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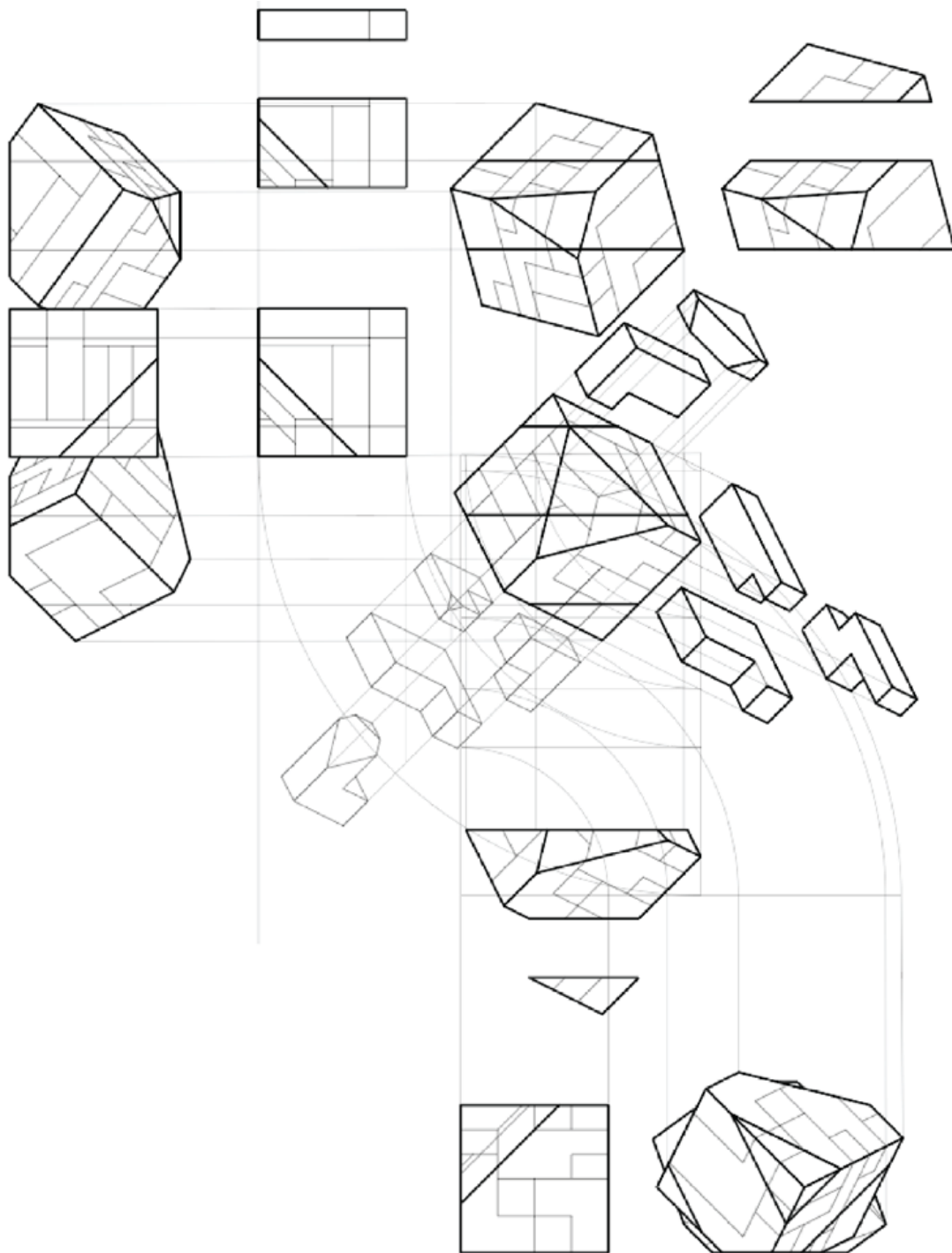
SHEN

1

LOST AND FOUND

Approach to Adaptive Reuse and Temporality in Architecture

Academic Works

Date_Fall 2024
Group
Instructor_Wonne LCKX
Site_Governoers Island, NY

Inspiration from pre-Hispanic architecture, such as the layered pyramids of Chichén Itzá, where each structure was built atop an older one, reflecting a continuous process of adaptation and transformation. This perspective challenges the notion of buildings as permanent monoliths, instead viewing them as temporary iterations that can evolve over time.

The studio explores one main approaches to adaptive reuse. First, systematic Aggregation: Treating buildings as organizational systems that can grow or shrink over time. Examples include Cesar Pelli's "Long Gallery House," Frank Gehry's Windsor Guest House, and the telescope houses of Buffalo, NY, which expanded organically over generations.

Site Map

Building 298

Governors Island, located south of Manhattan, New York, was once a U.S. military base. After the U.S. Coast Guard closed the base in 1996, many military facilities and residences were left abandoned. Today, the island has been reopened for tourism, offering opportunities for the adaptive reuse of these historic structures.
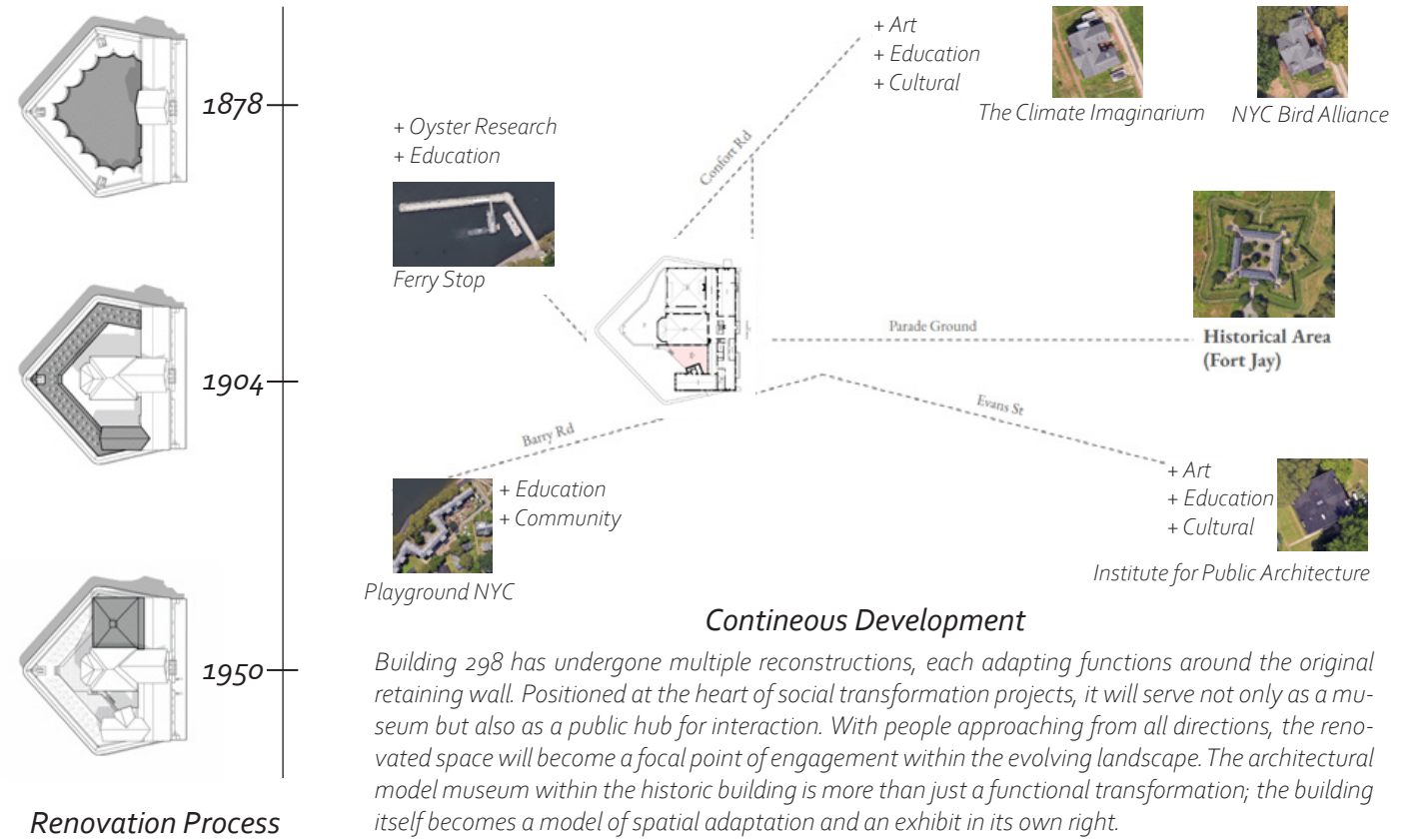
Building 298: North Side View

Building sits on a slope, with its higher north side serving as both the entrance and main facade, when viewed from the front, with a higher volume in the middle.

Building 298: East Side View

The building appears distinctly divided into two parts: the retaining wall at the base and the main structure above, establishing a clear formal separation..


Renovation Process

1878
1904
1950

+ Oyster Research
+ Education

Ferry Stop

+ Art
+ Education
+ Cultural

The Climate Imaginarium   NYC Bird Alliance

Parade Ground

Historical Area
(Fort Jay)

+ Education
+ Community

Playground NYC

+ Art
+ Education
+ Cultural

Institute for Public Architecture

Contineous Development

Building 298 has undergone multiple reconstructions, each adapting functions around the original retaining wall. Positioned at the heart of social transformation projects, it will serve not only as a museum but also as a public hub for interaction. With people approaching from all directions, the renovated space will become a focal point of engagement within the evolving landscape. The architectural model museum within the historic building is more than just a functional transformation; the building itself becomes a model of spatial adaptation and an exhibit in its own right.

Club Interior Photo

Club Interior Analysis

Both the interior and exterior of Building 298 adopt a layered design approach, enhancing functionality and visual depth through continuous superposition. Indoors, the wainscot overlays the original walls and windows, adding texture and spatial complexity.
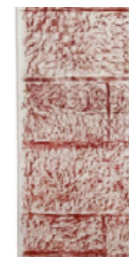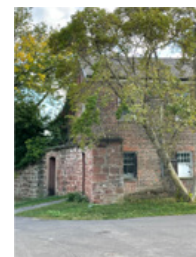

Material

Building 298 and the surrounding structures are primarily built of masonry and are situated within the sandstone walls of the 1812 fortifications. Due to transportation challenges, materials from collapsed houses on the island have remained stranded over time. As a result, efforts have been made to repurpose these materials in the construction of new buildings, integrating local history into contemporary development.
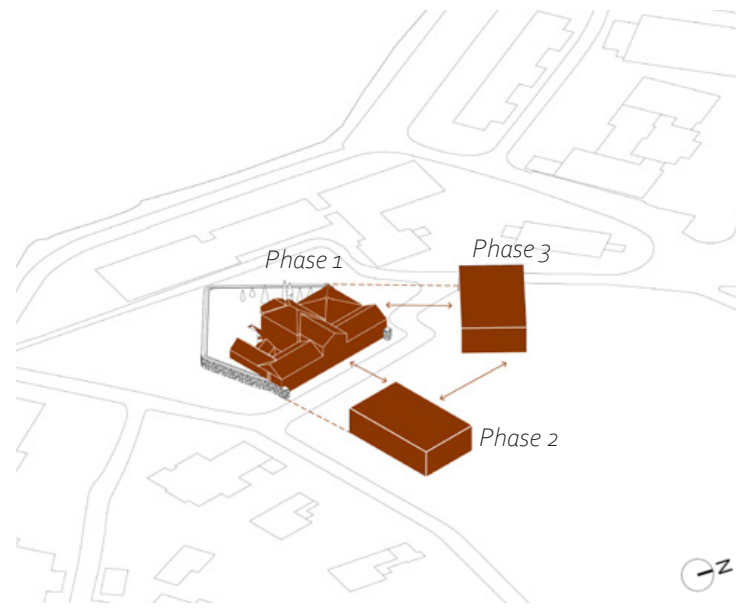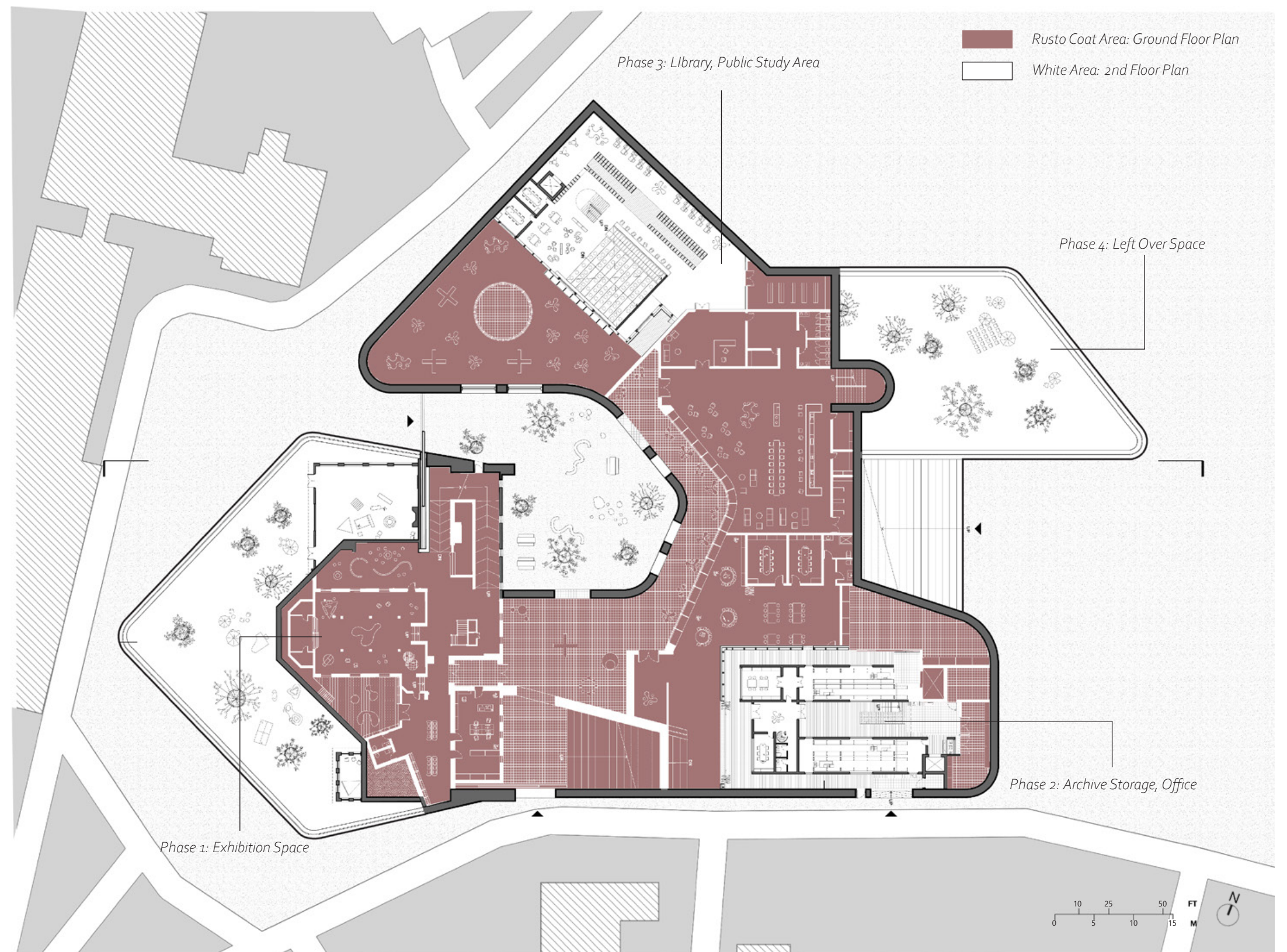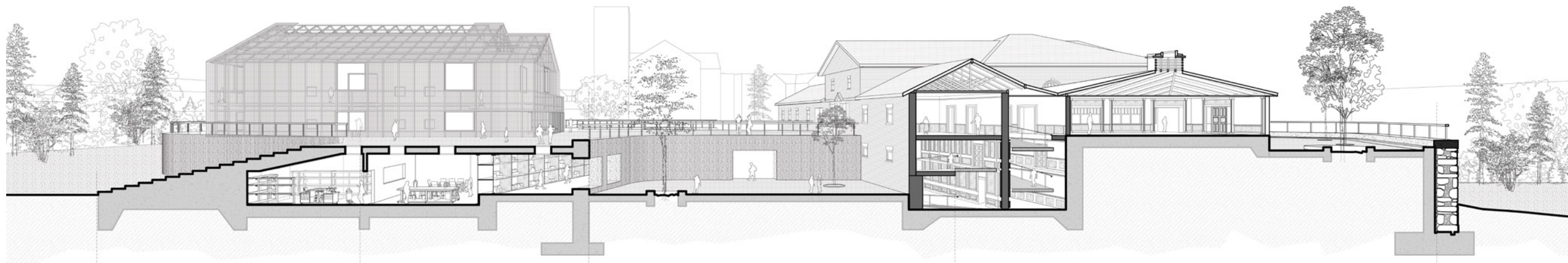
Zoning And Phasing
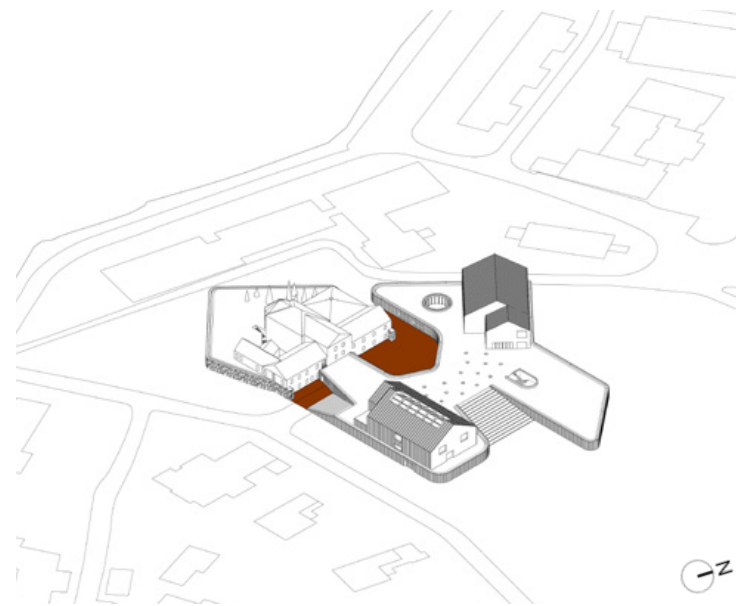
Enclosure

In the process of reshaping architecture, it is regarded as a dynamic and evolving entity rather than a static finished product. The building expands gradually in response to functional needs, challenging the traditional notion of permanence in architecture. Additionally, the design process seeks to integrate outdoor spaces as an integral part of the building, blurring the boundaries between interior and exterior environments.

Phase 1

Phase 3

Phase 2

Phase 3: LIbrary, Public Study Area

Phase 4: Left Over Space

Rusto Coat Area: Ground Floor Plan

White Area: 2nd Floor Plan

Phase 2: Archive Storage, Office

Phase 1: Exhibition Space

Composite Floor Plan

Section

The design of the new building prioritizes its natural continuity, drawing from the interpretation of its history and architectural elements. The original retaining wall is extended to function as a wrapping layer, seamlessly integrating past and present. Different exhibition stages serve as primary gathering spaces, while additional social areas are subtly tucked beneath the platform enclosed by this layer. This approach unites the building's history of multiple reconstructions with its new extension, forming a cohesive and functional evolution of its architectural identity.

Building Model Side Photo

As the building naturally expands, the retaining wall continuously integrates with new functions. It gradually fades at points of disconnection, merging seamlessly with descending staircases. The side retaining wall maintains a consistent relationship with the original structure, ensuring that from every angle, it serves as a reinterpretation of existing architectural elements within the same foundational form.


Building Model Perspective Photo

The expansion process also involves the westward extension of the outdoor space, which is strategically enclosed within the site by twisting the retaining wall. In case of emergency flooding, doors on both sides can be closed, preserving the wall's protective function. However, the retaining wall adopts a new design pattern—maintaining the depth of the original structure while introducing a more contemporary aesthetic.

Building Section Model 1:12

Interior of Retaining Wall
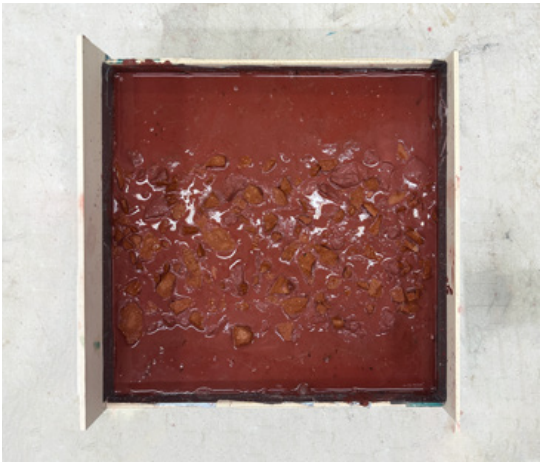
Brick Powder Facade Material Test
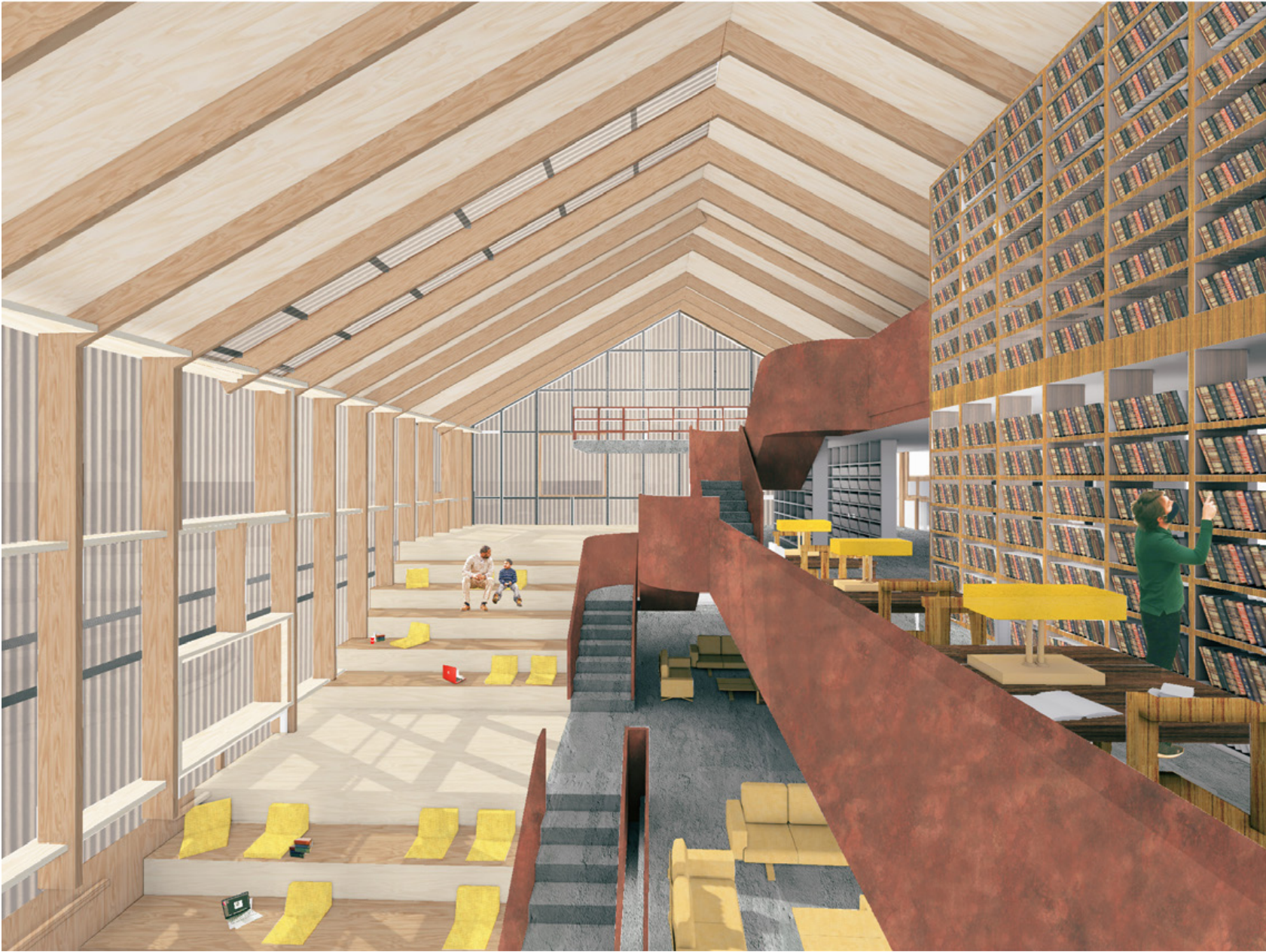

Building Exterior Facade Model

Beyond redesigning architectural elements, the island's original building materials were repurposed for the new retaining walls. Due to transportation challenges, debris from collapsed structures remains on the island and can be processed into pigments for the new walls. This approach infuses the walls with a rich red hue, enhancing both texture and spatial depth, creating a tactile and visually layered environment indoors and outdoors.

FORT AS FOUND

Wall Construction and Material Reuse

Resilience in Crisis: Flood Protection

Building Facade Material Test

As the retaining wall extends, the museum's primary functional blocks take shape, and the platform is established, creating a seamless interplay of three spatial experiences—indoor, outdoor, and beneath the platform. This dynamic arrangement transforms the building into one of the island's key social gathering spaces, inviting passersby to congregate and interact.

Throughout the extension process, the integration of descending staircases, atriums, and additional light wells enhances spatial depth and variation, enriching the overall architectural experience.

Phase3: Library Interior Rendering

Exterior View Above Platform: Looking Through Different Phases

Interior View Under Platform: Corridor Space Under Phase2 Platform

2 |

RETHINKING BIM
BIM function at urban and building scales

Academic Works

Date_Fall 2023
Group
Instructor_ Joseph A. Brennan
Site_ 1227 Broadway, New York, NY 10001

Redefines Building Information Modeling (BIM) by integrating Computational Design to enhance building delivery processes. It challenges participants to explore innovative ways to leverage BIM, focusing on collaboration across the development, architec ture, engineering, and construction (DAEC) industries. Also draws inspiration from tech and manufacturing sectors to improve infor mation exchange and design processes
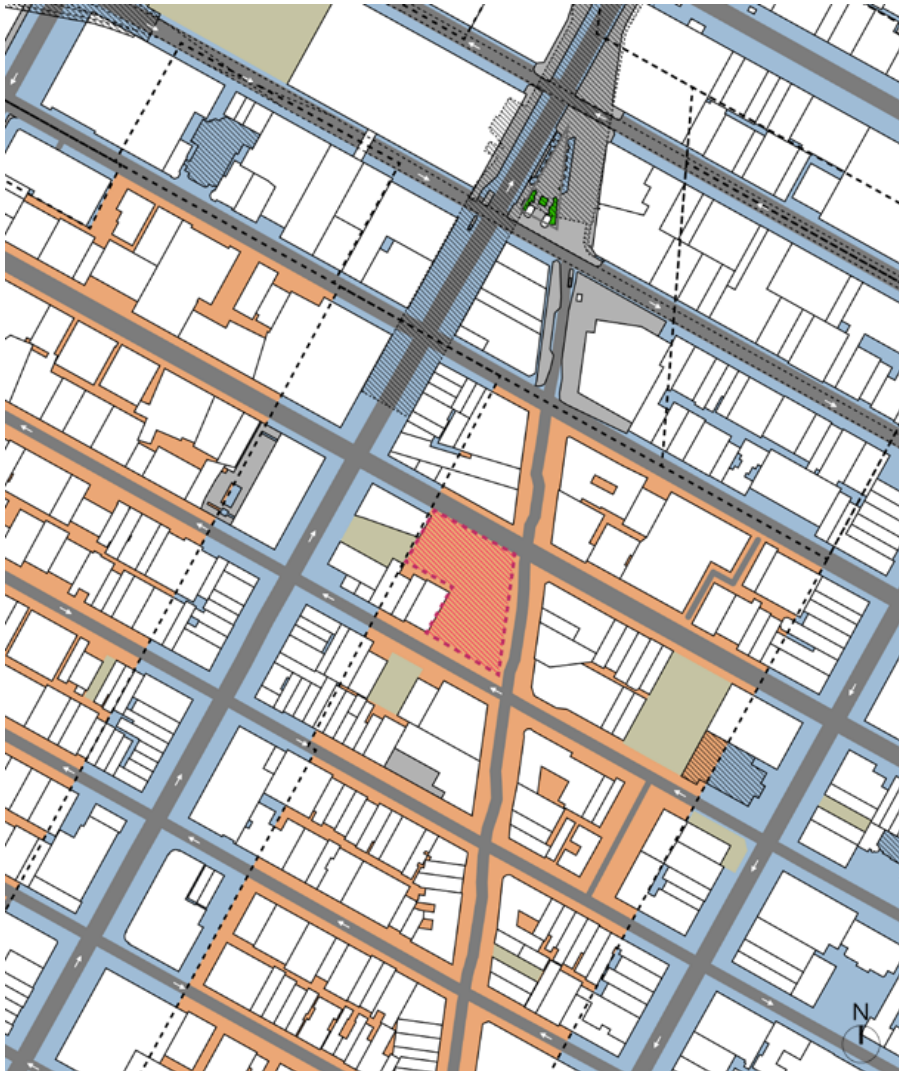
Site Map: 1227 Broadway, 10001

The site's corner location poses challenges for functionality and privacy in a single-tower skyscraper, as only one side is available for development. To address this, the building is divided into two towers based on function, positioned on the west and north sides of the site. The primary challenge is managing sightline conflicts between the two towers.
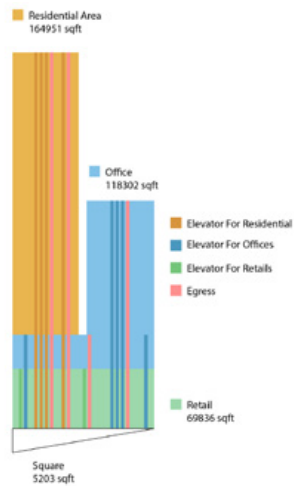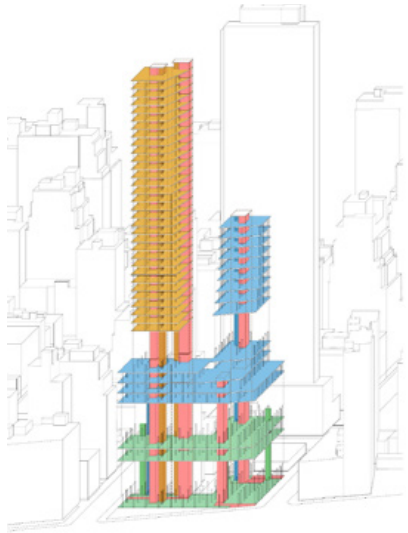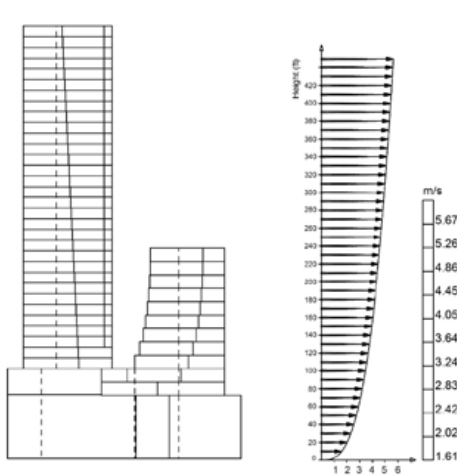

Program Arrangement

The retail space on the ground floor serves as a platform to elevate the residential and office buildings. The vertical system created additional outdoor spaces .

Site Incident Radiation

Winter Wind Rose

This multifaceted spine is created by the splitting open of the potential single mass at its core, thereby forming two separate high rise structures and causing them to reveal the almost geological strata of their core layers as they rise above a light-filled canyon. As a result of this

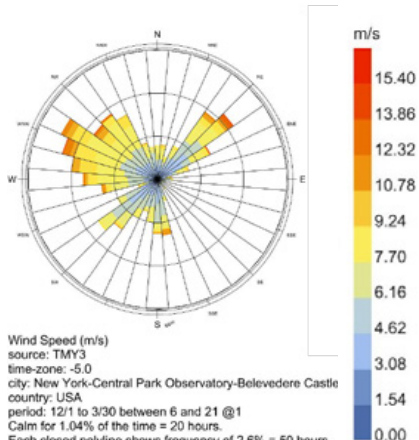

Parametric Viewing Design

Tower Spiral Ratio

This multifaceted spine is created by the splitting open of the potential single mass at its core, thereby forming two separate high rise structures and causing them to reveal the almost geological strata of their core layers as they rise above a light-filled canyon. As a result of this design intervention, the towers that result on either side can enjoy porous city views and vastly improved contextual links. The organisation of the Spine enables an extension of the public realm on the podium, the continuation of green onto the towers and orients itself towards the CBD and the Garden at the top of the towers.
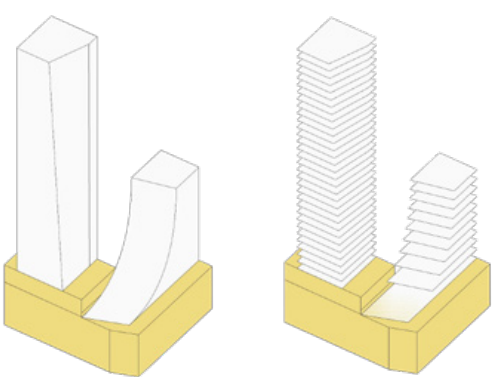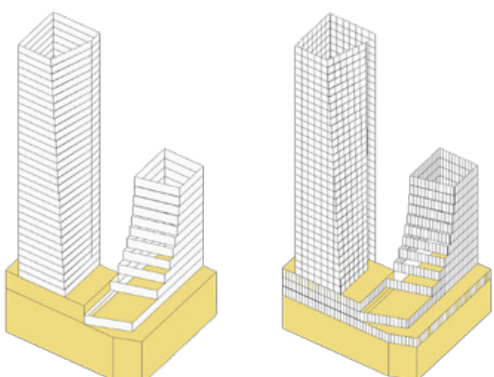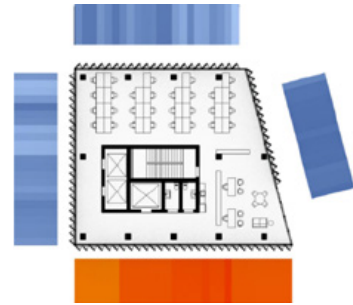

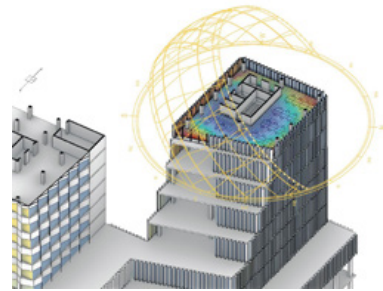*Building Massing* *Multi- story*

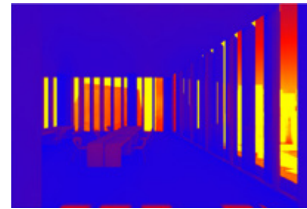*Envelop Enclosure* *Facade Grid Map*

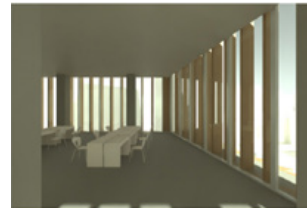*Parametric Design Radiation Analysis*

OfficeTower Radiation

OfficeTower Sun Path

OfficeTower Radiation Render

OfficeTower Reallife Render

The facade plays a key role in implementing sustainability measures, starting with the massing. It achieves high-performance sun shading by positioning the shading spine towards the north and west of the upper exposed face of the tower.

Final Choice of Facade Angle

Final Choice of Facade Density
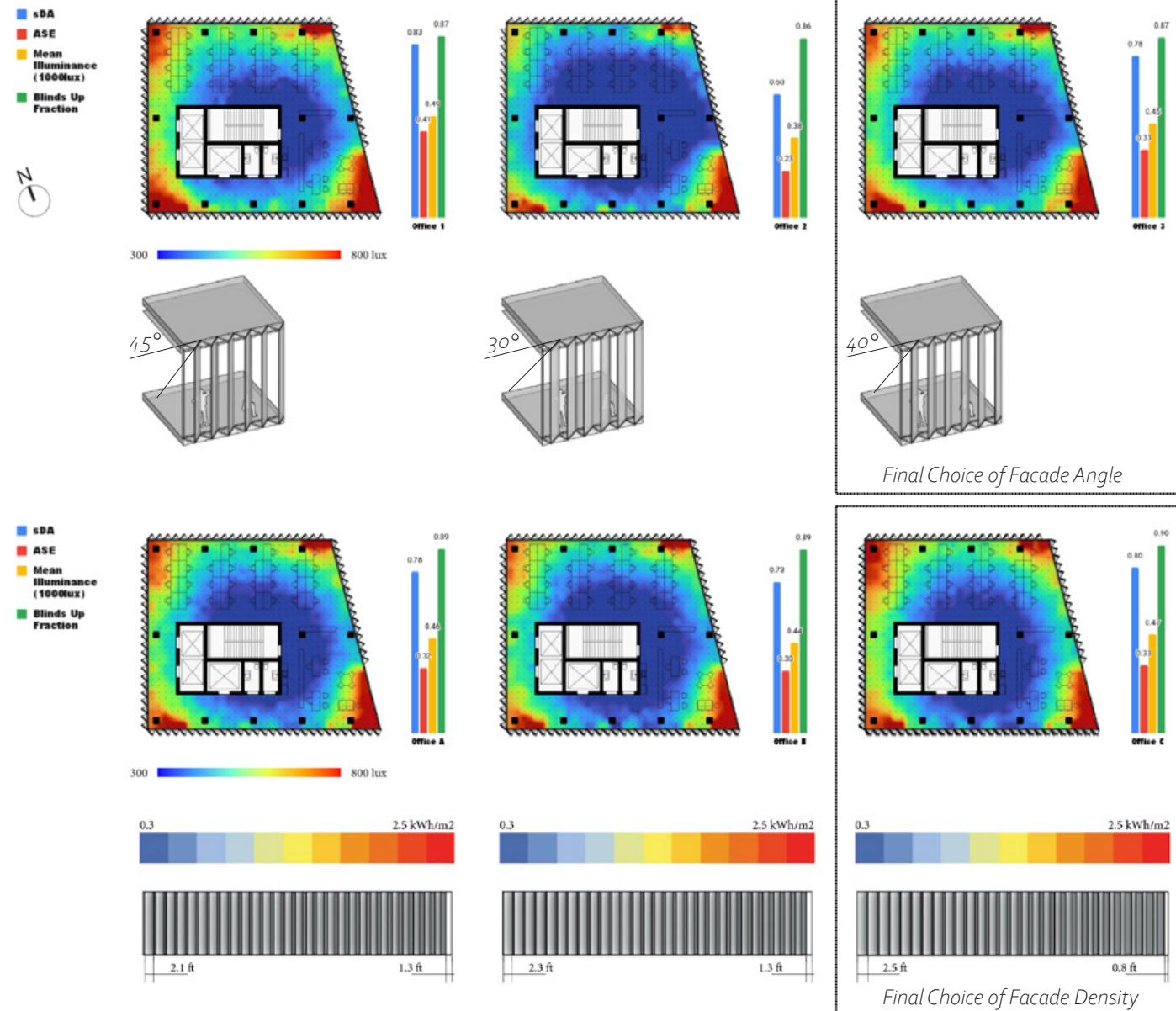
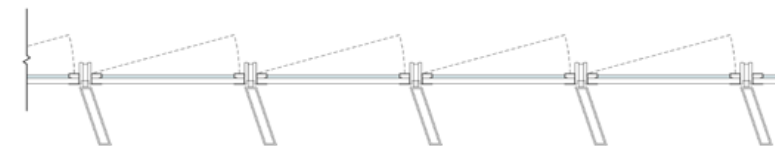Office Tower Daylight Avalibility

Office Tower Facade Exterior View
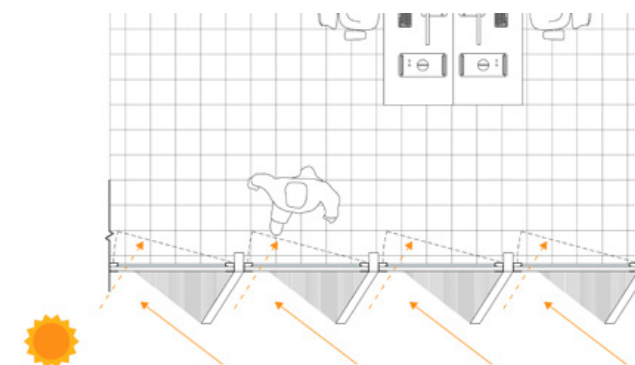

Office Tower FacadePlan
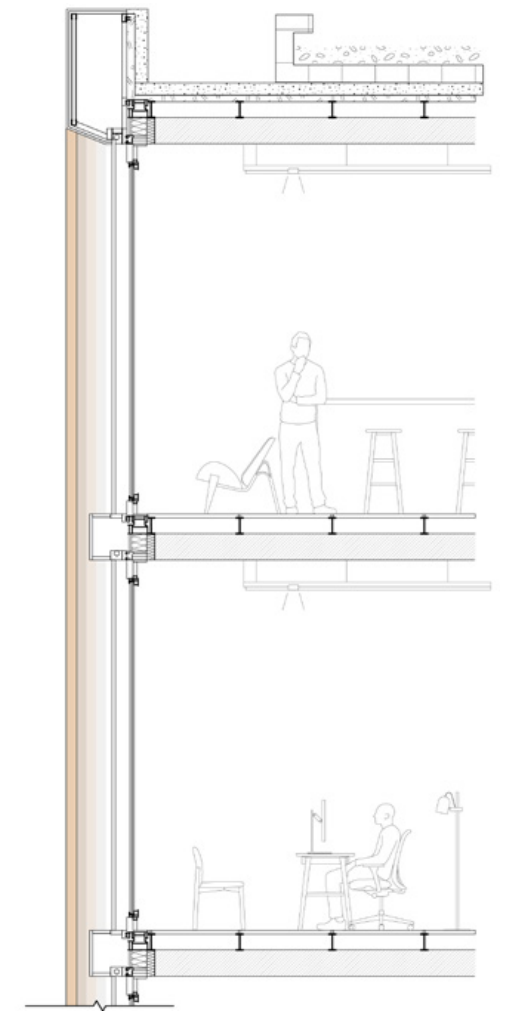
Office Tower Facade Section

The design of the office spaces varies from floor to floor, offering flexibility in use. The thickness and orientation of the central spine ensure ample natural light while providing intermittent north-facing views through the grille openings. This design also helps maintain privacy by shielding the office building from the residential area to the south.
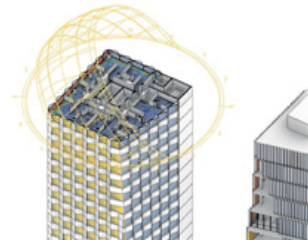

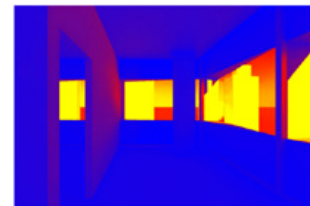Office Tower Facade Shading Analysis
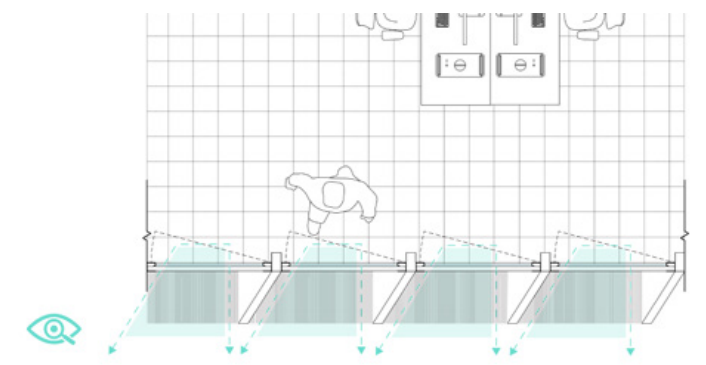
Office Tower Facade Viewing Analysis

Residential Tower Radiation

Residential Tower Sun Path

Residential Tower Radiation Render
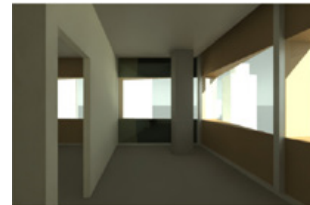
Residential Tower Reallife Render

Our proposal combines two different facade types: a thicker residential facade and a glass office facade. Both facades are subject to the optimization of architectural parameters that vary throughout the building height (low, medium or high).

Final Choice of Facade Format

Final Choice of Facade Density
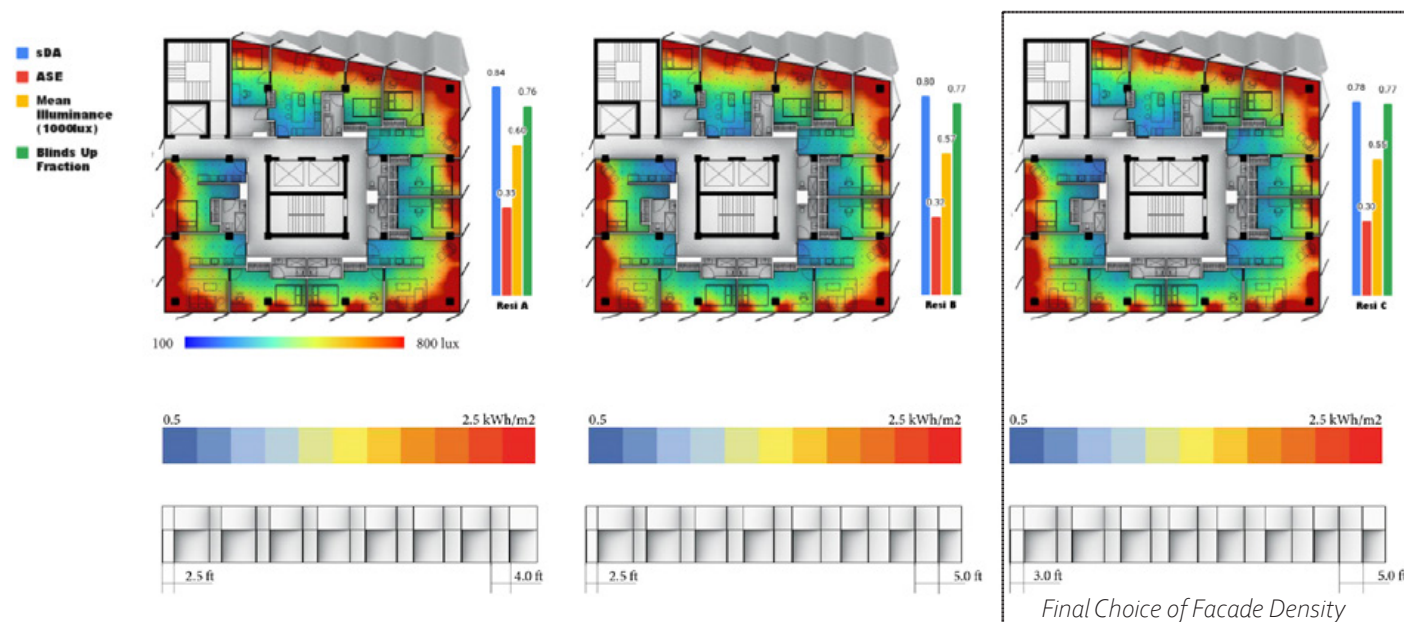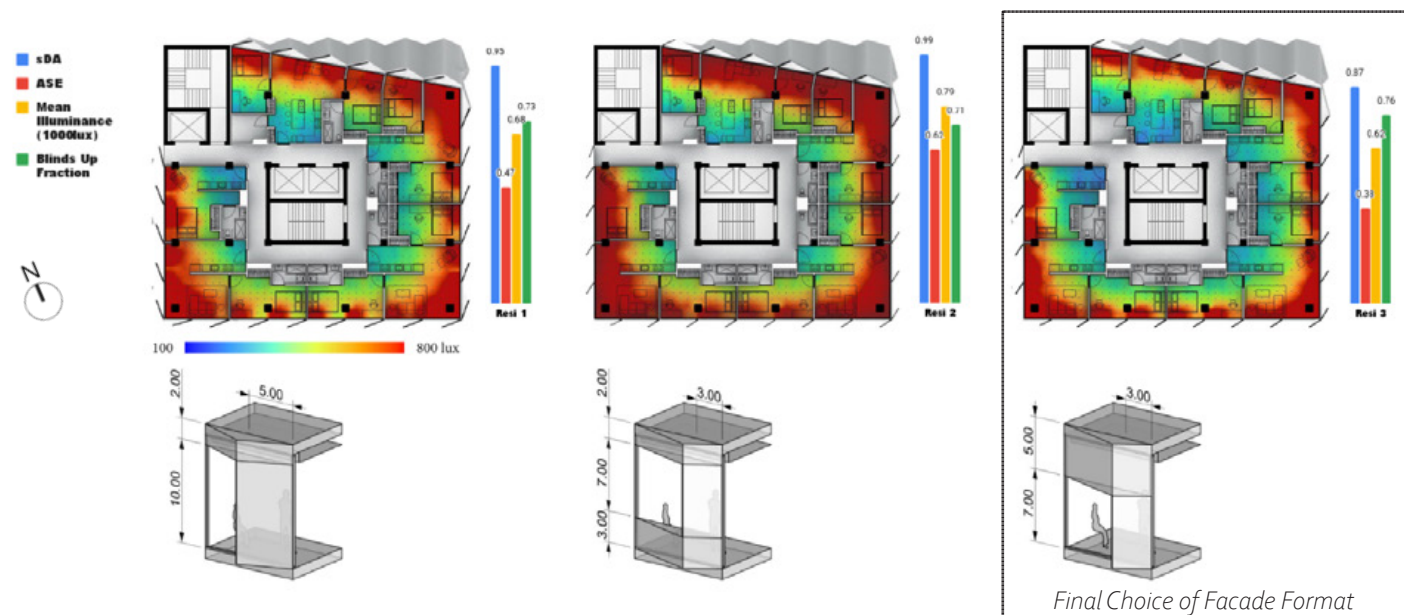
Residential Tower Daylight Avalibility

Concrete Horizontal Frame

Vertical Concrete Frame

Exterior sun protection
Opak series as a glass panel

Opening limit vertical slab concrete finish

Rolling Cabinet

3X sun protection glass

Vertical Concrete Structure
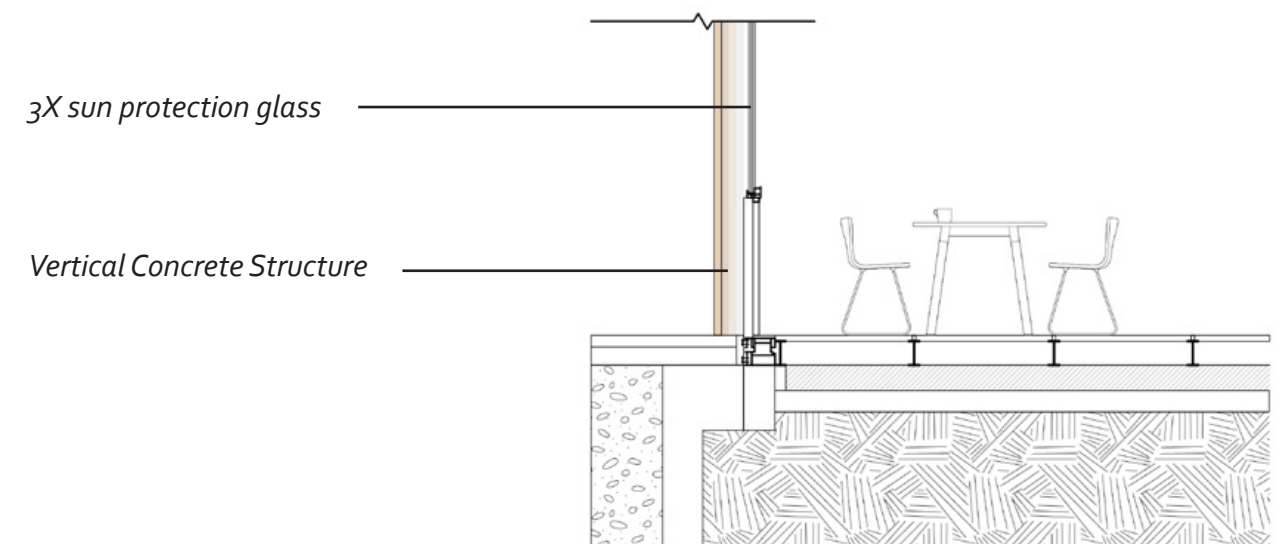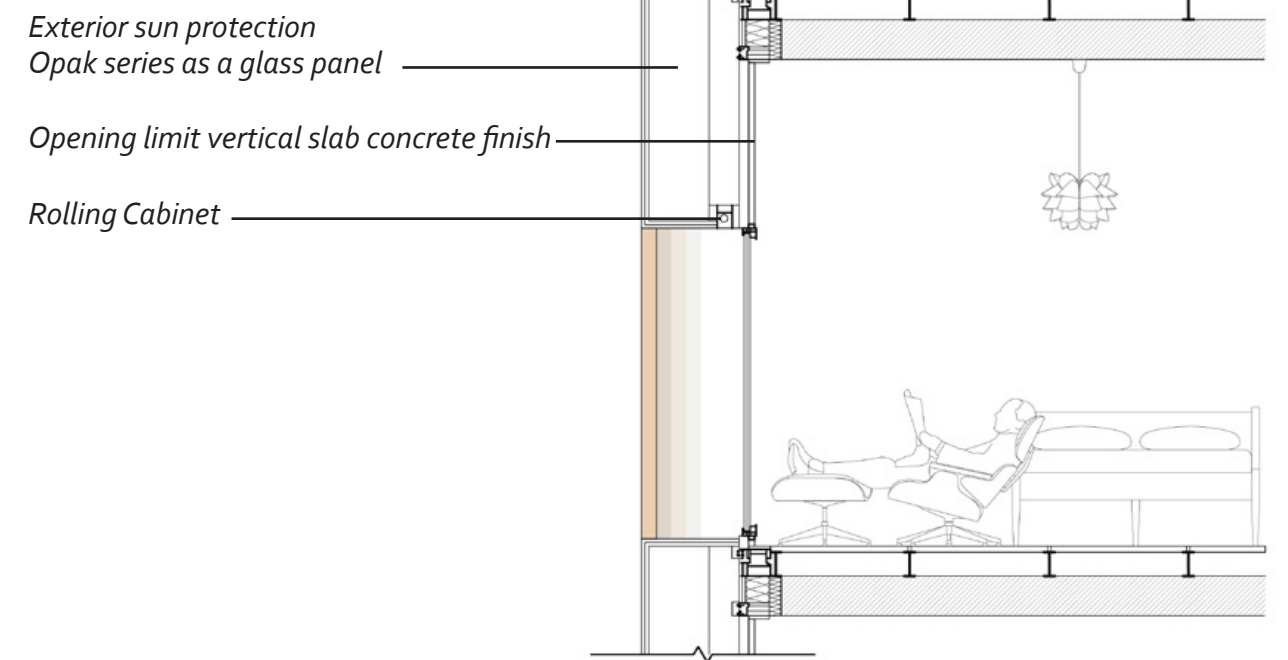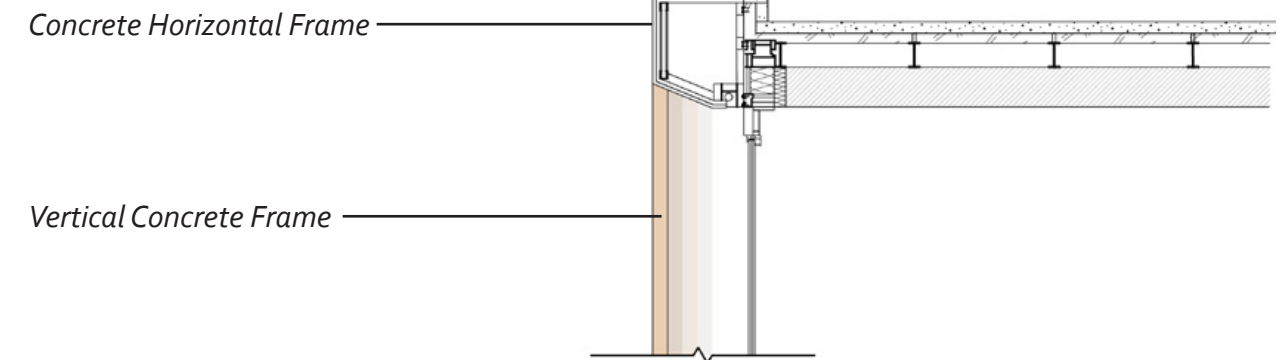
Residential Tower Facade Section

3 |

Claustrophobia
Redesign Space for Claustrophobia

Academic Works

Date_Spring 2025
Indivudual
Instructor_ Olonso Ortega
Anthony Clarke
Site_ 1227 Broadway, New York, NY 10001

*Redefines Claustrophobia by integrating
Computational Design to enhance spatial
experience and psychological well–being. It
challenges participants to explore innovative
ways to address enclosed environments,
focusing on collaboration across the
development, architecture, engineering, and
construction (DAEC) industries. It also draws
inspiration from advancements in neuroscience
and immersive media to improve spatial
perception and emotional responses within
confined spaces.*

The Beekman, A Thompson Hotel
123 Nassau St, New York, NY 10038

Sephora and other Connected Retail Space
175 Broadway, New York, NY 10007

The King's College
56 Broadway, New York, NY 10004

N
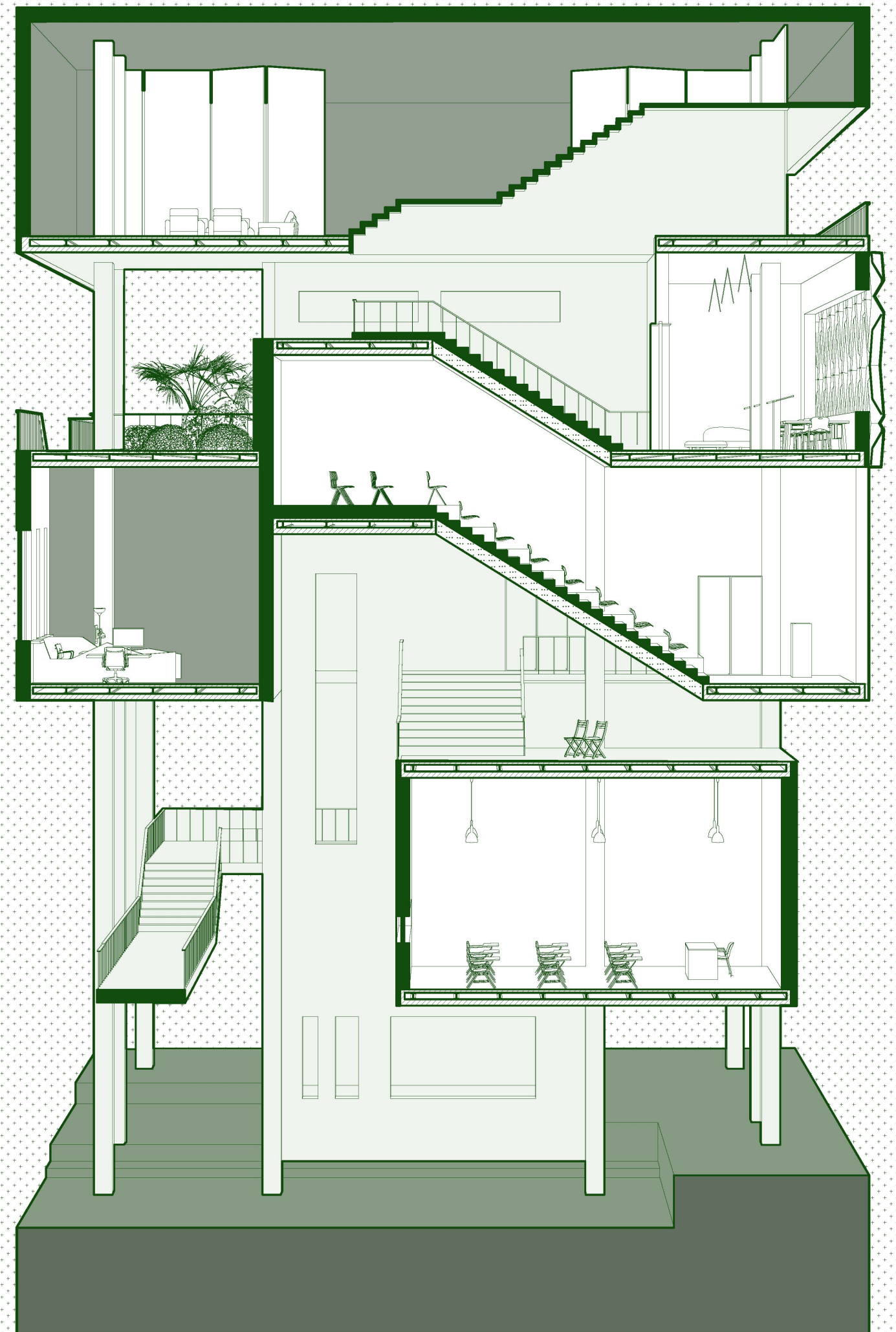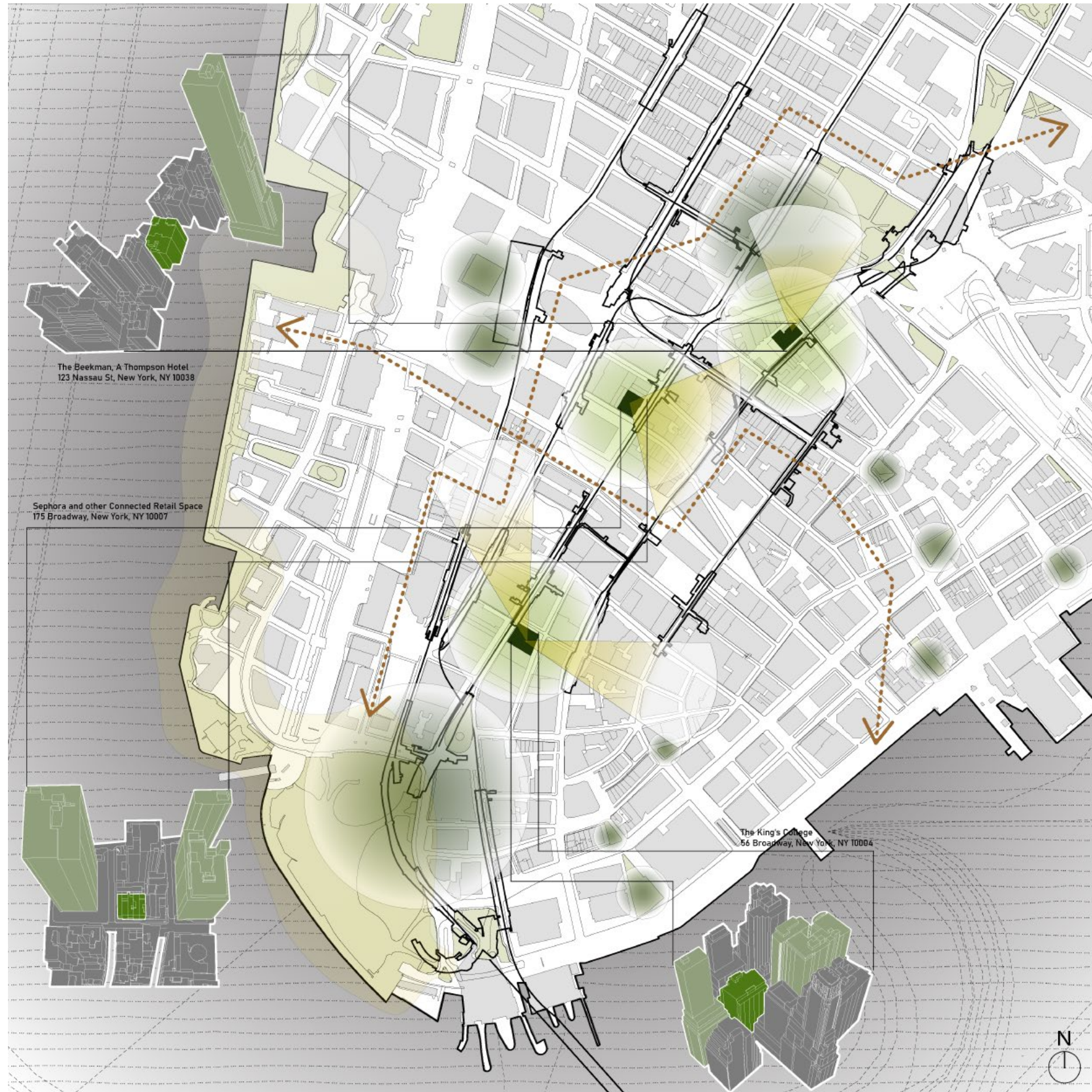
Adaptation
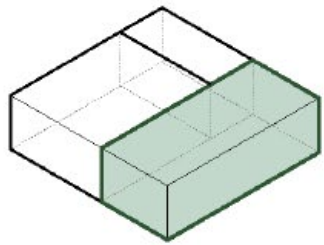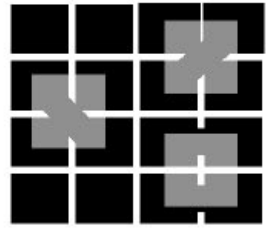
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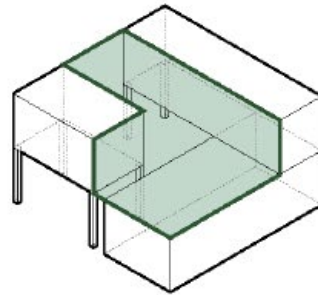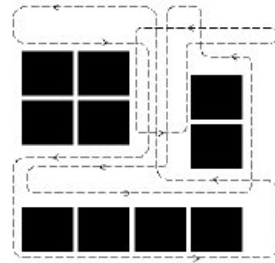
Extremism
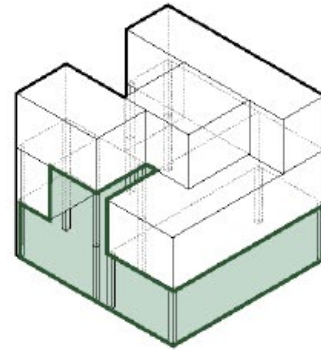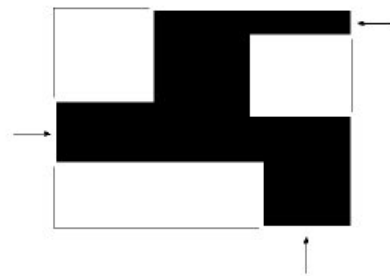
Fear
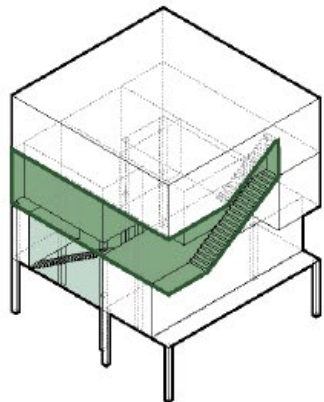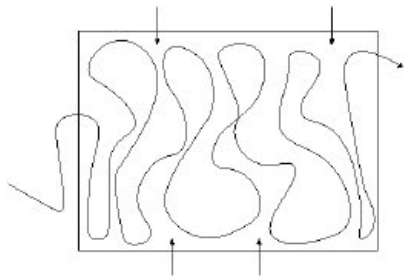
Rebellion
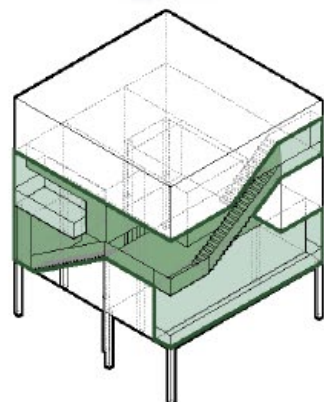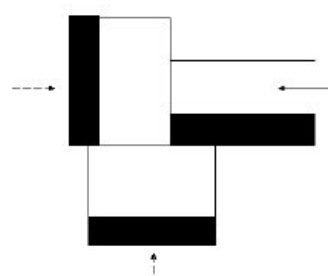
Growth
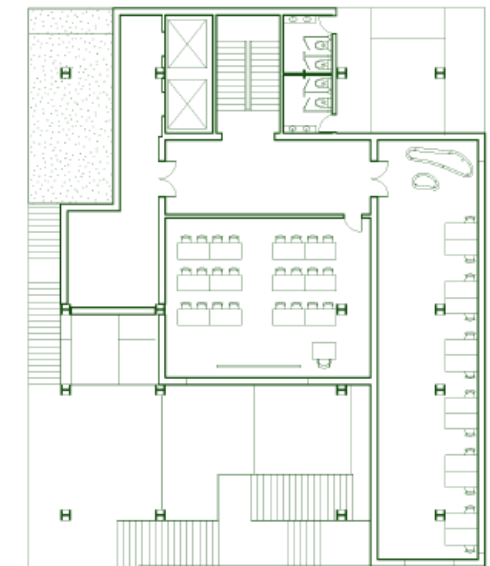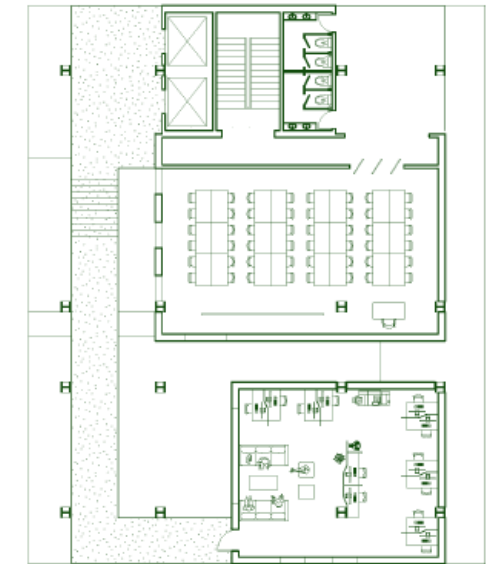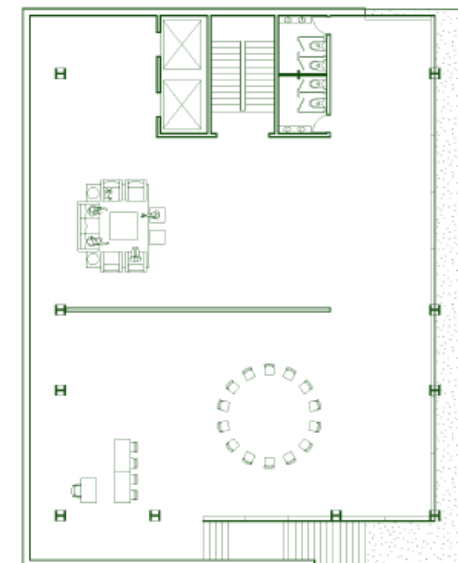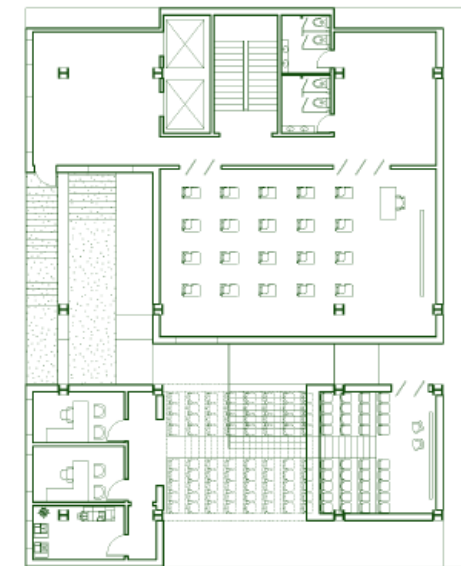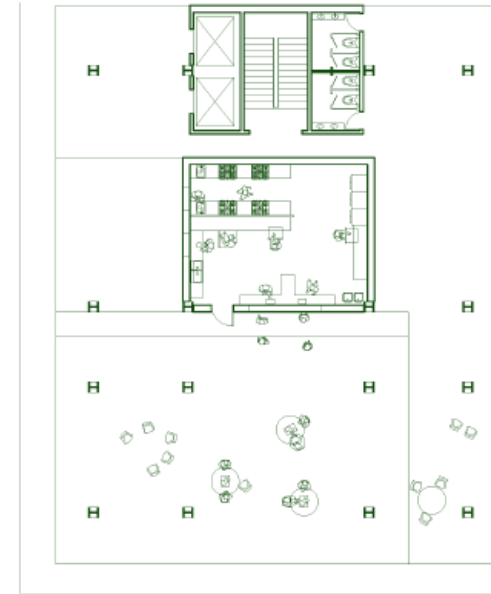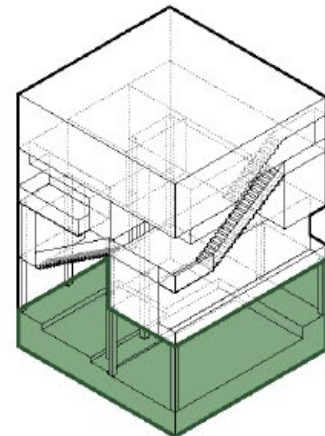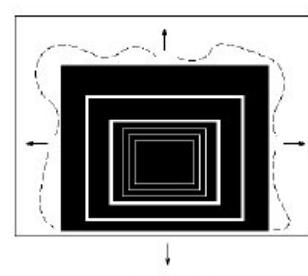
PLAN

- Just as a city should not have only one kind of citizen,
- Architecture should not have only one kind of façade.

- Fragmented volumes are connected by elevated streets
- The university academic building is no longer a singular image representing classrooms.
- It becomes a stage that embraces richness and complexity,
- A vertical flow of air and streets,
- A campus life that belongs to everyone.

RECOMBINANT RENAISSANCE

Cen Shen_cs4497

Prof. Mark Rakatansky

The architecture of the Church of SAN Andrea: Bernini's Baroque Spatial Poetics

Introduction: Architecture serves as a sacred theater

At the Church of SAN Andrea on Mount Quillinale in Rome, Gian Lorenzo Bernini integrated architecture, sculpture, painting and ritual activities, transcending the boundaries of traditional art forms. Scholars Owen Lavine and Giovanni Carrillo both explored the significance of this space as a milestone of Baroque innovation from different perspectives: Lavine emphasized that Benini organized visual art into a cohesive dramatic whole, while Carrillo interpreted the church as a ritualized stage, meticulously arranging the physical elevation of the audience from marism to redemption. Although their methods are different, both of these interpretations are based on Bernini's architectural techniques for spatial sequences, vertical layers and light and shadow effects. This article holds that the Church of SAN Andreas perfectly demonstrates how architecture itself - not only as a container for other media, but also as a positive medium - can create a unified aesthetic and spiritual experience. This article analyzes the axial layout, section composition and lighting design of the building from the perspectives of Lavine and Carrelli, revealing the dual roles of Baroque architecture as a medium of theology and drama.

Historical and religious background: The church and its Roman environment

To fully understand Bernini's architectural poetics, it is first necessary to recognize the profound religious nature contained in the urban and cultural structure of Rome. By the 17th century, Rome not only became the capital of the Catholic world, but also a stage to reaffirm the victory of the anti-Reformation. After the Council of Trento (1545-1563), the Catholic Church attempted to reaffirm its doctrinal and aesthetic authority, and this was most strongly reflected in the architectural environment of Rome. The construction or renovation of churches aims to evoke a sense of awe, invite people to participate, and visually convey the hierarchy of sacred truth. Just as Rudolf Wittcole said, "Rome in the Baroque period was a persuasive city - a theater of faith, and every spatial posture played the role of rhetoric" (Wittcole, 88). In Rome, architecture was no longer merely functional but a carrier of ideological expression. On this sacred land, Bernini

was both an artist and a theologian. He transformed architectural space into a medium that embodied faith.

Before delving into the interpretation framework, it is important to understand the history and urban background of the Church of Saint-Andre Quirinale. The church was commissioned by the Jesuits and was built between 1658 and 1670, designed during the reign of Pope Alexander VII. The characteristic of this period was that, in response to the Protestant Reformation, Catholicism reemphasized its grandeur and spatial persuasiveness. This site is located on Quignar Hill, one of the highest points in Rome. Historically, it has been closely related to the power of the empire and the church, symbolically reinforcing the core upward movement of Jesuit theology. The Jesuits are renowned for their rigorous academic attitude and missionary enthusiasm, regarding architecture as a tool for teaching and spiritual transformation. The compact urban environment and striking elliptical floor plan of the church not only embody the elevated theological message but also reflect the ambition of Baroque architecture, which is to transform the dense urban texture into an immersive sacred experience space. As Richard Crowtheimer observed, "The Roman Baroque church was both a participant in the liturgical service and a participant in urban construction", serving not only the believers but also shaping the city (Crowtheimer, 102).

Theoretical framework: Two complementary interpretations
Owen Lavine and Giovanni Carrei offer two distinct yet deeply complementary interpretations of Bernini's Church of SAN Andrea, both emphasizing the core role of architecture in building a unified spiritual and sensory experience. Lavine expounded Bernini's idea with the concept of "bel composto" - a Baroque ideal that held that architecture, sculpture and painting were not simply combined together, but merged into an inseparable whole. He described Bernini as a spatial master whose genius lies in "integrating architecture, sculpture and painting into a unified composition that transcends the boundaries of each medium" (Lavine, 112). Lavine believes that architecture is not a passive container but an active participant in visual drama. The audience is not merely onlookers but is drawn into a meticulously choreographed experience: "The spatial dynamics designed by Bernini bring the viewers into a dramatic experience, where the architecture is both a stage and an actor." (Lavine 115)

Carri further developed on this basis, but shifted the focus from vision to physical experience. He emphasized that the spatial sequence of the church "has meticulously planned a ritual journey, guiding believers from the secular realm to the sacred realm." (Carrey 89) This echoes the performance. The positive structure of Jesuit spiritual practice. In this sense, the audience not only participates visually, but also physically and emotionally. Just as he said, Bernini's designs "engage the body and senses to create an immersive environment where architecture and piety interweave" (Careri 92). The architectural analysis website WikiArquitectura supports the views of the two scholars, further pointing out that the elliptical plan played a key role in achieving this integration, and stating that "architecture, painting and sculpture jointly tell the story of Saint Andrew, immersing believers in it" (" Saint Andrew in the Church of Quirinale "). Therefore, whether through dramatic composition or ritualistic parades, Bernini's architecture constructs a dynamic field where space, body and narrative converge - an experience that is both spatial and spiritual, both rational and transcendent.

Spatial Analysis: Architectural Narrative
The core of the Church of SAN Andrea lies in Bernini's ingenious use of space. It not only serves as a carrier of religious art but also as a tool for theological narrative. The oval floor plan of the church is a hallmark of Baroque spatial experiments, setting it apart from the traditional rectangular basilica. This geometric shape guides the viewer's gaze inward and upward, promoting both visual focus and physical movement. As Lavine observed: "The spatial dynamics of Berinini bring the viewers into a dramatic experience, where the building is both a stage and an actor" (Lavine, 115). The oval layout becomes a spatio-temporal mechanism for immersive experiences and parades.

From a geometric perspective, Bernini's use of form is well-considered and innovative. Although he initially followed Selio's oval church model, later he introduced subtle variations to adapt to a more dramatic spatial rhythm. As a detailed spatial analysis explains: "Although Bernini initially followed the traditional elliptical plane of Selio's rule, he later innovatively changed the geometry to support spatial organization" (Blunt 67). These changes - the curvature of the wall, the proportion of the dome and the axial tension - create a sense of movement and emotional climax, and reach their peak as people approach the altar.

The segmented composition intensifies the ascending narrative, from the martyrdom of Saint Andrew depicted in the altarpiece, to the sculptural figures rising from the frame, and ultimately reaching the dome filled with light. This ascending path is illuminated by a hidden window, creating what Careri calls "the ritual journey that leads believers from the secular to the sacred" (Careri 93). The layer-by-layer arrangement of images, sculptures, buildings and lights reflects the spiritual practice of the Jesuits, that is, believers gradually elevate their understanding of the sacred through guided reflection.

Just as one study poetically described, the church turned into "a sacred opera composed of stone, plaster, paint, gold foil and lights", a "holistic work of art" (Blunt 71) that integrated all artistic elements into a sensory and theological performance. This dramatic unity is reflected not only in aesthetics but also in the spiritual aspect. Arnold Smitz interpreted church architecture as the path to moral transformation. He wrote: "Temptation seems irreconcilable with conversion..." Therefore, believers pray: "Do not lead us into temptation, but deliver us from evil" (Smits 44). In his view, the church is not only immersive in space but also morally instructive - its architecture gently forces believers into an introspective state.

This interaction between moral transformation and spatial allocation can also be interpreted through Michel Foucault's Heterotopia concept - an otherworldly space that simultaneously reflects and distorts the real world. Foucault wrote: "Heterotopia are Spaces distinct from all the places they reflect and talk about" (Foucault 24). From this perspective, the Church of Saint Andrea is not merely a reproduction of the order of Heaven, but rather a space for spiritual inversion: the secular is suspended, and the sacred becomes within reach through spatial arrangement. It is a place of transformation where the abstract concepts of theology are materialized through architecture.

Therefore, the space of the Church of SAN Andrea not only carries religious significance, but also creates such significance. Through precisely calculated geometric shapes, vertical layers and elaborately designed light, Bernini transforms architecture into narrative and ritual, where faith is not only manifested but also practiced through the space itself.

The achievement of architectural unity

Bernini's Church of SAN Andrea not only achieves visual grandeur or structural innovation, but also realizes a highly condensed spatial unity, integrating narrative, theology and sensory immersion into a single architectural experience. This sense of unity is not only reflected in form or style, but also in perception and atmosphere. Just as Peter Zumthor's famous saying: "Architecture is the art of creating buildings that can evoke a specific atmosphere and embody a specific sense of presence" (Zumthor 13). In the Church of SAN Andreas, existence is sacred, shaped by the seamless integration of spatial geometry, material texture, controlled light and meticulously arranged movement.

This immersive unity is manifested both visually and physically. The elliptical plane, axial arrangement and vertical ascent jointly create a spatial field, and each architectural element together constitutes a narrative trajectory: the martyrdom of Saint Andrew and the heavenly glory. Gernot Bohme's phenomenological insight that "we must be on the scene to fully experience a space" is particularly appropriate here - Benini's designs require viewers to move, look up, and stay in the composition that expands around them (Bohme 25). The harmony among the plane, section and decoration is not only understood intellectually, but also reflected physically.

Furthermore, Juhani Pallasmaa's theory that "the essence of architecture lies in its multi-sensory engagement" is vividly embodied here (Pallasmaa 40). The texture of gilded stucco, the contrast between the light and shadow of the niches and the bright dome, as well as the echo effect, jointly create a spatial atmosphere that transcends visual aesthetics. In this sense, unity does not refer to consistency, but rather synthesis - combining different elements into a coherent whole that resonates with the viewer's mind and emotions.

Furthermore, this kind of spatial cohesion is closely related to the "atmosphere" theory. In his "New Phenomenology", the German philosopher Hermann Schmitz holds that atmosphere is an emotional field that permeates space and is generated at a collective level that transcends individual perception. He wrote: "Atmosphere is not a projection of subjective emotions, but a

perceptual structure that objectively exists in space" (Schmitz 19). In St. Andrew's Church, viewers do not experience the space alone; They are enveloped in the collective emotional field shaped by architectural language. This atmosphere-filled structure complements Lavine's "Visual Drama" and Carrey's "Ritual Journey", jointly creating an overall experience field that integrates the senses and the soul.

In this dimension, Bernini's design not only achieves formal unity but also assumes the role of psychological and spiritual guidance. Hal Foster pointed out when exploring spatial perception and physical participation: "Space is not the background but an event" (Foster 87). This statement is particularly appropriate in the Church of SAN Andrea - the church is not a passive place of worship, but a place of sacred practice. Space actively triggers emotional responses, elevating religious experiences from passive observation to concrete beliefs.

Further extending this contrast, Bernini's use of domes and natural light forms a striking contrast with Tadao Ando's modernist "Church of Light". Ando observed: "The sacredness of space does not come from decoration, but from the controllable interaction of light and shadow" (Ando 31). Bernini foreshadowed this centuries ago: the hidden skylight of the Church of SAN Andrea bathed the central space with sacred light, embodying what Ando called "the light of God, not the light of illumination". This upward light guides the viewer's gaze and consciousness towards a transcendent realm.

By integrating the atmosphere, body interaction and the spirituality of light, we can better understand how Bernini's spatial unity creates an eternal architectural experience. The Church of SAN Andrea integrates artistic forms with architectural structures and echoes physical perceptions with theological symbols. Its spatial language is not merely the framework of the ceremony; it itself has also become the medium of the ceremony.

Conclusion
At the Church of SAN Andrea, Gian Lorenzo Bernini created more than just a Baroque-style church - he composed a spatial theology. By integrating architecture, sculpture, painting, light and geometric shapes, Bernini transforms physical space into a narrative, leading the viewers

into an immersive spiritual drama. This article explores how two important scholars, Owen Lavine and Giovanni Carrelli, interpret churches from complementary perspectives: Lavine emphasizes visual integration, while Carrelli emphasizes ritual arrangement. This study, supported by additional spatial analysis and architectural theory, demonstrates how Bernini's design - elliptical planning, vertical layers and elaborately designed lighting - constructs a unified spatial field to express and practice beliefs.

The architectural unity discussed in this article lies in the experience rather than merely in form. The church guides visitors from passive onlookers to active participants. Just as theorists such as Zumto, Palasma, Schmitz, and even Foucault have reminded us, powerful buildings attract people through atmosphere and concrete feelings. Benini understood this point intuitively. His church must be moved, elevated and experienced over time. Its unity is not static - it gradually unfolds in rituals, light, reversals and life.

Ultimately, the Church of SAN Andrea proved that in Baroque architecture, space is not merely structural - it also possesses emotional, theological and transformative qualities. The eternal achievement of Berni lies in transforming architecture into a tool of inspiration, making stone, movement and radiance the carriers of spiritual collisions.

Bibliography:

Ando, Tadao. The Architecture of Silence: Designs for Meditation. Rizzoli, 2006.

Blunt, Anthony. Baroque and Rococo: Architecture and Decoration. Harper & Row, 1978.

Böhme, Gernot. Atmosphere as the Fundamental Concept of a New Aesthetics. Routledge, 2016.

Careri, Giovanni. Bernini: Flights of Love, the Art of Devotion. University of Chicago Press, 1995.

Foster, Hal. The Art-Architecture Complex. Verso, 2011.

Foucault, Michel. Of Other Spaces: Utopias and Heterotopias. Architecture /Mouvement/ Continuité, 1984.

Lavin, Irving. Bernini and the Unity of the Visual Arts. Oxford University Press, 1980.

Pallasmaa, Juhani. The Eyes of the Skin: Architecture and the Senses. Wiley, 2005.

Sant'Andrea al Quirinale. WikiArquitectura. https://en.wikiarquitectura.com/building/santandrea-al-quirinale/. Accessed 5 May 2025.

Schmitz, Hermann. New Phenomenology. SUNY Press, 2011.

Smits, Arnold. The Sacred and the Architecture of Transformation. Liturgical Press, 1999.

Zumthor, Peter. Atmospheres: Architectural Environments, Surrounding Objects. Birkhäuser, 2006.