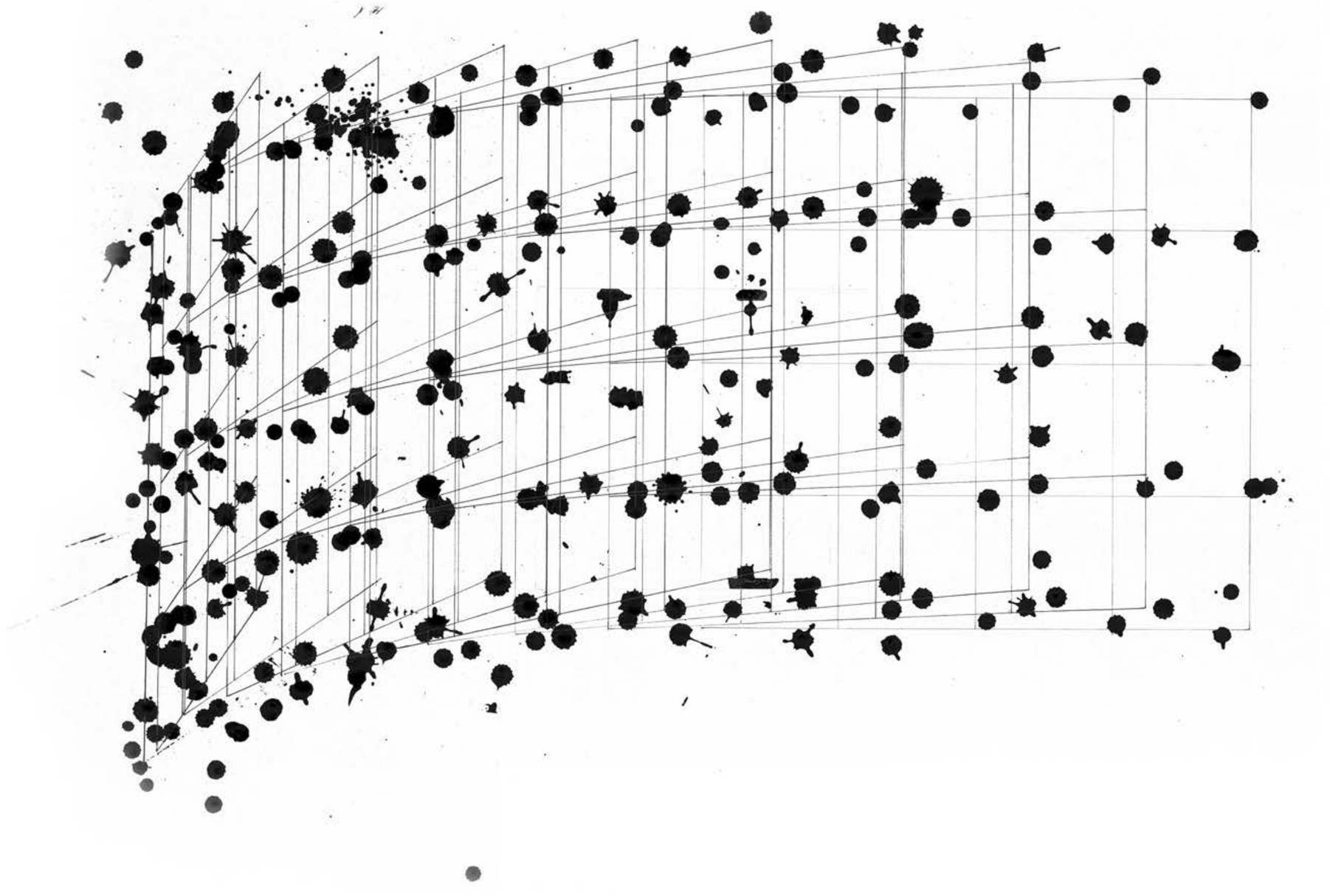


ZINAN CHI

Selected Architecture Work 2019 - 2022
Harvard Graduate School of Design
Master of Architecture I AP

01

DUO
Architecture at a Crossroads

Four Buildings around a crossroads
NYC, US
Fall 2022
Critic: Preston Scott Cohen

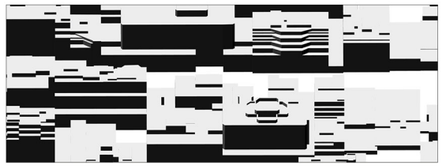
GSD Architecture Option Studio
Distinction

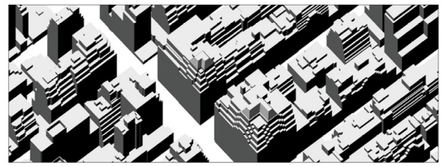
The studio discusses the relationship between architecture and its urban context. Around the crossroads of 7th Ave and 23rd Street in New York City, four buildings altogether contribute to the urban argument. Due to the unprecedented collaboration of four sites, the project is conceptual yet practical.

With the 1916 zoning laws, NYC depicts an aggregation of buildings with a solid wall along the streets and the setback terrace above. The City inherits this formal language till more and more entropies appear. Those entropies tend to break this aggregated whole. Now, architecture is at a crossroads. It can follow the existing totality of the urban image or speak louder for the designers' authorship as one of the entropies.

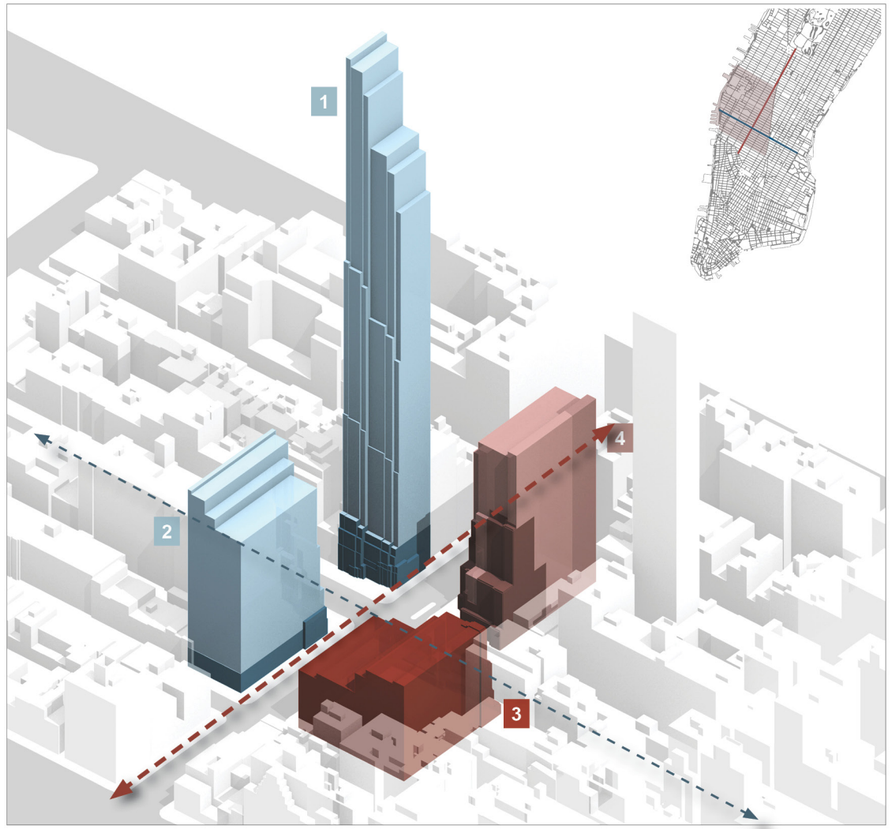
The four sites are located at the intersection of 7th Avenue and 23rd Street in Chelsea Neighborhood, populated by mid-rise or high-rise residential buildings. The DUO complexes provide one residential tower, one residential high-rise, one office high-rise, and a warehouse-like public community center equipped with a public library, art galleries, and music rooms.

DUO complexes reinterpret the wall and setback from the NYC urban texture and form its argument with a duality along 23rd Street and 7th Avenue. Connecting to Time Square, the facade along 7th Avenue takes the modern strategy with glass cladding, revealing the indoor life of the city. However, along 23rd Street, it immerses into the quiet neighborhood by the brick facade with repetitive window puncture. The setback is a formal gesture to bring the urban into domestic life.





NYC Aggregation -- Wall and Setback



1

L76 - 79
Penthouse

L5 - 75
Residential Housing
[Studio | one bedroom | two bedrooms]

L1 - 4
Retail | Residential Lobby
Gym | Study Room

2

L21 - 23
Penthouse

L3 - 20
Residential Housing
[Studio | one bedroom | two bedrooms]

L1 - 2
Retail | Lobby | Restaurant

3

L5 - 7
Area open for event hosting and public usage

L3, L4
Art Gallery, Artist work space | Chelsea Music Hall, Music practice room

L B1 - 2
Public Library,
Retail | Cafe

4

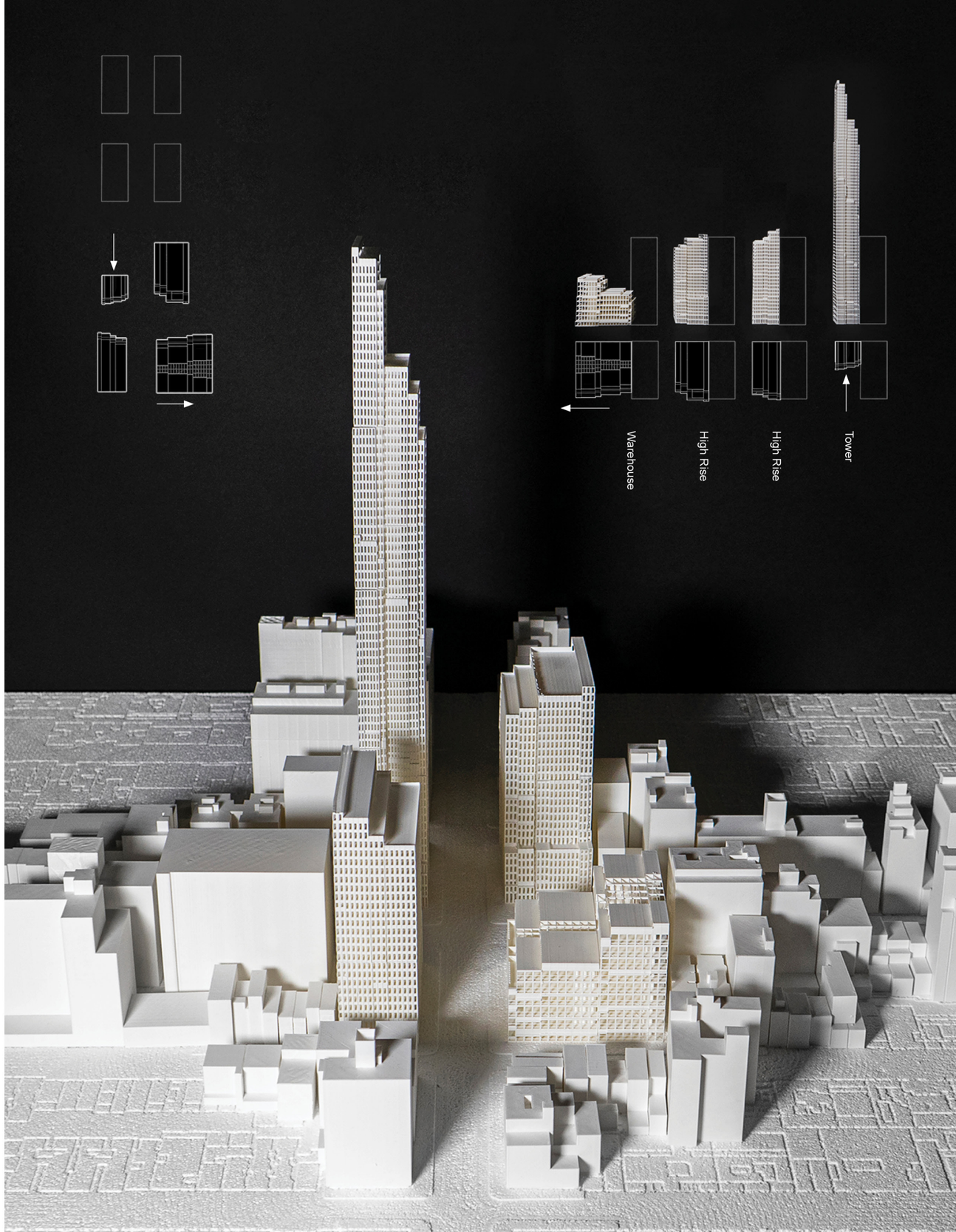
L3 - 18
Open office with meeting rooms | Public conversational space near the crossroads

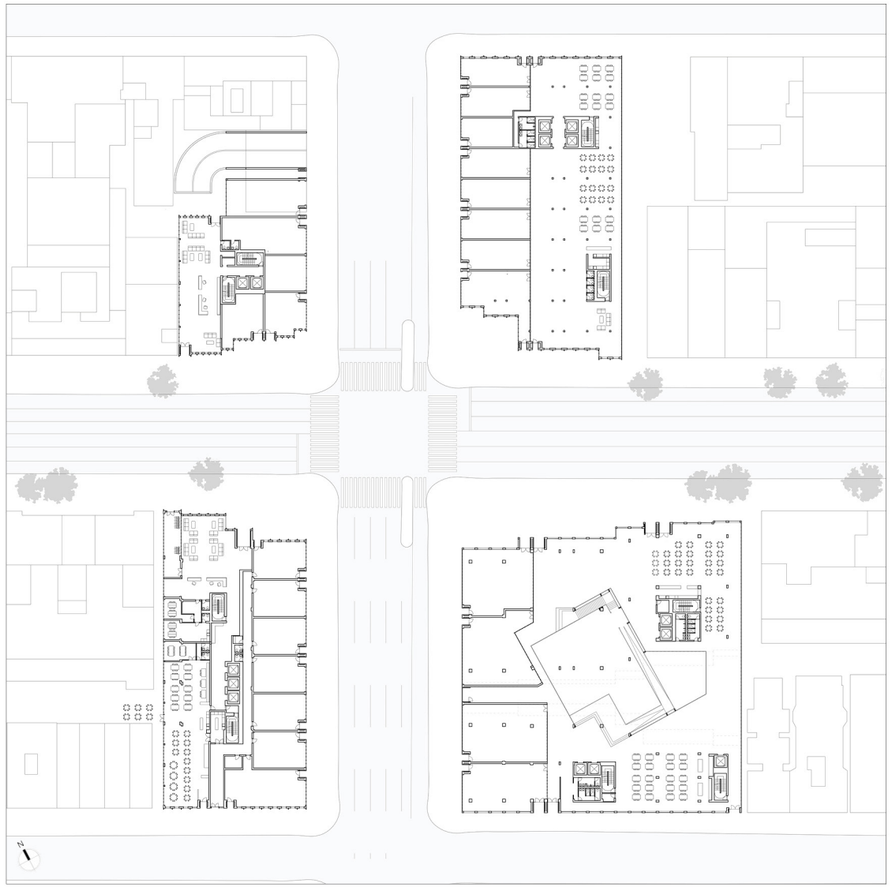
L1 - 2
Retail | Office Lobby | Cafe

- Public Program
- Office
- Common Space in office
- Residential
- Common Space in housing

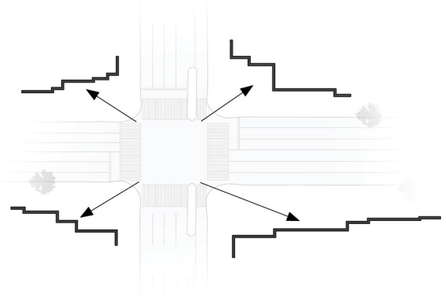
Slice and Scale

The massing starts from the equal treatment of the four corners, with volume spread equally among the four sites. The actual site constraints sculpt the building heights that the northwest volume grows higher to the tower typology; the southeast volume is pressed to allow more public flow on the ground floor, which reconciles with the warehouse typology. Inspired by Rockefeller center slices, an algorithm generates elastic slices. The different site dimension creates those slices in various scales, from facade relief to room size to building size.





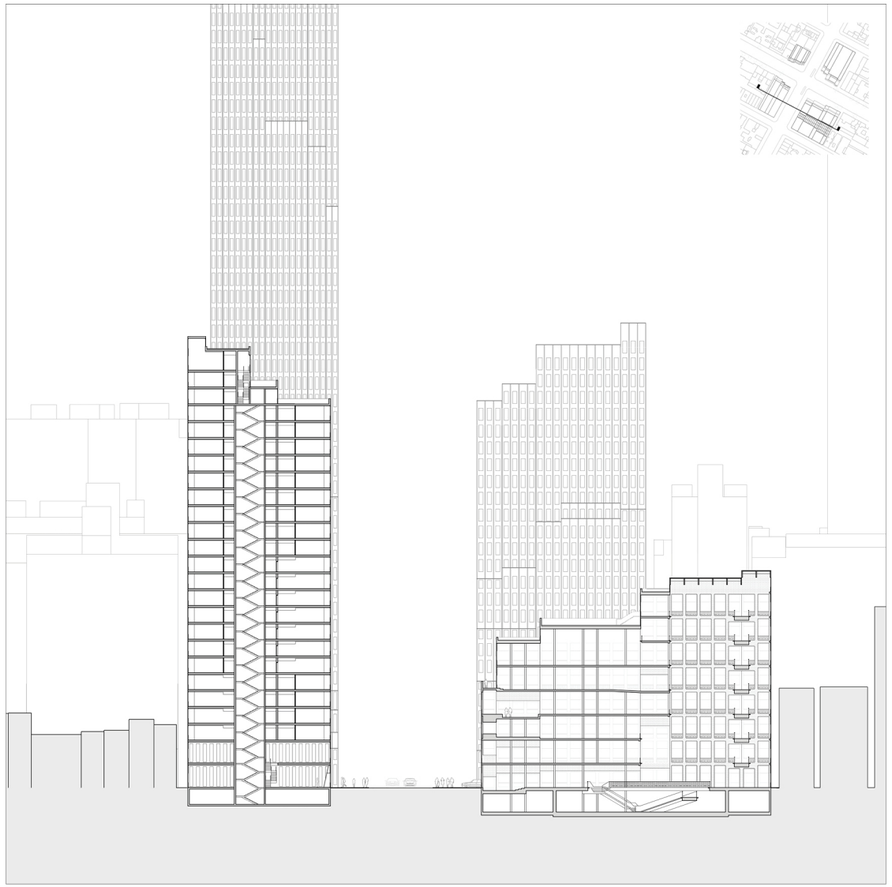
Ground Floor Plan

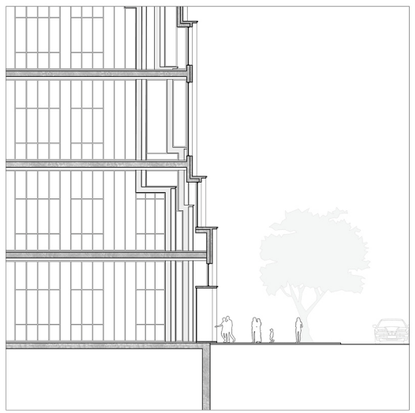


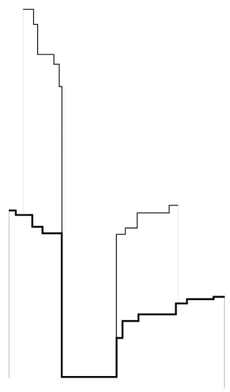
Domestic Out

Along 7th Ave, glass panels share the same vertical plane as the wall and display domestic life to the public. The alternation of operable windows, fluted glass, and translucent panels projects the interior as a pattern to the facade. The gap of slices is also filled with glass, allowing the domestic life to come out in layers.

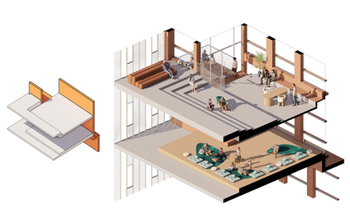
Views at the crossroads

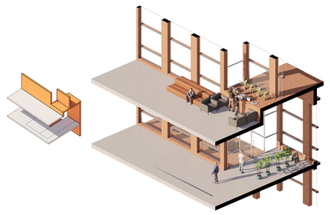


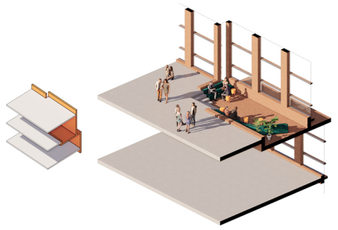


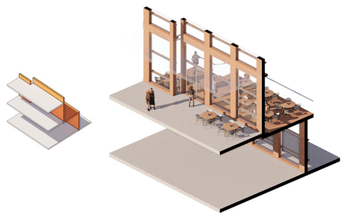


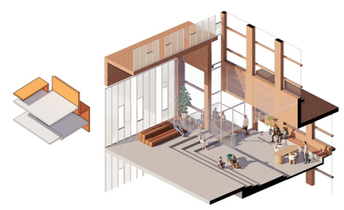
Top: Residential view to outside
Bottom: Public space with step seating to balcony











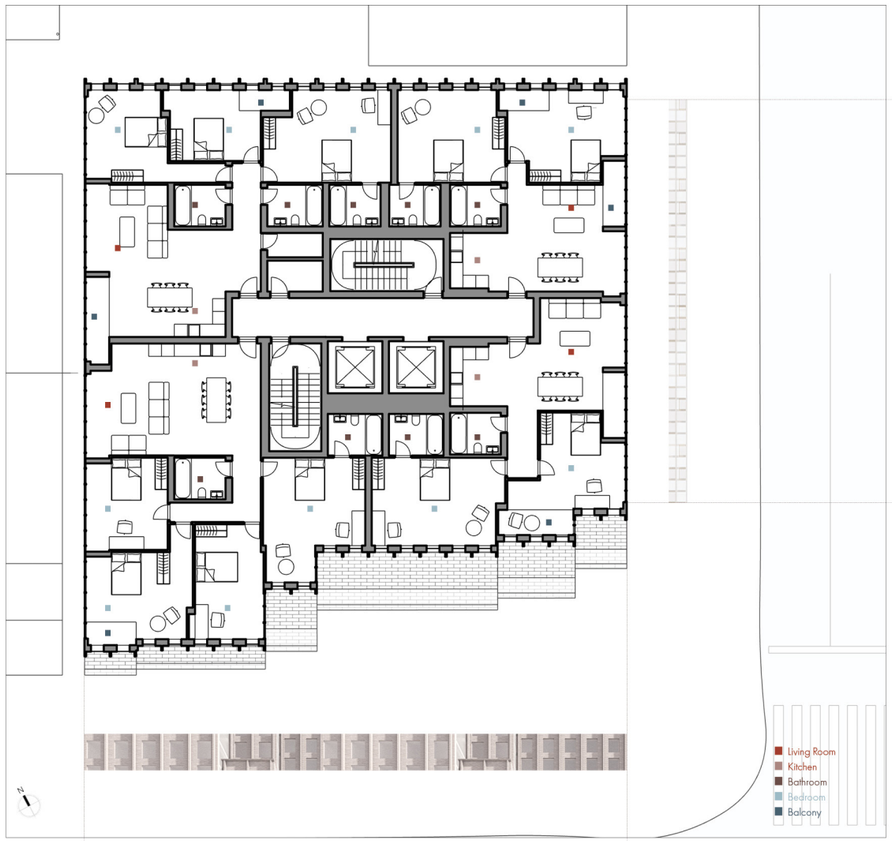
A. Intimate Playground Area
B. Sunken Seats

C. Outdoor Terrace
D. Outdoor Cafe

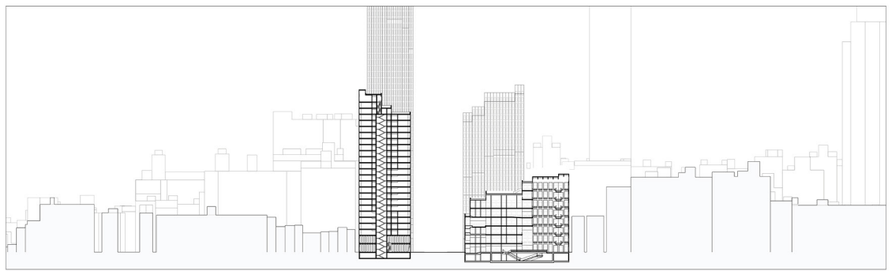
E. Vertical View Penetration
F Step Seating to Balcony

Urban In

The setback folds on the facade, especially for the public building on the southeast corner, influence the space inside. Inner space responds to urban intrusion with localized adjustments, like the double-height void, outdoor terrace, and balcony. Public space is sculpted by the urban force and creates playful bits to facilitate its function. The urban influence is not limited to the facade but merges into the inside.

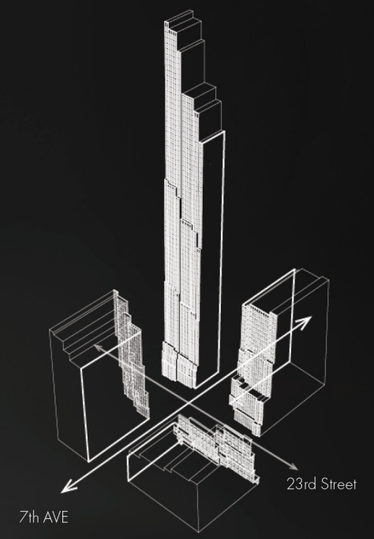


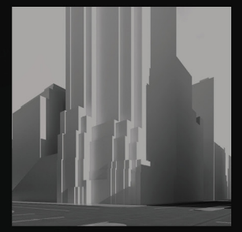
Typical Floor Plan

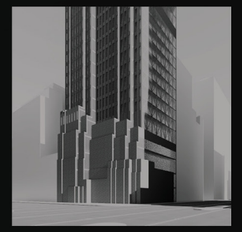


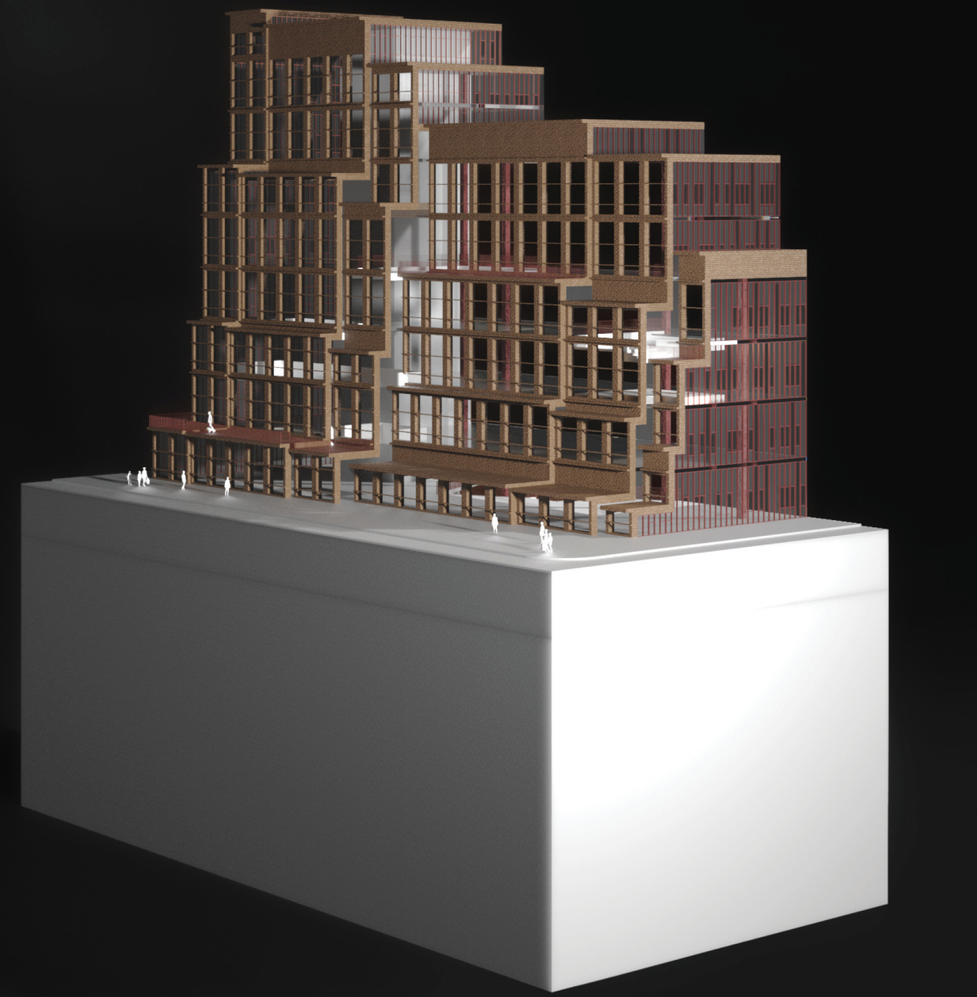
DUO, A Crossroads

Along the 7th Ave, operable windows alternates with fluted glass panels and clear glass panels, writing its domestic pattern on the urban scale. *In contrast, the brick material along the 23th street recaptures the pre-wall architecture aggregation in NYC. The duality extends from form (the* "Wall" and the "Setback") to materiality, introducing the duo concept in various scales so that people approach it in different scenarios.









02

AIRBORNE LIFESTYLE

Residential Complex in Drone's Era
Fall 2019 | St. Louis, MO
Instructor: Gia Daskalakis

WUSTL Option Studio

Introduced with Liam Young's video "I spy with my machine eye", this studio focuses on addressing the convenience and concerns that drone technology brings to people.

Located in the south of Arch Ground in St. Louis, the site faces the water level

In the future, unmanned air vehicles, such as drones, are likely to be a prevalent means of transportation and logistics in cities. How will drone technology affect the ways that urban dwellers move around a city? How will architecture in the future respond to changes in urban circulation?

I developed a residential complex where upper levels serve as residential and low levels serve as public space connecting Chouteau's Greenway and the Arch Ground. The private residential unit doesn't share the same circulation as the public space because passenger drones, which may replace cars in the future, take residents directly to their individual units. The public program provides experimental performance space, theater, and studios that incorporate recreational drones.

While recognizing the convenience of drones, I also exposed the surveillance issue of drones when they eventually become ubiquitous in the public sphere. People walking on the site can be filmed by drones' built-in cameras and have their faces projected onto the facade of the building-- an over-exaggerated representation of technology's invasion of privacy that is already prevailing in today's society.

Expose the surveillance by Drones. Drones film people and the video is displayed on the facade of the Residential Complex
Render and Digital Collage

Left: Residential Complex Short Section | Digital Drawing
Right: Top: Residential Units Plan at 200'; Bottom: Public Program Plan at 85'

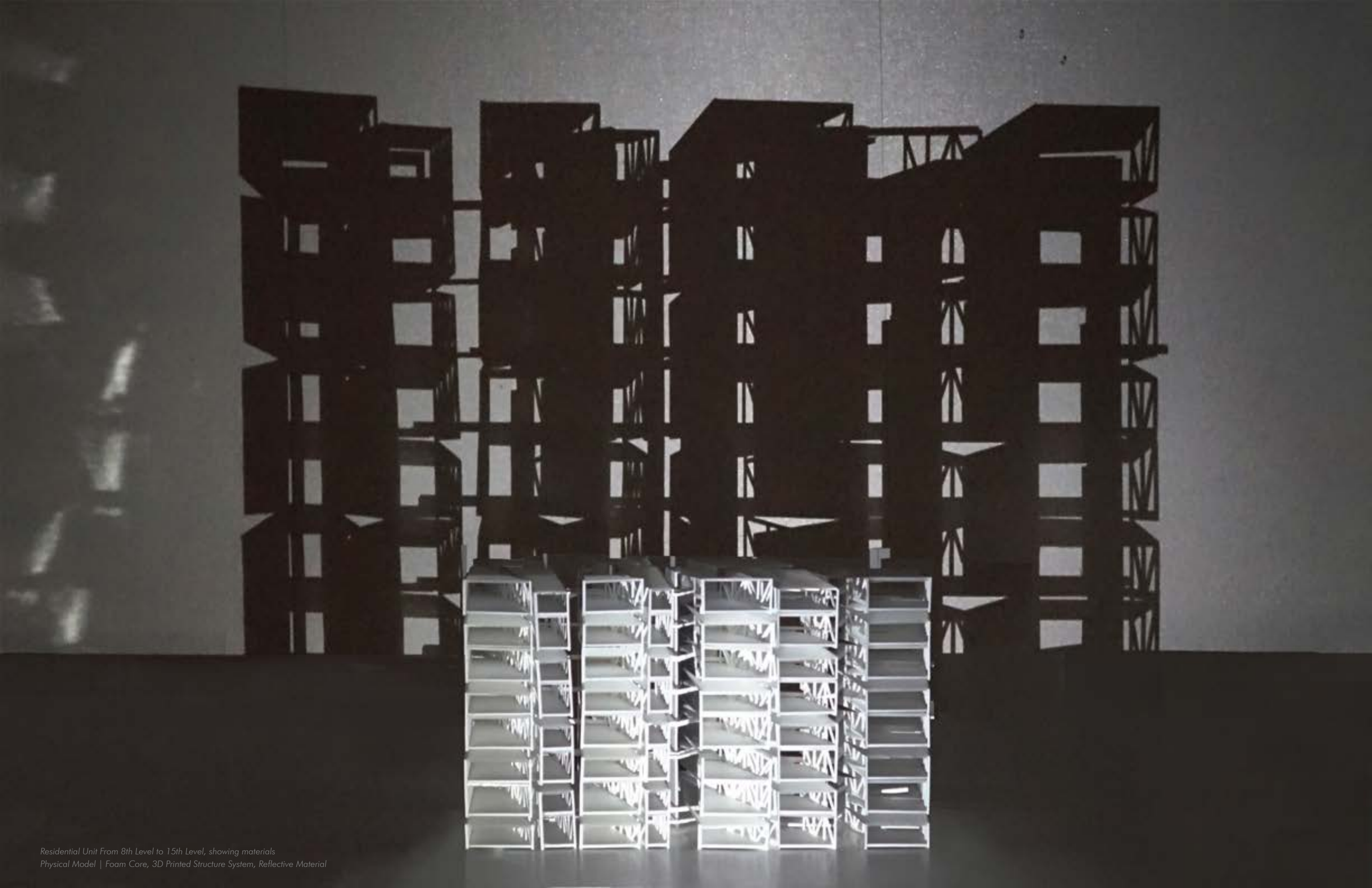
Gap | Eliminate Core System

The units are arranged to enable views towards the Mississippi River. The backside of the units faces the downtown area, providing drone parking for residents. The gap between the parking and unit works as the porch of the house. From the fourth level to the fifteenth level, residential units have no public circulation available. Without communal space nor a core system, this project serves as an experiment for future residential configuration. Instead of a core system, the steel structure system on both sides hold the cantilevered units and connects the individual units horizontally.

Drones Typologies

The building has portals designed for three kinds of drones: personal vehicle drones, delivery drones, and recreational drones. Personal Vehicle drones are parked in the back of the units facing the downtown area. Delivery drones can enter the units by the slit of each unit. Recreational drones are mainly used for entertaining on the ground level.

Left: Residential Complex Long Section | Digital Drawing
Right: Circulation Diagram | Digital Drawing



Residential Unit From 8th Level to 15th Level, showing materials
Physical Model | Foam Core, 3D Printed Structure System, Reflective Material

03

DISTRIBUTED GROUNDS MULTIPLE STRINGS

Housing Complex for 100 Units, Boston, MA
Spring 2021
Critic: Ron Witte
Collaborate with Inhwi Hwang

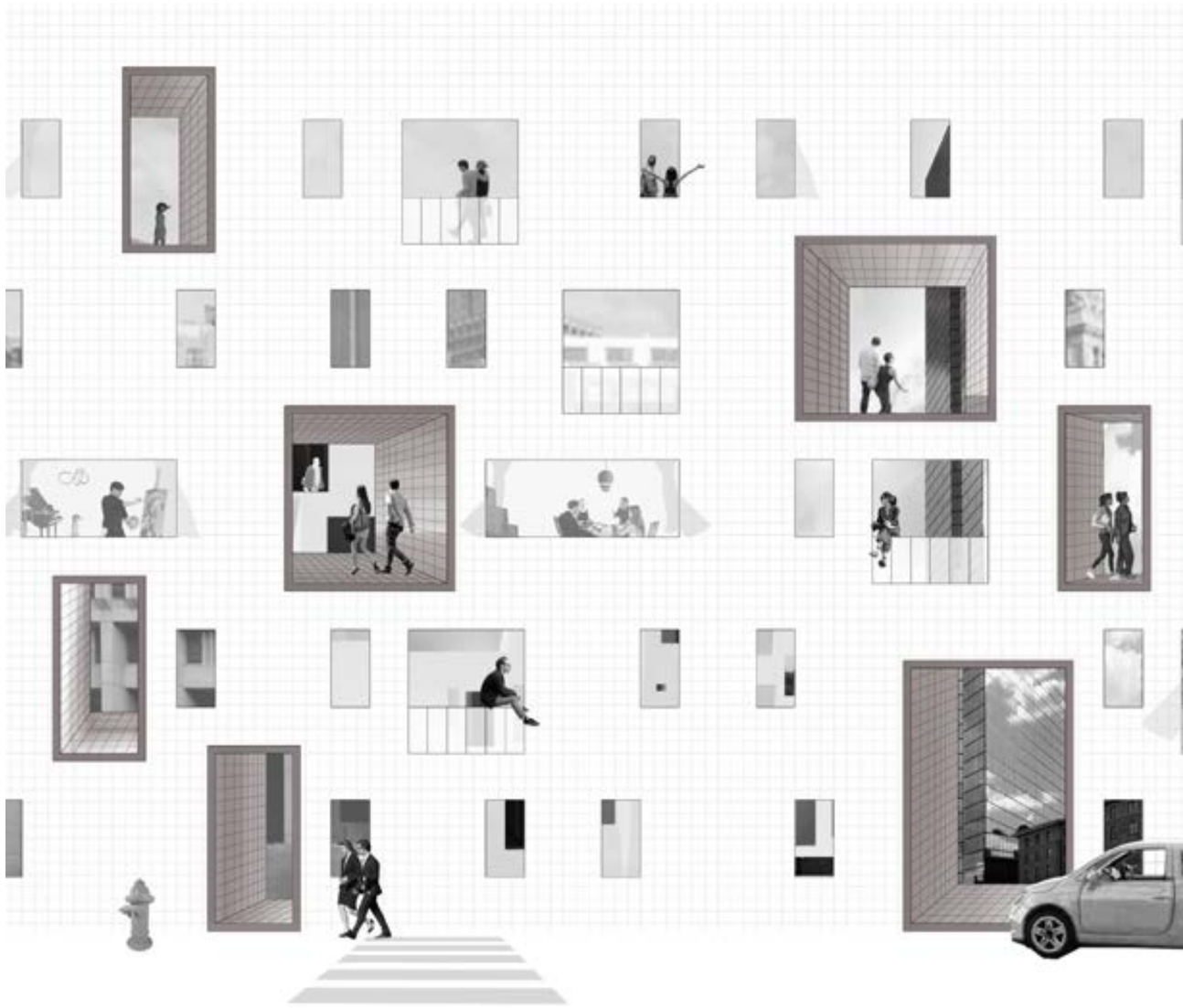
GSD Architecture Core Studio

The studio is aimed to investigate the relationship between a small room and a big room. By reconstructing a model of domestic life, collective space, and urban domain, a new way of livng for affordable housing for establishing a community

The project engages with critical problems of modern urban dwelling; lack of public ground and subsequent isolation from neighborhoods. The design approaches a new type of public life as an aggregation of multi-scalar publicness while respecting heterogeneity in private life. Here, the eccentric wall configuration creates small beads of collective life, forming various scenes of public life. Almost unnoticeable formal distinction between apartment unit and collective spaces extends a domestic life to a public domain, thus facilitating interaction between neighbors.

Galleries collect fragmented moments of publicness and organize them into a holistic experience. With strong directionality, galleries create a continuous sequence of public life present in the cluster. Simply by walking through a gallery, people situate themselves in dynamic publicness. Homogeneous matte brick façades toward the city provide a clear casing for the heterogeneous collective spaces stitched by galleries. The glazed brick finishing of the gallery then allows the urban backdrop to permeate into the existing public life of the clusters.

Synthesizing various scales of publicness, the project creates series of space for communication between individual living unit, neighborhood encounters, social gatherings, and ultimately to the broader urban life. Galleries further stitch different moments of public life into a holistic urban experience. Life here is no longer public versus private. Here, life is public, and public is life.



Galleries as the Third Facade Connecting Exterior and Interior

Gallery | Collective Space

A set of galleries slices through diverse housing blocks.
These galleries string together individual apartments, small beads of collective life, and views to the city beyond.
Across multiple scales, the sequence of shared spaces creates a diversified domesticity and dynamic publicness.

Massing Model Rendering

Multiple Grounds

Localized public life come into a holistic experience by a series of galleries. They go across different clusters and connect various scales of collective spaces including ground courtyard, roof terrace, and small beads of collective life. End of the galleries are toward the city, thus providing open views regardless of where people are located. Series of clusters are in different height to represent variety in individual life, while monochromatic white brick material adds unity.

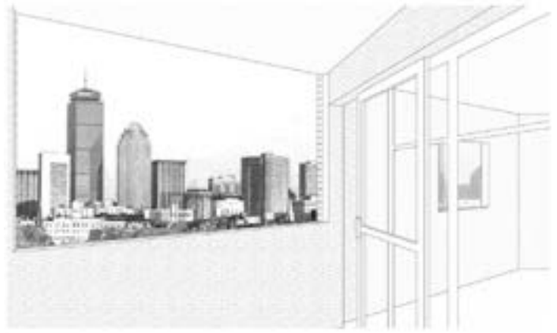
Upper: View on the Third Floor Gallery| Digital Rendering
Lower: View on the Fifth Floor Gallery | Digital Rendering

Views | Material

Galleries are defined by dark glazed brick cladding while the outer façade is finished by matte white bricks. The reflective material brings the urban views closer to the domestic life. People can see collective activities along the gallery. Random encounters pop up while they are walking along the gallery. The gallery provides people chance to communicate with neighbors, also the opportunity to experience novel public life.

Third Floor Plan with Three Galleries | Gridded Hard landscape on the Ground

A



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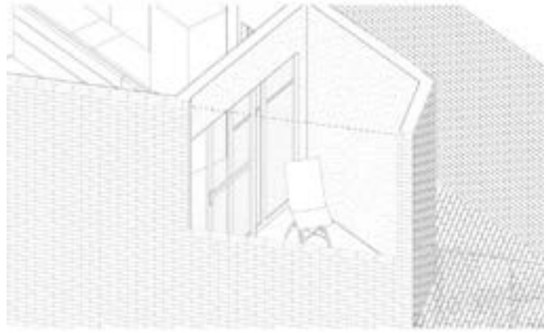

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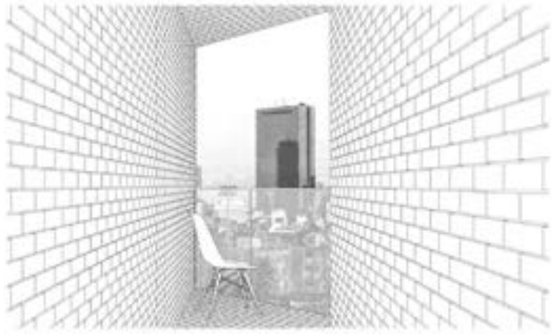

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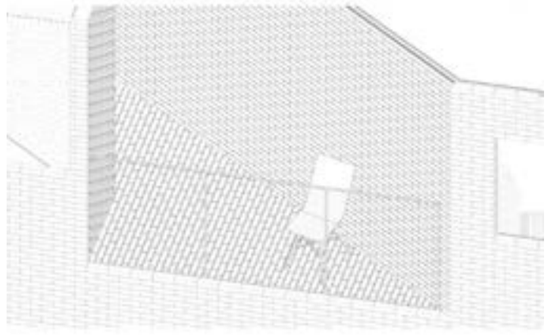

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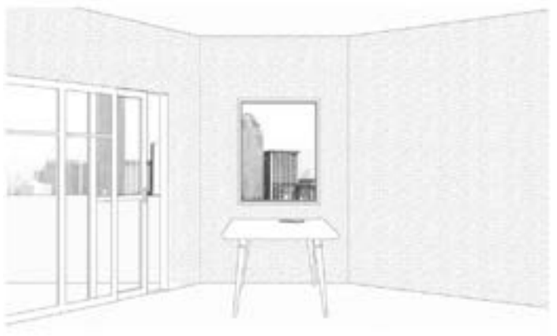

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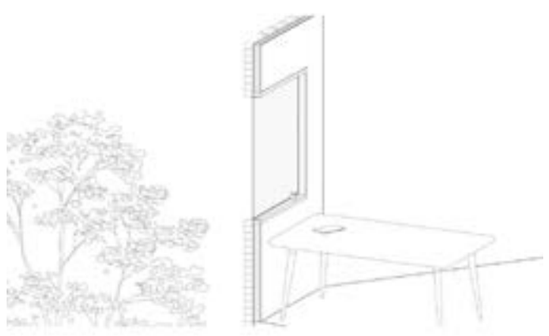


First Column -- Views
Second Column -- Structure Details

Local Gallery within a Cluster
A. Balcony | B. Gallery | C. Window

Gallery | Balcony | Window

The plan zooms into a cluster scale.There are three sets of punctures establishing the relationship between the interior space and the city: private balcony, end space of gallery, and glazing in individual apartment. Each space has really nice view out toward the city but differently framed. These spots are in proximity. Dynamic publicness thus embeds deeply in private life.

04

FLOATING PIAZZA

Office with Rental and Public Library, NYC
Fall 2020
Critic: Jennifer Bonner

GSD Architecture Core Studio

Municipal Art Society, also known as MAS, are looking for a new place for their headquaters in New York City. MAS advocates for a more livale NYC.

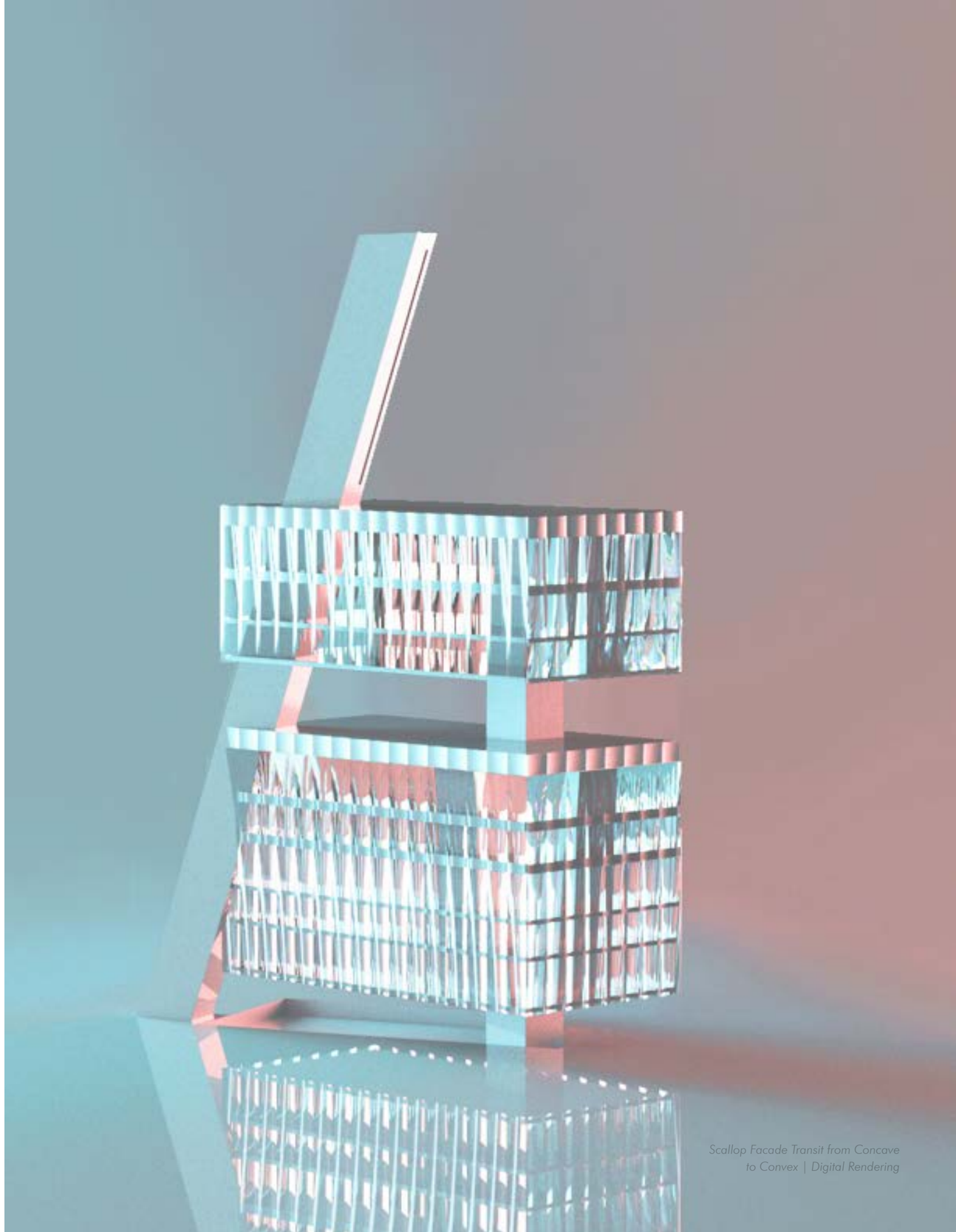
MAS wants a conversational relationship between multiple associations using the same space on the north-west corner of Washington Square Park in NYC.

With investigation from structure and facade, the studio cultivates a deeper understanding of technical aspects in architecture design.

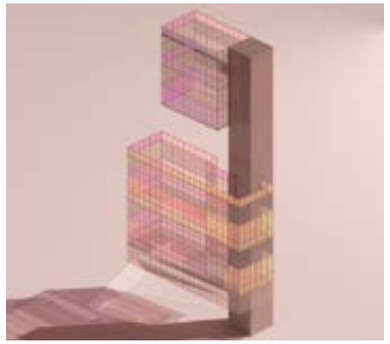
Privately Owned Public Space, also known as POPS, is a special program of New York City. It describes the eagerness and the urgency of the public space in a metropolitan. Floating Piazza provokes a maximized publicity into a private lot, as part of the constant discussion about NYC's public space.

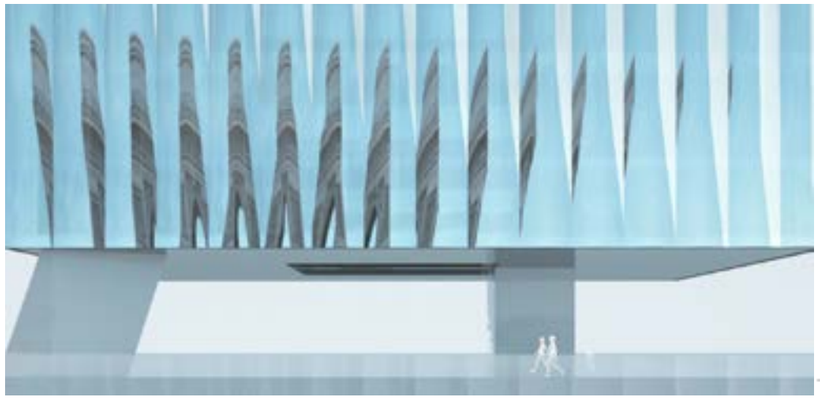
NYC is organized in a grid. Buildings are dots and flows are arrows. What if buildings are floating and allow people to move around on the ground floor. Public flow no longer goes around the dots but intrude into space.

Floating Piazza encourages the public to penetrate the building. Horizontally, ground level, middle green floor, and rooftop are Privately Owned Public Space. Vertical oblique public core and penetrated atrium builds the thermal, visual, and acoustic connection between private office levels and public levels. The suspended structure achieves the openness of Floating Piazza. The construction process is a performance to the city.

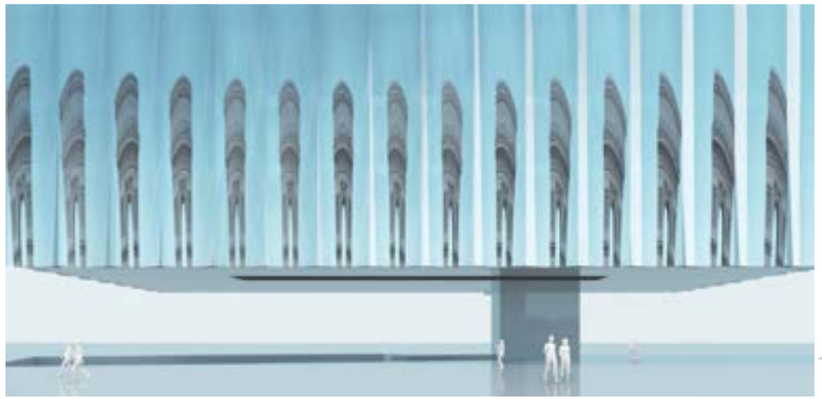


Scallop Facade Transit from Concave to Convex | Digital Rendering





90′

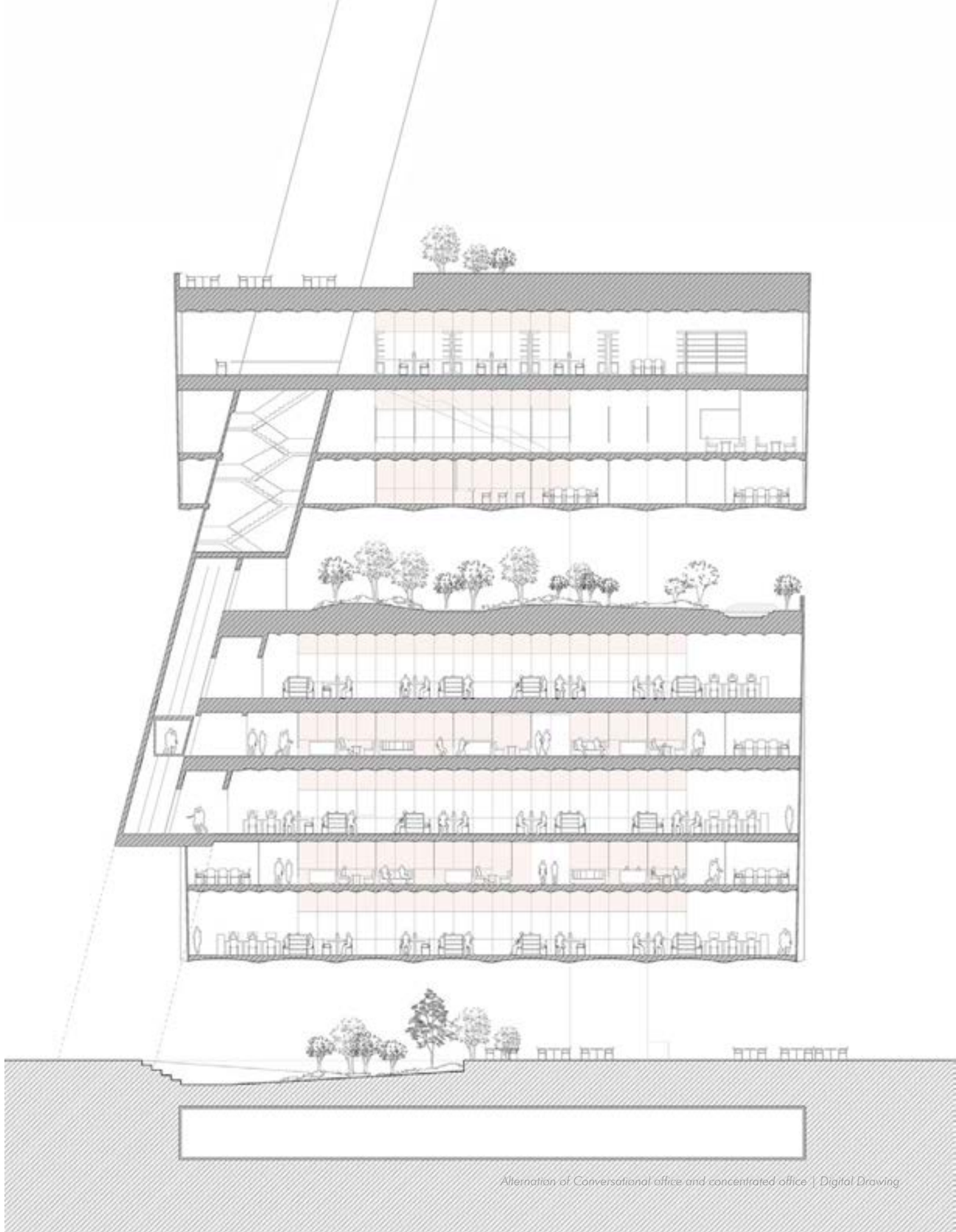


0′

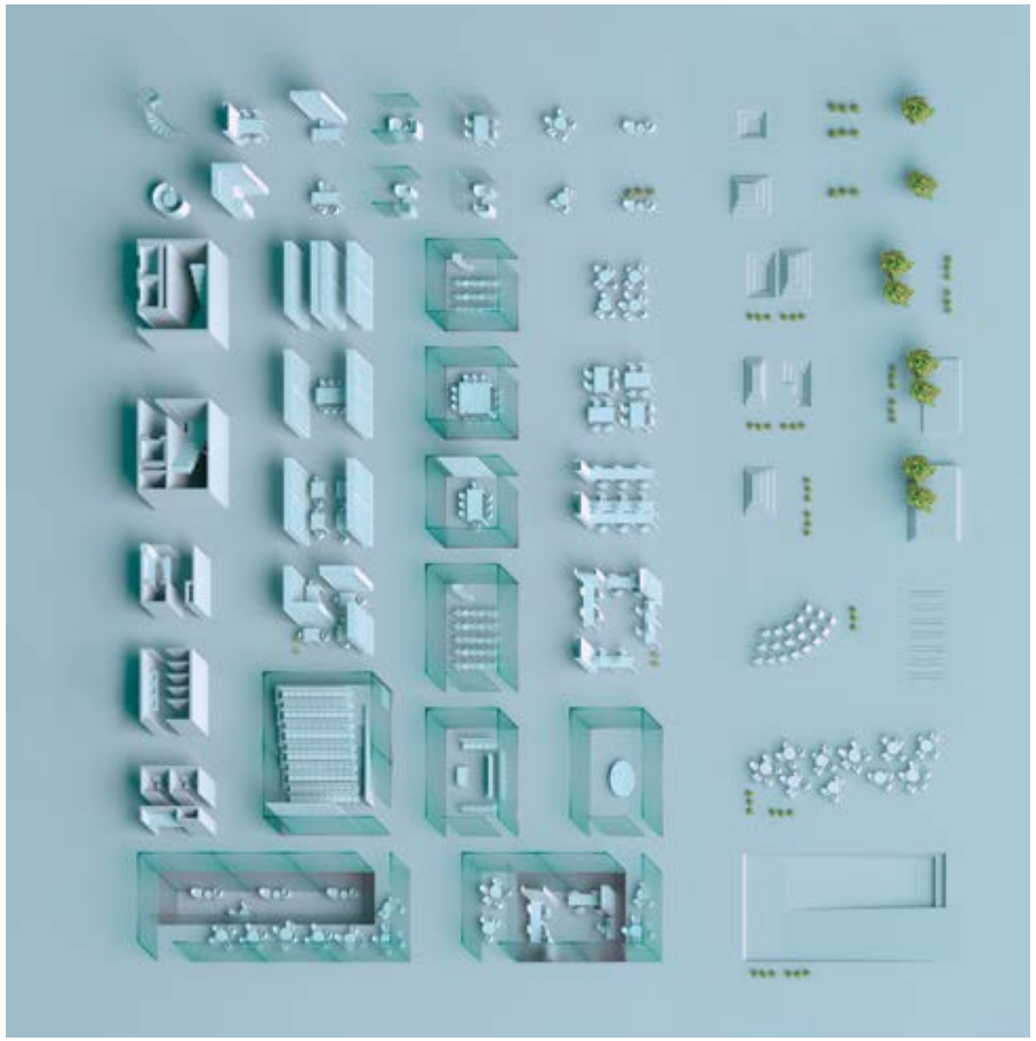
Upper Left: Scallop Facade Details
Upper Right: Dichroic Atrium Facade
Lower: Transitional Scallop Facade with reflection of context

Scallop Façade | Dichroic Atrium

The scallop façade system and dichroic atrium are aimed to activate office life. Transit from concave to convex as going from bottom to top, the scallop facade provides distortion to the city and transforms how people read the city through lens, mimicking the process of MAS that reinterpret NYC and public lives by decoding it. The atrium activates the office space with a catalyst of color. The dichroic glass is used to create different colors according to the lighting condition. The constant changing color of the inner space creates a dynamic office life.



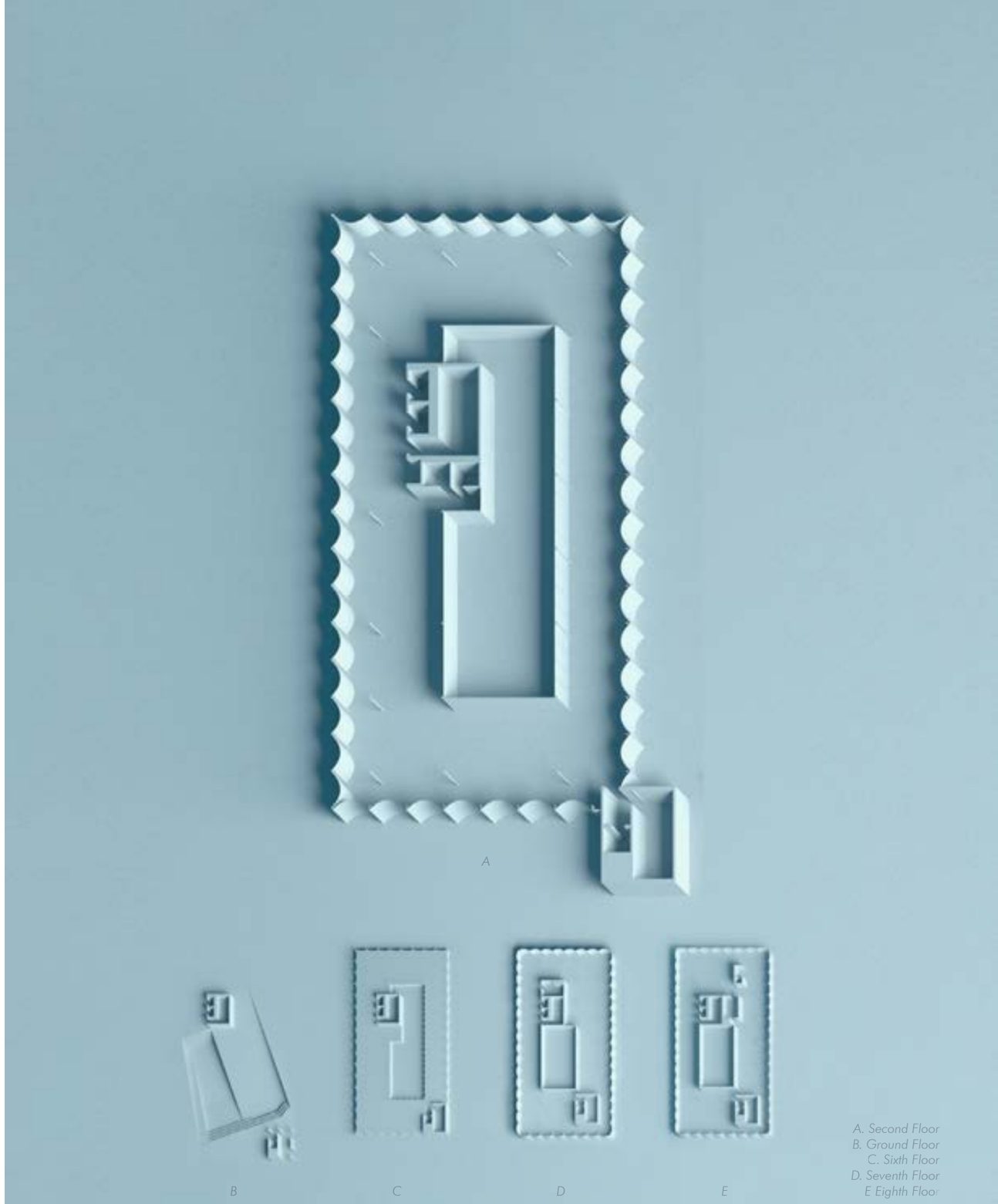
Alternation of Conversational office and concentrated office | Digital Drawing



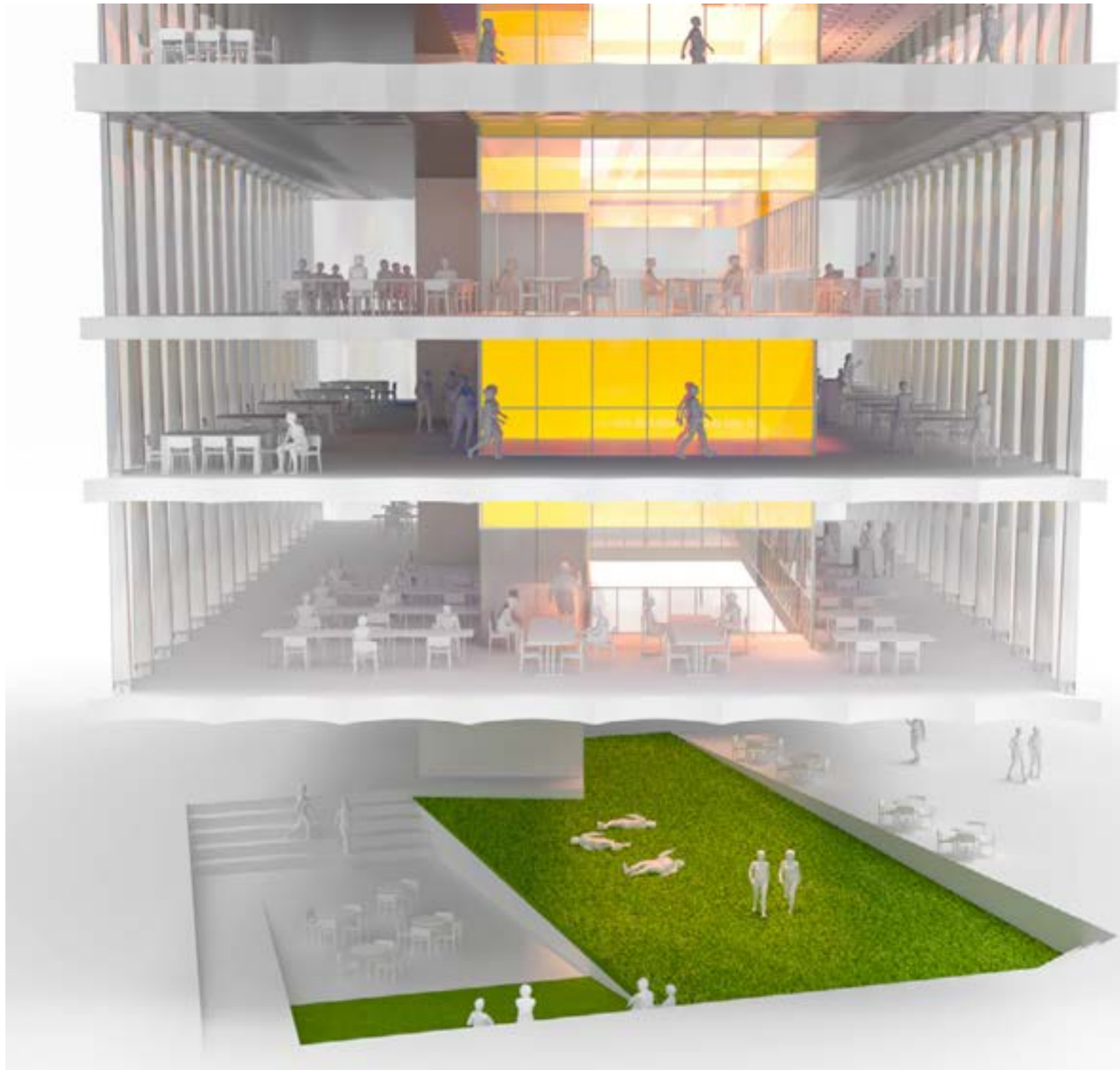
A spectrum of objects that define space | Digital Rendering

Suspended Structure | Object-defined Space

The suspended structure with haning cables achieves the openness of Floating Piazza to reduce architectural elements like walls and columns. It allows daylight penetration from both facade and atrium. During construction, suspended structure is a performance to the city. Without walls or columns, the object is the new space activator. Objects, organized in an opacity spectrum, are laid in grid associated. The opacity gradient is also correlated with the extent of publicity.



Plan Oblique Collection | Digital Rendering



Upper Left: Middle Green Level POPS | Digital Drawing
Lower Left: Ground Level POPS | Digital Drawing
Right: Activated office life with scallop facade and dichroic atrium | Digital Rendering

Privately Owned Public Space

As intrusion of the public activated office level. POPS levels push the publicity to an extreme. Ground POPS level returns its private space to the city; meanwhile, the whole ground floor works as the lobby. By introducing public circulation into the private site, they work as an event trigger throughout time. With path moves and forth between façade and atrium on the Green POPS level, people meander to enjoy both the urban and the office lives

05

WIREFRAME

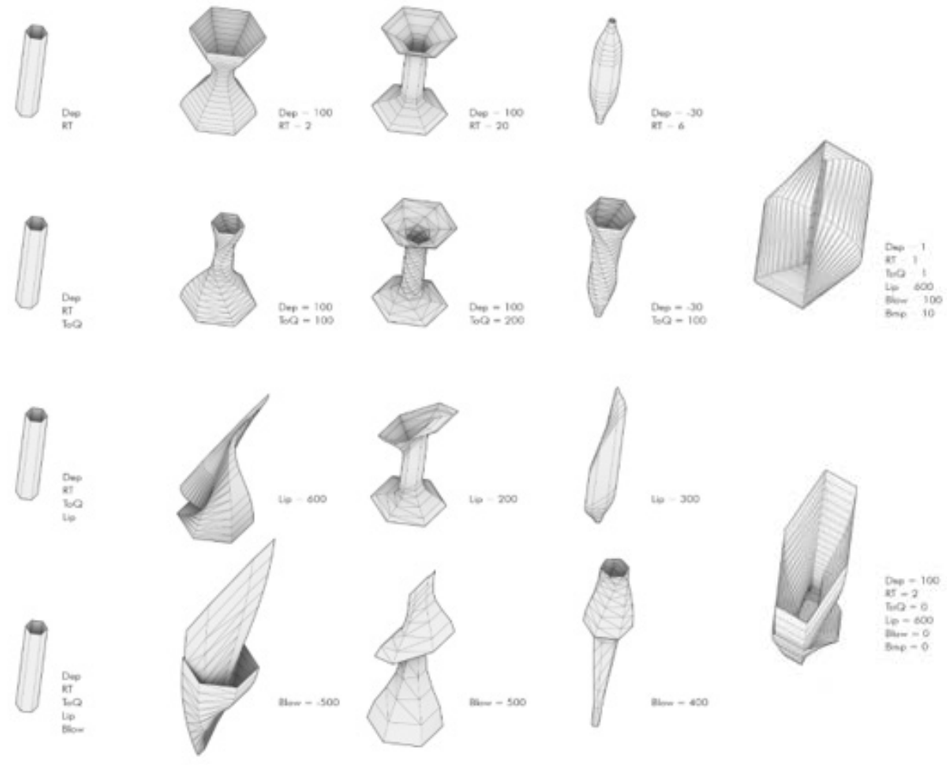
A Furniture Collection
Spring 2021
Critic: George L. Legendre
Collaborate with Davide Zhang

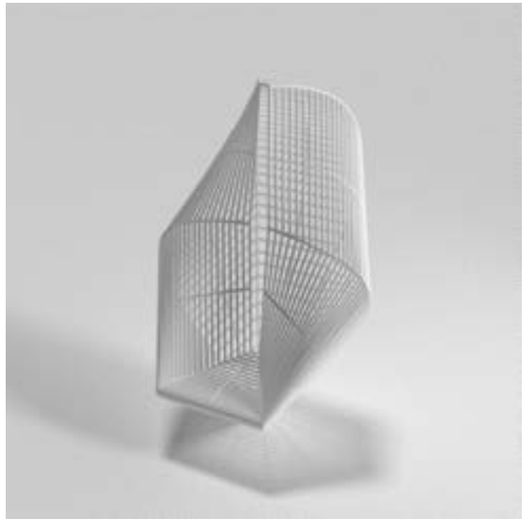
Digital Media Seminar

The course offers an introduction to the field of design and computation through the essential pursuit of writing form. It introduces the notion of form both mathematically and theoretically through a series of reading from Erwin Panofsky to Rosalind Krauss.

WIREFRAME is a reinterpretation of the woven or skeletal style of furniture, notably the rattan or wicker typology. It is characterized as having isocurves where straight lines fill the gap between guiding curvilinear ridges.

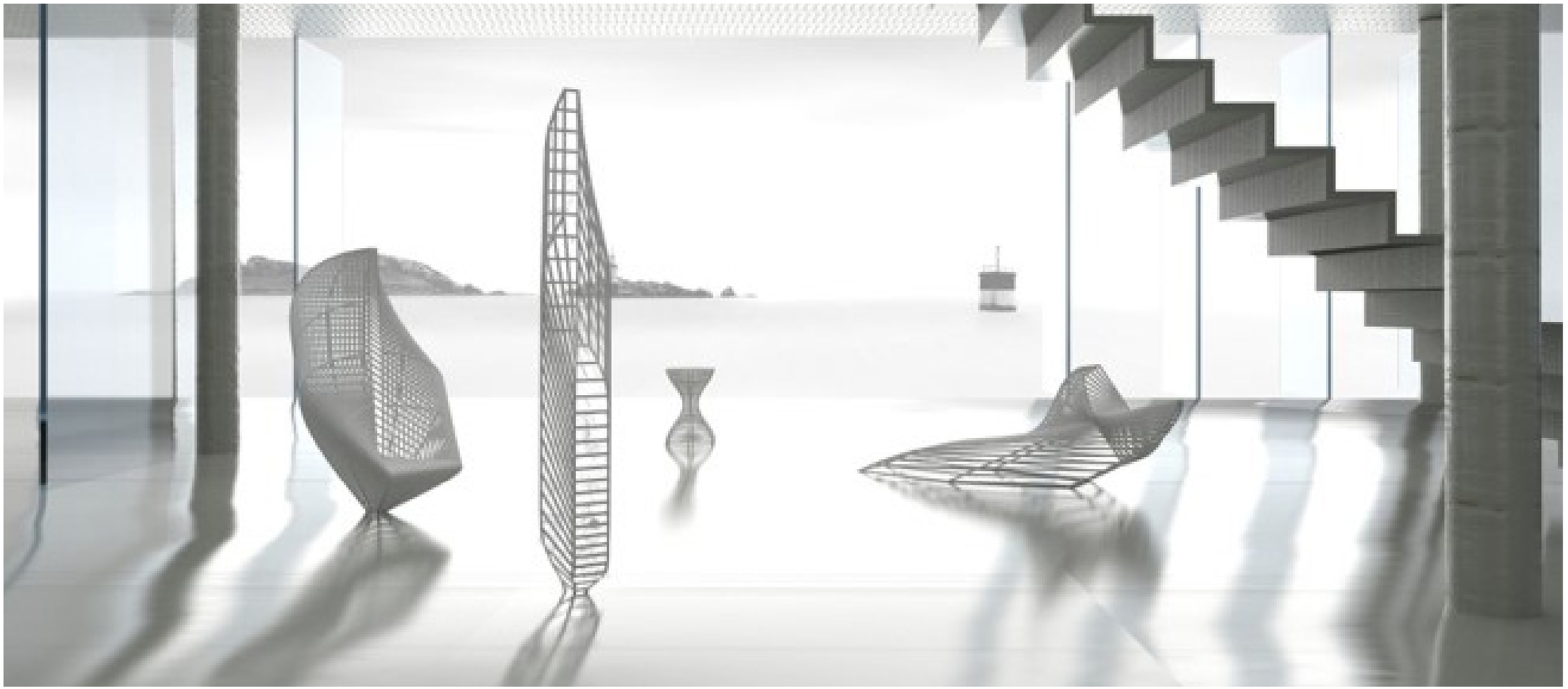
We wanted to evoke the resonance between the objects and the environment through the WIREFRAME collection. Through the struggle between intuition and the instrument, in this case the parametric exploration of mathematical equations, we sought to arrive at something that is visceral, if not radical.



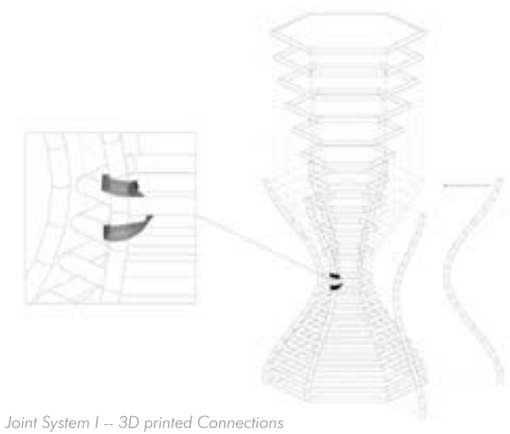


Upper: Catalogue of the Stylistic Family | MathCAD 15, Grasshopper
Lower Left to Right: Chair, Lounge Chair | Digital Rendering

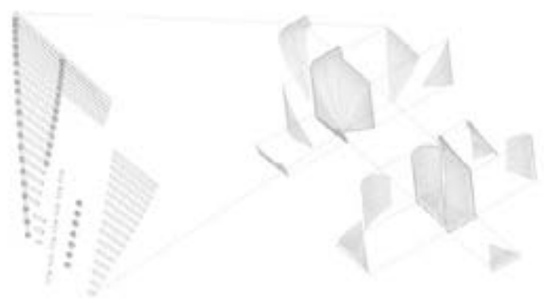
Mathematical Formula for the Family Character | MathCAD 15



Collection of WIREFRAME furniture in a scene | Digital Rendering



Joint System I -- 3D printed Connections



Joint System II -- Rope Knots

Joints | Wireframe

Two joint systems address the curvy surface in fabrication. The first system translates the curvy surface into straight wireframe segments jointed by 3D-printed connections. The second system holds straight pieces and singly curved pieces by knots inspired from rattan chair. The wireframe structure of the pieces give them an ethereal quality where the perception of surface and skeleton flickers depending on viewer's position.

06

BREATHING CORAL

Skin Study for 860-880 N Lake Shore Drive Building
Fall 2019 | Chicago, IL
Instructor: Sungho Kim

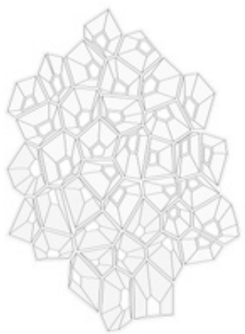
Seminar

Dynamic Materialism and Urbanism is a course developed for students who are interested in emerging technologies and digital production.

I experimented with a massing and skin study of Mies' Lake Shore Drive Apartment in Chicago. With the curvy massing, my strategy is to recreate the geometry by straight segments with Voronoi pattern. Various iterations are developed to invite light and shade through parametric design. The alternation between protrusion and indentation creates spatial variability for public space to enable outside views. The variety is tested by the rapid prototyping (3D printing).

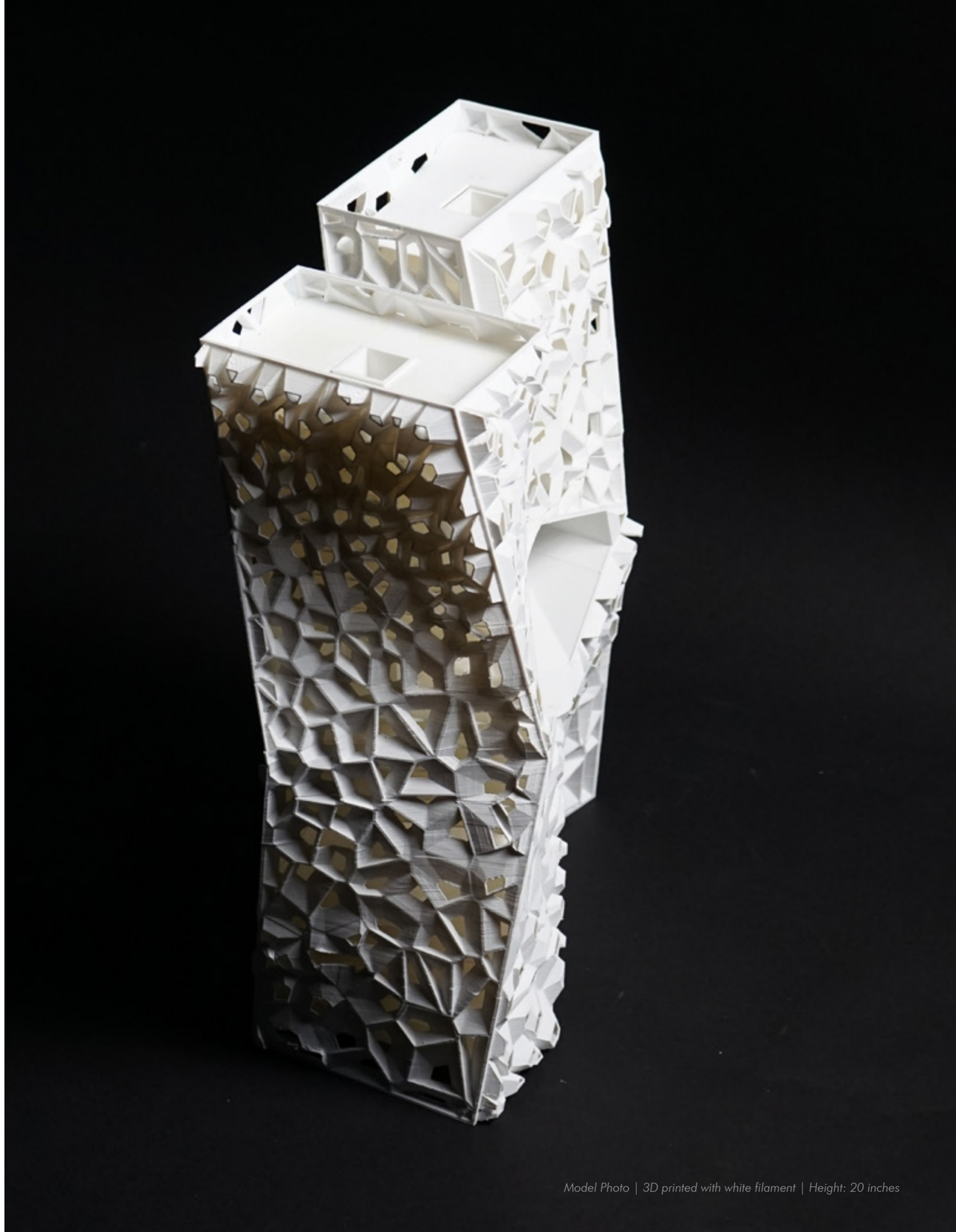
I

II



III

Digital Diagram | Iterative Parametric Pattern



Model Photo | 3D printed with white filament | Height: 20 inches