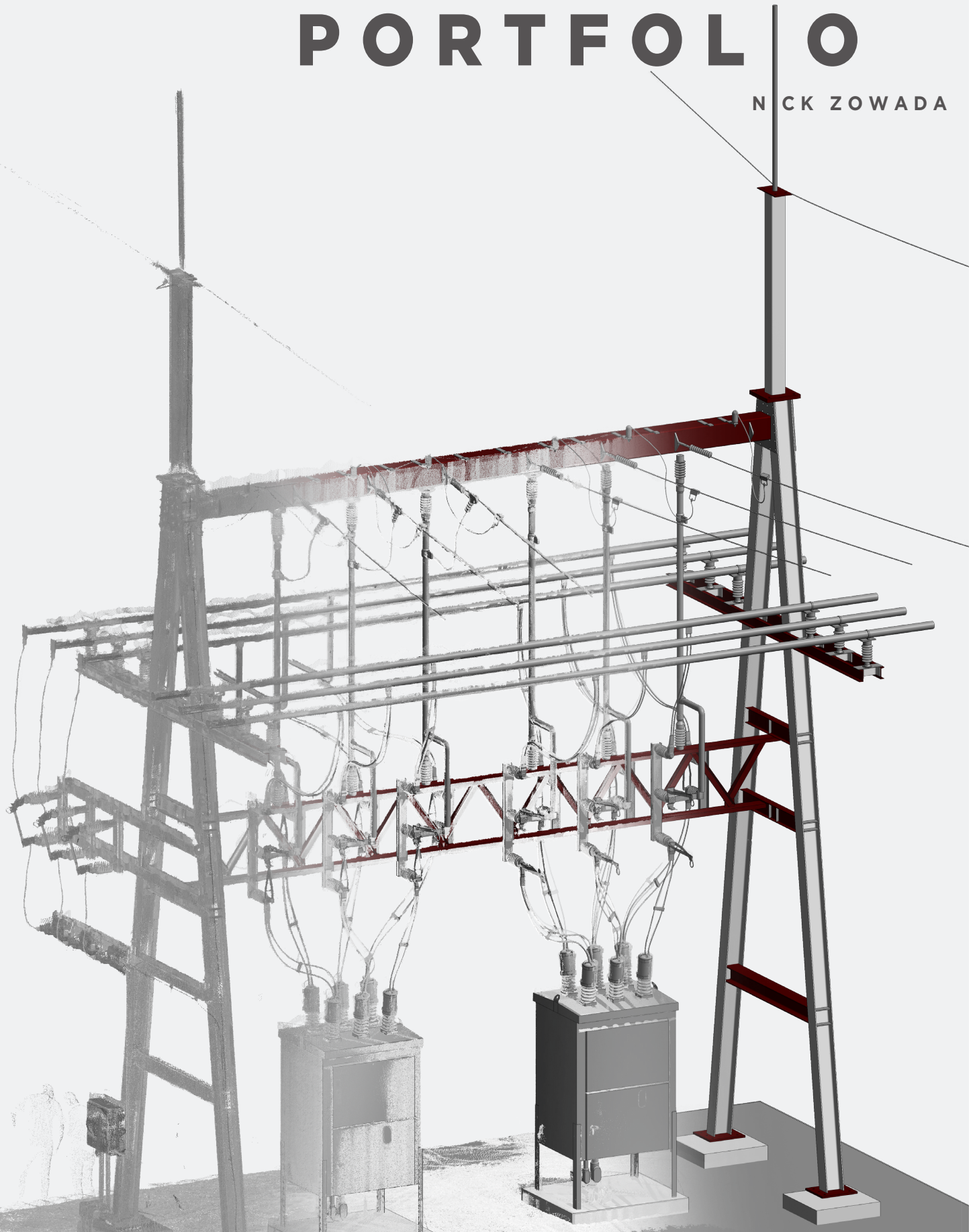


PORTFOLIO

NICK ZOWADA



BACKGROUND

NAME

NICHOLAS ZOWADA
27 / MALE

CAREER

ARCHITECTURAL DESIGNER
M3 Engineering & Technology Corp.
CONSTRUCTION LABORER
Schraufnagel Development LLC

EDUCATION

UNIVERSITY OF ARIZONA
Tucson, AZ
DEGREE
B. Arch. (Class of 2022)

CLUBS / AWARDS

- Club member of AIA Arizona Chapter
- Award Winner: American Institute of Architects Design Excellence Program Student Faculty Award

CONTACT

Ntzowada@gmail.com
LinkedIn.com/in/zowada
(970) 901-1825



Hi there! My name is Nick Zowada and I am an architectural designer that resides in Flagstaff, Arizona. I specialize in industrial design, which heavily involves expertise in BIM modeling and AutoCAD, LiDAR scanning technology, and animation production for reputable clients. My main responsibilities include the design and general arrangement of equipment & floor plan layouts, as well as overseeing and coordinating design progress with other in-house engineering departments. The project budgets I've been involved with can range from a few hundred thousand dollars for retrofit work, to multi-billion dollar mining facilities starting from scratch. I was lucky enough to gain experience using new-and-upcoming BIM-supported technology, both digitally and on site, and I'm excited to share these experiences with you.

Currently, I am employed as a construction laborer specializing in residential projects. My goal is to integrate practical, hands-on experience in general contracting and construction with my architectural design expertise to create more effective and informed architectural solutions.

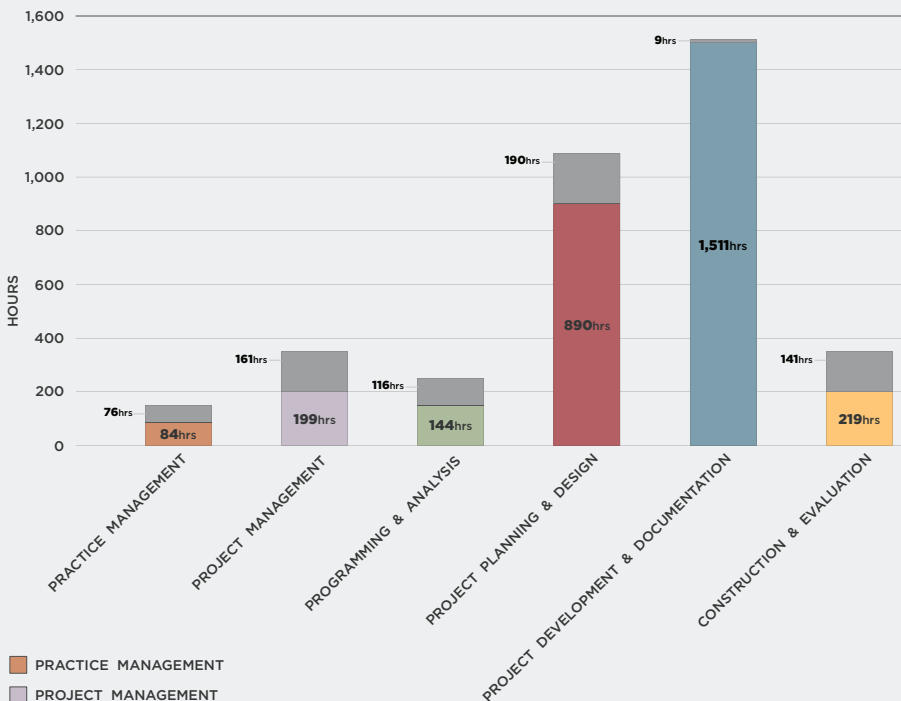
Although I currently reside in Arizona, I grew up in the snowy, South Western Slope of Colorado for the majority of my life. Growing up and living in polar opposite climate types, I have fallen in love with exploring the outdoors. In my free time, I'm usually taking photos and creating videos with my friends, snowboarding, or doing any other activities that get me outside.

My family has a long history of hobbying artists, so art has always been an staple of my life. The artistic influences around me have made a substantial impact on my design intent, causing me to always try to find the perfect balance between form and function for all of my designs. I am passionate about sustainable design advocacy, advantageous modern technology, and meticulous detailing and intent. I sincerely believe that a design is only as good as the people who designed it, and I will do whatever it takes to make a design great (and keep the client happy).

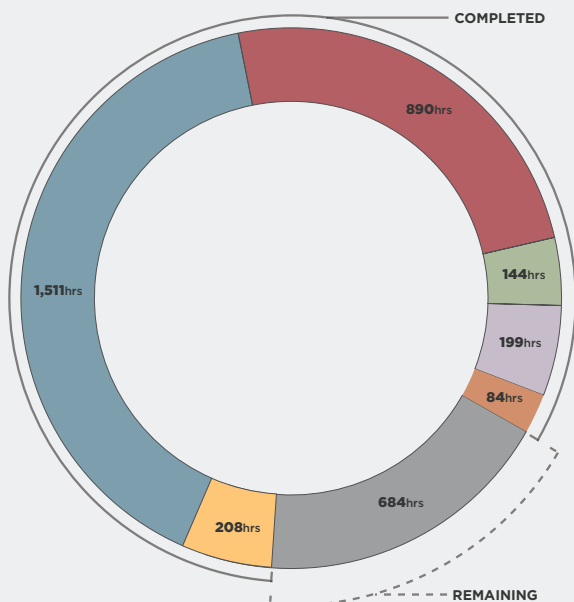
Thank you for taking time out of your day to take a look my portfolio. I hope you enjoy.

SKILLS / STRENGTHS

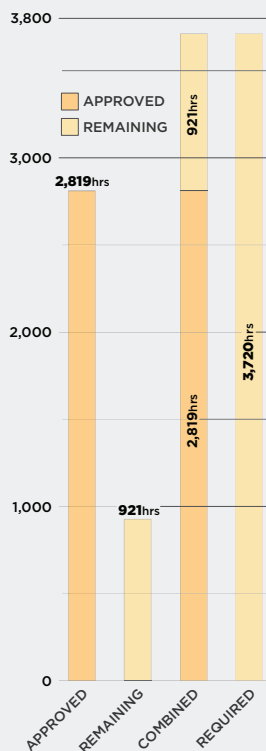
ARCHITECTURAL EXPERIENCE PROGRAM HOURS



- PRACTICE MANAGEMENT
- PROJECT MANAGEMENT
- PROGRAMMING & ANALYSIS
- PROJECT PLANNING & DESIGN
- PROJECT DEVELOPMENT & DOCUMENTATION
- CONSTRUCTION & EVALUATION
- REMAINING HOURS

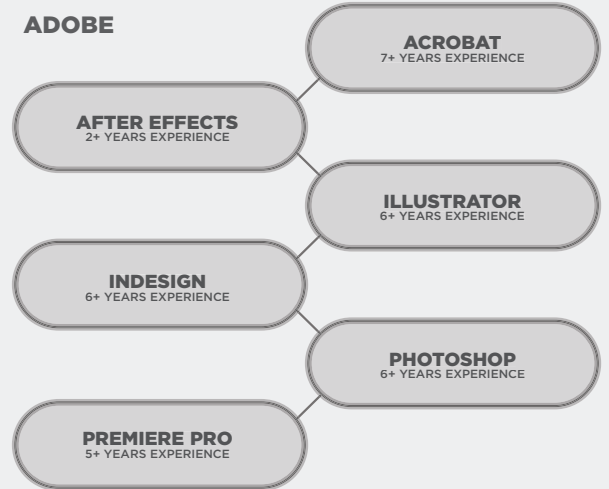


OVERALL PROGRESS

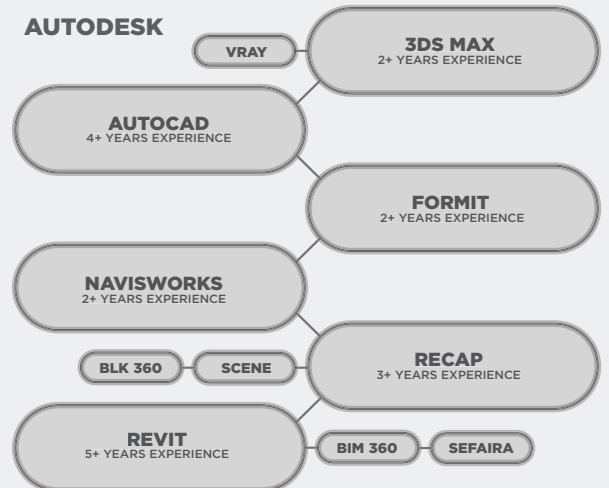


SOFTWARE

ADOBE



AUTODESK



OTHER

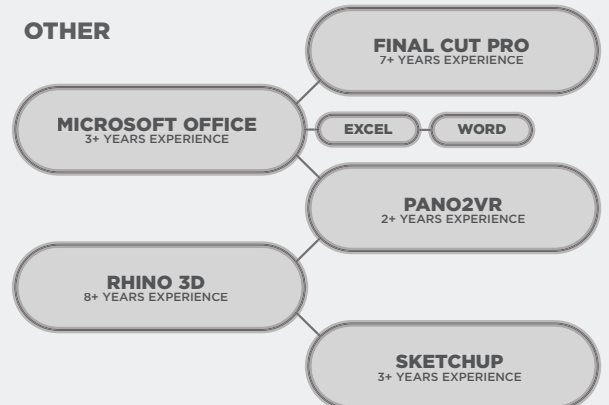


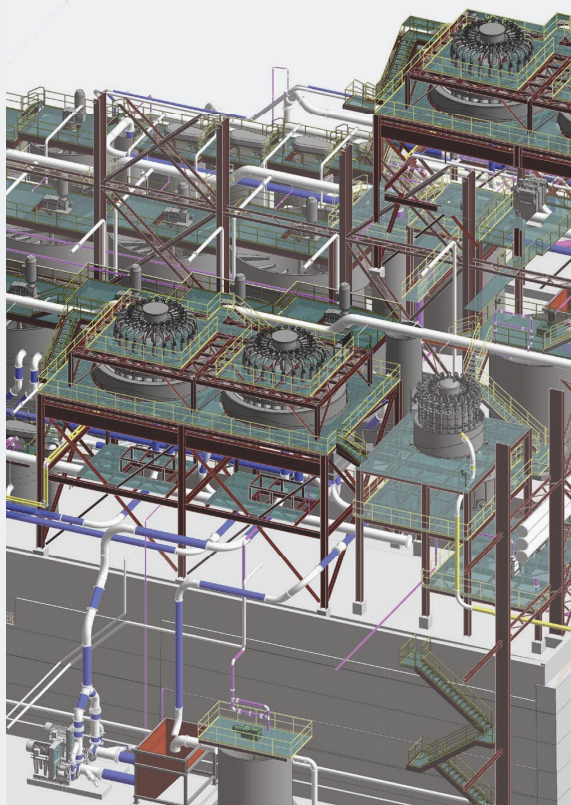
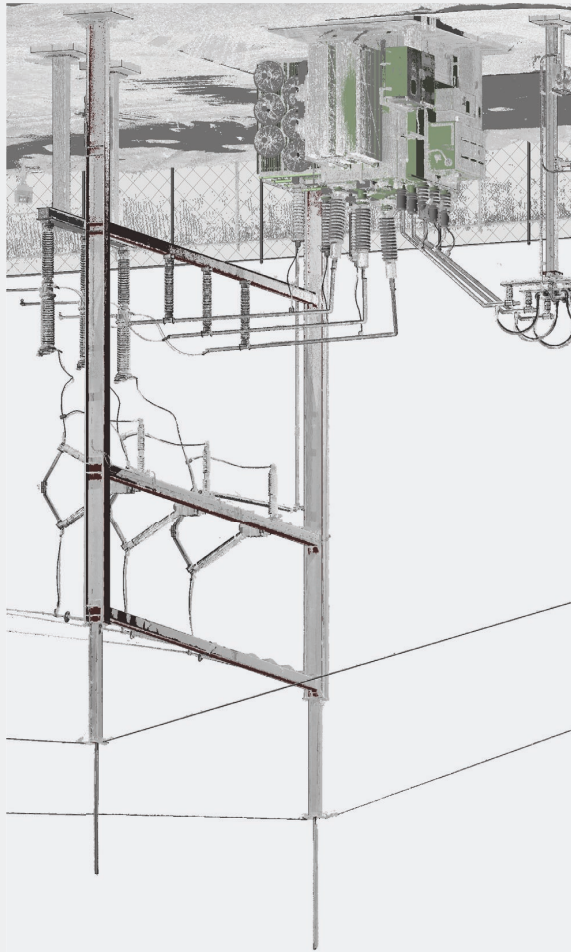
TABLE OF CONTENTS

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PROFESSIONAL CAREER

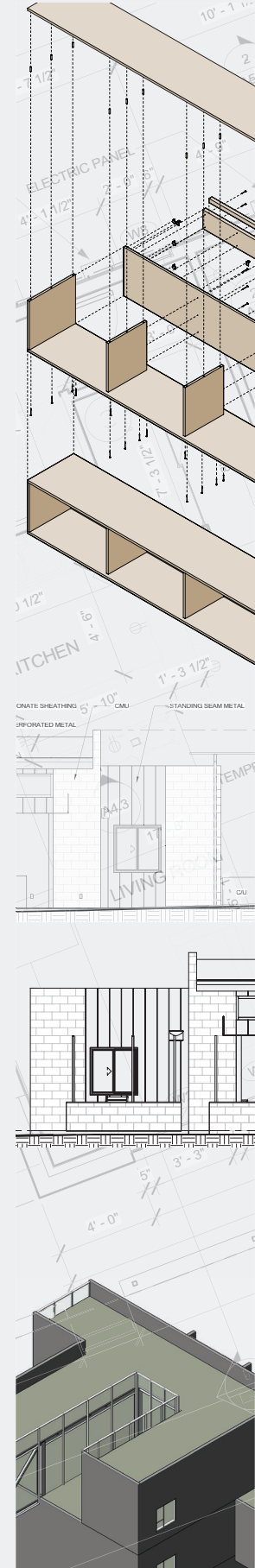
NORTH & SOUTH AMERICA
2022 - 2024



5 - 6

UNIVERSITY

ARIZONA
3RD YEAR - CAPSTONE



7 - 10

COLLABORATIVE CENTER OF INNOVATION (C.C.I.)

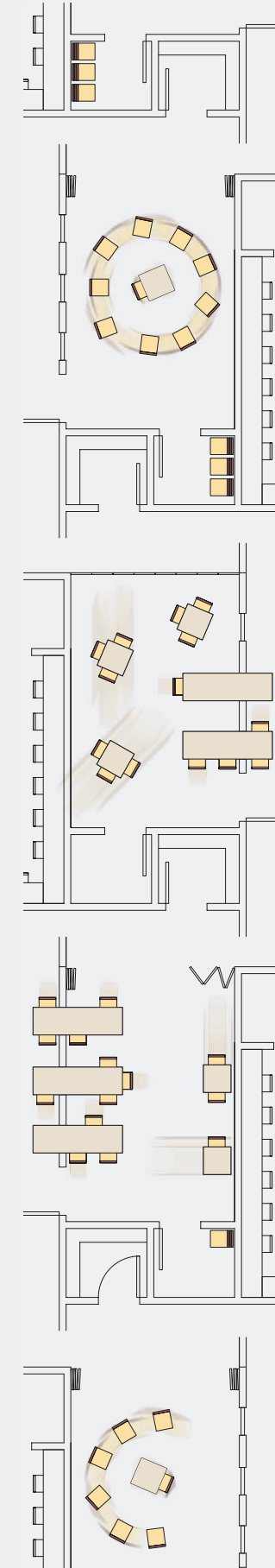
TUCSON, AZ
4TH YEAR



11 - 12

CAPSTONE

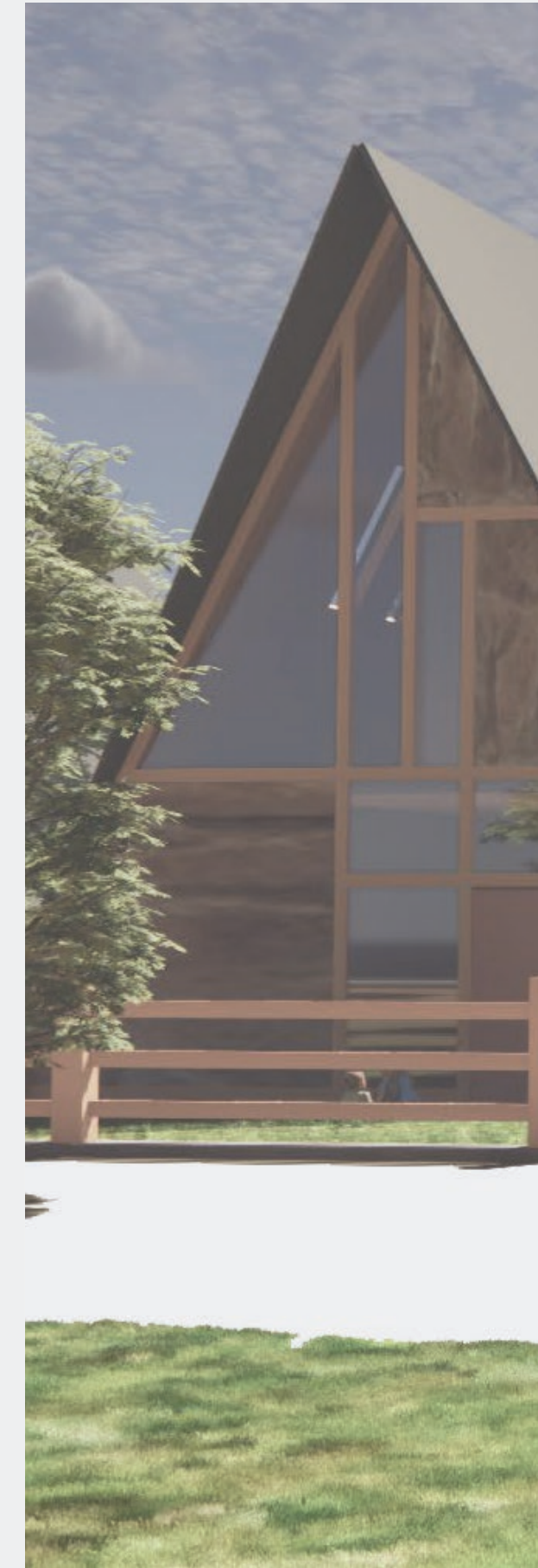
MOYO, UGANDA
5TH YEAR



13 - 16

FOSTER FAMILY RETREAT

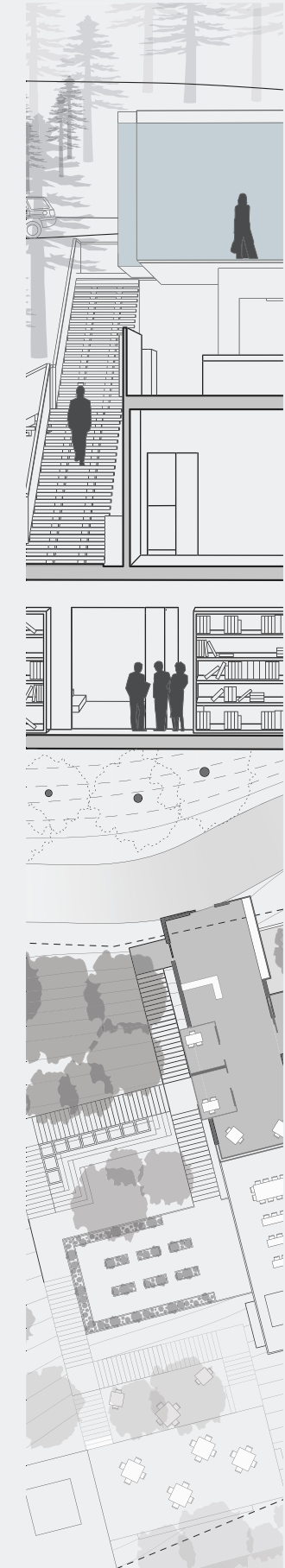
PATAGONIA, AZ
4TH YEAR



17 - 18

ENVIRONMENTAL RESEARCH CAMP

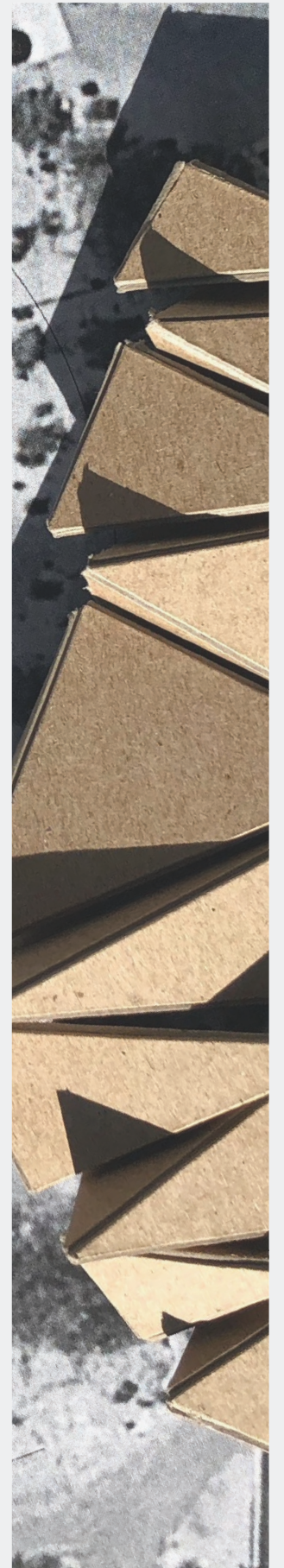
SUMMERHAVEN, AZ
3RD YEAR



19 - 20

RILITO RIVER PARK RAMADA

TUCSON, AZ
3RD YEAR



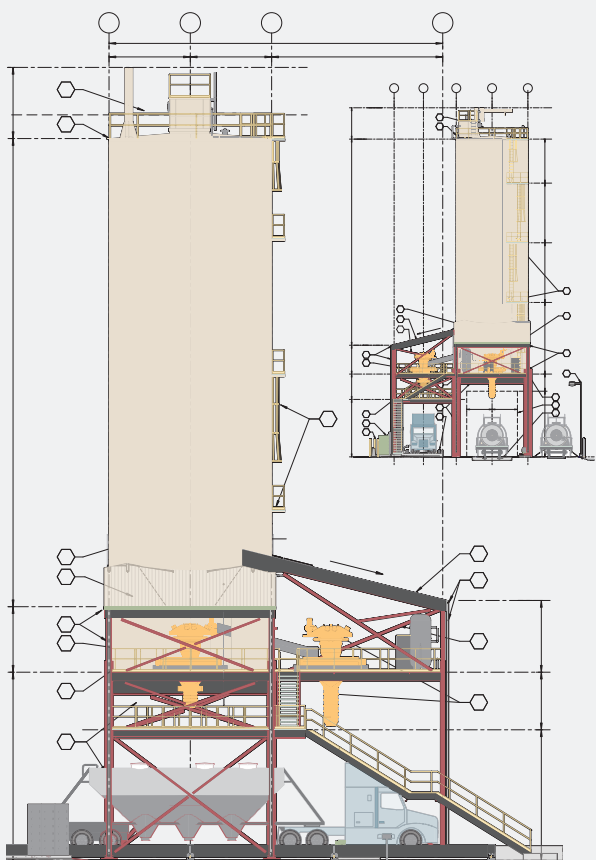
CAREER

REVIT SHEETS

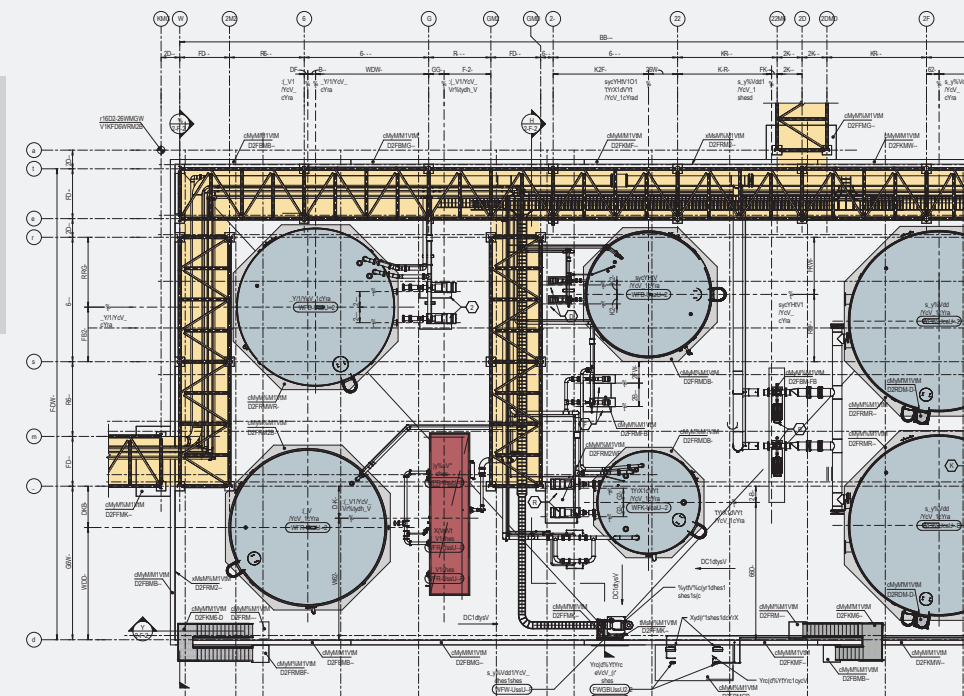
As an architectural designer, I utilize Revit and AutoCAD almost daily to draft comprehensive construction documents. These documents include site plans, floor plans, sections, elevations, 3D views, and diagrammatic drawings, all adhering to stringent graphic standards dictated by client and firm requirements.

The drawings must be precise, accurate, and highly informative, presenting all necessary data in an organized layout. Throughout the drafting process, I have enhanced my skills in areas such as annotation, sheet setup, and visibility/graphic overrides in both Revit and AutoCAD.

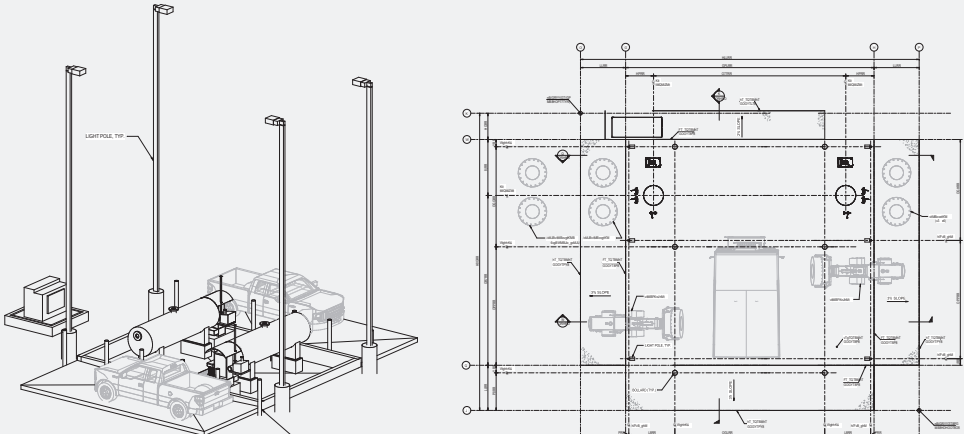
These documents undergo multiple iterations of review, revision, and issuance to clients, following predetermined deliverable schedules. To maintain the confidentiality of sensitive project details, much of the drawings and text have been obscured.



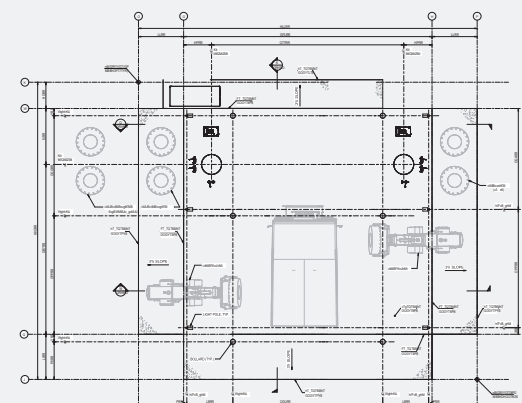
ELEVATIONS
CEMENT STORAGE & TRANSFER | ARIZONA



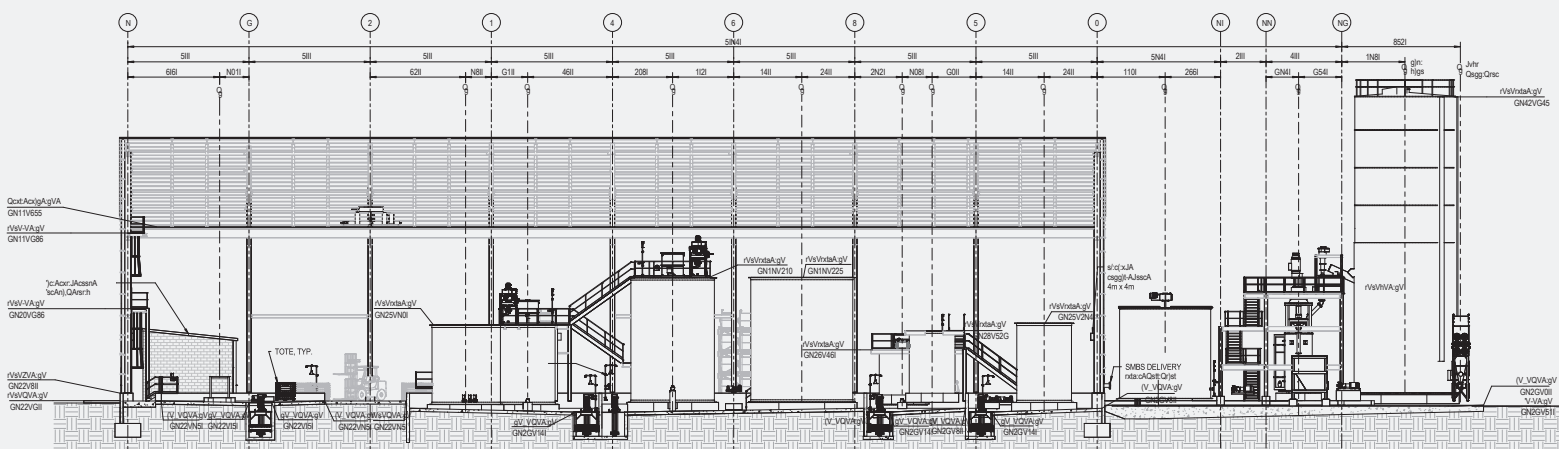
ORTHOGRAPHIC LAYOUTS
WATER STORAGE SYSTEM | MEXICO



AXONOMETRIC & 3D VIEWS
VEHICLE FUELING STATION | MEXICO



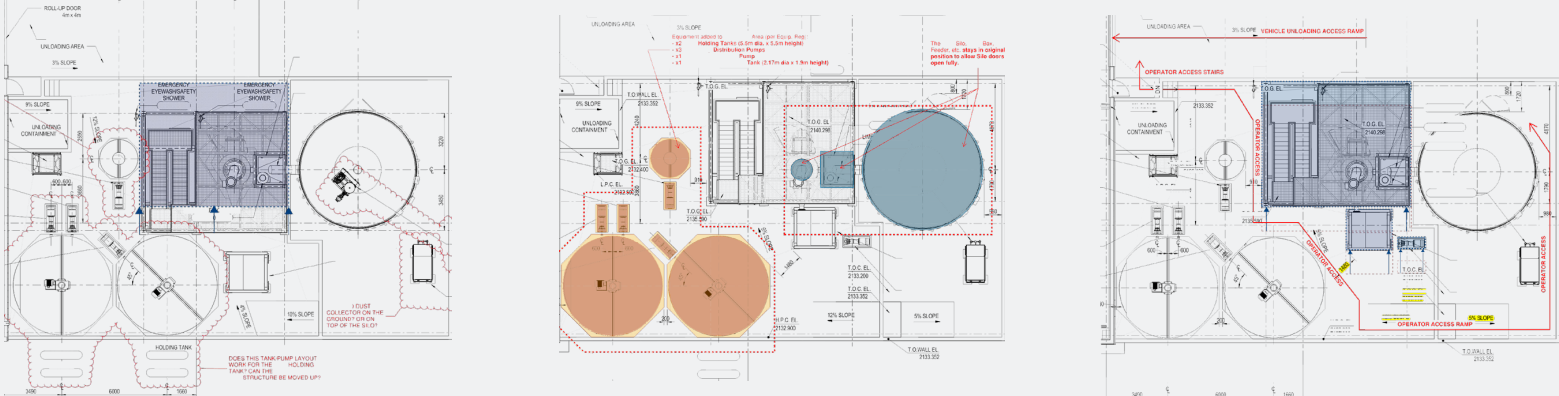
OVERALL FLOOR PLANS
TIRE CHANGE STATION | ARGENTINA



FULL / TRANSVERSE SECTIONS
CHEMICAL MIXING + STORAGE | PERU

BLUEBEAM

Just as producing drawings for clients is common, creating redlines is also an essential part of brainstorming ideas with clients and colleagues. Bluebeam is a key tool for this, as it focuses on redlining PDFs and enabling collaborative editing sessions. Mastering Bluebeam was crucial for effectively communicating design ideas and progress. This software allows us to mark up documents, share feedback in real-time, and ensure everyone is on the same page throughout the design process.

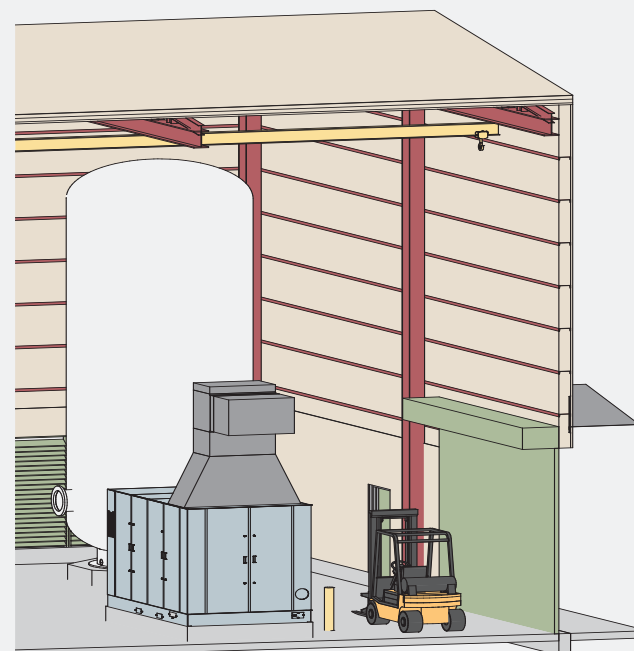


REVIT MODELING

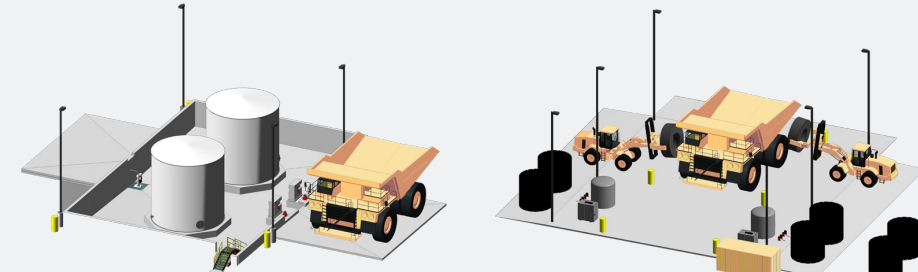
In industrial design, Revit modeling is essential for bringing projects to life, especially when dealing with challenging terrains. Many project sites have rough, contoured landscapes, making it crucial to use shared coordinates and correct elevations to seamlessly connect different building areas.

A key aspect of these projects involves piping and electrical connections to various equipment. This requires ongoing collaboration with engineers to ensure our models are accurately linked and integrated. Additionally, it's vital to design layouts that provide safe egress and maintenance access around all equipment.

Successful execution of design demands extensive knowledge of Revit modeling, both in the project editor and the family editor, to effectively create and manage these complex building areas and equipment layouts. Throughout the process, I've developed strong skills in Revit's project and family editors, ensuring precise, functional designs that meet the needs of industrial projects.



E-WASTE COMPRESSION PLANT
INDIANA | GENERAL ARRANGEMENT | REVIT

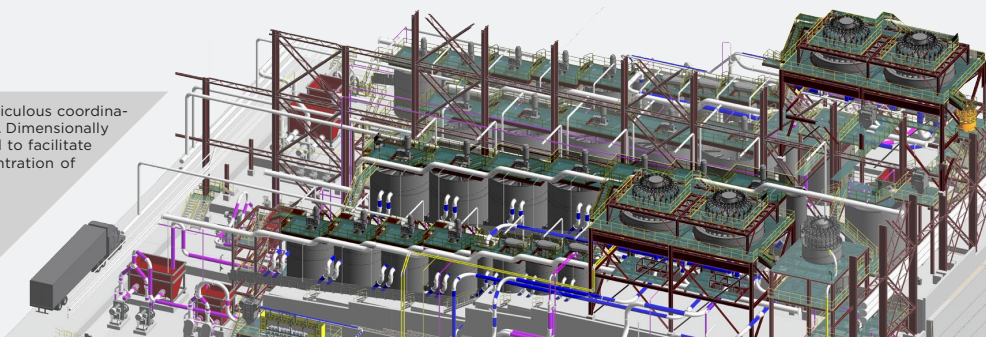


HEAVY VEHICLE FUELING & TIRE CHANGE STATIONS
MEXICO | GENERAL ARRANGEMENT | REVIT

COLLABORATIVE PROJECTS

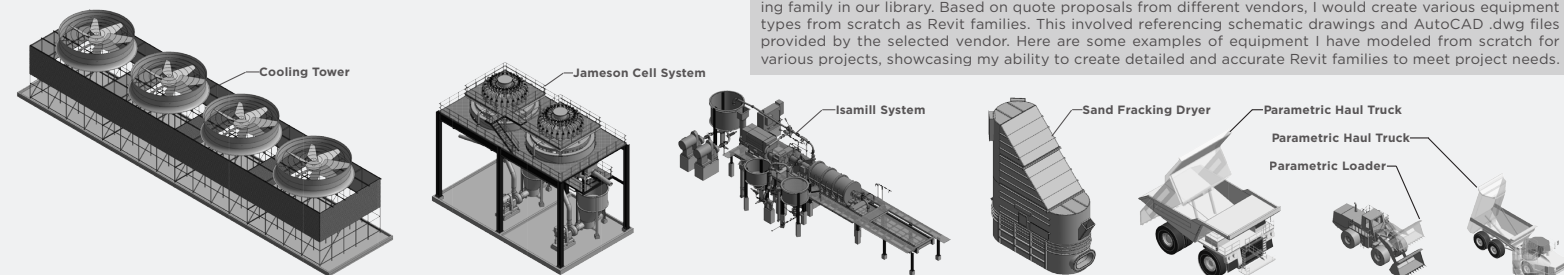
The flotation building, which felt like the heart of the project, required meticulous coordination across all in-house engineering disciplines, particularly Civil and Piping. Dimensionally accurate modeling was crucial. Civil engineers needed to add an MSE wall to facilitate gravity flow between flotation cells, and this area had the highest concentration of piping in the entire project.

I was responsible for modeling several aspects of the flotation building, including the flotation cells, operator platforms and stairs, overall equipment layout, and the concrete foundations. As equipment updates occurred, I ensured that the models remained accurate and up-to-date. This required a high level of precision and collaboration, utilizing Revit's advanced modeling capabilities and coordination tools to integrate inputs from different disciplines seamlessly.



REVIT FAMILIES

In industrial projects, it's common to model new equipment in Revit when our company doesn't have an existing family in our library. Based on quote proposals from different vendors, I would create various equipment types from scratch as Revit families. This involved referencing schematic drawings and AutoCAD .dwg files provided by the selected vendor. Here are some examples of equipment I have modeled from scratch for various projects, showcasing my ability to create detailed and accurate Revit families to meet project needs.



PARAMETRIC MODELING

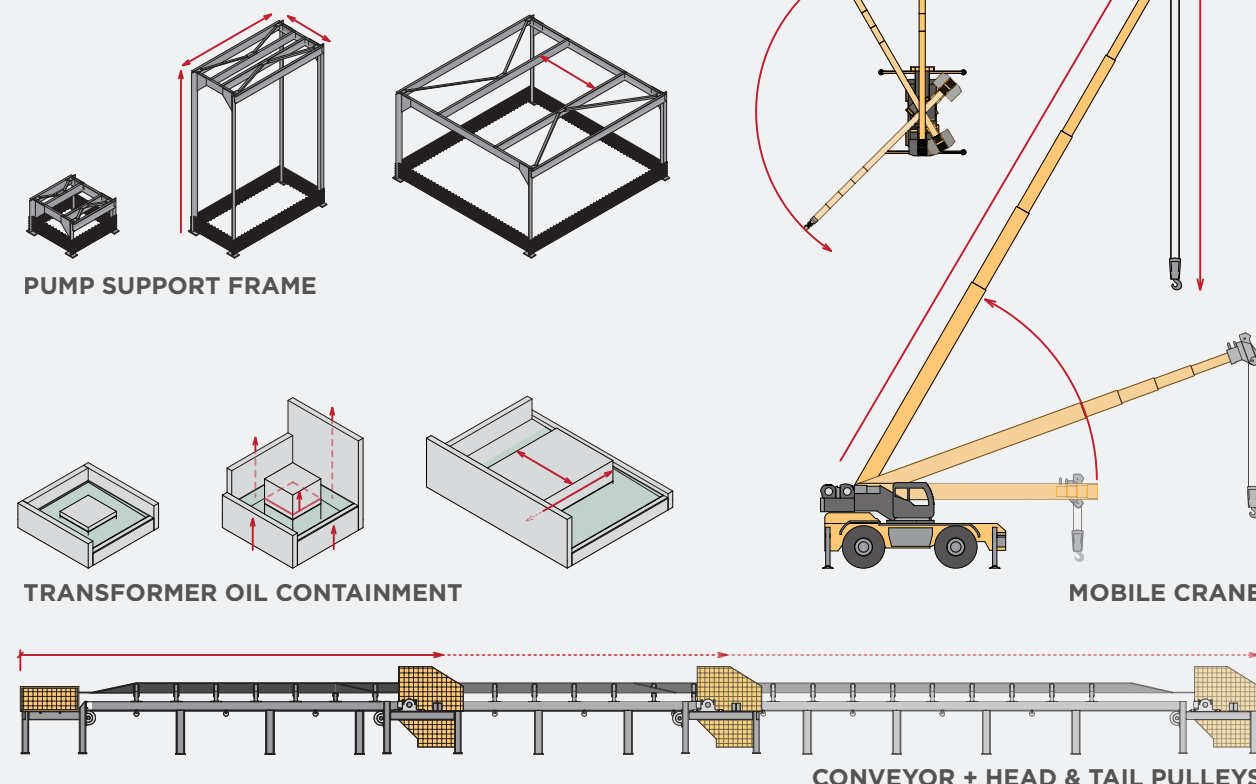
Equipment in industrial projects often comes from the same vendor and serves similar functions but varies in size to support seamless mineral processing. By creating parametric Revit families, we can customize equipment to fit any dimensions, saving both time and money in the modeling process.

For instance, the industrial vehicles shown above utilize "Type Parameters" to exhibit functionality, while the models on the right use "Instance Parameters." These parameters allow multiple nested families to link together using formulas and identical variables, ensuring they work cohesively within the parent family.

Developing these parametric industrial Revit families has significantly improved the efficiency of project design in several ways:

- **Time Savings:** They reduce the time needed to adjust models for changes in equipment sizes.
- **Material and Space Calculations:** They enable quick calculations of the material or space required to meet peak processing functionality.
- **Repositioning Flexibility:** They can be swiftly repositioned to reflect real-time operations during different project phases.

These advancements demonstrate my ability to create adaptable and efficient designs using Revit's advanced features, enhancing overall project workflows.



AUTOCAD

Not all in-house engineering disciplines use the same software to advance their part of a project. In our industrial-focused design firm, AutoCAD serves as a crucial platform where various .dwg file types can be exported from different software and imported into AutoCAD. The result is an X-Facilities file that overlays all parts of the project in their respective locations using shared coordinates, allowing for real-time updates.

X-Facilities serves multiple purposes at our firm, but my primary involvement includes producing site plans and diagrams with colored overlays. These overlays highlight different aspects of the project, such as phases of construction and the organization of building type layouts. This process ensures that all project elements are accurately coordinated and visually clear for effective project management and client presentations.

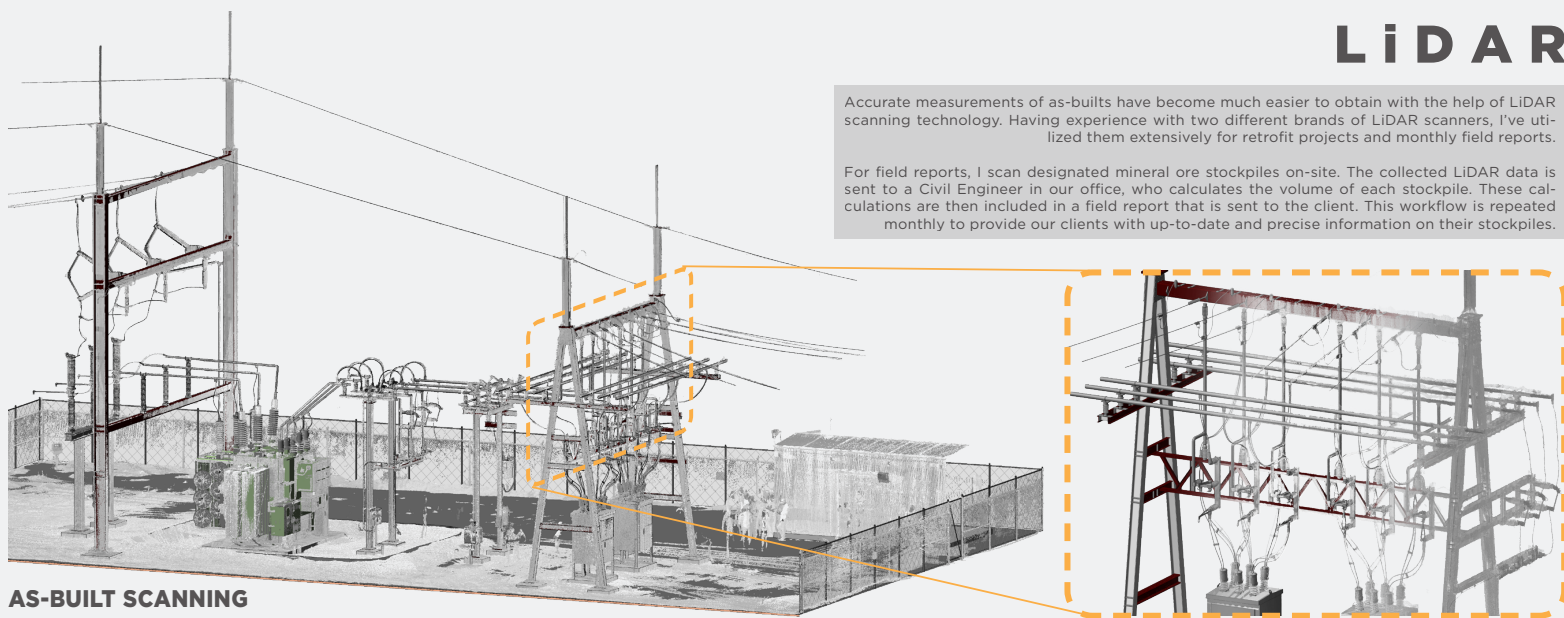
SITE PLANNING + PHASING
Li/Zn REFINERY | ARGENTINA



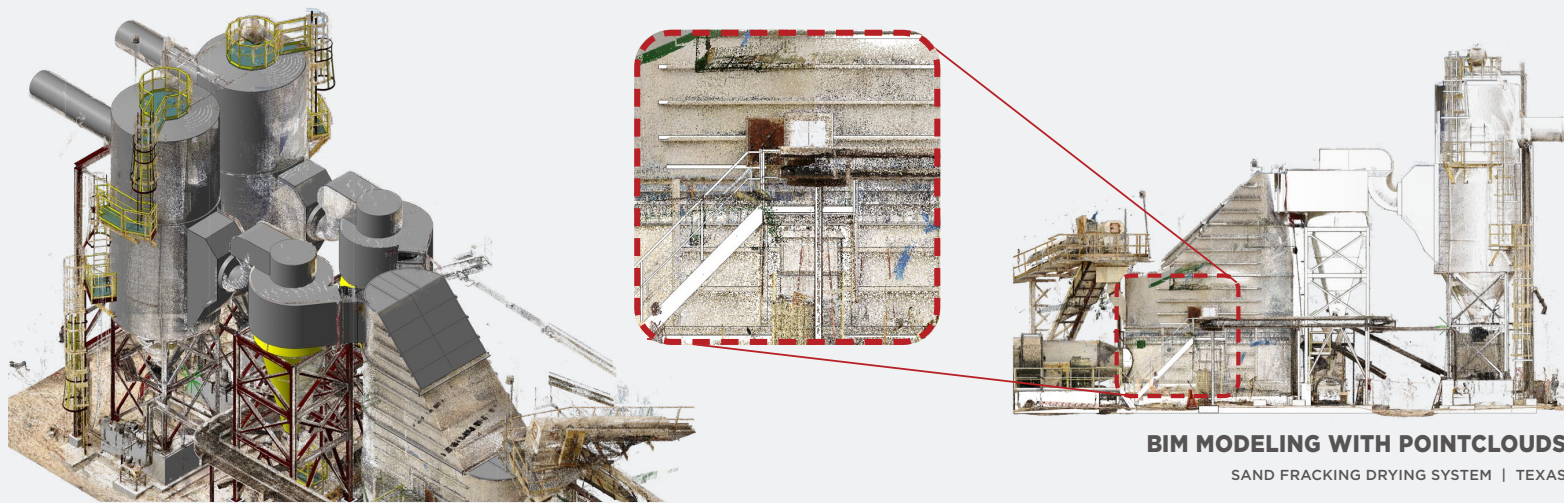
LIDAR

Accurate measurements of as-builts have become much easier to obtain with the help of LIDAR scanning technology. Having experience with two different brands of LIDAR scanners, I've utilized them extensively for retrofit projects and monthly field reports.

For field reports, I scan designated mineral ore stockpiles on-site. The collected LIDAR data is sent to a Civil Engineer in our office, who calculates the volume of each stockpile. These calculations are then included in a field report that is sent to the client. This workflow is repeated monthly to provide our clients with up-to-date and precise information on their stockpiles.



AS-BUILT SCANNING
ELECTRICAL SUBSTATION | TEXAS

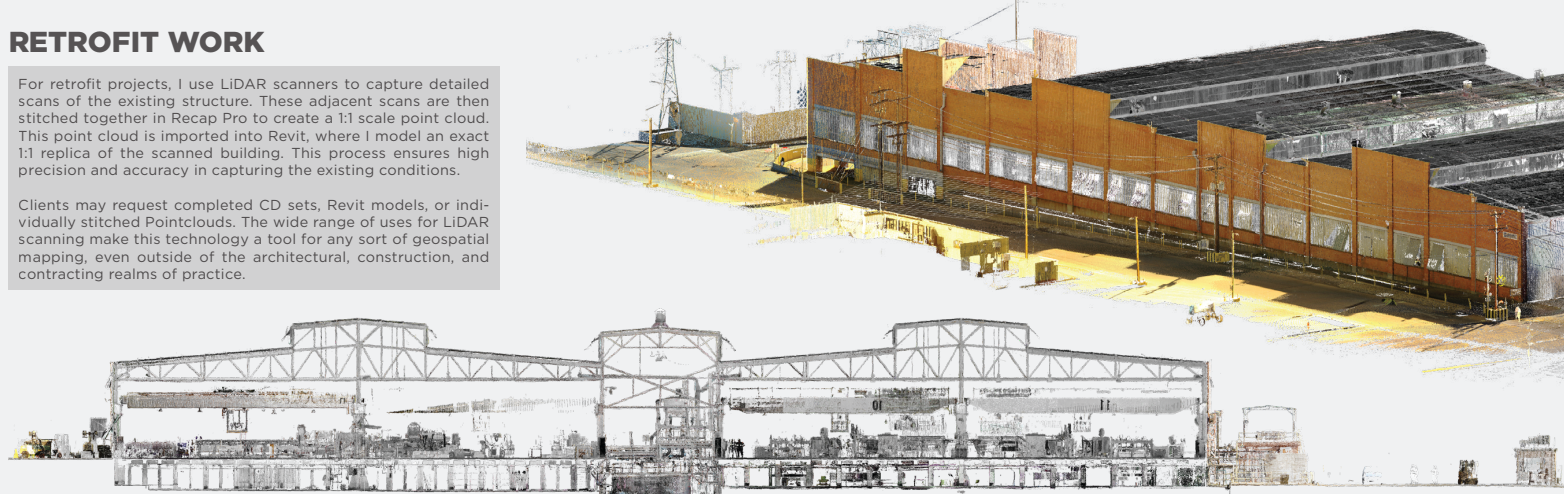


BIM MODELING WITH POINTCLOUDS
SAND FRACKING DRYING SYSTEM | TEXAS

RETROFIT WORK

For retrofit projects, I use LIDAR scanners to capture detailed scans of the existing structure. These adjacent scans are then stitched together in Recap Pro to create a 1:1 scale point cloud. This point cloud is imported into Revit, where I model an exact 1:1 replica of the scanned building. This process ensures high precision and accuracy in capturing the existing conditions.

Clients may request completed CD sets, Revit models, or individually stitched Pointclouds. The wide range of uses for LIDAR scanning make this technology a tool for any sort of geospatial mapping, even outside of the architectural, construction, and contracting realms of practice.

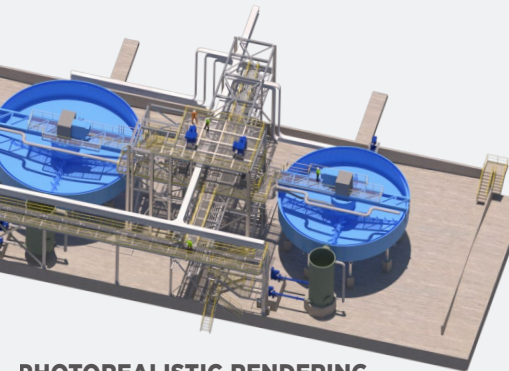
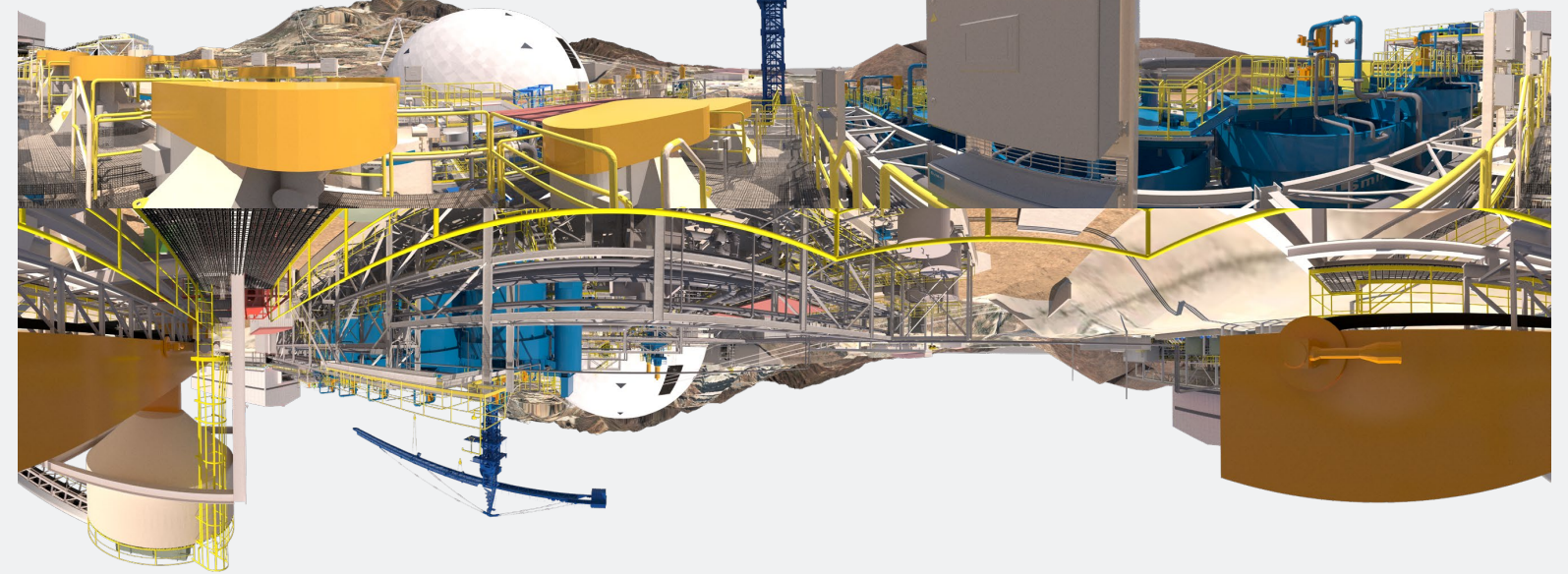


POINTCLOUD STITCHING
COPPER REFINERY | TEXAS

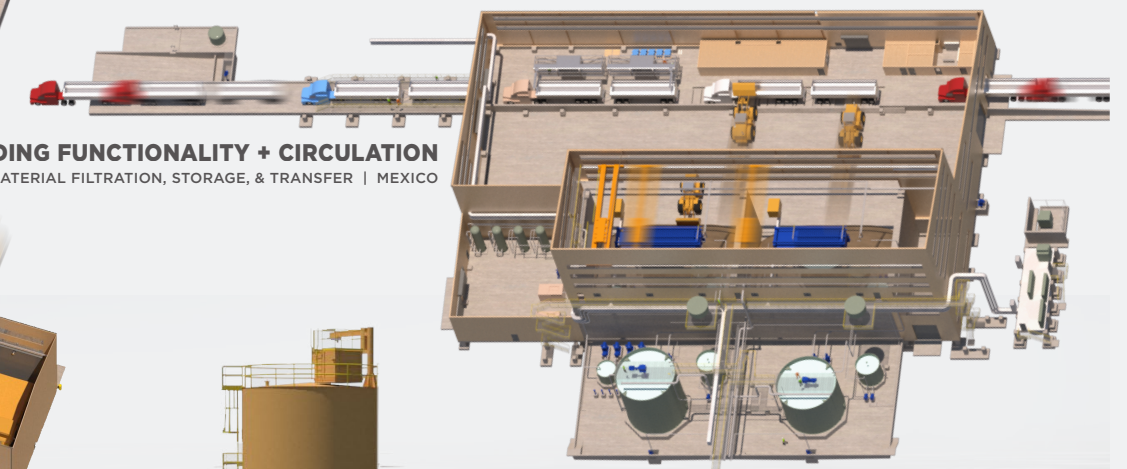
VIRTUAL TOURS

To showcase our projects to potential clients, we use various media to highlight the quality of our work. One key tool is Autodesk's 3DSMax, which, when paired with VRay, can produce photorealistic renders of BIM models. These renders can be used to create 360-degree POV virtual tours by stitching them together using third-party software like Pano2VR. Creating 360-degree POV virtual tours allows potential clients to explore the project in a detailed, immersive way, providing a comprehensive understanding of the design and layout. It enhances client engagement, offers a realistic preview of the final product, and aids in decision-making by allowing clients to visualize the space from all angles.

ON-SITE VIRTUAL WALK-THRU
FLOTATION AREA | PERU



PHOTOREALISTIC RENDERING
TAILINGS THICKENING | PERU



BUILDING FUNCTIONALITY + CIRCULATION
MATERIAL FILTRATION, STORAGE, & TRANSFER | MEXICO

TRAFFIC FLOW
VEHICLE MECHANIC SHOP | MEXICO



BNSF RAILWAY SCHEDULE ANIMATION
CEMENT STORAGE + TRANSFER STATION | PHOENIX

ANIMATIONS

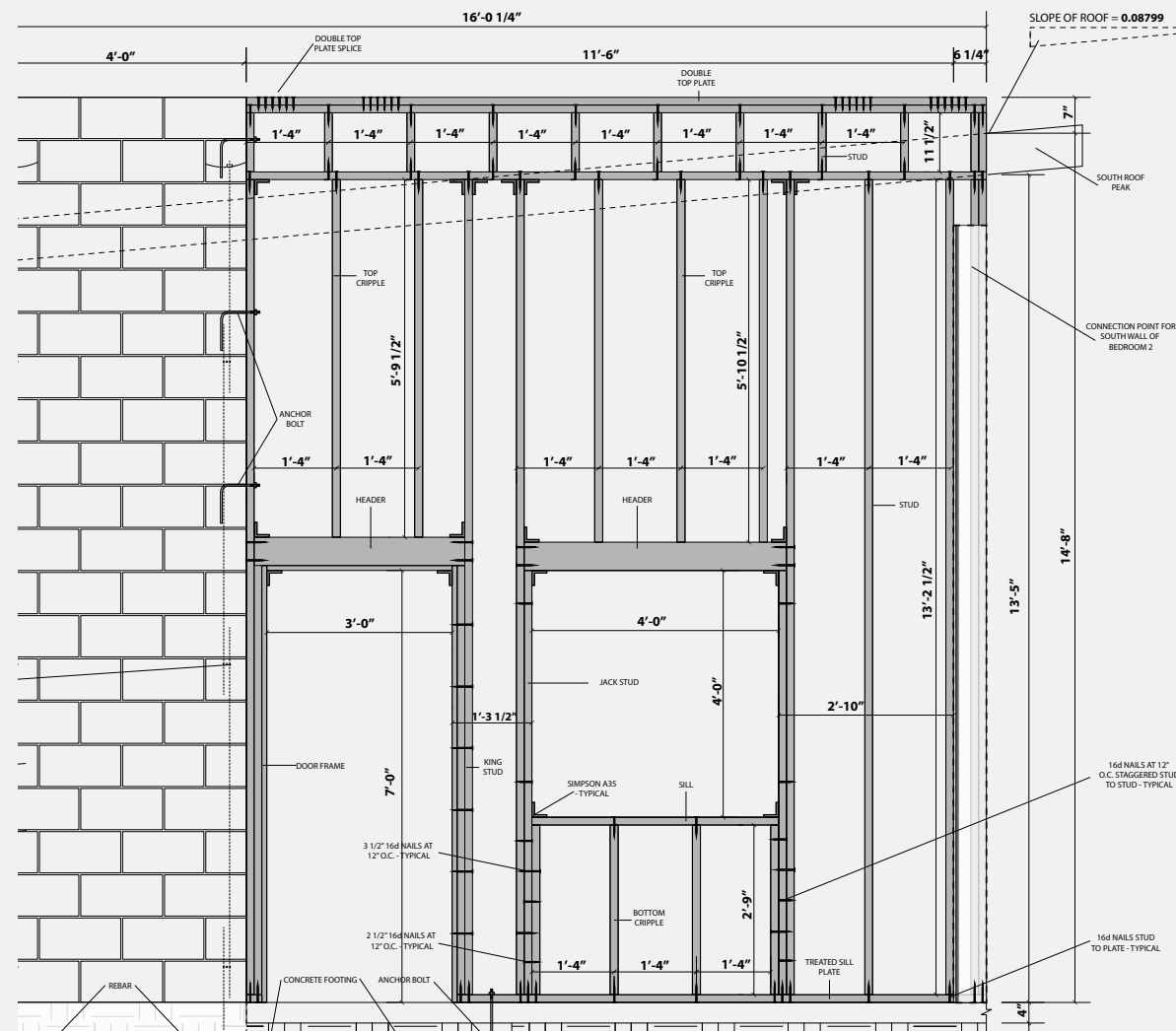
To showcase our projects to potential clients, we use various media to highlight the quality of our work. One key tool is Autodesk's 3DSMax, which, when paired with VRay, can produce photorealistic renders of BIM models. These renders can be used to create 360-degree POV virtual tours by stitching them together using third-party software like Pano2VR. Creating 360-degree POV virtual tours allows potential clients to explore the project in a detailed, immersive way, providing a comprehensive understanding of the design and layout. It enhances client engagement, offers a realistic preview of the final product, and aids in decision-making by allowing clients to visualize the space from all angles.

Additionally, we utilize 3DSMax in combination with Adobe Premiere and After Effects to create compelling marketing animations. In 3DSMax, we can adjust the movement speed and paths of equipment, as well as set camera angles to capture the best perspectives. Once individual scenes are exported as video files, they are assembled in Premiere to create a final marketing video. After Effects is then used to design customized, eye-catching intros and outros featuring client logos, which are added to the final video in Premiere. This multimedia approach effectively advertises our projects and demonstrates our capabilities to potential clients.

UNIVERSITY

DESIGN + BUILD

Using the skills we learned of model making and conceptual design, the Design Build studio applies these skills into real-world projects, and encourages the practice of construction, contracting, and architectural job positions. Under the guidance of skilled professors, students made schematic designs and began constructing an entire house, all while visiting with contractors and passing building code inspections. My studio specifically developed the building envelopes of each wall and constructed the framing walls & roofing on the site.

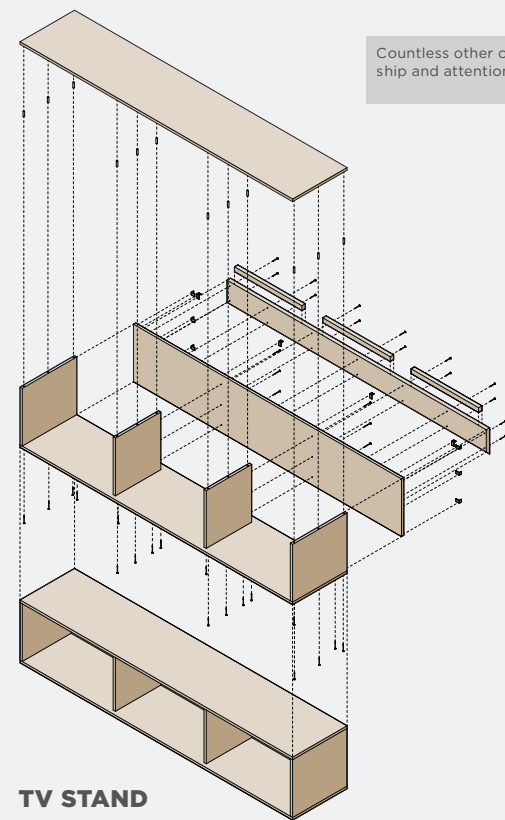


EAST LIVING ROOM WALL FRAMING ELEVATION
TUCSON | REVIT, ILLUSTRATOR

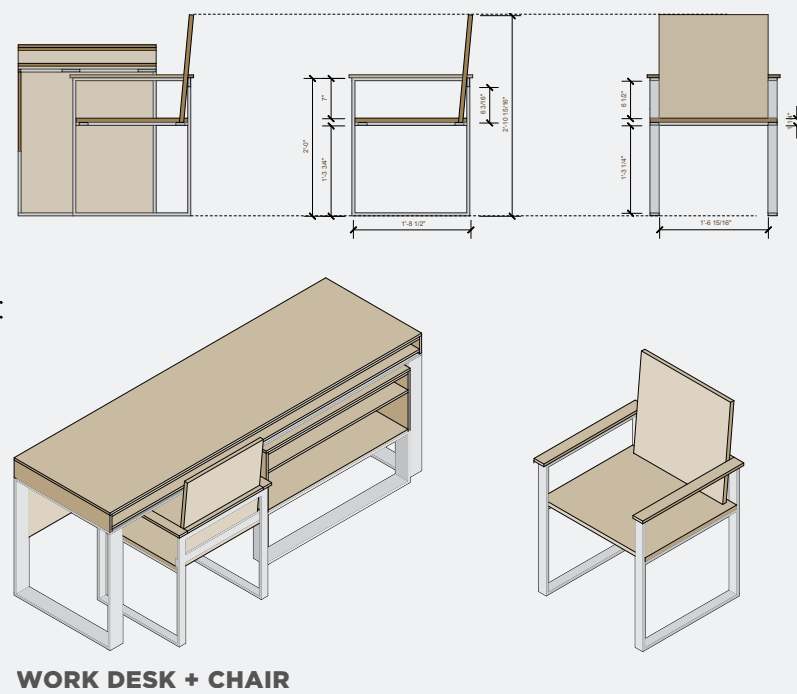


FURNITURE DESIGN

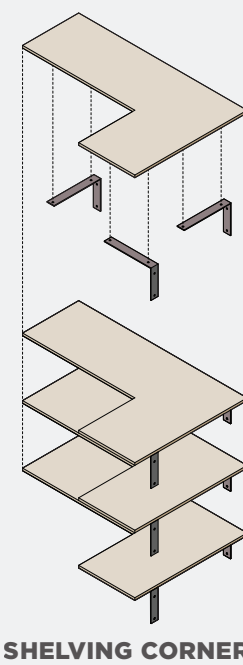
Countless other construction skills were learned over the semester, including sheathing, CMU brick wall construction, and weatherproofing, as well as craftsmanship and attention to detail. Students also designed interior features of the house; mine being the built-in furniture. This class provided hands-on experience with real tools, design experts, and residential construction, which can be counted as AXP construction and design development hours.



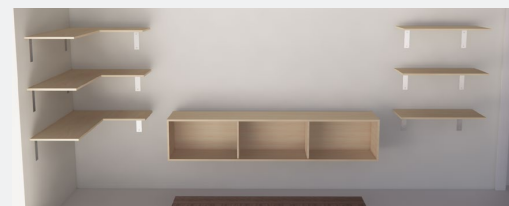
TV STAND



WORK DESK + CHAIR



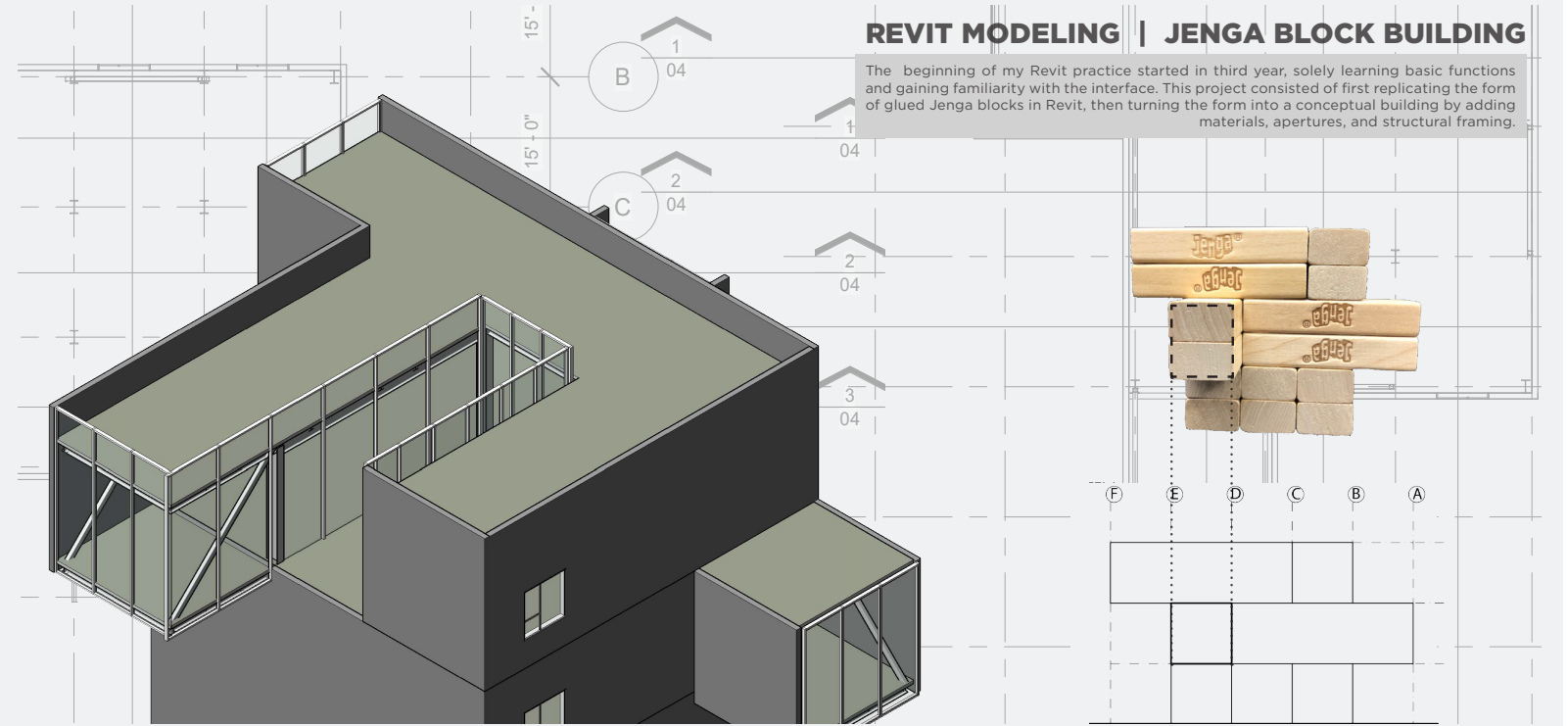
SHELVING CORNER



BIM EXPERIENCE (SCHOOL)

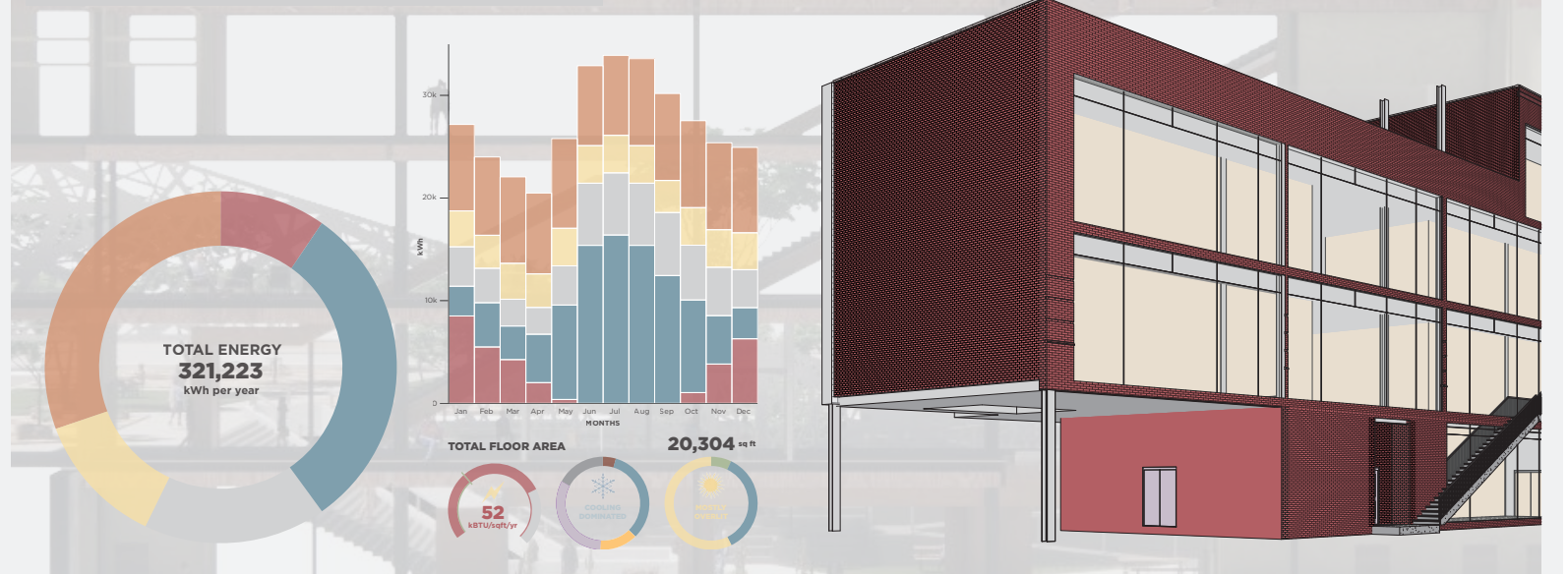
REVIT MODELING | JENGA BLOCK BUILDING

The beginning of my Revit practice started in third year, solely learning basic functions and gaining familiarity with the interface. This project consisted of first replicating the form of glued Jenga blocks in Revit, then turning the form into a conceptual building by adding materials, apertures, and structural framing.



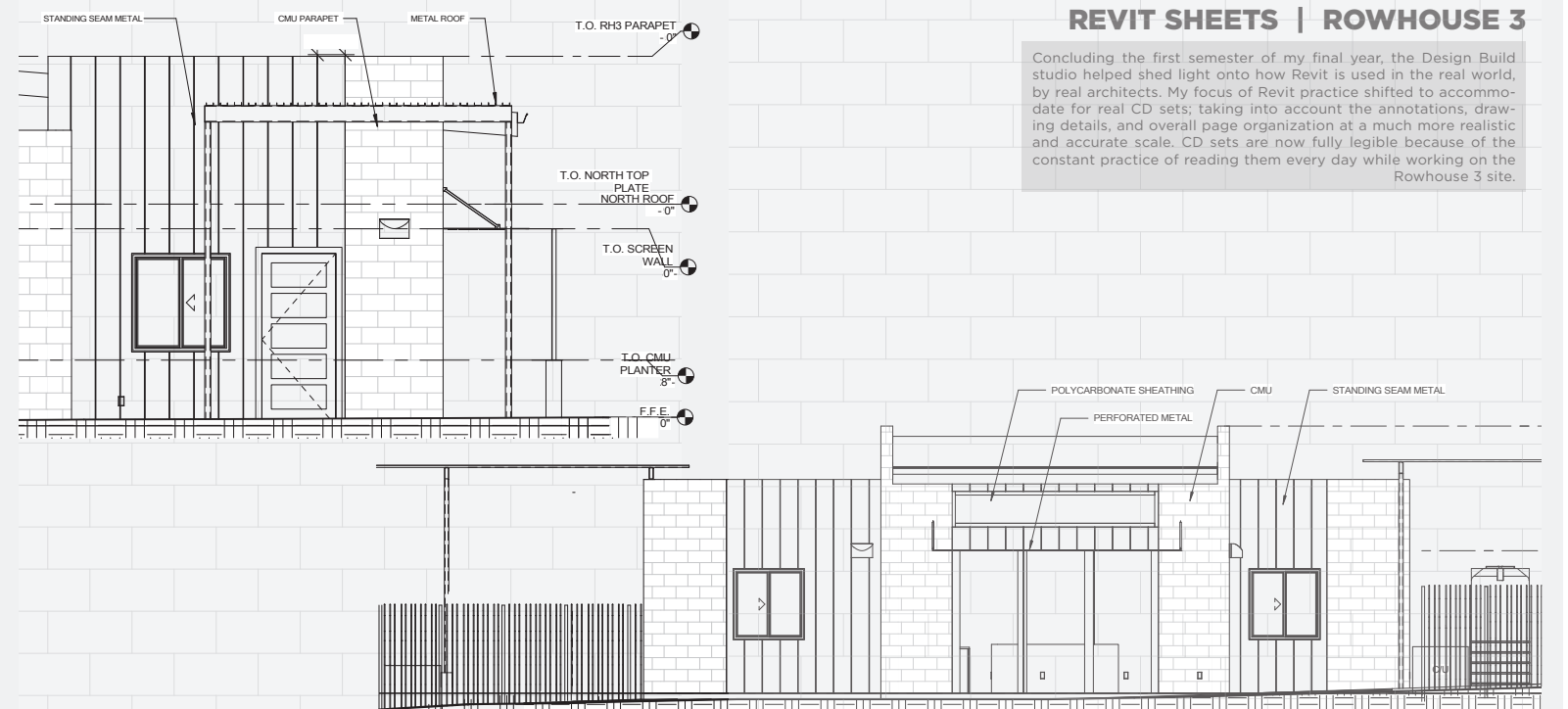
BUILDING ANALYSIS | CCI PROJECT

Going into fourth year, Revit was taught to be more than just a 3-D modeling software. With our studio projects being heavily influenced by COTE's Top 10 and the AIAS 2030 challenge, software plug-ins such as Sefaira and Insight were essential towards achieving the goal of creating a building with net-zero carbon emissions.



REVIT SHEETS | ROWHOUSE 3

Concluding the first semester of my final year, the Design Build studio helped shed light onto how Revit is used in the real world by real architects. My focus of Revit practice shifted to accommodate for real CD sets; taking into account the annotations, drawing details, and overall page organization at a much more realistic and accurate scale. CD sets are now fully legible because of the constant practice of reading them every day while working on the Rowhouse 3 site.



CAPSTONE

CLASSROOM + OFFICE

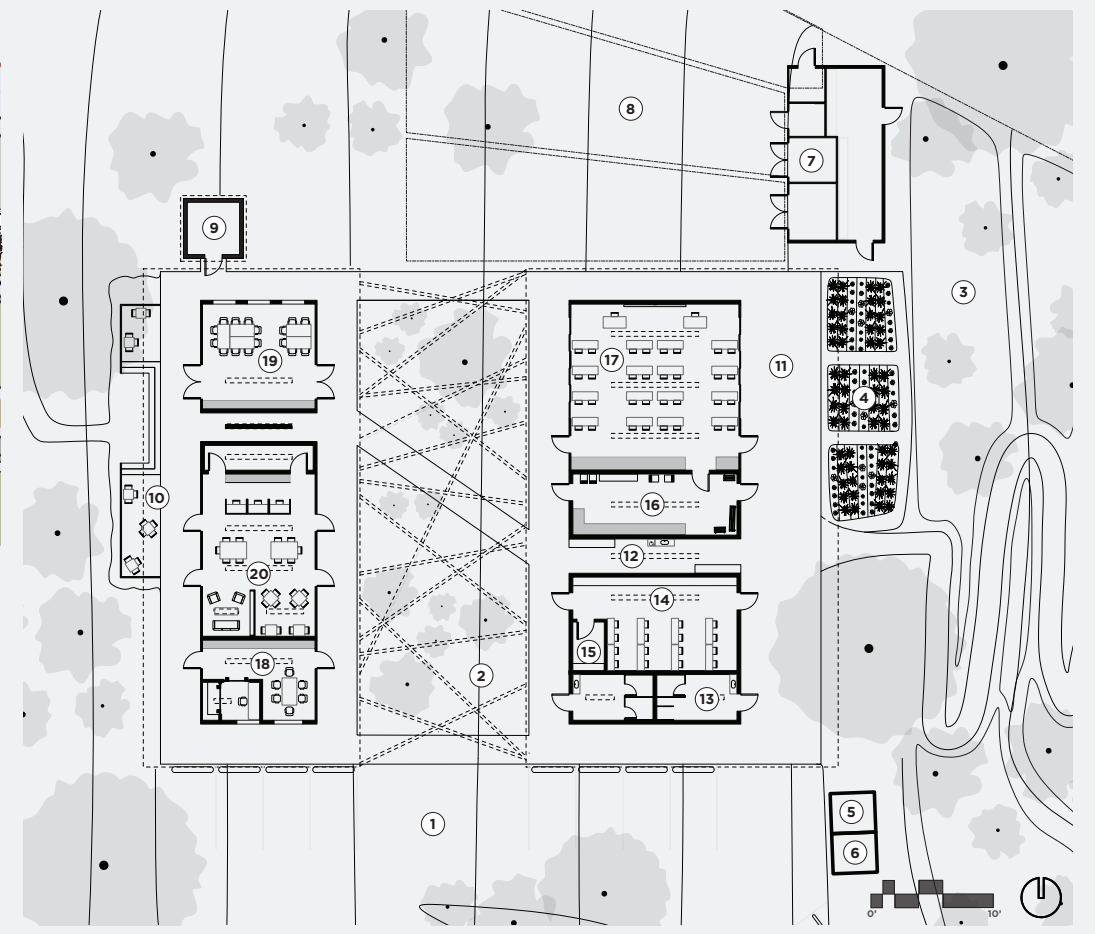
With the aspirations of designing something to make a change, the Critical Practices Capstone Studio has teamed up with Pipeline Worldwide, a nonprofit organization that focuses on the improvement of living conditions for people in Africa through donation-driven projects. With Pipeline's experience and our studio's expertise, we have begun the schematic design phase for four projects: an Ambulance Kiosk, a Cafe + Kitchen, a Marketplace, and my group's project, the Classrooms + Office, all of which are on a single parcel of land. Several semesters ago, our Critical Practices Colloquium began to research every topic, contact every local representative & vendor, and study the land of Moyo extensively in order to produce the most logical design solutions. These solutions can drastically benefit the health and well-being of local Ugandans, while being simultaneously integrated with the historical, cultural, and physical traditions of Moyo practices.

- ROADS
- PEDESTRIAN PATH
- VEGETATION
- SURROUNDING BUILDINGS
- SIDEWALK / CONCRETE
- PROJECT ZONES
- PROPERTY LINE
- HIDDEN OVERHEAD
- FENCING
- MINOR CONTOUR (1')
- MAJOR CONTOUR (10')
- DRAINAGE



PARTI & PROGRAM

CLASSROOM 400 sq ft	RESTROOM 250 sq ft	AGRICULTURE 600 sq ft	SHADED CIRCULATION 1,100 sq ft
STAFF OFFICE 400 sq ft	CLASSROOM STORAGE 150 sq ft	STAFF STORAGE 100 sq ft	COURTYARD 1,000 sq ft
CONFERENCE ROOM 350 sq ft	I.T. ROOM 75 sq ft		
COMPUTER LAB 300 sq ft			
HEAD OFFICE 250 sq ft			

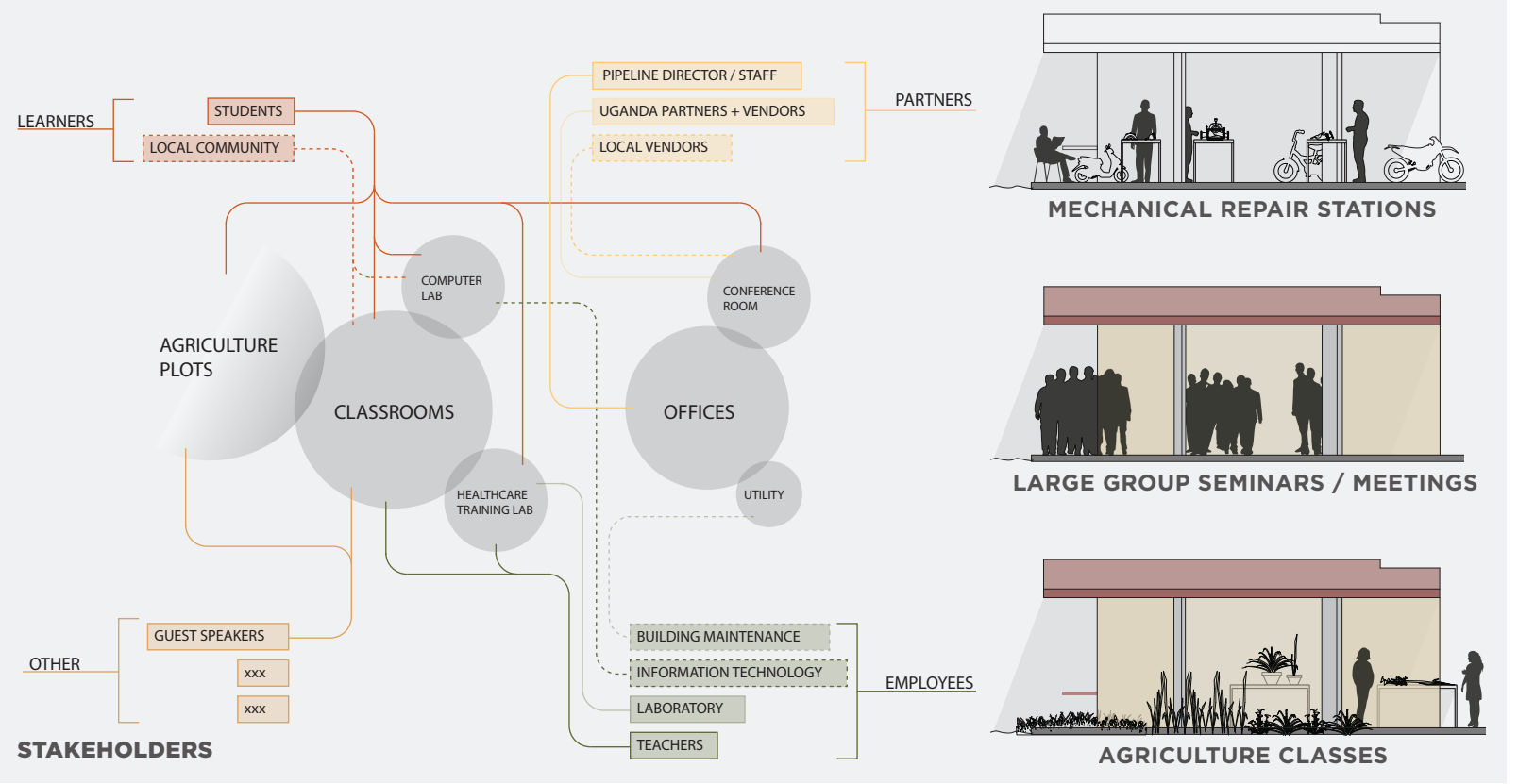
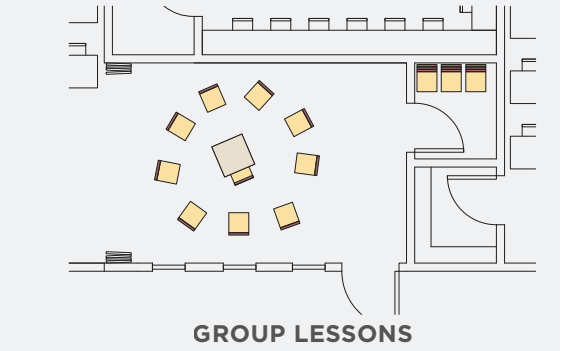
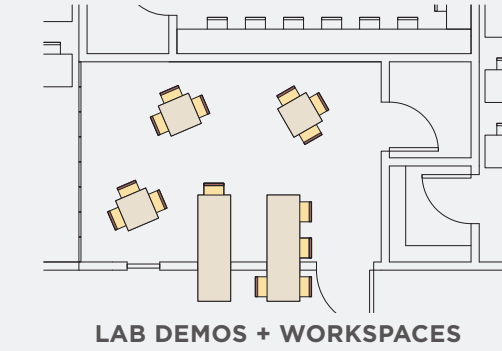
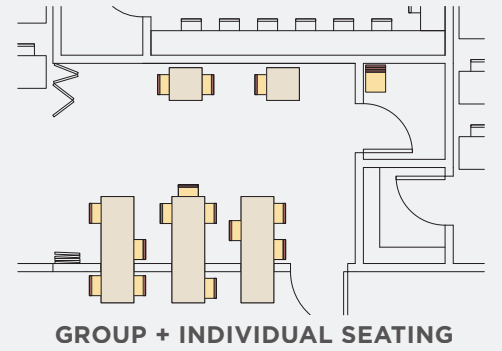


OVERALL PLAN

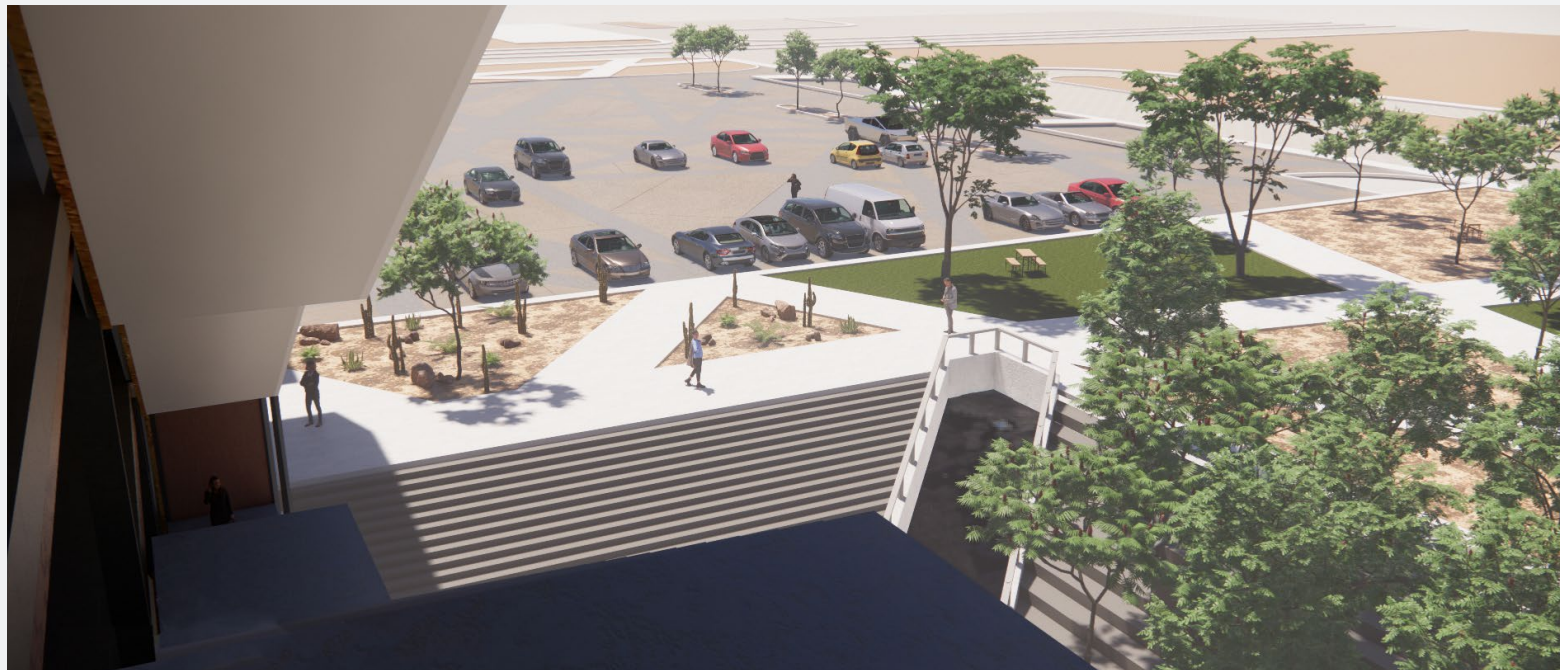
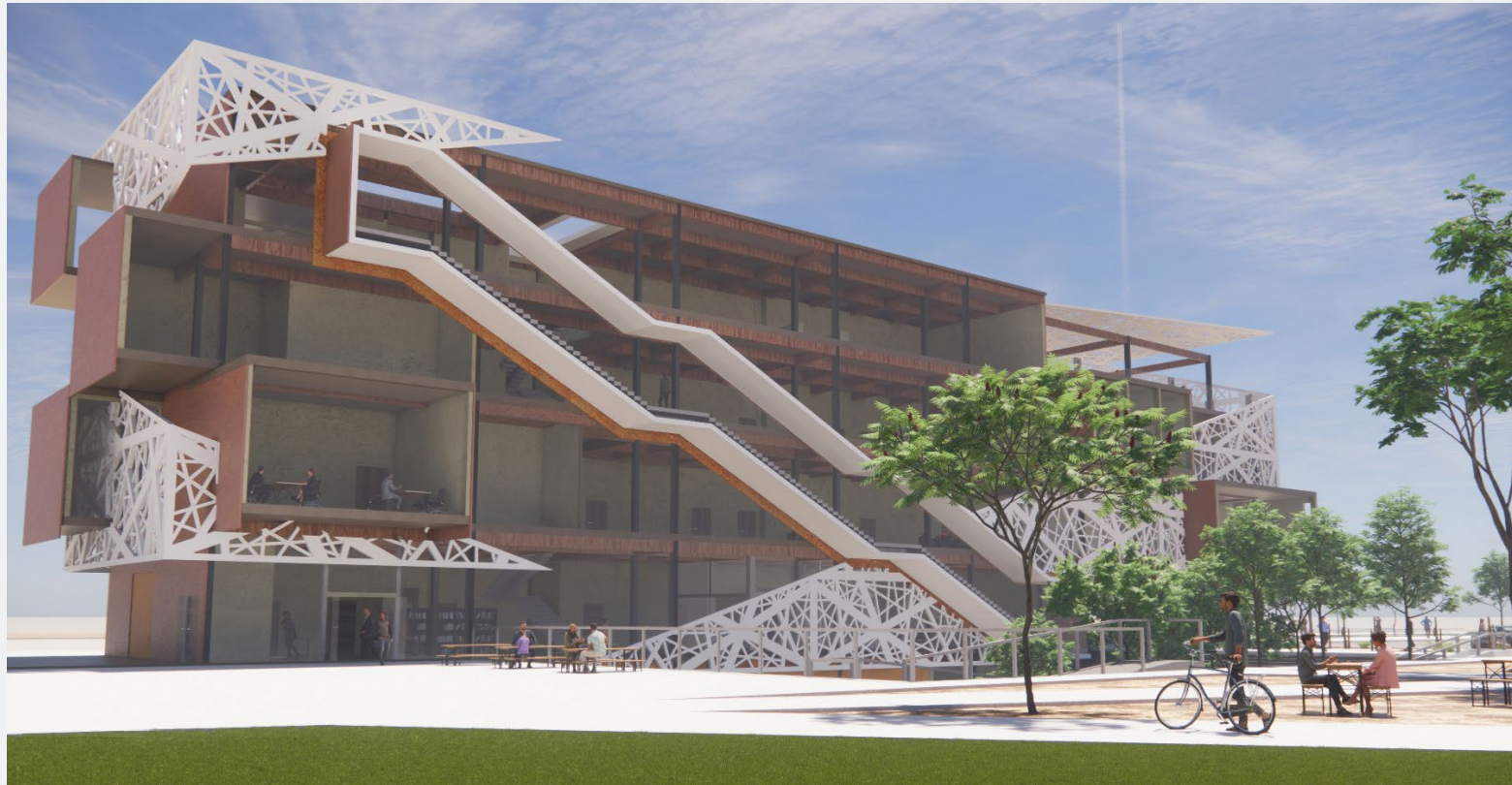
- 1 PARKING
- 2 COURTYARD
- 3 TERRACE FARM
- 4 PLANT NURSERY
- 5 COMPOST
- 6 DUMPSTER
- 7 LIVESTOCK
- 8 PASTURE
- 9 WATER STORAGE
- 10 OUTDOOR SEAT
- 11 OUTDOOR WORK
- 12 SHADED CIRC
- 13 RESTROOMS
- 14 COMPUTER LAB
- 15 I.T. OFFICE
- 16 STORAGE
- 17 CLASSROOM
- 18 HEAD OFFICE
- 19 CONFERENCE
- 20 STAFFOFFICE

SPACES DESIGNED FOR ANY PROJECT

The education following after primary school in rural Uganda is predicated by lessons specific to survival and career practice within their own environmental conditions. **Water harvesting, agriculture, carpentry, hair dressing, vehicle repair, and tailoring** are just some of the different skills that are most important to the people of Moyo. It was vital for us to design a learning space that can adapt to and accommodate for all of these conditions.

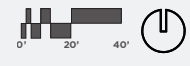


With an entire semester dedicated to focusing design towards the AIA 2030 challenge, students experimented different possibilities of building performance strategies, in hopes of producing a building with net-zero carbon emissions. Focusing on building form / orientation, passive / active performance strategies, and function / experience within the building and its indirect impact on the surrounding community, the end-result building would be tested with environment analysis software. This specific project integrates survival strategies practiced by desert climate plants and animals that have been adapting for hundreds of thousands of years, made possible by incorporating the latest building strategies and technology into it.





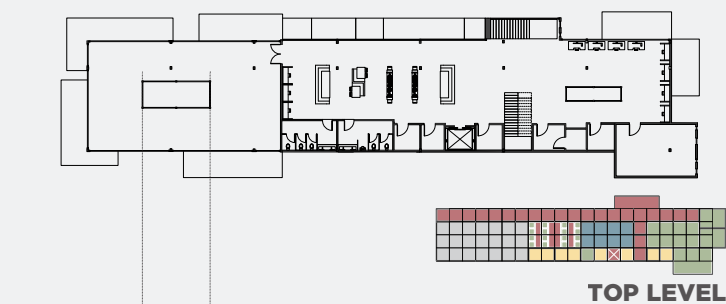
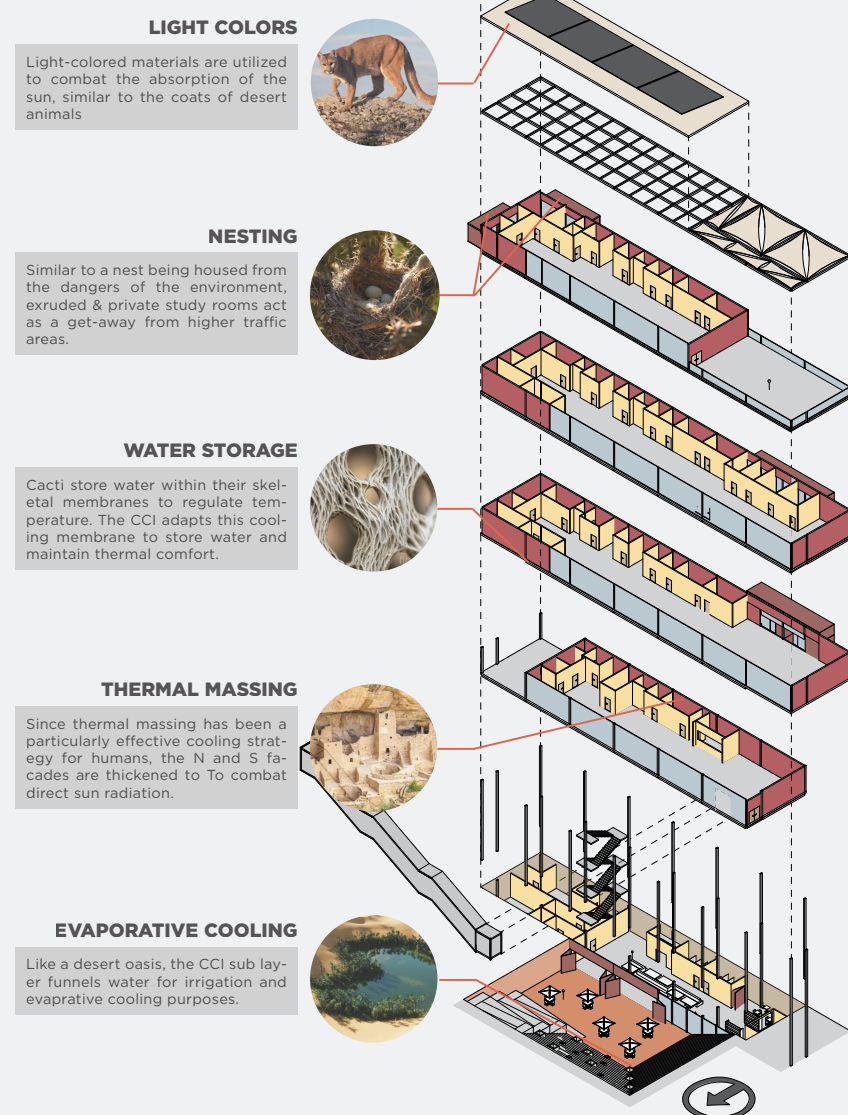
SITE PLAN



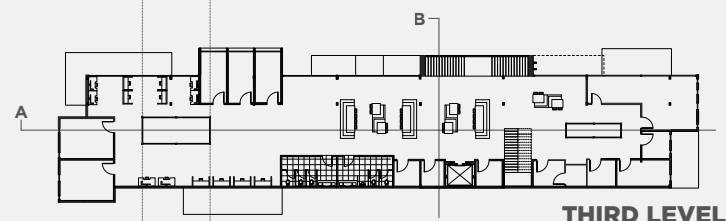
PUBLIC	2,000 SF LOBBY / RECEPTION	300 SF CAFE PREP	500 SF CAFE SEATING
LIBRARY	120 SF CHECK IN / OUT	80 SF WORK AREA	3,000 SF LIBRARY COLLECTIONS
COLLABORATION	3,000 SF COLLABORATIVE LIVINGROOM	4,800 SF SHARED WORK AREA (x4)	480 SF PRIVATE WORK KIOSKS (x20)
		200 SF COMPUTER STATIONS (x10)	600 SF LARGE MEETING ROOM (x3)
		600 SF SMALL MEETING ROOM (x5)	600 SF VISITING SCHOLAR OFFICE (x6)
EGRESS	2,000 SF CIRCULATION		
EXTERIOR		2,000 SF EXTERIOR TERRACE	2,000 SF OUTDOOR CAFE
COLLABORATION	2,000 SF MECHANICAL SERVICE		
ADMINISTRATION	64 SF STAFF WORK AREA (x2)	120 SF STAFF OFFICES (x2)	800 SF COMPUTER SERVER ROOM
	240 SF LT. OFFICE	200 SF SHIPPING / RECEIVING	

PROGRAM

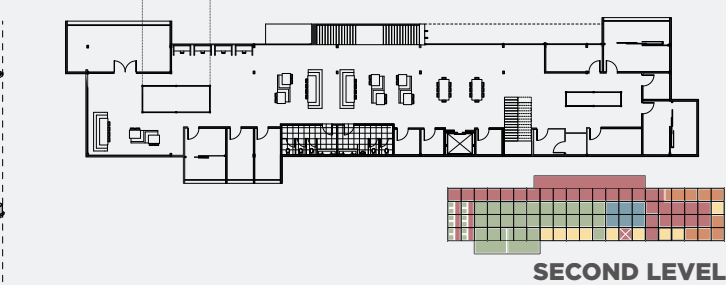
BIOPHILIC INTEGRATION



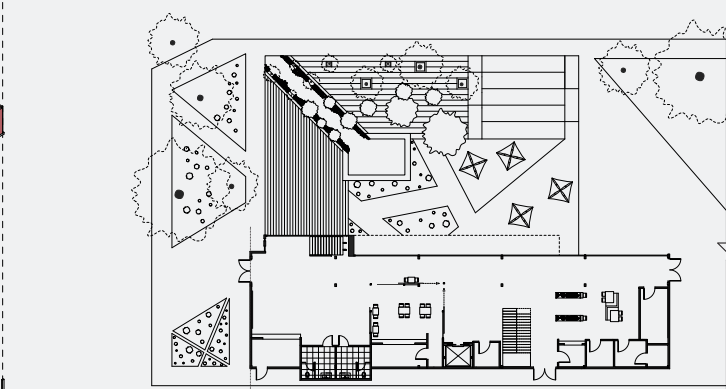
TOP LEVEL



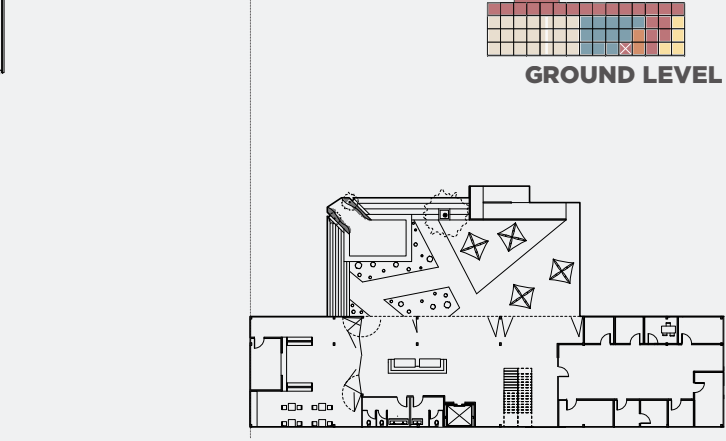
THIRD LEVEL



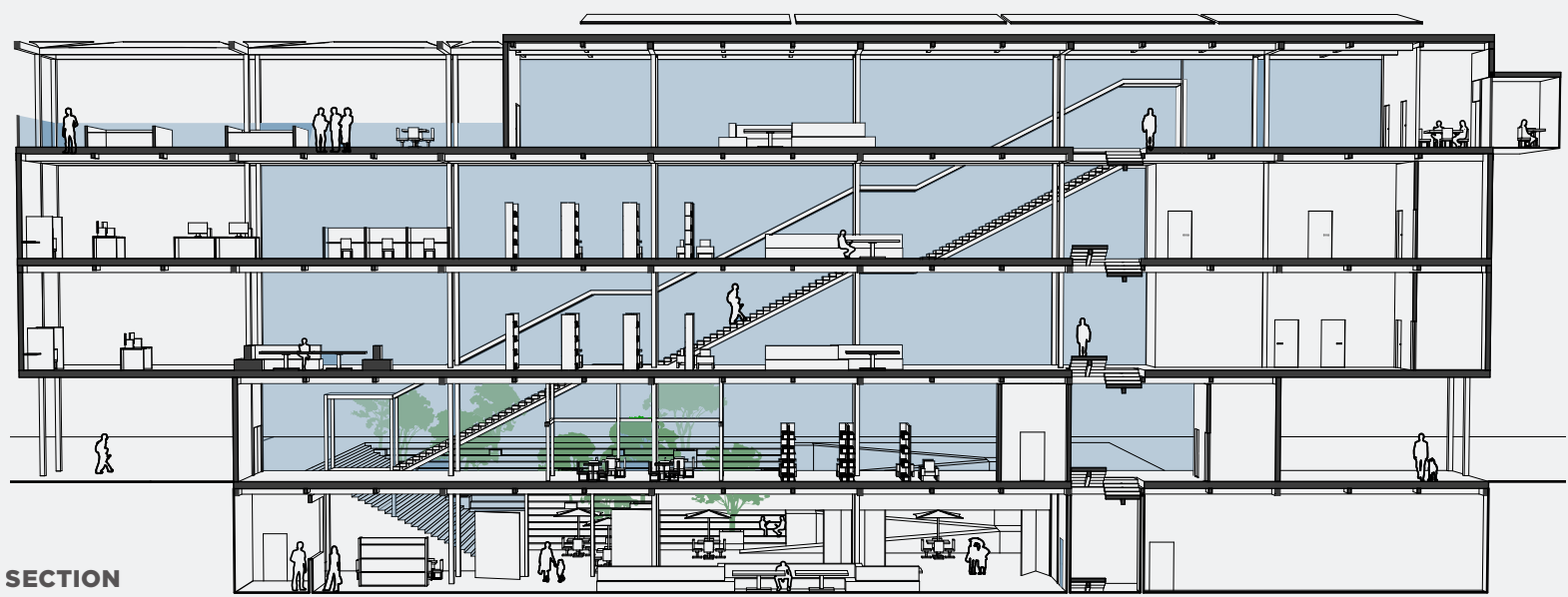
SECOND LEVEL



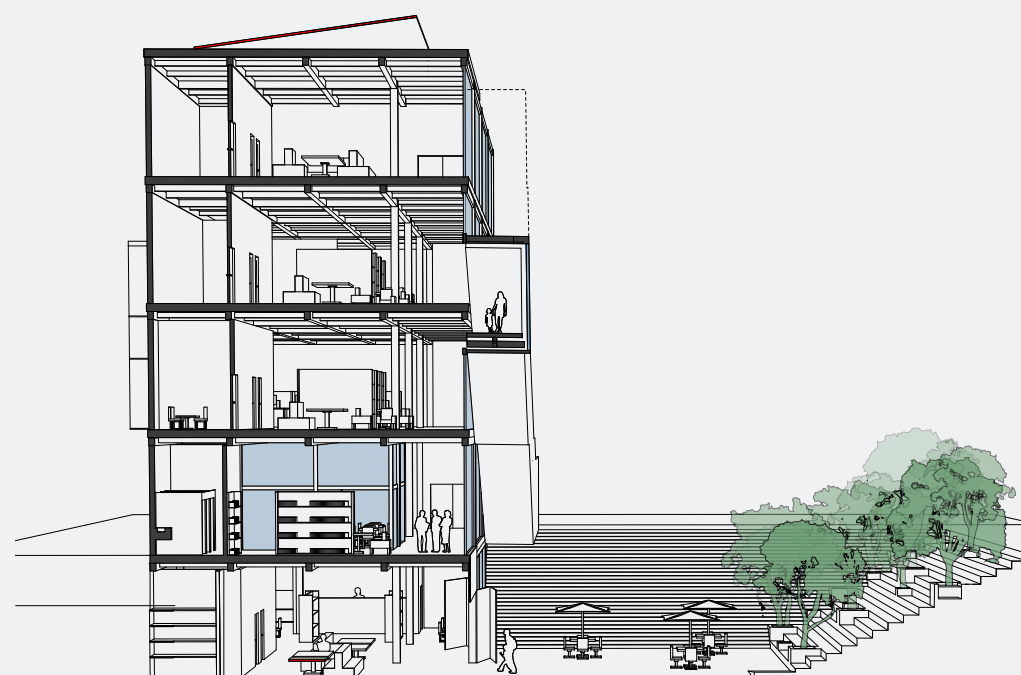
GROUND LEVEL



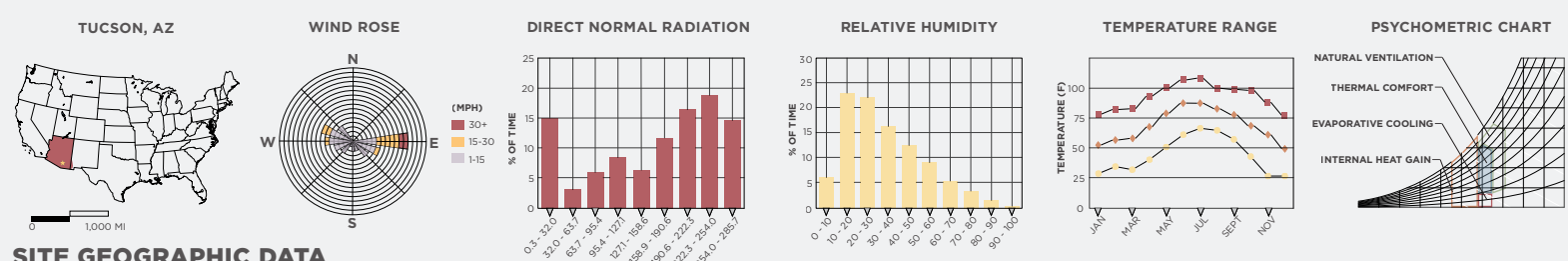
SUB LEVEL



SECTION



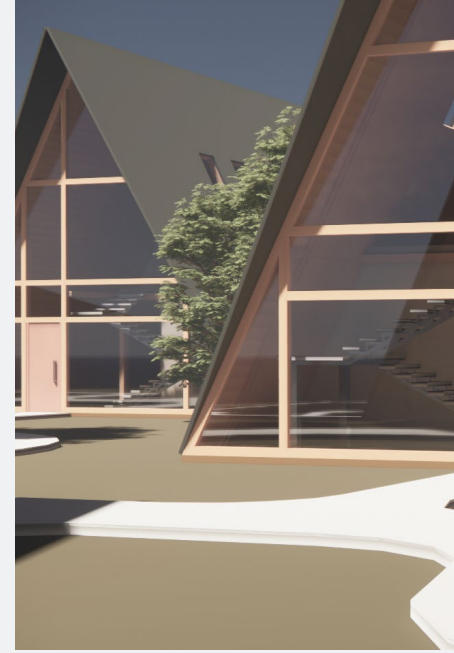
SECTION

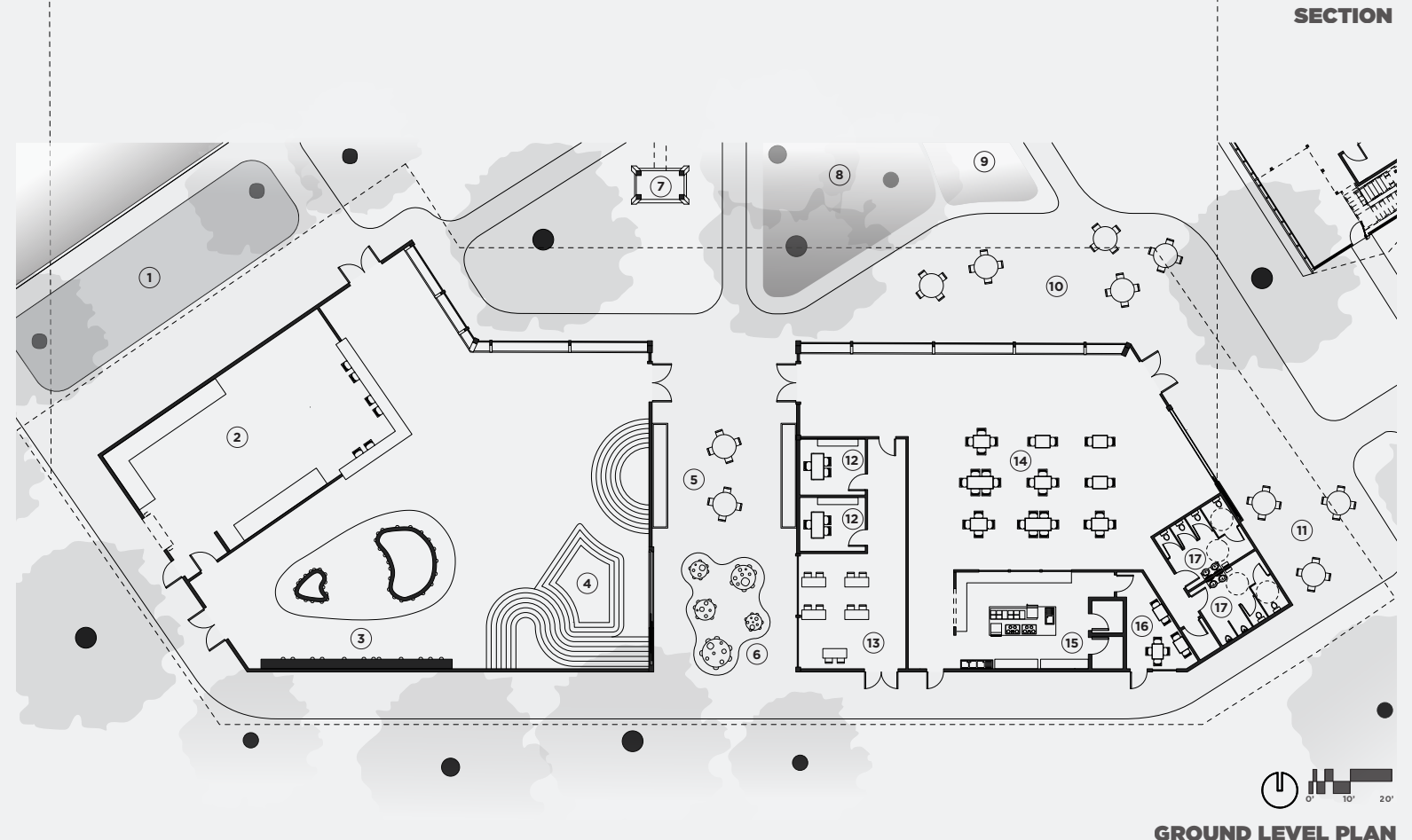
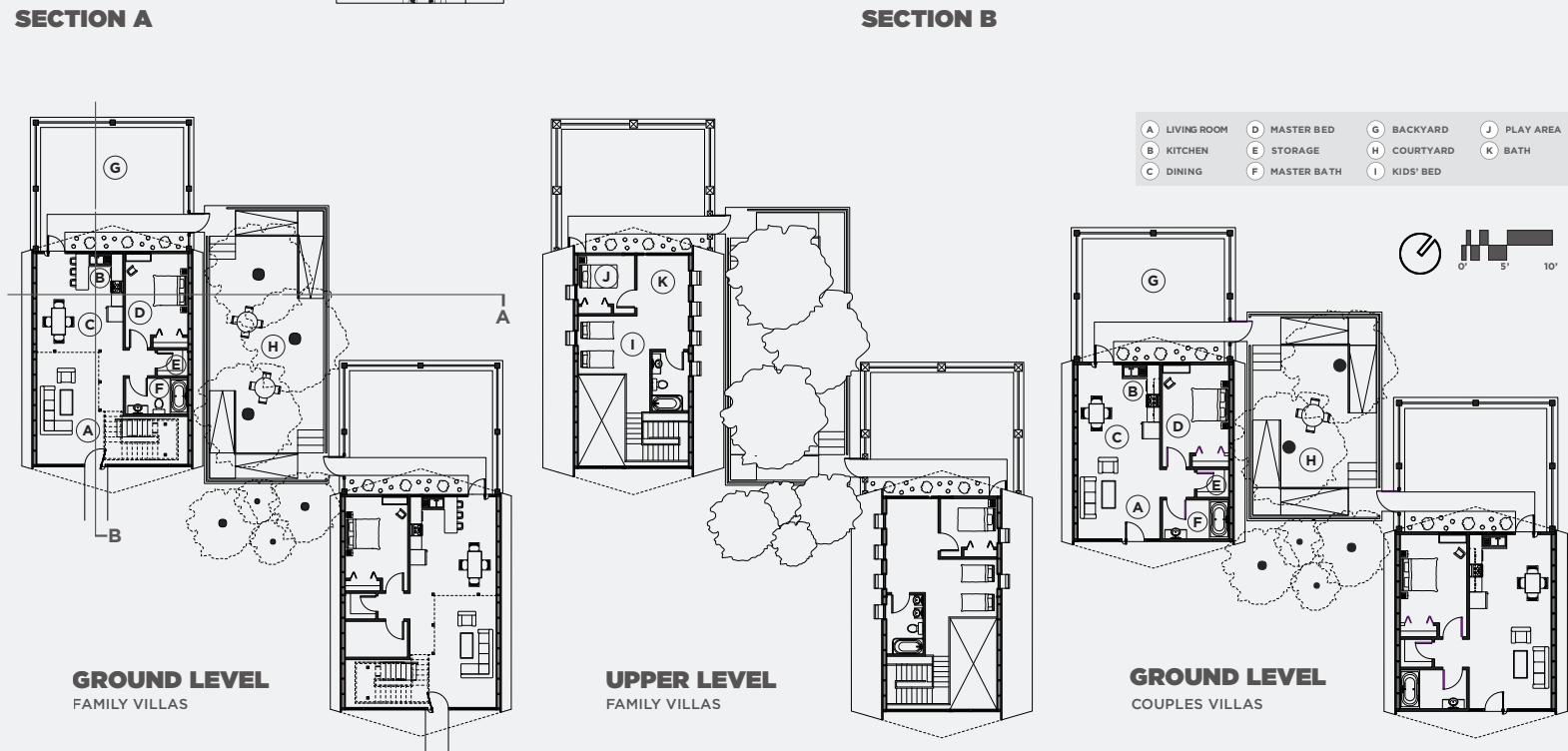
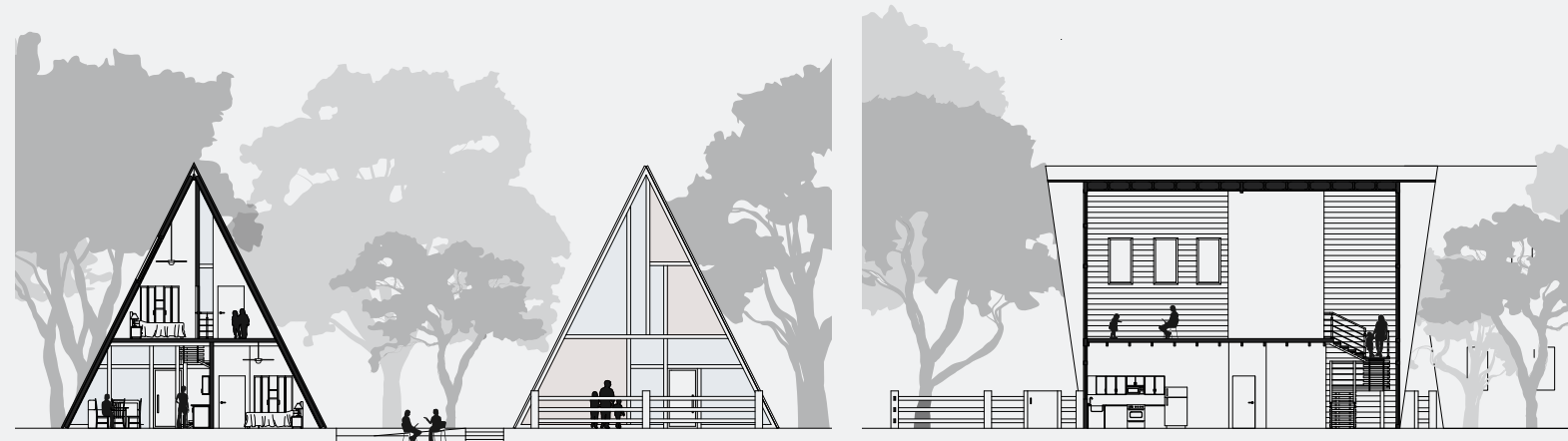
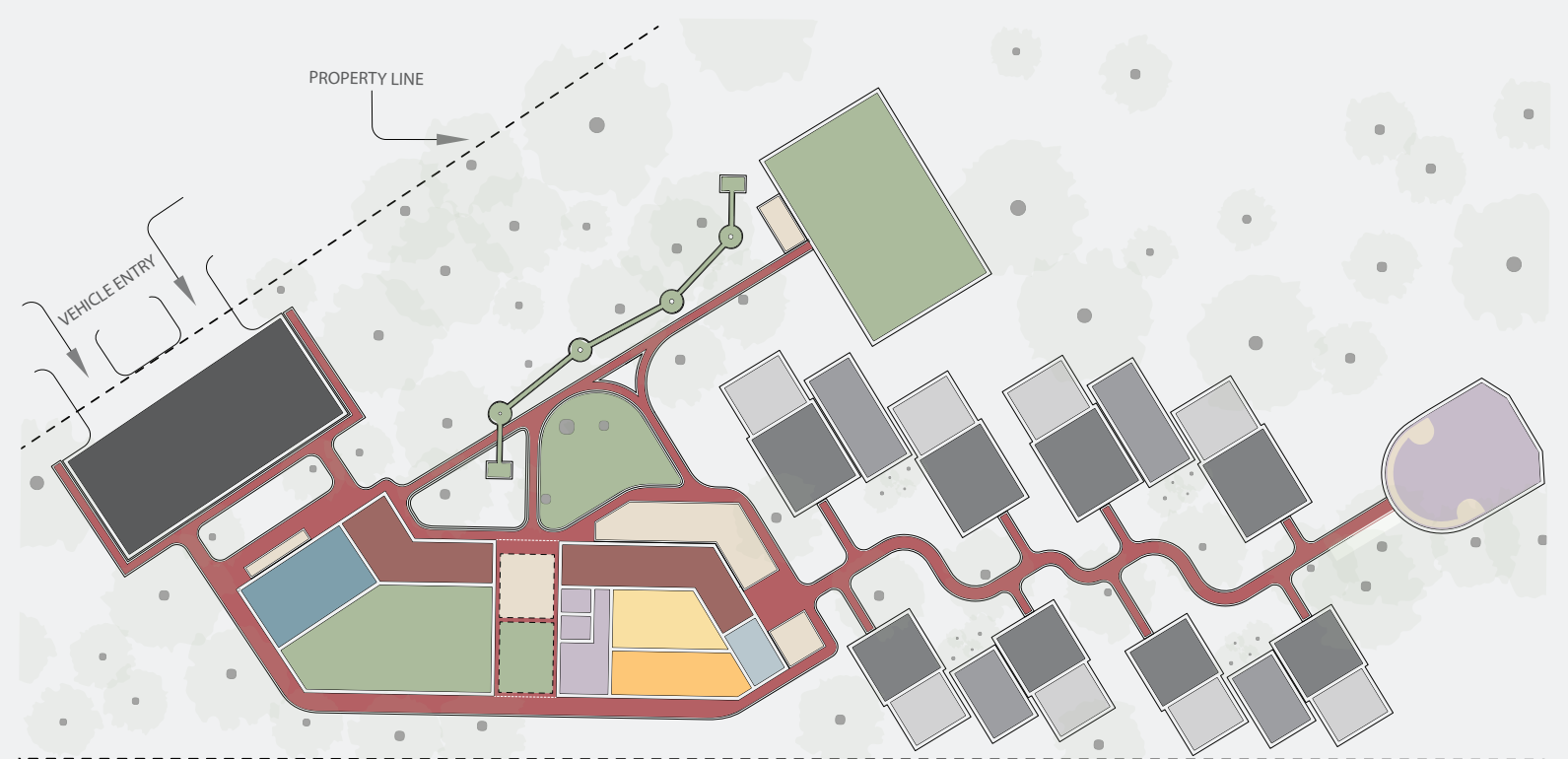
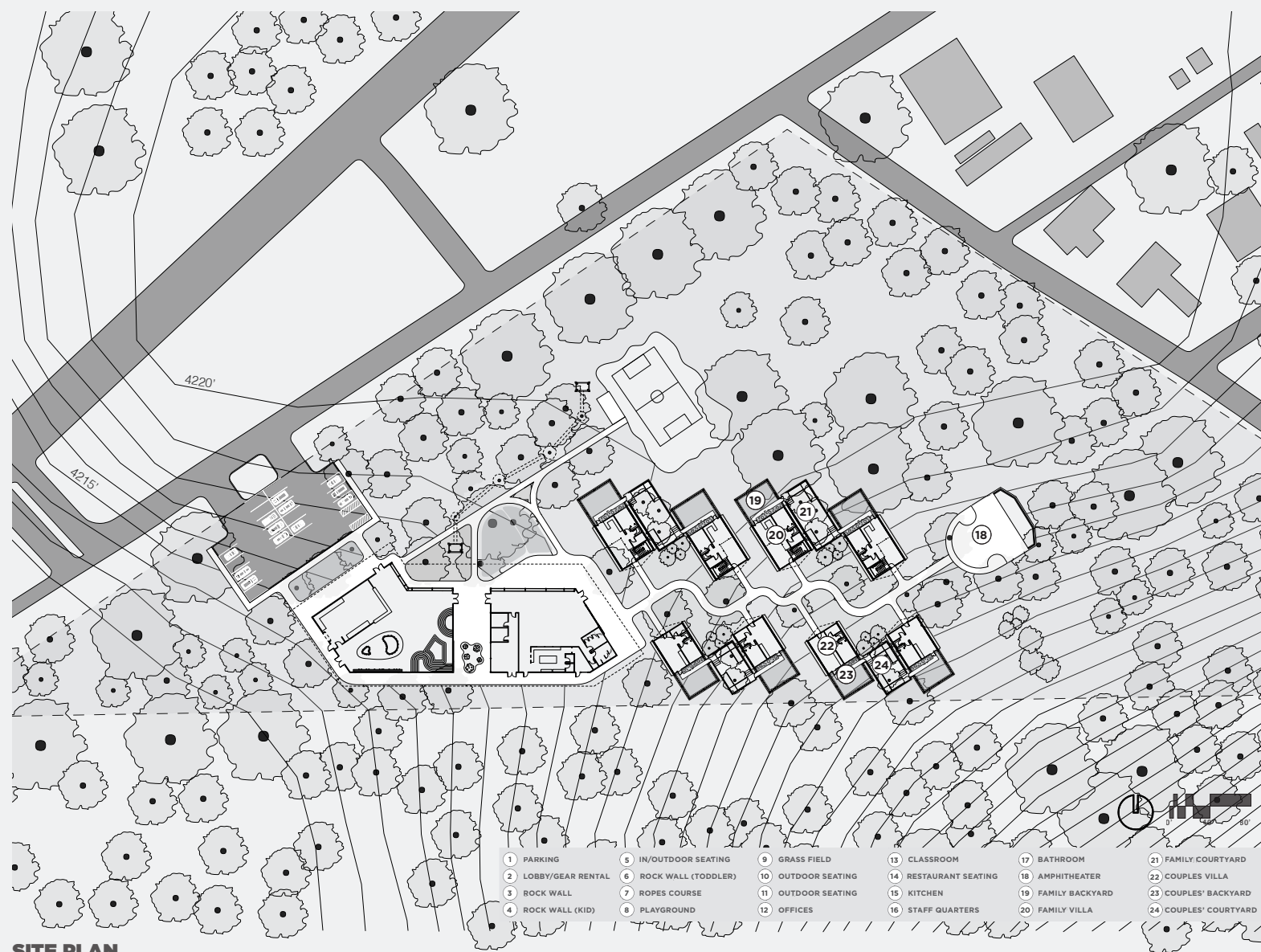


SITE GEOGRAPHIC DATA

FAMILY RETREAT

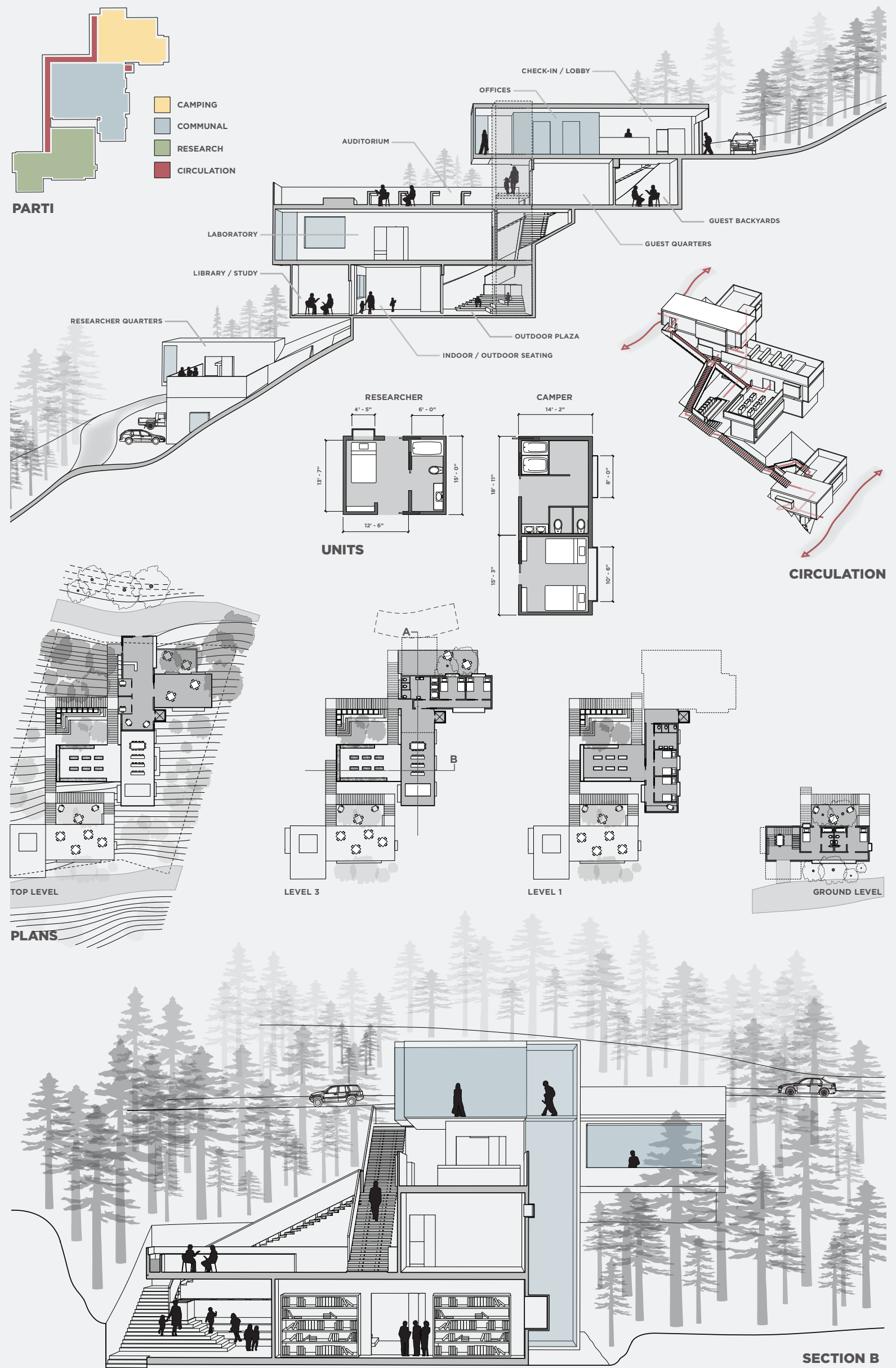
Spending an entire semester studying strategies of design that strive for justice, such as a memorial that visually represents a past event in history, or a rehabilitation center that uses its design to work towards a better cause, students designed a retreat centered around an issue that resonates with them personally. Having a history of fostering a brother and sister when I was around 12 years old, this life changing experience is something I wanted to bring to light, with the purpose of designing a retreat that strives for justice. This is both a vacation and educational retreat that accommodates adoptive families and couples interested in adoption, and the architecture is designed to encourage interaction, observation, and growth within families. Adoptive parents can communicate their specific family issues, couples can become certified adoptive parents, and adopted children can make friends and experiences that will last a lifetime.





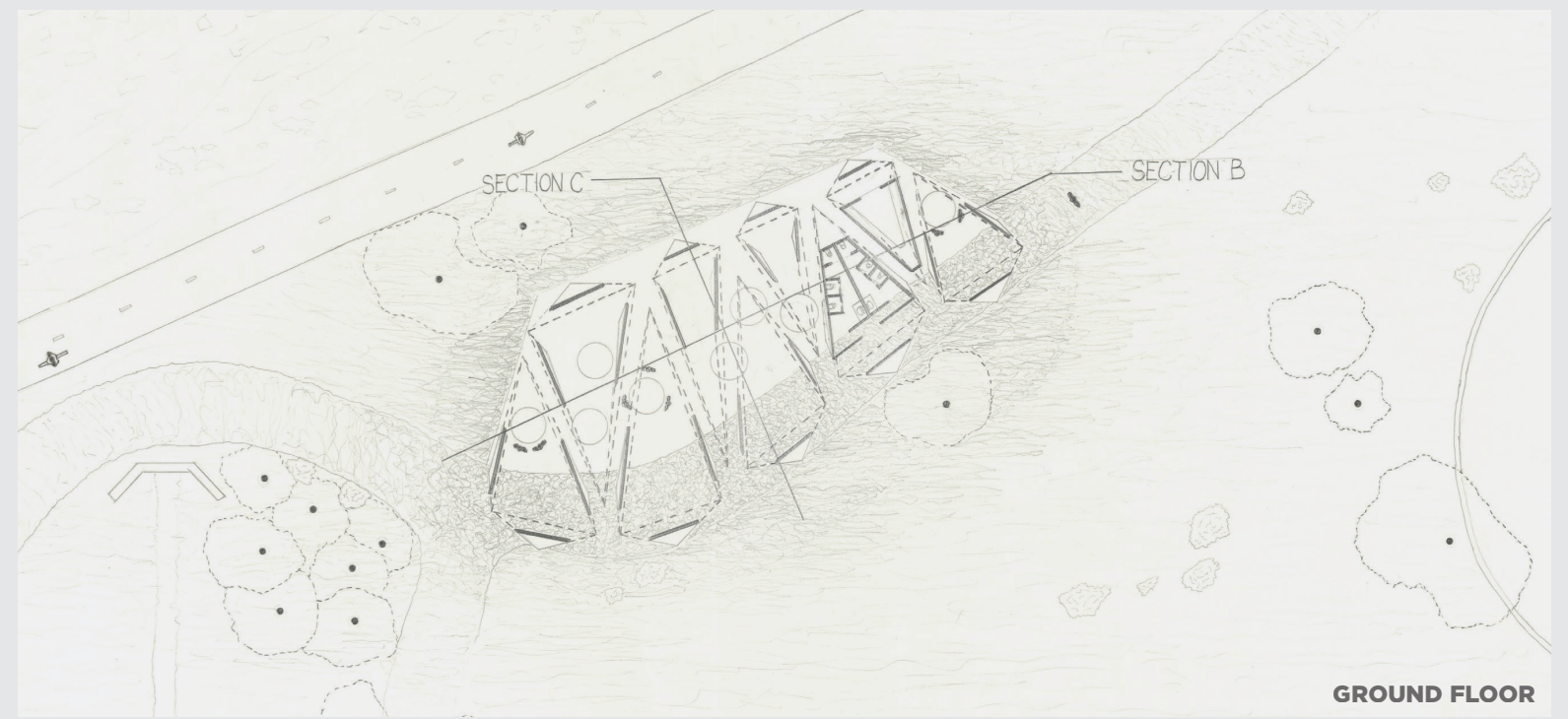
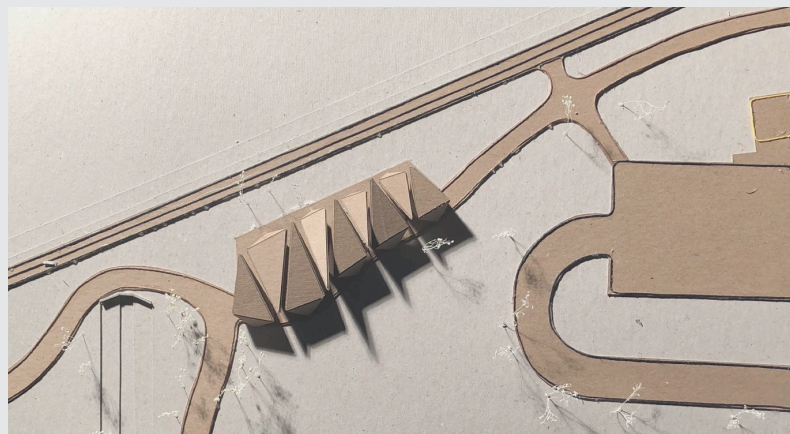
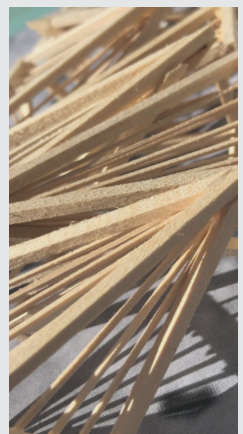
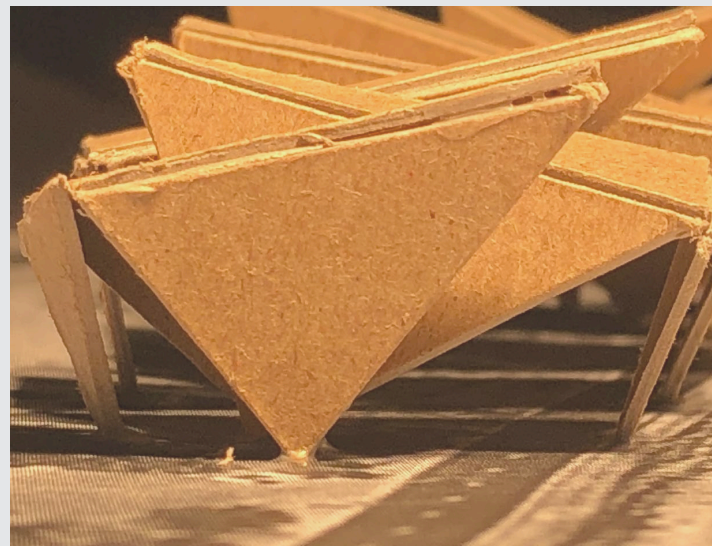
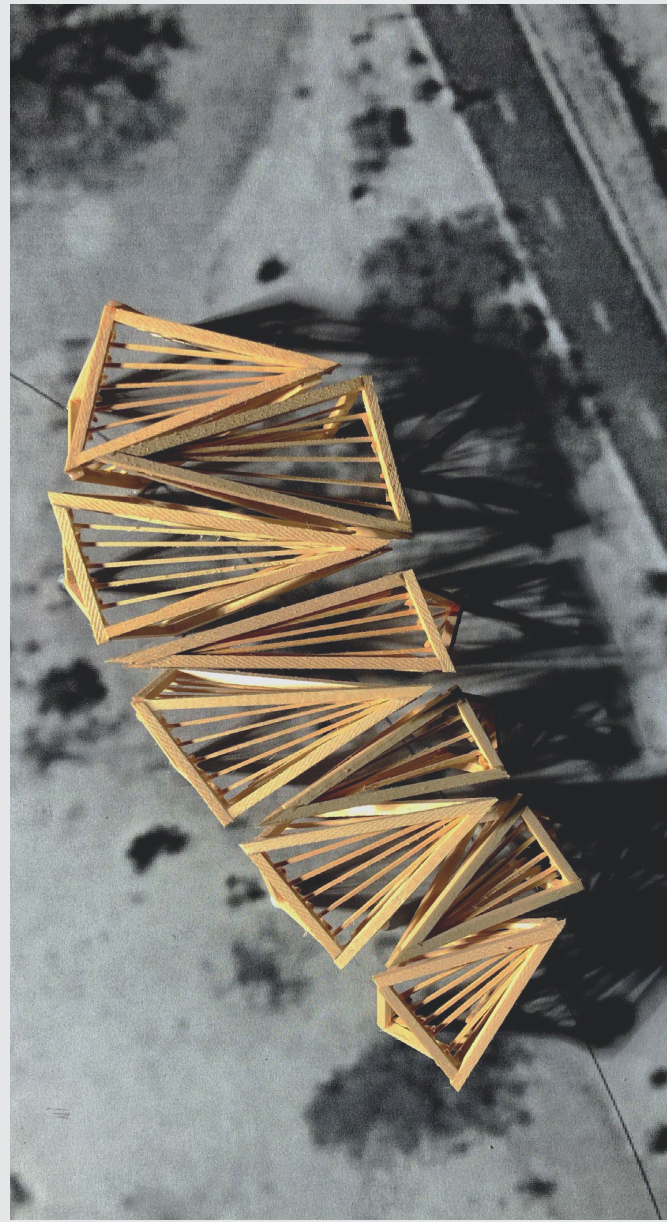
RESEARCH CAMP

With the goal of cross-pollinating the architectural aspects of a summer camp and an environmental research center, all while being carefully shaped along side the drastic slope of Mt. Lemmon, this project unveiled incredible moments between human and nature that would otherwise go unseen on a flat site. Stacking rectilinear building forms against the mountain side creates unmatched opportunities for framed views, as well as intimate connections with the environment. The top floors are reserved for up to 15 campers, while the bottom floors are reserved for up to 4 scientists who will have the resources provided to research several fields of biology and biofilic design. The central floors are where camp instructors are temporarily housed, but their main purposes are to provide communal spaces for campers to participate in group activities, learning spaces where the campers can learn from scientists, and indoor / outdoor spaces where the campers can connect with nature in a safe and unique way.

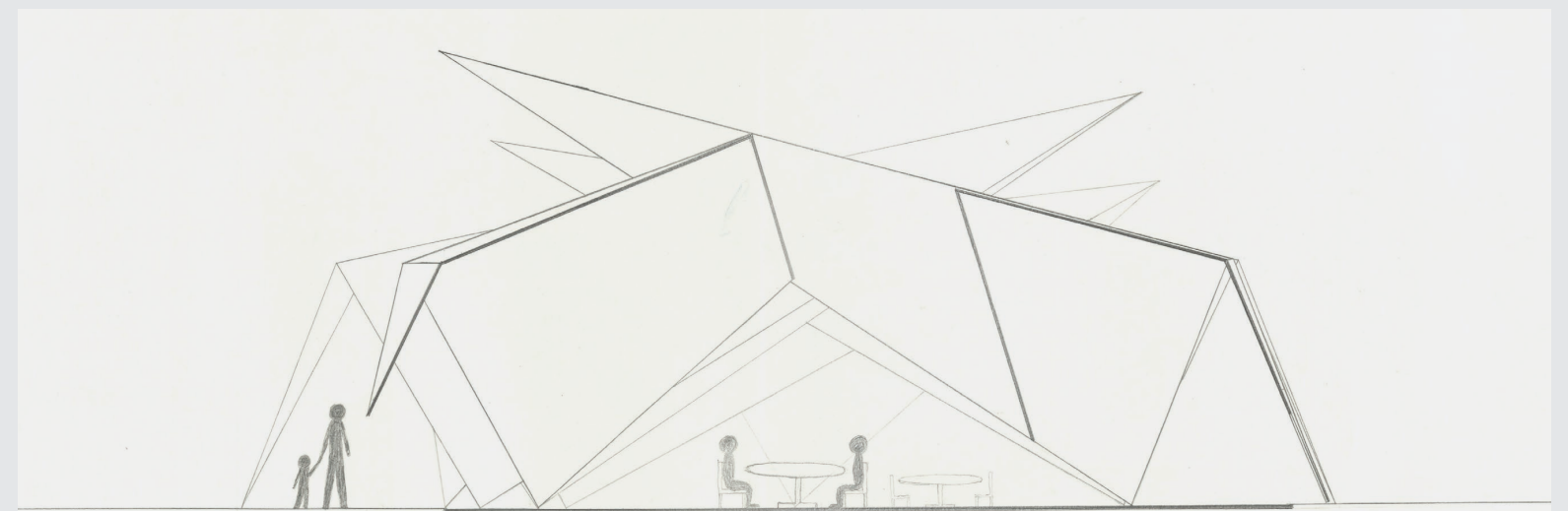


PARK RAMADA

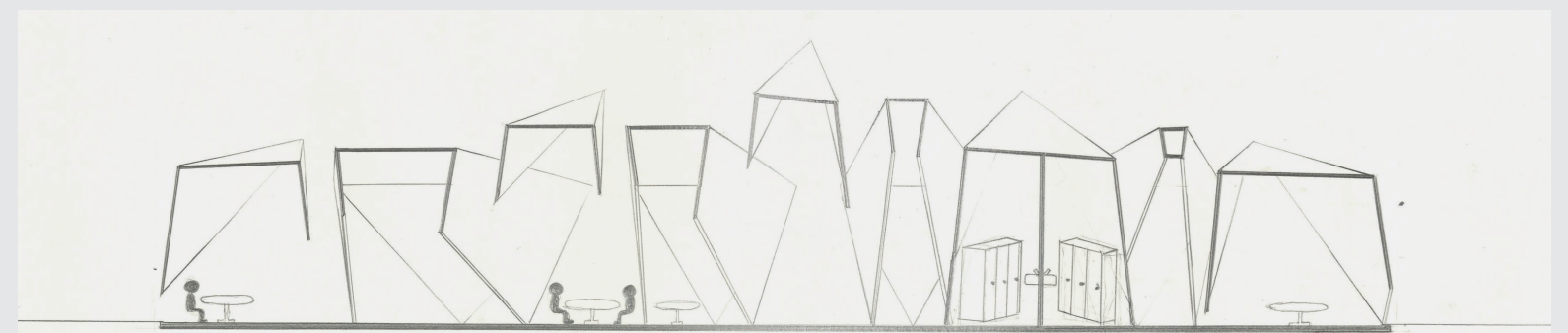
Located less than 50 feet south of the dried up Rillito River and nestled against the parallel bike path, this park ramada is an attempt with balancing form and function through its simplicity. The goals of the ramada include blending into the landscape by replicating the northern Catalina Mountains and taking the shape of the site, but also include leaving a minimal foot print on the site. The ramada form consists of flat, triangular faces connected in groups of four, that are bent and assembled into nine modular prisms that shape to the Rillito River's organic curves. Every module can be walked under, so the entire ramada is fully accessible. A foot trail becomes engulfed within the Ramada, surprising those who walk under it with a refreshing shadow cut with creases of light. Rather than disrupting the site's biophilia due to its construction, the minimal footprint gently rests on it, while accentuating the landscape and providing gracious amounts of spacious shade.



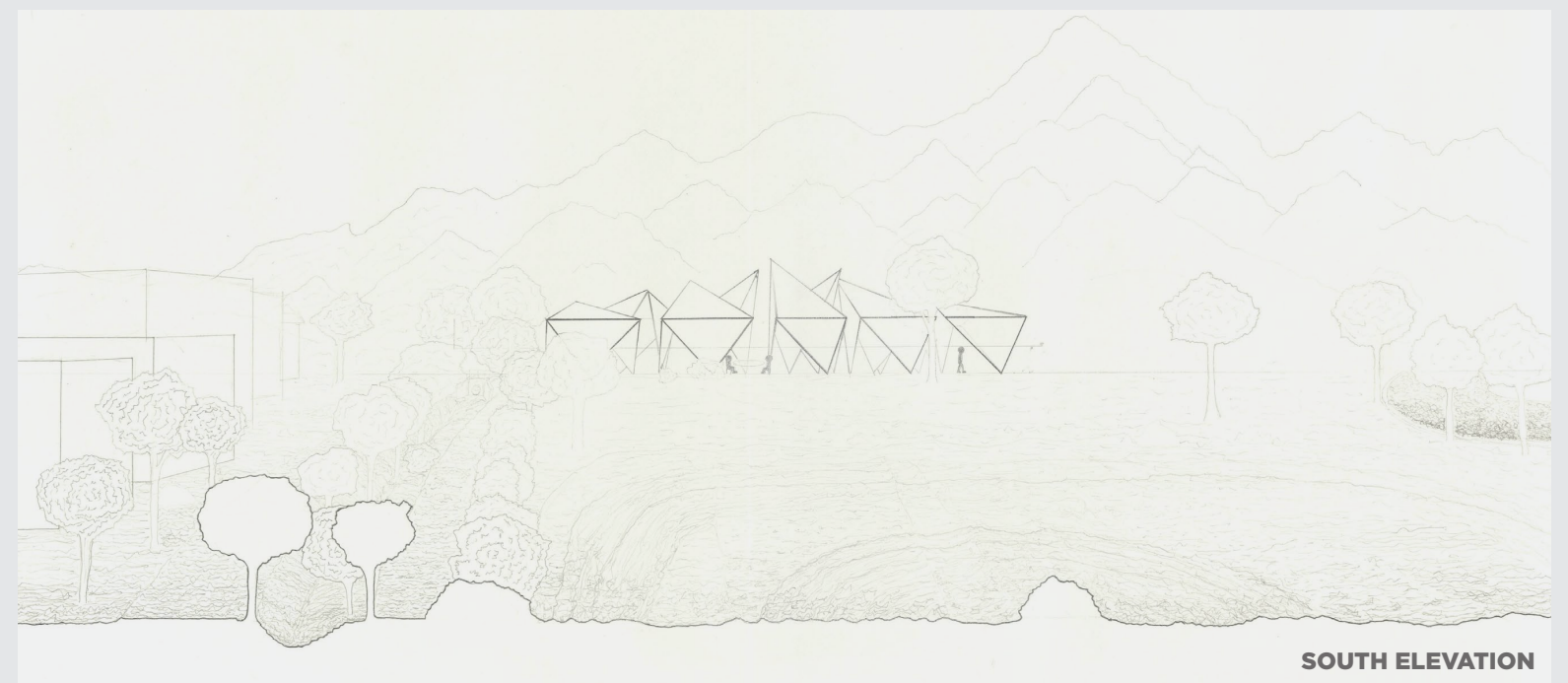
GROUND FLOOR



SECTION C



SECTION B



SOUTH ELEVATION

**THANK YOU
FOR
YOUR TIME.**

