

# **Lucas Warfield**

Short Works Portfolio

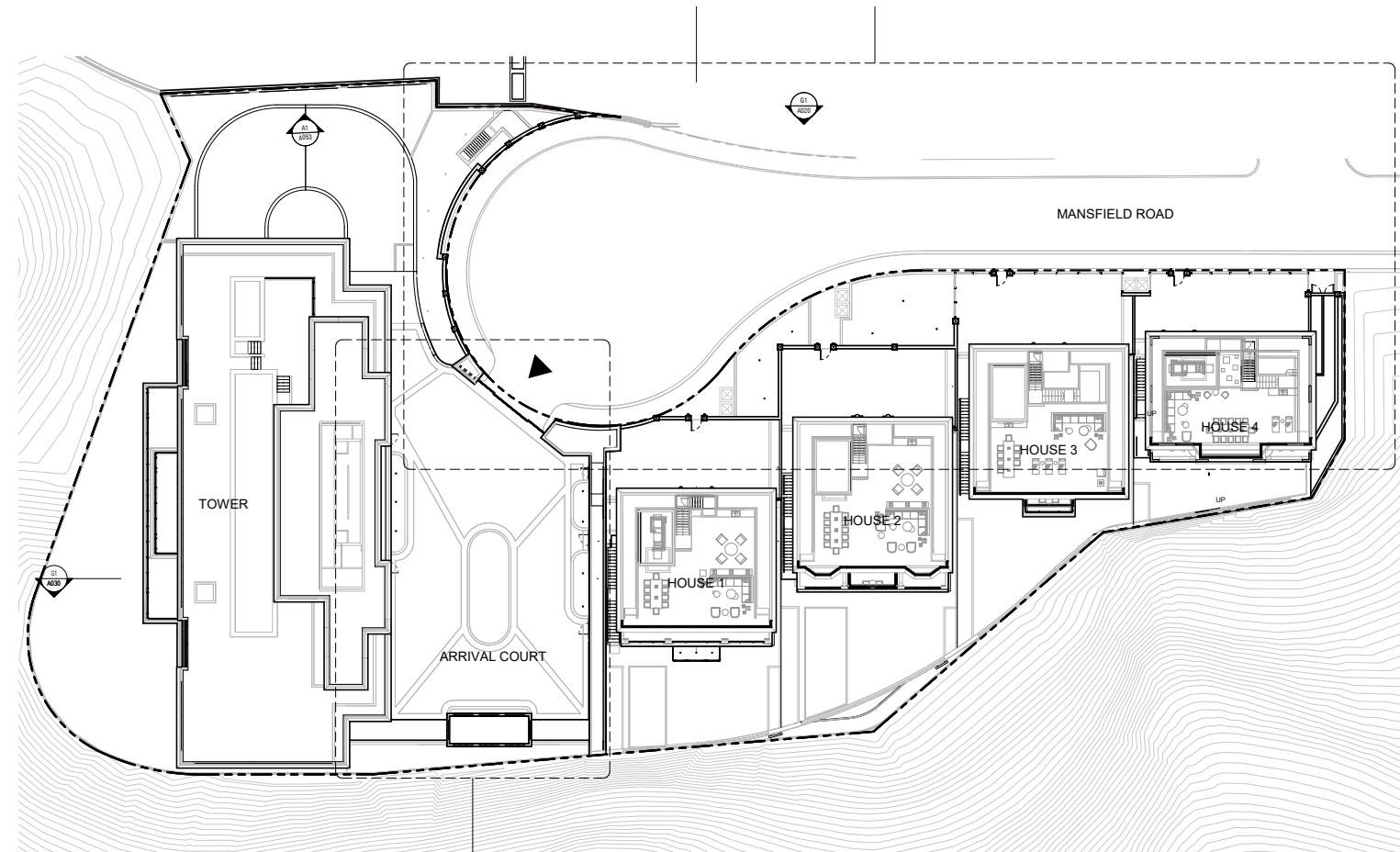
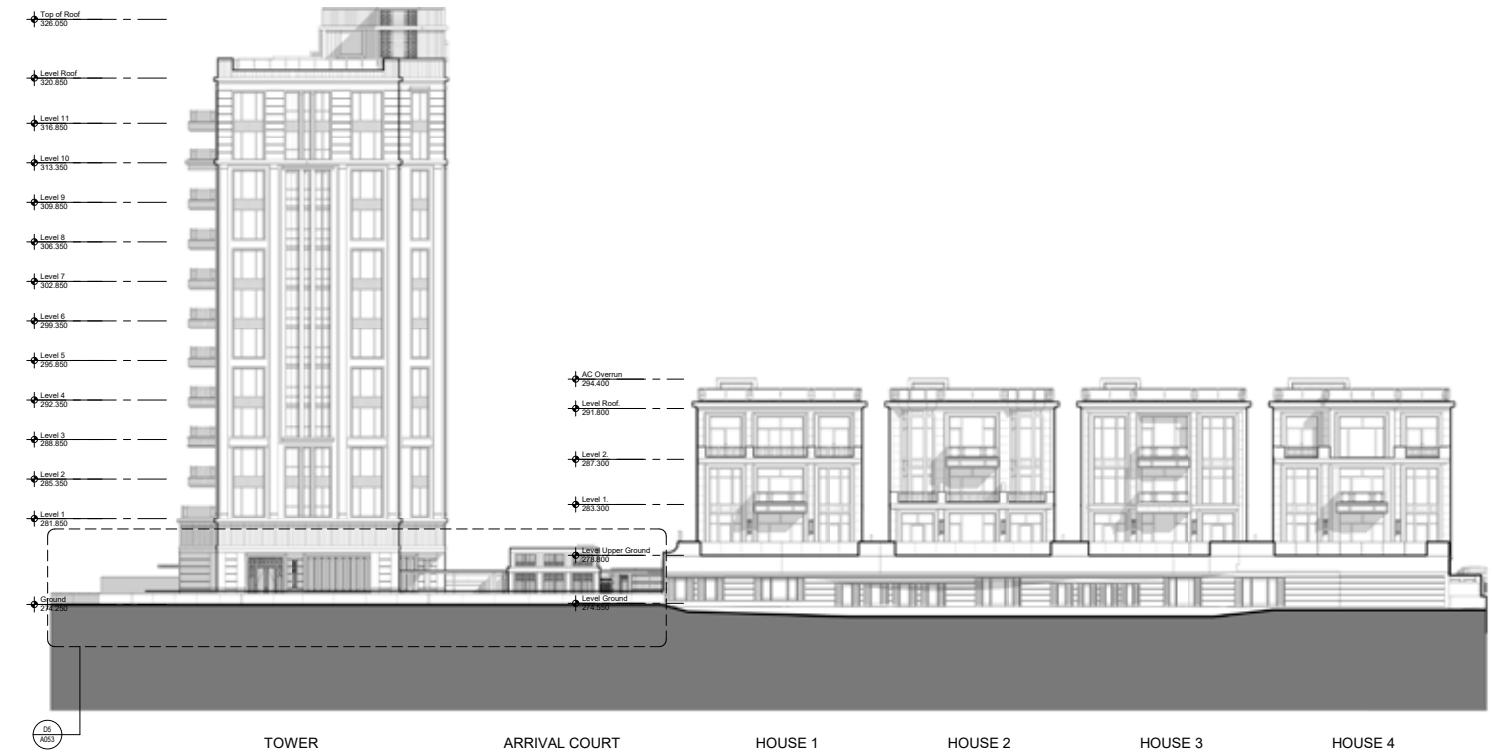
2025  
New York, New York



## Residences in Hong Kong

This residential development in Hong Kong is comprised of four connected homes and a residential tower. The site, nestled in the mountains surrounding the city, overlooks the ocean.

2021-2024  
Hong Kong  
Robert AM Stern Architects  
Multifamily Residential  
Revit, Rhino, Enscape, Indesign, Photoshop



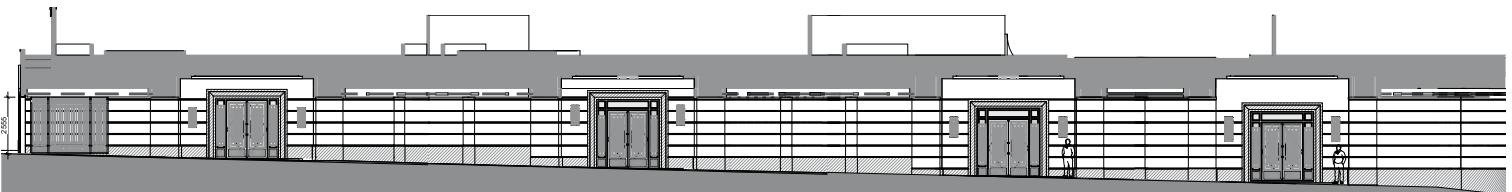


View of House 2 driveway entrance

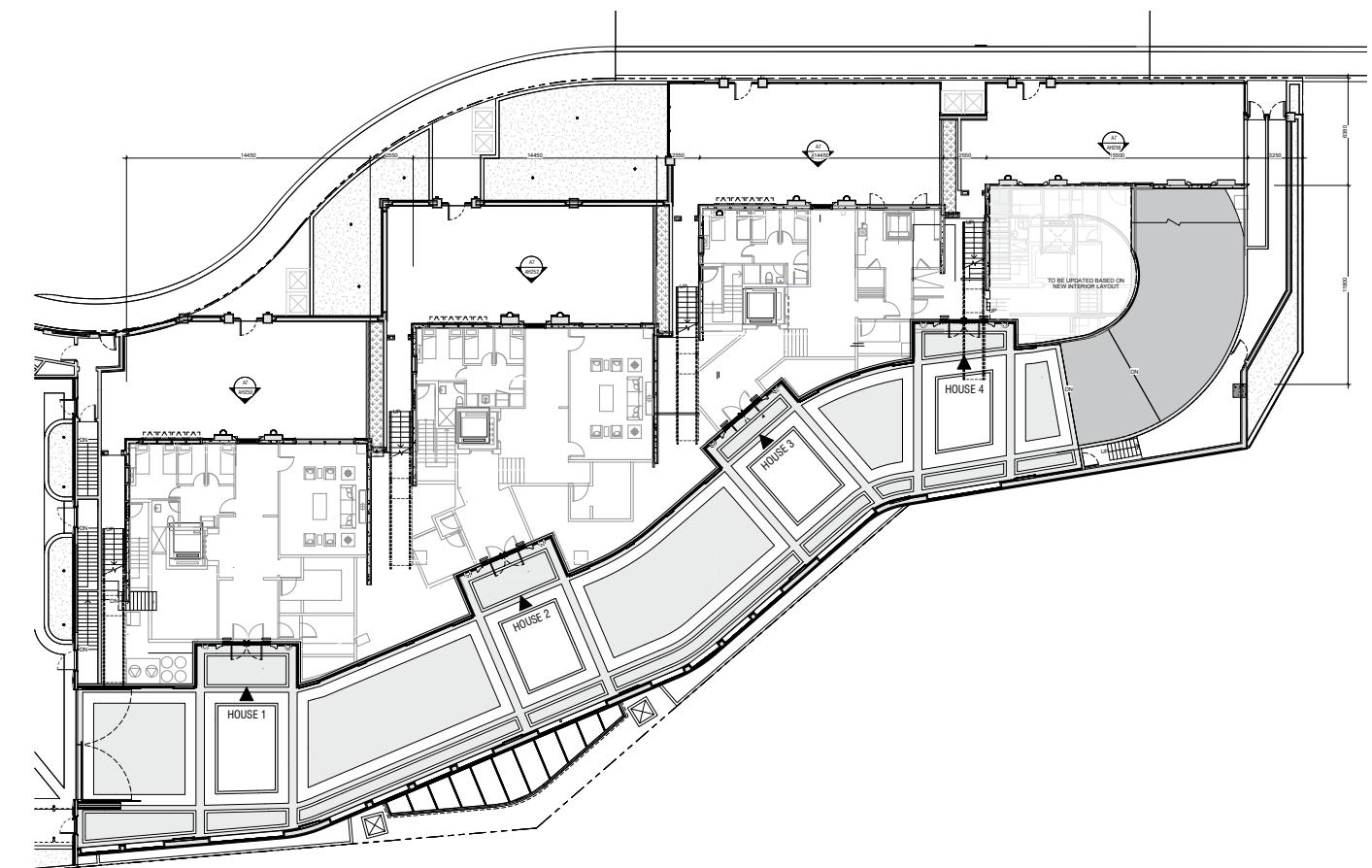
## Residences in Hong Kong

Hong-Kong zoning regulations resulted in unique challenges, particularly for the connected private residences. Creating distinct entrances for each of the units that felt private and equally grand while navigating the sloping road leading to the parking garage below was a top priority. Particular attention was paid to the grade to prevent high-end vehicles from bottoming out on the descent. I evaluated various strategies for managing the grade while also creating the distinct house entrances. Using hand sketching initially, then progressing to diagrammatic analysis, I helped produce the final product and inform the paving and cove lighting designs around the entrances. These designs were initially prototyped in Rhino and Enscape before being implemented in the Revit model to produce further visualizations.

2021-2024  
Hong Kong  
Robert AM Stern Architects  
Multifamily Residential  
Revit, Rhino, Enscape, Indesign, Photoshop



View looking down residential driveway





West elevation



East Elevation

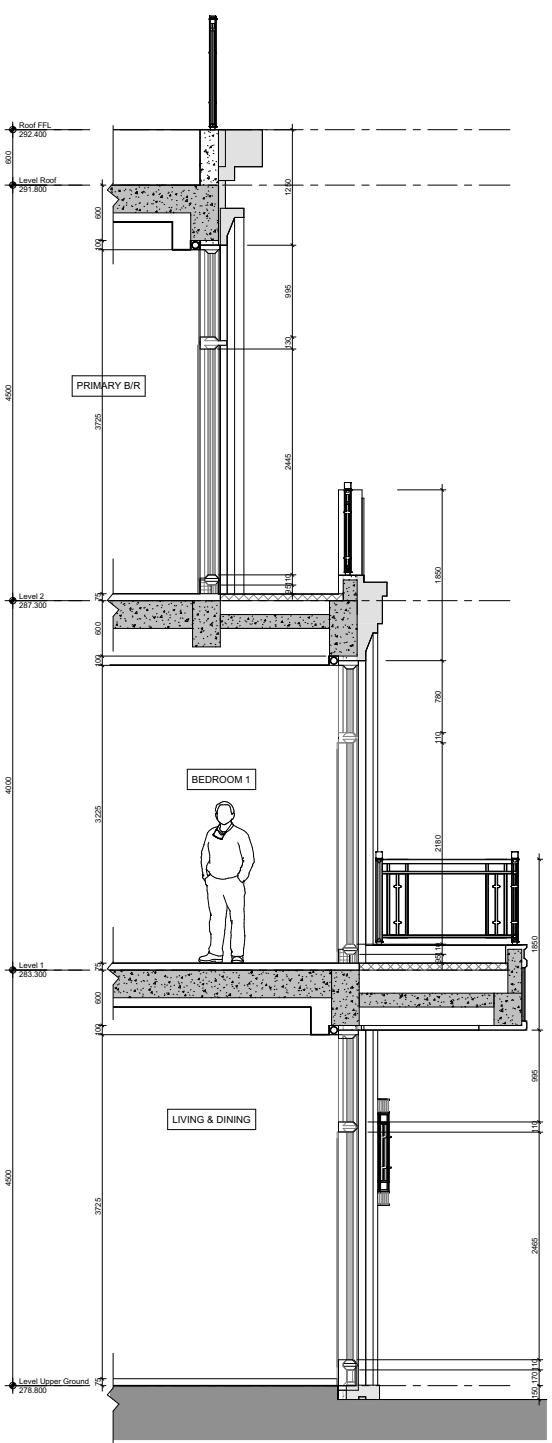
## Residences in Hong Kong

During the Design Development and Construction Documentation stages, I collaborated closely with the team to produce comprehensive submission drawings. My responsibilities included cutting sections, detailing, and dimensioning drawings with meticulous attention to standards and conventions, ensuring consistency and clarity across the entire set. This process required not only precision but also a deep understanding of the project's design intent and technical requirements. My work spanned multiple scales, from crafting overall building elevations to developing detailed window and door schedules. Through this process, I contributed to creating a cohesive and well-organized drawing set that supported clear communication with contractors, consultants, and stakeholders.

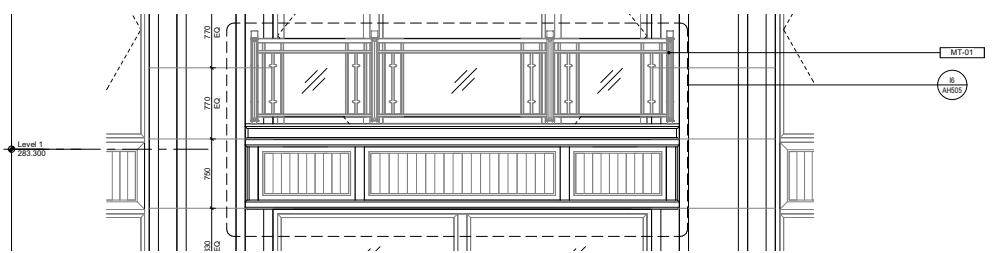
2021-2024  
Hong Kong  
Robert AM Stern Architects  
Multifamily Residential  
Revit, Rhino, Enscape, Indesign, Photoshop



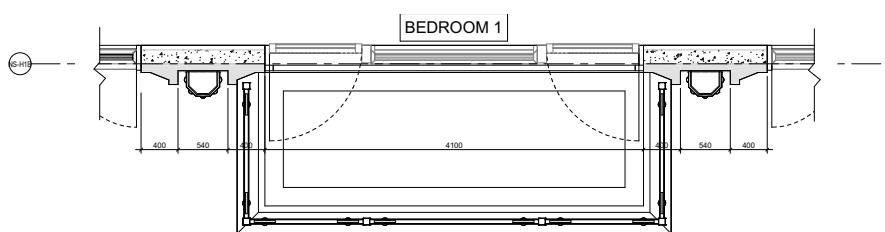
Axonometric



Section



Balcony Elevation



Enlarged Plan



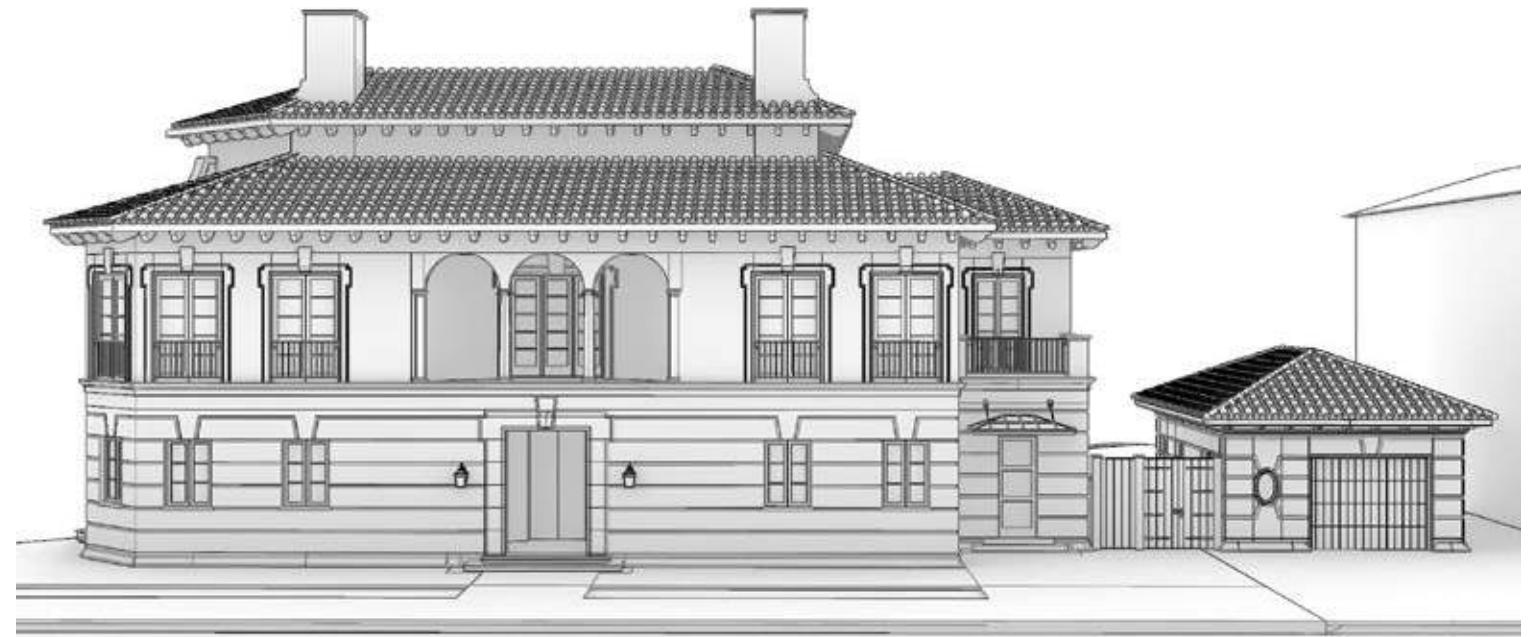
Corner detail model for Site 2 Tower design iteration  
3D Print PLA, Foam Core, & Plexiglass  
Scale 1/4"=1'

## Residences in Hong Kong

I assisted in the accurate construction of several models over the course of the project by coordinating the design team and the in-house model shop. A large-scale site model was constructed to analyze the project siting. I employed my knowledge of 3D printing processes to prepare and print accurate and interchangeable portions of the façade for  $\frac{1}{4}$  scale studies of both the top of the tower and the ground level entrance of the houses. The interchangeable nature of these models allowed the visualization of multiple design ideas for review by partners and clients. An important aspect of the design process was documenting the models for the client to use for marketing the project.

2021-2024  
Hong Kong  
Robert AM Stern Architects  
Multifamily Residential  
Revit, Rhino, 3D Printing, Laser Cutting

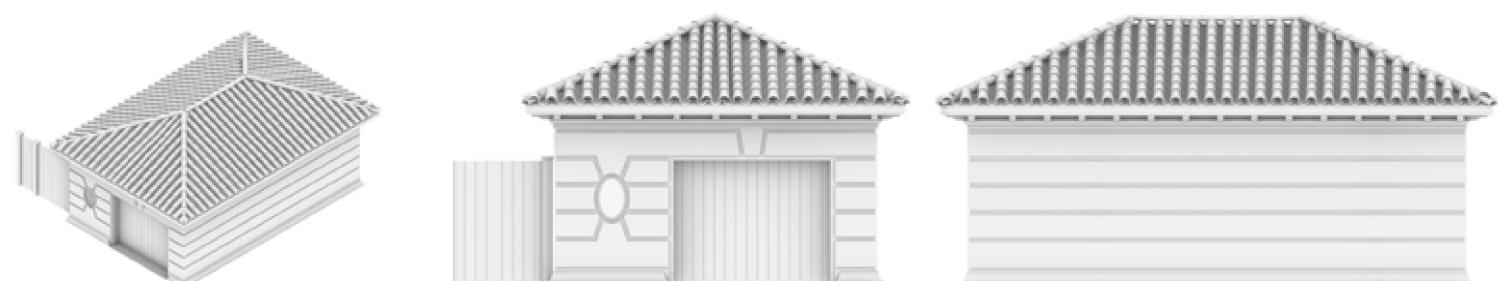
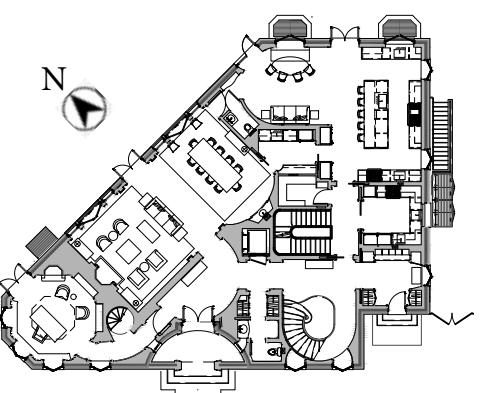




## Home in Brooklyn

This new house in Brooklyn is a 3-story 12,000 sq. ft. home currently in construction on three combined lots in Brooklyn, New York. Working with the head partner, project architect and one other teammate, I helped refine and visualize the interiors of the home as well as exterior portions of the project.

2024  
Brooklyn, New York  
Robert AM Stern Architects  
Single Family Residential  
Rhino, Autocad, Grasshopper, Enscape,  
Photoshop, Indesign

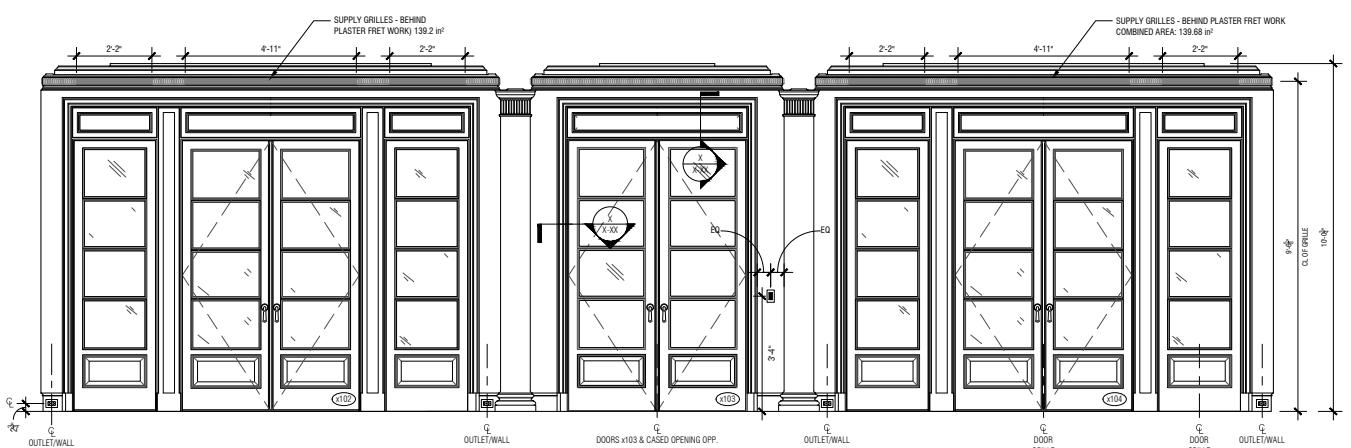
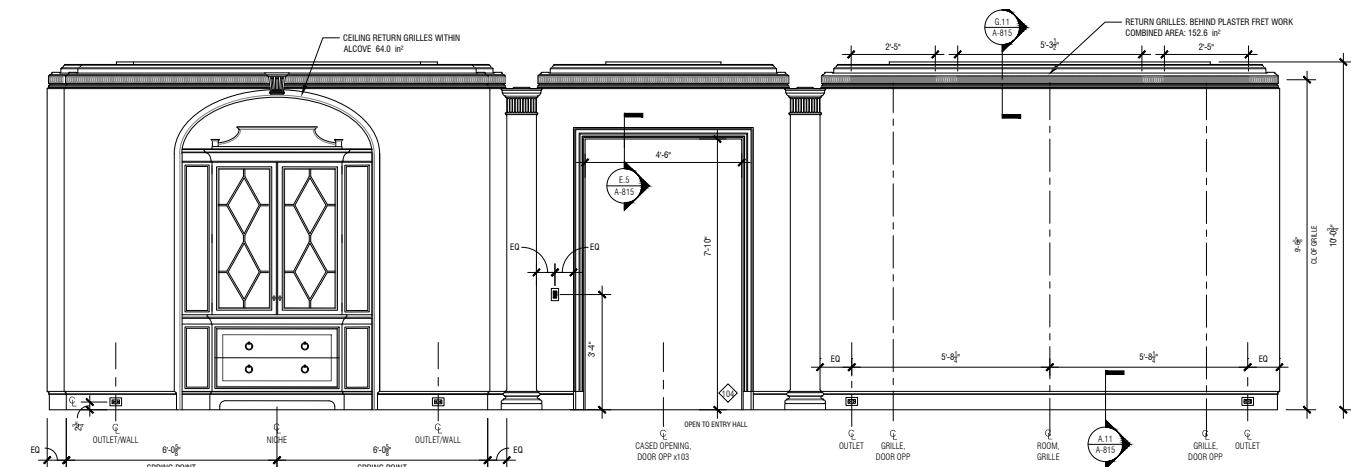
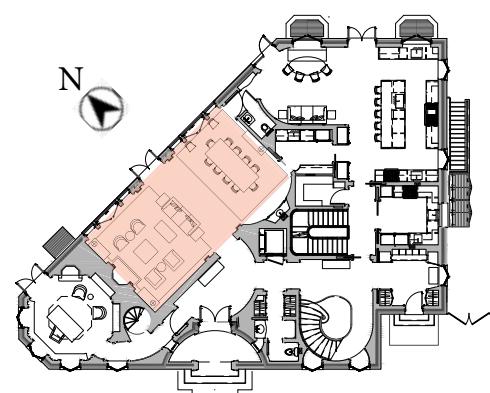


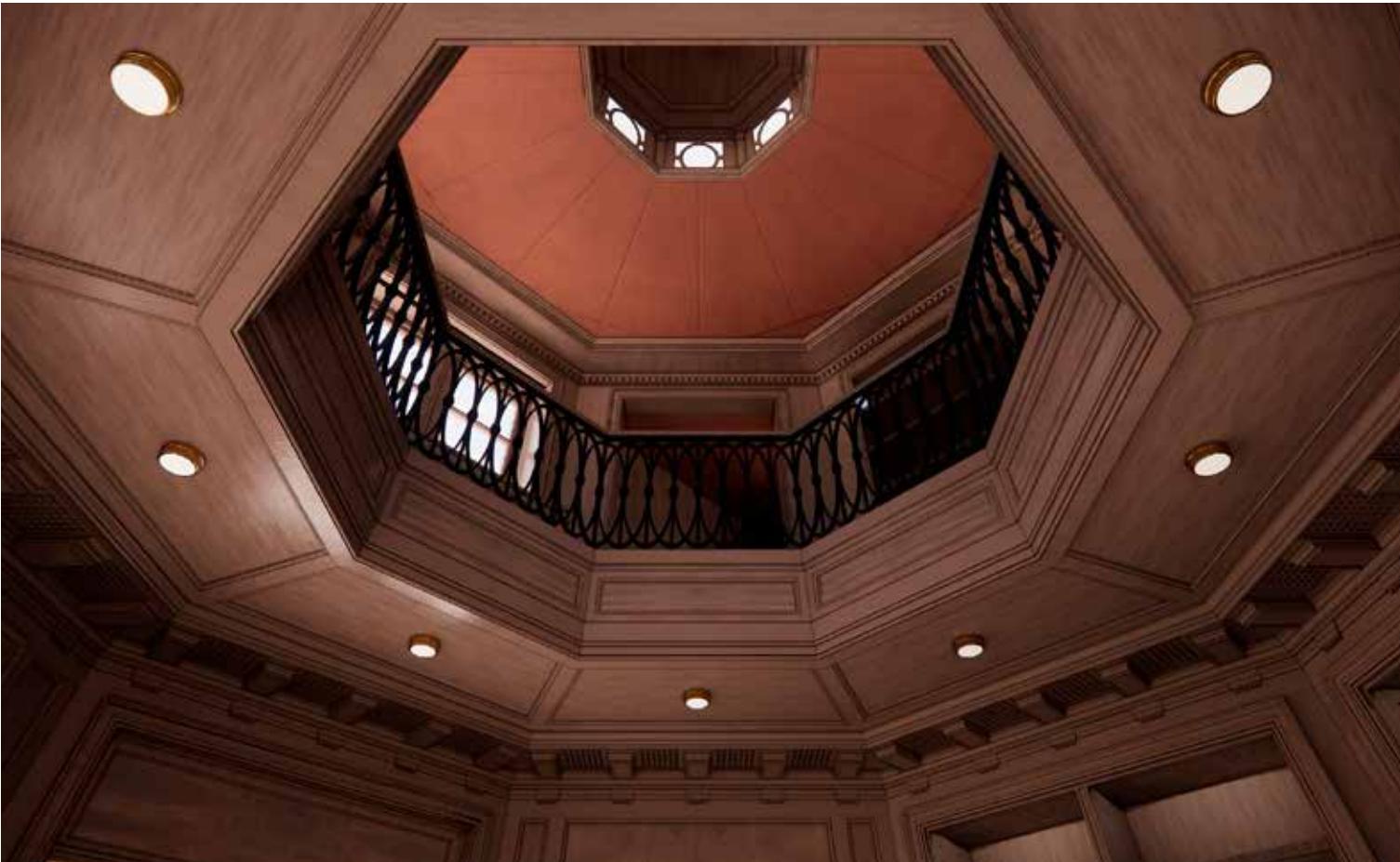


## Home in Brooklyn

For the living room, I revised CAD elevations to refine interior millwork details, ensuring coordination with design specifications. I developed a detailed 3D model to analyze millwork design and floor patterns, facilitating multiple design iterations. I used the model to generate renders that played a key role in obtaining client approval for over one million dollars of millwork throughout the home.

2024  
Brooklyn, New York  
Robert AM Stern Architects  
Single Family Residential  
Rhino, Autocad, Grasshopper, Enscape,  
Photoshop, InDesign

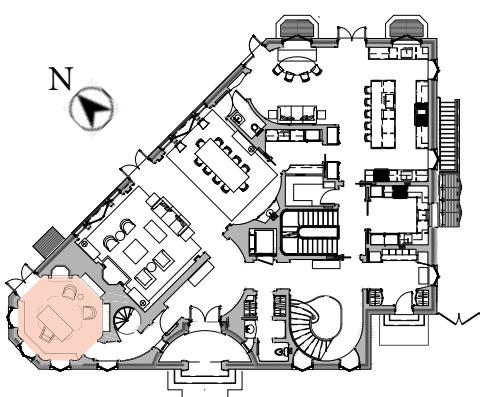




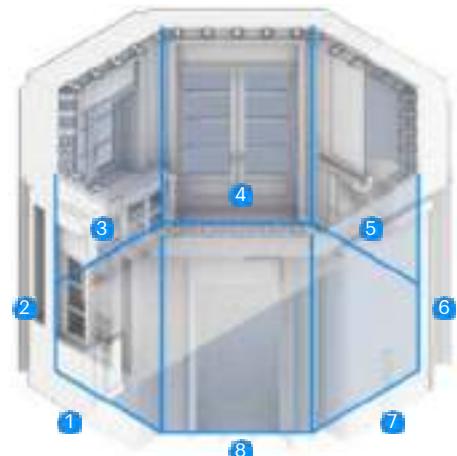
## Home in Brooklyn

The double-height octagonal library acts as a secluded study. Working from unfolded elevations I created a system to effectively iterate design options for the bookshelves and ceiling details throughout the room. Using nested blocks, I could adjust everything from the bookshelf profiles to the dentils in the ceiling, automatically changing them throughout the space. This workflow also increased texture mapping efficiency which was critical for showing wood grain running the correct direction in the fully-paneled room. I delivered a studio-wide presentation on the library and stair hall workflows to demonstrate the possibility of increased efficiency in modeling at the firm.

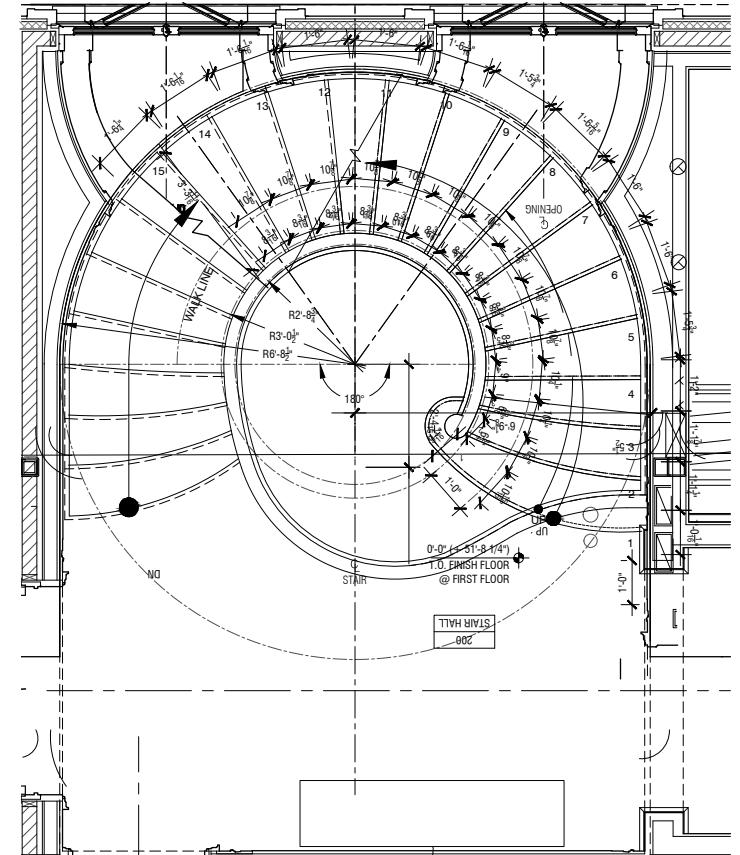
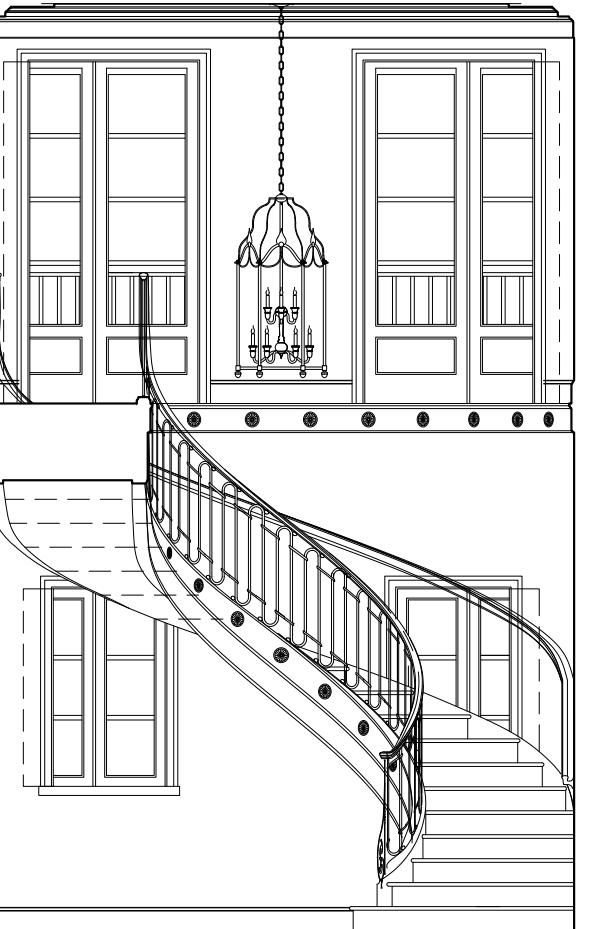
2024  
Brooklyn, New York  
Robert AM Stern Architects  
Single Family Residential  
Rhino, Autocad, Grasshopper, Enscape,  
Photoshop, InDesign



Unfolded Elevation



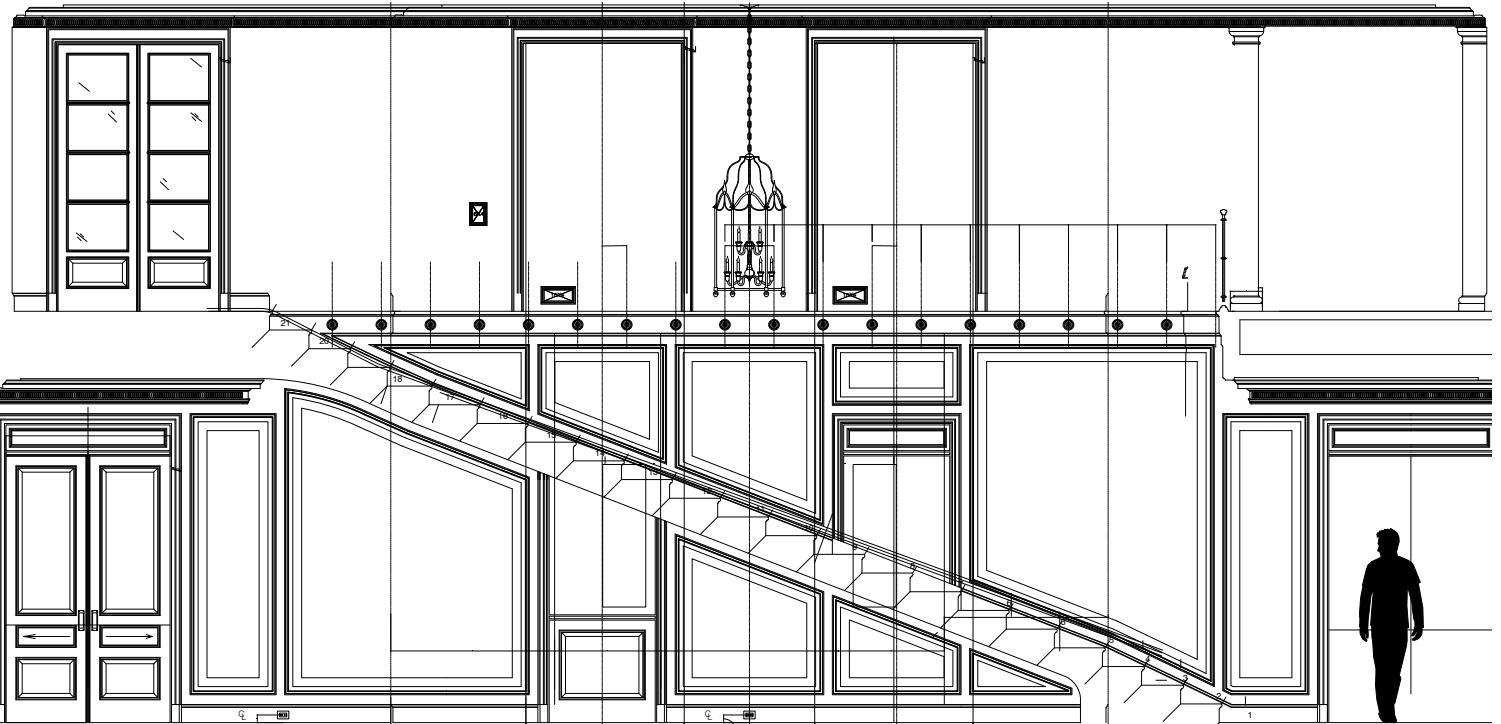
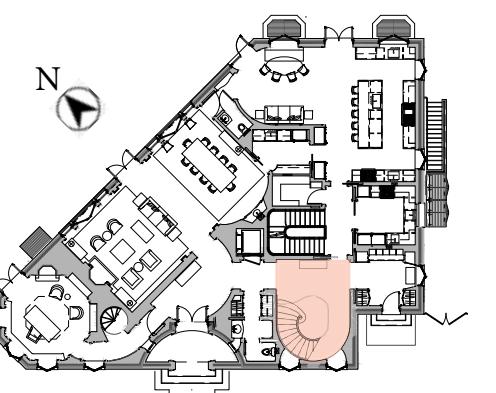
Oriented Elevations



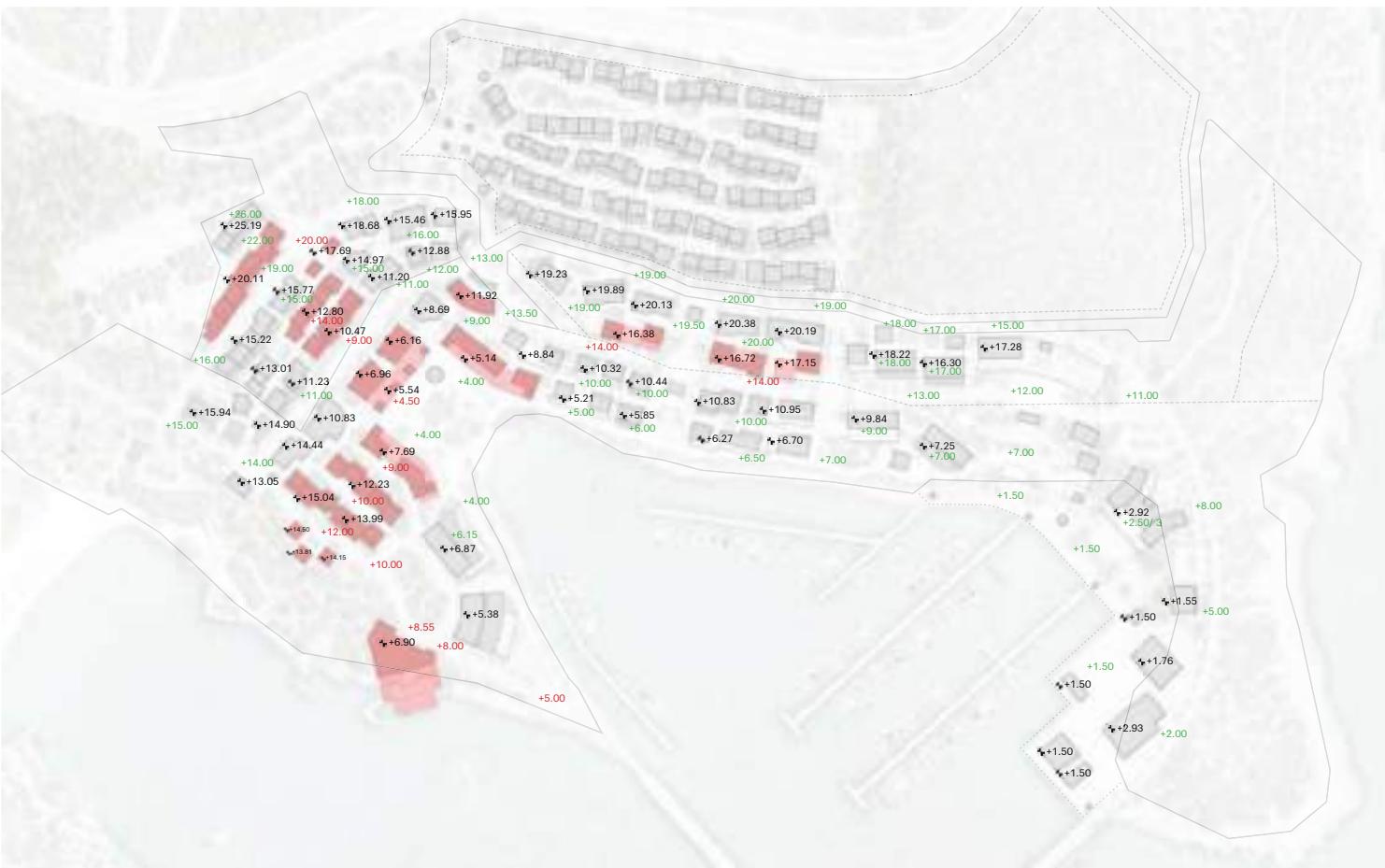
## Home in Brooklyn

The stair hall is a trophy space within the home featuring an intricate wrought iron railing sweeping down the staircase. I developed a system in Rhino for mapping the project architect's 2D railing schemes onto the complex 3D curve of the staircase. This facilitated the ability to generate multiple schemes for client review and approval. I utilized a similar workflow for mapping panel schemes onto the curved surrounding walls.

2024  
Brooklyn, New York  
Robert AM Stern Architects  
Single Family Residential  
Rhino, Autocad, Grasshopper, Enscape,  
Photoshop, InDesign



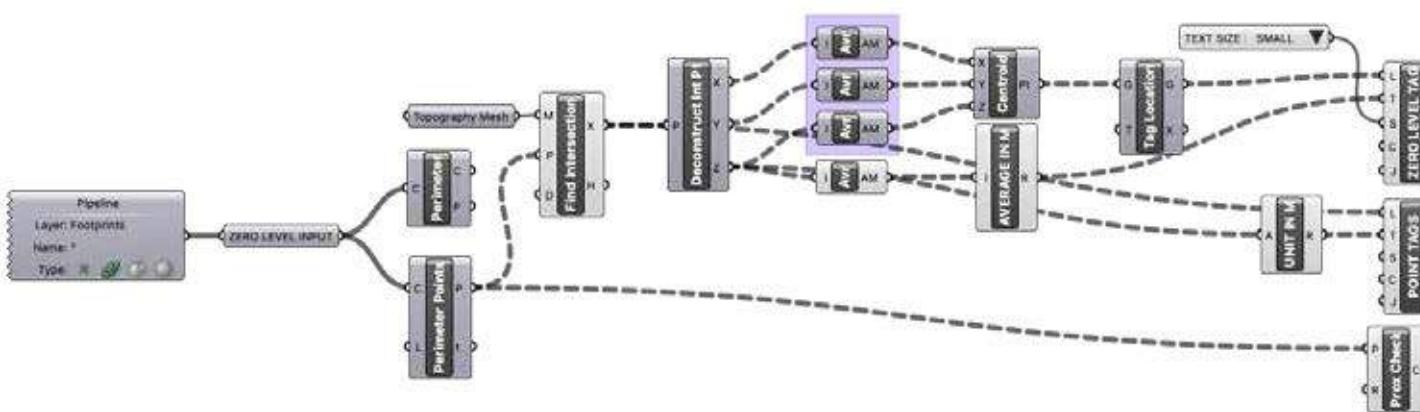
Stair Hall Unfolded Elevations



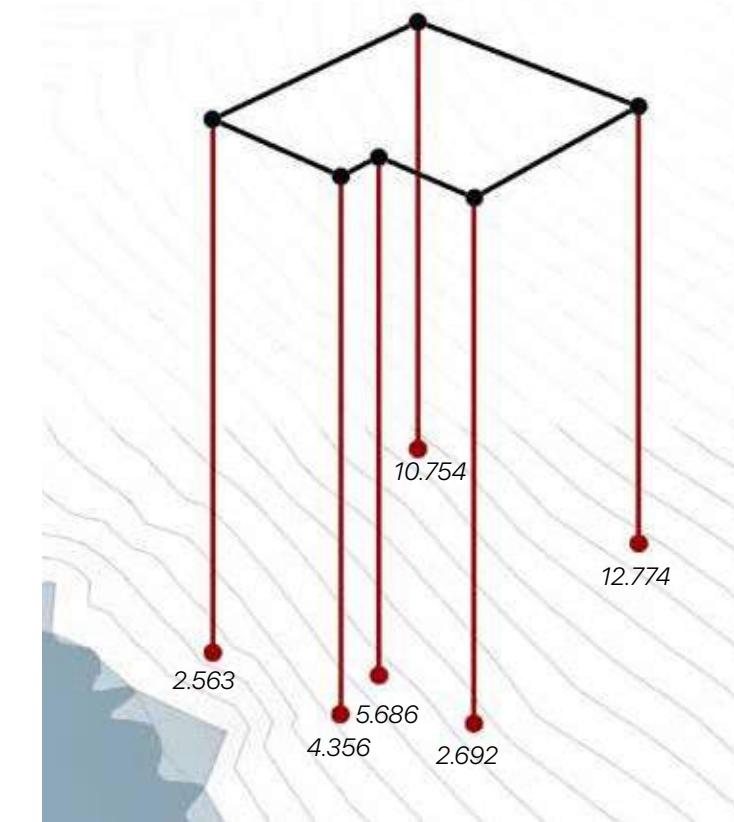
## Marina in Southern Turkey

The client required unobstructed views of the Mediterranean for every unit, necessitating careful design integration with topography and zoning laws. Local zoning defined a "Zero-Level" as the average intersection of a building footprint with the topography, determining foundation placement. Site requirements typically allowed deviations of no more than  $\pm 1\text{m}$ . Initially, these calculations were manually performed, a time-consuming process for every design iteration. To streamline this, I used Grasshopper to create a tool that automates Zero-Level calculations. The component analyzes building footprints, calculates intersections with topography, and displays results directly on the master plan. This dynamic tool updates in real time as designs change, creating a feedback loop between design and validation. I also expanded its capabilities to verify setbacks, enhancing compliance checks across the site.

2023-2024  
Kaplankaya, Turkey  
Robert AM Stern Architects  
Master planning  
Grasshopper, Rhino, Autocad, InDesign



**Z=7.137**

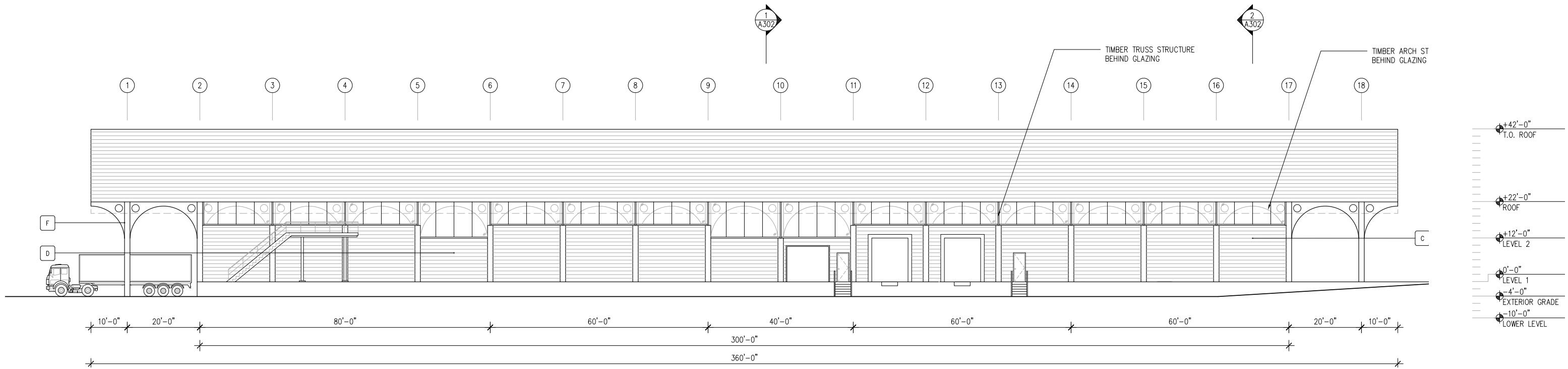


$$\text{Zero Level} = (\text{Z- Height of Intersection}) / \text{Number of Intersections}$$

$$7.137 = (12.774 + 10.754 + 5.686 + 4.356 + 2.692 + 2.563) / 6$$

● Building Perimeter Point

● Z-Height of Intersection with Topography Mesh

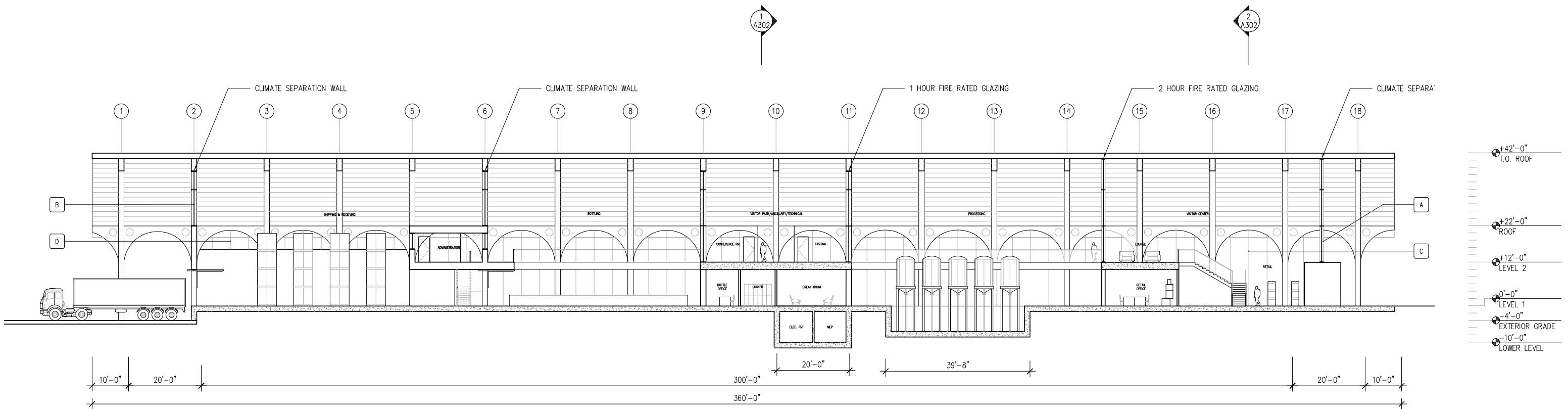


## Whiskey Distillery in Kentucky

This project in Kentucky is a proposed campus for a distillery brand meant to channel a connection between the land and the process of whiskey production. I worked specifically on the schematic design phase for the bottling center. This program provided several unique challenges especially related to fireproofing for the high-proof alcohol production process. Production spaces were interwoven with public spaces to allow visitors the opportunity to experience the process of producing the whiskey.

2021  
Bardstown, Kentucky  
Shigeru Ban Architects  
Commercial, Multi-Use  
Autocad, Rhino, Enscape, Bluebeam,  
Illustrator

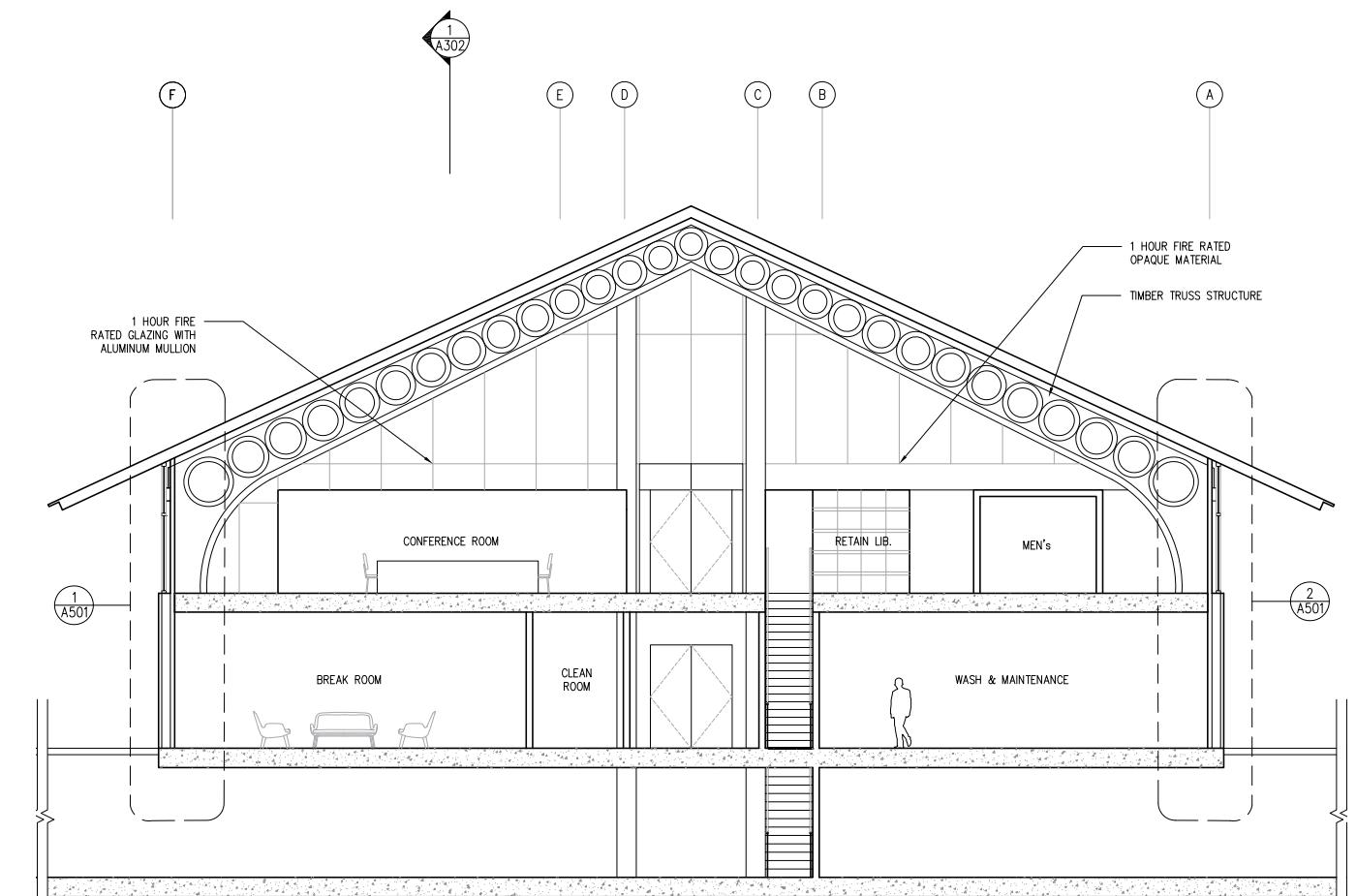
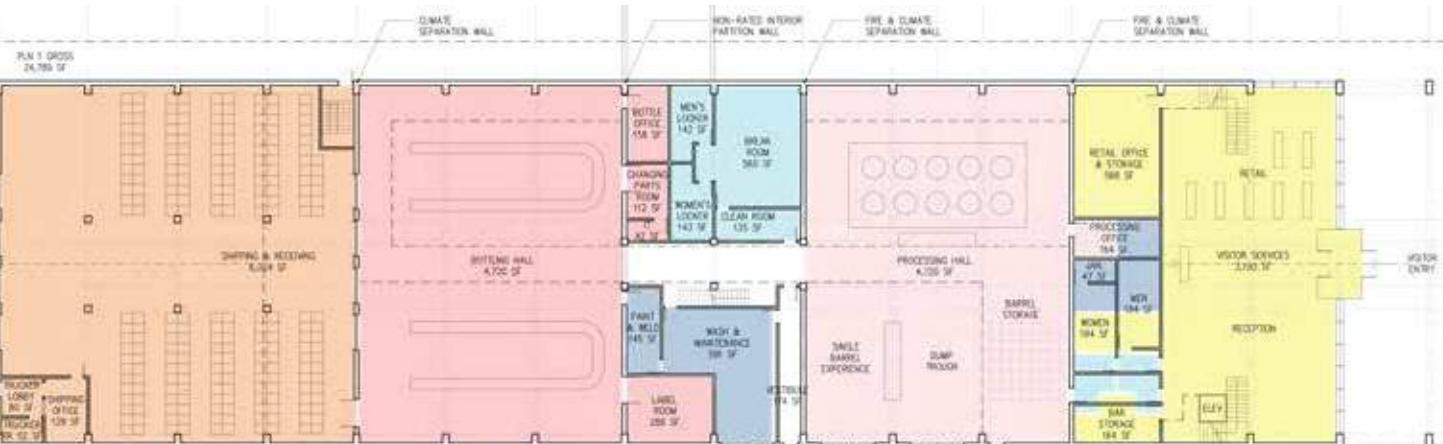




## Whiskey Distillery in Kentucky

I conducted area studies and comparisons to optimize showroom and production spaces. Collaborating with a small team, I drafted sections, annotated drawing sets, and created program diagrams to communicate spatial relationships to the client. I also developed initial 3D models in Rhino, which served as a foundation for the firm's rendering consultants. These deliverables supported the client's understanding of the project and facilitated coordination of design objectives.

2021  
Bardstown, Kentucky  
Shigeru Ban Architects  
Commercial, Multi-Use  
Autocad, Rhino, Enscape, Bluebeam,  
Illustrator





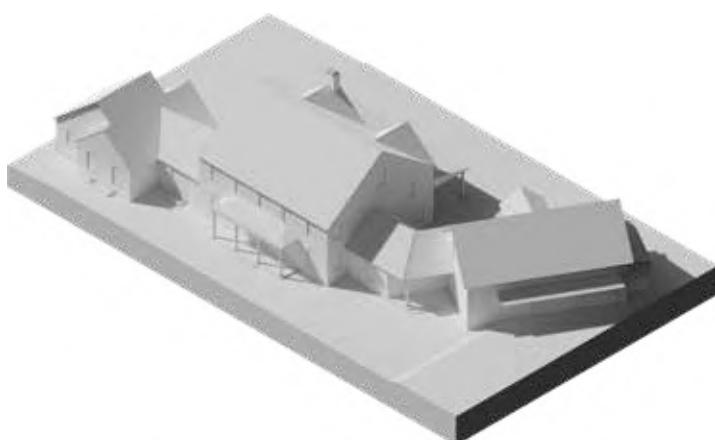
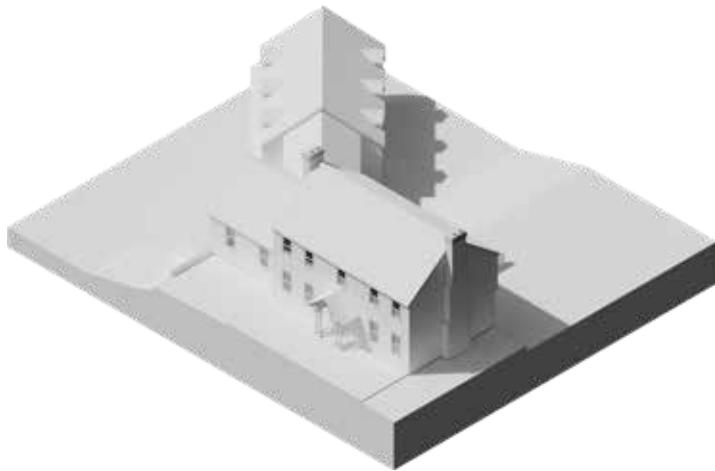
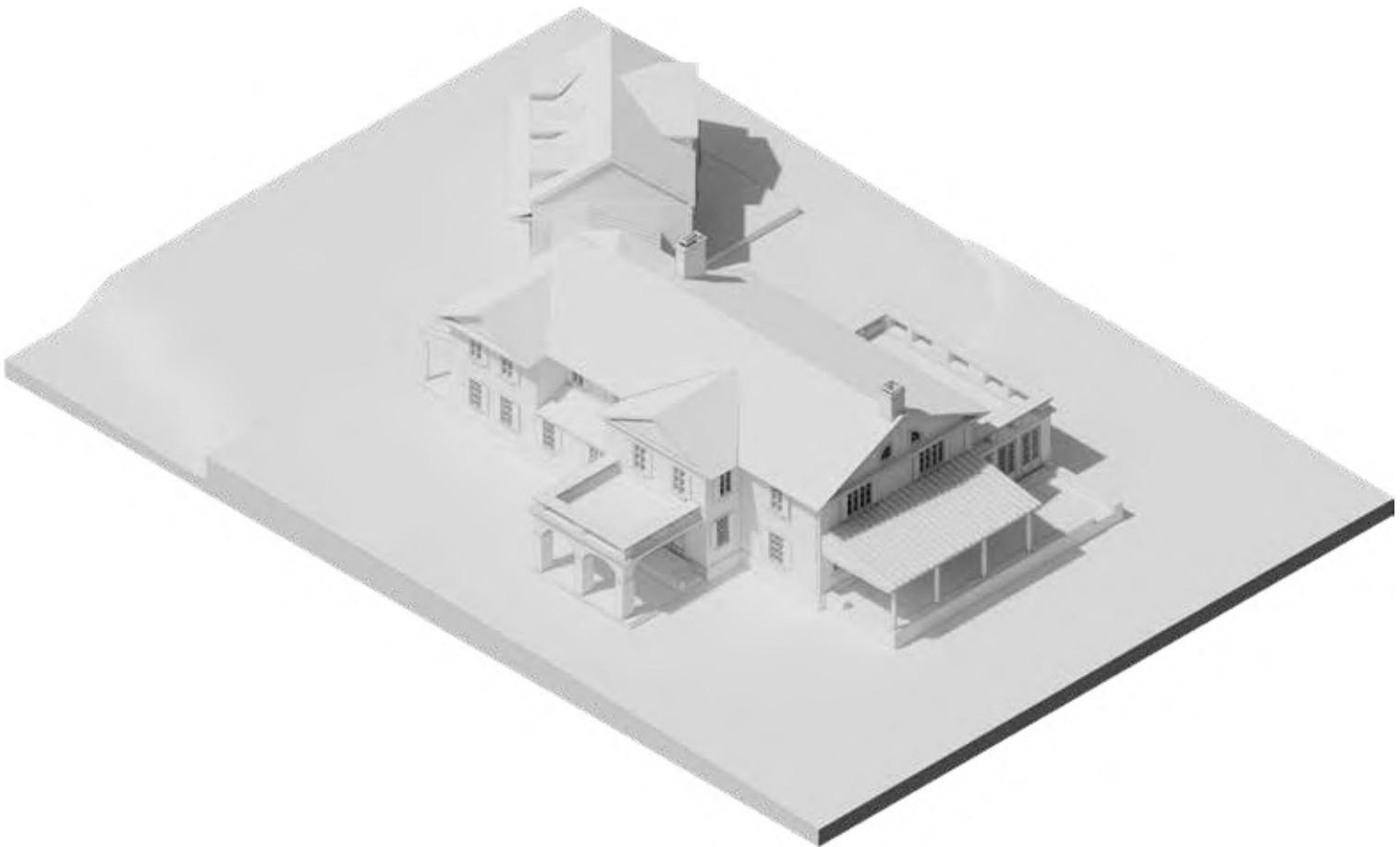
## Johns Hopkins Children Medical Center

At Ayers Saint Gross I worked closely with team members to build large scale models of the proposed addition to the Johns Hopkins Children's Medical and Surgical Center. A guiding criteria of the design of the CMSC building was the impact on the adjacent courtyard when the building is illuminated. To demonstrate the interaction between the glass façade of the new CMSC building and the courtyard, I helped build two scale models with internal lighting and an interchangeable façade system. My responsibilities included calibrating and operating 3D print and laser cutting machines, the creation of cut and print files, the creation of context buildings and the assembly of the final models.

2019

Baltimore, Maryland  
Ayers Saint Gross  
Hospital, Educational  
Autocad, Rhino, Laser Cutting, 3D Printing,  
Model Making

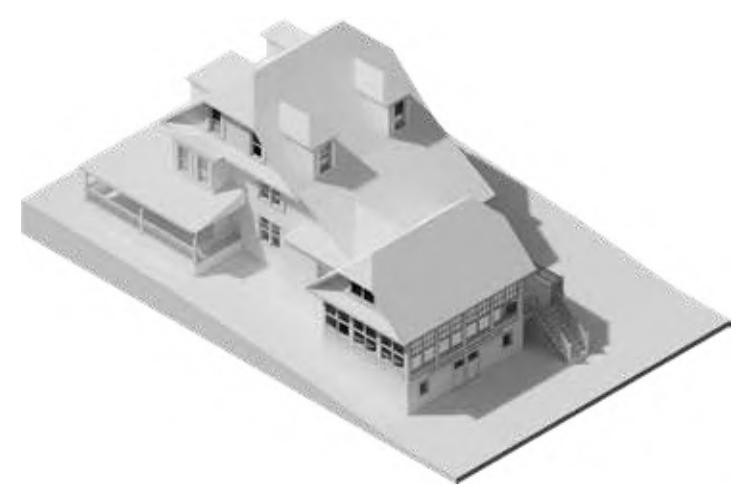
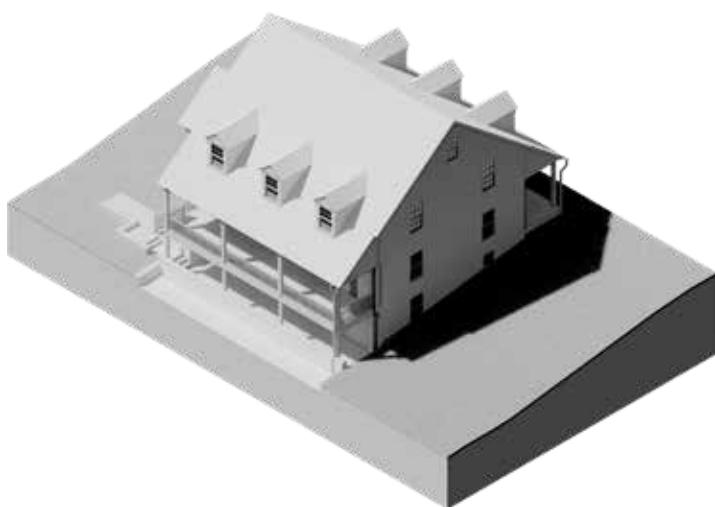




## Warfield Architects Selected Projects

Since 2016 I have worked intermittently at Warfield Architects to introduce digital design methodology to the firm. Initially my work involved scanning hand drawn plans and sections. These drawings were replicated in AutoCAD then modeled with Rhino to create visualizations. Clients have reacted positively to the introduction of 3D visualization at the office. More recently my role has evolved to be more design oriented and comprehensive, producing original drawings and visiting on site with contractors and clients.

2016 - 2025  
Warfield Architects  
Single Family Residential  
Rhino, Autocad, V-ray, Enscape

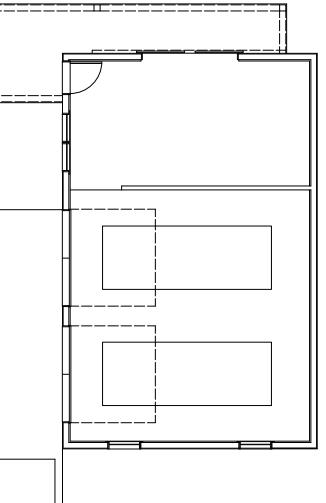
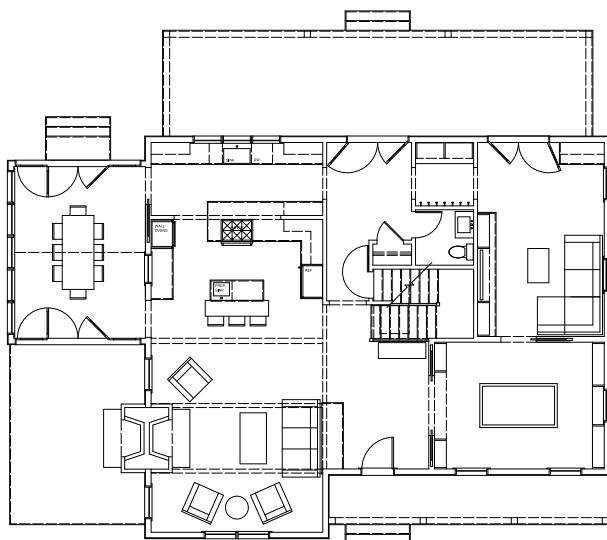
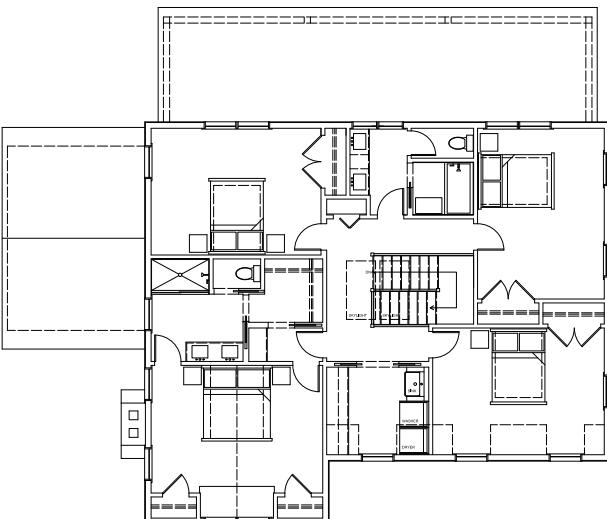




## Home on a Truffle Farm

This residence in Baltimore County is new construction located on a truffle farm. Designed as a cost-effective 3,500 sq. ft. home, it draws inspiration from the local vernacular of traditional farmhouses. The home features a central stair with four bedrooms on the second floor and an open living area and kitchen adjoining a three-sided glass dining room at the first floor. A porch linkage connects the main house to the barn, which serves as a two-car garage with studio above. I developed and modeled the scheme which received client approval.

2021  
Baltimore County, Maryland  
Warfield Architects  
Single Family Residential  
Autocad, Rhino, Enscape



South Elevation

East Elevation





Existing



Scheme 1

## Home in Ruxton

This residence in Ruxton, Maryland, included a renovation and an addition focused on framing its southern view and enhancing the connection between indoor spaces and the surrounding landscape. The design centered on a living room extending toward the south. I developed and modeled several massing options and attended meetings with the client to present the options. Ultimately, a scheme without decks was selected and integral solar blinds were incorporated to provide unobstructed views while managing sunlight and heat gain. Completed in Fall 2020, the project modernized and expanded the home while blending with its original design.

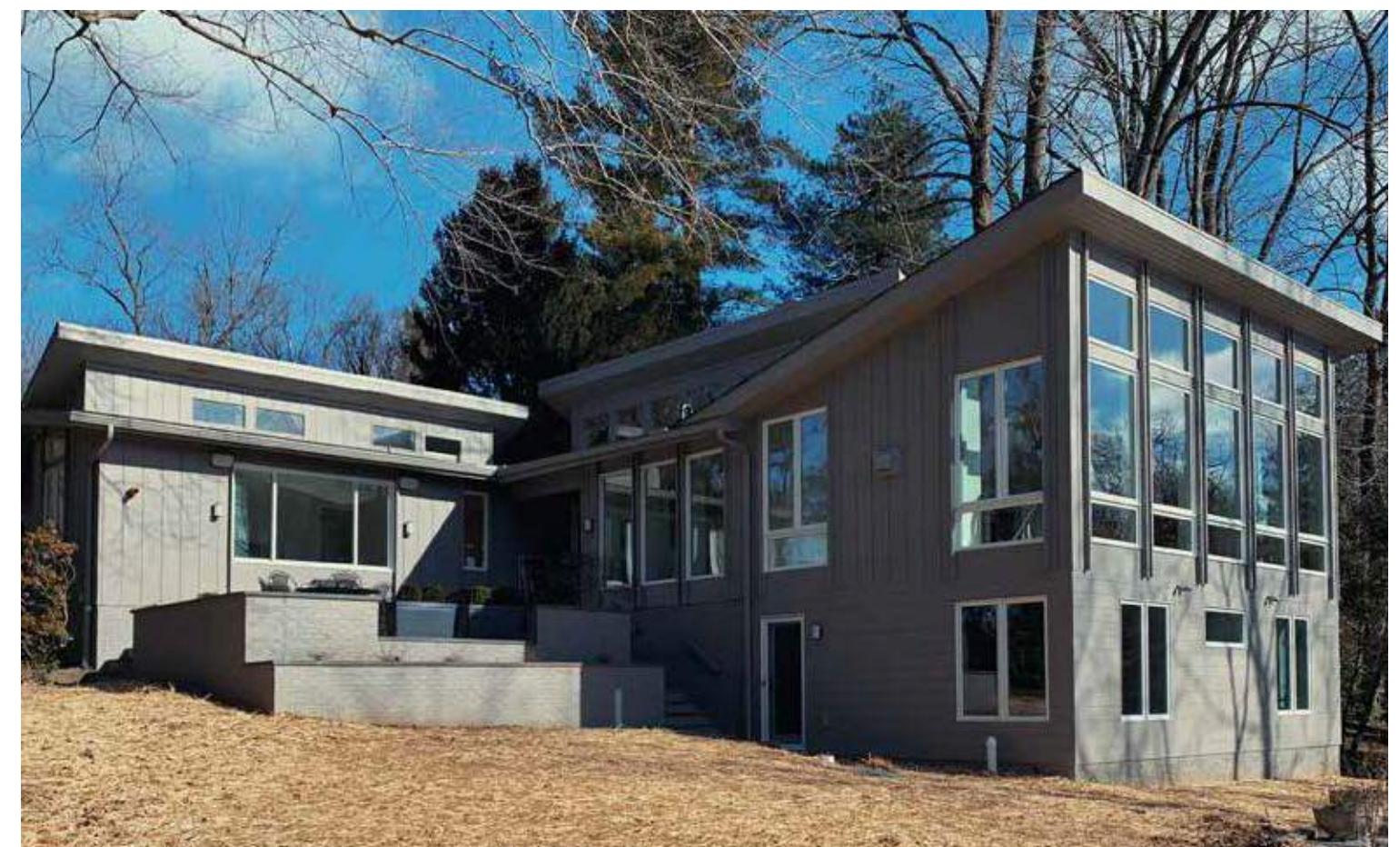


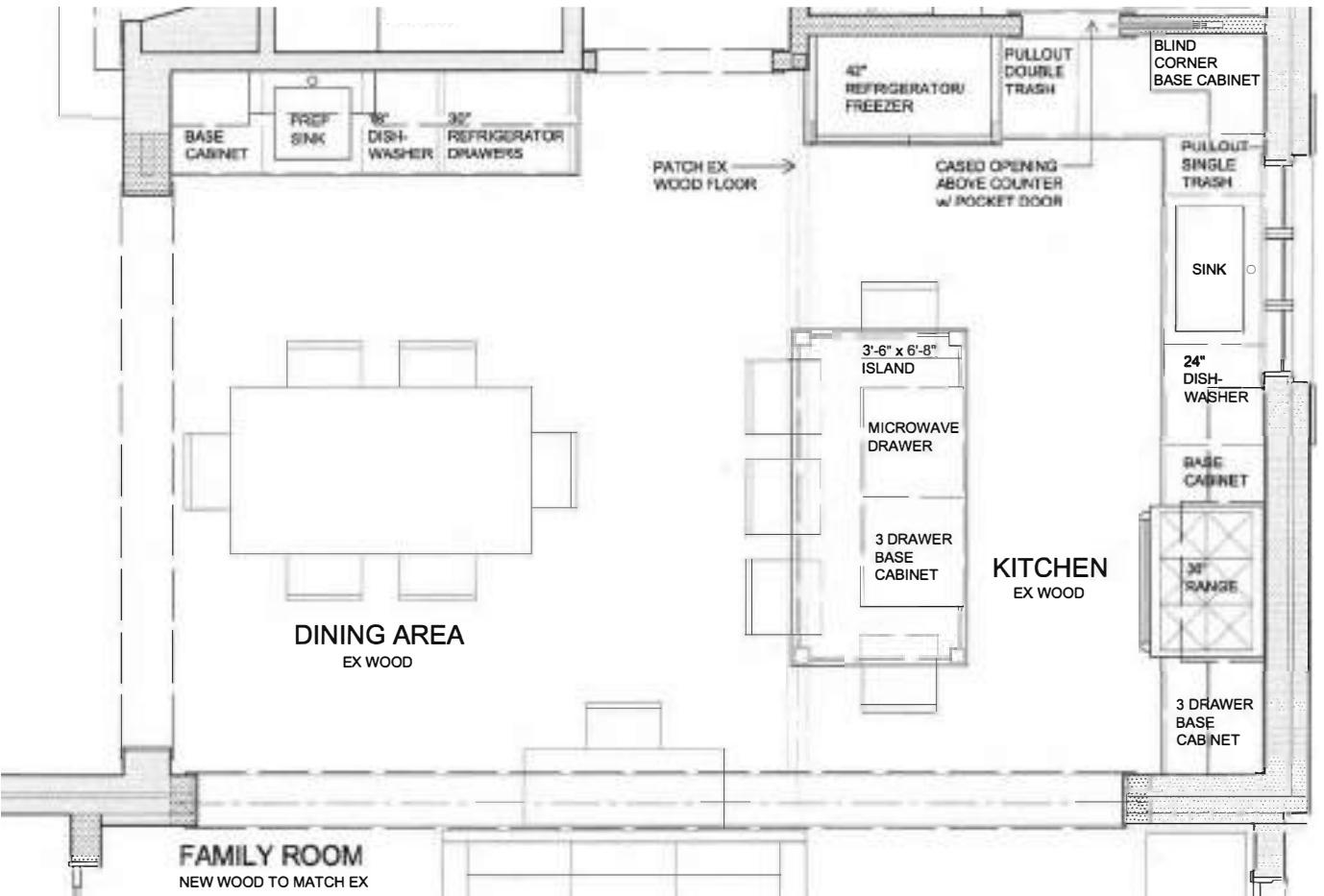
Scheme 2



Scheme 3 - Selected

2019  
Ruxton, Maryland  
Warfield Architects  
Single Family Residential  
Autocad, Rhino, Enscape

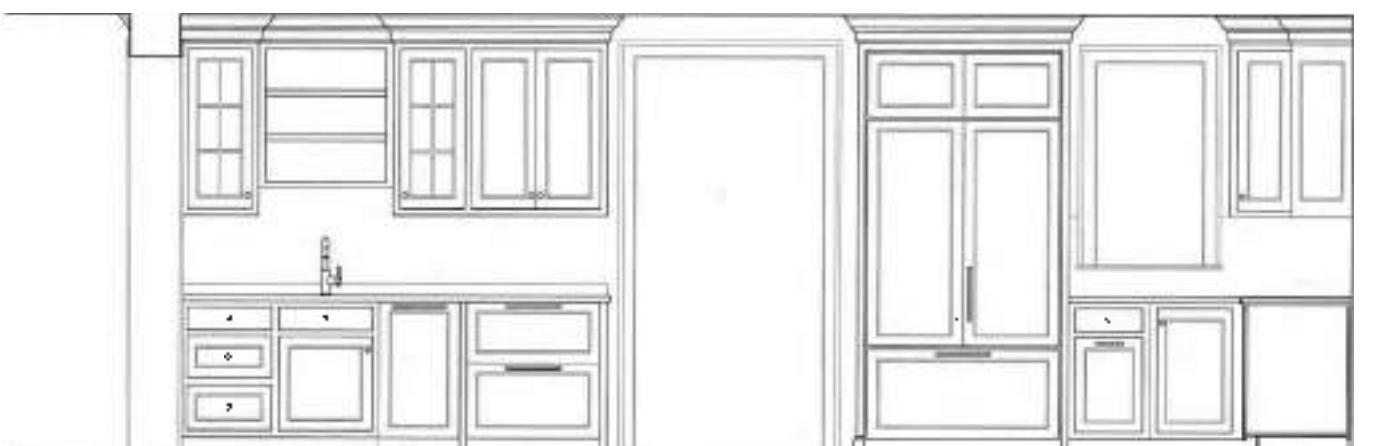


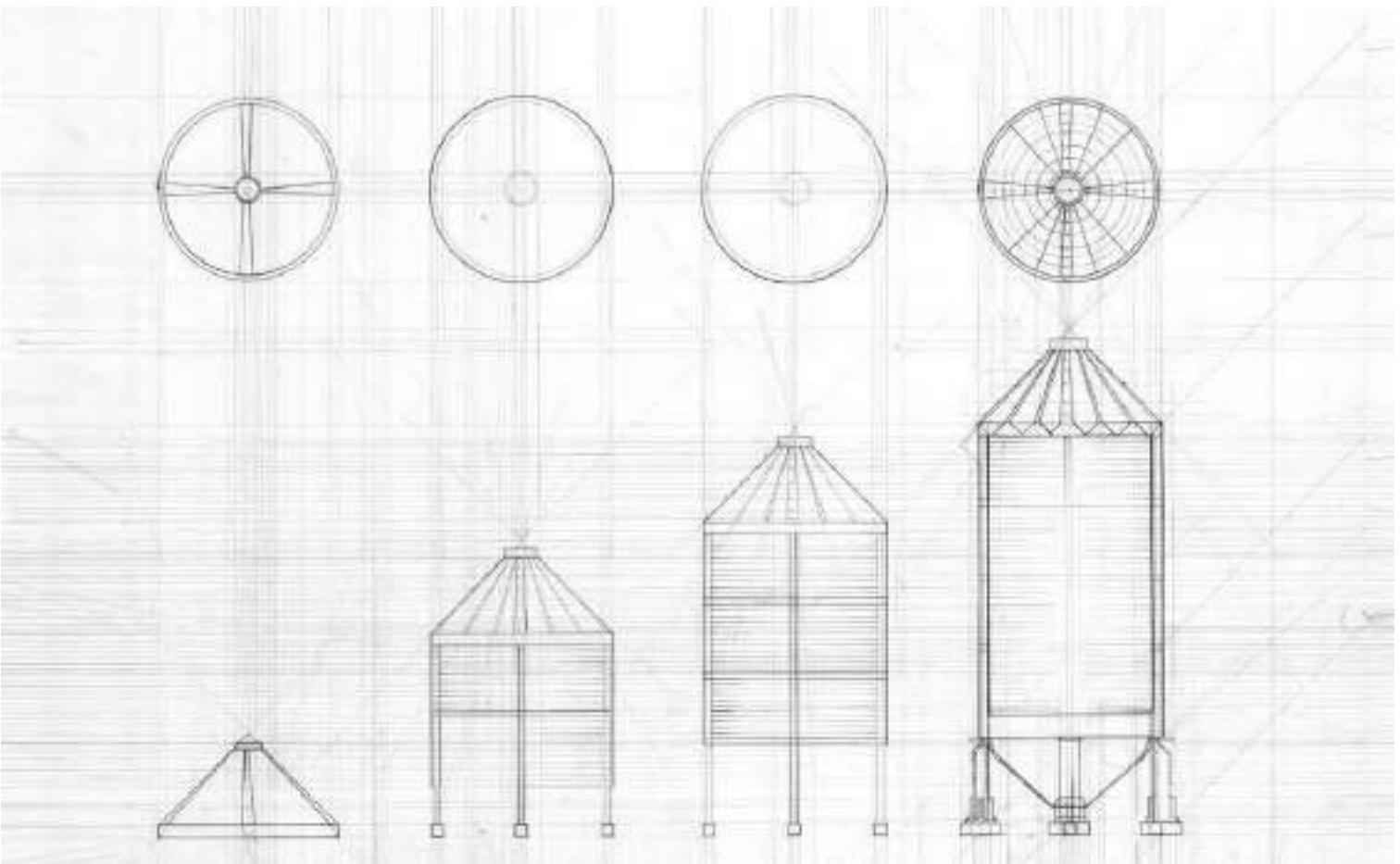


## Renovation in Baltimore

This renovation to a home in Baltimore is currently under construction. A major component of the design was the removal of an 18' long section of wall to create more openness between the kitchen and family room. The design emphasizes custom millwork to enhance storage and create a cohesive look for the kitchen. To help the client visualize the end result, I developed detailed 3D renderings and millwork studies that provide a clear picture of the planned layout and functions. I created a Grasshopper script to allow for the seamless iteration of the millwork molding pattern as the design evolved. This process simplified revisions to the design based on client feedback.

2024  
Baltimore, Maryland  
Warfield Architects  
Single Family Residential Renovation  
Autocad, Rhino, Grasshopper, Photoshop

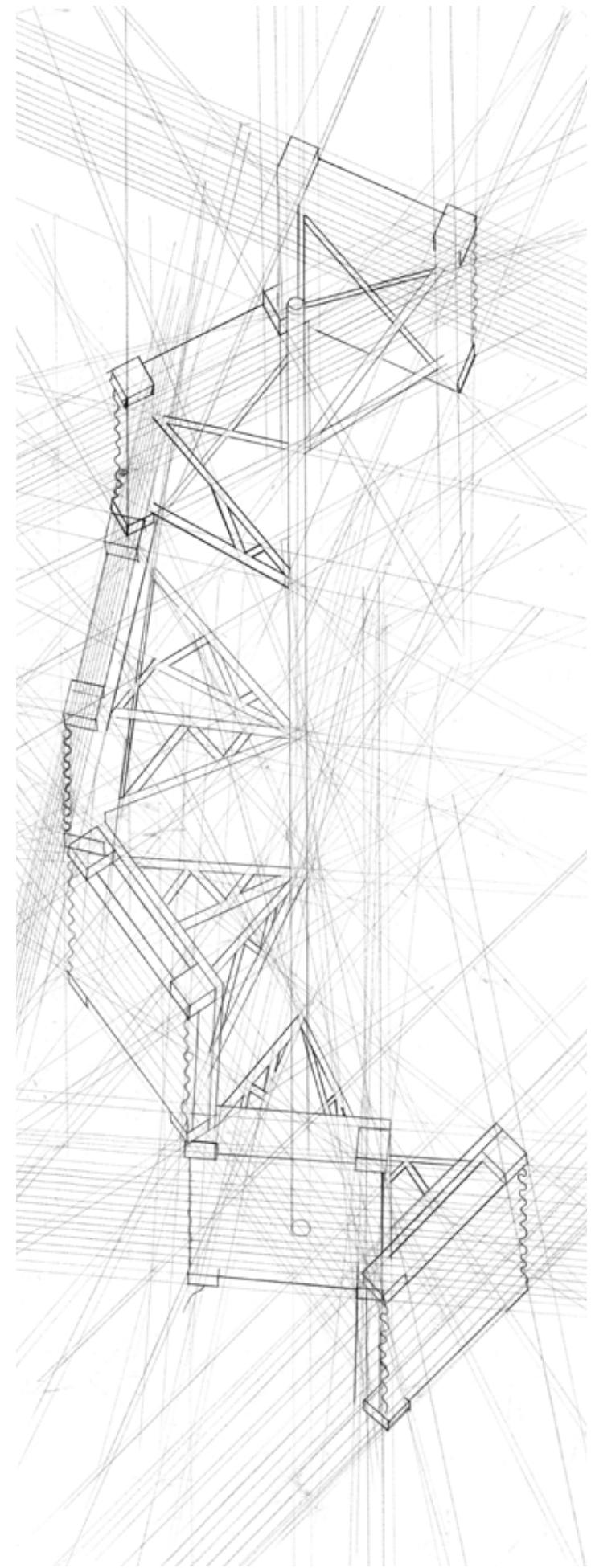
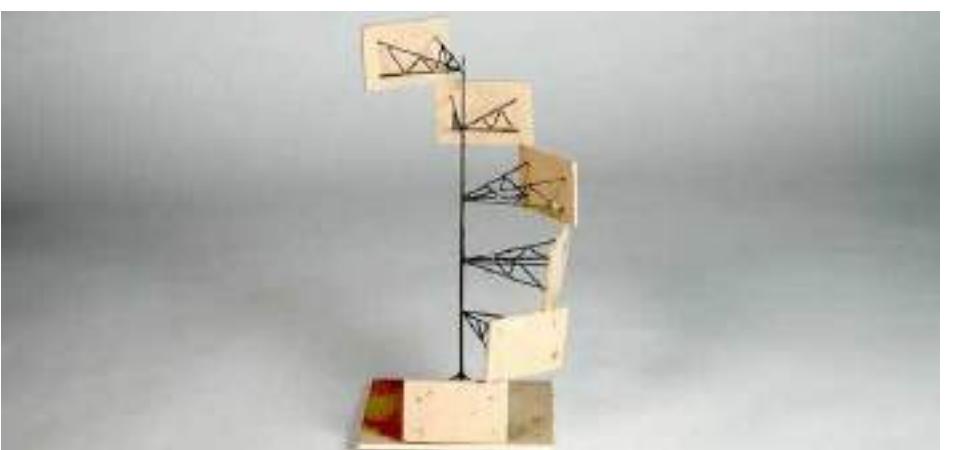


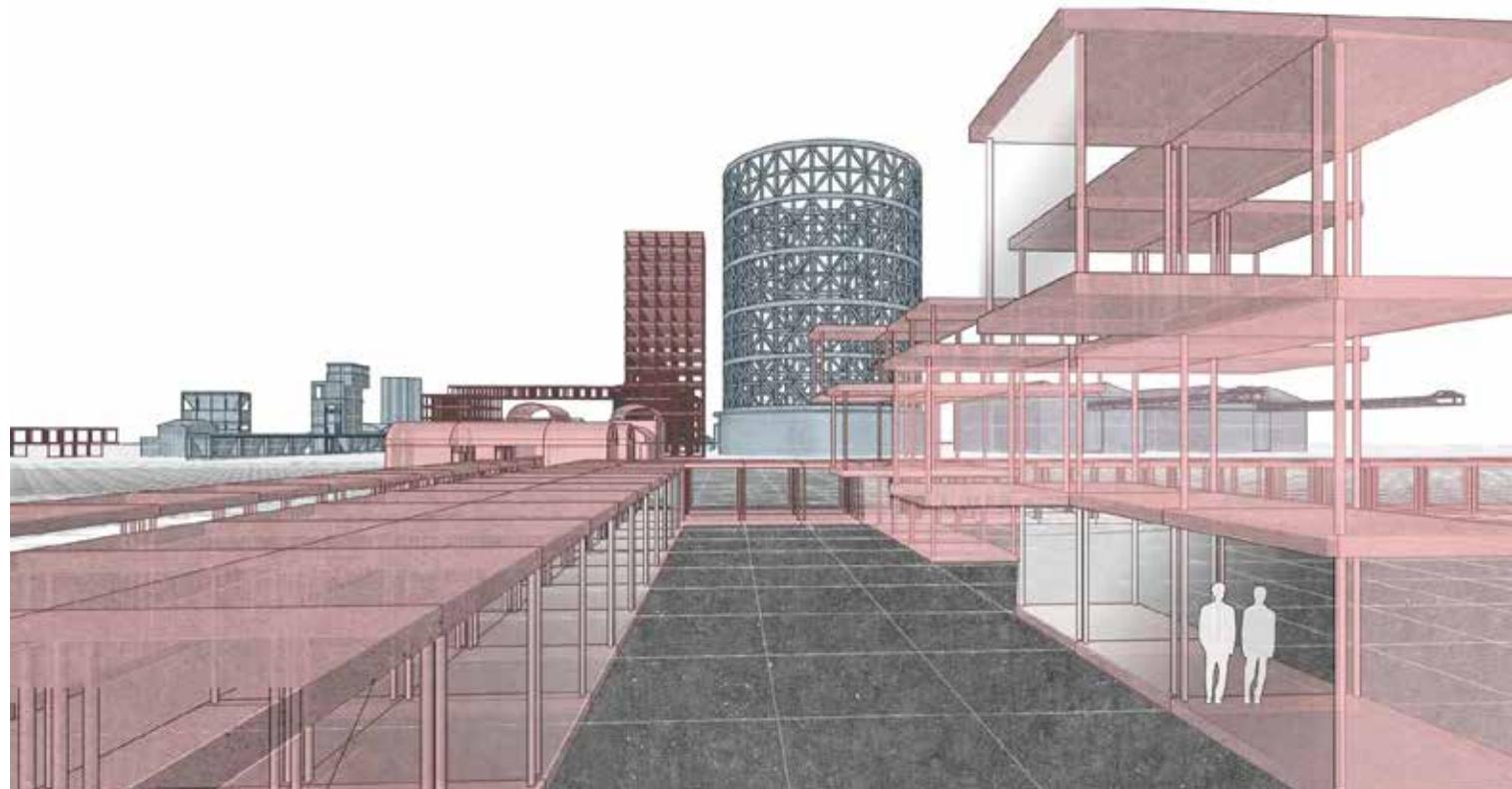


## Grain Silo Precedent

Analyzing and abstracting industrial precedent was the focus of my second year studio at Cornell. I investigated the precedent of the grain silo, specifically its method of construction and the architectonics of its panel system. These investigations occurred through drafting and model making. I began by hand drawing the sequence of how a grain silo is built. This process was then abstracted through a simple model made of wood and metal rods soldered together. The simple model helped expose the core movement which was then diagrammed in drawing. From this drawing I produced a more developed and complex model using metal trussing and panels.

2015  
Cornell University  
Professor Val Warke  
Student Work  
Hand drafting, Model making, Soldering



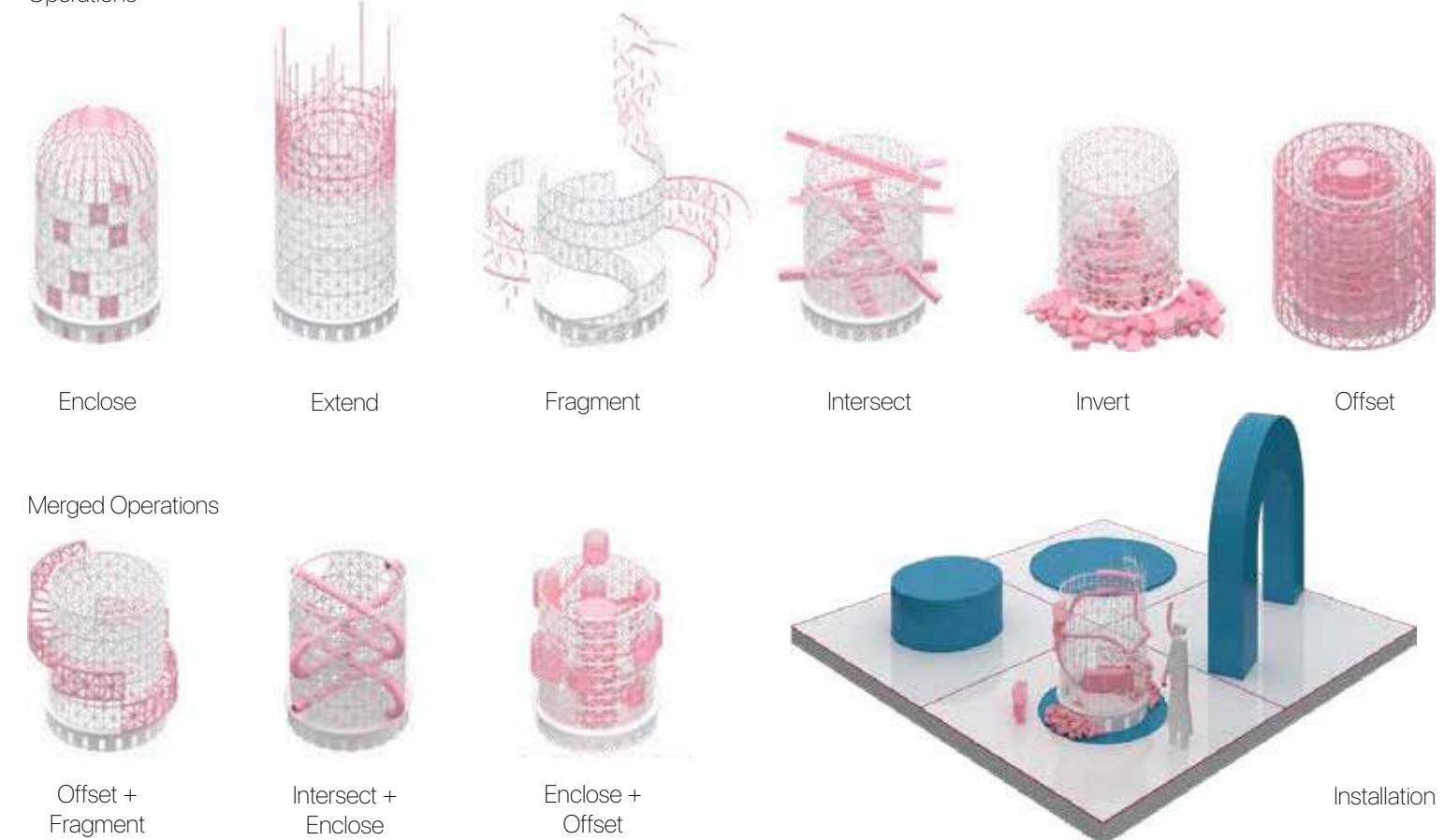


## Villa Gazo

The Ponte de la Scienza residential project examines the notion of bridging in the context of post-industrial Rome. Driven by a cartographic analysis of the urban fabric of the surrounding neighborhood, this community housing project was designed to interweave within the existing industrial landscape. A combination of post and beam and vaulted bearing wall construction responds to local precedents. These building forms become an additive system of design which can expand into various vacant sites and connect post-industrial Rome.

2017  
Cornell University  
Professor Werner Goehner  
Rome, Italy  
Student Work  
Rhino, Sketching, Collage

Operations

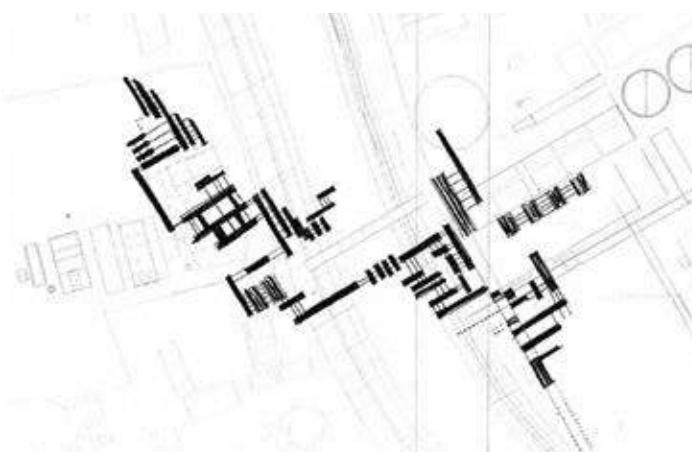


## Ruin and Redemption

Spolia, the reuse of existing architectural fragments in a different context, is prevalent throughout Italian history. The Gazometro, an empty gas tower in Rome, serves as the basis to explore the possibilities of using spolia to redeem a ruin. For the Seoul Biennial, the proposed installation will be realized as a scaled model of the Gazometro featuring the system of modification and re-imagination with interactive components which can be rearranged to create a variety of configurations. The primary construction material will be 1cm steel rods soldered together to form the intricate truss system of the Gazometro. The interactive extensions of the truss system will be made of the same material, with the addition of magnets to secure them to the frame of the tower.

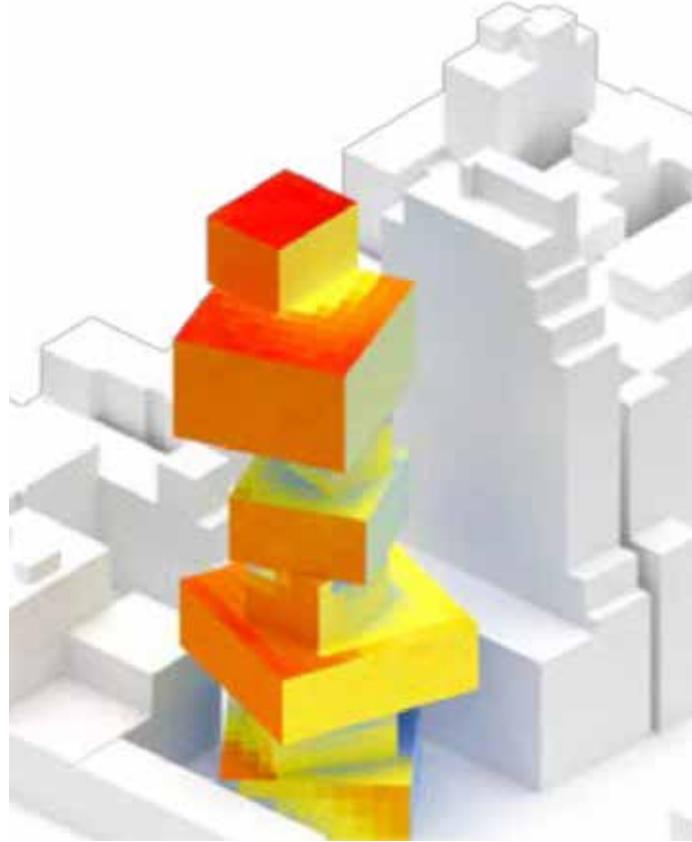
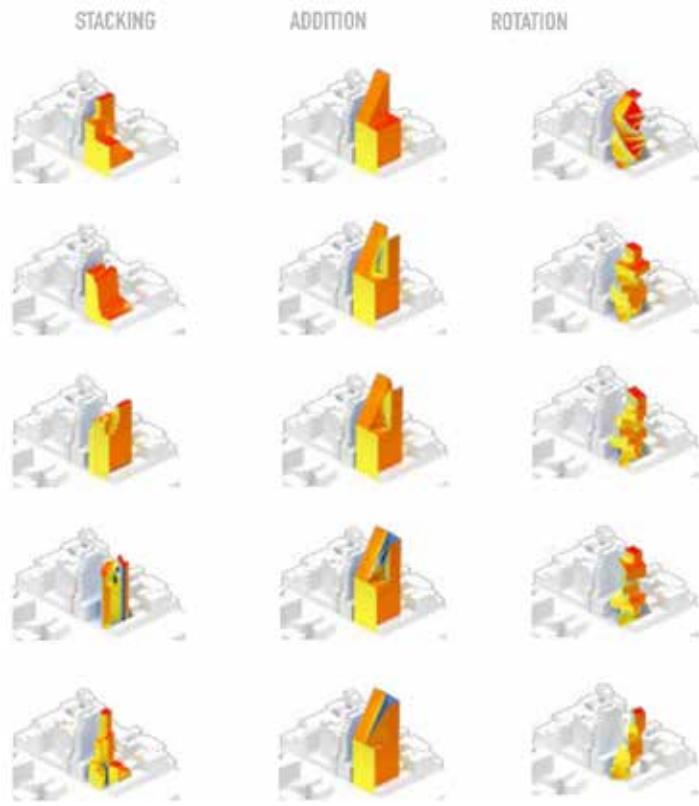
2020  
Seoul Biennial Competition Short List  
Competition  
Rhino, V-Ray

Parti



Project Plan

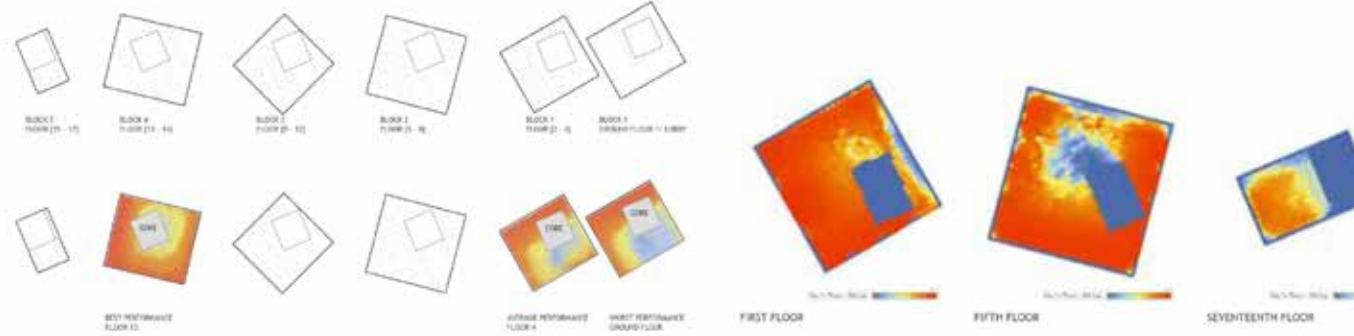




## NYC Daylighting Analysis

Using DIVA, a daylighting analysis software, my team and I designed and evaluated building proposals for a site in New York City. We adapted our design to the unique requirements of the urban environment. Our team assessed sun exposure on the exterior of the building, as well as glare and light penetration into office space and how variations to our façade influenced these properties.

2017  
Cornell University  
Professor Timur Dogan  
Student Work  
Rhino, Grasshopper, Daylighting Analysis

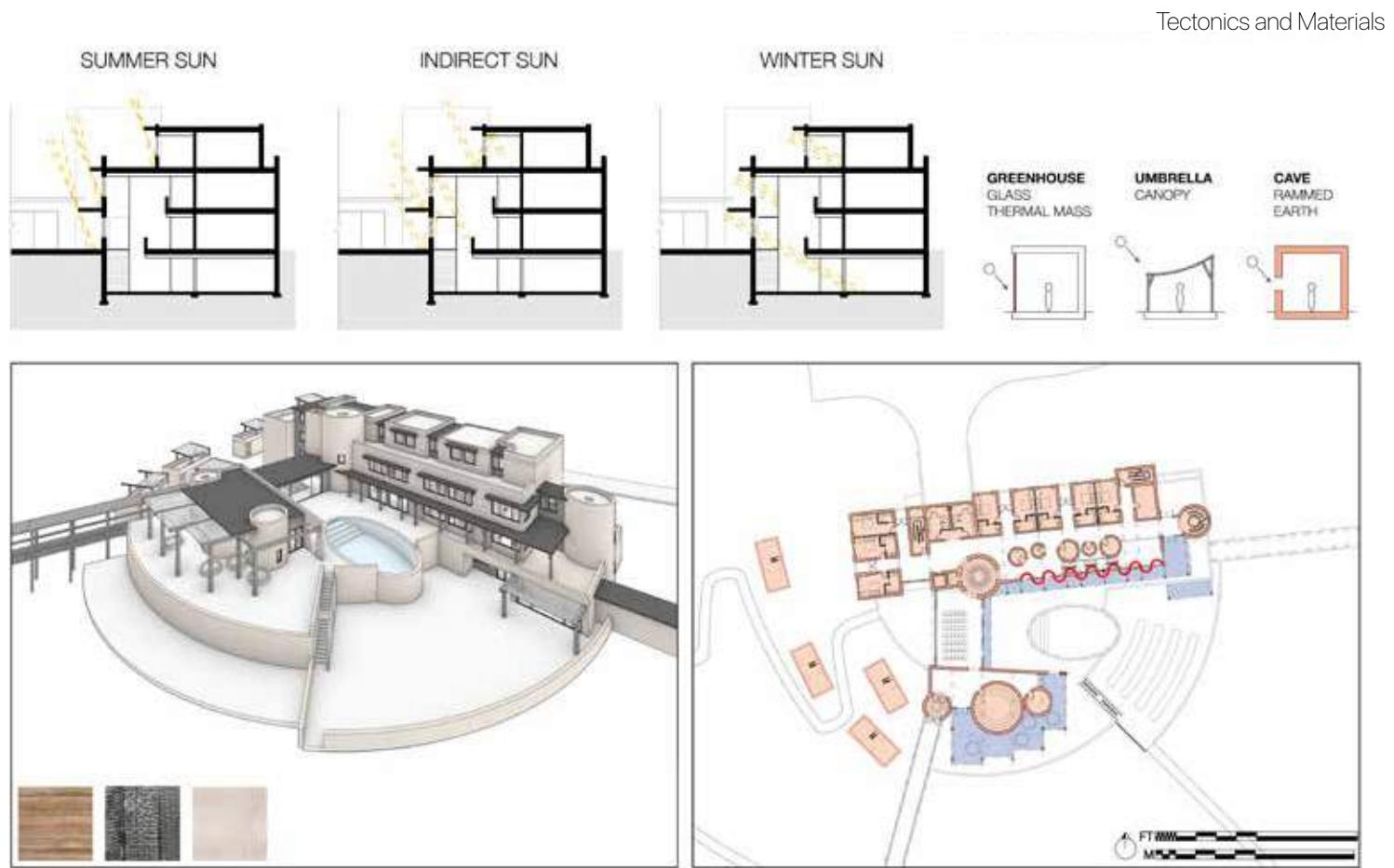
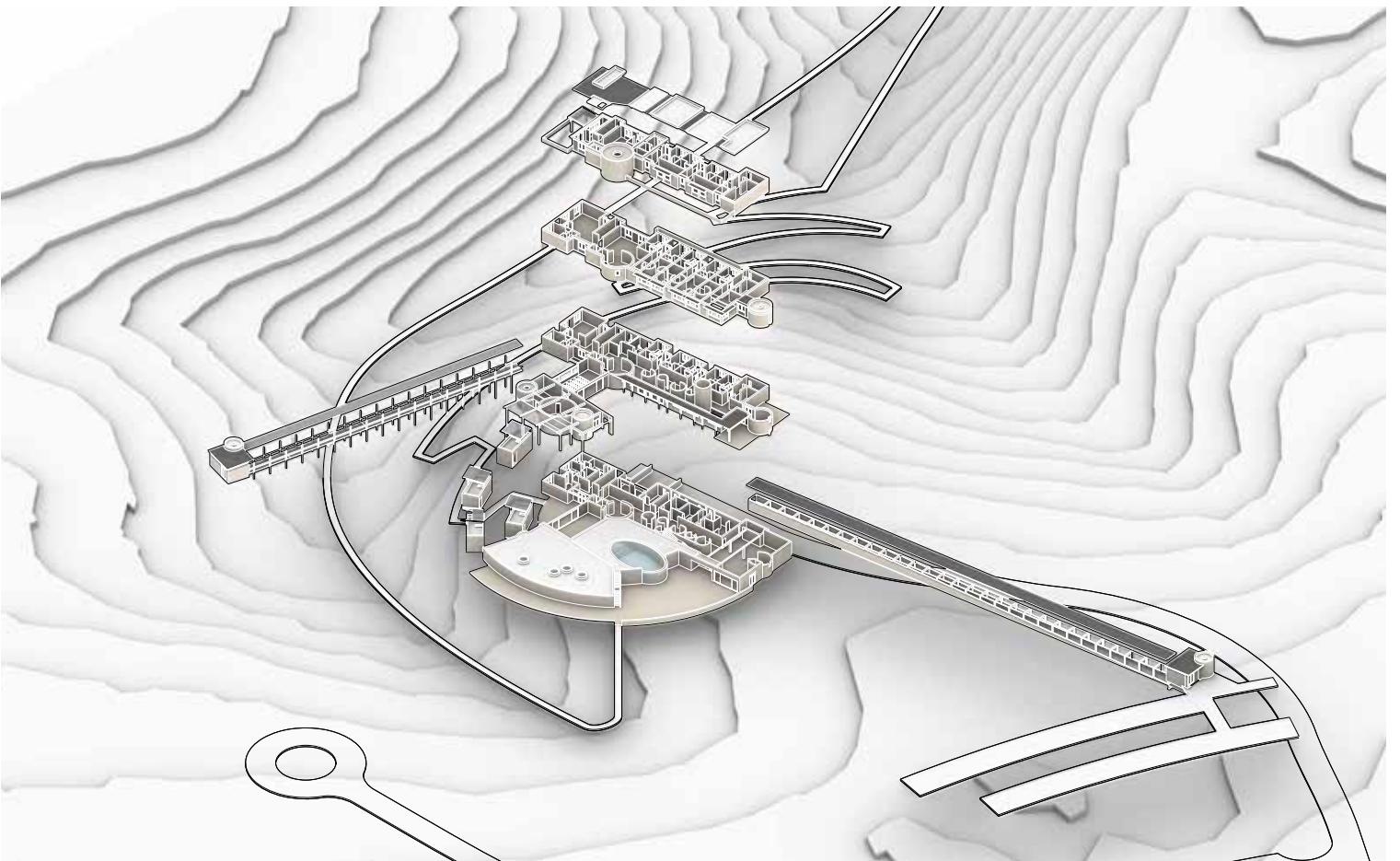


## Aeroslip

AeroSlip creates passive cooling through the use of ceramic elements. This approach results in a façade system which harnesses the power of passive cooling with a corollary visual phenomenon. A simple funnel, at the core of the design, applies the Venturi effect as air accelerates through the constricted opening resulting in a cooling effect. The project is grounded in contemporary craft. The final slip-cast brick is the evolution of a series of material phases. A set of digital iterations was developed with the specificities of slip-casting in mind. The digital designs became physical through printed PLA and machine plaster molds. The molds are reusable and reconfigurable. Composed in a total of 21 interchangeable parts, the reconfigurability results in a variety of potential forms for each cast unit. The cumulative impact of this sustainable component-based variation is diversity in aesthetics and function across the passive-cooling façade.

2020  
Cornell University  
Professor Jenny Sabin  
Student Work  
Slip Casting, 3D Printing, CFD Modeling





## Retreat in New Mexico

My thesis explores architecture's role in processing grief, focusing on the transition between the tangible and symbolic. The vernacular structures of northern New Mexico, which connect humanity to both the natural environment and sacred space, serve as precedents for the therapeutic retreat located on the Taos Plateau. The design responds to the site's environmental context with rectilinear forms for secular and private spaces, circular spaces for therapeutic activities and spiritual connection, and interstitial spaces for public interaction. The circulation paths integrate the role of ritual to support healing. Beyond addressing grief, the thesis examines innovative presentation techniques by combining traditional diagrams and drawings with digital modeling and film.

Thesis 2020  
Taos, New Mexico  
Cornell AAP  
Hospitality  
Rhino, Lumion, Photoshop, InDesign,  
Sketching

Secular Housing  
Static Form

Sacred Healing  
Transformative



Public Circulation  
Interstitial Space

