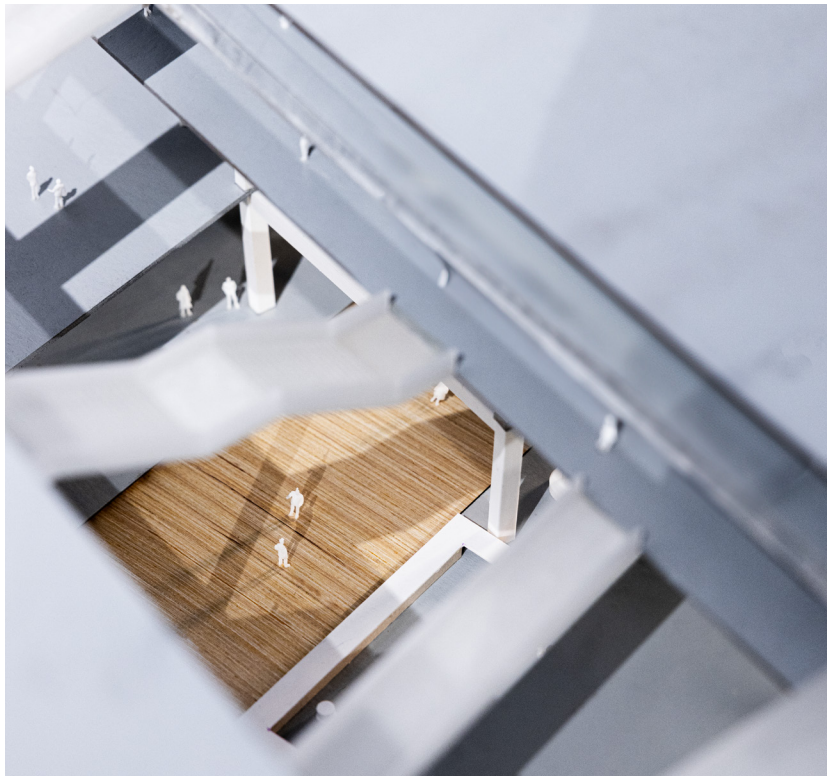




01 A BIG WHAT IF?

A PRUDENTIAL PLAN FOR CONEY ISLAND

Site: Coney Island, NY
Columbia GSAPP Studio
Instructor: David Moon
Summer 2024
Group Work

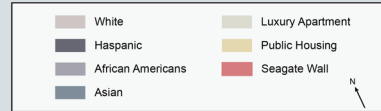
The terms "City" and "Island" seem contradictory. We see a "City" as a network connecting people and their environment—a complex system of public and private spaces. In contrast, an "Island" is typically isolated, private, and lacks connectivity and transition. Islands are often accessible only by limited transportation, such as boats, planes, or sometimes bridges, creating introverted communities.

Rem Koolhaas described the connection between Manhattan and Coney Island in *Delirious New York*: "wide enough to feed the resort with a continuous flow of visitors yet narrow enough to keep a majority of urban inmates in place." Today, the connection between Manhattan and Coney Island is over-constructed, making Coney Island no longer a technical island. However, the "Sea Gate" community remains isolated, surrounded by the Atlantic Ocean on three sides and enclosed by a wall on the fourth, with only two resident-only entrances.



Coney Island

Seagate



Occupation



Transportation



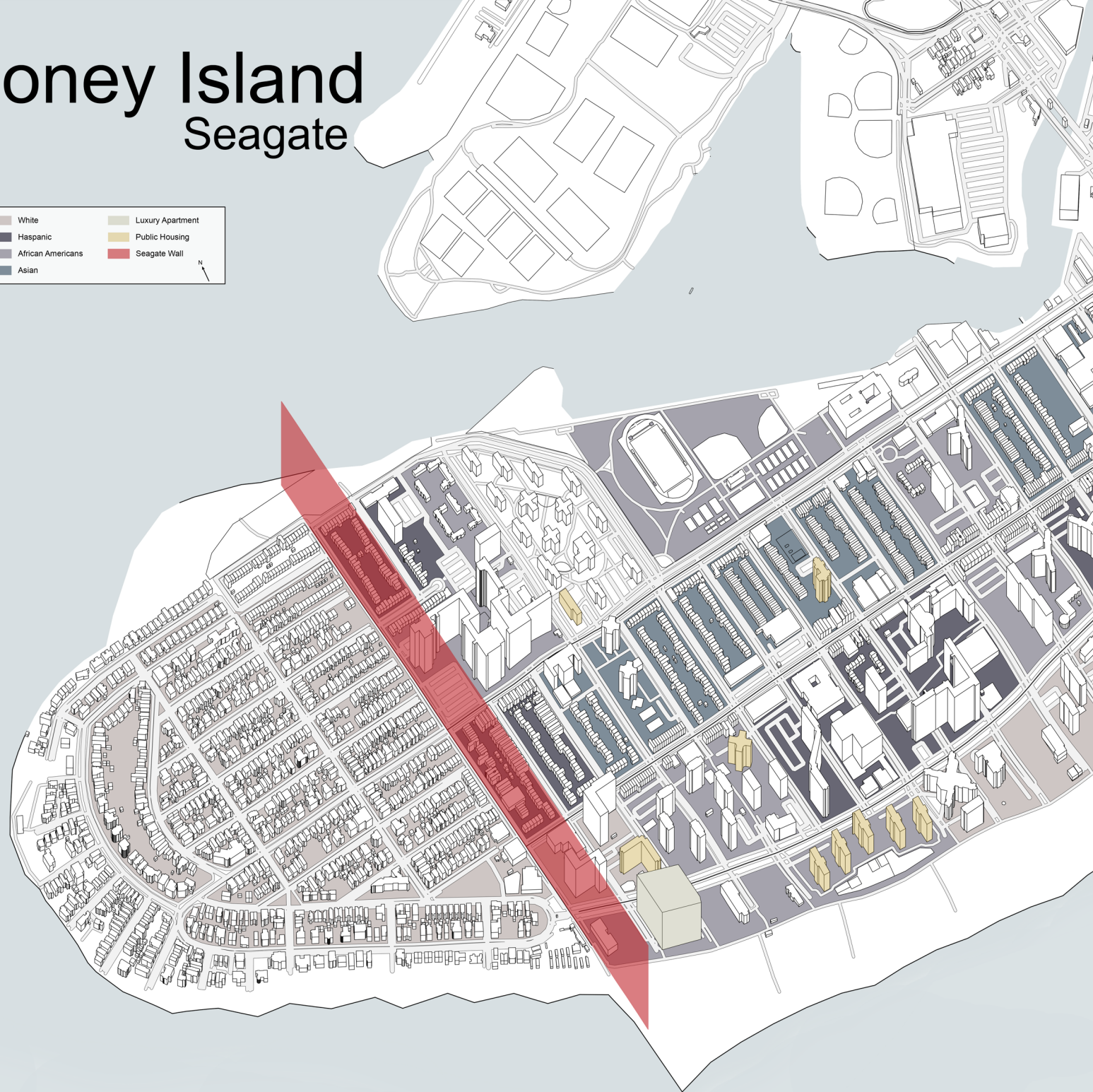
Household Income

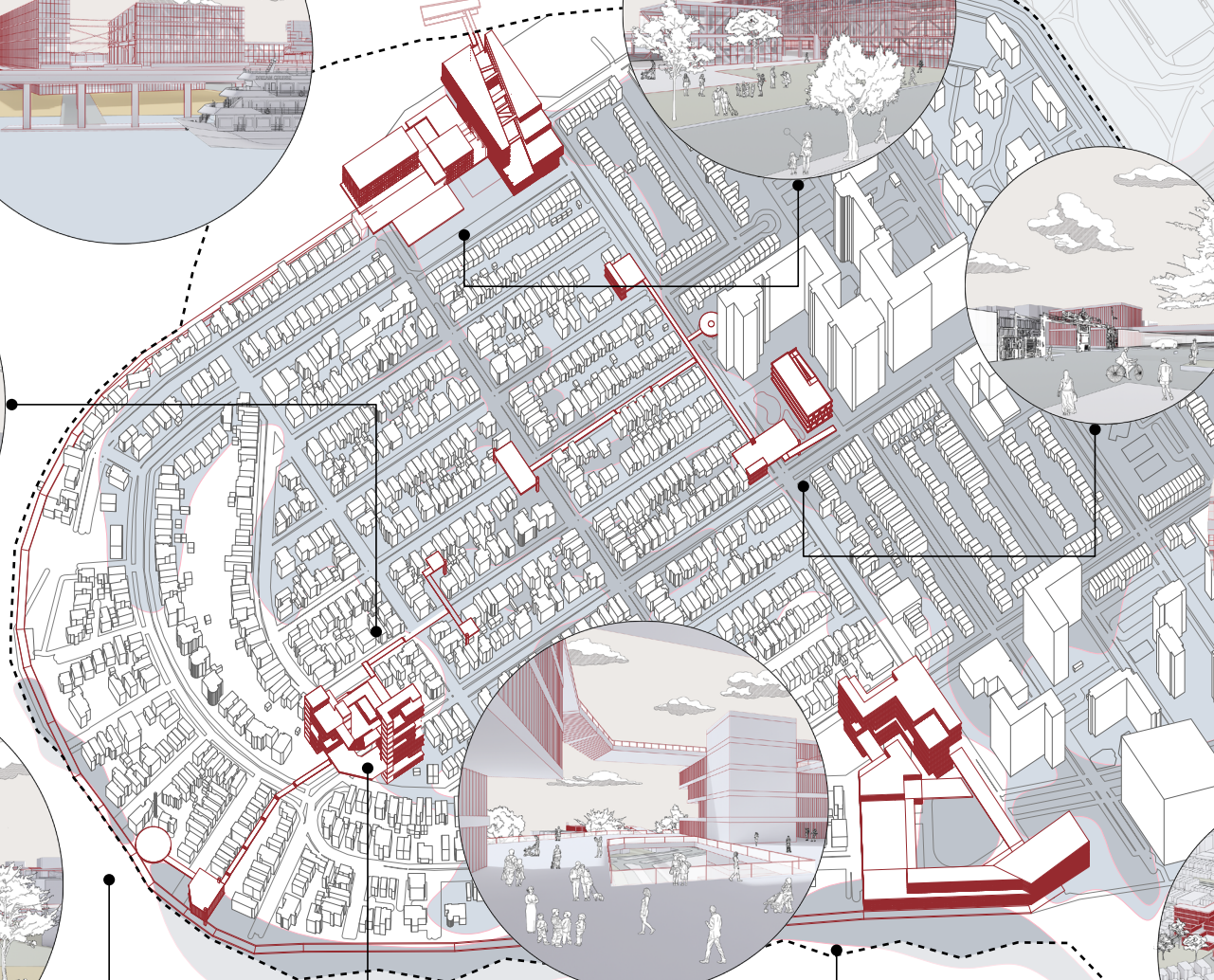
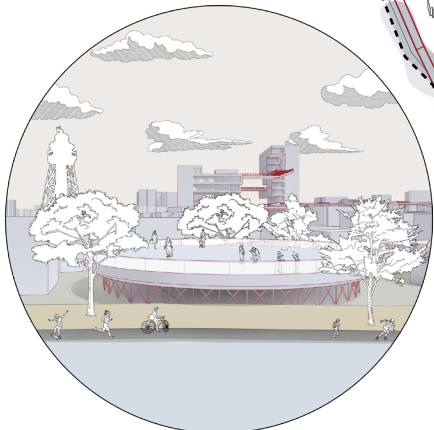
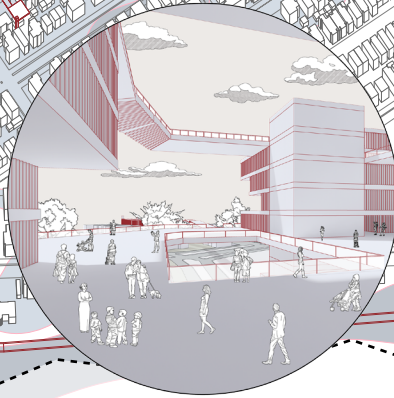
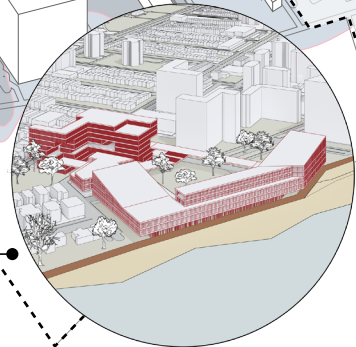
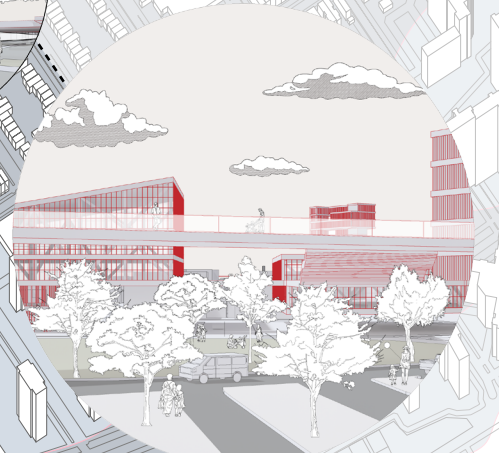
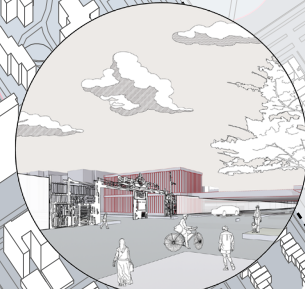
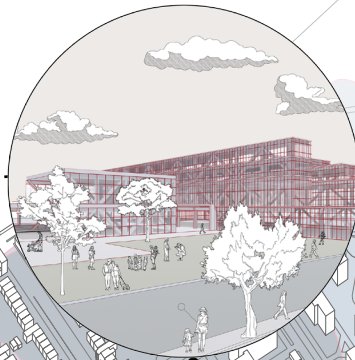
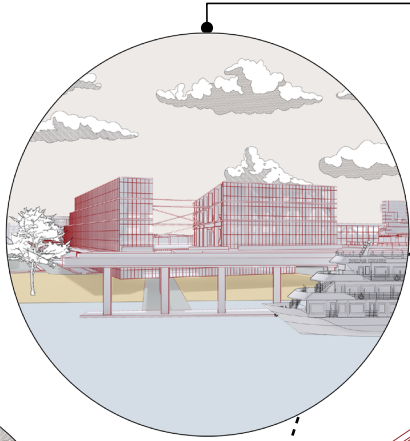
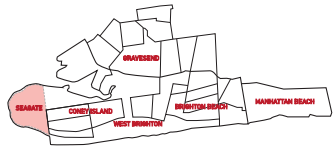


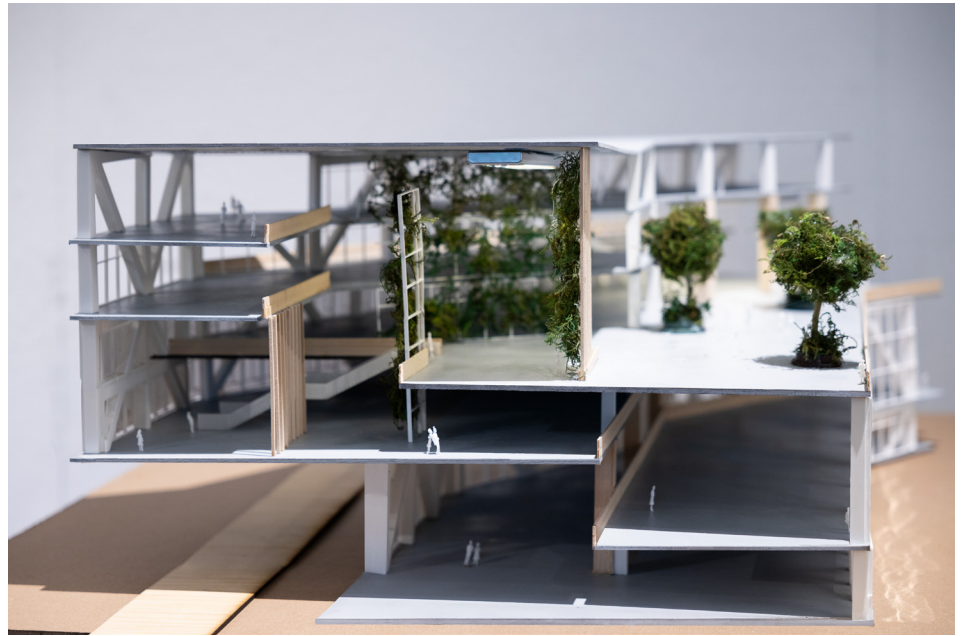
Education Rate



Employment Rate

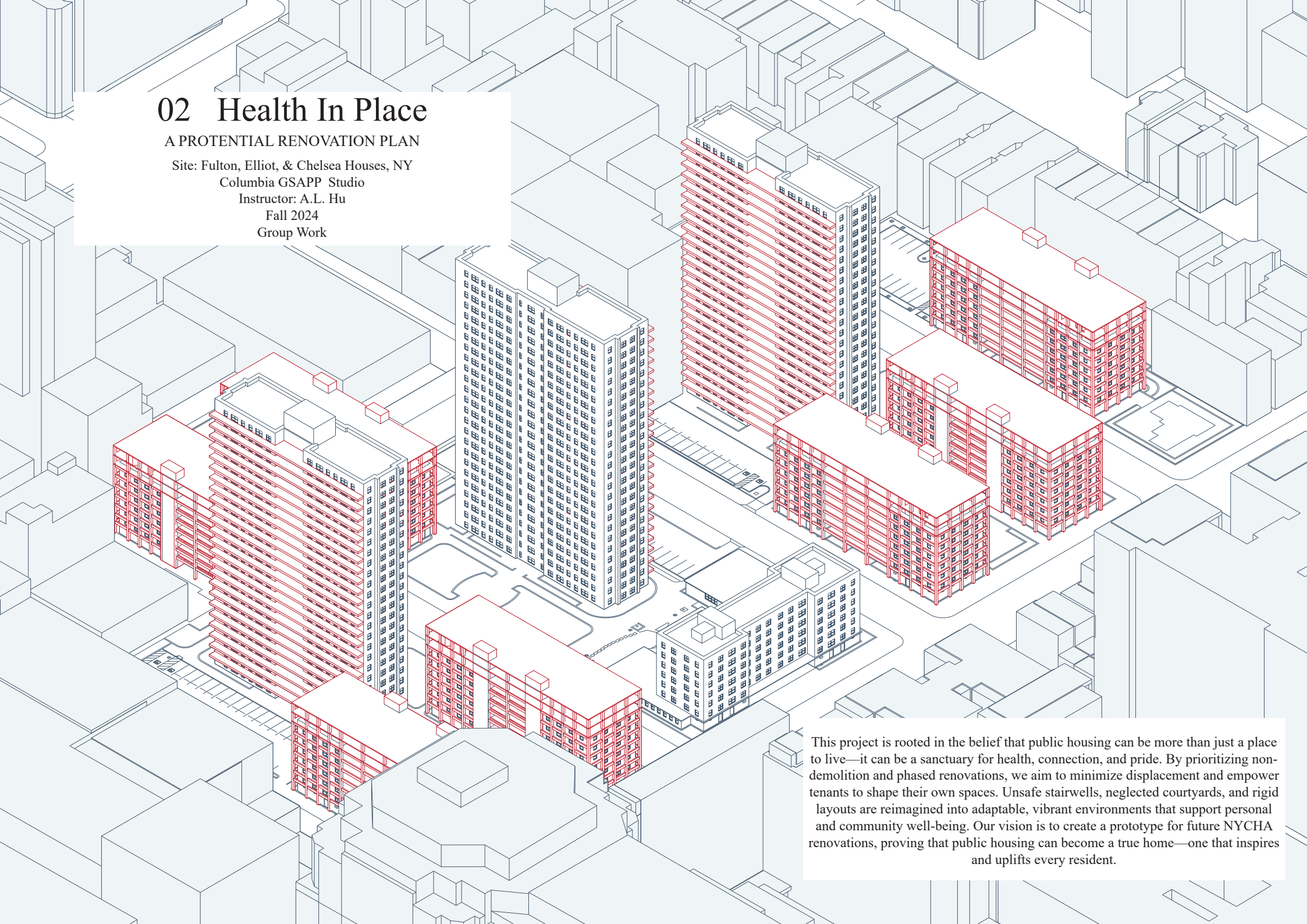








A Boundary to Design, Is the Boundary to Open



02 Health In Place

A PROTENTIAL RENOVATION PLAN

Site: Fulton, Elliot, & Chelsea Houses, NY

Columbia GSAPP Studio

Instructor: A.L. Hu

Fall 2024

Group Work

This project is rooted in the belief that public housing can be more than just a place to live—it can be a sanctuary for health, connection, and pride. By prioritizing non-demolition and phased renovations, we aim to minimize displacement and empower tenants to shape their own spaces. Unsafe stairwells, neglected courtyards, and rigid layouts are reimaged into adaptable, vibrant environments that support personal and community well-being. Our vision is to create a prototype for future NYCHA renovations, proving that public housing can become a true home—one that inspires and uplifts every resident.

RESEARCH: FULL POTENTIAL OF HOME

This research examines how public housing campuses can evolve beyond basic shelter to become vibrant, inclusive communities. By addressing physical, mental, and community health, we aim to redesign public housing as a home where tenants can thrive. Our focus is on unlocking the full potential of underutilized spaces, fostering connection, pride, and well-being among tenants and the surrounding neighborhood.

GOALS

- » Redefine public housing campuses as environments that support physical, mental, and community health.
- » Enhance underutilized spaces to foster interaction, inclusivity, and belonging.
- » Create spaces and programs that align with tenants’ needs and aspirations.

TAKEAWAYS

- » Inclusive design can transform underutilized spaces into hubs for interaction, ensuring all age groups benefit equally.

What is Home?

Home is not merely a physical structure; it is a place of return—a sanctuary where individuals and families feel grounded, secure, and supported. It is where people can find stability in their daily lives, build meaningful connections, and nurture their physical and mental health. A true home provides an environment where residents feel a sense of belonging, allowing them to reflect on and express their identities within a supportive community.

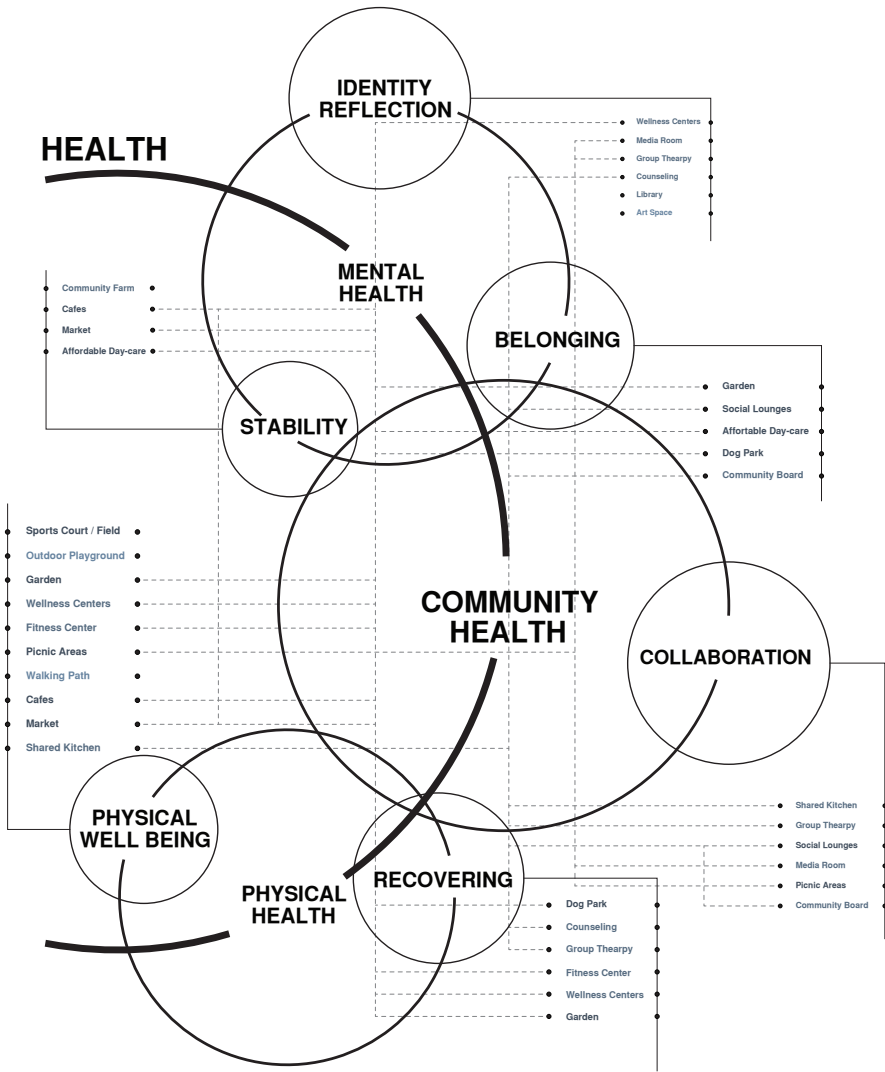
The home we envision strives to provide more than shelter. It is an integrated environment designed to enhance physical and mental health, promote recovery and stability, and support personal and collective growth. This vision reflects a commitment to creating spaces where residents feel empowered to thrive both individually and as part of a larger community.

Our work involved studying the existing sites to understand the lived experiences of tenants and identify opportunities for improvement. Recognizing that these campuses are already home to many, our approach focuses on enhancing their potential rather than redefining their purpose. This project is not about superficial upgrades; it is about reimagining the campus environment to fully align with the needs, aspirations, and daily lives of its residents. By unlocking the potential of these spaces, we aim to create environments that inspire, support, and encourage the community to flourish together.

What Is Full Potential?

Public housing campuses are more than just residential complexes—they are vibrant, potential-filled environments with the capacity to surpass traditional townhouses and apartments. For us, full potential means offering tenants and the surrounding neighborhood not only what is essential but also spaces that cultivate a true sense of home and community.

These campuses possess extensive interior and exterior space; that, through strategic improvements and thoughtfully designed programs, can provide enhanced facilities and amenities. These upgrades directly support physical and mental health, fostering a thriving environment that tenants and the community can truly call home—a place that inspires pride, well-being,



UNDERSTANDING URBAN-SCALE CONDITION

Site Conditions

Our analysis considers the relationship between tenants’ health and their home environment, starting at a broader urban scale. In New York City, accessible green spaces within a 1-mile radius or a 10-minute walk are scarce, even in otherwise appealing neighborhoods. This lack of green areas limits opportunities for exercise and relaxation, negatively impacting physical health and reducing tenants’ sense of connection to their home and community.

In terms of amenities, the Fulton, Chelsea, and Elliott campuses benefit from accessible public transportation, unlike more isolated sites like Coney Island. However, the absence of affordable gyms limits physical activity opportunities and contributes to feelings of exclusion. While grocery stores are present nearby, many tenants still travel long distances to access affordable essentials, exposing gaps in local resources that impact day-to-day living.

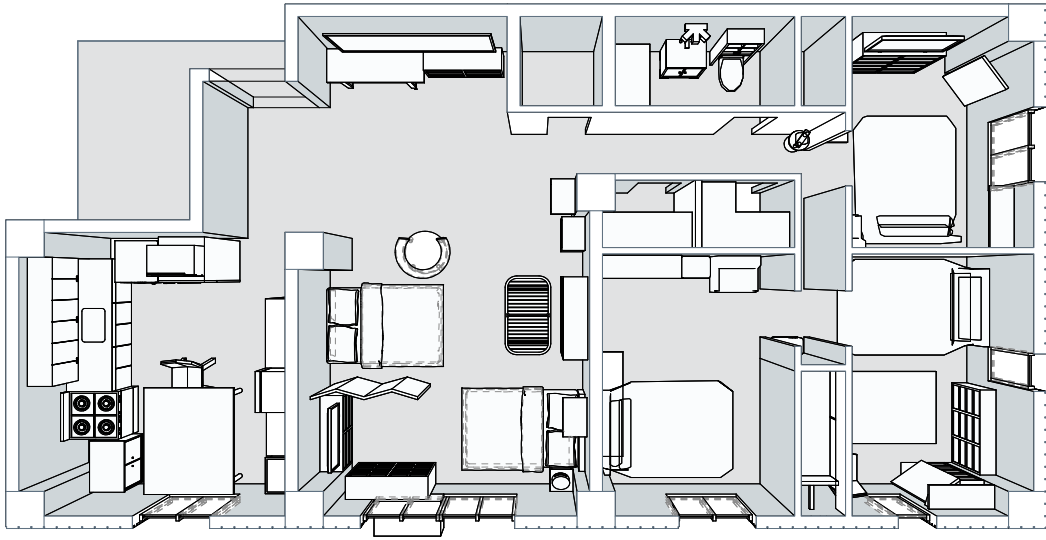
Design Strategy

A key consideration for the site is the commitment to a non-demolition approach. This decision stems from several critical factors:

1. There is no guarantee that all tenants would be able to return after demolition.
2. Construction timelines for demolition and rebuilding are uncertain, creating prolonged displacement.
3. The cost of demolition exceeds that of renovation.
4. Extensive renovation can mirror the disruptions of demolition, requiring tenants to vacate their homes for safety and health reasons.
5. Tenants prioritize maintaining their homes over concerns about construction costs.

Given these challenges, our primary design strategy focuses on a phased approach to minimize disruption. This strategy avoids large-scale construction and ensures a smoother transition for tenants between their current homes and the improved living environment. By prioritizing continuity and minimizing displacement, we aim to preserve the integrity of the community while delivering meaningful upgrades.





CURRENT TENANT HOME: A FAMILY OF SEVEN ACROSS FOUR GENERATIONS

Scale 1 - Individual Family

This research examines how public housing campuses can evolve beyond basic shelter to become vibrant, inclusive communities. By addressing physical, mental, and community health, we aim to redesign public housing as a home where tenants can thrive. Our focus is on unlocking the full potential of underutilized spaces, fostering connection, pride, and well-being among tenants and the surrounding neighborhood.

GOALS

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- » Enhance underutilized spaces to foster interaction, inclusivity, and belonging.
- » Create spaces and programs that align with tenants’ needs and aspirations.

TAKEAWAYS

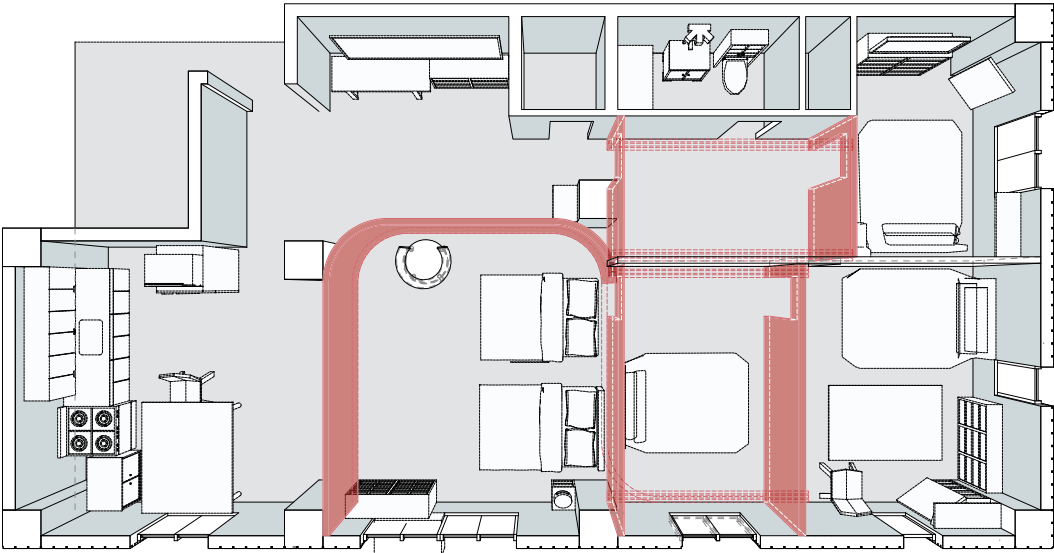
- » Inclusive design can transform underutilized spaces into hubs for interaction, ensuring all age groups benefit equally

Understanding Home of the Tenants

Based on the lived experiences of tenants in public housing campuses, scale 1’s purpose focuses on a hypothetical apartment model housing a multigenerational family of seven. This unique household spans four generations, which presents both spatial and relational challenges within the apartment.

While the apartment is relatively spacious, the layout highlights significant design inefficiencies. Narrow hallways restrict movement, and the lack of designated communal gathering spaces places strain on the household’s mental and social well-being. These issues are compounded by the everyday demands of a large family, demonstrating the limitations of static layouts that fail to evolve alongside changing family dynamics.

The family is also in a period of transition, with one member potentially moving out with her child. This situation amplifies the need for adaptable spatial designs that can respond to shifting household compositions and evolving tenant needs. Such transitions, while natural, often bring additional spatial and emotional challenges that the current layout is ill-equipped to address.



REIMAGINING SPACE: A PATHWAY TO TENANT-CENTERED DESIGN



Modifications

- » **Enhanced Communal Spaces:**
The introduction of designated gathering areas promotes family cohesion and mental well-being. These spaces provide opportunities for multigenerational interactions and support mental health by reducing stress associated with cramped living conditions. Enhance underutilized spaces to foster interaction, inclusivity, and belonging.
- » **Flexible Adaptation:**
Modular elements within the design allow tenants to adjust spaces as household needs evolve. For instance, rooms can be reconfigured for privacy or communal use, addressing the needs of families experiencing changes such as members moving out or growing families.
- » **Improved Functionality:**
By reorganizing circulation spaces, the new layout ensures that narrow hallways and inefficient transitions no longer hinder mobility or utility. This creates a more livable and harmonious environment for all residents.

Imagined Space Function

The proposed layout seeks to address the spatial inefficiencies of the current design, offering a more adaptable and tenant-centered approach. By introducing flexible, multi-purpose spaces, the design enables families to personalize their homes to better suit their needs, fostering a sense of ownership and agency among tenants.

As part of the renovation strategy outlined in Scale 2, this new layout will be introduced in temporary housing units, serving as a testing ground where tenants can experience and experiment with the design. Tenants will have the opportunity to provide feedback, suggest modifications, or opt for further customizations when their permanent homes are renovated. This iterative process ensures that renovations are deeply aligned with tenant needs, fostering trust and collaboration between residents and designers.

The new layout focuses on how inclusive, adaptable designs can transform public housing into vibrant, supportive environments that promote individual and community wellbeing while respecting the unique experiences of tenants.

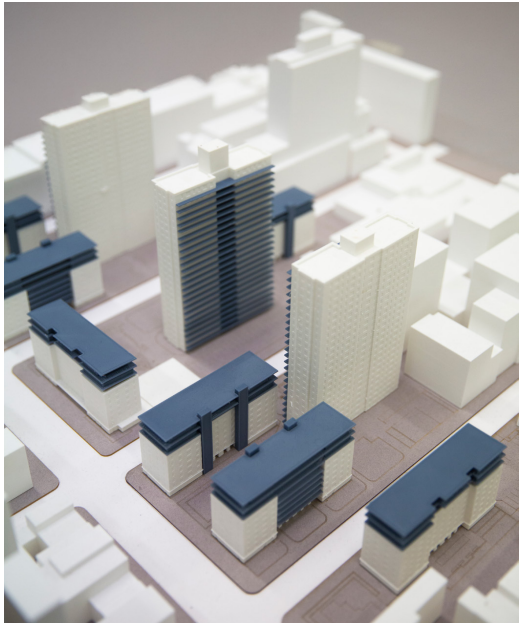
Scale 2 - Building

This phase shifts focus to how the principles of Scale 1 can be applied effectively at the building scale. Public housing buildings often face critical challenges, and one of the most pressing is the lack of safety within the stairwell systems. These interior stairwells are frequently dark, narrow, and isolated, creating an environment that fosters unsafe situations and leaves tenants feeling vulnerable and insecure. Addressing this issue is key to improving both the functionality of the buildings and the sense of safety for residents.

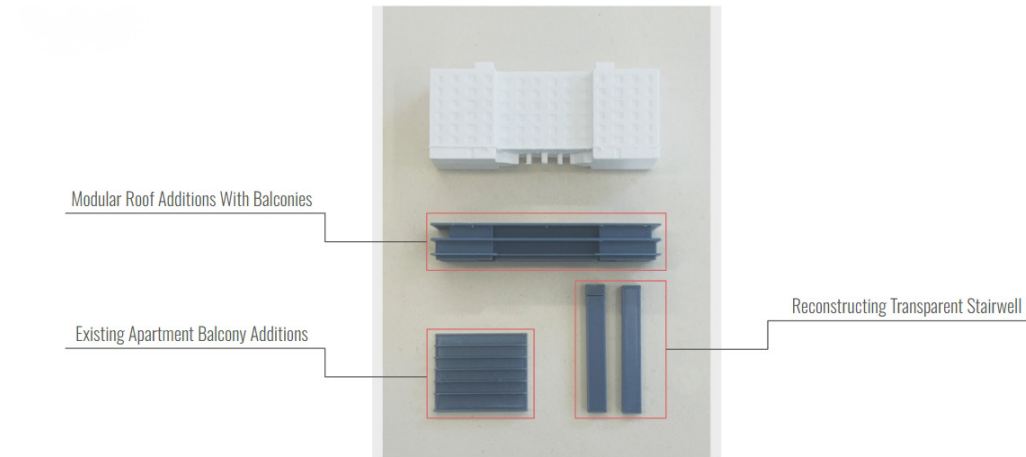
To resolve this, we propose relocating the stairwells to the exterior facade of the buildings. By moving the stairs outside, we increase visibility and transparency, transforming the stairwells into open, well-lit spaces that foster a greater sense of safety. This adjustment also allows for better integration between the building and its surrounding environment, encouraging safer and more public-friendly use of these critical circulation spaces.

In addition to redesigning the stair system, we propose a solution to one of the most significant challenges in public housing renovations: tenant displacement. Each Fulton house would gain an additional two floors with a free-plan design, creating temporary housing for residents during renovation. This approach ensures that tenants can remain within their building throughout the construction process, avoiding the stress and uncertainty of relocation. By staying close to their homes, tenants retain their connection to their community, minimizing disruption to their daily lives.

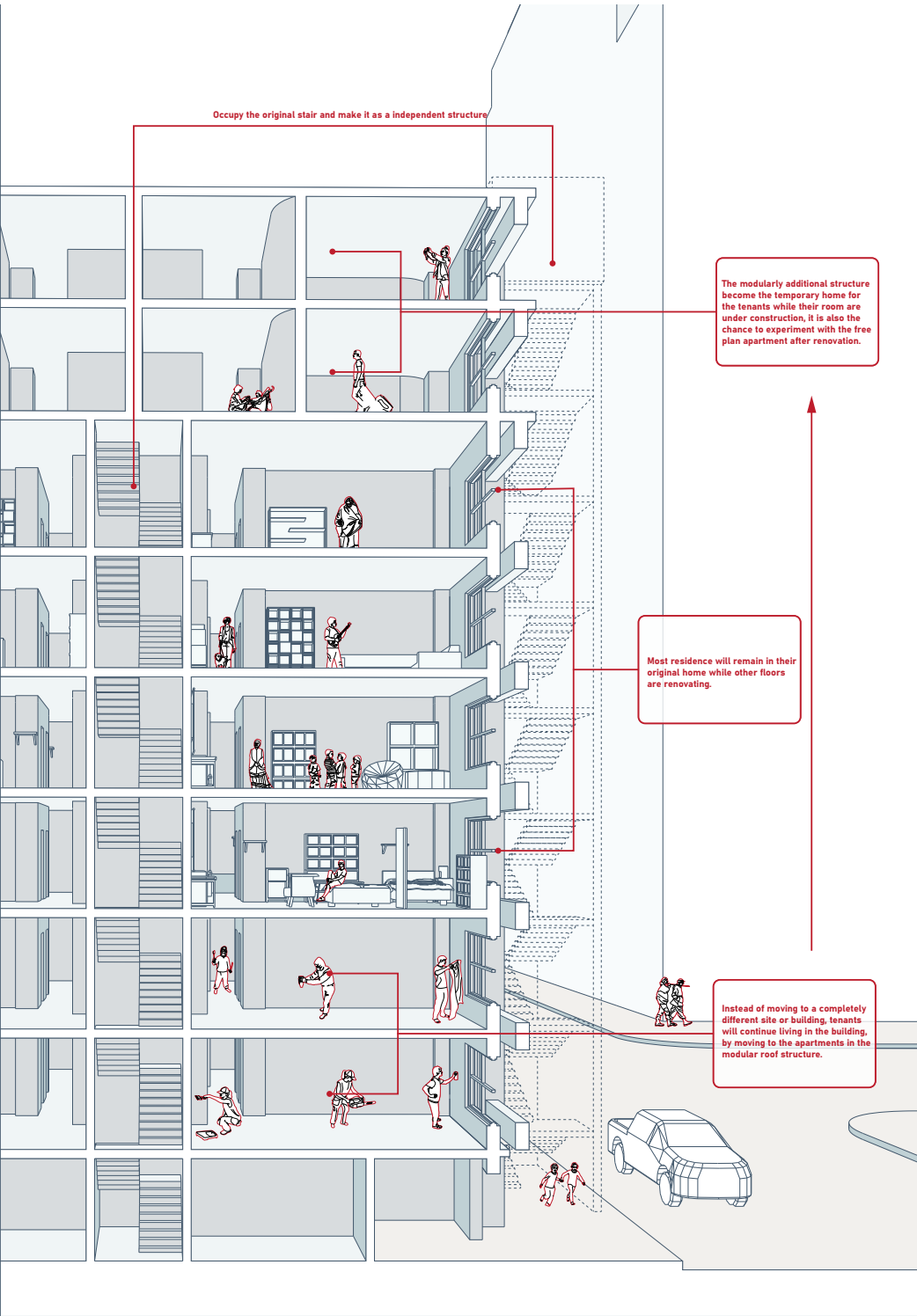
This phased renovation strategy avoids the extreme costs and long timelines associated with demolition while addressing key safety and housing challenges. By improving stairwell safety and providing temporary housing, we aim to create a smoother transition between the old and renovated spaces, guaranteeing tenants a home to return to. This approach reflects our commitment to enhancing both the physical structure of the building and the emotional well-being of its residents, aligning with the broader goals of creating spaces that foster safety, stability, and a sense of community.



SITE MODEL FOR FULTON RENOVATION



MODULARS FOR FULTON RENOVATION



Scale 3 - Community

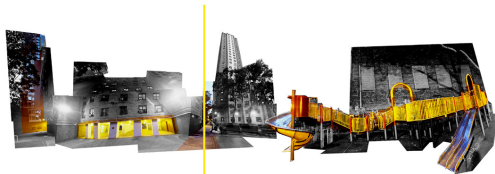
Scales 1 and 2 focused on the tenants’ primary goal: creating a better home to return to. Scale 3 shifts the focus toward strengthening community health by addressing the broader social and spatial challenges within the site. While tenants share strong bonds, current public spaces lack adequate seating and gathering areas, often leaving residents to stand on the street.

The campus exteriors hold significant potential, but several issues hinder their use. Public spaces are fenced off from the surrounding Chelsea community, isolating NYCHA residents and limiting green space access. Additionally, the grey, hospital-like spaces beneath the Fulton apartments lack warmth, and amenities such as the unmaintained playground remain neglected.

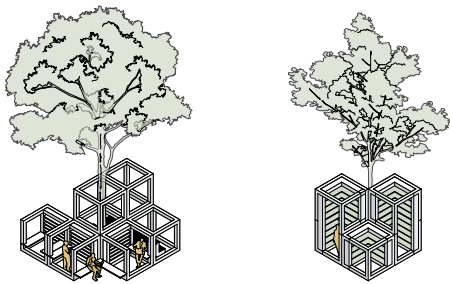
As previously noted, public transport running north-south is highly accessible, leading to predominantly west-east foot traffic. This positions edge spaces along the site as critical opportunities for fostering community interaction. However, many of these edge areas, such as underground courtyards with narrow stairways, are currently unused due to limited access and obstructed views. The edge spaces, previously



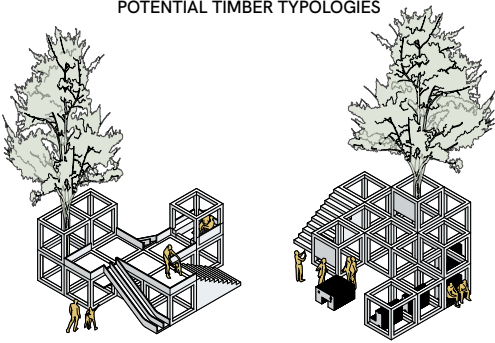
SEVERED CANOPIES:
FENCED GREENS AND CONVOLUTED PATH SYSTEM



VACANCY:
HOSTILE GREY SPACE AND UNKEPT PLAYGROUNDS



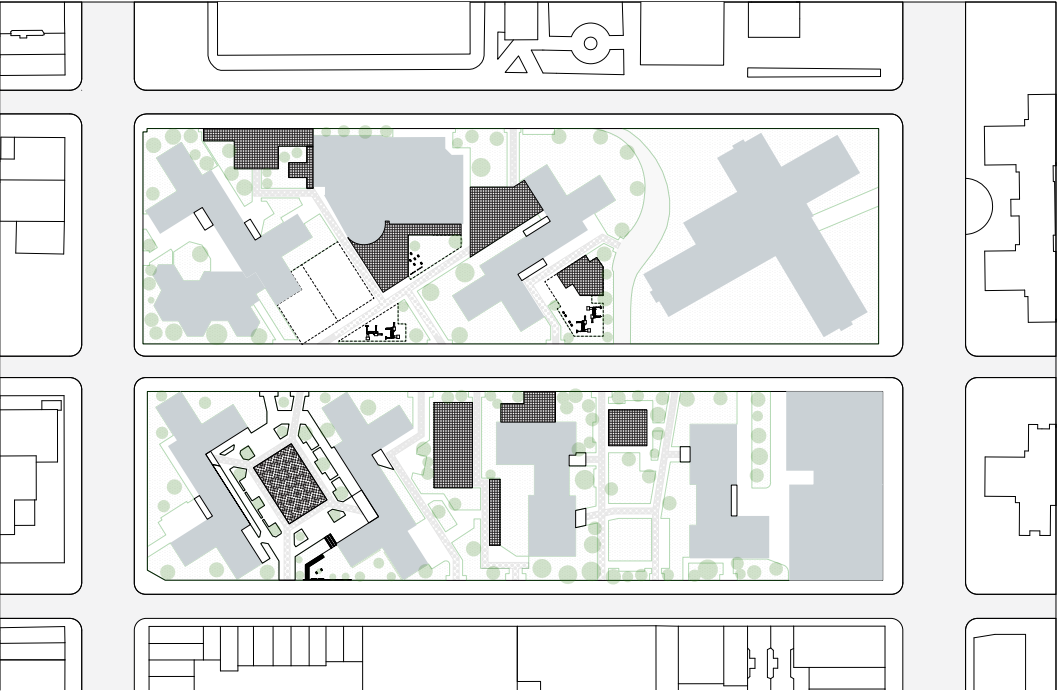
POTENTIAL TIMBER TYPOLOGIES



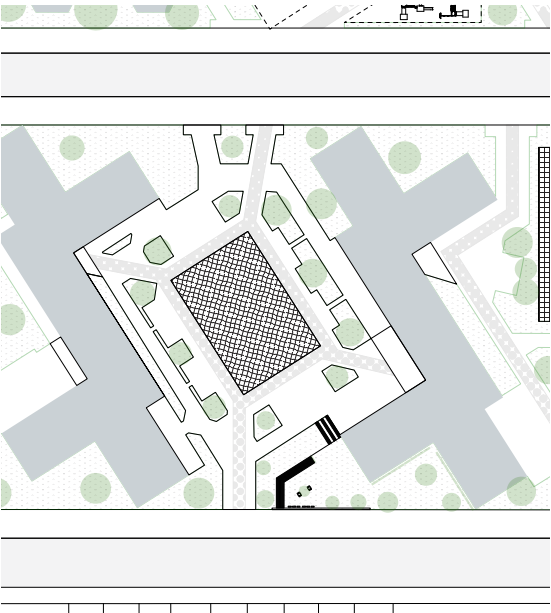
Open stairways and improved visibility will make these areas inviting and accessible, while community services like reading rooms will provide tenants with shared spaces that foster connection and personal growth. These changes will create a welcoming transition between the campus and the surrounding urban fabric, promoting stronger ties between tenants and the larger community.

Internally, our focus shifts to enhancing privacy while addressing inclusivity and flexibility. The repurposing of fenced green areas and outdated playgrounds will introduce multi-use spaces that are not limited to specific age groups. Instead of static, single-purpose designs, we aim to integrate adaptable installations that support a variety of uses, encouraging tenants of all ages to interact, play, and relax in ways that meet their needs.

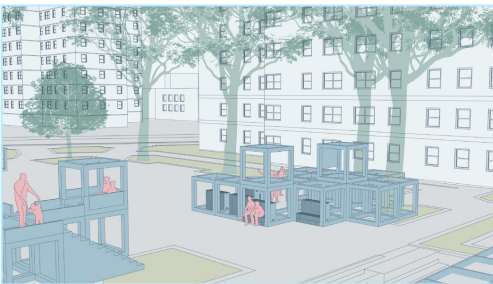
Through these thoughtful interventions, we are redefining the role of public spaces within the campus. These spaces are no longer secondary or underutilized areas but are vital components of a cohesive, health-focused community design. By addressing physical, mental, and community health holistically, our design strategy ensures that the campus evolves into a place where tenants can feel pride, belonging, and well-being.



CHELSEA MASRTER PLAN: RENEWED COURTYARDS & POCKET PARKS



DETAIL INTERIOR COURT PLAN



INTERIOR COURT WITH REUSED TIMBER STRUCTURE



UNDERGROUND SERVICE CENTER WITH INFORMAL STAIRS

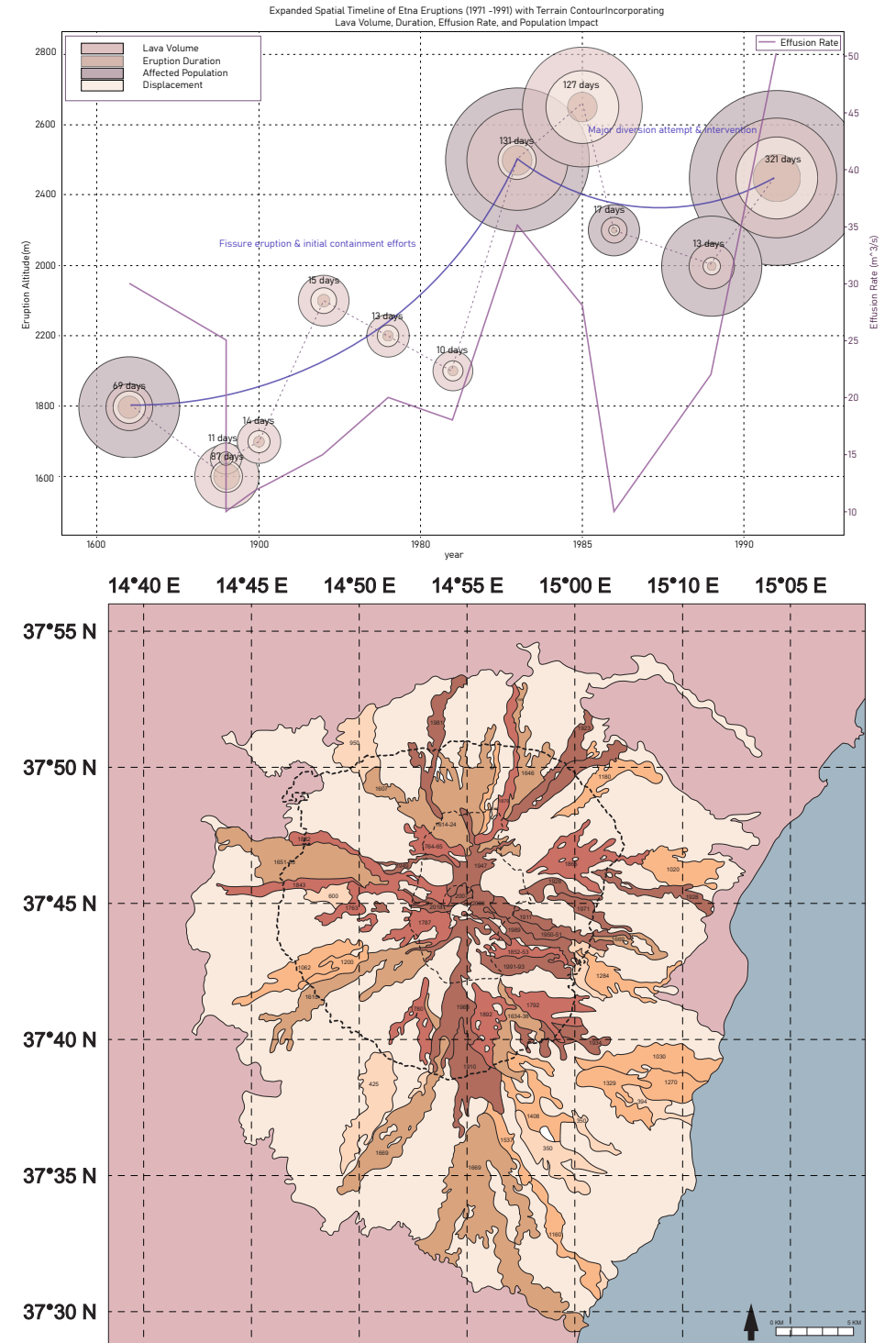


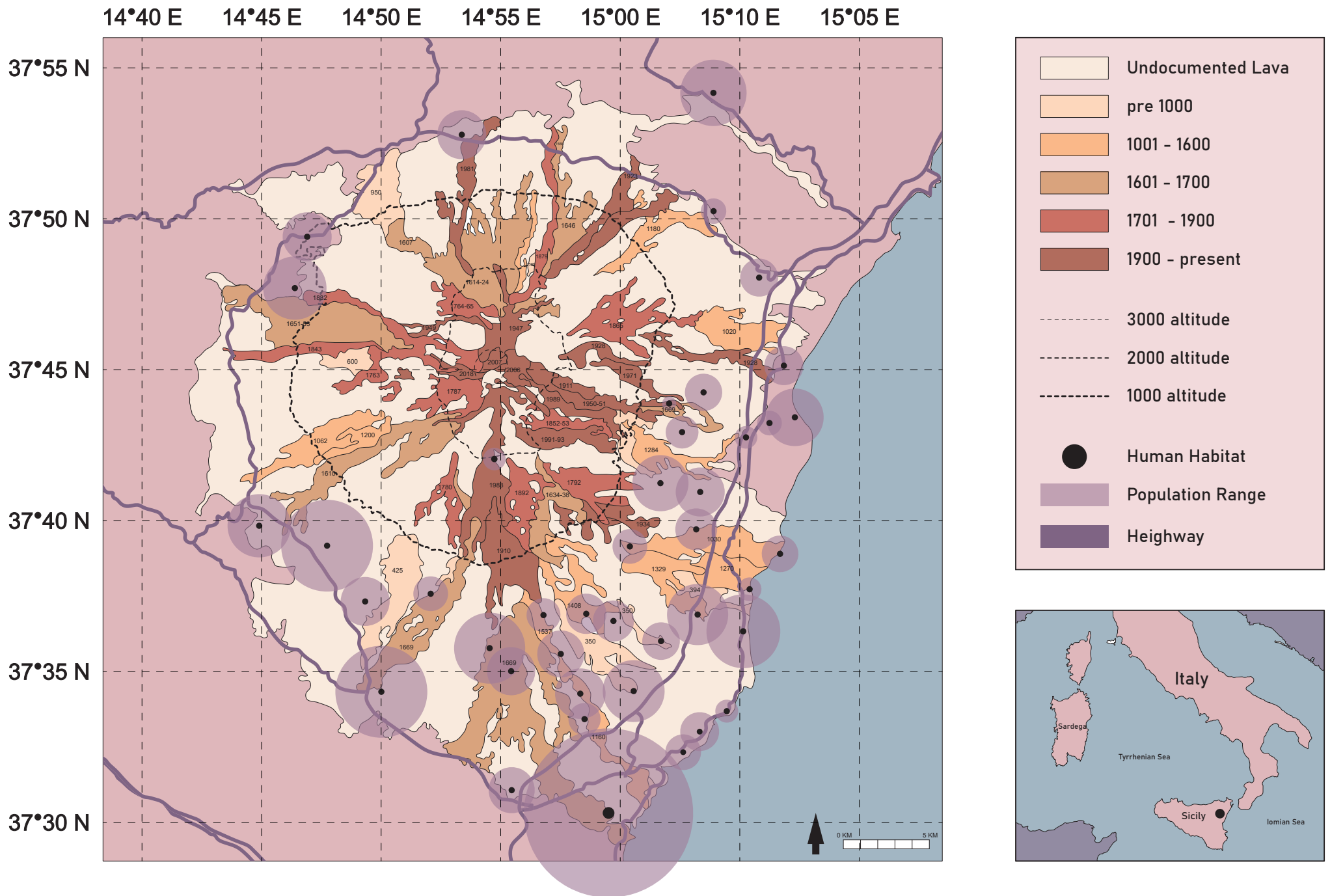
03 HABITAT ON LAVA

VINEYEAR AND FACTORY ON LAVA

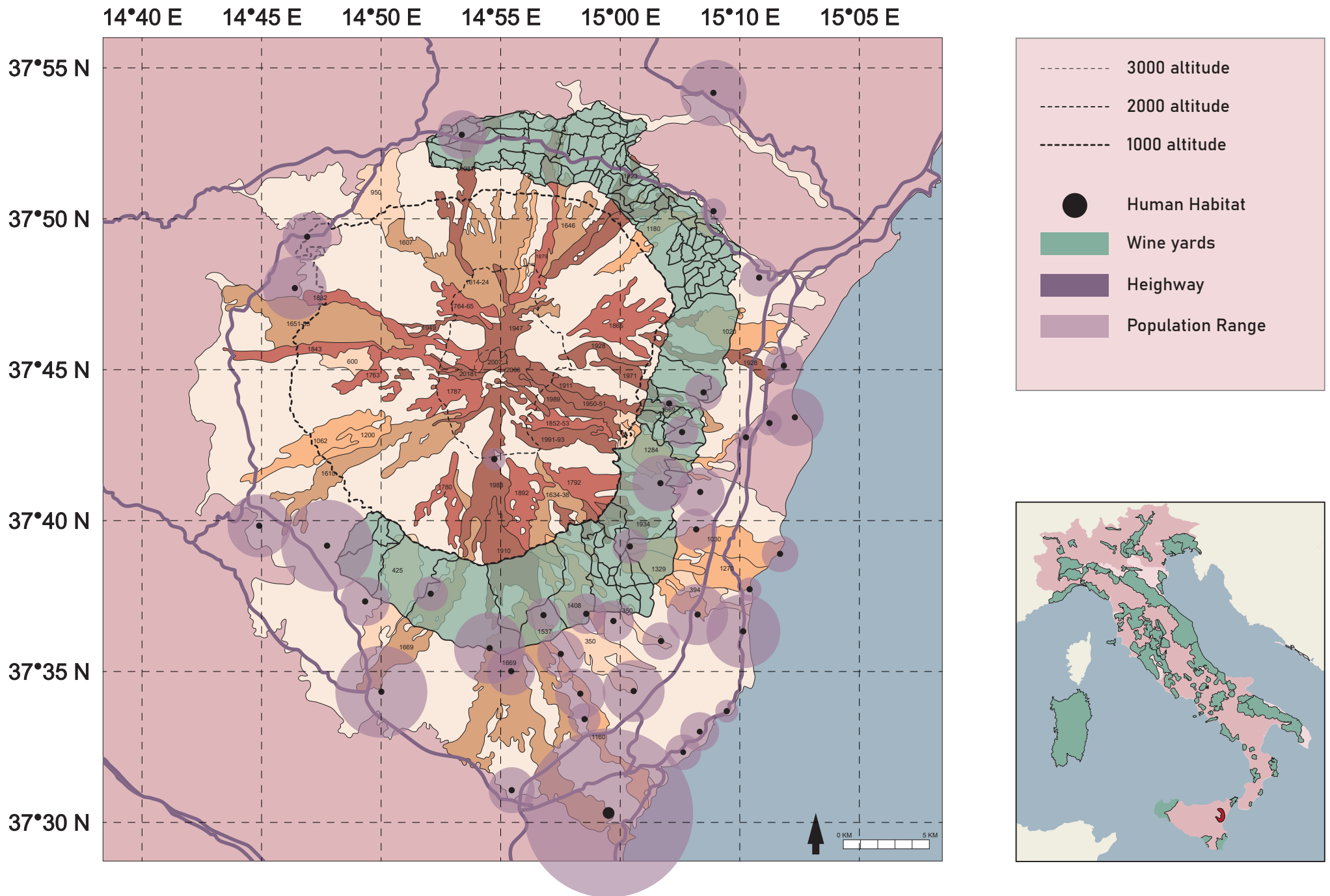
Site: Mount Etna, Italy
Columbia GSAPP Studio
Instructor: Mark Wastiuta
Spring 2025
Individual Work

Mount Etna is both creator and destroyer. This project reclaims the scorched trace of its 1992 lava flow—not as a dead zone, but as a charged threshold between violence and renewal. Suspended lightly above the hardened terrain, the architecture hovers between blackened rock and regrowing vine, between fear and familiarity. It plays with the boundary—neither retreating from the mountain nor attempting to tame it, but manifesting a space where cultivation and volcanic memory coexist. This is not a monument to control, but a quiet choreography between human hands and the breath of the mother mountain.





Human habitat build and live on the historical lava trace, not one, but tens.



Etna's vineyards do not simply survive the volcano—they rely on it. The mineral-rich soil and thermal gradient make this a terroir born from risk.

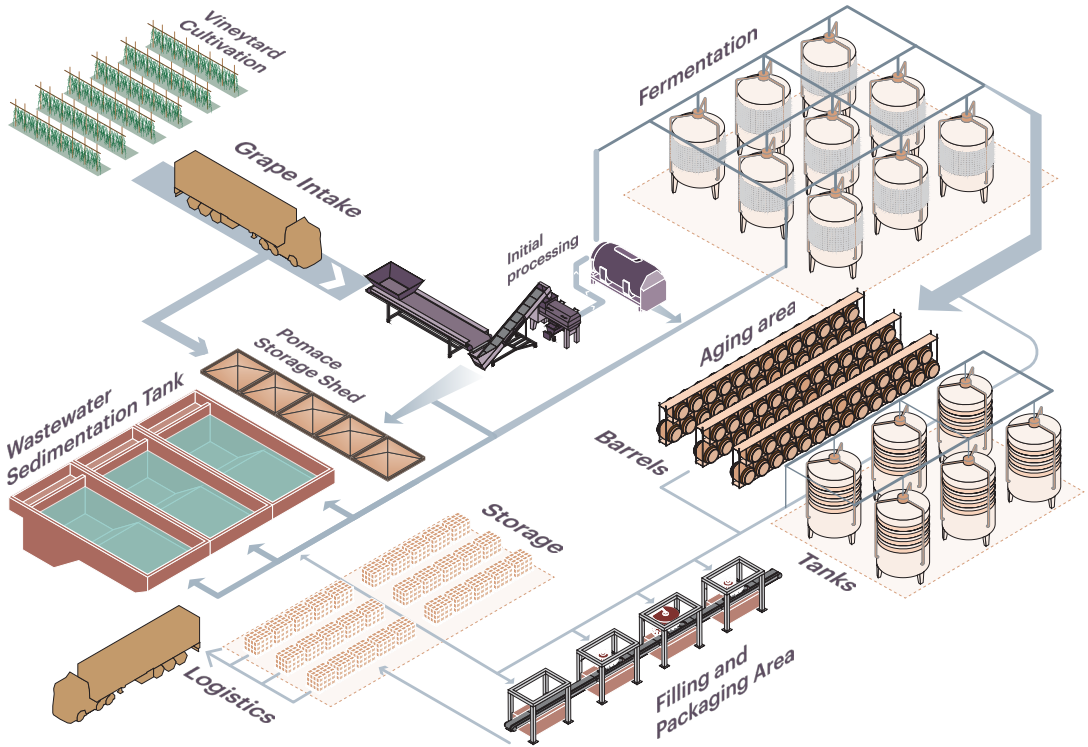
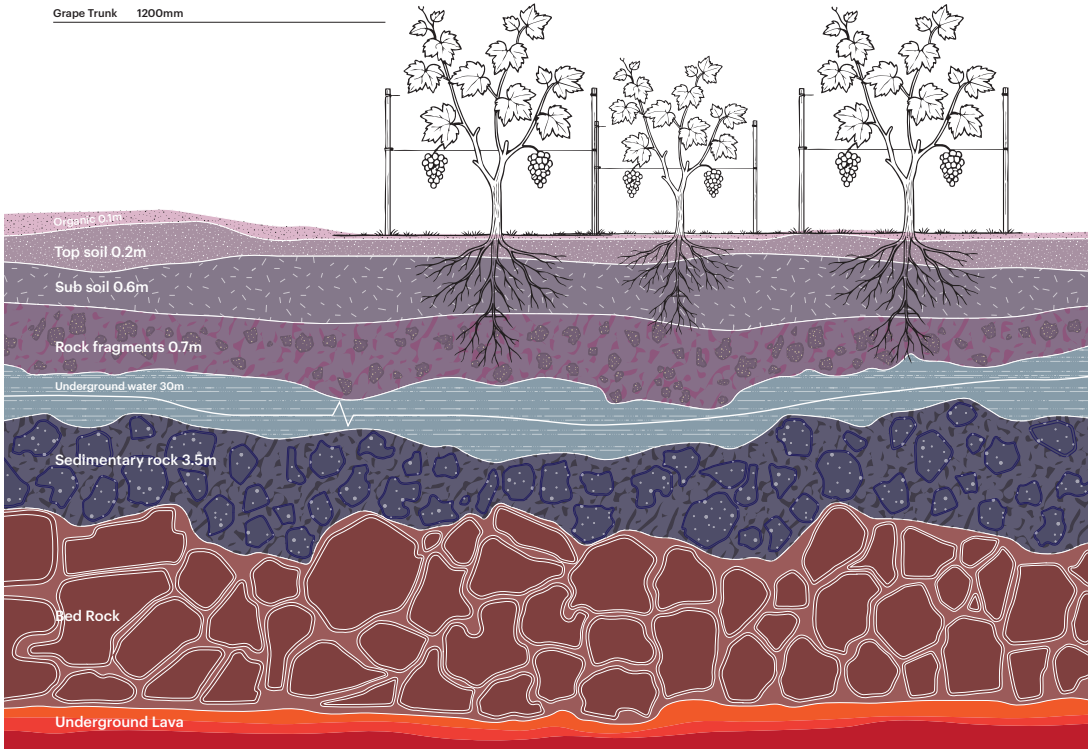
Vineyards Around Mount Etna

Mount Etna is not only a volcano—it is a living terroir. Beneath its blackened crust lies a uniquely rich and dynamic soil environment that has made the slopes of Etna one of the most prized wine-growing regions in Italy. The mountain’s eruptions, while destructive, continuously replenish the land with mineral-rich ash and lava, which break down over time into porous, nutrient-dense soils. These volcanic soils have exceptional drainage, low organic content, and a rugged structure that forces vine roots to struggle and stretch deep. That stress, paradoxically, enhances grape quality, resulting in wines that are structured, mineral, and expressive. Unlike many fertile valleys, Etna’s fertility is hard-won—its agricultural value is forged through adversity.

Climatically, Etna offers dramatic daily temperature variations, especially at higher altitudes between 600 and 1200 meters. These thermal shifts slow down the ripening process, allowing grapes to develop more nuanced aromas and balanced acidity. In an era of climate uncertainty, Etna’s altitude provides a natural buffer—cooling the vines in summer, sheltering them from excessive humidity, and allowing late harvests into October and November. Additionally, the mountain’s multiple slopes and microclimates offer a wide range of growing conditions, making it possible to cultivate diverse grape varieties such as Nerello Mascalese and Carricante with exceptional terroir-driven specificity.

The wine-making process on Etna is deeply intertwined with this geology. Grapes are still largely harvested by hand due to the steep terrain and terraced layouts of the vineyards. After sorting and destemming, white grapes are pressed and fermented without skin contact, while red varieties undergo skin fermentation to extract tannins and color. Fermentation can take place in stainless steel tanks with temperature control, or in neutral containers such as concrete or large wooden casks to preserve the grape’s natural profile. Aging follows—often in used oak barrels that impart subtle character without overpowering the volcanic minerality. From vine to bottle, the process is both ancient and adaptive, reflecting a cultural knowledge passed down through generations and shaped by the unpredictable rhythms of the mountain.

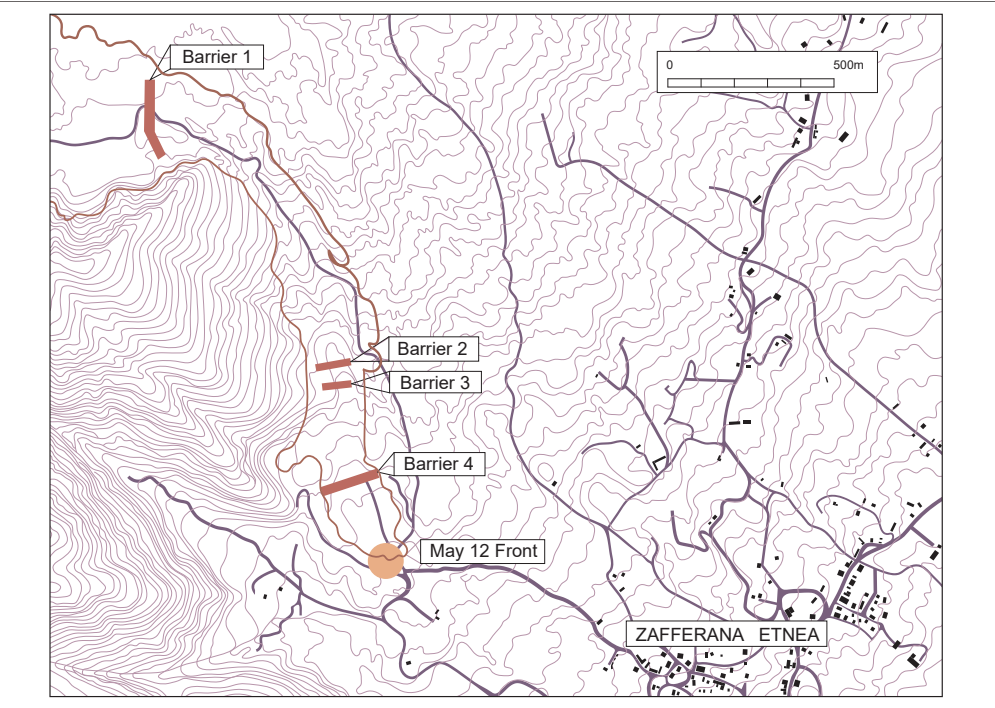
This research sits at the core of the architectural response. Just as Etna’s soil holds memory in layers—organic topsoil, cooled lava, buried water, and dormant magma—the architecture seeks to layer human activity over geological time without erasure. It does not aim to control the mountain, but to participate in its cycles of destruction and cultivation. Suspended above the lava’s trace and oriented toward the regrowth of vines, the structure becomes part of the vineyard’s extended process—a witness to transformation, and a mediator between what the earth has taken and what it now gives back.



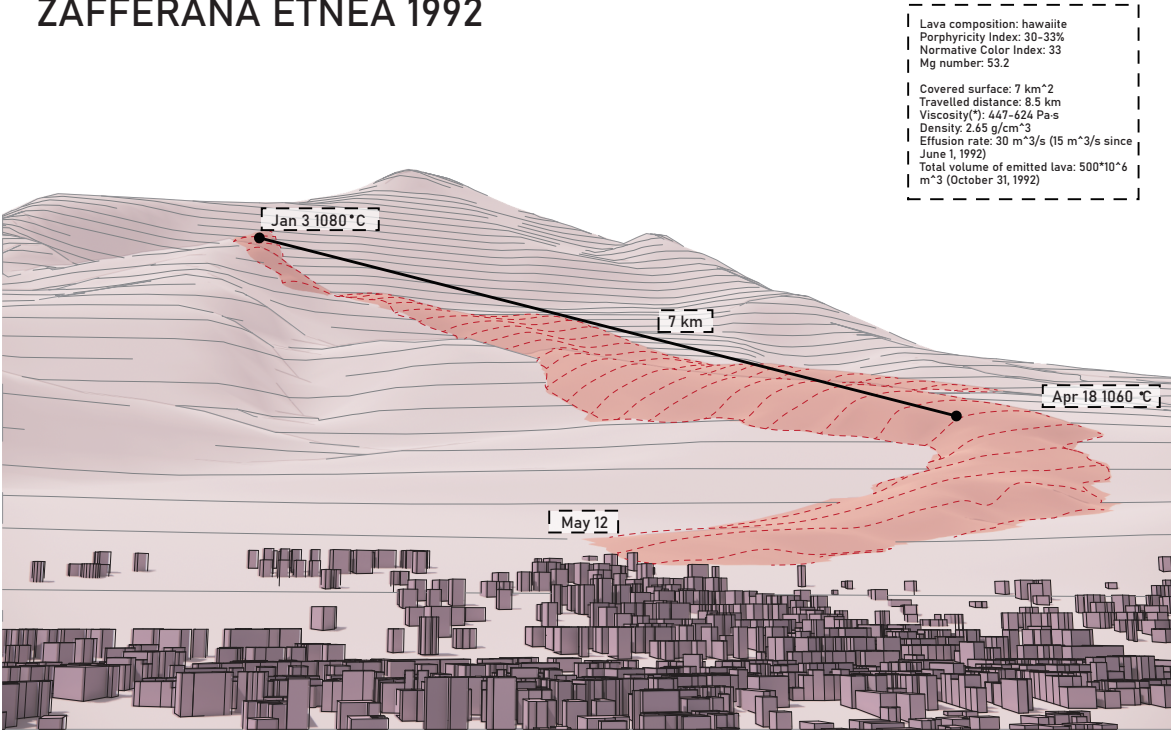
Site: The Closest Lava to City

In March 1992, Mount Etna erupted along a fissure that released a long, slow-moving flow of hawaiitic lava aimed directly toward the town of Zafferana Etnea. In a rare moment of emergency intervention, four artificial barriers were constructed by bulldozers—linear earthworks meant to slow the lava’s descent. For a time, they worked. The lava paused, swelled, redirected. But by mid-May, it overtopped them. The event was not a victory of engineering, but a delayed inevitability. These barriers, however, left more than marks in the landscape—they inscribed the human desire to negotiate, not defeat, the volcano.

This drawing sequence reads like a diagram of confrontation. Red indicates lava’s thermal path; black marks the artificial ridges built to resist it. Between them lies a fragile boundary—one drawn not in stone, but in timing and hope. The architecture proposed in this project recognizes that same line: the one where cultivation meets catastrophe, where people live not in denial of the mountain’s force, but in rhythm with it. Here, resistance is not a wall, but a choreography.

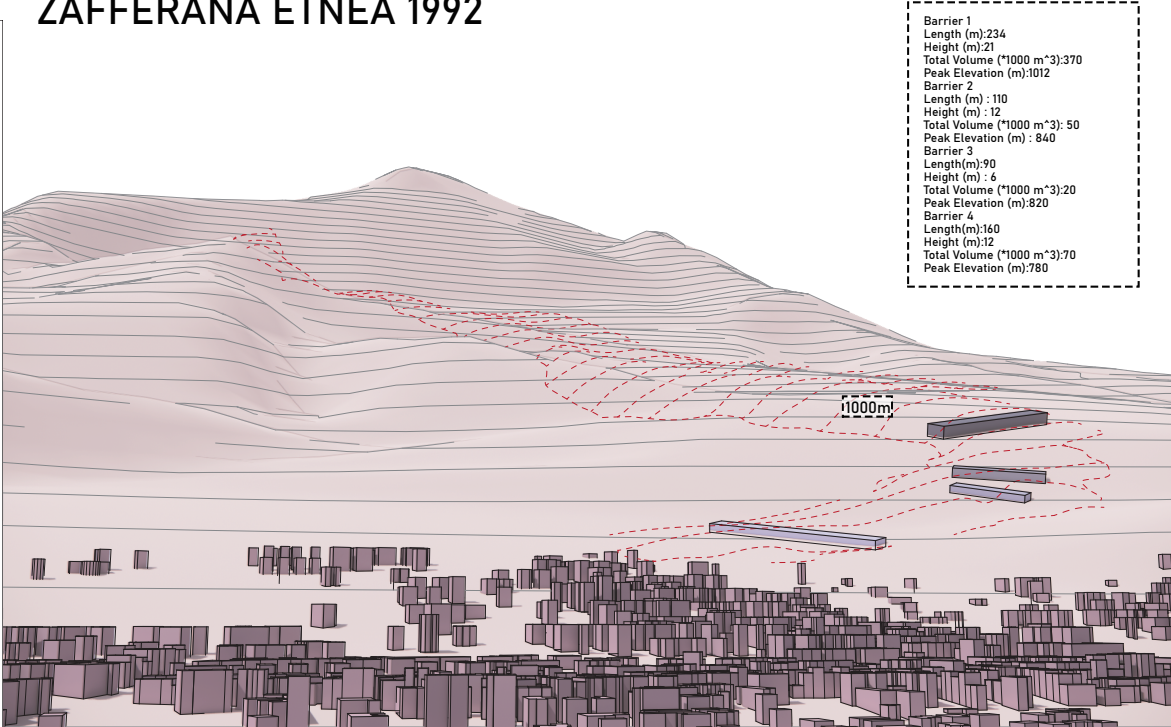


ZAFFERANA ETNEA 1992

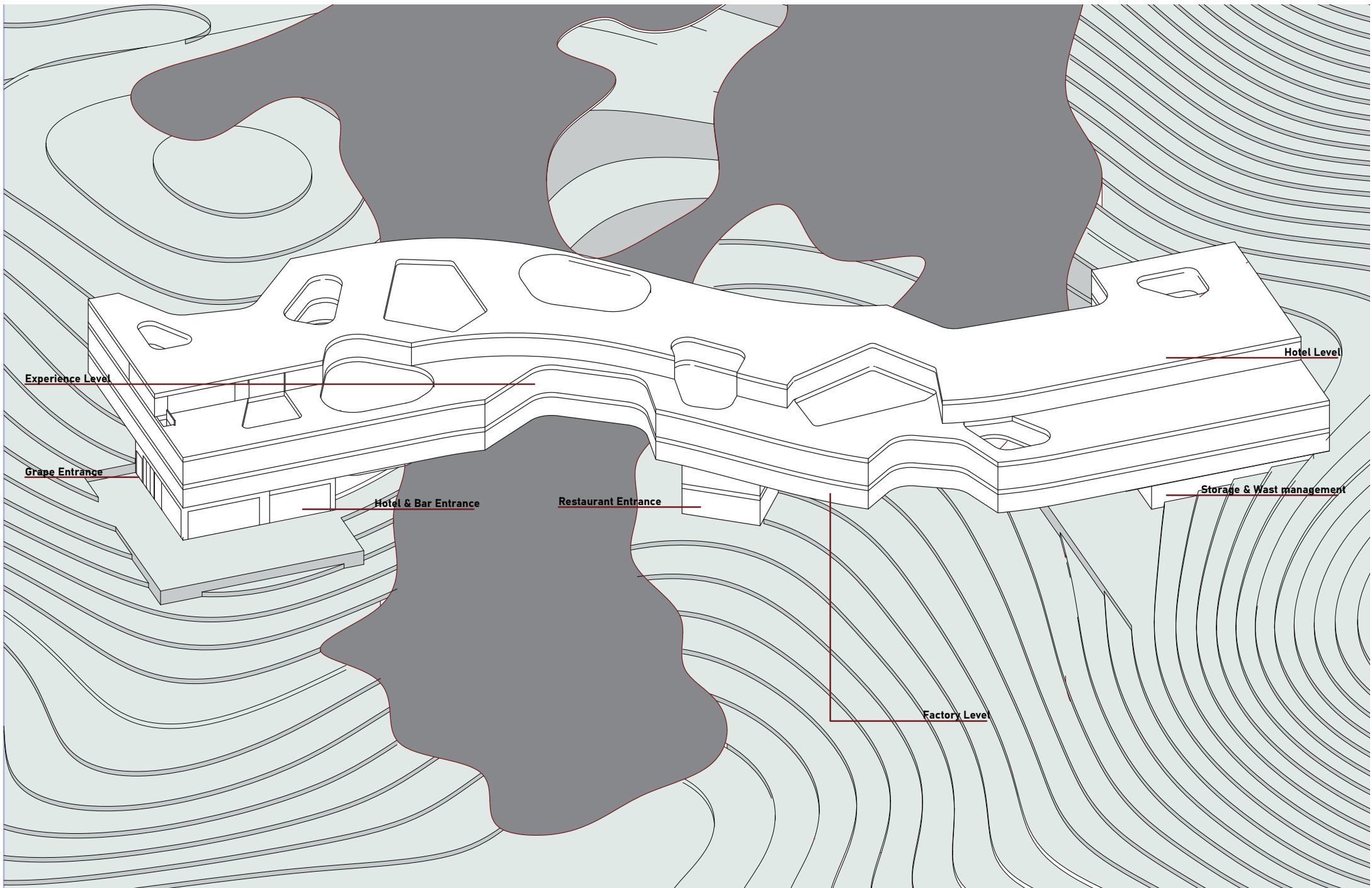


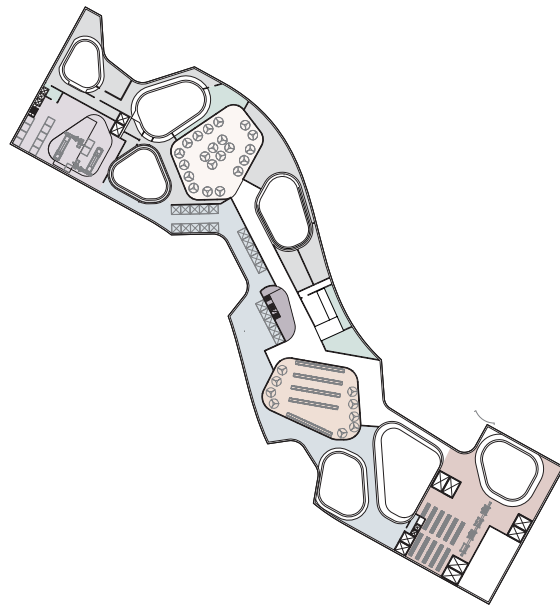
Lava composition: hawaiiite
Porphyricity Index: 30-33%
Normative Color Index: 33
Mg number: 53.2
Covered surface: 7 km ²
Travelled distance: 8.5 km
Viscosity(°): 447-624 Pa-s
Density: 2.65 g/cm ³
Effusion rate: 30 m ³ /s (15 m ³ /s since June 1, 1992)
Total volume of emitted lava: 500*10 ⁶ m ³ (October 31, 1992)

ZAFFERANA ETNEA 1992

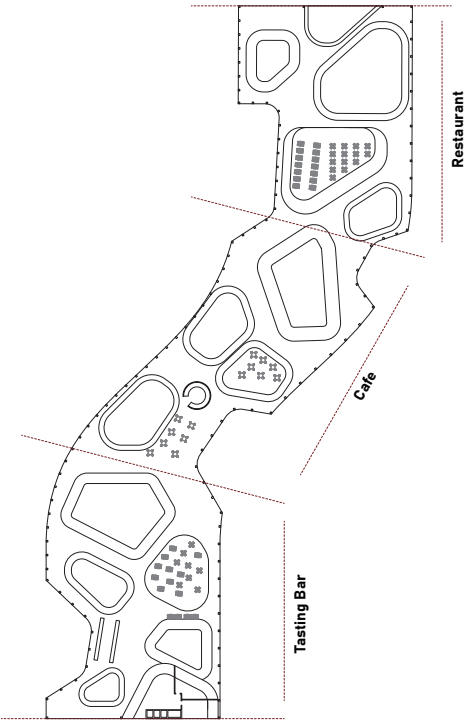
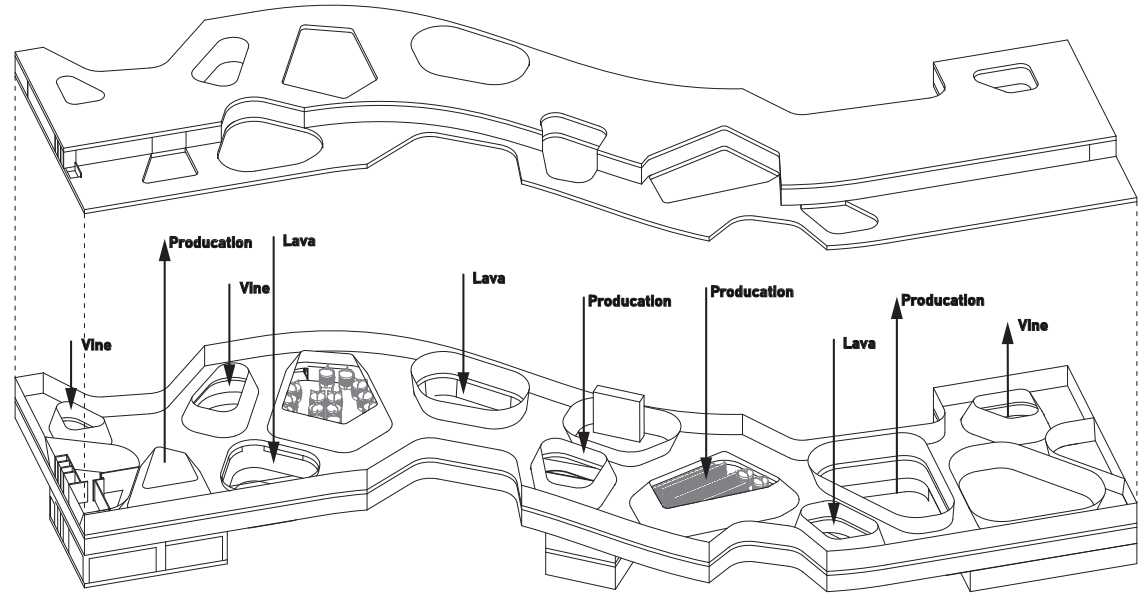


Barrier 1
Length (m): 234
Height (m): 21
Total Volume (*1000 m ³): 370
Peak Elevation (m): 1012
Barrier 2
Length (m): 110
Height (m): 12
Total Volume (*1000 m ³): 50
Peak Elevation (m): 840
Barrier 3
Length (m): 90
Height (m): 6
Total Volume (*1000 m ³): 20
Peak Elevation (m): 820
Barrier 4
Length (m): 160
Height (m): 12
Total Volume (*1000 m ³): 70
Peak Elevation (m): 780

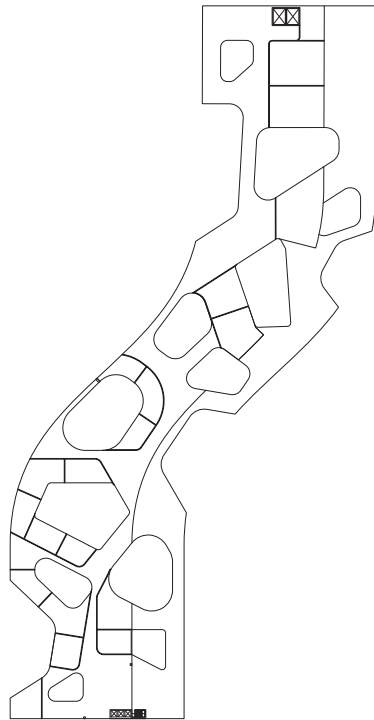




- Cleaning & Crushing
- Fermentation
- Quality Control Lab
- Anging
- Bottling
- Administration
- Wast Tunnel
- Sentitizing



Experience Level



Hotel Level

