to protect pedestrians from the risk of flooding. They are still able to get to neighborhoods and the network of rivers without being disrupted by the river's flooding waters. A series of buildings and pavilions located along the river bank are set on stilts, so that they are not at risk of flooding. Ponds, wetlands, and green roofs help to manage and store the water.



Fig. 23: Elevated Paths Before and During Storm



Fig. 24: Pavilion on Stilts

## CASE STUDIES

### AD23 HOUSE

CANELA, CHILE

APIO ARCHITECTS

The AD23 House receives two families, where they live independently on either side; however, they come together in the central outdoor space. They have their space that is their own. A space that is private and quiet with views of the sea and dunes. The central space is where everyone gathers. It is protected from the sun and is sheltered from the wind. It is a comfortable space for everyone.



Fig. 25: Exterior House



Fig. 26: Central Courtyard



Fig. 27: Interior Living Space

## CASE STUDIES

### WAGNER EDUCATION CENTER AT THE CENTER FOR WOODEN BOATS

SEATTLE, WASHINGTON

OLSON KUNDIG

Built in 2019, The Wagner Education Center was designed to showcase boats during the repair and restoration stage. There are classrooms, galleries, gift shops, and a workshop space. The architects and owners wanted a building that invites a wider range of people, where they can gather, learn, and observe. It achieved LEED Silver Certification, while featuring wood, glass, and steel that matches the materials of the boats.



Fig. 28: Workshop



Fig. 29: Workshop

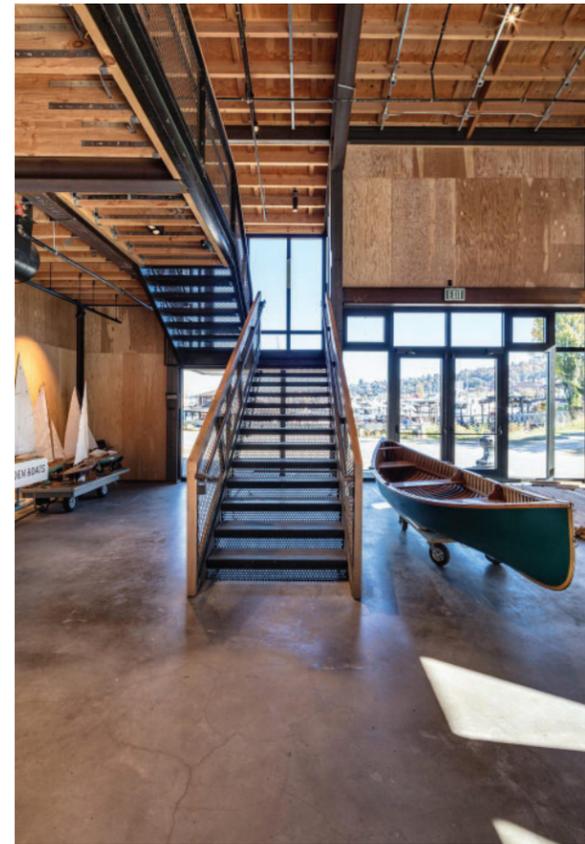


Fig. 30: Workshop Stair

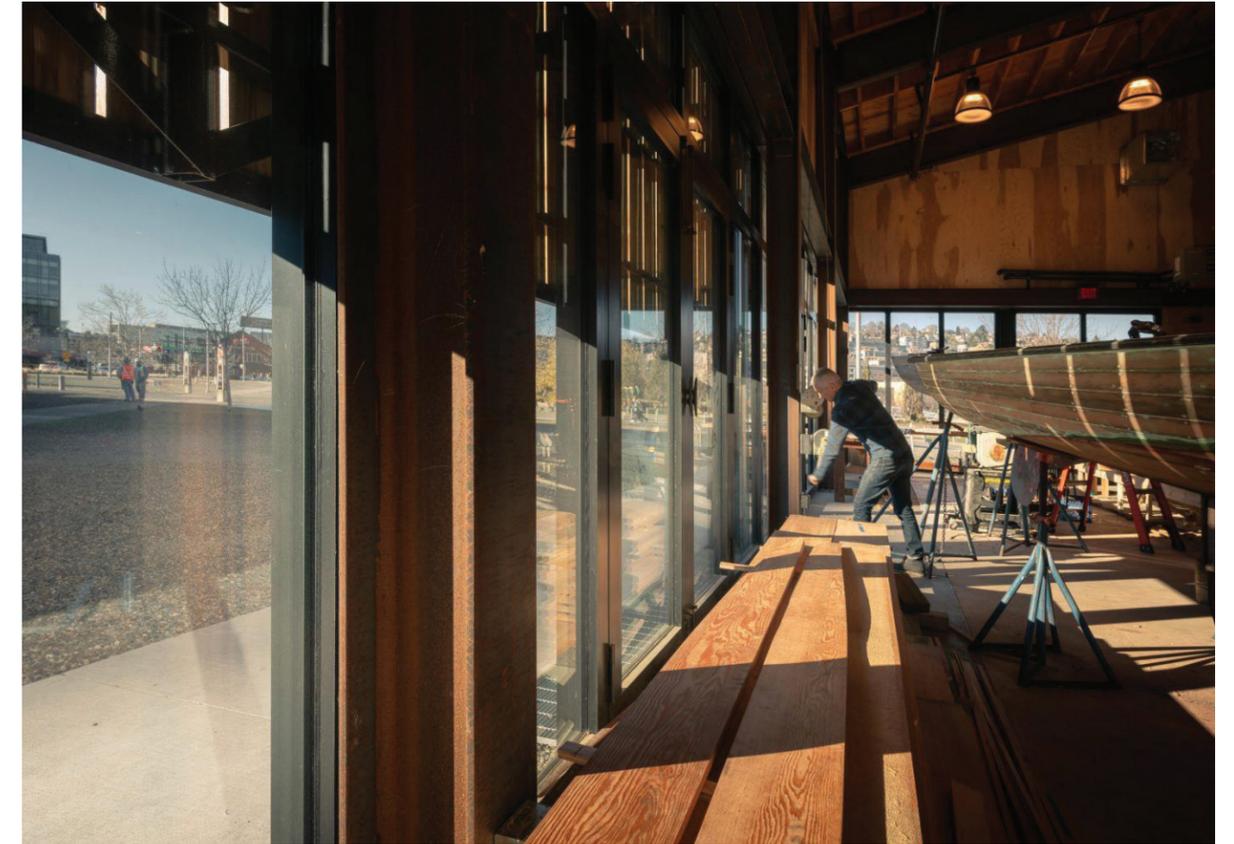


Fig. 31: Workshop Operable Doors

# BOAT LIFTS

## NO PROFILE BOAT LIFT

The NO PROFILE BOAT LIFT provides a seamless look that is unobtrusive to the river and downtown views. The lifting components are located underneath and the lift can be controlled by a remote control. It is perfect for any type of water and is sturdy to withstand harsh weather conditions, such as hurricanes.

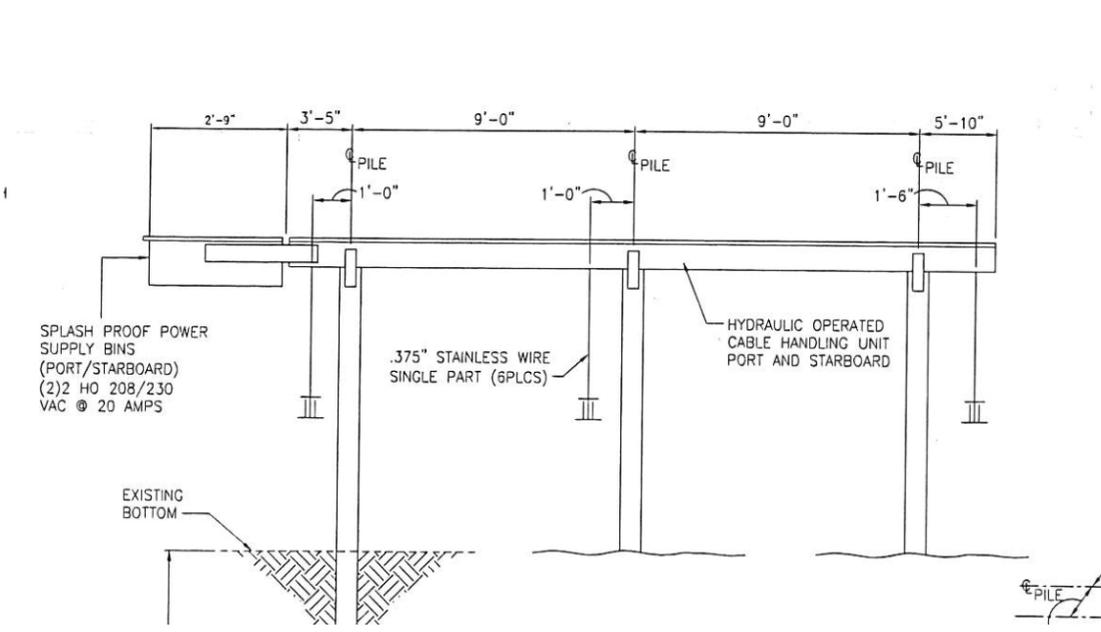


Fig. 32: Lift Section

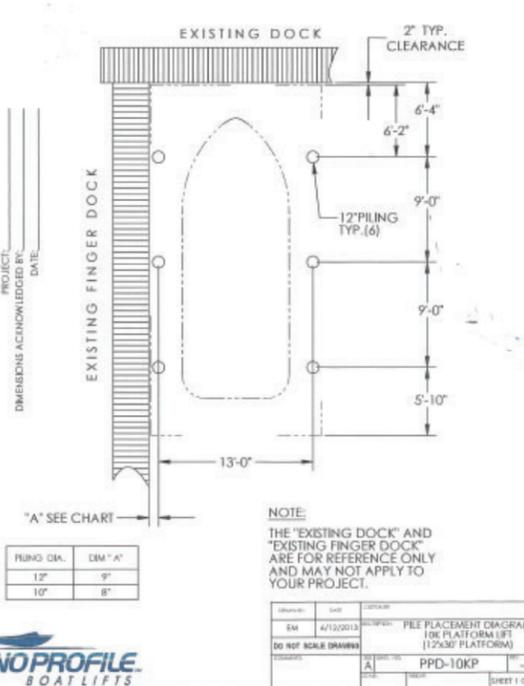


Fig. 33: Lift Plan



Fig. 34: Boat Trolley and No Profile Boat Lift



Fig. 35: Boat Lift Down

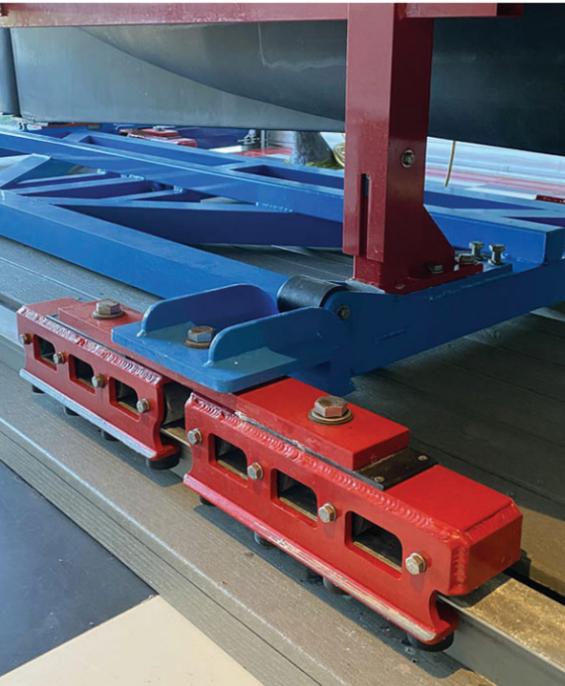


Fig. 36: Trolley System

## BOAT TROLLEY

The Boat Trolley system is a system that brings the boats from the water into the workshop without obstructing any views. It is easy for the residents and workers to easily get the boats in and out of the water without much stress on their bodies.

INTERIOR PROPOSAL



This place is warm. It's cozy and makes me feel comfortable. There's natural light in every room. My room is my personal space to reflect. It has it's own view of the river. I feel at home here. It's my refuge.

## ELEVATED PATHWAY PROPOSAL



Elevated pathways provide constant views of the Cape Fear River and downtown. I love being able to get around above the landscape. I feel on top of the world. It's lively when the weather is beautiful and it's the most serene when the river overflows onto the site.

## BOAT DESTINATION PROPOSAL

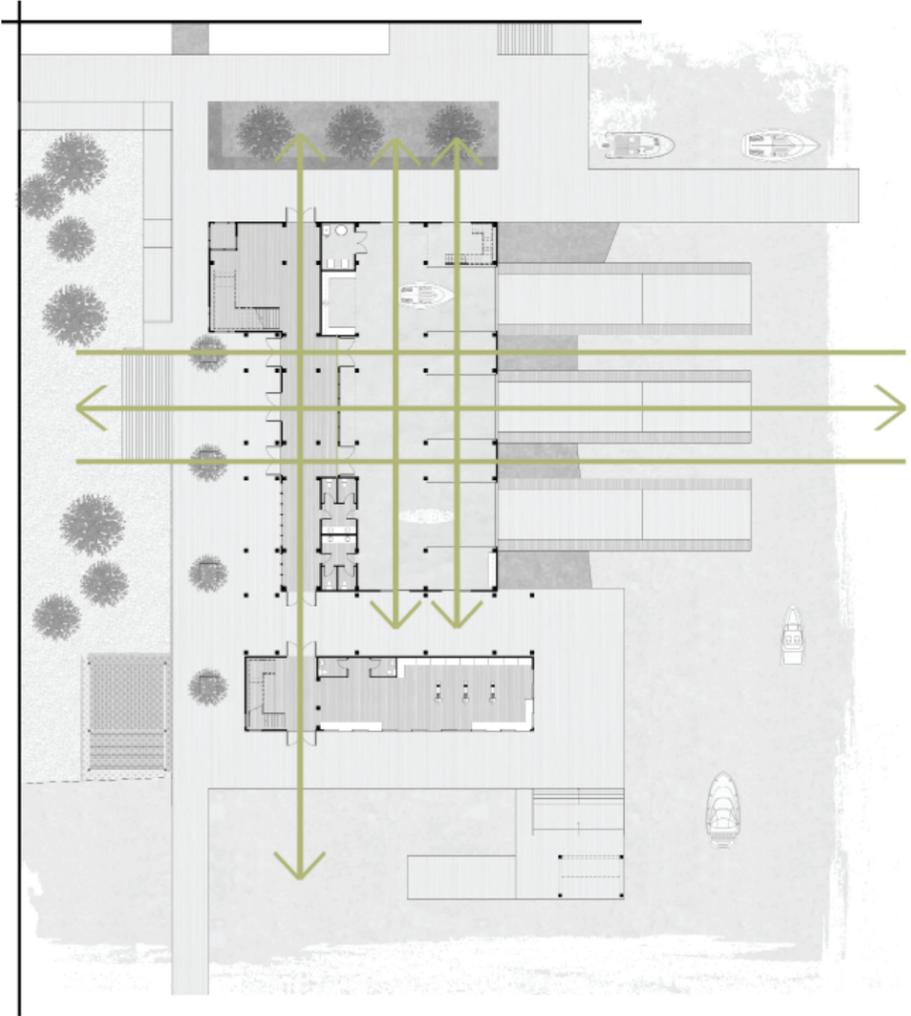


The smell of the newly constructed and restored boats gives me a sense of comfort. The wood docks, boats, buildings, and trees give the site a natural and healing energy. The strongest scents of the dogwood trees and pine trees evoke memories. My blood pressure and heart rate seem to drop.

**SITE DIAGRAM**



**BUILDING DIAGRAM**



Taking advantage of the panoramic views of downtown Wilmington and the Cape Fear River, the buildings on the site are placed and oriented in a way where each building has the best views, ventilation, and natural light. There are two different types of circulation: elevated pathways and ground level, natural pathways.

## DESIGN PROPOSAL

## TRANSITIONAL LIVING DEVELOPMENT

Transitional living programs give recovering addicts a place to live as they continue to heal and build their self-esteem. A transitional living development allows them to live and participate in the surrounding community where they learn how to handle potential triggers with confidence.

The recovering addict is the focal point of this thesis. Understanding each person and adhering to his or her needs is critical in getting back to a normal life.

Isolation is detrimental to their well-being and growth. By creating a series of pathways that are elevated, they are still able to get to each building during any weather condition, especially flooding.

Each building functions that address various needs. Whether it be social, educational, therapeutic, or residential, each building accommodates a person's needs. Separate buildings force the residents to get outside and experience their natural surroundings.

It is important to have a connection with nature. The advantages of interacting with and seeing nature are countless. Being able to feel the presence of the living world around us elevates the spirit and soothes our soul.

1. COMMUNITY CENTER
2. GARDEN STORAGE
3. PRIVATE FLEX AREA
4. RESIDENCE
5. BOATHOUSE
6. CLASSROOM/OFFICE
7. FITNESS CENTER
8. WETLANDS



## GREEN ROOF



The roof garden is an escape. We grow different plants, flowers, fruits, and vegetables. The fruits and vegetables are cooked and stored downstairs in the kitchen. They are always perfect and delicious. The refrigerator is always stocked. It encourages the residents to eat healthy.

## ELEVATED PATHWAYS



There are small spots on the site where residents meditate and engage with nature. Each spot has a place to sit and unwind. There is a place for refuge. Trees provide the necessary shade from the sun during the hot summer months. They protect each person from the elements. It brings comfort being under the tree and looking out onto the water.

## NATURAL PATHWAYS



The scents of flowers, trees, and grass smell wonderful on my daily runs. It helps to reduce my stress after a long day of work. The scents bring me happy memories. I drift to another world. The scents attract wildlife, too. Sometimes I see deer eating the plants.



# FIRST FLOOR PLAN



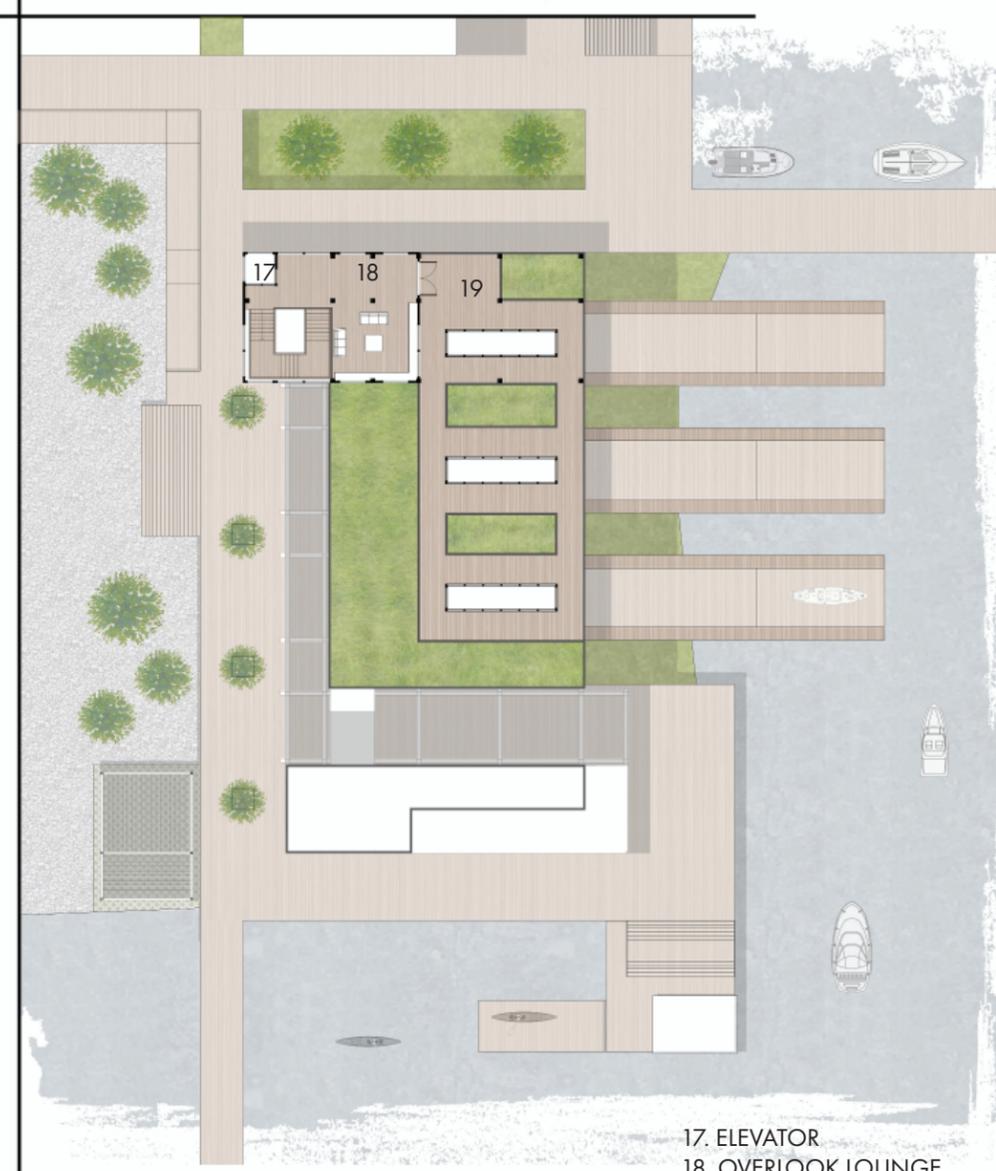
- 1. ENTRANCE
- 2. MAIN HALL
- 3. BATHROOMS
- 4. ELEVATOR
- 5. BOAT WORKSHOP
- 6. BOAT LIFT
- 7. ROWING ROOM
- 8. KAYAK RAMP
- 9. TEMPORARY PERGOLA

# SECOND FLOOR PLAN



- 10. ELEVATOR
- 11. DESIGN STUDIO
- 12. WORK SPACE
- 13. BATHROOMS
- 14. OPEN TO BELOW
- 15. KITCHEN
- 16. DECK

# THIRD FLOOR PLAN



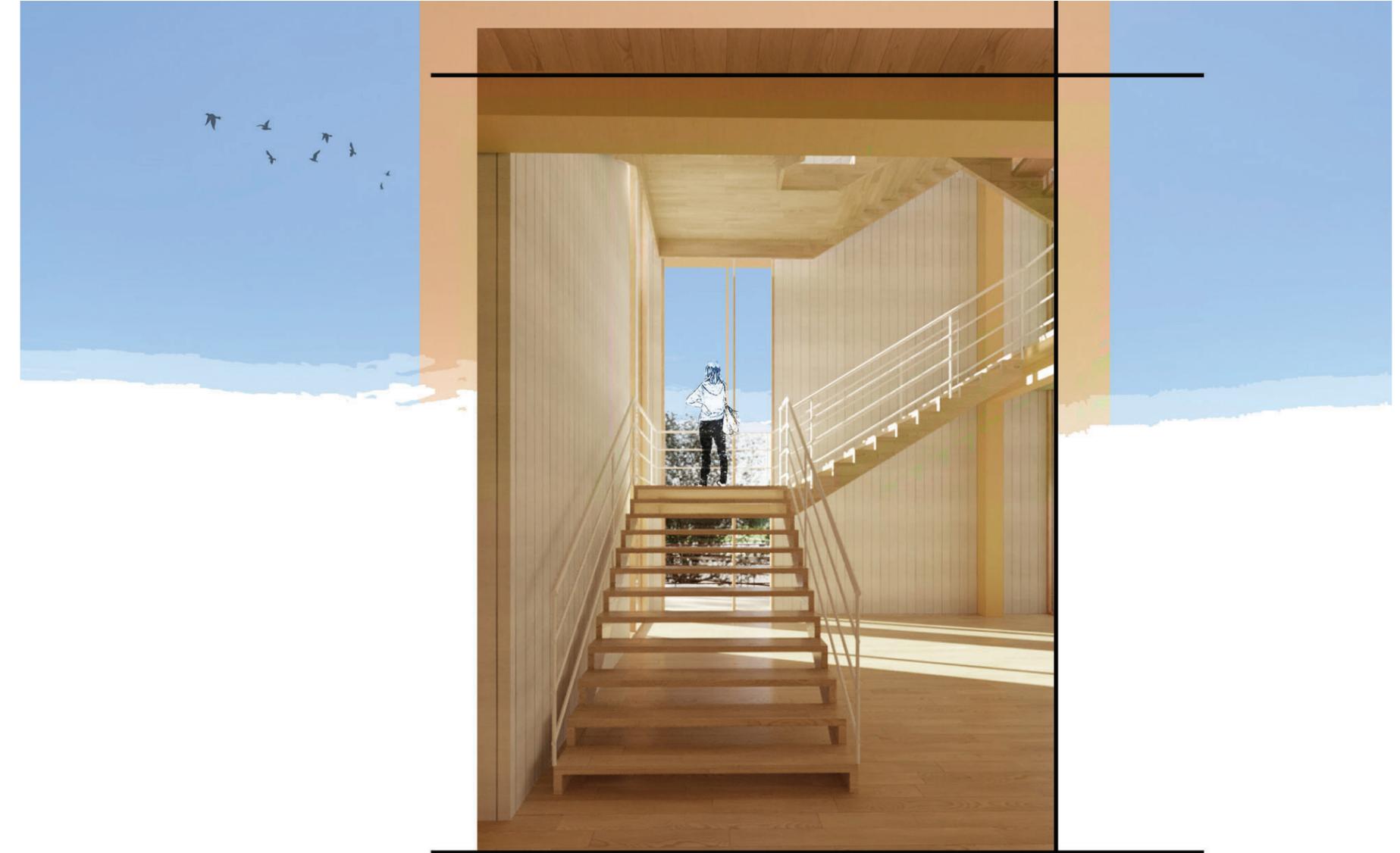
- 17. ELEVATOR
- 18. OVERLOOK LOUNGE
- 19. GREEN ROOF

## ENTRANCE



The smell of wood fills the hallways. It creates this productive and calming energy throughout the building. Opening up the doors and windows brings in the sweet scent from the dogwood trees and the minty scent from the pine trees outside. My head feels clear and at ease when I am working in the shop or studio.

## STAIR TOWER



I feel safe here. Every morning before going upstairs to the studio, I pause here. I stop and reflect. I look out the window and see residents, doctors, and visitors enjoying the beautiful day. So many trees have been planted. They are visible from every space. I am lucky to be able to see the beauty of nature all around.

## WORKSHOP



I have been restoring boats for two months now. I come here three days a week and whenever I feel frustrated. The natural warmth of the wooden boats and building seem to reduce my stress. It has become my therapy. My fears seem to disappear.

## WORKSHOP



There are noises coming from every direction. One person is cutting wood, another person is chatting with one of our teachers, and another person turned on the dust collector. This space feels alive. When we open up the garage doors, we hear the seagulls squawking to each other at the end of the boat lift. They squawk all day long. It's like a song. Their sound is a part of our everyday life.

## ROWING ROOM



I come here every morning before I row in the river. It is a routine. I love sitting on the rower and looking out at the river's inlet, while also being able to see downtown and any people passing by. Looking outside is peaceful. The water looks so calm and the birds are flying over to get any fish they can find for breakfast.

## DESIGN STUDIO



The studio is a collaborative space. We sketch, model, and research projects that help us to understand the complexity of boat building. We work every muscle in our body. Our brain and body are challenged. Some of our ideas come from touching the wood. It helps us to understand the material better. We test the comfort. We interact with it and learn from it. The contact with the wood is physiologically relaxing.

ELEVATIONS



LAND FRONT ELEVATION



SOUTH ELEVATION

ELEVATIONS

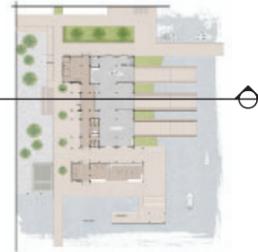


WATER FRONT ELEVATION



NORTH ELEVATION

BUILDING SECTIONS



## SITE MATERIALITY



GREEN GIANT THUJA [EVERGREEN]



OAK TREES



SPIKE / SALT GRASS



RIVER BIRCH TREES



DOGWOOD TREES



LONG LEAF PINE TREES

## BUILDING MATERIALITY



SHADING DIAGRAMS



MORNING



SUMMER AFTERNOON



WINTER AFTERNOON



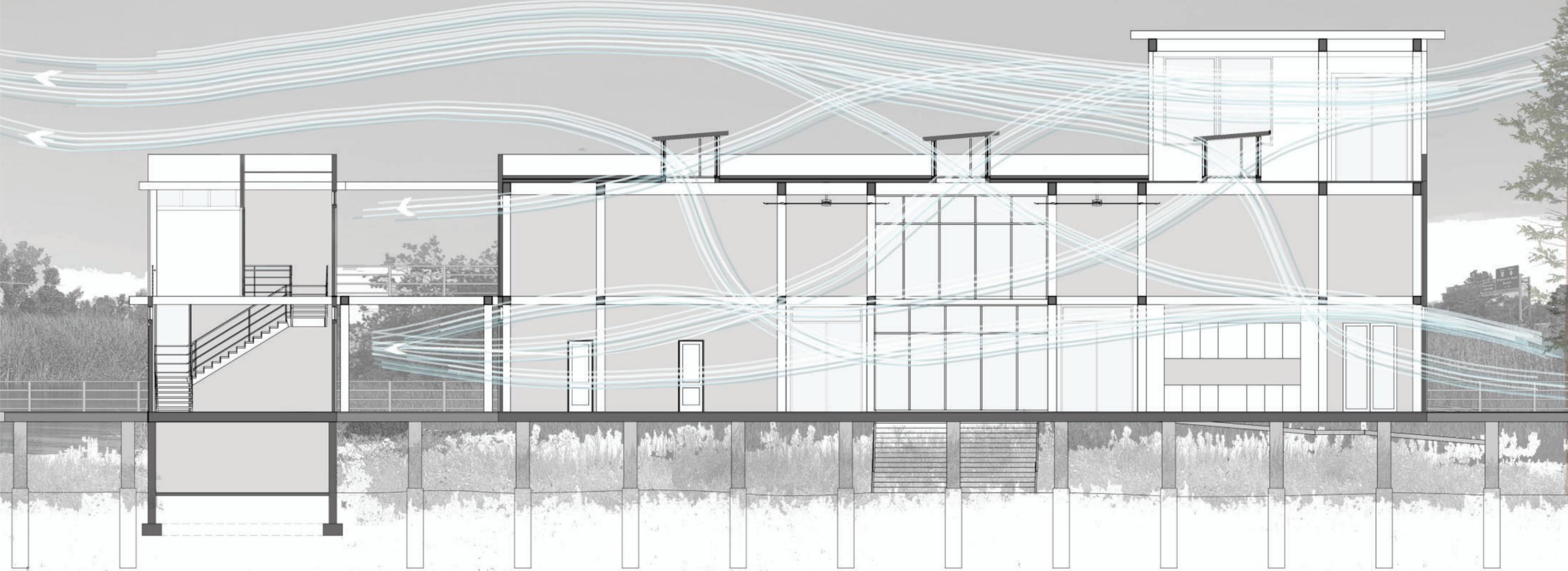
NIGHT

# VENTILATION DIAGRAM

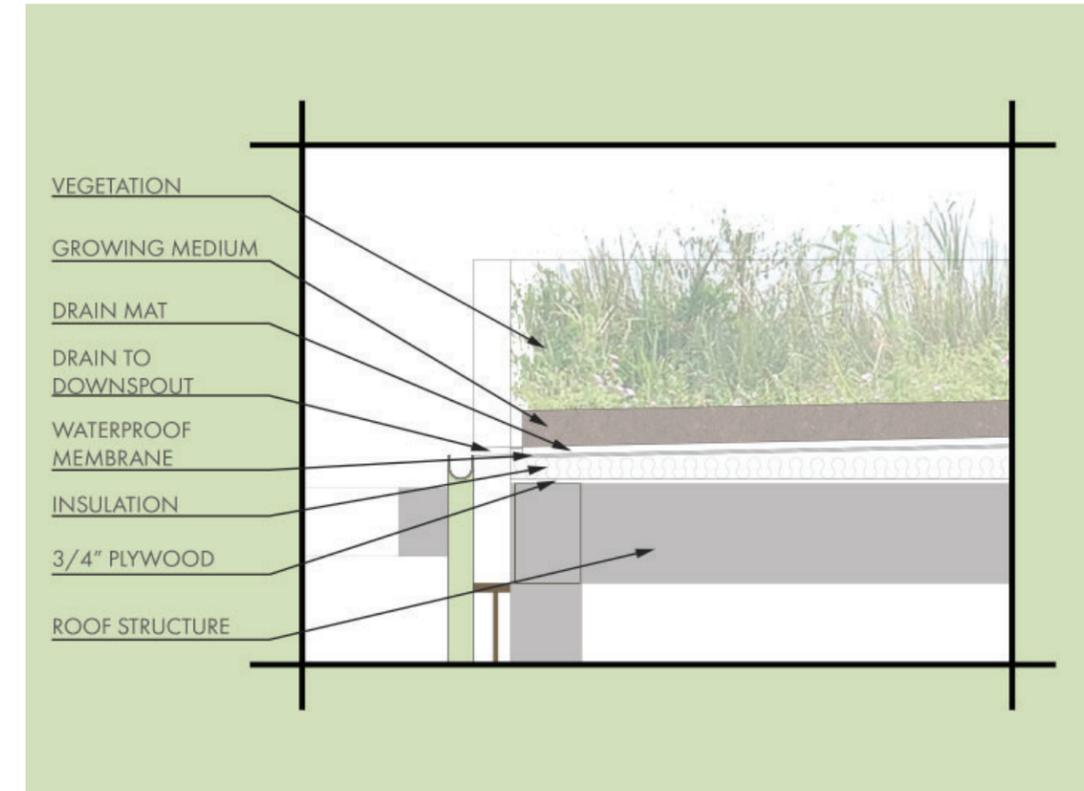
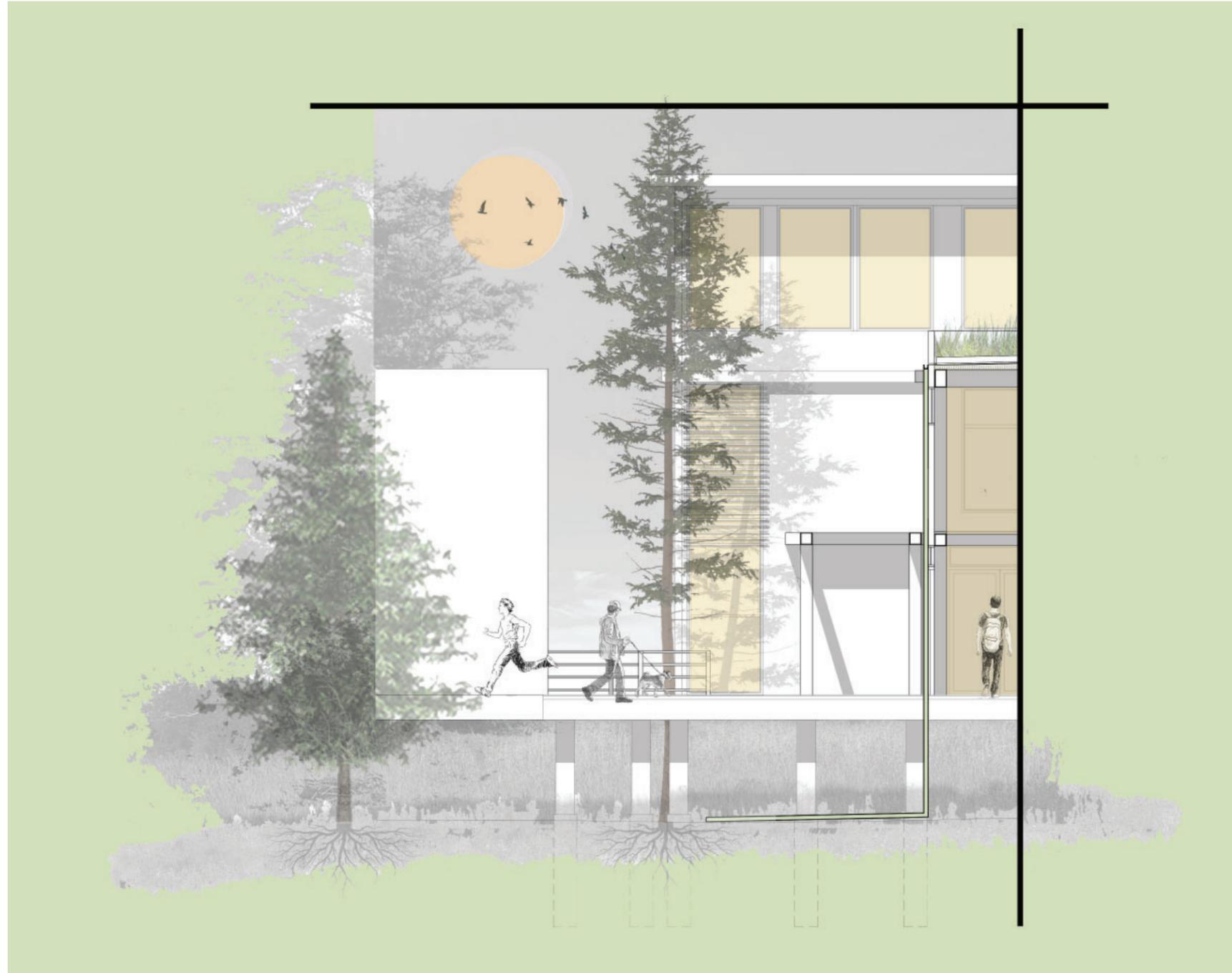
Operable windows and doors on all four sides of the building can be opened during any season.

The winter and fall wind comes from the north. This will be an ideal time to open the windows and doors when the humidity and temperatures are not as high as in the summer.

Large, industrial fans on the ceiling in the workshop will help circulate the air when it is too hot and humid to open up all the doors and windows.



Trees surrounding the building from all four directions will send the natural scents into the interior. Dogwood trees and pine trees are native trees in North Carolina that give off pleasant and therapeutic aromas. They have healing properties that can help increase productivity and concentration while working on a project.



### GREEN ROOF

The green roof will be used daily for growing fruits and vegetables. It encourages the residents and workers to eat healthy. It is easily accessible since it is a floor above the kitchen. Since it is elevated, the crops and flowers will not be damaged from any flooding that may happen when a storm rolls through. The green roof improves the water quality. It absorbs the water preventing a high volume of runoff. The rainwater that does not get absorbed will go into the gutter and downspout that helps to water the vegetation and trees below.

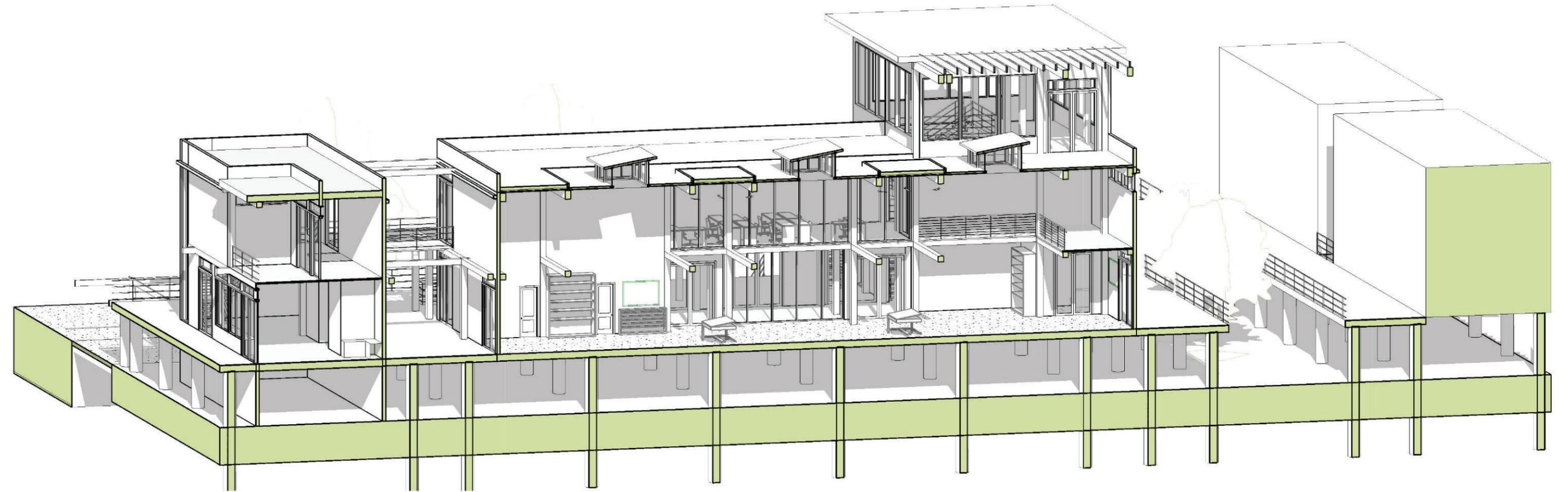
## STRUCTURE SYSTEM

### CROSS-LAMINATED TIMBER

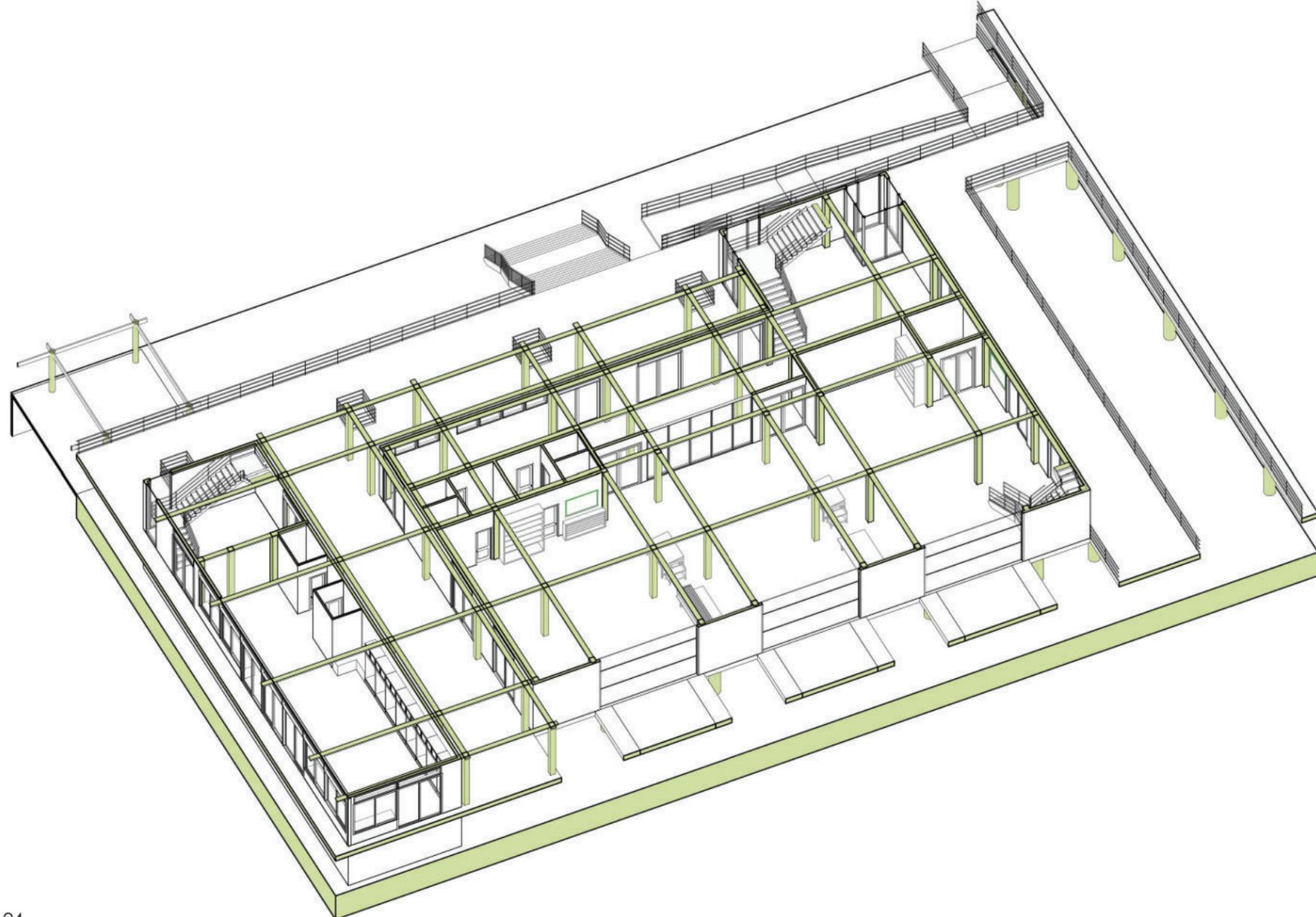
CLT is a sustainable, prefabricated engineered wood. It can provide noise control within the building, which helps with the machine noise coming from the workshop. It also acts as a thermal insulator and improves the indoor air quality making it a comfortable and healthy environment to work and relax.

### PIER BEAM SYSTEM

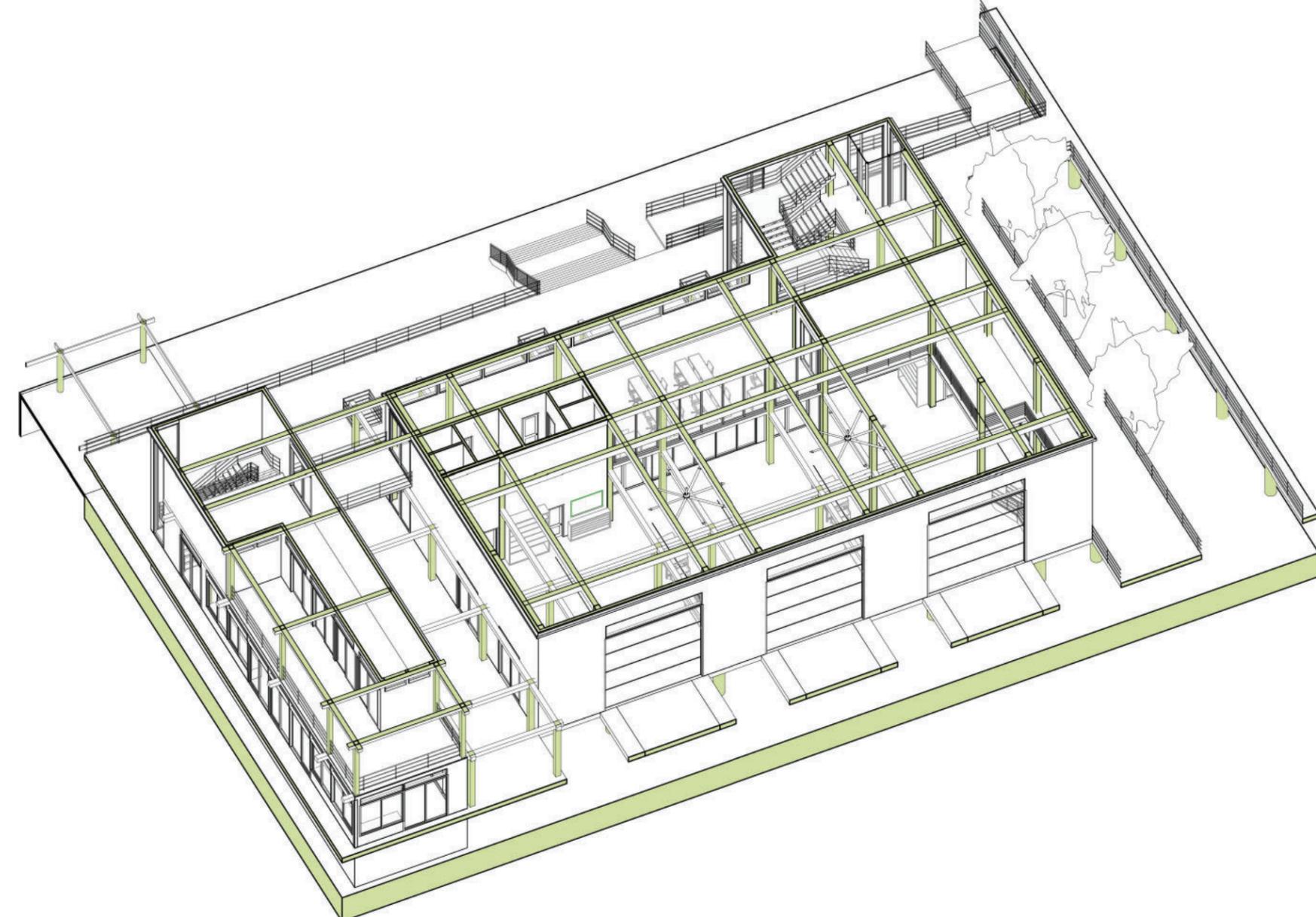
The Pier and Beam System is well-suited to environments on the coast and flooding regions. They protect against floods and maximize the surrounding views. It provides ventilation underneath the building and minimizes the building ecological mark.



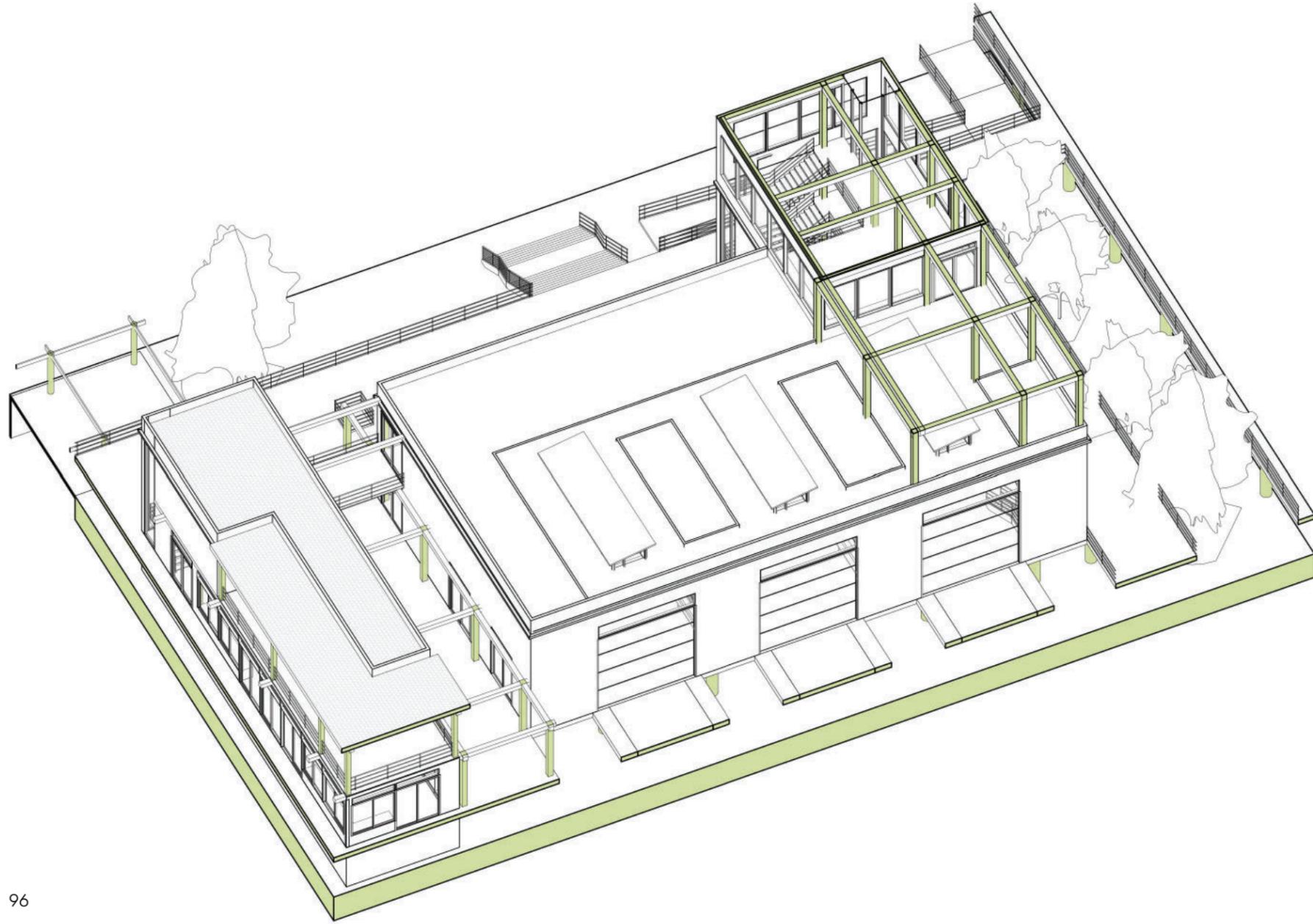
FIRST FLOOR FRAMING



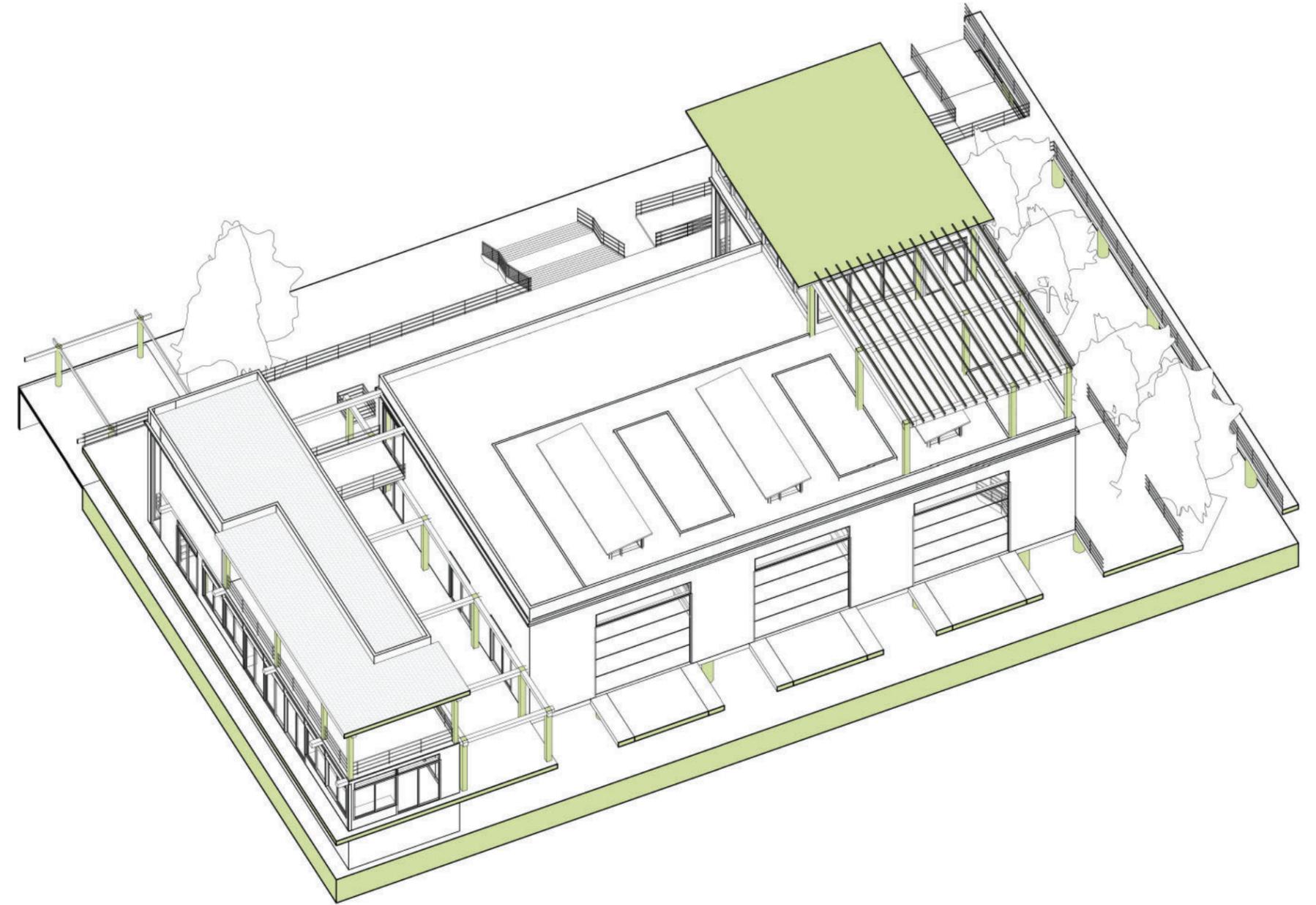
SECOND FLOOR FRAMING



### THIRD FLOOR FRAMING



### PERGOLA ROOF FRAMING



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