

ARCHITECTURAL DESIGN PORTFOLIO

By Ryan Angello

SELECTED WORKS

01 THE WATERSHED SCHOOL

02 DIVUM DENVER

03 RBN ST

04 SKYLINE RESIDENCE

05 CENTRAL PARK PAVILLION

06 CERRITOS SURF VILLA

07 THE ZACHARY HOUSE

WELCOME

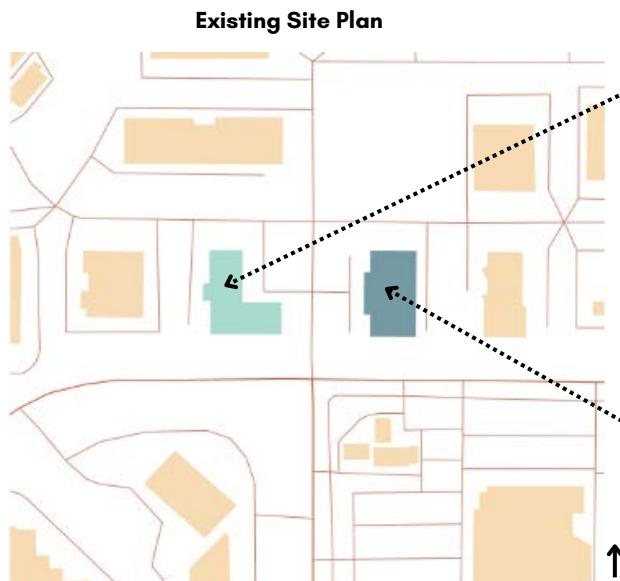
"Architecture: Where Imagination meets the built world, and visions take reality"

I am a graduate of the Environmental Design Program from the University of Colorado Boulder. My work reflects my appreciation of the diverse scales and dimensions as well as the ability to merge creativity with functionality. I have developed a strong passion for architectural design, I completed five studios in the fundamentals of architecture, as well as courses in software technology, materials & methods, and rigorous math and science courses. I have also gained valuable experience as an intern where I assisted in drafting construction documents, creating 3D models and renderings, and communicating with clients. I am proficient in numerous design software, such as AutoCAD, Revit, Rhino, Enscape, Lumion, Sketchup, and Adobe Creative Suite platforms. I am looking for opportunities to apply my skills and knowledge in architectural design and to contribute to innovative and sustainable projects. I am eager to connect with other design enthusiasts and potential employers, so feel free to reach out to me!

THE WATERSHED SCHOOL

NIWOT, COLORADO

The new design concept for the new 5405 Spine Road school revolves around fostering a dynamic learning environment that seamlessly integrates technology, sustainability, and flexibility. The design aims to inspire collaboration, creativity, and adaptability, creating spaces that cater to diverse educational needs while promoting a sense of community and well-being through a resilient design framework.



5405 Spine Road

Consists of my personal design proposal for the newly expanded Watershed School, an adaptive reuse project of an existing single floor office building. Following approval, the Watershed school bought this secondary property, directly across from the second location of the Watershed School that is soon to be acquired. 5405 is meant to bring the traditional aspect of schooling to the very unique mission that Watershed holds.

5400 Spine Road

Consists of my teams personal design-build project that was taken and approved by current students & higher education members. 5400 Spine Road is a much smaller intimate location than 5405 Spine Road. The 5400 Spine Road location seeks to optimize this smaller space with individual and communal research spaces, hands on learning projects, and community inspired ideas for students to insure student growth.

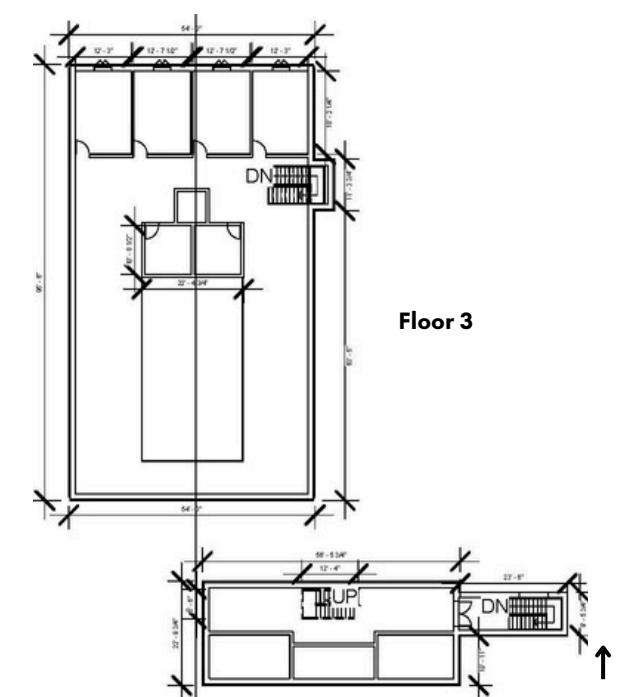
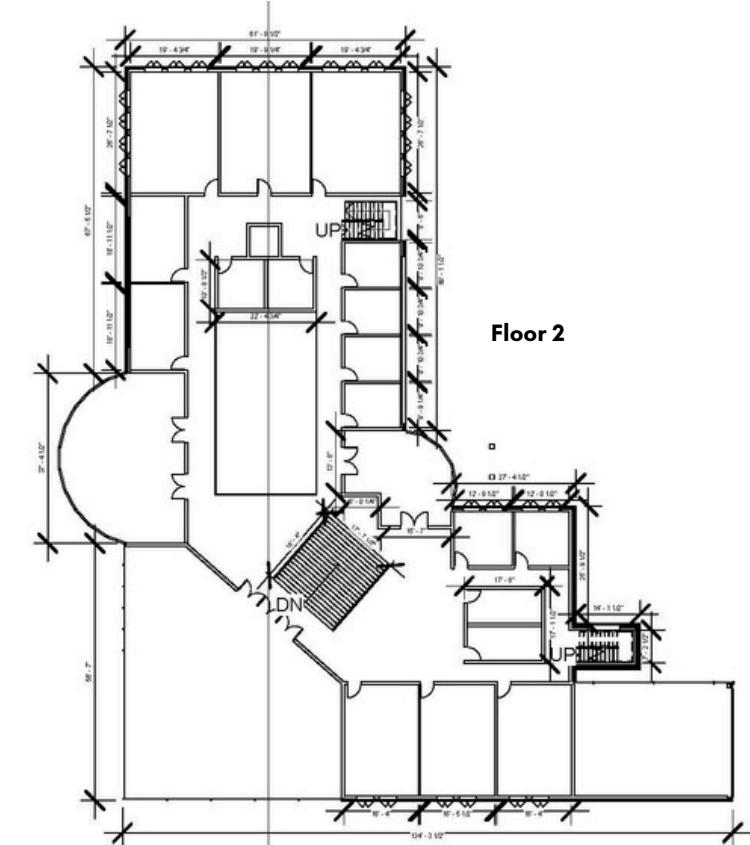
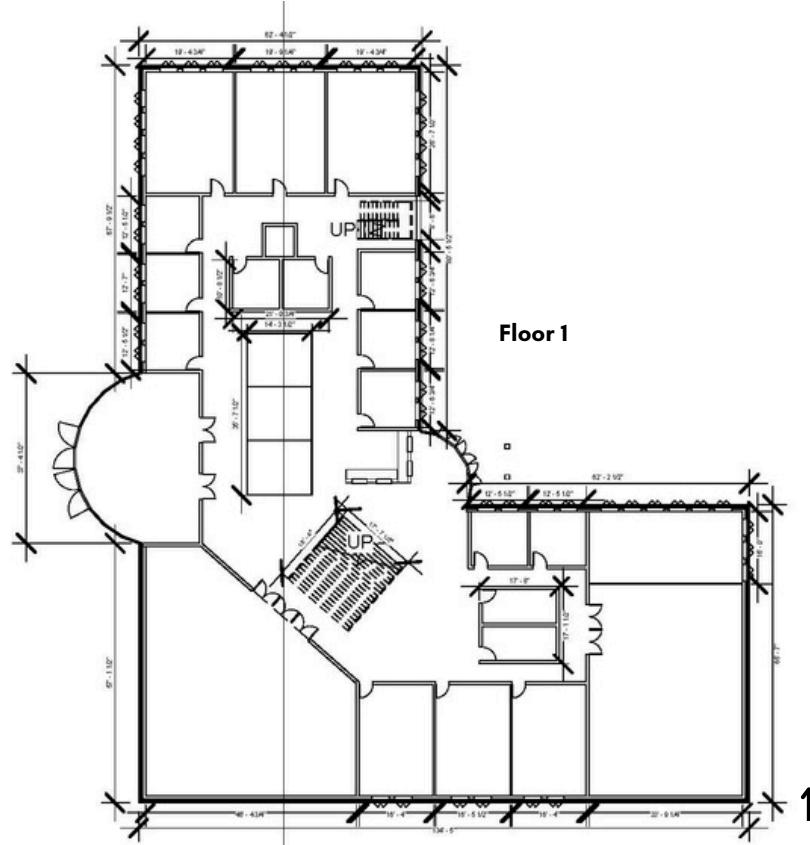
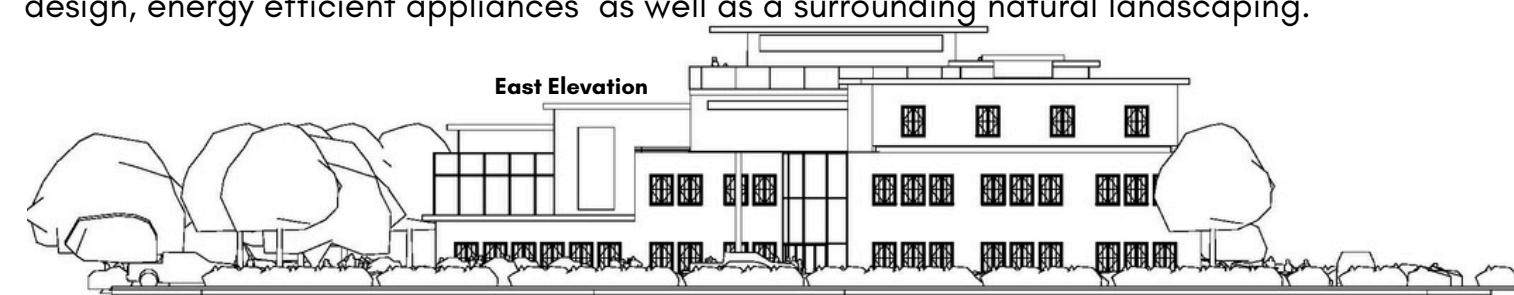


ARCHITECTURAL DESIGN PORTFOLIO

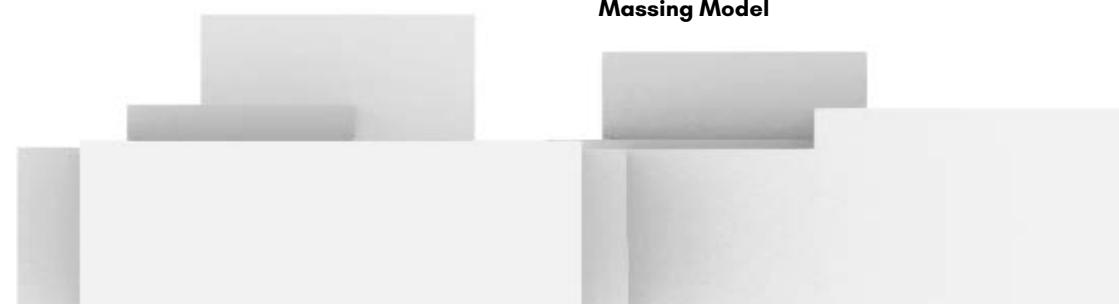
5405 SPINE ROAD

NIWOT, COLORADO

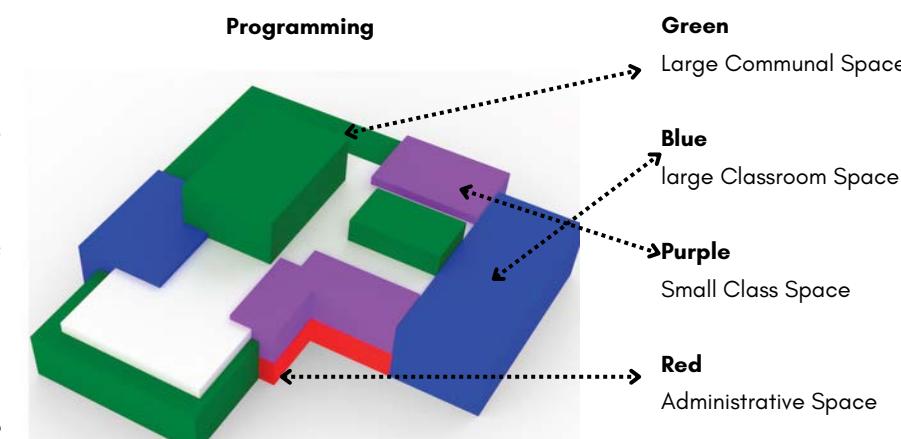
I worked with many different form studies, pushing and pulling the exterior for my building to gain a certain level of hierarchy. Watershed has lacked a traditional education space for its students and faculty. Their existing school in downtown Boulder is as chaotic as they come. While visiting Watershed, I was able to observe student & faculty daily routines, in efforts to design a more accommodable and modern school. This project was designed with a clear and programmatic organization system, creating a division between independent and communal spaces. The schools design reflects a harmonious blend of traditional and modern architectural styles, by incorporating large windows for natural lighting and spacious interiors conducive to learning and collaboration. The structure prides itself on passive design, energy efficient appliances as well as a surrounding natural landscaping.



Massing Model



Programming



Green

Large Communal Space

Blue

Large Classroom Space

Purple

Small Class Space

Red

Administrative Space

Mission Statement

The school will serve as a hub for community engagement and outreach, hosting events, workshops, and educational programs focused on sustainability and environmental conservation. By involving students, parents, and community members in sustainability initiatives, the school would foster a sense of collective responsibility and empowerment to effect positive change.



ARCHITECTURAL DESIGN PORTFOLIO

5400 SPINE ROAD

NIWOT, COLORADO

When touring Watershed's old and new facilities, it was clear that this school is not a typical middle and high school. From the art on the walls to the camping tents hung up to dry from their last backpacking trip, these are some of the pieces of the school that we saw perfectly embodied Watershed's mission to be outside and to encourage their students to apply their learning and education. The new space at 5400 Spine Road, Gunbarrel has great potential for this exploration and creation, it just needs a few finishing touches to get there. A few of the biggest challenges I noticed were the problem of noise, the lack of nature, and the lack of sense of place and space. These are all problems that can be solved with these design interventions.

Sound Mitigation

5400 Spine Road has so much potential, but there are a few things that need to happen to help the success of students' learning in the new space. The 10 or so feet of open space above the existing walls will allow for sound to travel, so we need to include some sound mitigation solutions in order to keep the learning environment as distraction free as possible.

Bringing Nature Inside

Originally, we wanted to do this by including a dendriform inspired wall installation, storage, and seating area. As this idea progressed, we decided that the most disireable part of the tree was the feeling of being under a canopy with leaves above you, so we translated these leaves as circles hanging from the ceiling. This not only gives the feeling of a tree, but also of water, with the light reflecting off of the panels.

Wayfinding and Usage

Watershed has a large sense of place in the community. Although they are moving, this sense of place should not be lost, nor should their Boulder foundations. One of the most iconic pieces of Boulder's nature is the Boulder Creek, so we would love to have this translate into the wayfinding and signage of the new space, letting the flow of the river take students to their respective classes.

Paneling System

Made from three different materials, these sound absorbant panels are hung throughout the building. Hung on a steel frame from the ceiling, they have an abstract shape of flowing water on them to play the feel of the Boulder Creek, bringing the outside in. The shadows cast through these pieces from the skylight that add a feeling of being under a canopy.

Furniture Grade Plywood



Tectum Panels



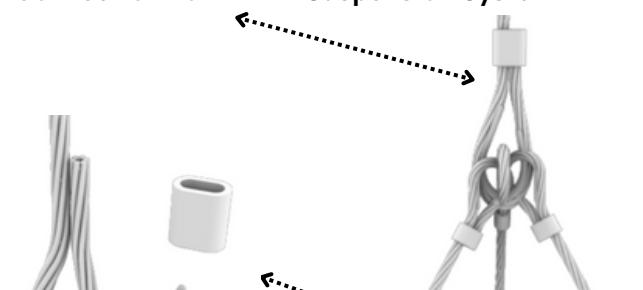
Colored Acrylic



Etched River Pattern



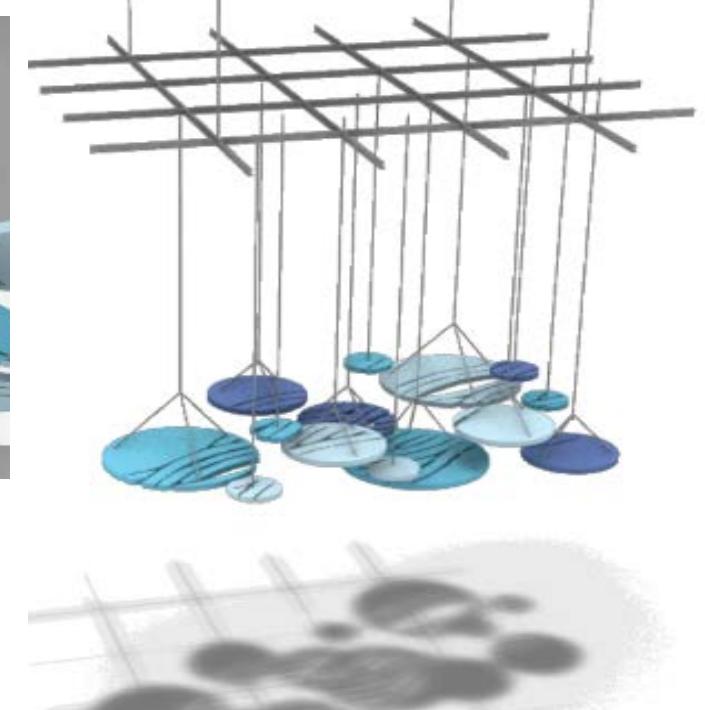
Connection Point with Suspension System



Thimble Cable and Ferrule Pieces



Myself During Construction



DIVUM DENVER

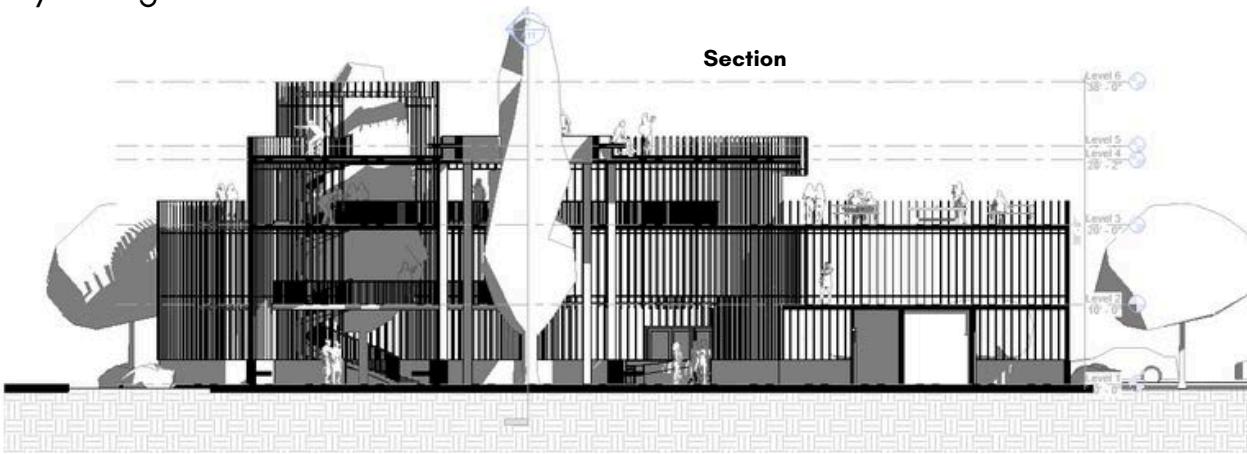
DENVER, COLORADO

The Divum Denver located in the RiNo art district is a conceptual project seeking to redefine the museum experience by integrating art, nature, and architecture into a seamless open-air environment. The RiNo (River North) district is a vibrant and rapidly developing neighborhood known for its artistic culture and blend of old and new architecture. Divum is Latin word for "open air" This innovative design initiative will transform an urban park into a cultural oasis where visitors can engage with both the natural world and artistic expressions in a dynamic, interactive setting. The project aims to create a museum without walls, encouraging exploration, discovery, and personal interpretation.

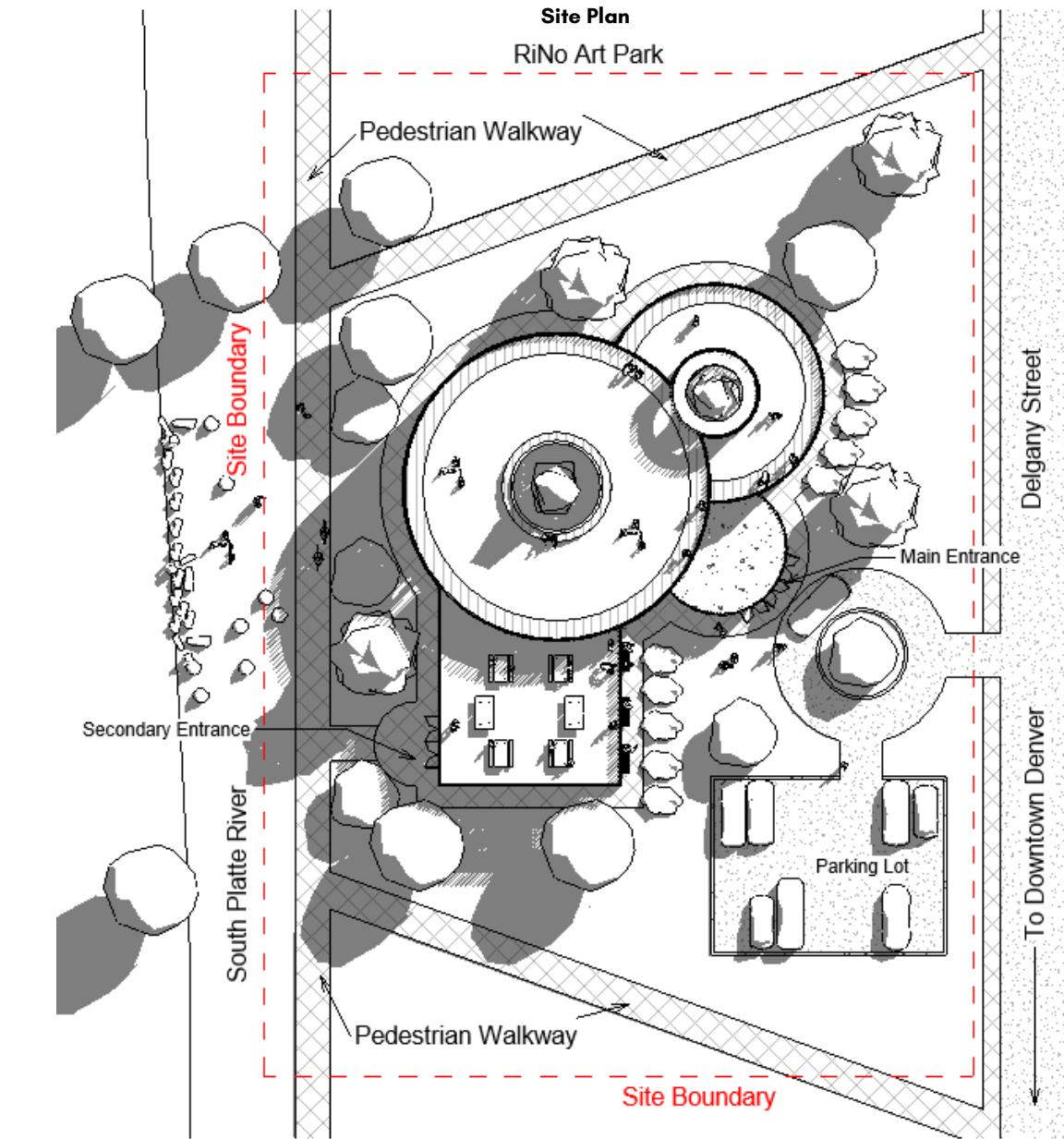
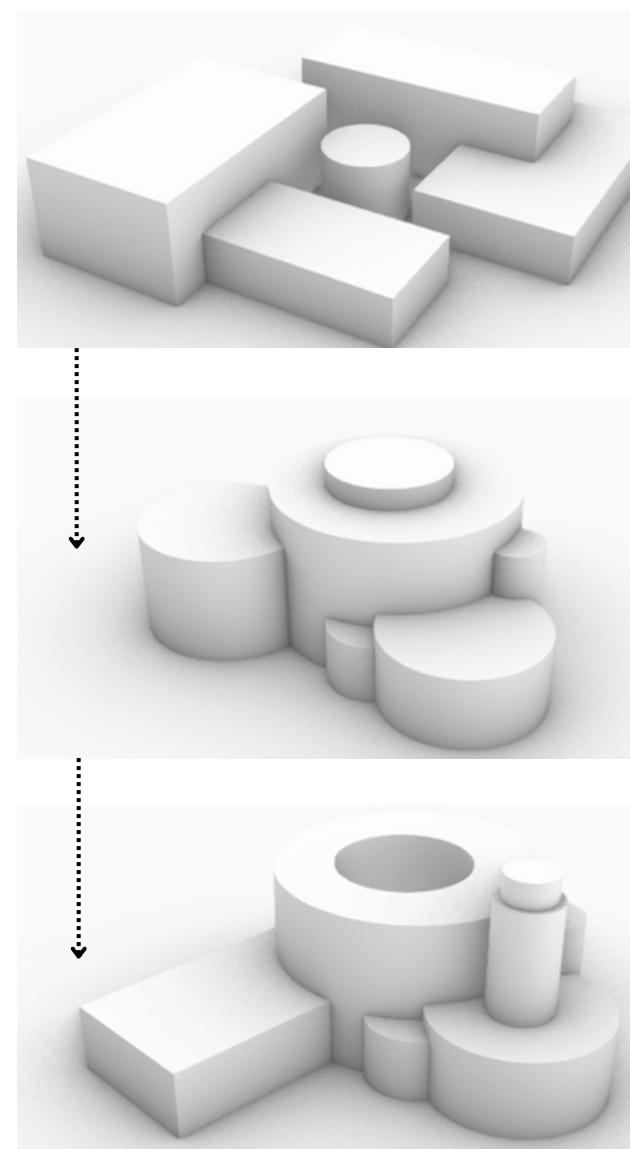


DIVUM DENVER**DENVER, COLORADO**

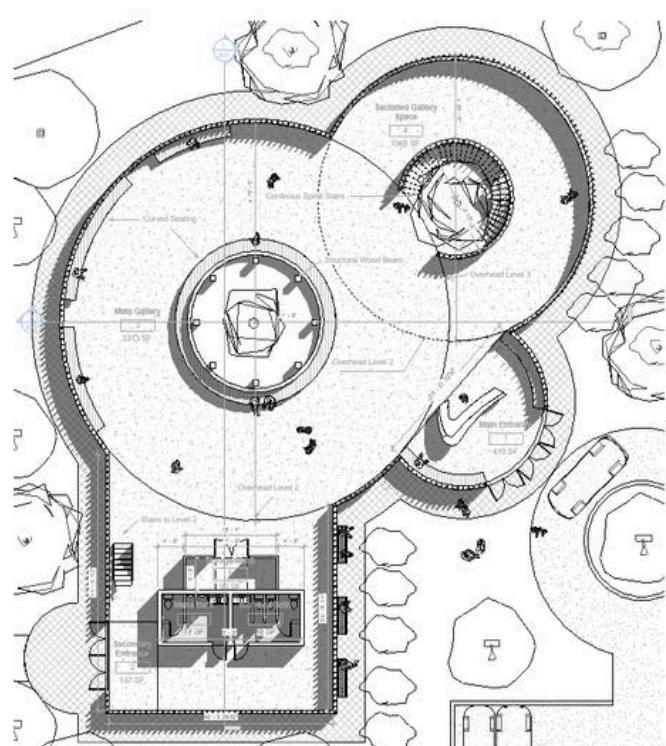
The idea for the Divum Denver emerged from a desire to foster a deeper connection between art and the community in an inclusive and environmentally sustainable manner. Inspired by the global shift towards green spaces within urban settings, the museum's concept revolves around creating a space where art lives within and alongside nature, rather than being confined indoors. The museum is designed with a wooden veneer wall that is precisely spaced around the entirety of the structure. The wooden veneer wall acts as "natural art" when casted upon by shadows. The addition of the spiral staircasing allows continuous wayfinding from floor to floor.



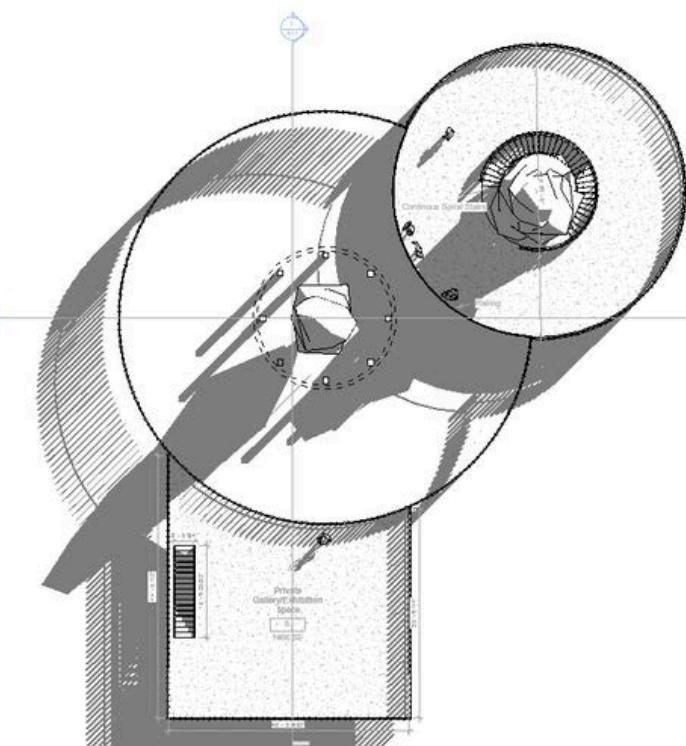
Form Study



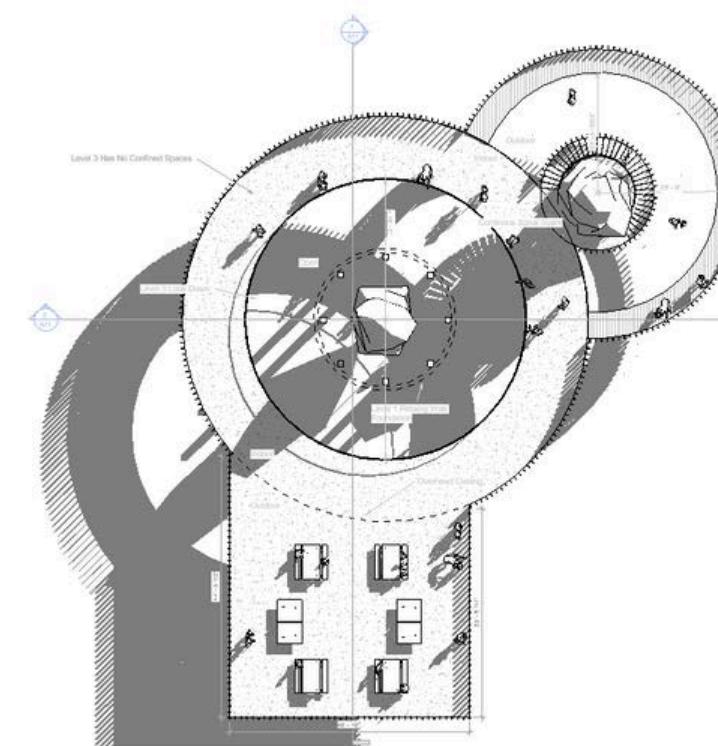
Floor 1



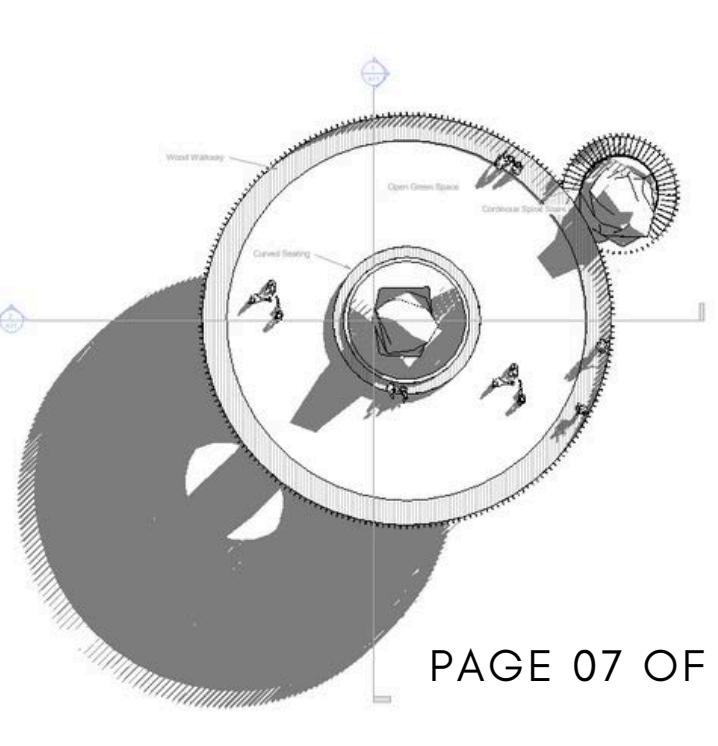
Floor 2



Floor 3



Floor 4



RBN STREET

LONGMONT, COLORADO

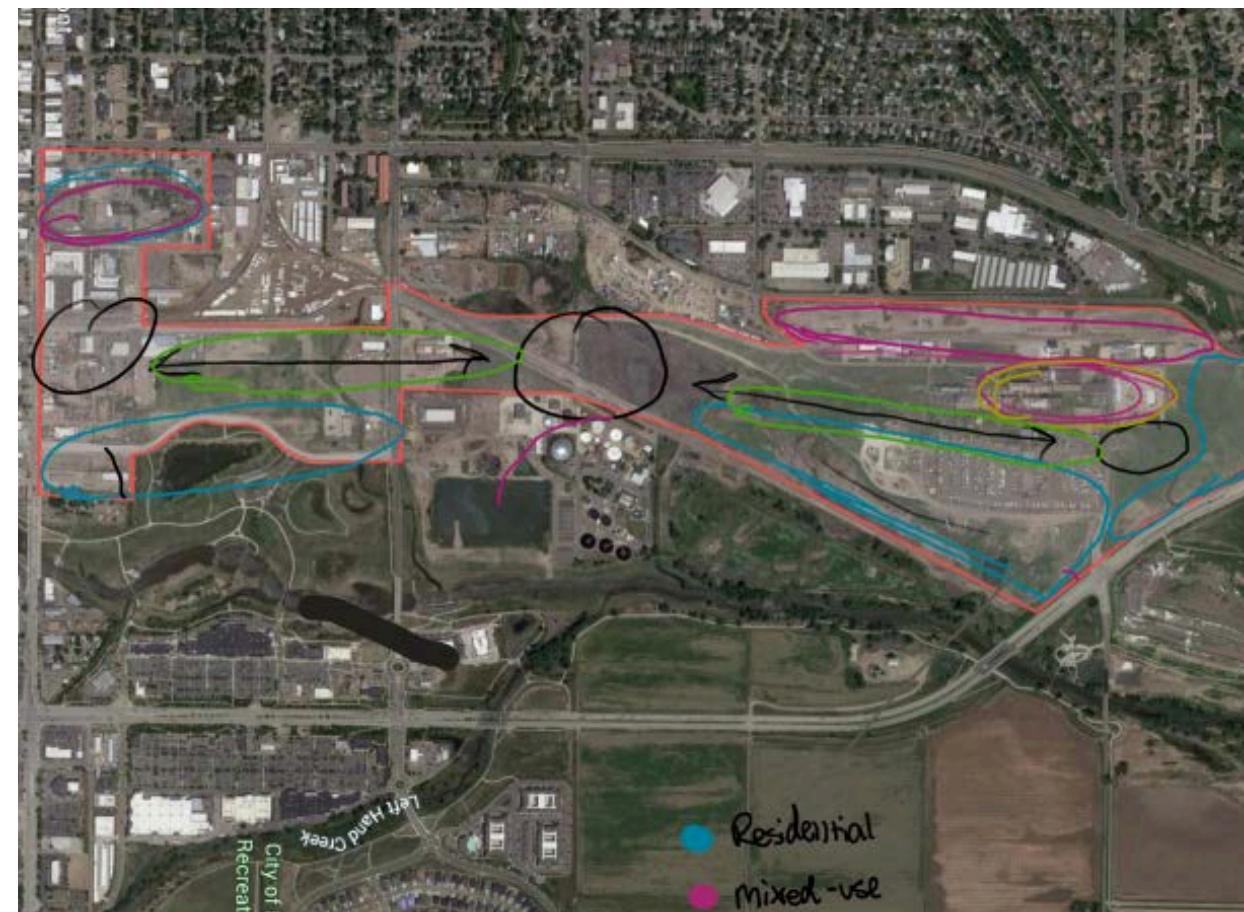


Project Overview

The Longmont Sugar and Steam Mill Renovation is a significant historical restoration project aimed at preserving and reviving an iconic landmark in the city of Longmont. The mill, which holds great historical and cultural value, has fallen into disrepair over the years. To ensure its preservation and celebrate its heritage, a comprehensive renovation plan has been devised to transform the mill into a vibrant and functional space for the community and visitors alike.

The Site

The Longmont Sugar and Steam mill is situated in Boulder County, Colorado. The mill itself is located in an area that once thrived on agricultural farming and sugar beet production. The region is characterized by a flat to gently rolling landscape, which is ideal for agriculture. The St. Vrain Creek runs nearby, providing a vital water source for irrigation. The site is accessible by several major roads and highways, making it well-connected to nearby towns and cities. This accessibility was important for labor and transportation of goods. The mill was strategically located near the railroad lines, which were essential for transporting goods. Over the years, Longmont has grown from a small agricultural community into a more urbanized area. This growth has brought commercial developments, schools, and other amenities to the region. As Longmont continues to grow, urban development has encroached upon the agricultural lands. Balancing development with preservation remains a challenge for the community.



Solution

In order to properly address the needs of the Sugar Mill and STEAM, this proposal combines 3 projects across the site to create a cohesive plan. The 4 projects detailed below are Site Connectivity and Circulation, Mixed Use Development and a renovation of the Sugar and Steam Mill. All working together across the site to create activation and engagement near downtown Longmont.

Plan

- Complete Design Process
- Gain & Ensure Public Approval
- Move to Pre-Construction once Approval is Met
- Clear Site
- Begin Construction process

Risks

The size of the site poses a threat, as well as complexities around land ownership. Stormwater management and grading of the site are also both very important, complicated factors. Zoning and local building codes will have to be met.

Requests

Initial costs of \$3.42 million dollars and any staff hourly work to finalize the design and begin pre-construction. Pending city approval construction costs will be approximately \$40.5 million dollars with construction beginning on July 27th, 2023.

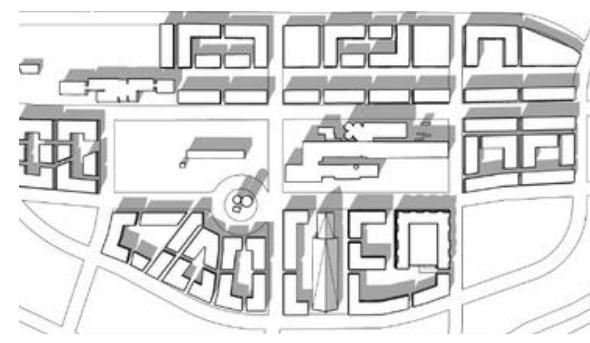
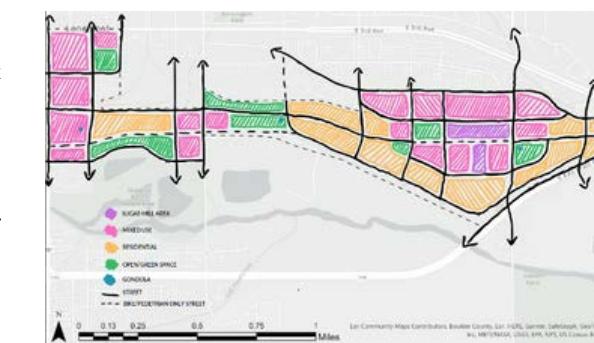
01 Mixed Use Development

Site Activation

- Implement Mixed Use Offices, Apartments and live work buildings
- Keep residents on site and attract outside visitors.

Connection Downtown

- Provides a connection to downtown, providing a base user group and further activating downtown.



02 Connectivity and Circulation

Connect Existing Streets

- Engage downtown Longmont
- Provide a framework for intra-site connections

Ensure Safe Pedestrian Passage Experience

- Buffered sidewalks, pedestrian crossing islands, dedicated bikeways, streetlights, etc.

Provide Diverse Transportation Options

- Discourage single occupant vehicles by providing alternate transit options.



03 Sugar Mill Renovation

Preserve

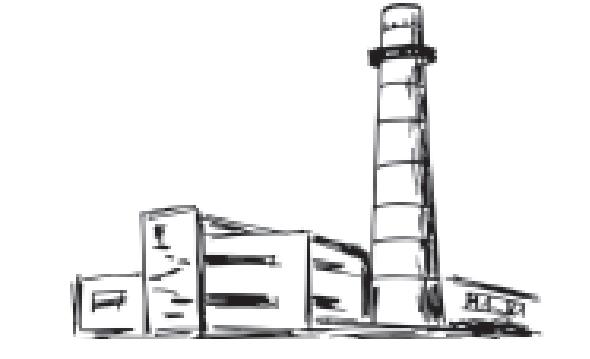
- Strong historical presence that is special to the city
- Exterior structure remains intact

Repurpose

- Complete interior remodel
- Modern eatery, engaging brewery & taproom, vibrant social hub

Engage

- Considering neighborhood wants and needs, employment opportunities
- Welcoming atmosphere for locals and travelers



ARCHITECTURAL DESIGN PORTFOLIO

RBN STREET

LONGMONT, COLORADO

01 Mixed Use Development

To promote a diverse mix of activity-generating uses in centers and corridors. Prioritize employment uses within Mixed-Use Employment areas. New housing complex's for influx of activity.



Being one of the larger sites I have worked with I have a full plan providing the Longmont Sugar and Steam mill with mixed use and residential development, as well as a well devised and performed method of connectivity and circulation. Ranging from different building typologies and various mixed uses areas sprawled around to engage home and business owners with the site. Vehicles and pedestrians are ensured safety with our street layout accommodating all methods of transportation. Lastly this project looks to repurpose the once large industrial sugar mill with a modern, casual and vibrant eatery and social hub for people of the metropolitan area, as well as to preserve the infrastructure with a local brewery surrounded by community engagement.

02 Connectivity and Circulation

To provide effective multimodal connections within and between existing and developing neighborhoods and mixed-use centers, parks, city facilities and schools. Streets accompany a variety of target users



03 Sugar Mill Renovation

To revitalize and repurpose the sugar mill. Preserve the initial infrastructure for historical reference. Driven by engagement and opportunity with community and surrounding members.



ARCHITECTURAL DESIGN PORTFOLIO

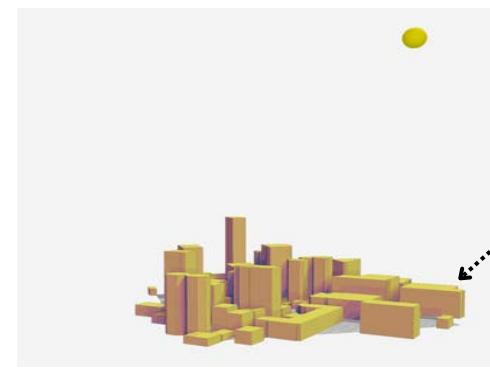
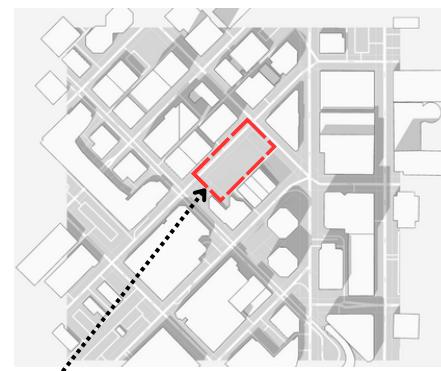
SKYLINE RESIDENCE

DENVER, COLORADO

The Skyline Residence is an adaptive reuse research project that plans to transform the Denver city skyline. Republic Plaza, an icon of downtown Denver, is Colorado's tallest building to date. Constructed in 1984, the 1,850,000 square foot building rises 56 stories and offers some of the best panoramic views of the Colorado Rocky Mountains. Over the last 40 years since its construction, Republic Plaza has stood the test of time structurally, economically speaking not so much. Republic Plaza is worth hundreds of millions of dollars less than it was a decade ago as the shift to remote work empties out downtown offices all around. Due to the economic uncertainty of the Republic Plaza Building, the new vision plans to tackle some major challenges, while offering sustainability and revitalization to the area

The Issue at Hand

In June 2023, Republic Plaza was appraised at \$298 million, down from \$535 million the last time the building was valued in 2012. As of August 2023, the high-rise is only 37% leased, Republic Plaza still has 63% of open space that struggles to find tenants. In Denver, the older buildings are the most likely to lose tenants due to the lack of modern finishes and updated amenities. This isn't just a problem with Republic Plaza, it is a growing problem with buildings like this, not only in Denver, but around the country.



Sun Study

With any high-rise structure, a sun study is crucial. Especially here in Colorado. This is the plaza building on a moderate spring afternoon. The darker the shade is, indicates that that area is receiving minimal hours of sunlight. With the height of the plaza, take into consideration the seasons, time of day, receives almost eight plus hours of sunlight per day.

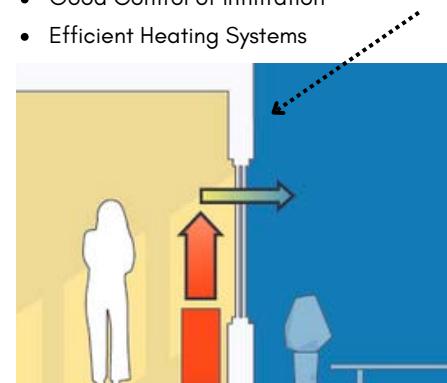
Site Context

The site of Republic Plaza is in the heart of Denver's financial district and is surrounded by other commercial buildings, retail outlets, and entertainment venues. This central location makes it a hub of activity and an integral part of the city's urban fabric. Republic Plaza serves as a significant landmark in the Denver skyline and is an important center for business and commerce. The building is well-known for its distinctive white marble facade and the series of step-like setbacks that decrease in size as the building rises, which creates a tapered effect. This design not only contributes to the aesthetic appeal of the building but also enhances its structural integrity. The site also features a public art program and an outdoor plaza that hosts a variety of seasonal events and art displays, enriching Denver's cultural scene. Inside, Republic Plaza boasts a modern and sophisticated interior with a spacious atrium that houses art exhibitions throughout the year. The building's location at the intersection of the 16th Street Mall and Tremont Place makes it accessible and highly visible, contributing to its status as a focal point in downtown Denver. This prime location ensures that Republic Plaza remains a central player in the economic and social activities of the city.

Architectural Response Towards Climate

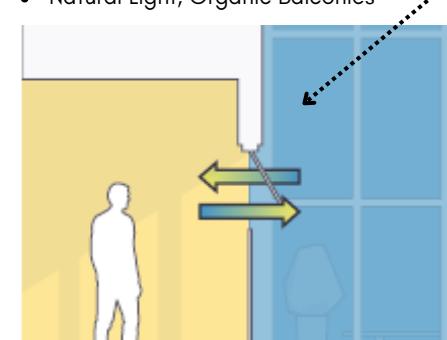
Provide Shelter From the Cold

- Well Insulated glazing and Building Envelope
- Good Control of Infiltration
- Efficient Heating Systems

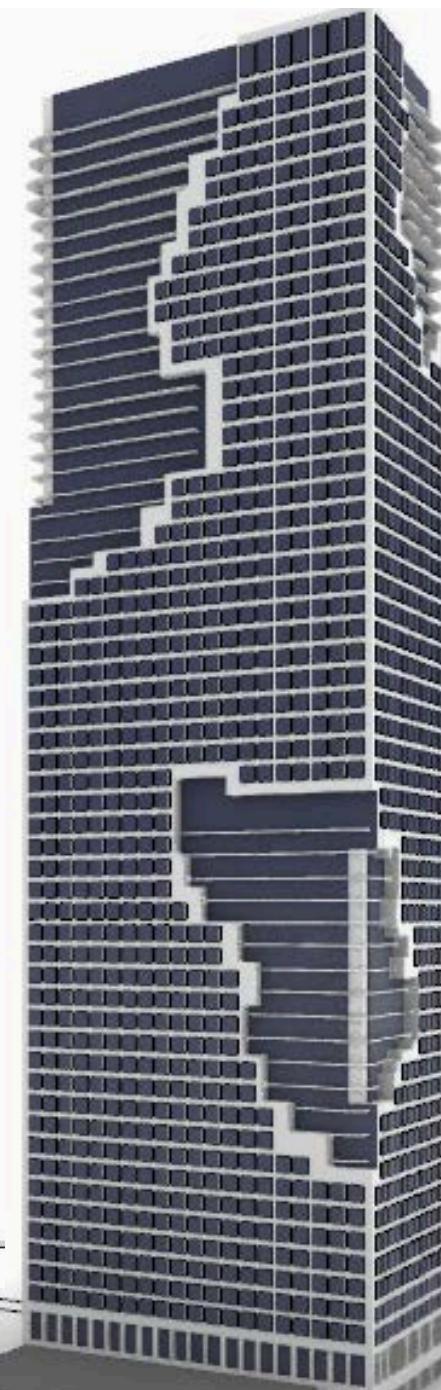
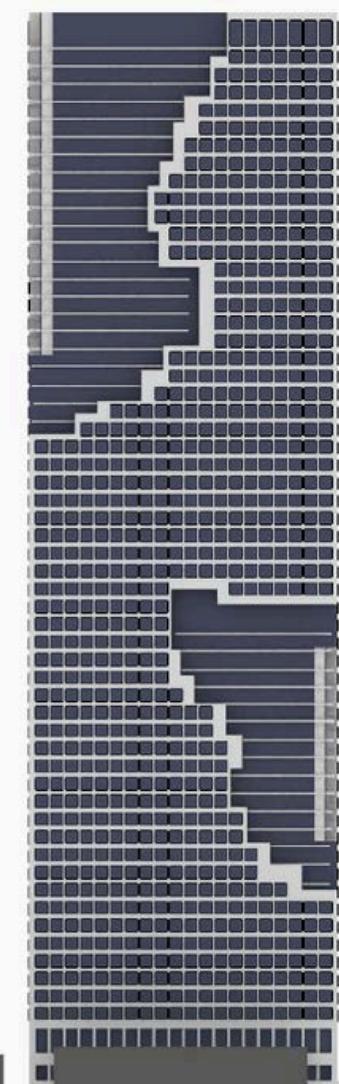


Bring the Outside In

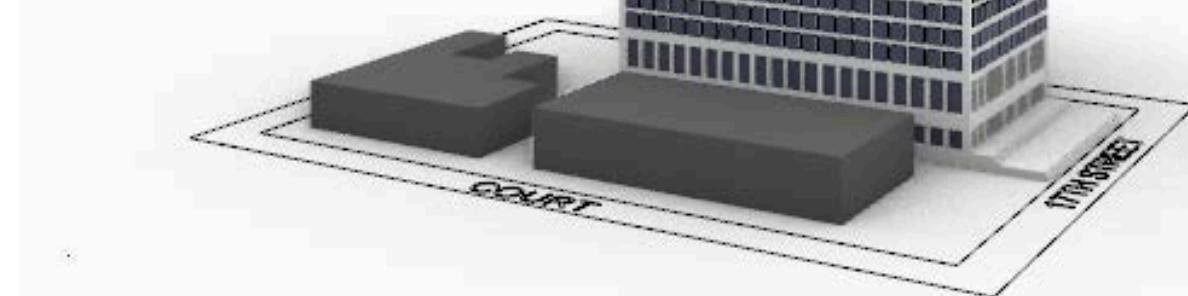
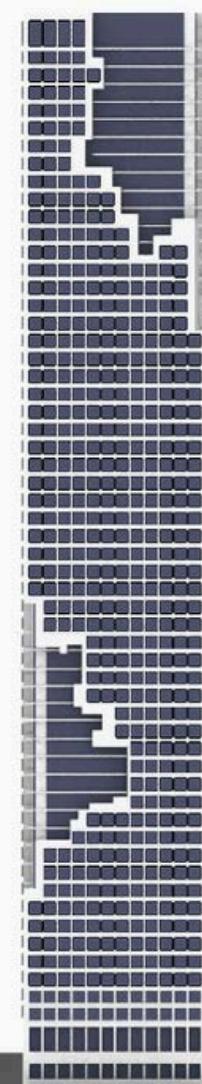
- Controlled openings for natural ventilation
- Vegetation, Native Planting, Hanging Gardens
- Natural Light, Organic Balconies



Side Elevation

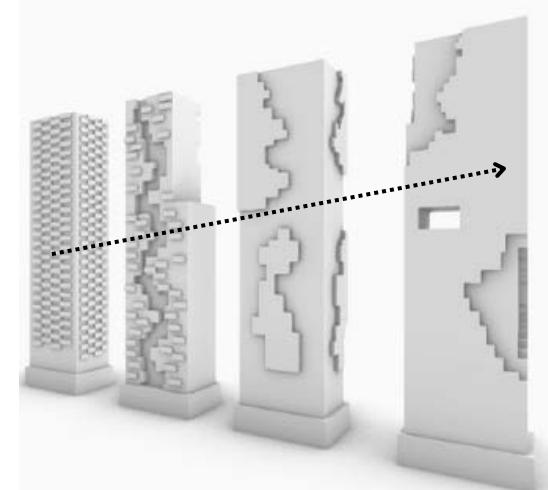


Front Elevation



Form Study

Conceptual massing models are a fundamental step in the architectural design process, especially when planning a building. They serve several crucial purposes that help to shape and refine the eventual design of the structure. Throughout the iterative design process, creating physical and digital models allowed me to explore different forms and shapes (facade design). Having a sense of scale when coming up with conceptual masses helps determine the appropriate scale and proportion of the building in relation to human use and the surrounding area. This also plays a large role in spatial relationships as well, understanding flow of movement and defining internal layouts.



ARCHITECTURAL DESIGN PORTFOLIO

SKYLINE RESIDENCE

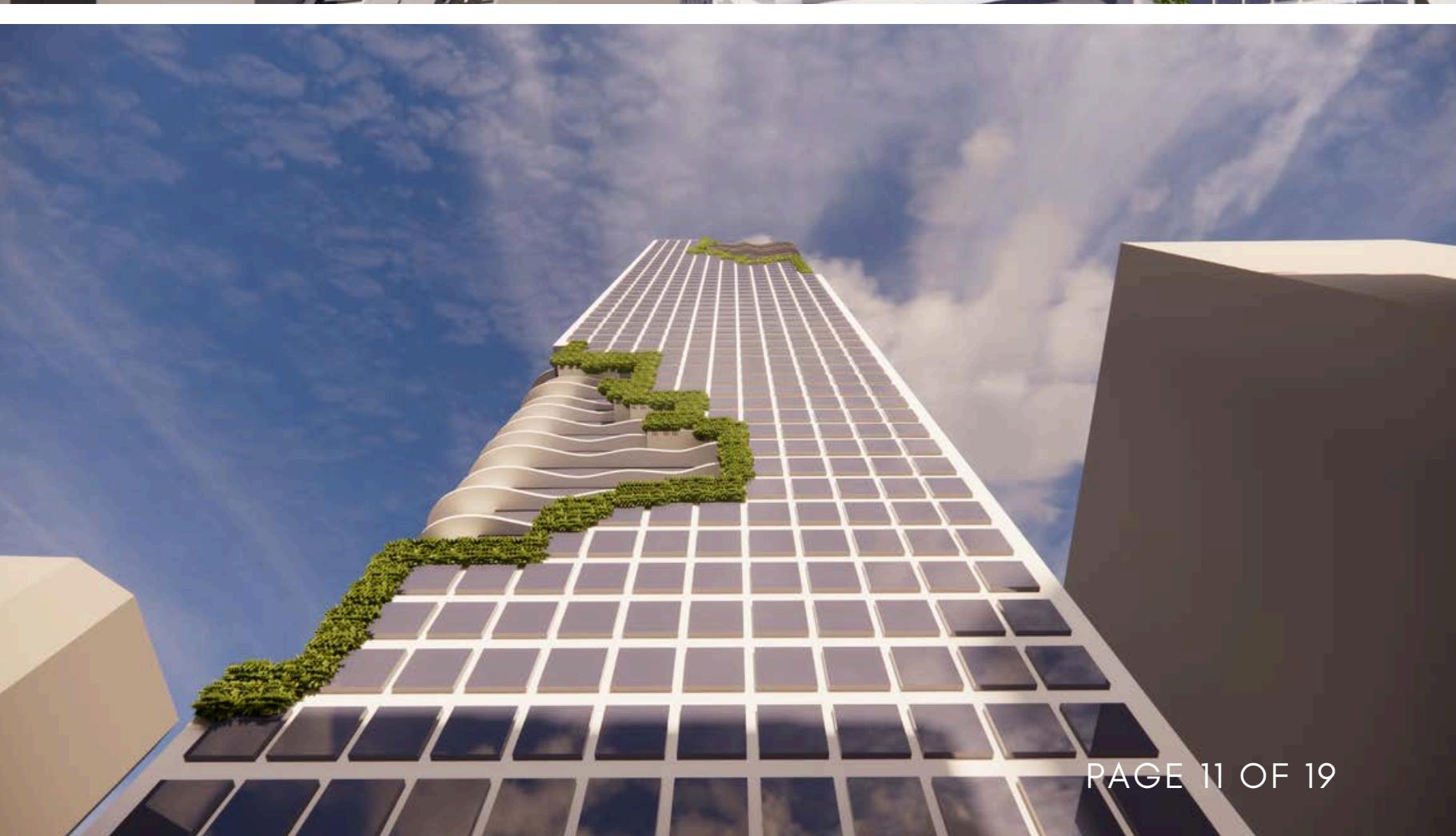
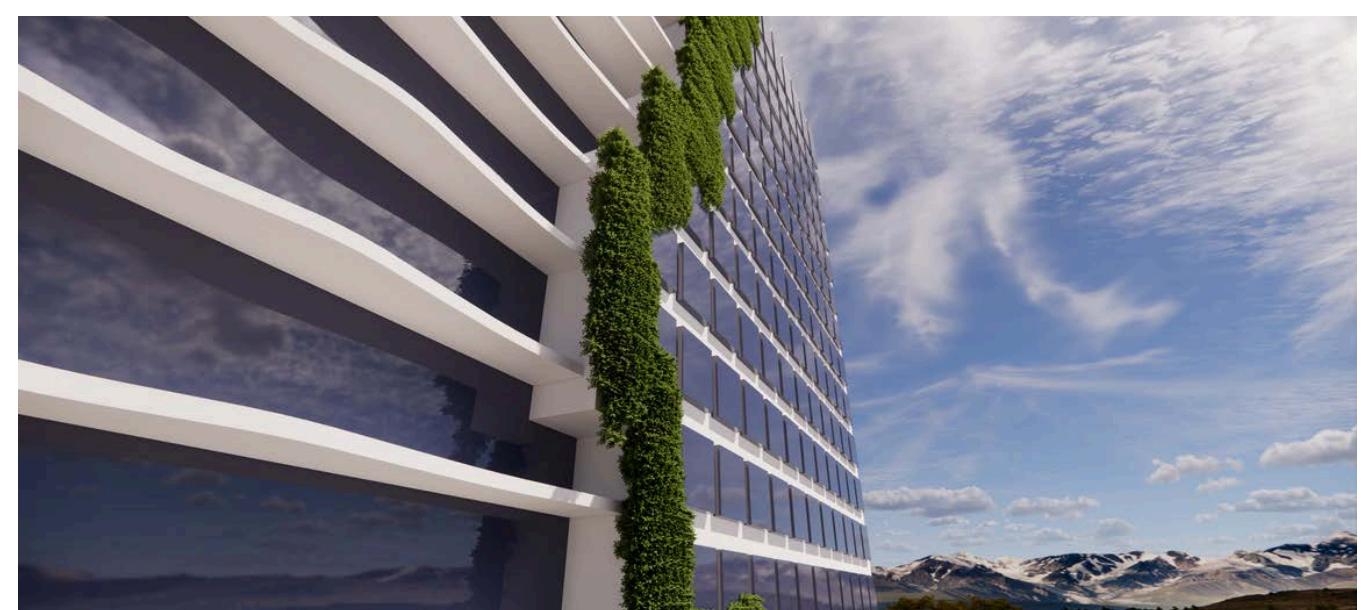
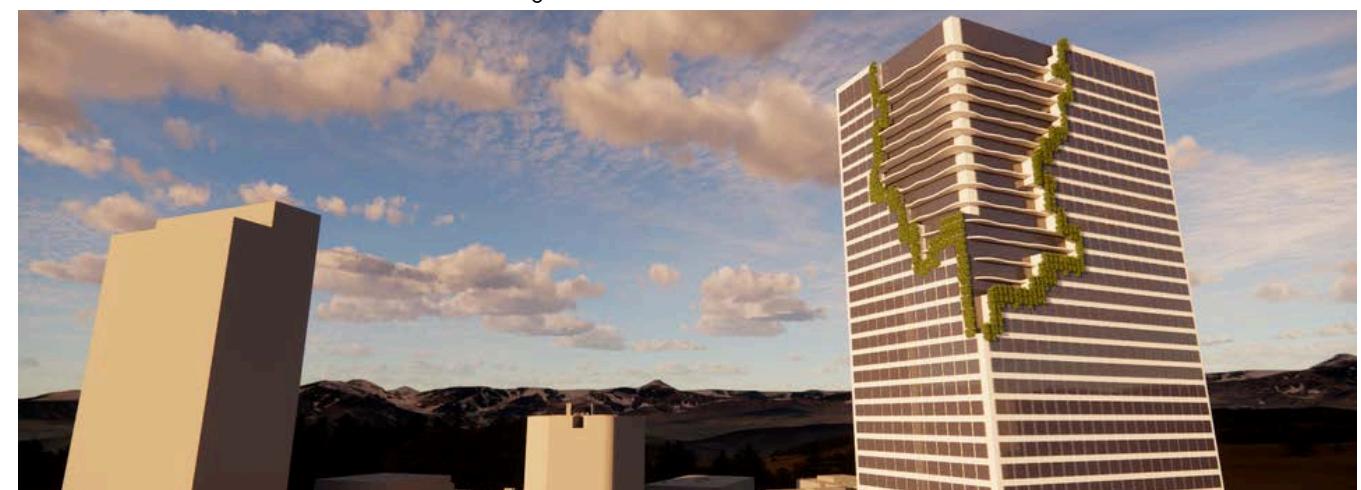
DENVER, COLORADO

Economic Flourishment

Designing a high-rise apartment building with a focus on maximizing economy and revenue involves several key considerations to ensure profitability, efficiency, and tenant satisfaction. This proposal outlines the development of a high-rise apartment complex in downtown Denver, aimed at maximizing economic returns while providing high-quality urban living. The proposed site is strategically located to attract professionals, couples, and small families seeking a vibrant lifestyle within the city's core. Denver's residential market has shown robust growth, with increasing demand for rental properties due to the city's growing population and economic development. Our targeted demographic primarily includes young professionals and small families drawn to urban lifestyles. The new Republic Plaza adds value to owners, occupants and the surrounding community.

Ecological Impact

The Skyline Residence, stands as a pioneering model of ecological design in urban architecture. Constructed with sustainability at its core, the highrise features green vertical hanging gardens planted with native species that not only reduce the urban heat island effect but also provide habitats for local wildlife. The building's exterior vertical gardens that helps to purify the air, while its orientation and window placements are strategically designed to maximize natural light and enhance energy efficiency. Rainwater harvesting systems and greywater recycling are implemented to reduce water consumption significantly. Inside, the apartments use materials sourced from sustainable, non-toxic supplies, ensuring a healthier living environment for its residents. By integrating these ecological features, The Skyline Residence not only offers a comfortable and sustainable living space but also actively contributes to the environmental health of its urban surroundings.

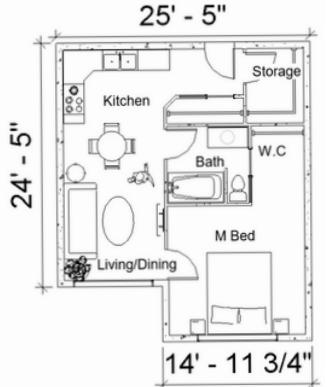


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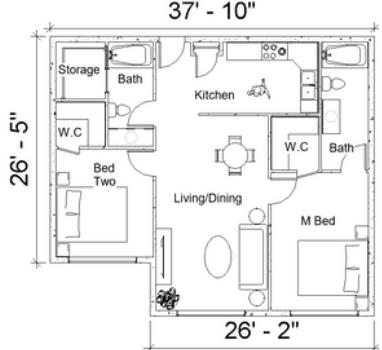
SKYLINE RESIDENCE

DENVER, COLORADO

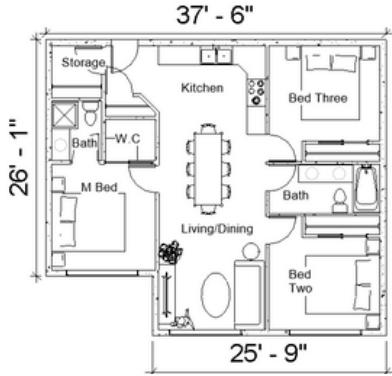
Single Bedroom Unit



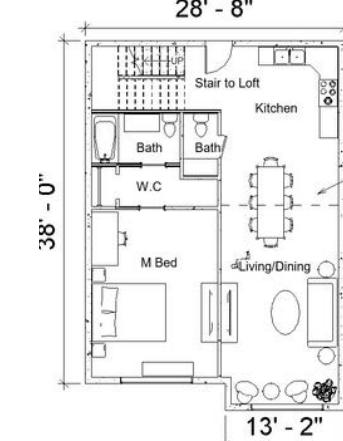
Double Bedroom Unit



Triple Bedroom Unit



Lofted Unit



The New Building Standard

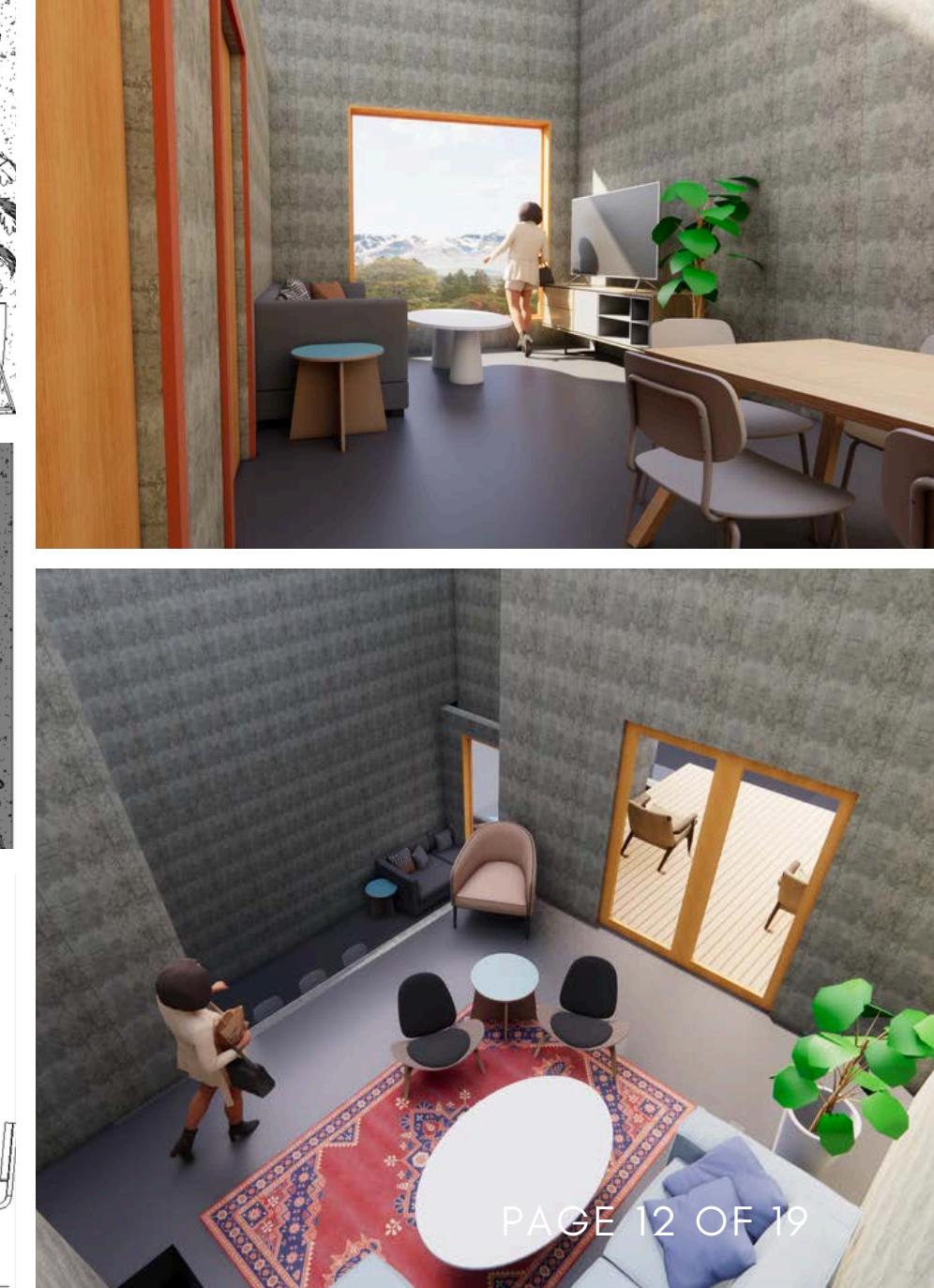
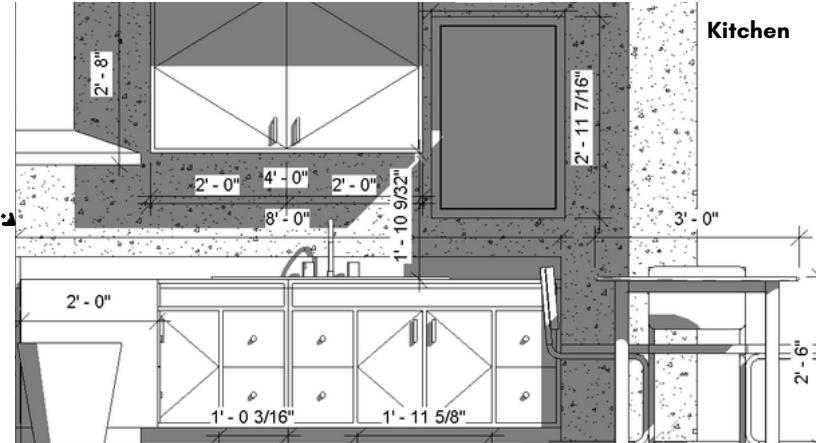
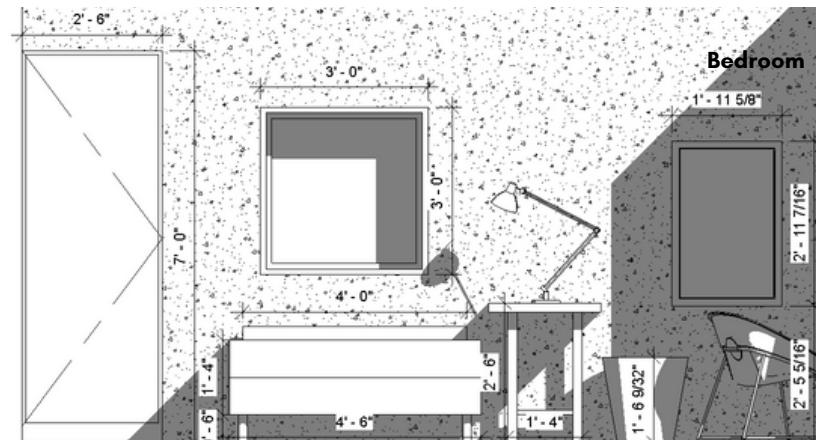
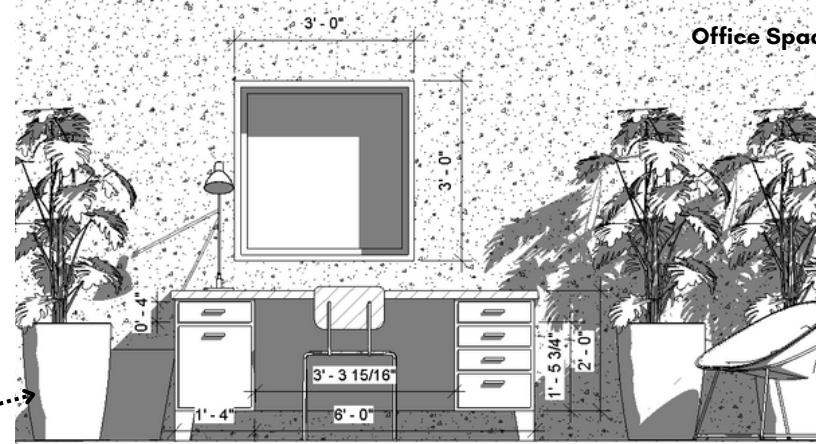
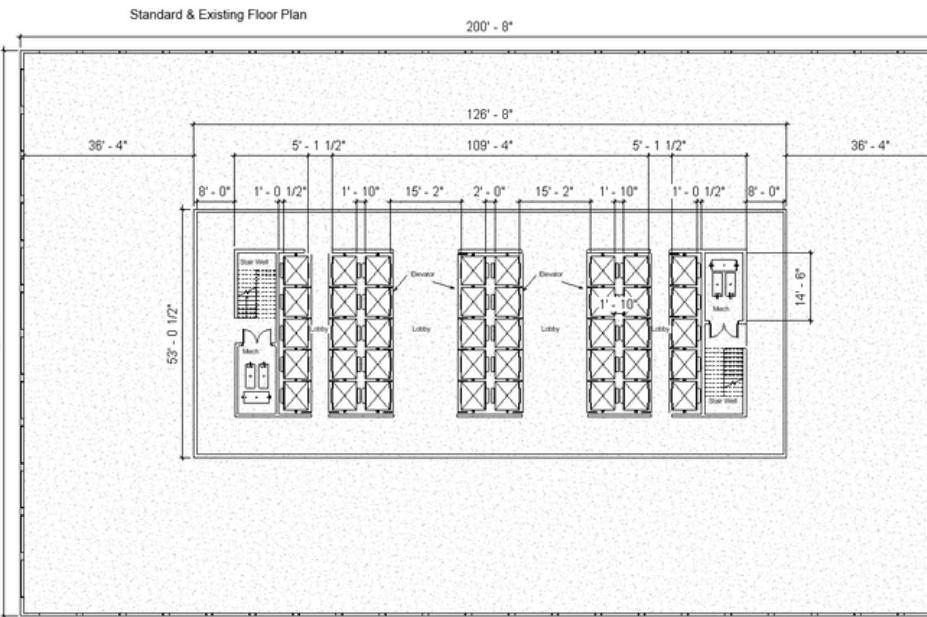
When constructing a high-rise tower with an emphasis on eco-friendliness and sustainability, the selection of building materials plays a crucial role. The use of sustainable materials not only reduces the environmental impact during the construction phase but also throughout the life cycle of the building. As an adaptive reuse project, the original floor plate and structural components were left untouched for consistency and feasibility of new design. With the new design, called for an addition of new materials and eco-friendly systems.

Efficient Material Methods

Though the existing floor plate has remained the same, there are many new implementations of suitable sustainable materials. The use of recycled steel, which is strong and durable, utilizing this steel throughout newly added floors can reduce the buildings carbon footprint. Recycled Concrete was used when casting the wavy circulating balconies on floors with the "structural decay exterior." The building is almost 75% covered in glass panels, Low emissivity glass was installed to reflect heat while allowing light through to each unit.

Internal Composition Layout and Elevation Drawings

There is a variety of unit typologies that seamlessly mix and match throughout each floor. All rooms are equipped with modern technology and finishes. The apartment is designed to optimize space while providing comfortable living quarters and privacy for its residents. It typically features a central living area flanked by bedrooms and other service areas like the kitchen and bathrooms. Windows are placed to maximize light and air flow, enhancing the living experience and reducing reliance on artificial lighting and air conditioning. Modern apartments are designed with accessibility in mind, featuring wider doorways and elevators access to accommodate everyone, including those with disabilities.



CENTRAL PARK PAVILLION

MANHATTAN, NEW YORK

Being born and raised in New York, Central Park was always a main attraction for me and my family. On a sunny day when we would travel into Manhattan for some daily adventures. New York City, also known as the "concrete jungle" is one of the largest cities with a densely packed population as well as urban architecture. Central Park brings New York City a rich ecological diversity as well as large areas of natural land. The design of the Central Park Pavillion is meant to immerse architecture within the natural world. Combining the two of what make up New York City, while creating an organic flow between that advocating social and healthy lifestyles.



ARCHITECTURAL DESIGN PORTFOLIO

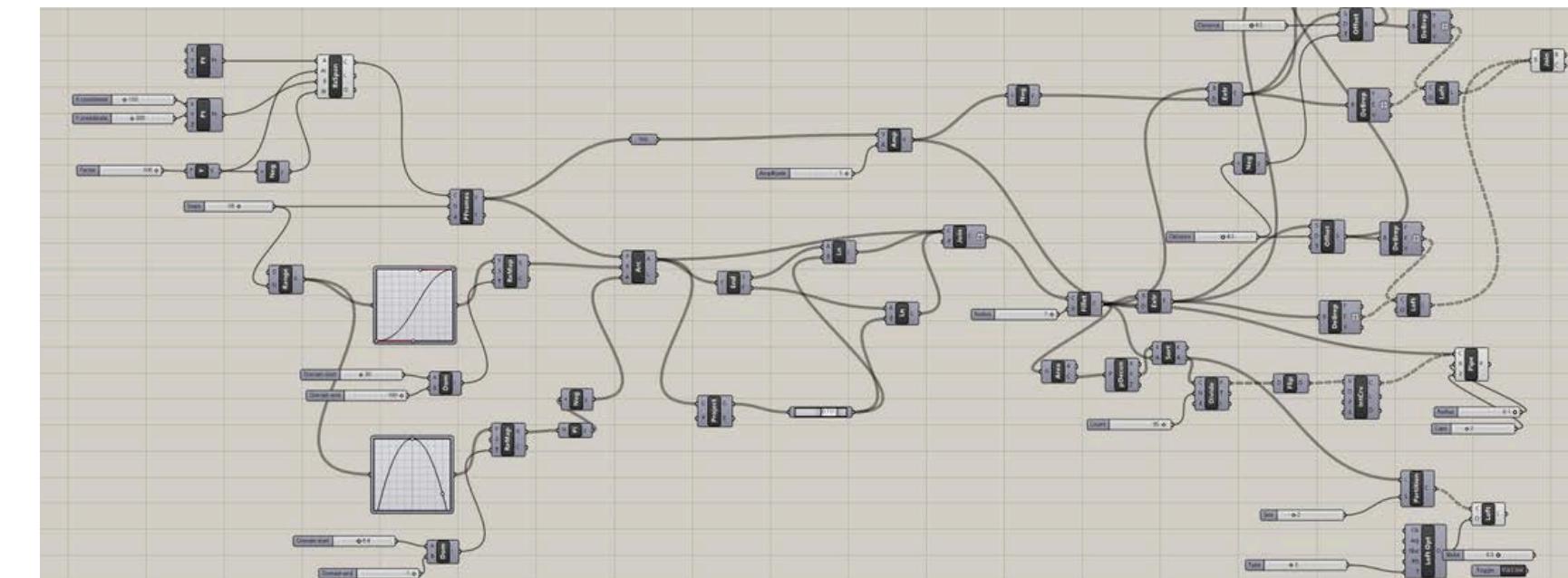
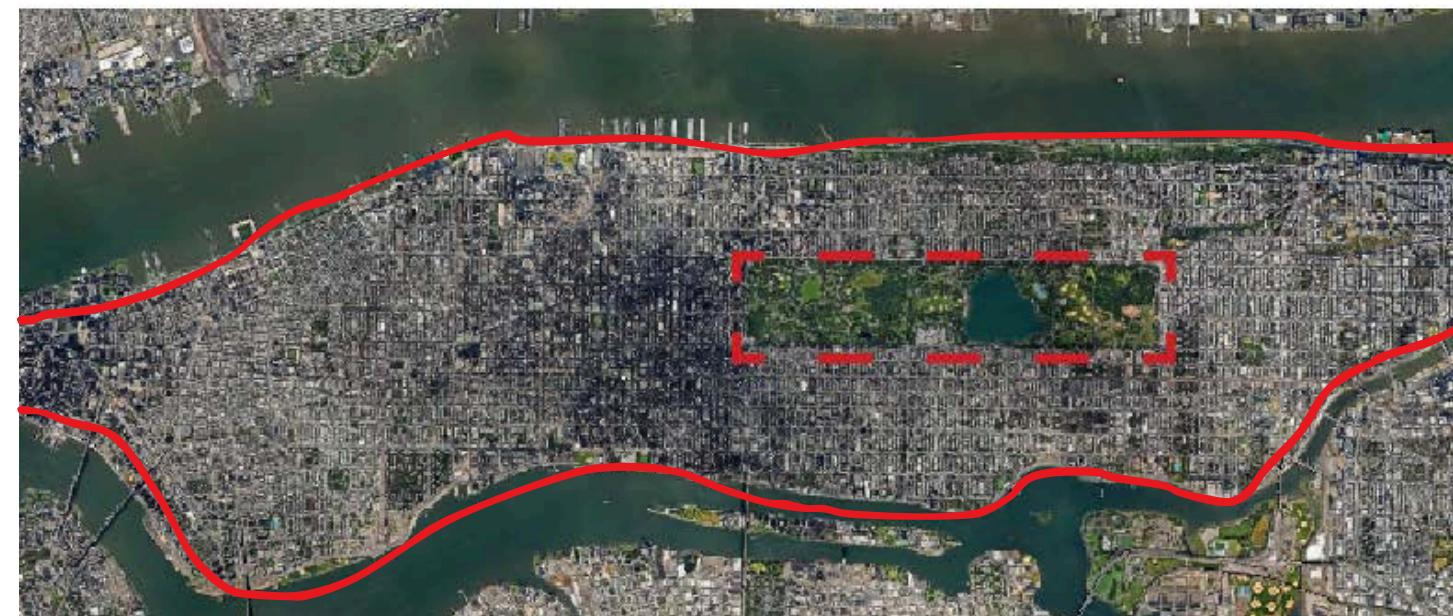
CENTRAL PARK PAVILLION

MANHATTAN, NEW YORK

Central Park provides numerous recreational activities including walking, jogging, cycling, boating for those who live nearby. There are several sporting facilities sprawled around the park, that are used by the locals. However, what the park lacks is a blend of new and old architecture with the surrounding natural environment. A stationary location that people can come visit. This futuristic design for the Central Park Pavillion seeks to stand out as an icon of New York City's architecture, and an area that looks to accommodate hundreds of people. Promoting wellness and growth, the pavilion allows people to hangout in and around the structure offering day long activities for people around.

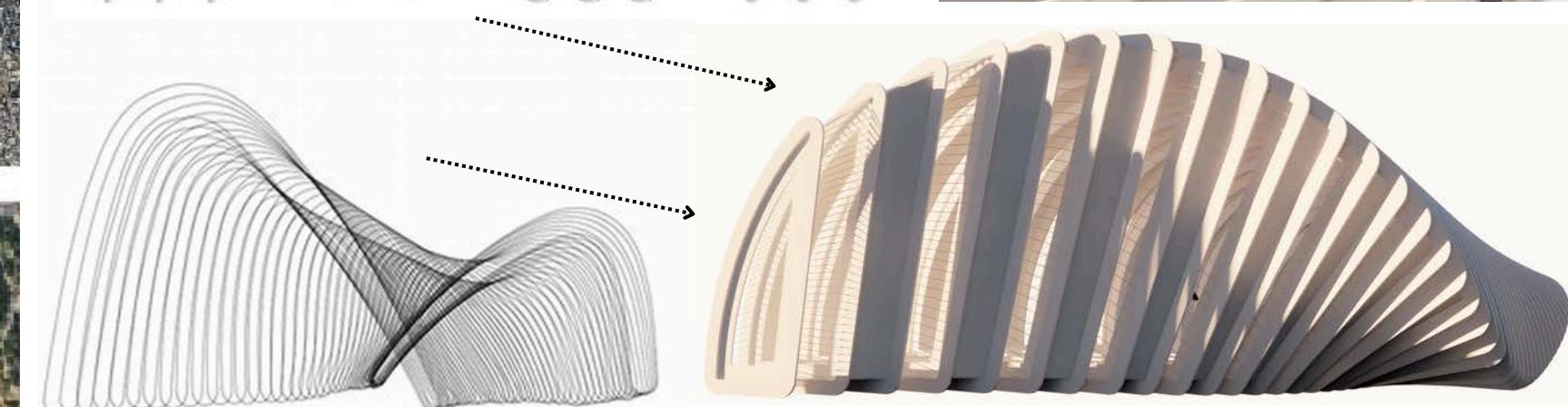
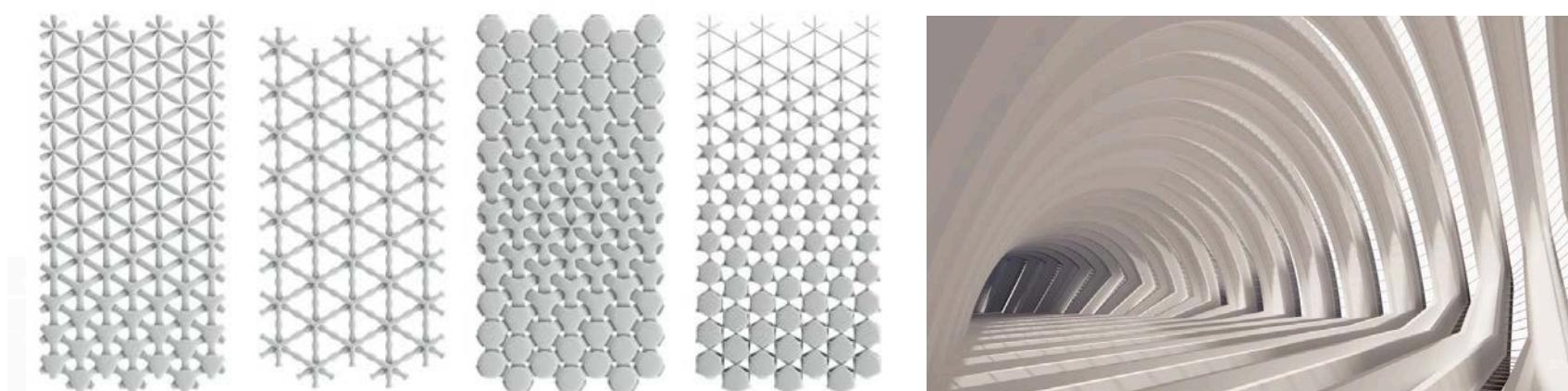
The Site

Below is the scale of Manhattan compared to Central Park. Central Park makes up roughly 6 percent of Manhattan and the other 94 percent belongs to the infrastructure that the city is made up of. Walking throughout the city over a hundred times I always feel ambushed by the amount of infrastructure and the lack of green space. However, the green space that belongs to Central Park has little to no architectural activity other than performance venues that are outdated. The goal was to bring a sustainable structure with energy efficient qualities to the heart of central Park to excite and attract people from around the city to explore the pavilion and surrounding area.



This assignment was to be produced with the Grasshopper plug-in in Rhino. My concept revolved around the idea of a structure being organic. Organic has many different interpretations for this project it determined the flow and movement of a structure through the natural land. That same interpretation was heavily involved in the form of the pavilion. Smooth and winding curves that give a unique feel when standing in or around the building. With the help of Grasshopper, and parametric design studies, the pavilion brings a new form of architecture to the very dense area of Central Park.

Early Stage Parametric Design Forms & Facade Study Model



ARCHITECTURAL DESIGN PORTFOLIO

SURF VILLA

CERRITOS, MEXICO

The Cerritos Surf Villa, a personal conceptional project of mine, that revolves around designing a communal surfing villa nestled in the captivating landscape of Cerritos, Mexico. Inspired by the harmony between nature, modern comfort and my love for surfing, the villa effortlessly integrates with its surroundings. The design emphasizes open spaces, allowing for panoramic views of the ocean and surrounding cliffs. The Cerritos Surf Villa offers 20 individual units, dining & nightlife, an outdoor communal pool lounge, and of course the beautiful Pacific Ocean. This destination is a surfer's paradise, what more could you ask for then to be surrounded by those who share the same passion for surfing.

A love for Surfing

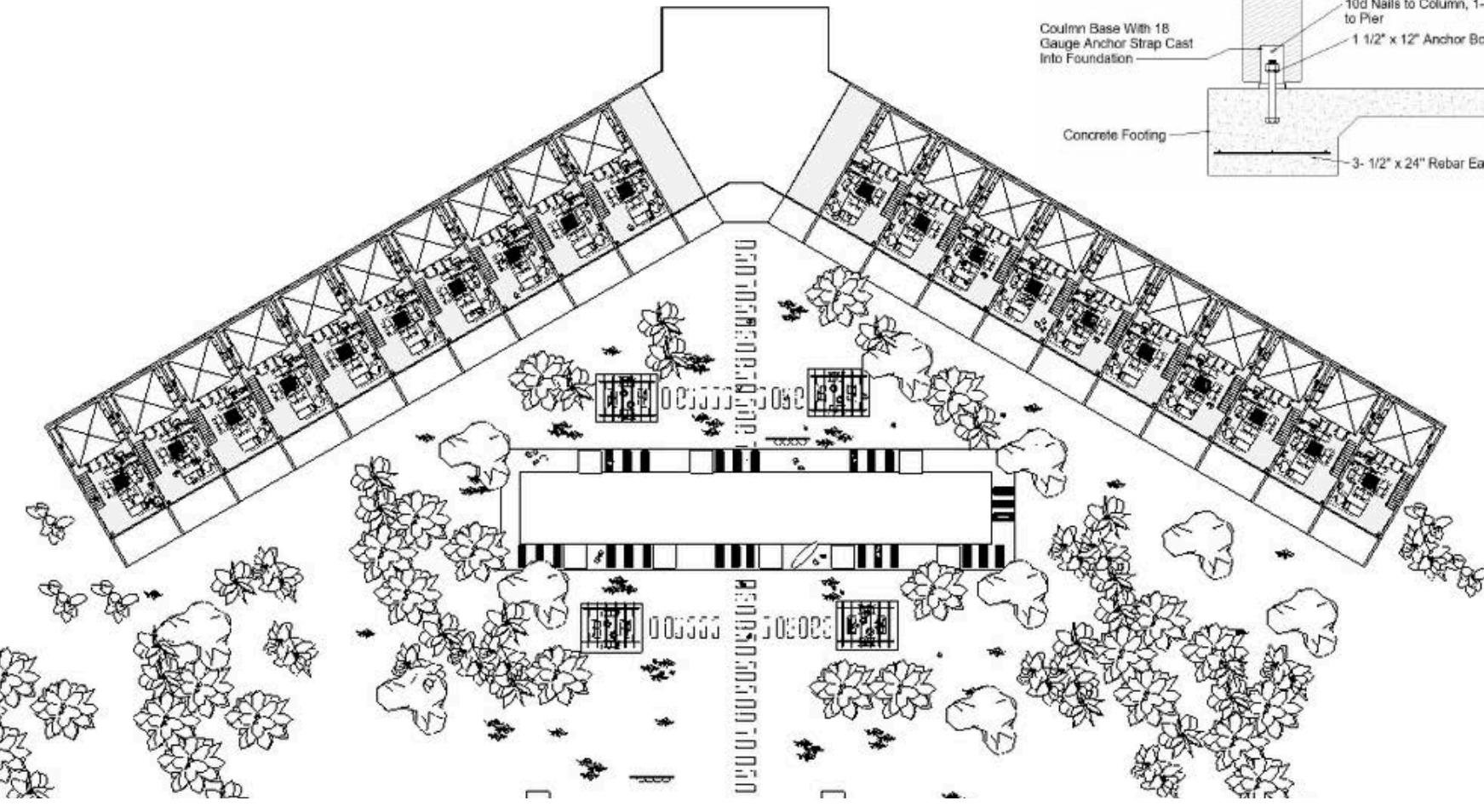
Ever since I can remember, surfing has always been a part of my daily life in the summer when I am at the beach. I love surfing because it makes me feel free and connected to nature. The excitement of riding waves is both thrilling and calming. Being in the ocean, with the sun and saltwater, helps me forget my worries and focus on the present moment. Surfing challenges me to improve and stay mindful, and it gives me a deep appreciation for the beauty of the sea. It's a fun and adventurous way to enjoy the outdoors and stay active. I knew I wasn't the only one who felt this way, so designing this space that allows people from all around the world to travel to the Cerritos Surf Villa was a driving factor and sparked the creativity that surrounded this project.



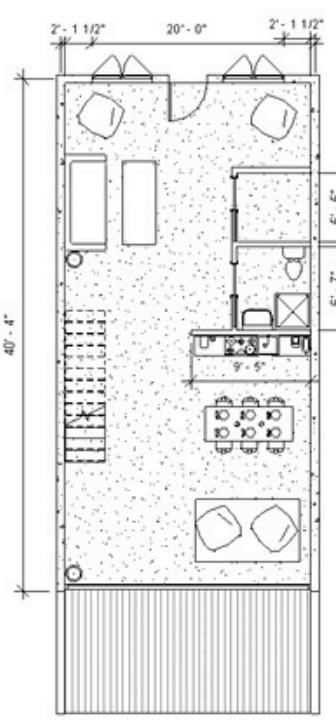
ARCHITECTURAL DESIGN PORTFOLIO

SURF VILLA

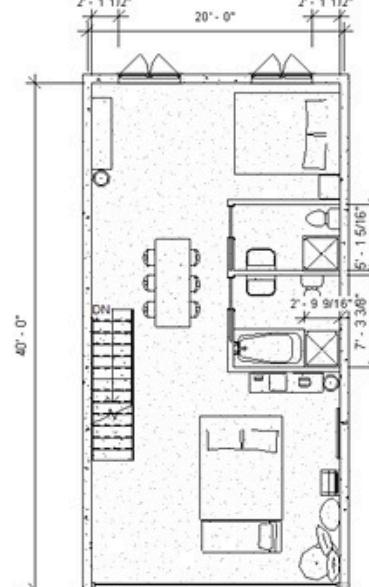
CERRITOS, MEXICO



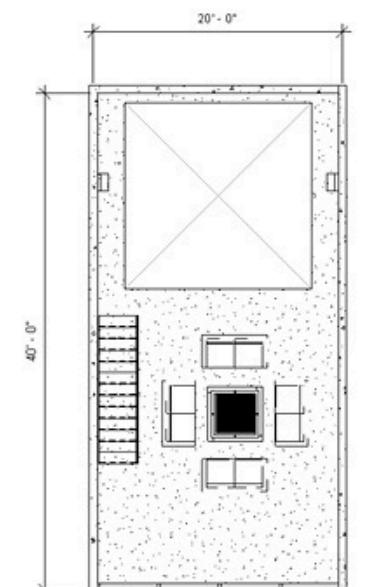
Floor 1



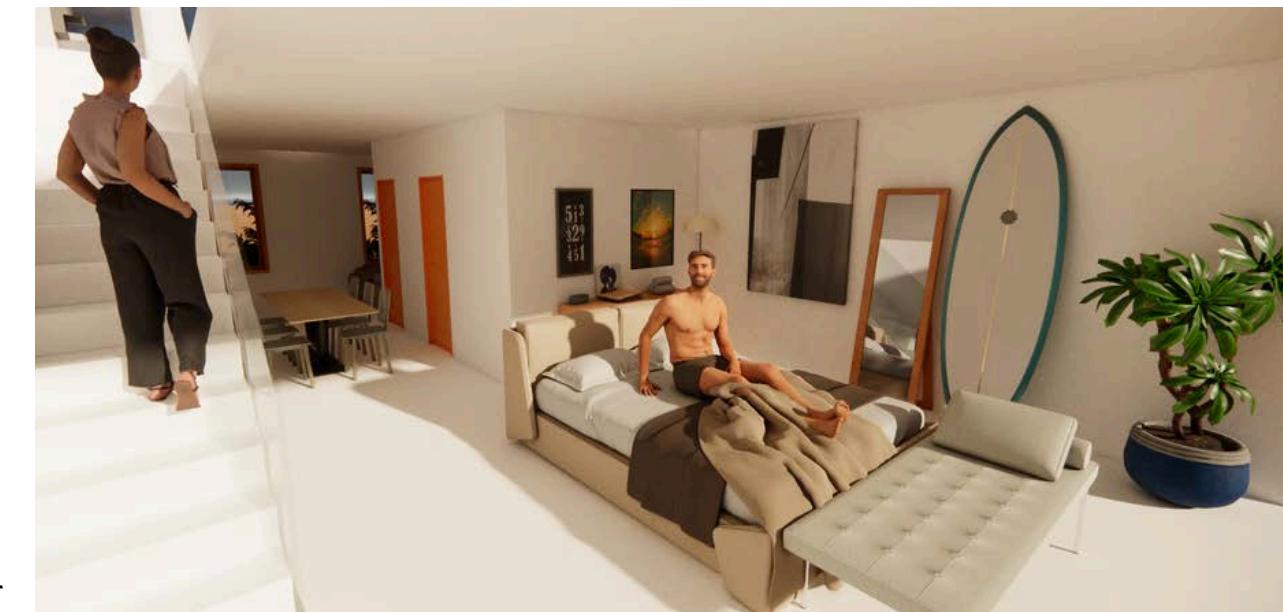
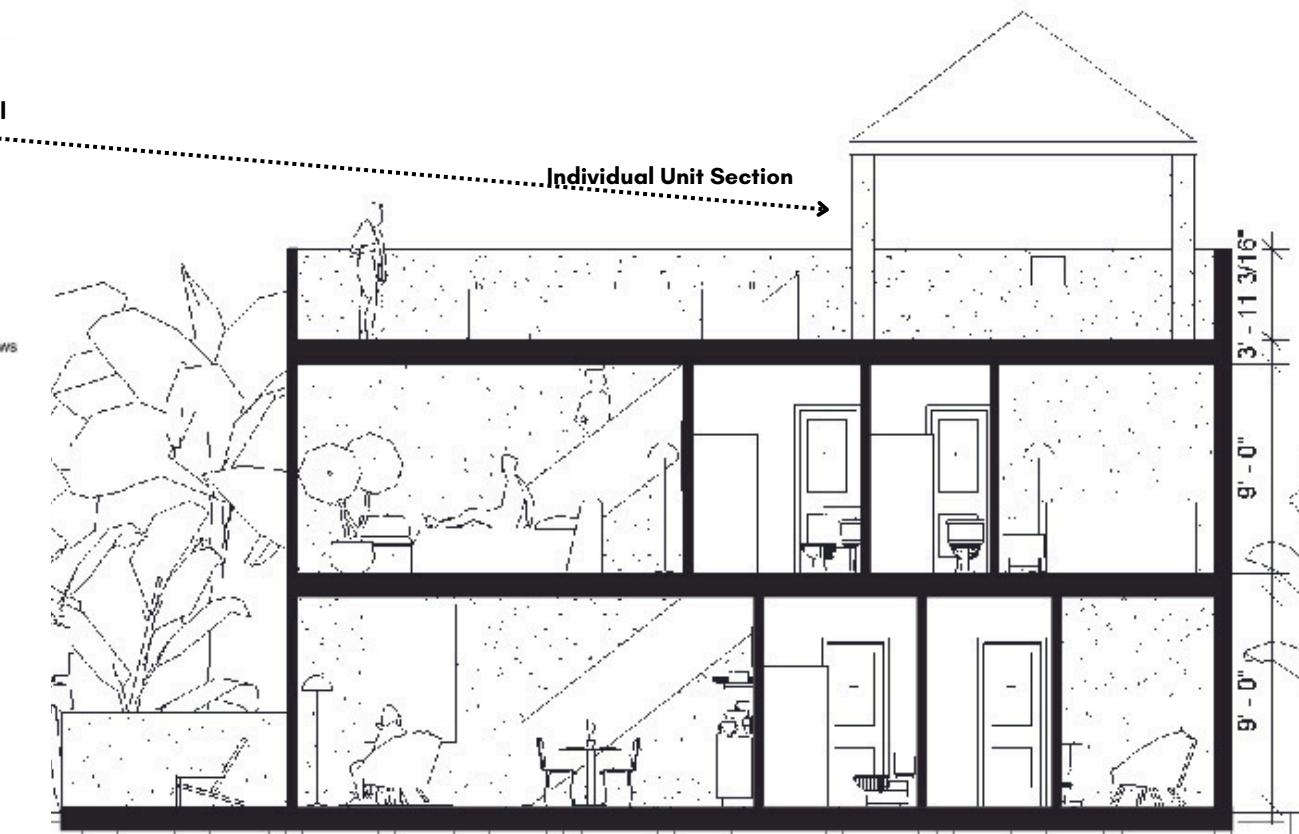
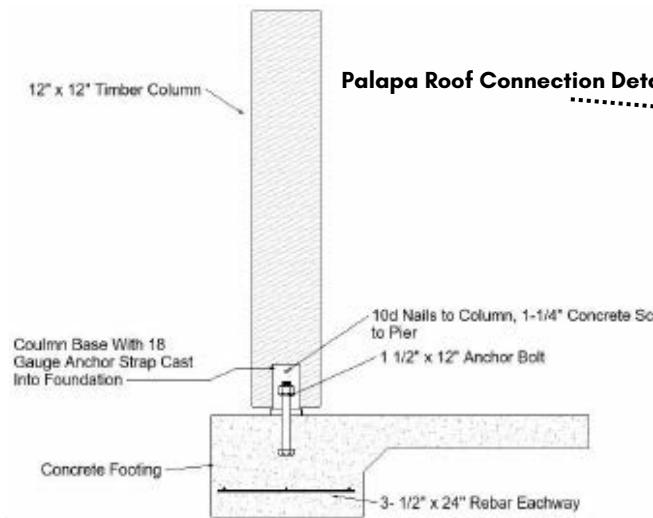
Floor 2



Floor 3



To the right and left are floor plans for each individual unit. Each unit is equipped with a bedroom, kitchen, dining and living area. Each villa has its own ground and top floor personal balcony for easy access to the beach and for sunset endeavors. These villas are designed for temporary stay, allowing visitors to come and go with only a surfboard to travel, while housing them with all the basic necessities.



ARCHITECTURAL DESIGN PORTFOLIO

ZACHARY HOUSE

BOULDER, COLORADO

The Zachary House, designed by Atkinson Architecture, originally built in Zachary, Louisiana is known for its blend of "dog trot" and "shotgun style" homes that maintains every element of its distinctive design. Characterized by clean lines and minimalist features, the house exudes a sense of elegance and simplicity. Light floods through expansive windows, illuminating the spacious interiors and creating a connection with the outdoors. The Zachary House is minimal and functional for those who seek simple living.

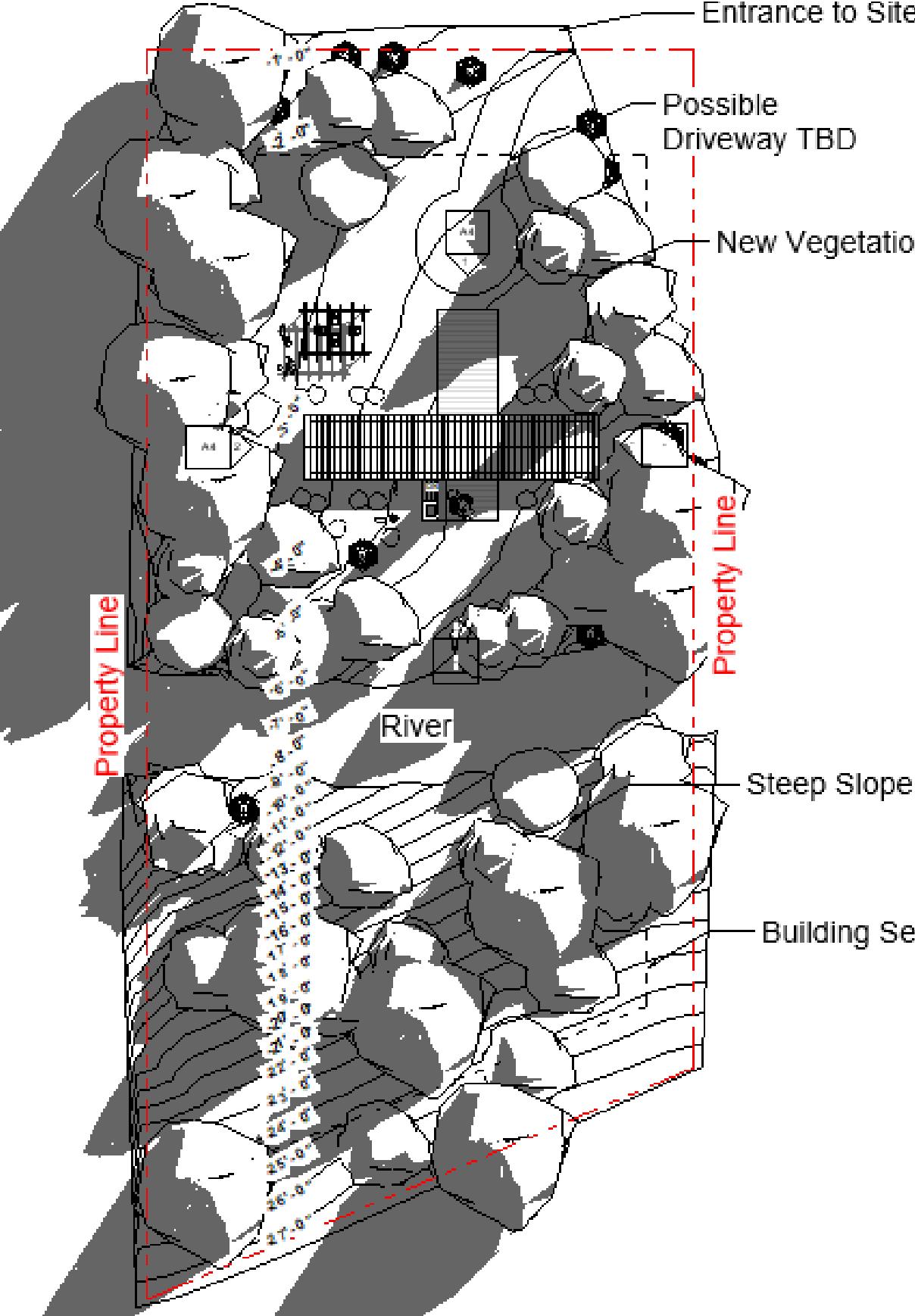


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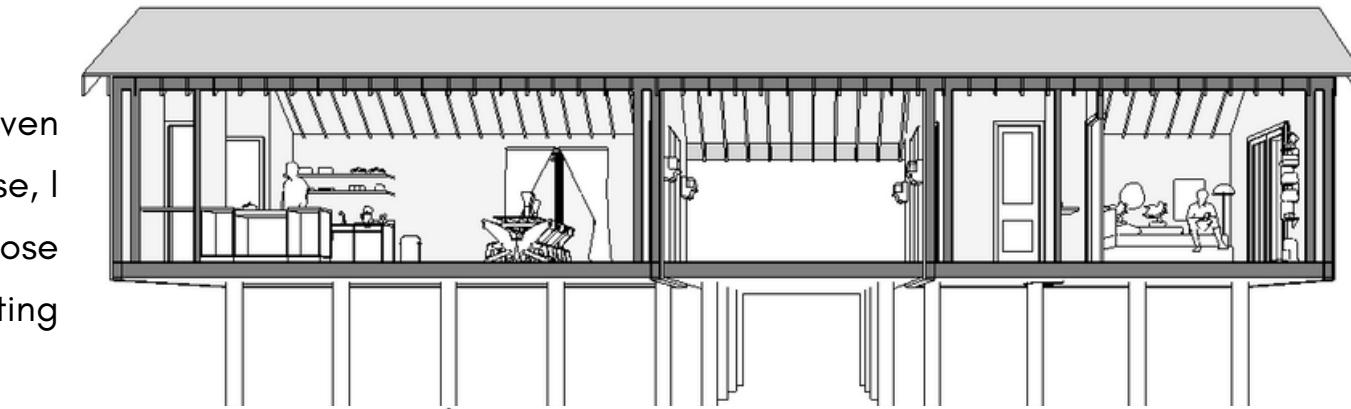
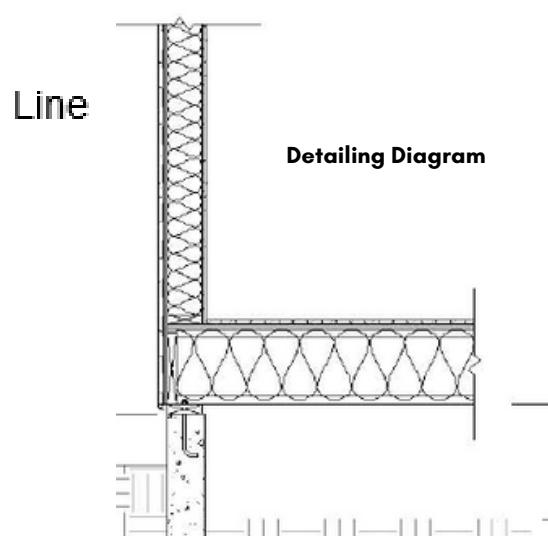
ZACHARY HOUSE

BOULDER, COLORADO

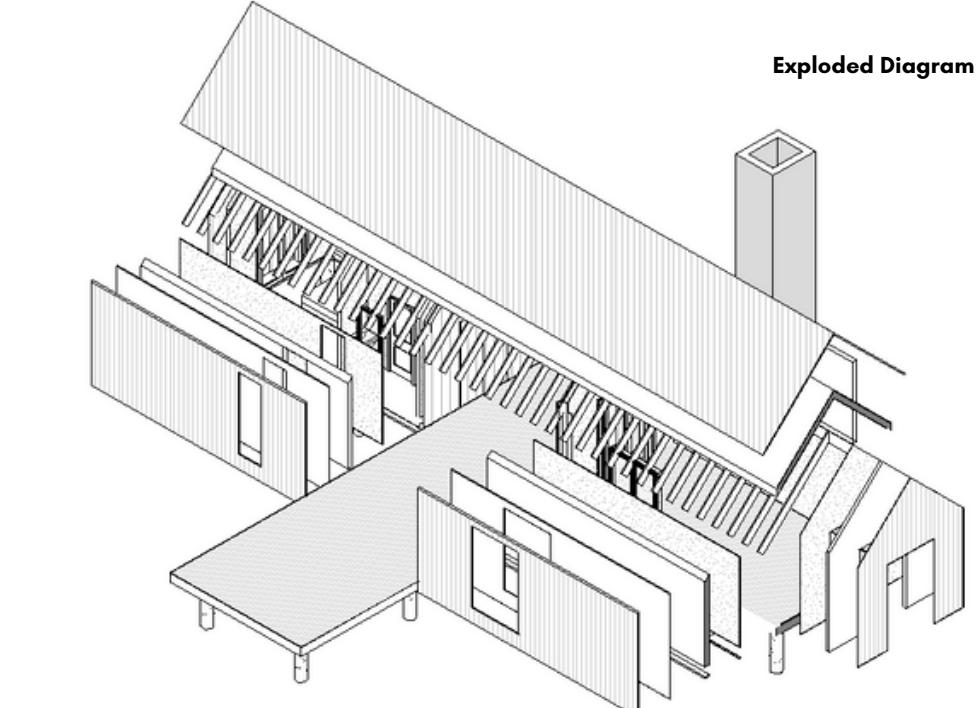


This was a replication project. Given pictures of the actual Zachary House, I was tasked with modeling this as close as possible to the real life existing exterior structure.

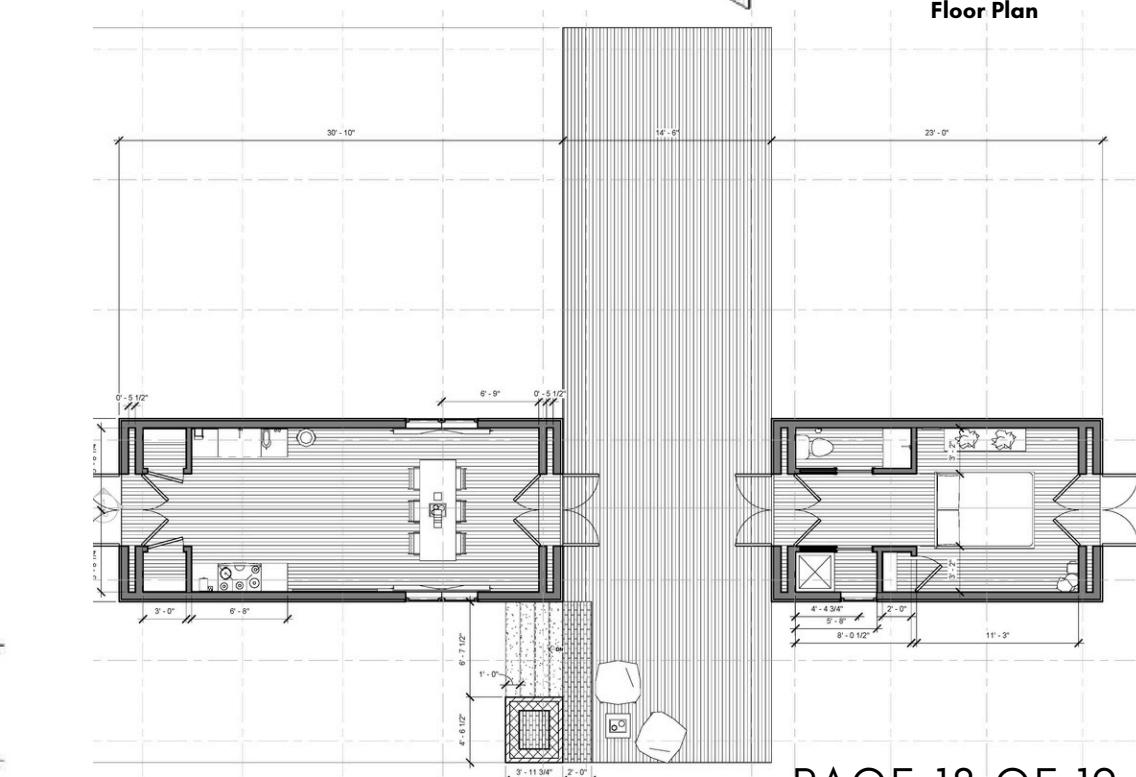
Inspiration Images



Section Perspective



Exploded Diagram



THANK YOU

CONTACT

Ryantangello97@gmail.com
Linkedin Ryan T. Angello
914-356-4786