PORTFOLIO

# BriannaRose Murphy

I began my journey combining fine arts and science through design, leading me to study Environmental Design at the University of Colorado, Boulder, with a focus on Architecture, Ecology, and Environmental Biology. My work prioritizes blending nature and structure, using local materials, site reuse, and salvaged elements to create sustainable, immersive spaces. Every detail, from daylighting to textures, fosters well-being and a harmonious connection to the environment.



## Connect

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## Education

**CU Boulder**
Bachelor's in Environmental Design (B.EnvD)
Architecture
3.9 GPA High Distinction

**Yavapai College**
Associates of Science

**Health Sciences Academy**
Certified Nutritional Therapist

**Empire Beauty School**
Certificate of Cosmetology

## Skills

- Site analysis
- Conceptualization
- Schematic design
- Strong verbal and written communication skills

## Software

- Adobe Creative Suite
- LCA Certified
- AutoCAD
- Revit
- Rhino
- Lumion
- Sketchup
- Enscape

## Accomplishments

- Project recognition in ENVD displays
- Deans List
- Transfer Excellence Scholarship
- ENVD Achievement Scholarship
- Sapp Family Foundation Scholarship
- Dana Giffin Soper Scholarship

## Relevant Work Experience

**Bartender** |Colorado | 05/2021 – Present

- Designed signage and tap handles for the venue and breweries.
- Researched industry trends to inform bar menu design and new drink recipes.
- Collaborated with team members to deliver high-quality customer service.

**Bartender** | Arizona | 08/2017 – 12/2020

- Analyzed bar trends to guide menu updates and recipe development.
- Maintained effective communication to support smooth operations.

**Bartender** | Maine (Seasonal)| 07/2020 – 10/2020

- Delivered excellent customer service during busy periods.
- Created seasonal drink menus and planned special events to increase profits.
- Provided excellent customer service, ensuring guest satisfaction.

**Lead Stylist** | A Dream By Day, Prescott, AZ | 02/2017 – 08/2017

- Created custom looks for clients based on their preferences.
- Maintained records of client preferences for future visits.
- Worked closely with creative directors on innovative styling approaches.

**Salon Sales Consultant** | Self Employed, Prescott, AZ | 01/2015 – 01/2017

- Advised salons on eco-friendly skincare lines and provided cosmetic consultations.
- Attended industry conferences and workshops to stay current.

**Aesthetician** | Natural Healing Garden, Prescott, AZ | 05/2015 – 12/2015

- Customized hair care plans based on customer preferences.
- Set up workstations and treatment rooms to streamline services.
- Built strong relationships with clients through excellent product knowledge.

**Art Therapist Apprentice** | Carmen's, Oakland, CA | 08/2013 – 01/2015

- Developed and led art therapy sessions addressing trauma, and addiction.

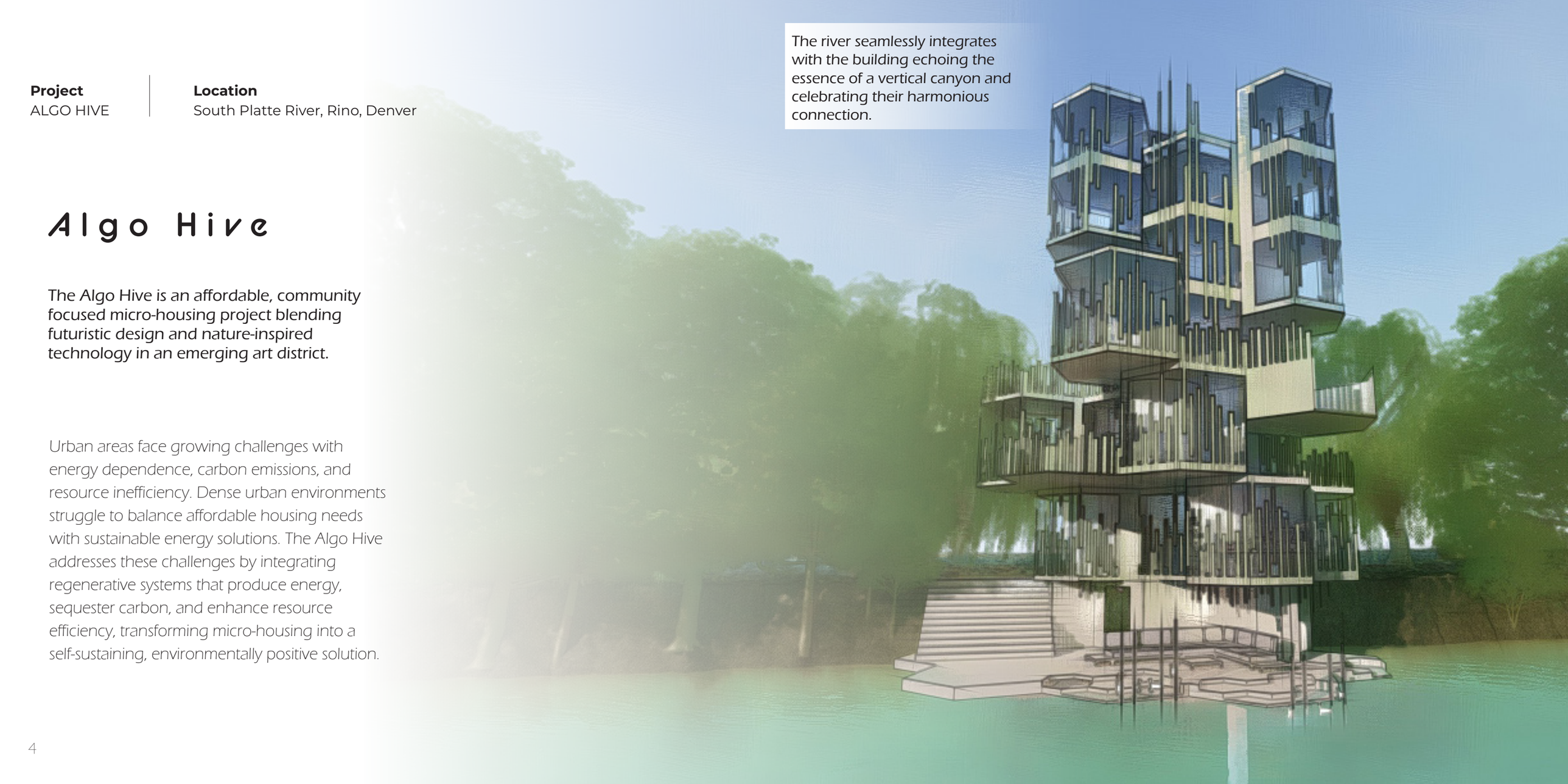
**Project**
ALGO HIVE

**Location**
South Platte River, Rino, Denver

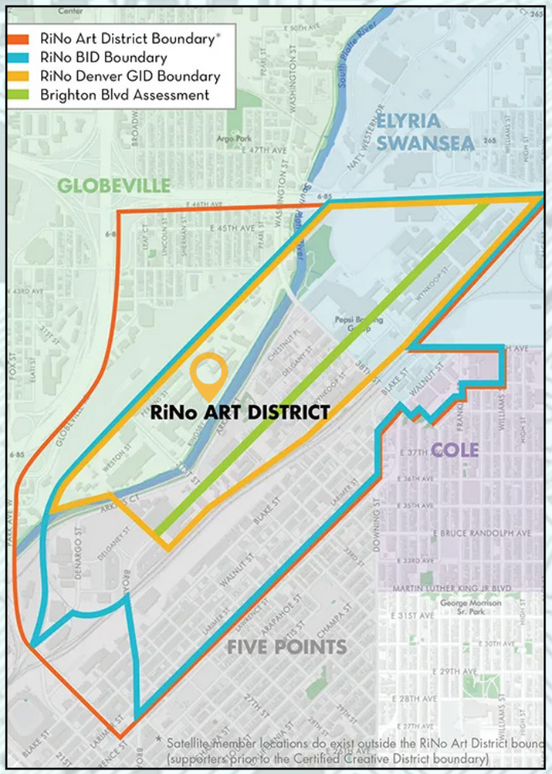
# Algo Hive

The Algo Hive is an affordable, community focused micro-housing project blending futuristic design and nature-inspired technology in an emerging art district.

*Urban areas face growing challenges with energy dependence, carbon emissions, and resource inefficiency. Dense urban environments struggle to balance affordable housing needs with sustainable energy solutions. The Algo Hive addresses these challenges by integrating regenerative systems that produce energy, sequester carbon, and enhance resource efficiency, transforming micro-housing into a self-sustaining, environmentally positive solution.*



The river seamlessly integrates with the building echoing the essence of a vertical canyon and celebrating their harmonious connection.




## SITE

The site is located on a river bank in Denver, Colorado's art district. Affordable and workforce housing are a growing issue in the area. To solve this micro-housing units for professionals and people in the workforce will be built right near a bustling neighborhood.

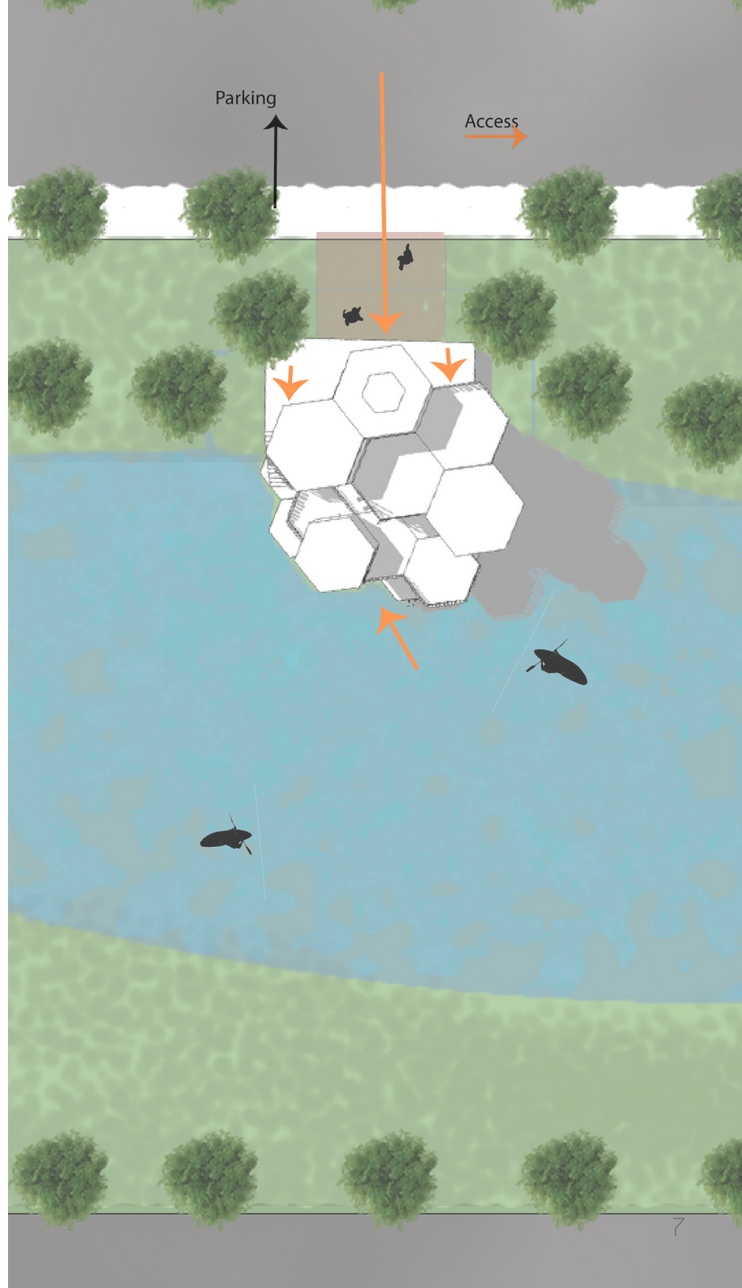
## Design Concept

The Algo Hive is designed not only to be sustainable but regenerative, pushing the boundaries of energy independence and environmental harmony. This innovative structure generates its own energy, with bio-fuels and heat output sufficient to support surrounding areas.

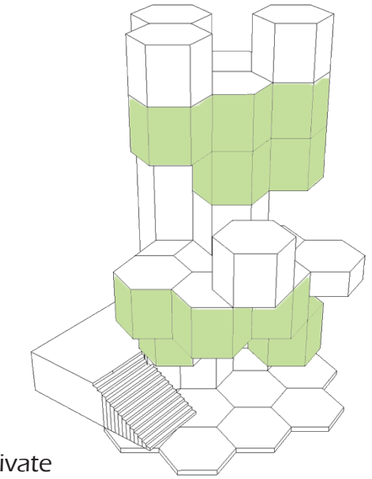
As a closed-loop system, it produces no waste; instead, it re-purposes wastewater and distributes surplus energy efficiently. The algae tubes and hemp concrete walls contribute to significant carbon sequestration, actively reducing atmospheric carbon while fueling both the building and the community.

Site Plan

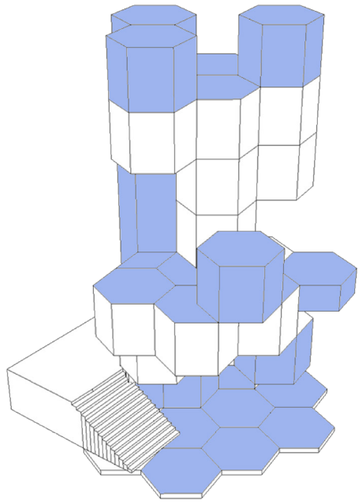
40'



**The program** *is meant to integrate the public and private areas to promote community and inclusive design.*



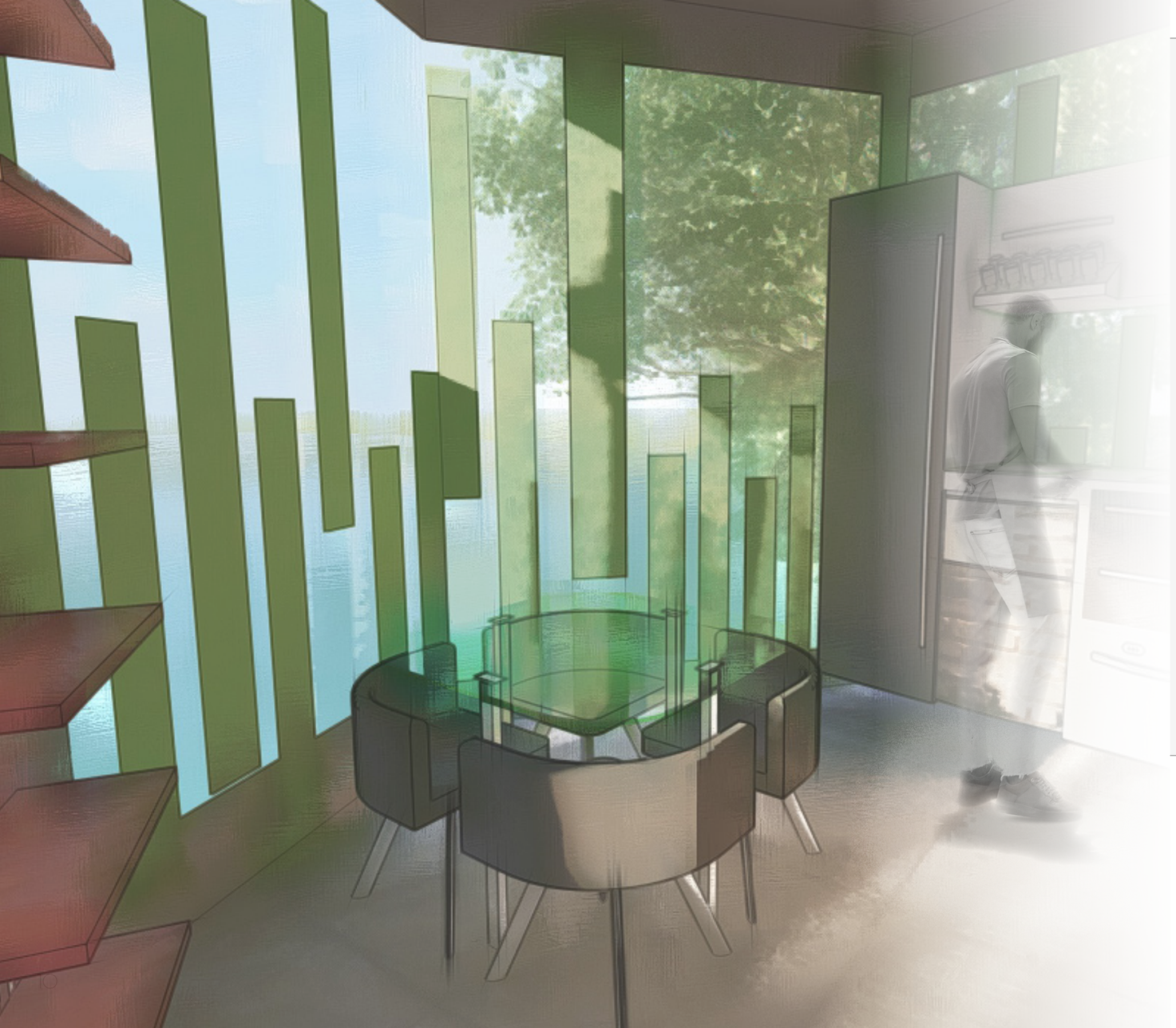
Private



Community

## Program Design

The building is designed so that the communal areas sandwich the private areas. There are central amenities like a pool and sauna and outdoor cooking area. Access to the river is easy via the patio with kayak storage on site. The roof features gyms, co working areas, and meditation rooms.




Section A-A'

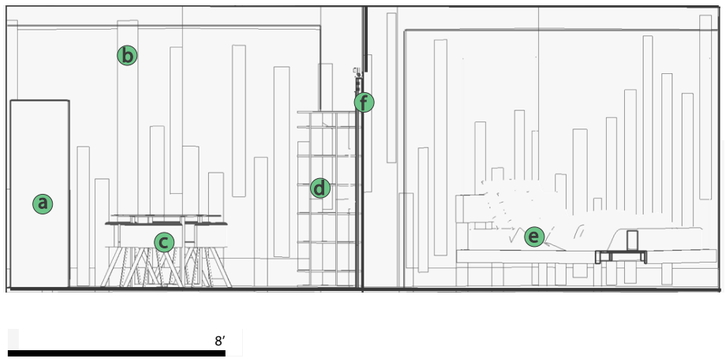
## Interior

*The curtain windows with algae tubes allow plenty of light into the micro-units. Kitchenettes are installed with the gray water system and furnished to maximize the space with beds that raise to the ceilings and modular/nesting furniture pieces.*


## Floor Plan

Legend

**a.** Bed suspended from ceiling on pulley system
**b.** Photo-bioreactor tubes 3-5" diameter
**c.** Nesting tables
**d.** Eame's sofa with storage
**e.** Modular dining
**f.** Shelving/Storage
**g.** Kitchen
**h.** Shower
**i.** Glass partition
**j.** Toilet
**k.** Sliding door




## Unit Section

Legend

**a.** Kitchen
**b.** Photo-bioreactor tubes 3-5" diameter
**c.** Modular dining area
**d.** Shelving
**e.** Bed suspended from ceiling
**f.** Sliding door separating public

### Floor Plan

Micro-units are laid out for maximum efficiency. The bed raises to the ceiling so the space can be used in other ways besides a bedroom. The living room/ kitchen is equip with collapsible elements to maximize space. All furniture is nesting or multi-use.

### Unit Section

The modular dining section is displayed here with sliding doors to not take up extra space. The algae tubes are visible through the windows. They create a unique aesthetic appeal and fuel the whole building and surrounding areas.

## BASALT CANYON MODEL

The model is important to showcase the focus of the stairway and elevator and the material juxtaposition. The prominence of the algae tubes against the hemp concrete and algae roofs have a unique futuristic form. The hexagonal rise from the river bank reflects basalt canyons natural form.

# Powering the Algo Hive

## Environmental Impact Metrics

| | |
|---|---|
| CO2 Sequestration | 328.5 metric tons/year |
| Renewable Energy | 182,500 kWh/year |
| Biofuel Production | 912.5 kg/year |
| Water Recycling | 292,000 liters/year |
| Cooling Energy Savings | 15,000 kWh/year |

### Quantifiable Environmental Impact

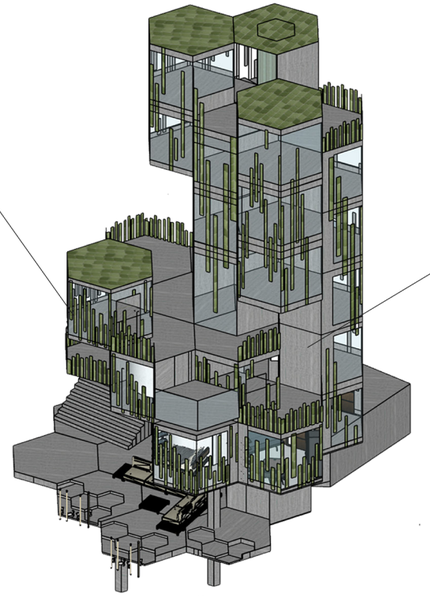
The Algo Hive exemplifies my design philosophy of harmonizing architecture with nature to create regenerative, adaptable spaces. By integrating photobioreactor algae tubes into the building's facade, the design not only generates renewable energy but actively captures carbon, transforming urban micro-housing into a living system that benefits both occupants and the environment.





**Algae Tubes**

The algae tubes are powered by sunlight and sequester carbon dioxide. They work as a facade and brise soleil for the building.

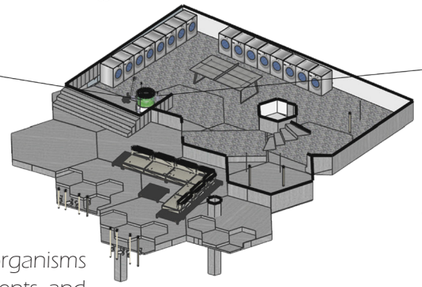


**Hemp Concrete**

The building is built with carbon sequester-ing concrete.

**Photobioreactor**

A photobioreactor grows microorganisms like algae using light, water, nutrients, and CO, producing biomass for bio-fuels, carbon capture, and sustainable products.



**Battery**

A battery in a building with a photobioreactor stores excess energy produced by the system, ensuring consistent power for lighting, heating, and other operations.

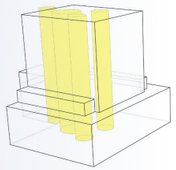
# Modulife

Transforming underutilized office spaces into vibrant modular housing to address urban density and sustainability.

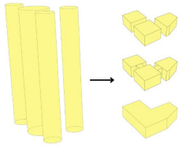
light well

green roof view

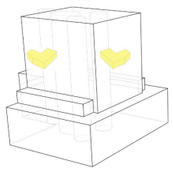
## Program



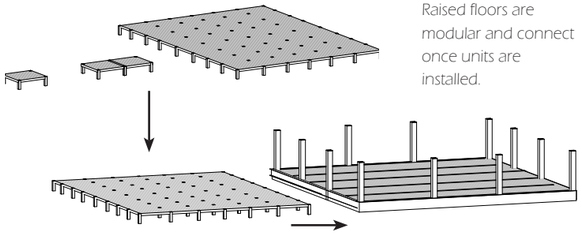
1. Cut hole through floors of building around stairs.



2. Repackage the volume for prefab units.

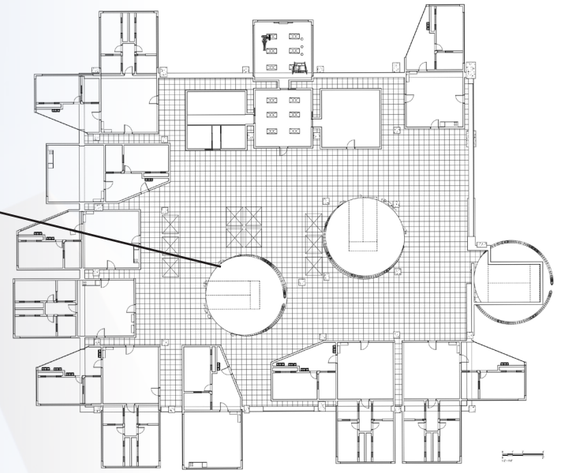


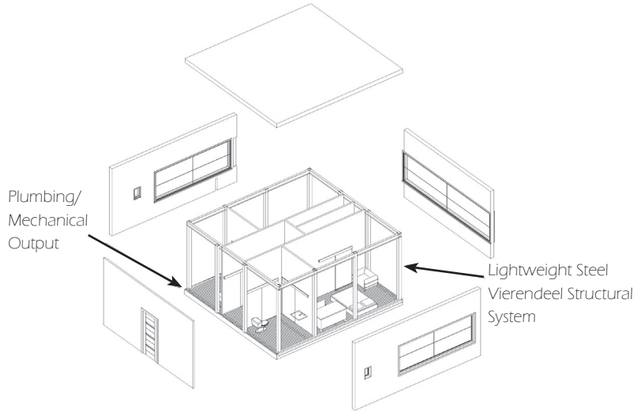
3. Crane units to office floors for gut renovation.



Raised floors are modular and connect once units are installed.

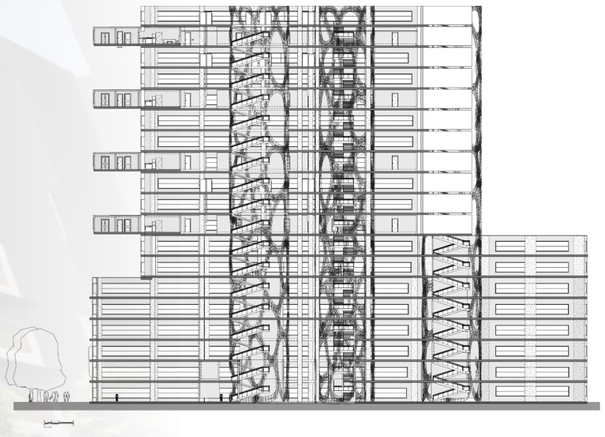
Raised floors allow unit plumbing and mechanical to be channeled to existing building systems.





Plumbing/ Mechanical Output

Lightweight Steel Vierendeel Structural System



Manhattan's rising office vacancies, driven by post-pandemic shifts in work culture, present an opportunity for innovative reuse. Modulife reimagines these unused spaces as sustainable modular housing through adaptive design and prefabricated systems. This project demonstrates how architecture can transform urban challenges into opportunities, fostering vibrant, adaptable spaces that prioritize community and sustainability., Modulife not only revitalizes these spaces but also provides affordable housing solutions for the city's workforce.

**Location**
Viikki, Helsinki, Finland

**Project**
Green Connections

# Green Connections

Utilizing solar punk principles and local materials to create a new mixed-use urban apartment community.
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*This project, located in Viikki, Helsinki, Finland, seamlessly integrates a dense urban landscape with nature while prioritizing sustainability through the use of local materials and site reuse. Intentionally crafted to maximize daylight and reduce environmental impact.*



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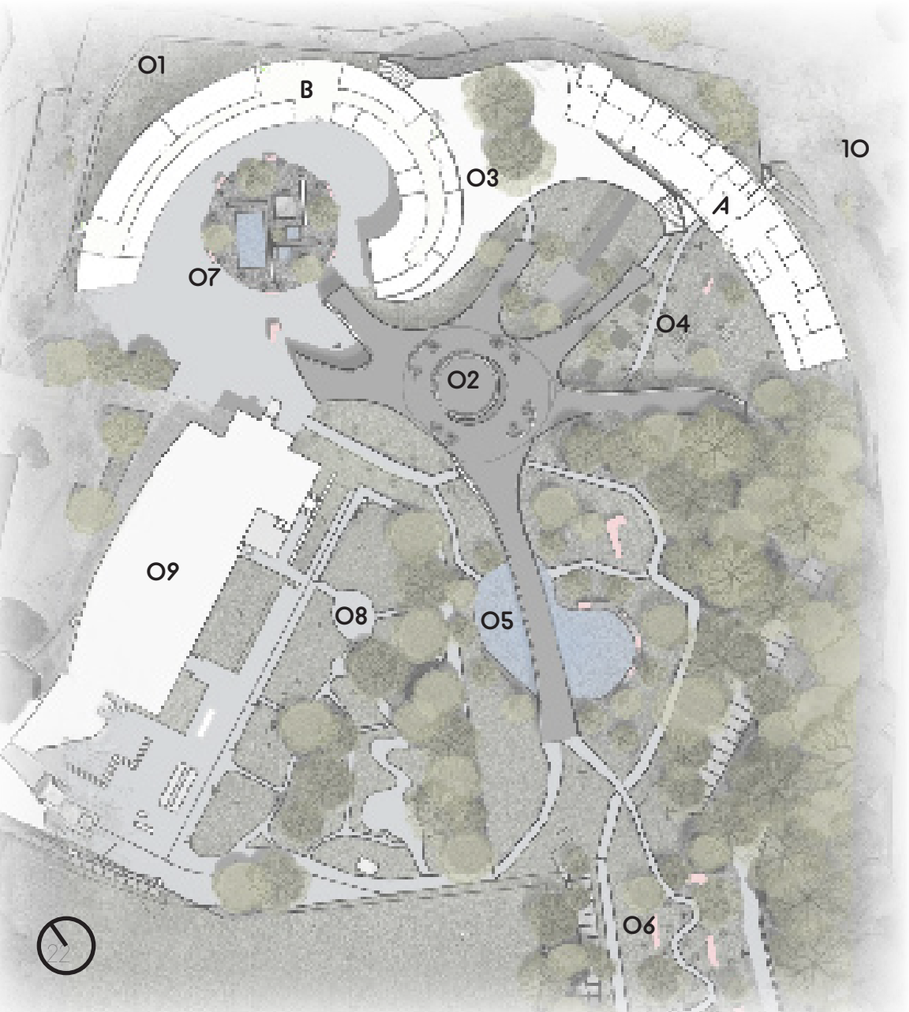
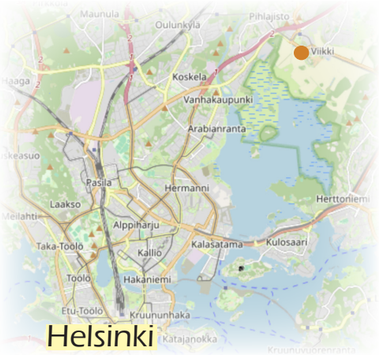
## SITE

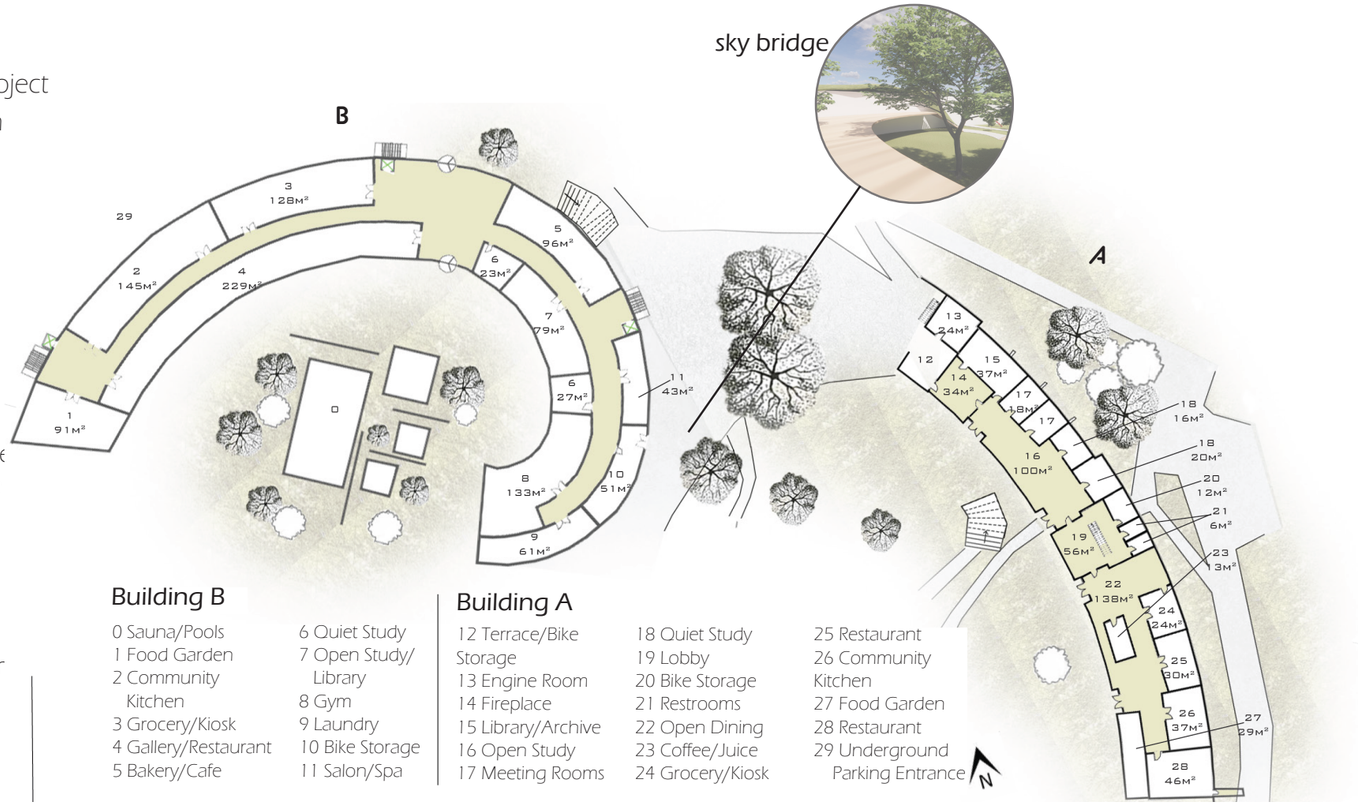
**The site is located** *in a collegiate neighborhood with a nature reserve and transportation hubs. The project directive was the surrounding landscape, a retrofit building (Building A) and a new build (Building B). In group project I focused on the new build and will be showcasing that here.*




### Legend

01 Parking entrance
02 Pavilion with roof bridge
03 Sky bridge/Bike storage
04 Nature playground
05 Fountain/Ice rink
06 Ruin garden
07 Sauna/Pools
08 Gardenia
09 Japanese winter garder
10 University




### Building B

0 Sauna/Pools
1 Food Garden
2 Community Kitchen
3 Grocery/Kiosk
4 Gallery/Restaurant
5 Bakery/Cafe
6 Quiet Study
7 Open Study/ Library
8 Gym
9 Laundry
10 Bike Storage
11 Salon/Spa

### Building A

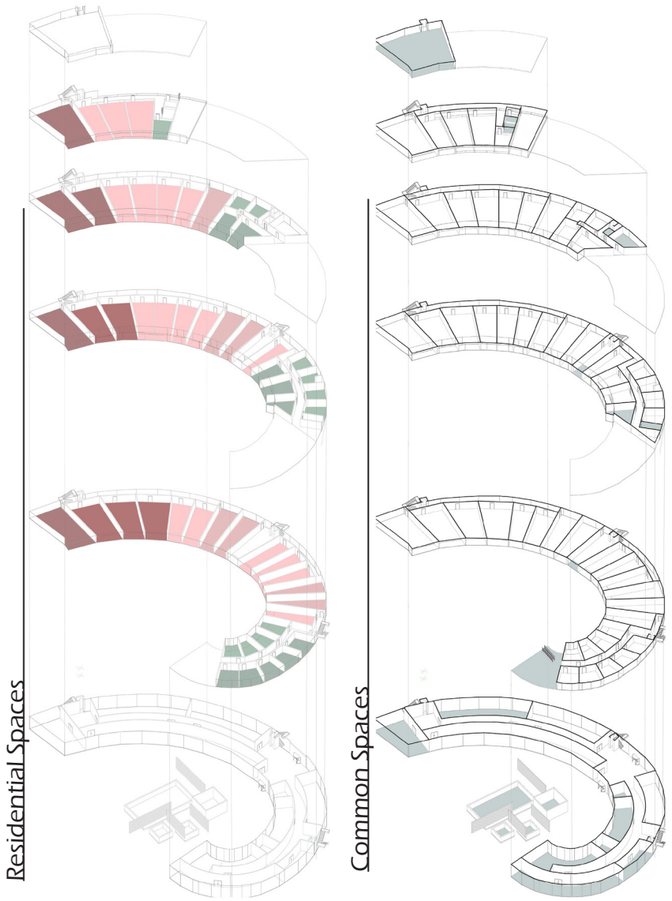
12 Terrace/Bike Storage
13 Engine Room
14 Fireplace
15 Library/Archive
16 Open Study
17 Meeting Rooms
18 Quiet Study
19 Lobby
20 Bike Storage
21 Restrooms
22 Open Dining
23 Coffee/Juice
24 Grocery/Kiosk
25 Restaurant
26 Community Kitchen
27 Food Garden
28 Restaurant
29 Underground Parking Entrance

### Design Concepts

The **sky bridge** physically connects the new structure to a retrofitted building, symbolizing the amalgamation of community and nature. Operable glass balconies not only capture southern views but are constructed using locally sourced materials, minimizing ecological footprint.

**Ruins** from the original museum find new life, framing an aromatic wellness ruin garden while preserving historical elements. The pavilion serves as a symbolic bridge between old and new, embodying the solar punk ethos through thoughtful design and material reuse.

Green Connections stands as a testament to **sustainability**, where local materials and site reuse harmonize with innovative architecture, fostering a flourishing future for the community and the environment.

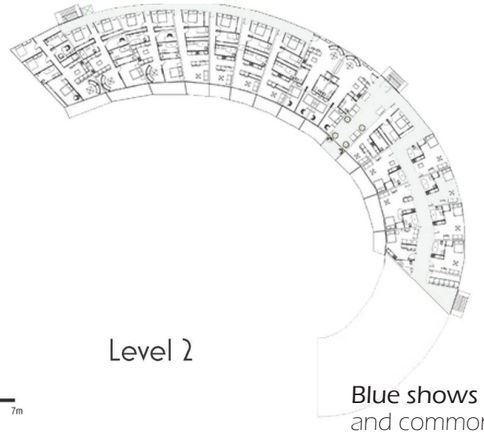



**Program Design**

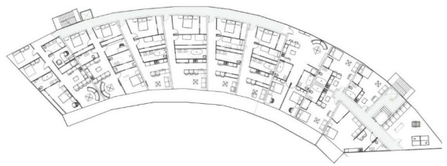
The public and private spaces show the connection to community and ideals of a multi-use housing option. Units range from studios to 3 bedrooms to fit a wide range of needs.

The gallery/restaurant faces the sauna and pools hosting local and global art. There is an indoor community garden for the kitchen and residents.

Level 1



Level 2

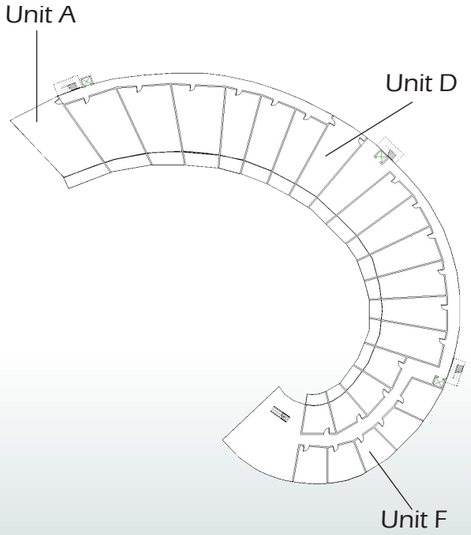


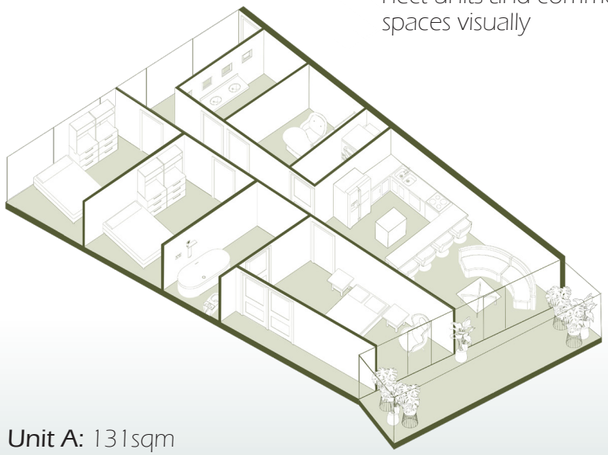
Level 3

Level 4

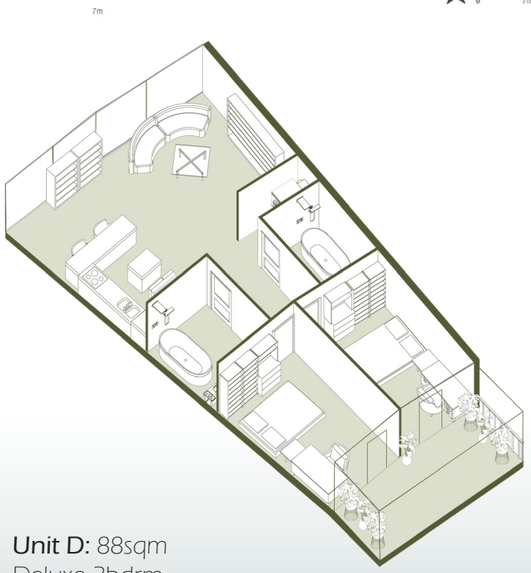
Level 5

**Blue shows circulation** and common areas in the floor plans. Balconies connect units and common spaces visually

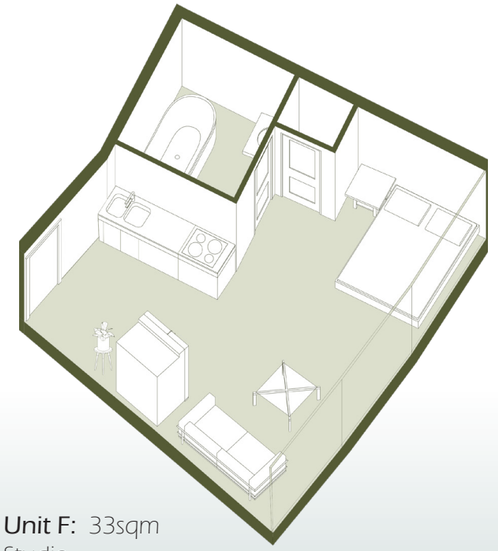


**Unit A:** 131sqm
Deluxe 3bdrm



**Unit D:** 88sqm
Deluxe 2bdrm



**Unit F:** 33sqm
Studio

## Floor Plans

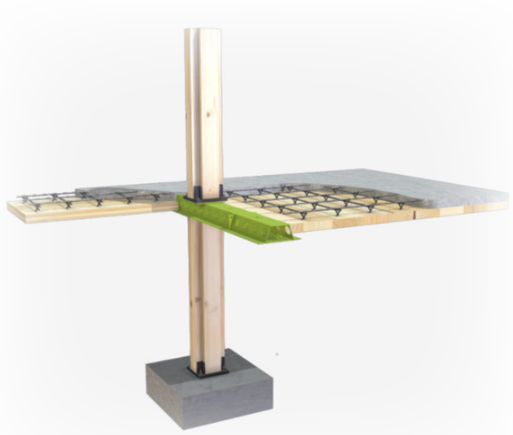
Floor plans are arranged so that units are aligned to the south of the building where they will be able to receive the maximum benefits of daylighting.

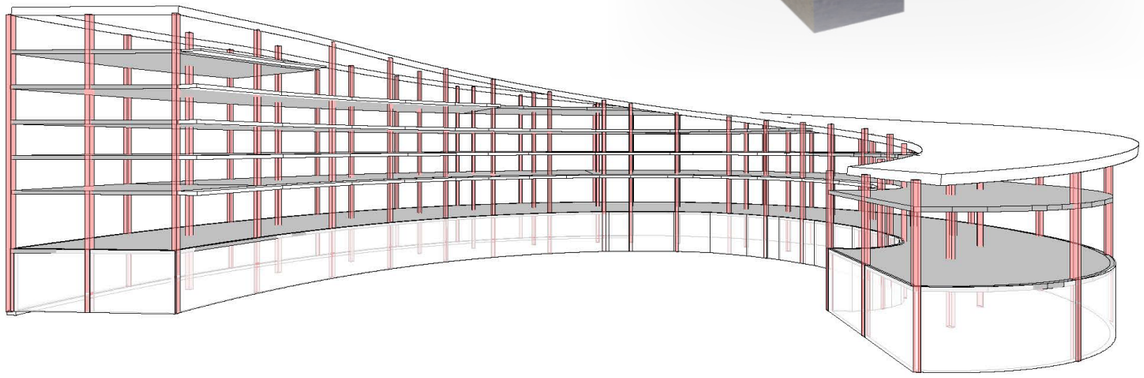
## Units

In this location sunlight is a valuable commodity and each unit is designed with reflective materials, balconies and south facing curtain windows.

# CLT Structure/ Slab and Column

The building structure integrates the most sustainable and modern technology that is locally sourced, efficient, and low carbon .

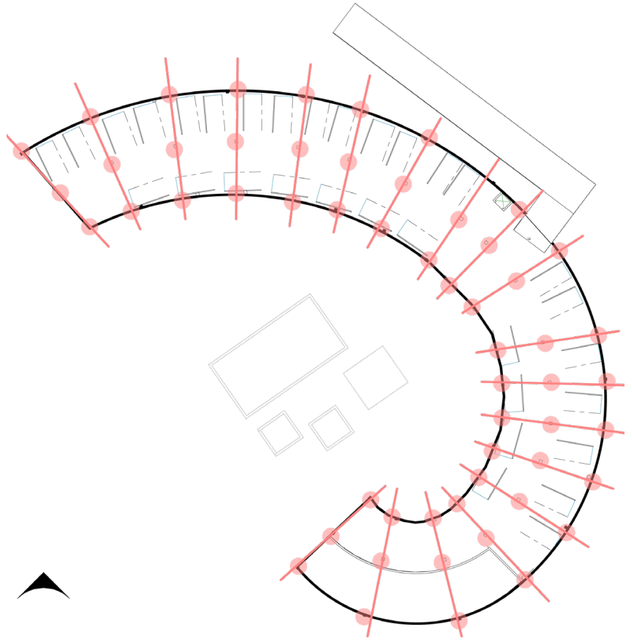




Slab and Column

DELTABEAM® Green is an eco-friendly version of Peikko's **composite beam,** offering the same structural benefits while significantly reducing environmental impact. It achieves up to a 50% reduction in CO2 emissions compared to standard beams by utilizing over 90% recycled materials and renewable energy in its production, along with eco-friendly logistics. Additionally, DELTABEAM® Green provides integrated fire resistance, supports long spans and flexible open spaces, enables slim floor structures, facilitates efficient HVAC integration, and contributes to lower heating and cooling costs over the building's lifecycle.

DELTABEAM® Green
Lightening environmental footprint.

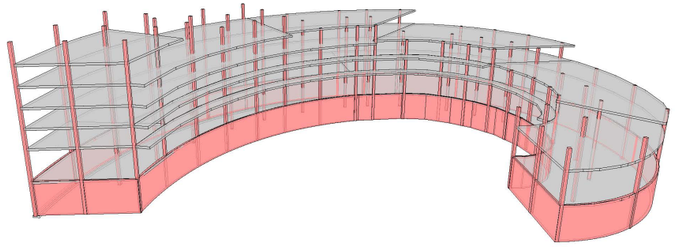


Rigidir and Timber construction

Gypsum Fiber Boards and Wood Panels

High static properties – certified as effective stiffening planking
Robust, modern drywall solution with high surface quality
Ideal use of space and flexibility thanks to high stability and strength
Universally applicable for fire and sound insulation constructions or wet room solutions
Maximum living health thanks to natural, vapor-permeable materials with high water vapor adsorption capacity

rigips
SAINT-GOBAIN



Plinth and Footing Foundation

CHRYSO®EnviroMix ULC (Ultra Low-Carbon) : a reduction of CO2 / m3 of **concrete** beyond 50%.

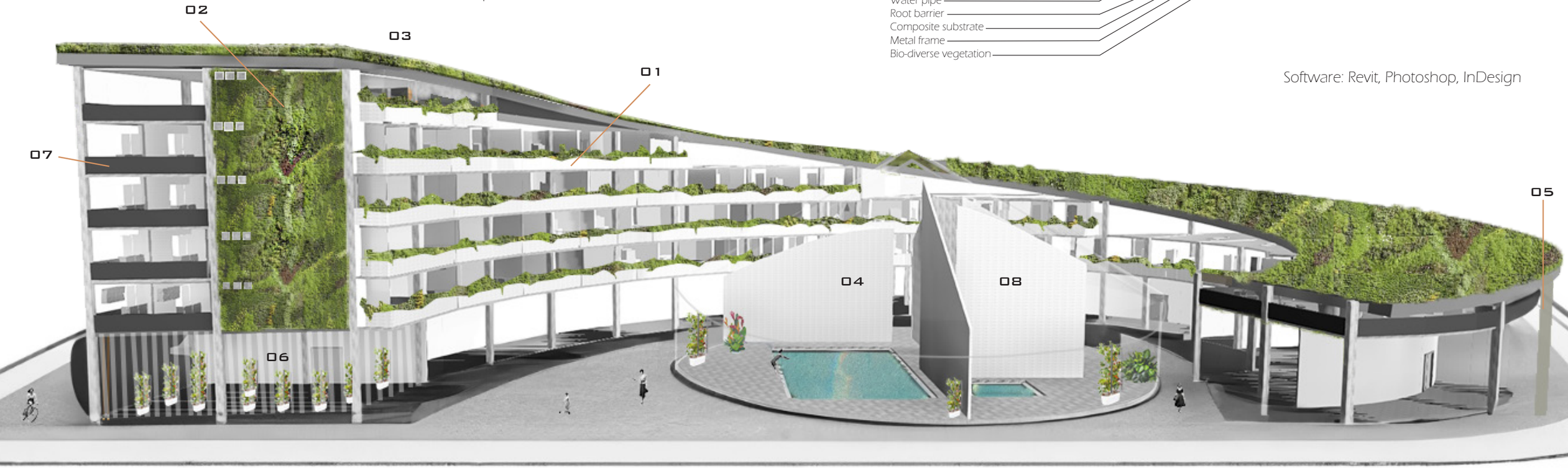
CHRYSO
SAINT-GOBAIN

## Sustainability

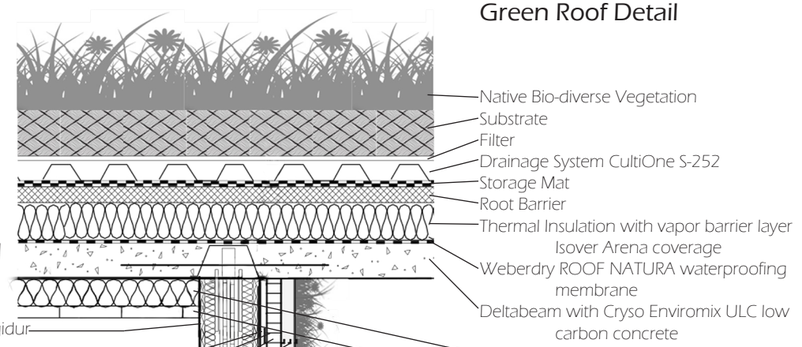
The intentional use of organic shapes around the site signifies inclusivity and a commitment to nature, employing salvaged materials from the site's original museum ruins in various structures and outdoor furniture. In the atrium, sauna culture takes center stage within a transparent greenhouse, embracing solar punk principles and powered by geothermal energy, reducing overall environmental impact.

### Legend

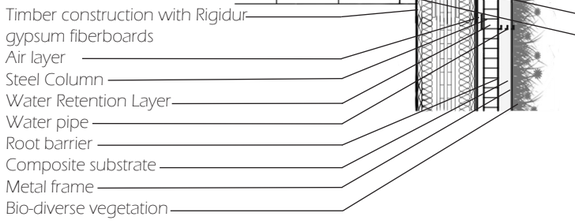
01 White granite planter
02 Green wall
03 Green roof
04 Sauna and pools: birch, granite, and ruin stones
05 Pipe to cistern
06 Opaque food garden walls
07 3' Privacy Walls
08 Conical winter greenhouse/sauna and pool shelter




### Green Roof Detail




### Exterior Wall Detail

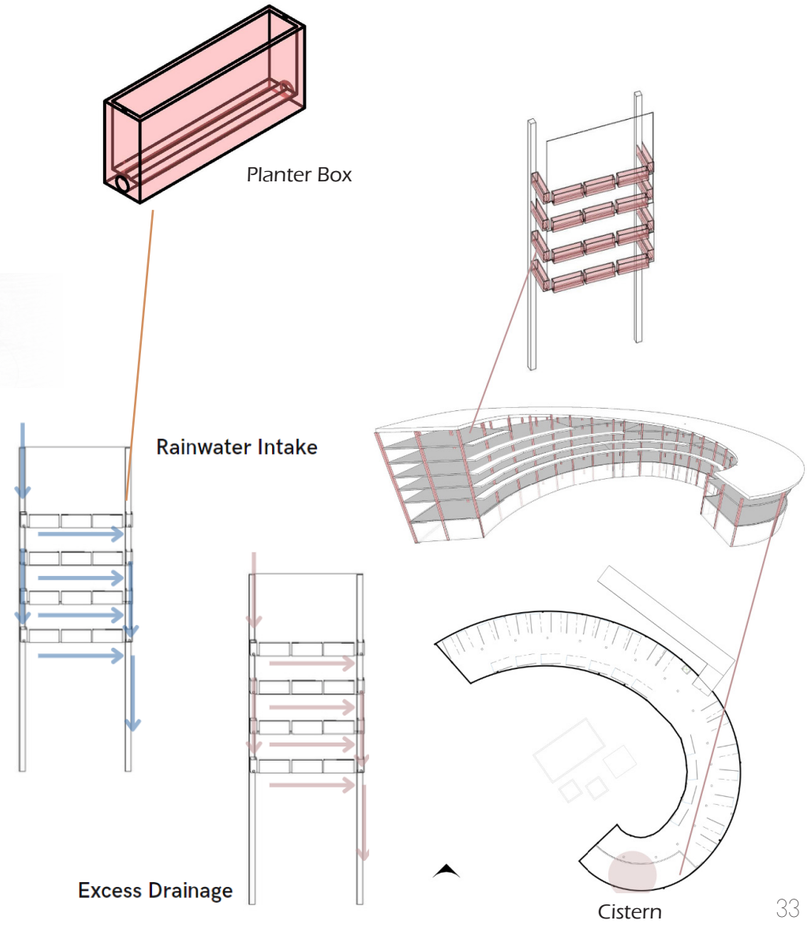



Software: Revit, Photoshop, InDesign

Balconies overlooking the sauna and pools feature seasonal operable enclosures, offering a harmonious blend of openness and comfort throughout the year.

## Sustainability

**Rainwater harvesting** system that waters balcony gardens equip with a water sensor in each planter for optimal drainage. Excess drainage then filters to the subterranean cistern for building use.



The new top floors have warm inviting colors that create a comfortable environment for learning and studying.

**Project**
ENVD bldg

**Location**
CU Boulder, Colorado

# ENVD Building

Retrofit of the building I studied design in, to improve learning, aesthetics, and comfort.

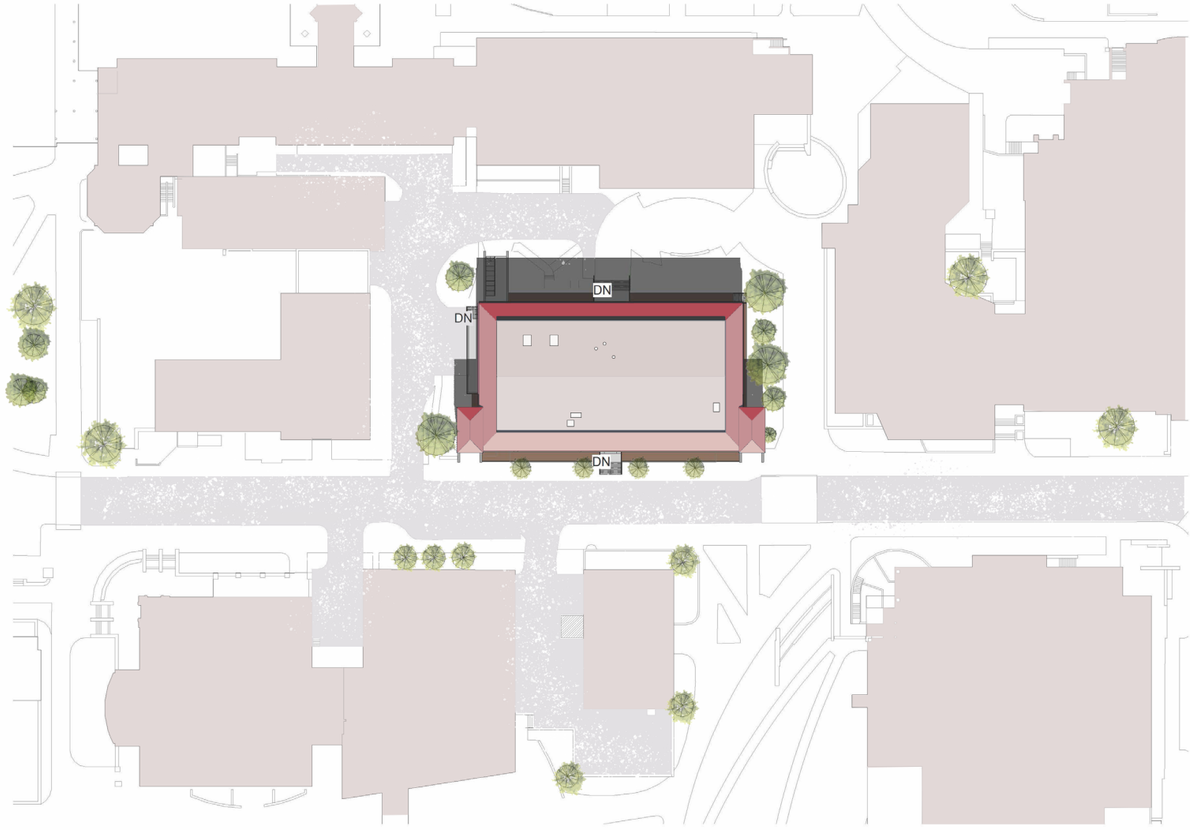
The Environmental Design Building at CU Boulder is consistently in need of renovation especially on the top floor. In this project I address the opportunities and constraints designing a better learning environment.

The ENVD Building is located close to the central part of campus in Boulder, Colorado.



## SITE

The site is located on the University of Colorado, Boulder campus in Boulder Colorado. Trees surround it and other buildings. From the top two floors views of the campus and the flatiron mountains are just to the west.



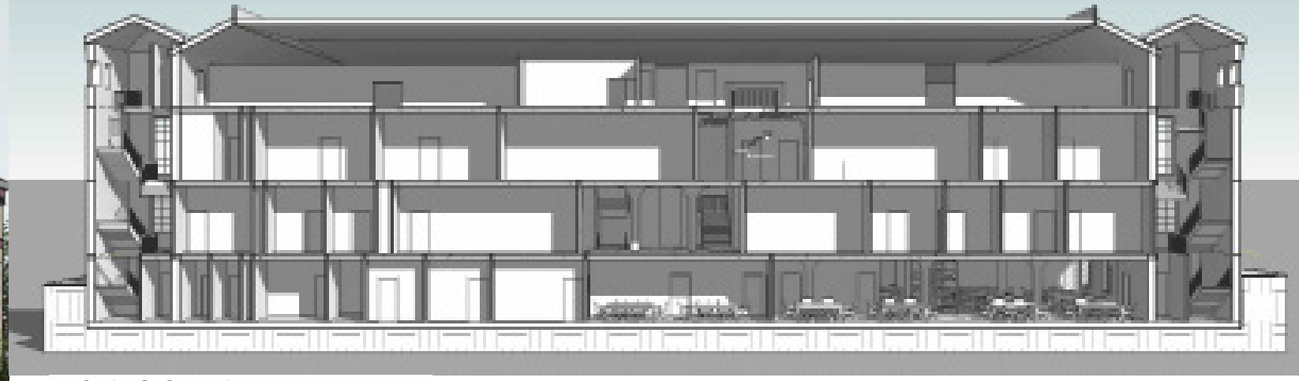

1 Site
1" = 60'-0"

## Design Concept

The top floor is basically unfinished with no HVAC and limited design concept for its purpose. Gutting the floor and building up and out with proper HVAC is essential to a cohesive and attractive learning environment.

2 Basement Studio

3 Spiral Stairs



1 Section Cut Perspective

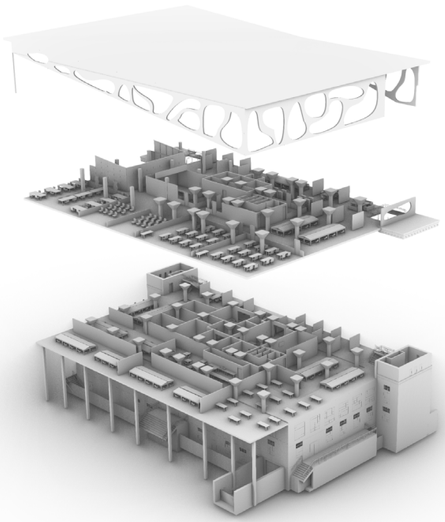
## Design Concept

***From old building construction documents*** *I created the current ENVD building in revit. This allowed me to understand the building's design and the opportunities present for redesign.*

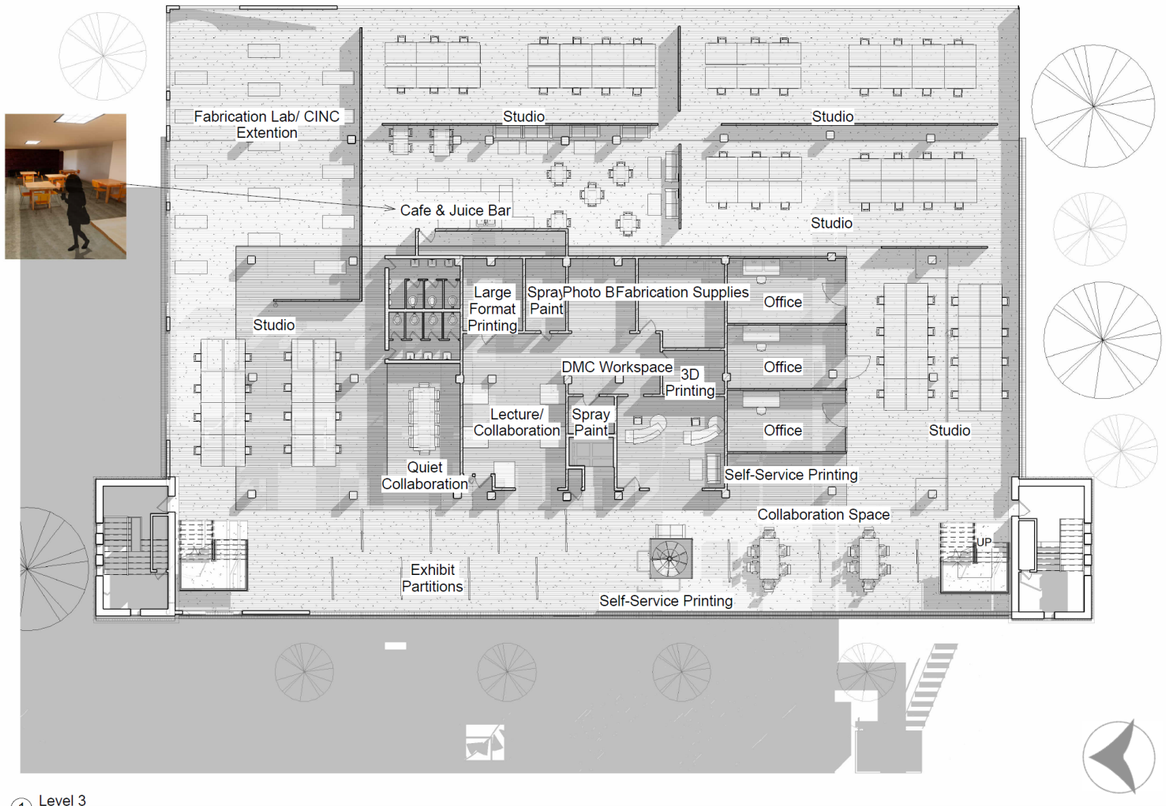
*The best opportunity was in redesigning the top floor. It would need to be gutted and aesthetic appeal would need to be introduced in a way that complimented the original Tuscan Vernacular Style.*

## Program Design

Currently the ENVD Building doesn't have all the necessary workshop elements as needed. There is a separate workshop off campus and it can be difficult to get to for some. This design incorporates the workshop into the studio spaces and allows for an integrated educational experience.



Thermo reactive windows change color in different temperature, creating an exciting, interactive, and warm space.




1 Level 3
1/16" = 1'-0"


1 Level 4
1/16" = 1'-0"

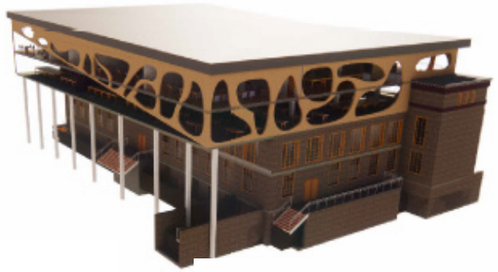
## Floor Plans

The floor plans represent the spaces necessary for a complete design space. It includes the workshop with the studio environment. Spaces are elevated to encourage a more comfortable work environment where students want to learn. The new plans include a greenhouse to help students understand native plants and promote wellbeing.

## Floor Extension

The floor plate is extended for the new floors in order to maximize the space and incorporate new elements while adding another floor and more successful stairwells.

**West Perspective**



North West
Perspective

North West
Perspective

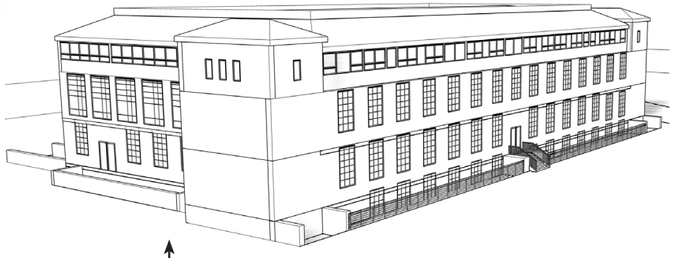
South East
Perspective

## Perspectives and Elevation

Renderings show the retrofit skin juxtaposition with the original Tuscan style vernacular. The openness of the windows allow more natural light in as well as the roof lift with curtain windows.




1 East Elevation
1/16" = 1'-0"

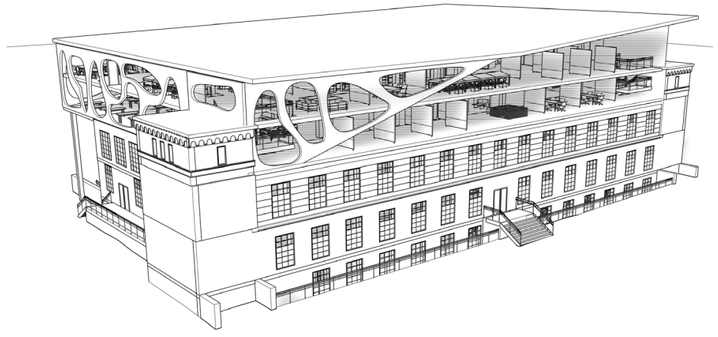


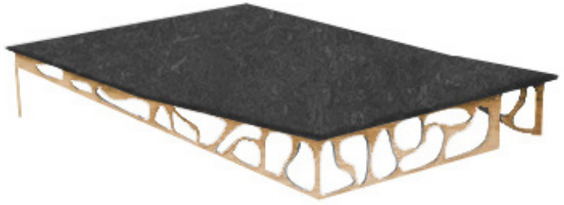
## Before Design Intervention

The original building was designed for a laundry facility and the introduction of classrooms was an after thought. The top floor where the studios are located is closed off to light and lacks temperature control.

## After Design Intervention

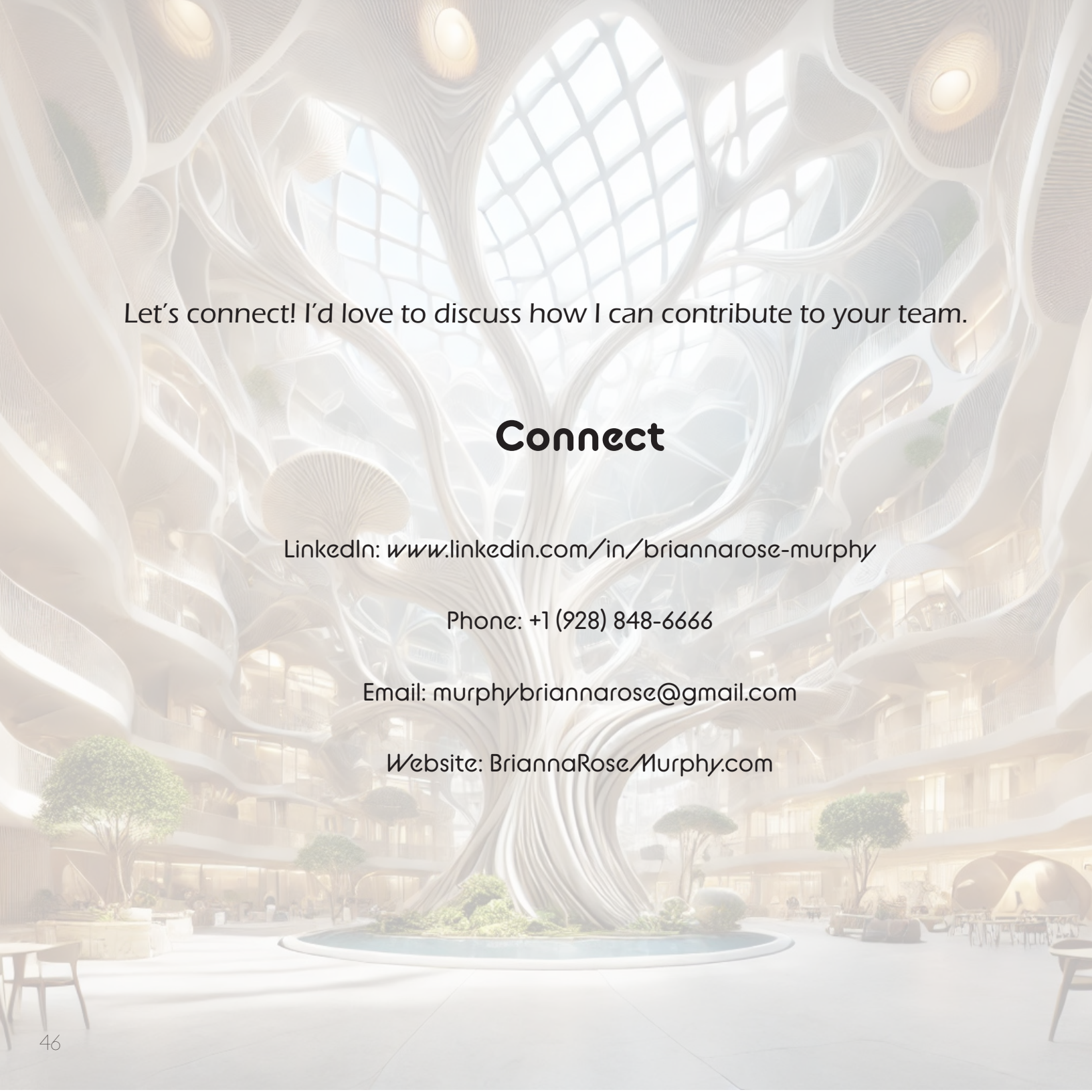
The final concept for design intervention allows more light into the building and adds another floor for studio space and an inclusive design environment. The temperature control will be added for a more comfortable space.





## Facade Design

The original building is very rectilinear and in order to break this up I wanted to add in organic shapes and light. In order to do this I added warm colored wood to make the inside more inviting and cut holes in it to allow light in. The roof is skov matte black roof tiles in order to mimic the Tuscan Vernacular Style.



Let's connect! I'd love to discuss how I can contribute to your team.

# Connect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