



**Fern
Sripongtanakul**
MSAAD 2025-2026

Fields of Instability

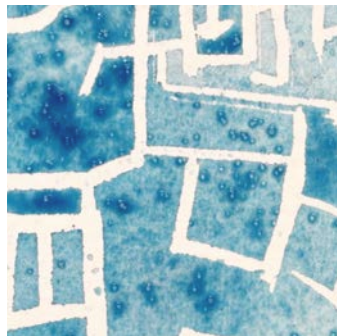
**Architectural Thinking
Through Spatial Transformation**



01



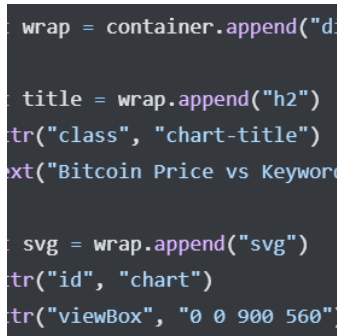
02



03



04



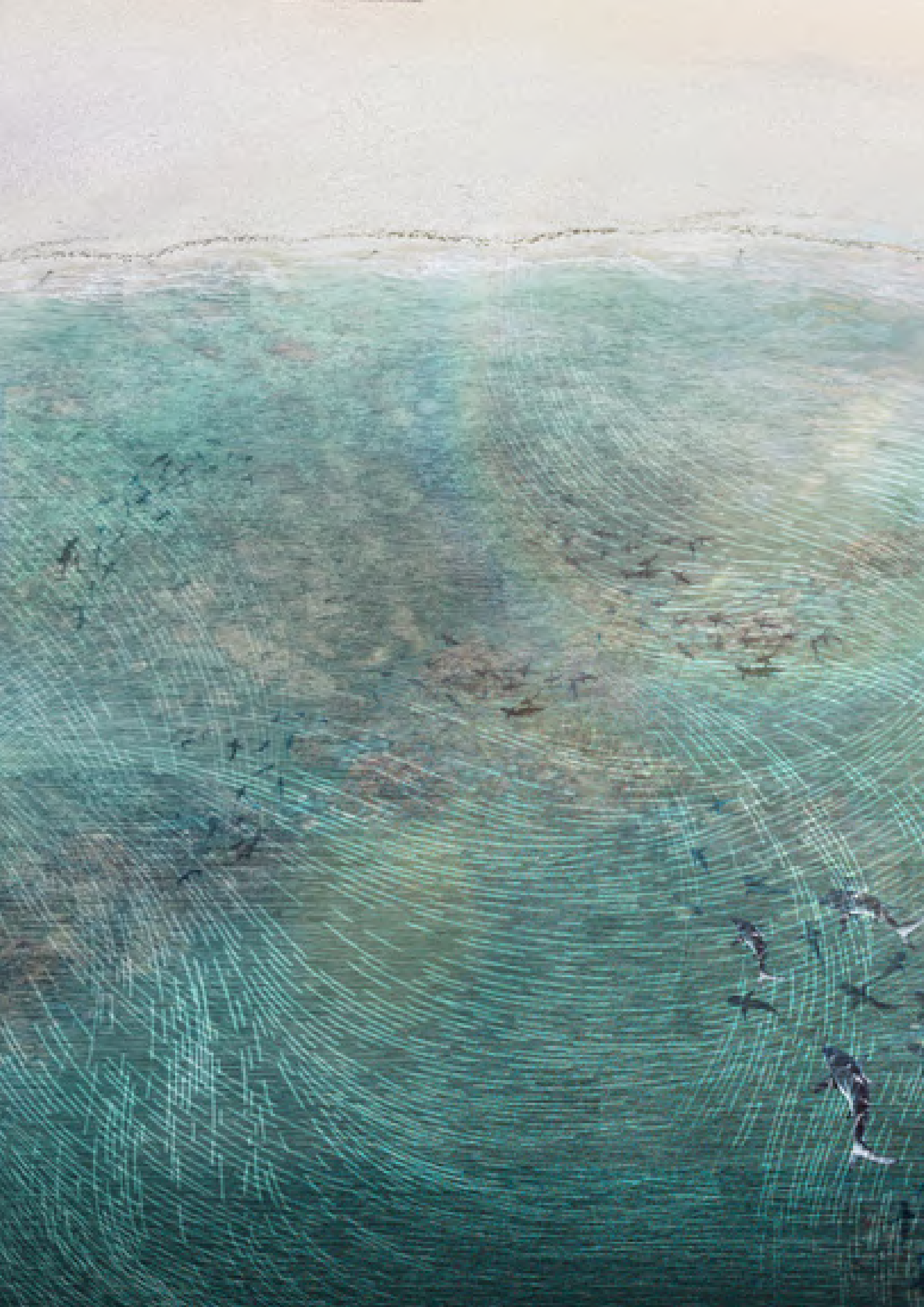
05



06

- 01 Coral Regeneration
Advanced Studio IV, Summer 2025
- 02 Unfolding Midtown
Advanced Studio V, Fall 2025
- 03 Pavlopetri: What the Water Remembers
Advanced Studio VI, Spring 2026
- 04 Architecture as Record: Movement, Displacement, and Repair
Advanced Studio VI, Spring 2026
- 05 Data Visualization of Speculative Behavior
Elective, Fall 2025
- 06 Reclaiming Underground Vacancy
Elective, Spring 2026

Contents



Coral Regeneration

Intercepting the Aerial space for Marine resurgence
on The Edge of Climatic Turbulence

In association with:
Hilary Kusuma

Advanced Studio IV, Summer 2025
Studio Critic: Nerea Calvillo
Location: Rockaway beach, Queens, New York

The project reimagines the future of the Rockaway Peninsula by working with the forces already reshaping it. Instead of resisting rising seas and intensifying storms, it proposes to use them as agents of ecological regeneration.

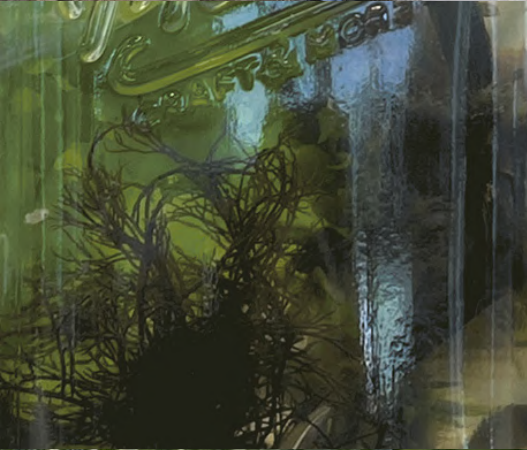
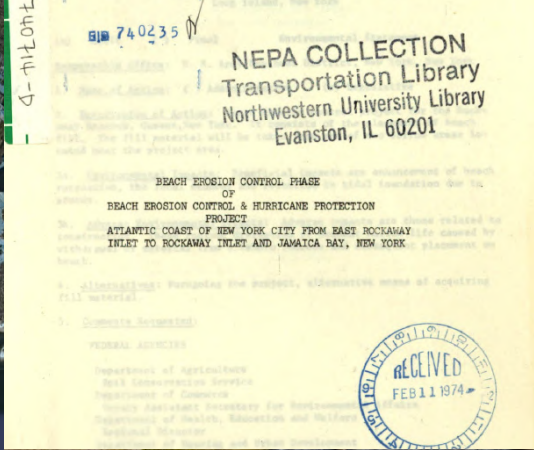
Through coordinated aerial operations, aircraft distribute coral nutrients, mycelium, and cloud-seeding agents to support marine life and ecological repair. Abandoned infrastructure becomes scaffolding for coral reefs activated by low-voltage currents and underwater sound systems.

Rockaway becomes a testing ground for atmospheric design and long-term ecological thinking where flooding and retreat are not failures, but conditions for new beginnings.



Rockaway has long been imagined as New York's escape. A recreational landscape shaped by surfing, leisure, and public gathering, the beach also became a place where social norms could temporarily dissolve.

Beneath this image of freedom lies an increasingly unstable coastal ecology shaped by erosion, flooding, and rising seas.



Rockaway's ecology is deeply entangled with pollution, dredging, sewage overflow, and algae blooms. Water samples taken from the bay reveal changing chemical and biological conditions as marine systems continue absorbing urban waste.



Artificial reefs, discarded infrastructure, and abandoned marine objects become evidence of an ecology already under stress.

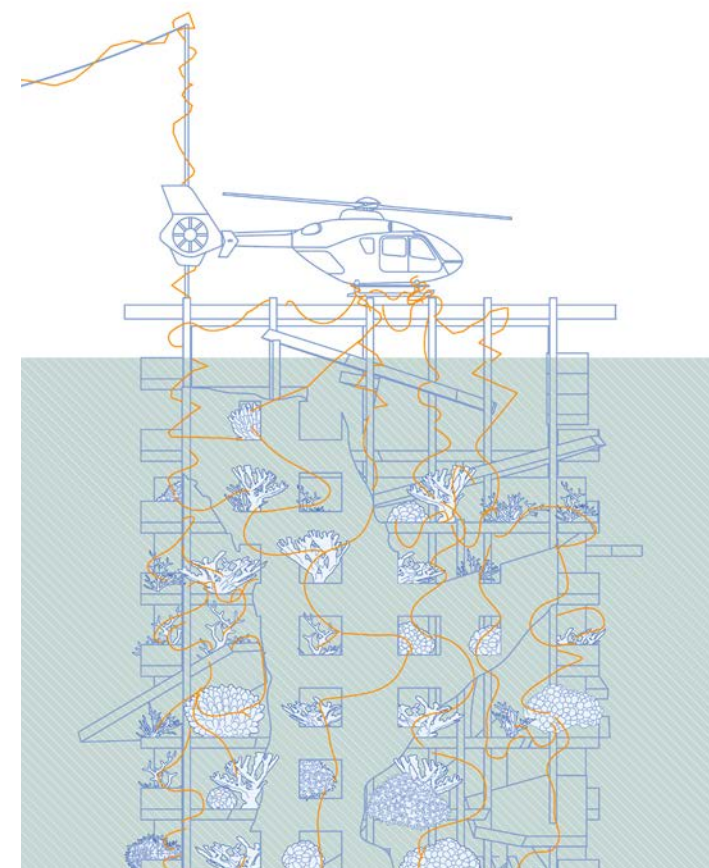
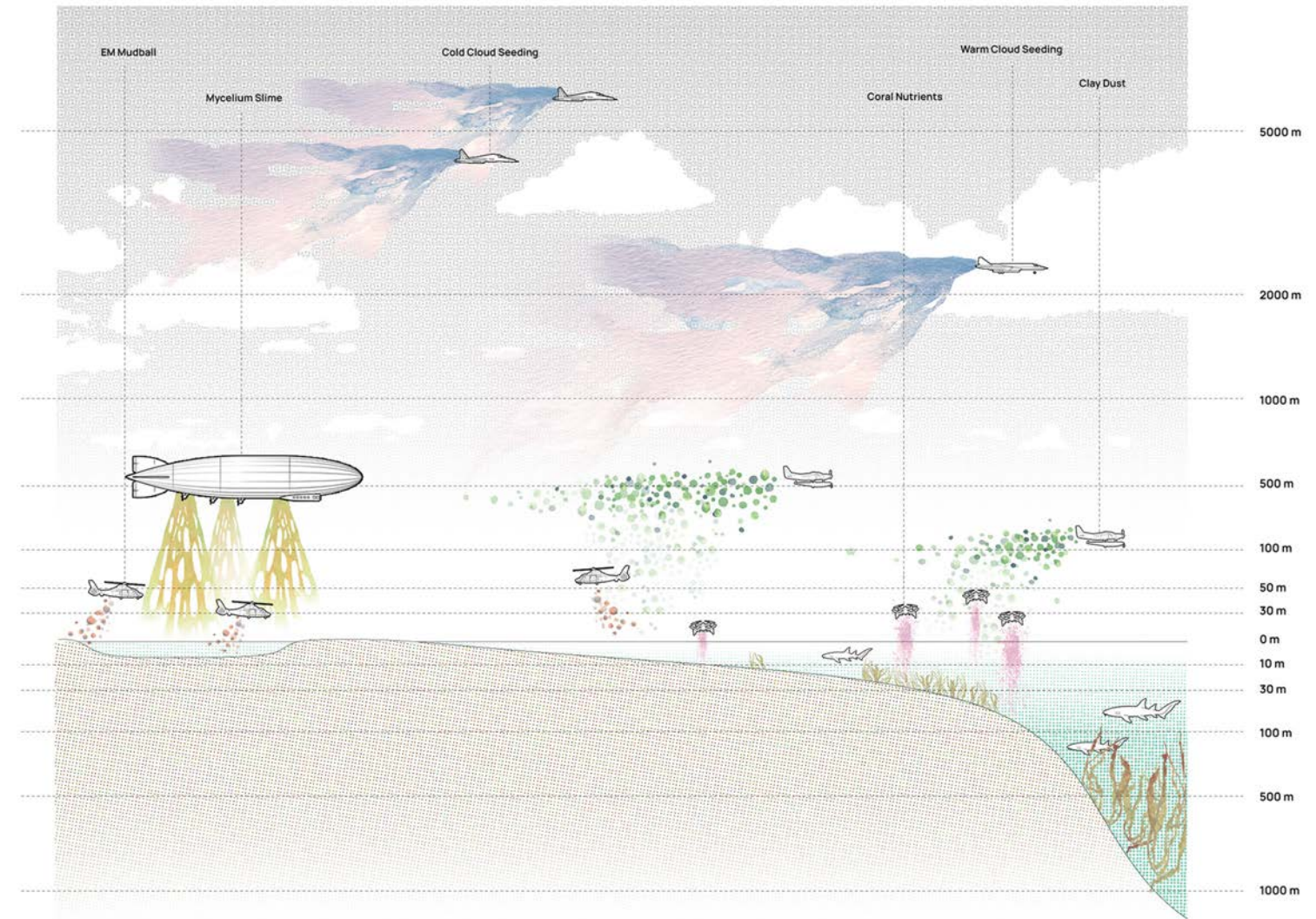
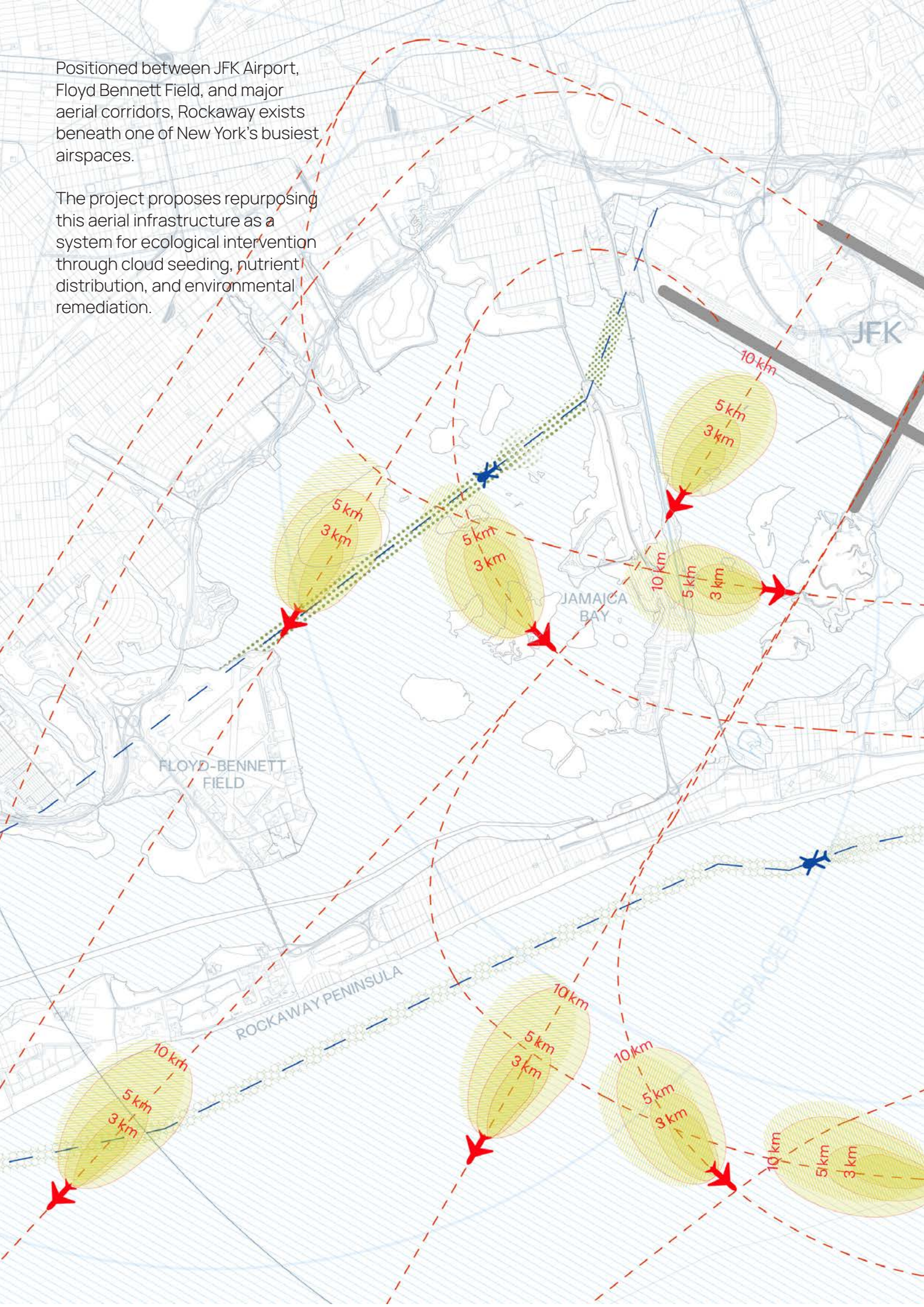


Formed through sediment and tidal movement, the Rockaway Peninsula exists in a constant state of transformation. Historical maps reveal a coastline continuously reshaped by storms, ocean currents, and deposition over time. Rather than treating the shoreline as fixed, the project understands it as a living and unstable geography.



Positioned between JFK Airport, Floyd Bennett Field, and major aerial corridors, Rockaway exists beneath one of New York's busiest airspaces.

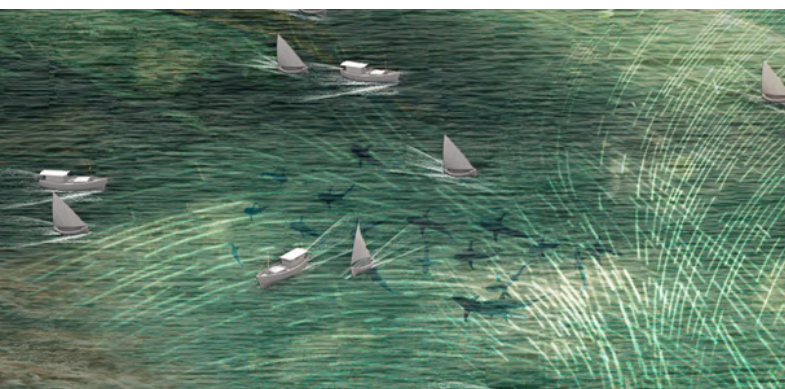
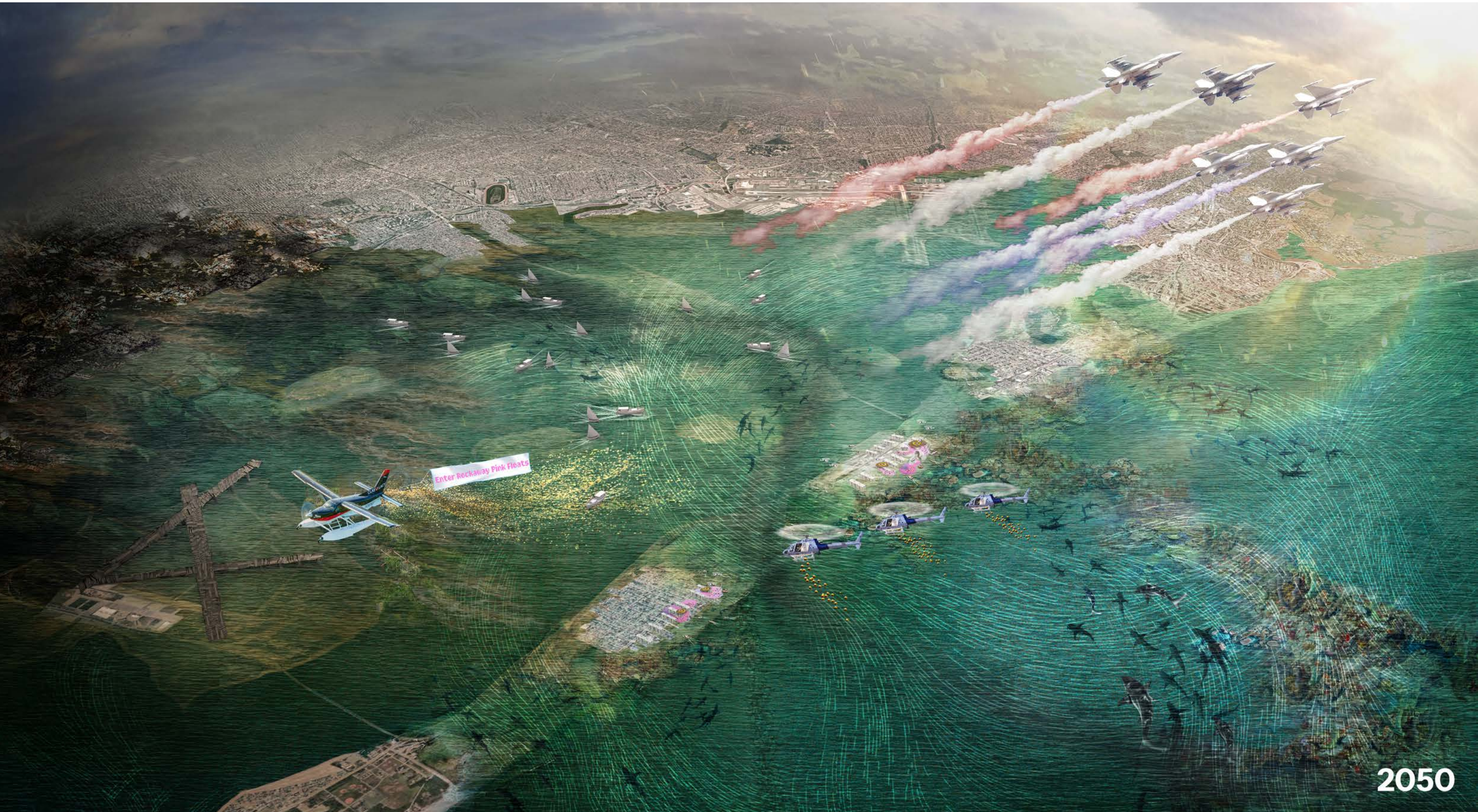
The project proposes repurposing this aerial infrastructure as a system for ecological intervention through cloud seeding, nutrient distribution, and environmental remediation.



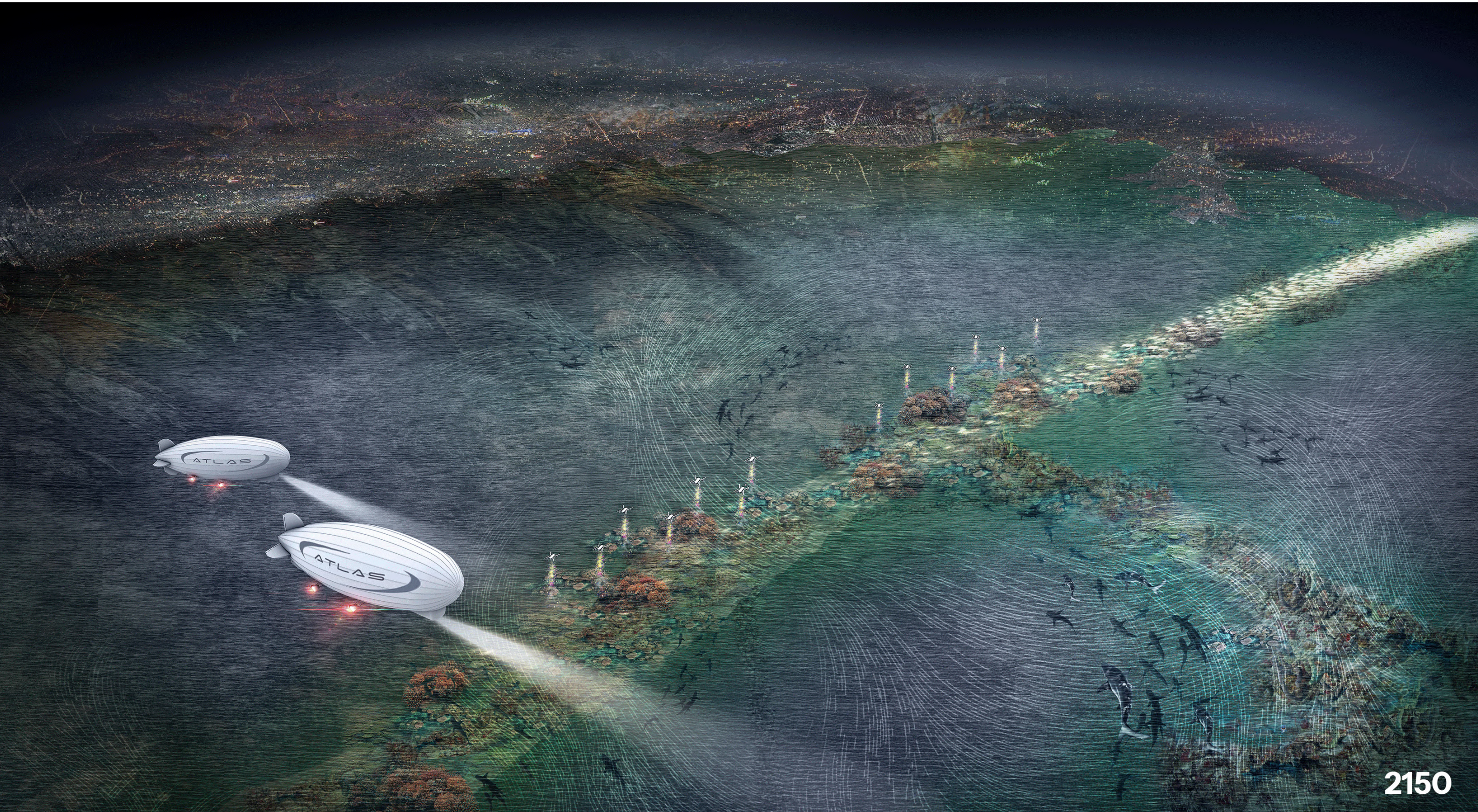
The project transforms Rockaway's existing airspace into a platform for environmental operations. Aircraft, helicopters, drones, and airships distribute mycelium, coral nutrients, clay dust, and cloud-seeding agents across the bay. Air becomes a medium for ecological repair rather than transportation alone.



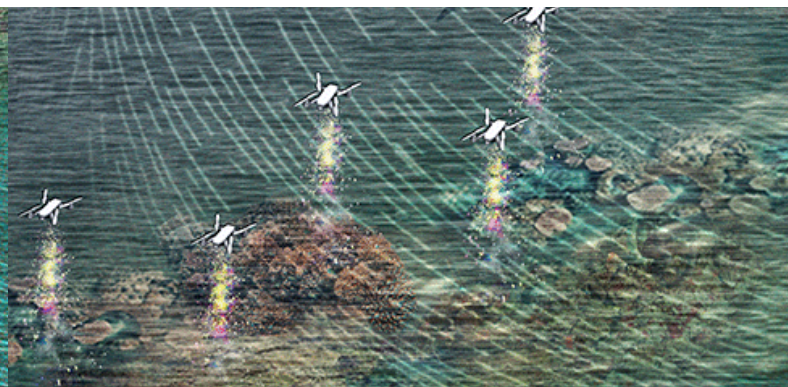
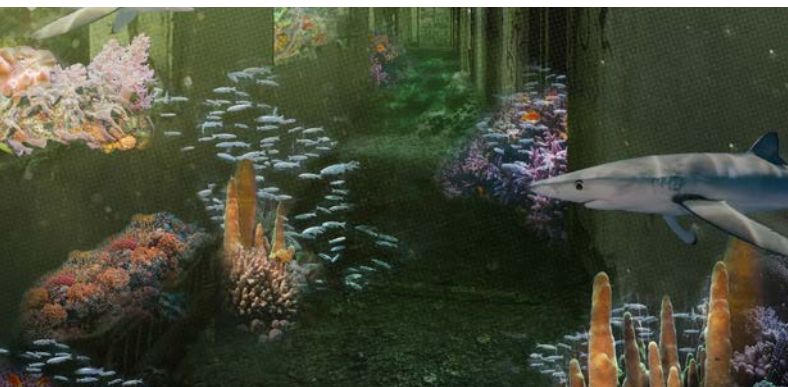
For decades, flood barriers and coastal defenses have attempted to stabilize the peninsula against storms and sea level rise. This project questions the logic of endless reconstruction and instead proposes working with hurricanes and storm surges as active forces shaping future ecologies



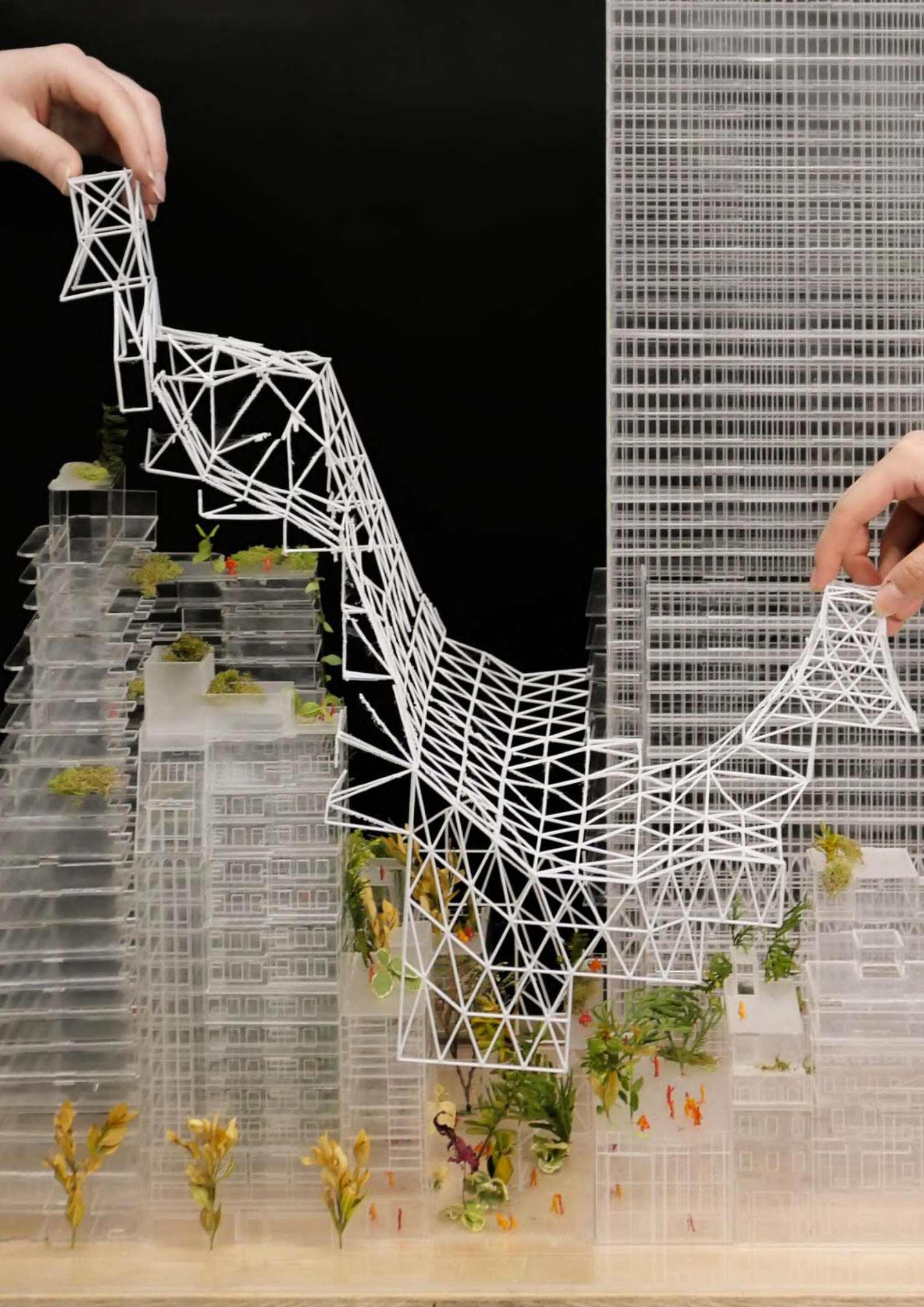
Corals become the central figure of the project. As geological animals, they slowly construct habitats while adapting to environmental instability over long periods of time. Their ability to inhabit ruins, shipwrecks, and submerged structures offers another model for architecture rooted in coexistence and regeneration.



2150



Flooded buildings, artificial reefs, and submerged steel frameworks become scaffolds for marine growth. Low-voltage electrical systems and underwater soundscapes support coral settlement and regeneration, allowing abandoned infrastructure to slowly transform into habitat.

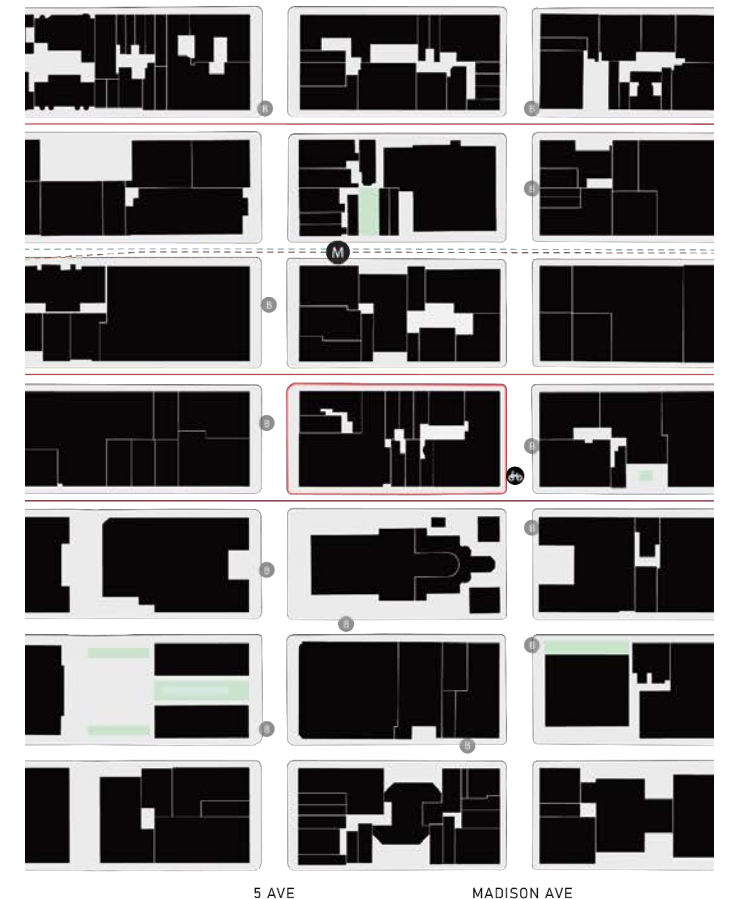


Unfolding Midtown

In association with:
Ashley Broyles
Nien Lee

Advanced Studio V, Fall 2025
Studio Critic: Sebastián Adamo, Javier A. Flores
Location: Midtown, Manhattan

Midtown Manhattan operates as a dense urban machine shaped by office towers, tourism, and constant movement, yet it lacks the conditions that support everyday neighborhood life. Deep office floorplates, fragmented public space, rising vacancy, and environmental stress have produced a district active during the day but largely emptied at night. This project proposes transforming a Midtown block into a multi-layered urban environment where housing, ecological systems, and public life coexist. By removing underused buildings at the center of the block, the proposal creates a new interior garden connected to surrounding public spaces while vacant office structures are reused as housing with shared terraces and year-round environmental systems.

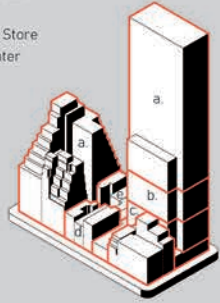


ACTIONS

Re-activating the Block

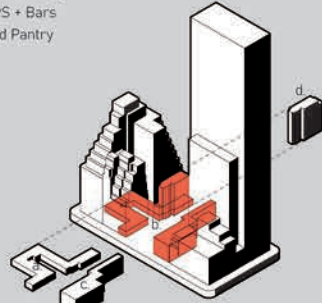
01 Affordable Housing

- a. Affordable Housing
- b. Homeless Shelter
- c. Food Pantry
- d. Consignment Store
- e. Recovery Center



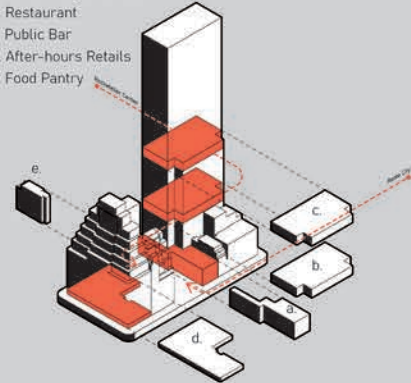
02 Food

- a. Restaurants
- b. Food Vendors
- c. POPS + Bars
- d. Food Pantry



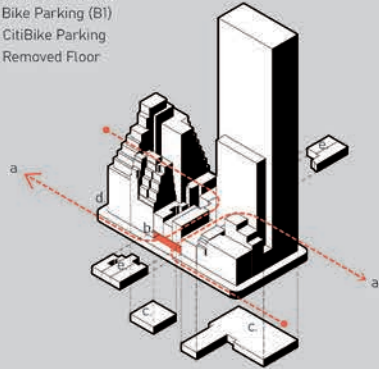
03 Night Life

- a. POPS + Night Market
- b. Restaurant
- c. Public Bar
- d. After-hours Retail
- e. Food Pantry



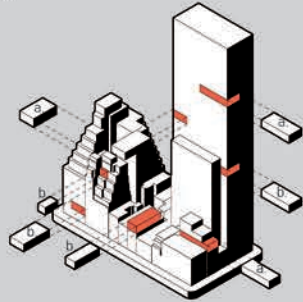
04 Bike

- a. Bike Lane
- b. Bike Parking (GF)
- c. Bike Parking (B1)
- d. CitiBike Parking
- e. Removed Floor



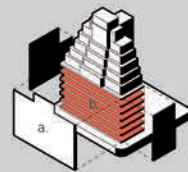
05 Plug-in Unit

- a. Public Space
- b. Housing



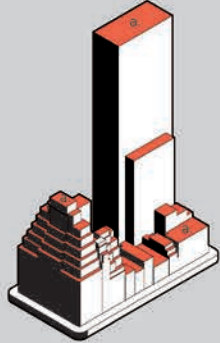
06 New Street Facade

- a. Removed Wall
- b. New Balconies



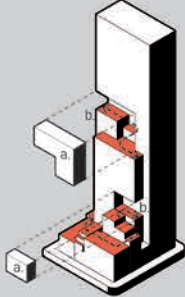
07 Green Roof

- a. Roof Garden



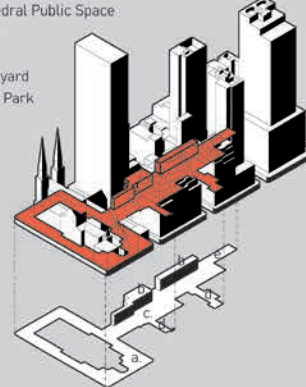
08 Carved Out

- a. Removed Space
- b. New Terrace



09 Pedestrian Avenue

- a. Cathedral Public Space
- b. POPS
- c. Park
- d. Courtyard
- e. Paley Park



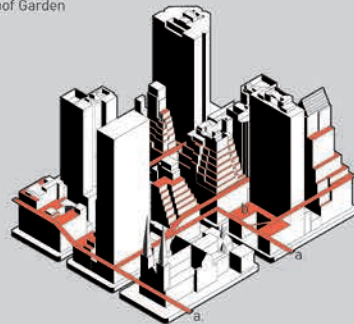
10 Inner Facade

- a. New Platform/Structure/Opening



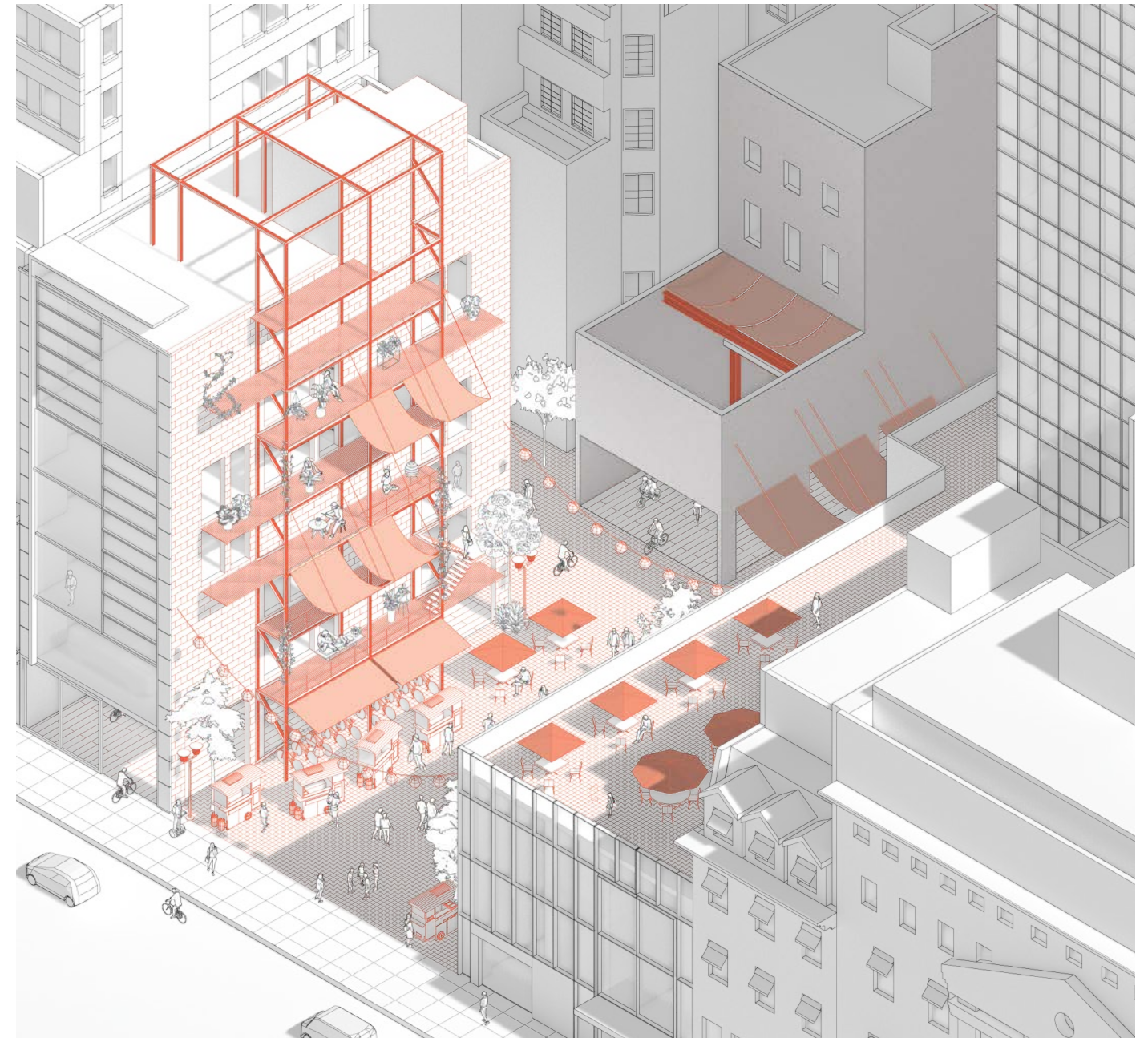
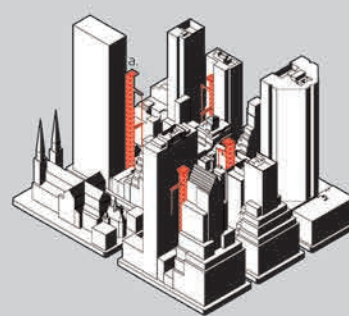
11 Elevated Path

- a. Path
- b. Roof Garden



12 Inner Court Activation

- a. Drone Platform



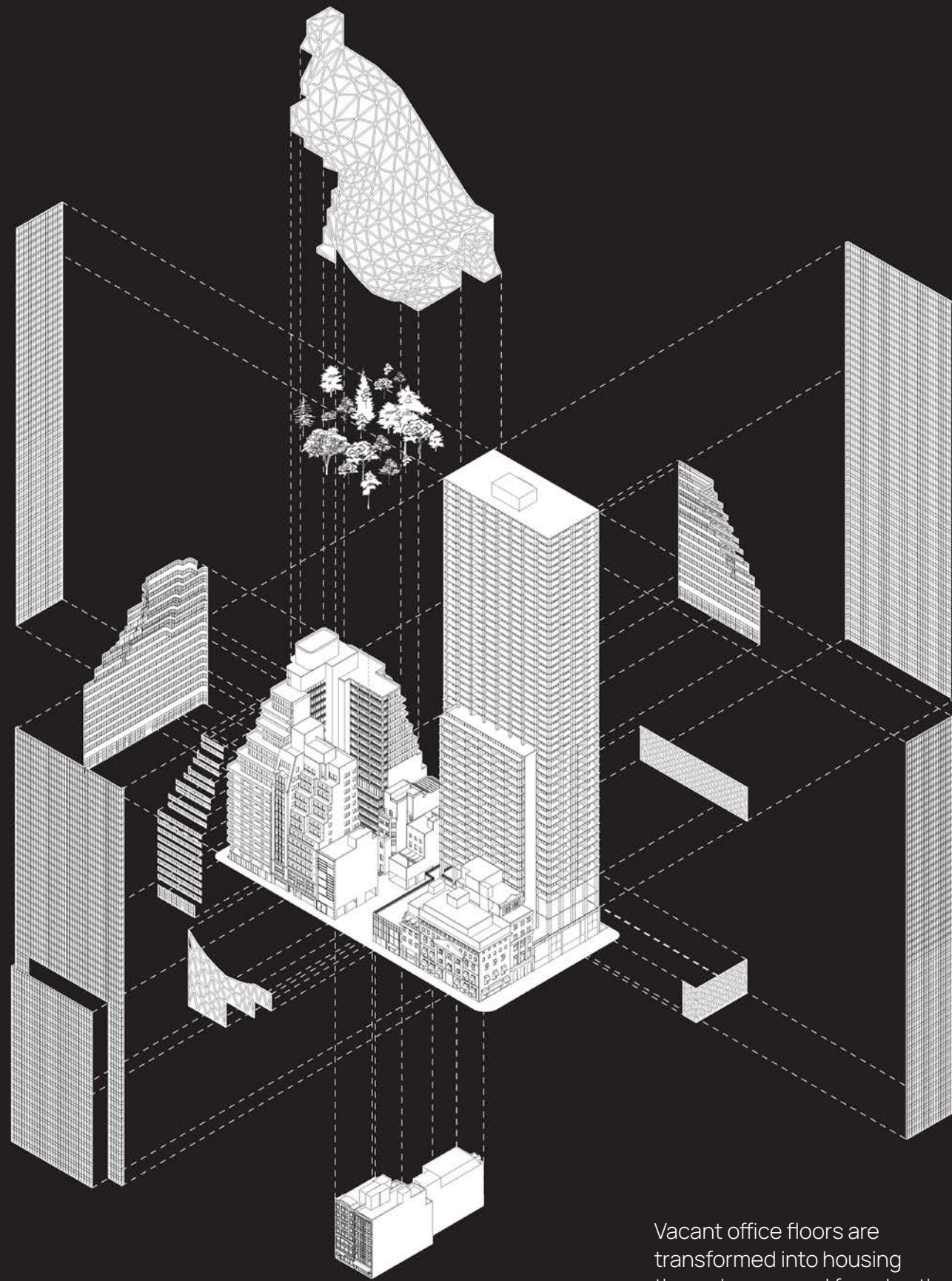
Although Midtown appears continuous at the scale of the skyline, the block itself is fragmented into isolated geometries, disconnected courtyards, and inaccessible roof spaces. Ecological systems survive only in small and overlooked urban fragments. Birds, pollinators, insects, and urban vegetation experience environmental stress, noise, and habitat loss within the district. The project reframes Midtown not only as a business center, but as an ecological site shared by multiple forms of life.



The proposal removes abandoned low-rise buildings at the center of the block to create a new interior public landscape. This intervention unfolds the previously hidden middle of the block into an accessible garden connected to surrounding pedestrian networks and public spaces.

What was once fragmented and underused becomes a continuous public interior organized around planting, circulation, gathering, and slower forms of movement

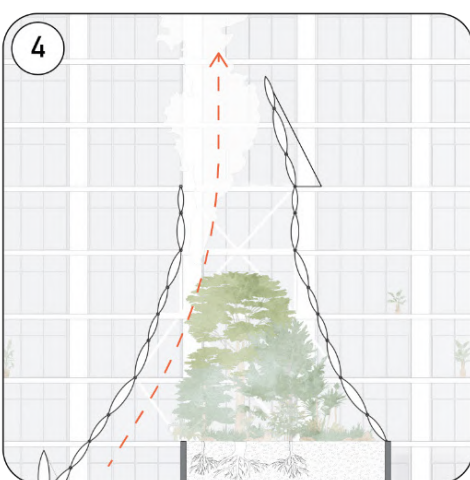
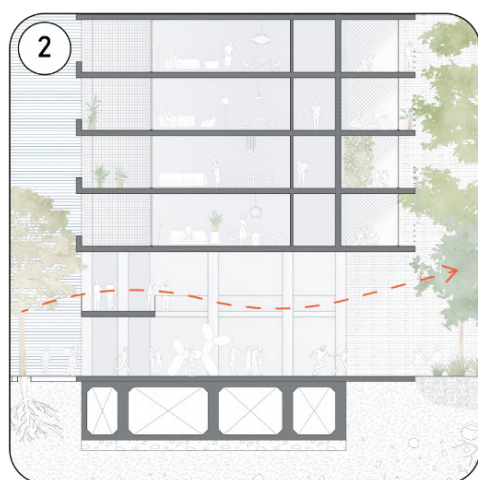
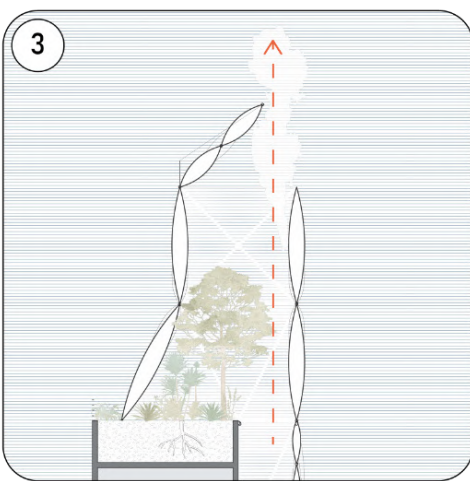
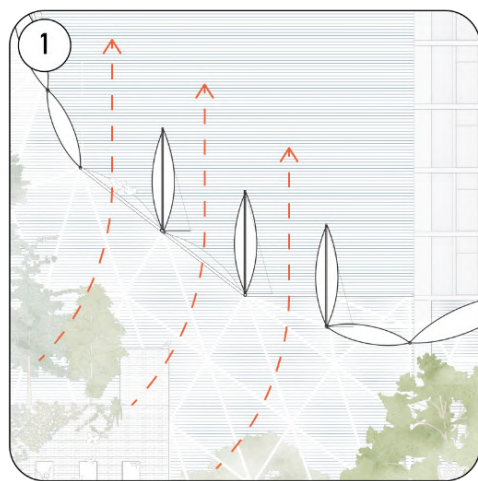
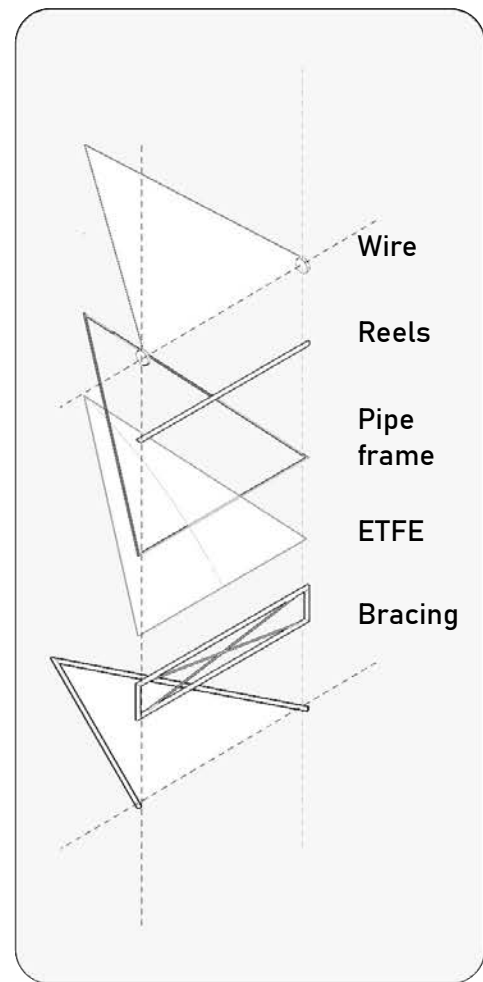
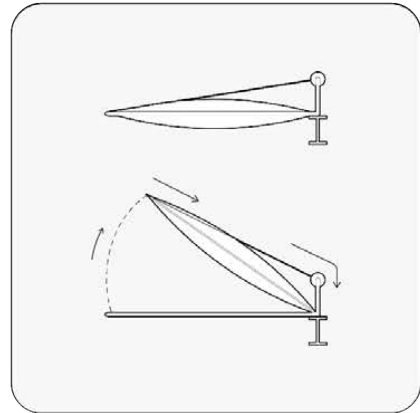
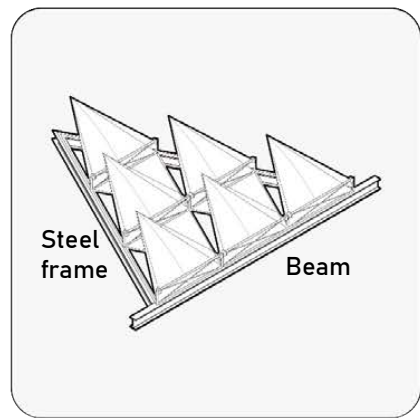
GROUND FLOOR PLAN
0 5 10 25 50



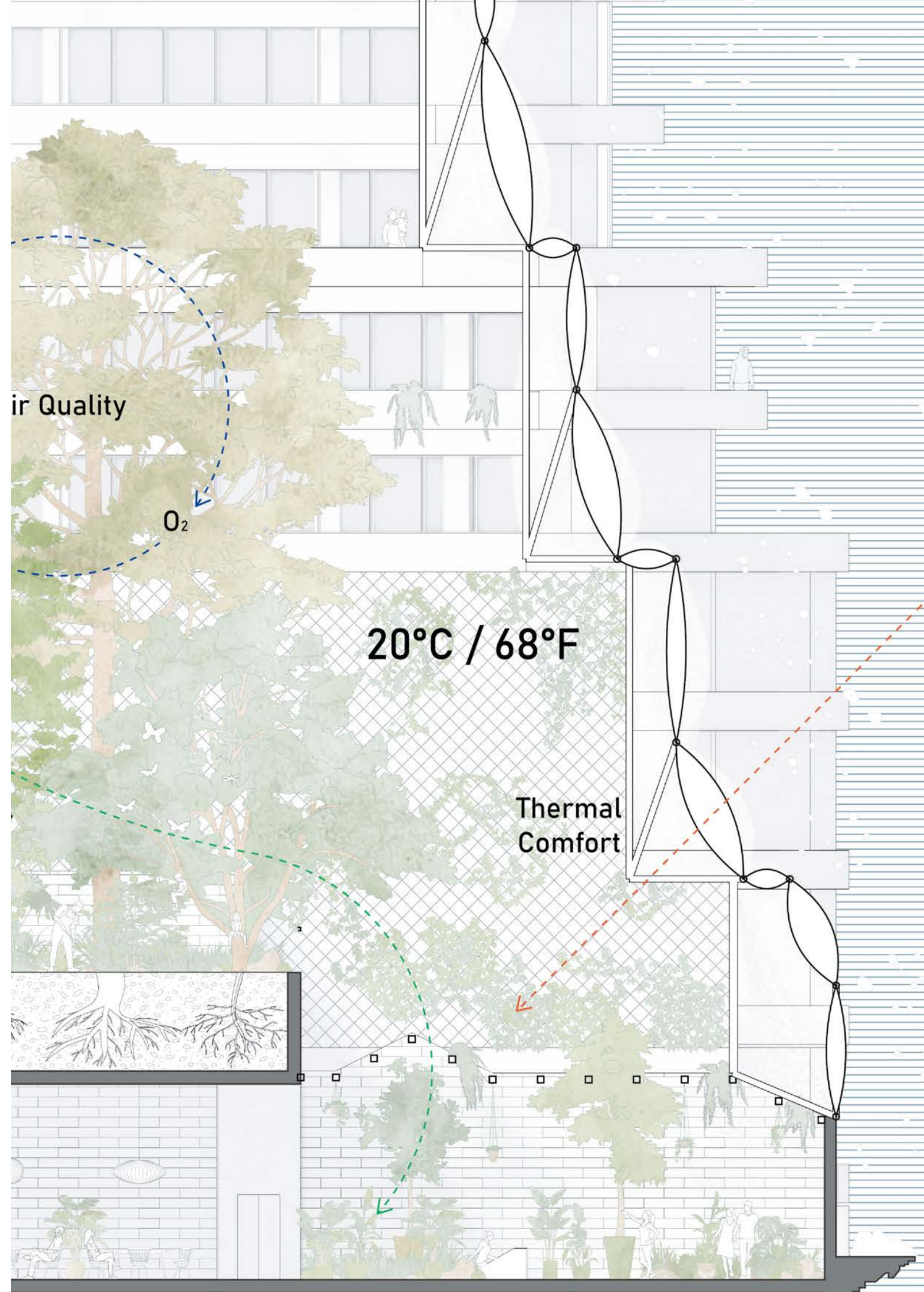
Vacant office floors are transformed into housing through recessed facades that create terraces, balconies, and shared outdoor spaces. Existing structural systems are reused while the relationship between interior and exterior life is redefined.

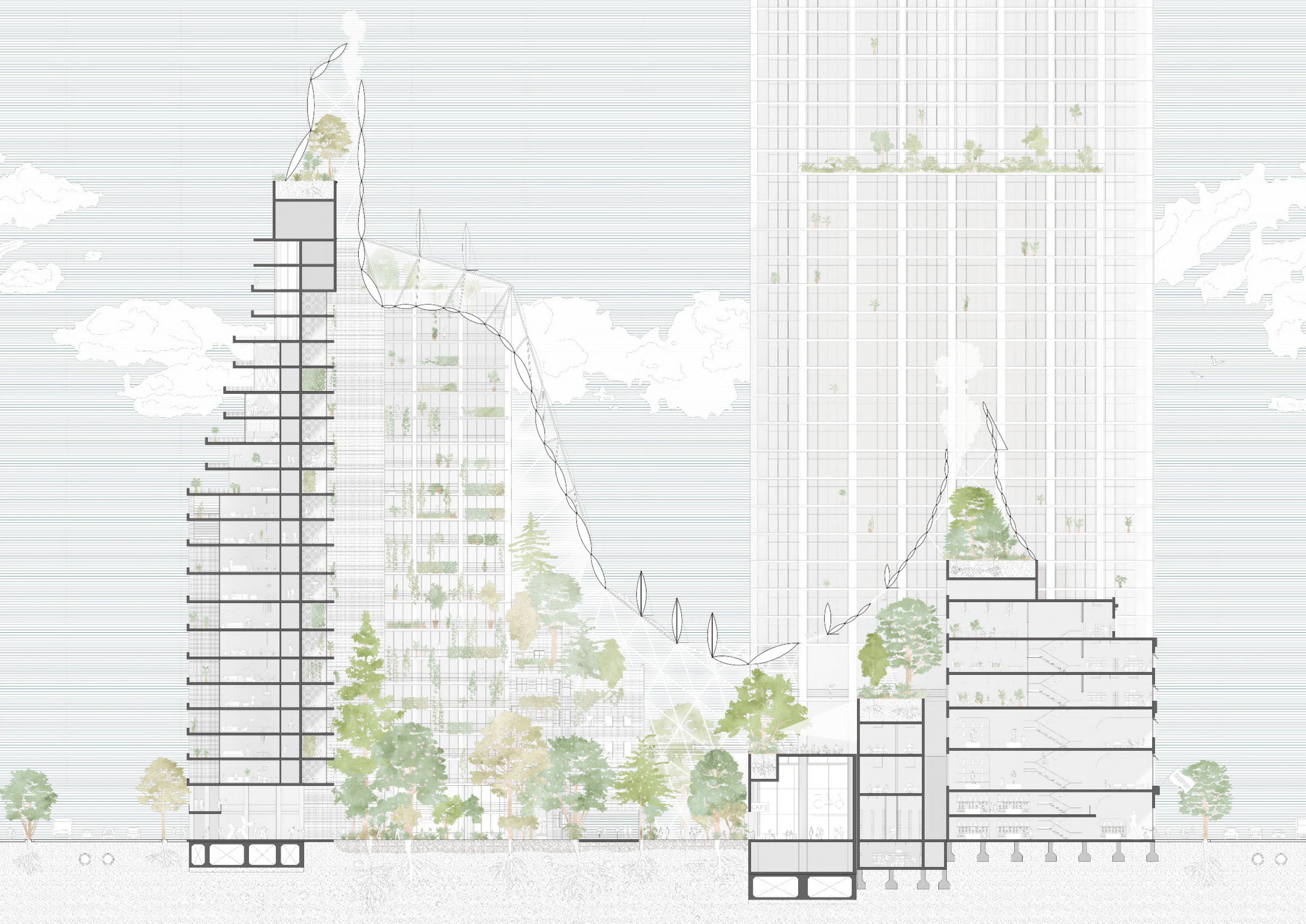






The project introduces a controlled microclimate through an adjustable canopy system that responds to sunlight, humidity, wind, and seasonal changes. By stabilizing the environment, terraces and gardens remain active throughout the year rather than functioning as temporary seasonal spaces.





An aerial photograph of Midtown Manhattan, showing a dense grid of skyscrapers and buildings. Overlaid on the image are several translucent, white, irregular shapes that resemble clouds or smoke. These shapes contain glowing green and yellow particles, suggesting a digital or conceptual overlay. The overall color palette is dominated by the greys and browns of the city buildings, with the glowing green and yellow providing a contrasting, vibrant element.

The project proposes Midtown as a prototype for rethinking vacancy, housing, ecology, and public life within dense commercial districts. Similar conditions of deep office floorplates, fragmented interiors, vacant terraces, and ecological pressure exist throughout Midtown and across many global cities.

Pavlopetri

What the Water Remembers

Advanced Studio VI, Spring 2026
Studio Critic: Ala Tannir
Location: Pavlopetri, Greece

This project looks at Pavlopetri, an ancient submerged city, through the perspective of water as a recording medium.

Rather than reconstructing the city as a fixed form, it traces how water gradually erodes, fragments, and redefines what remains.



Pavlopetri

What the Water Remembers



Pavlopetri

What the Water Remembers

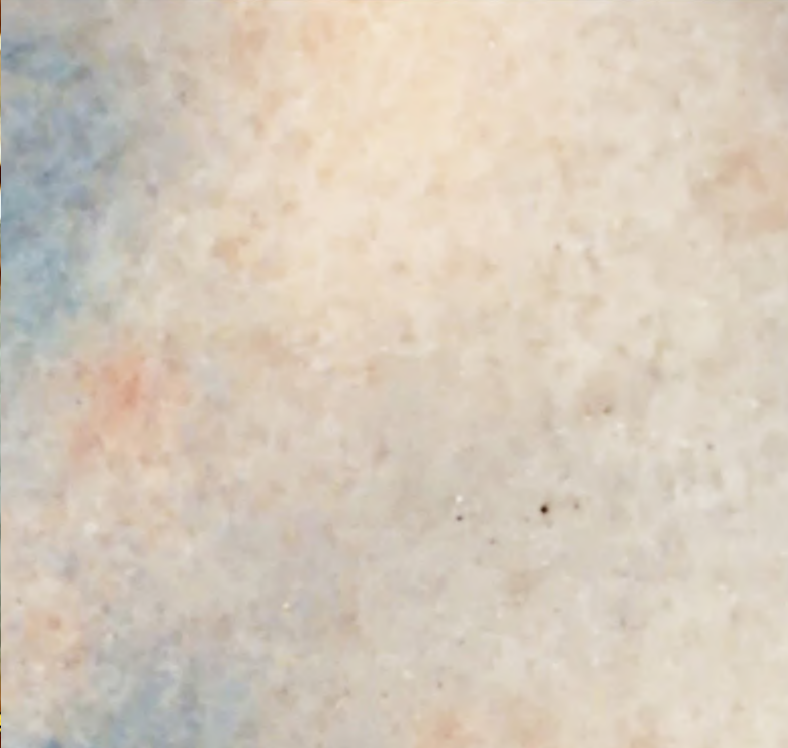
"I began to recognize a shape beneath me."

[1967 — Divers traced the submerged town for the first time.]

"Clay blurred into color."

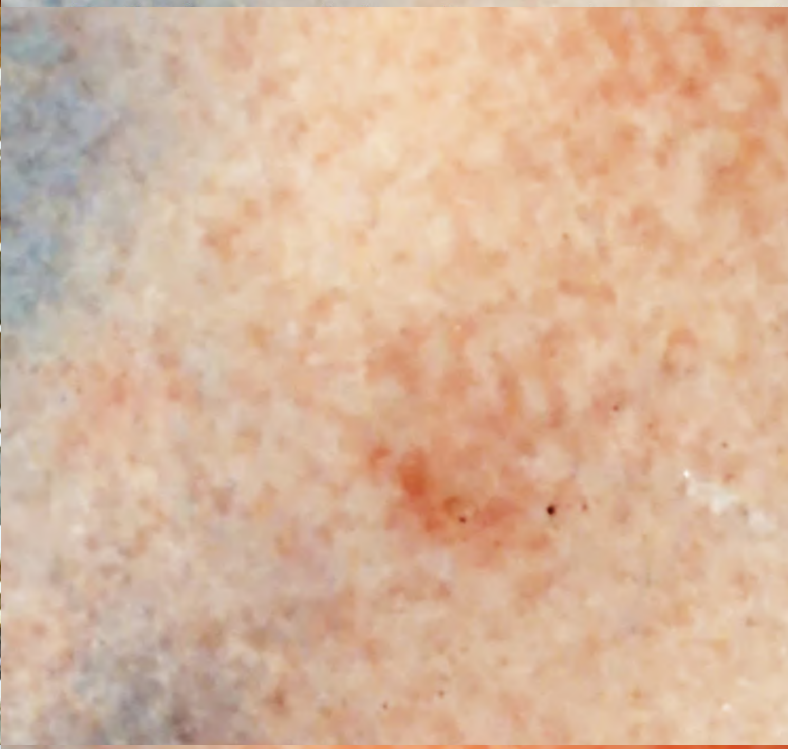
Using layered visual sequences, the project follows the shift from a stable settlement to a submerged landscape, where architecture becomes partial, blurred, and dispersed. Edges dissolve, boundaries become unclear, and the city is no longer read as a complete object but as traces held within water.

The work focuses on how environmental forces reshape spatial memory over time. It asks how a city can be understood not through reconstruction, but through processes of loss, accumulation, and transformation.

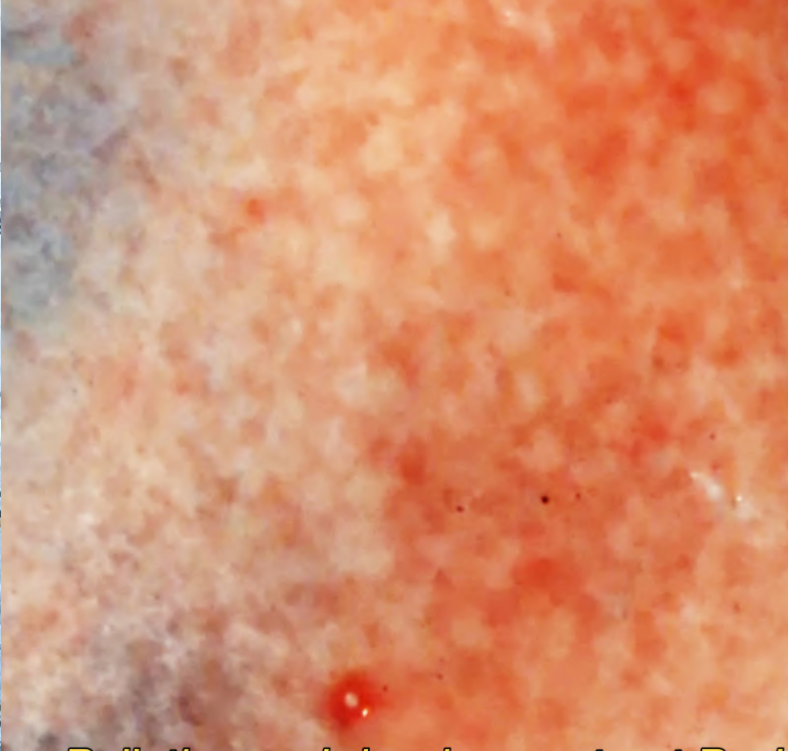


"The city became a quiet form beneath the

"Centuries settled as sediment."



"Centuries passed without footsteps."



"You rest in my tides."

Scan to watch



Architecture as Record:

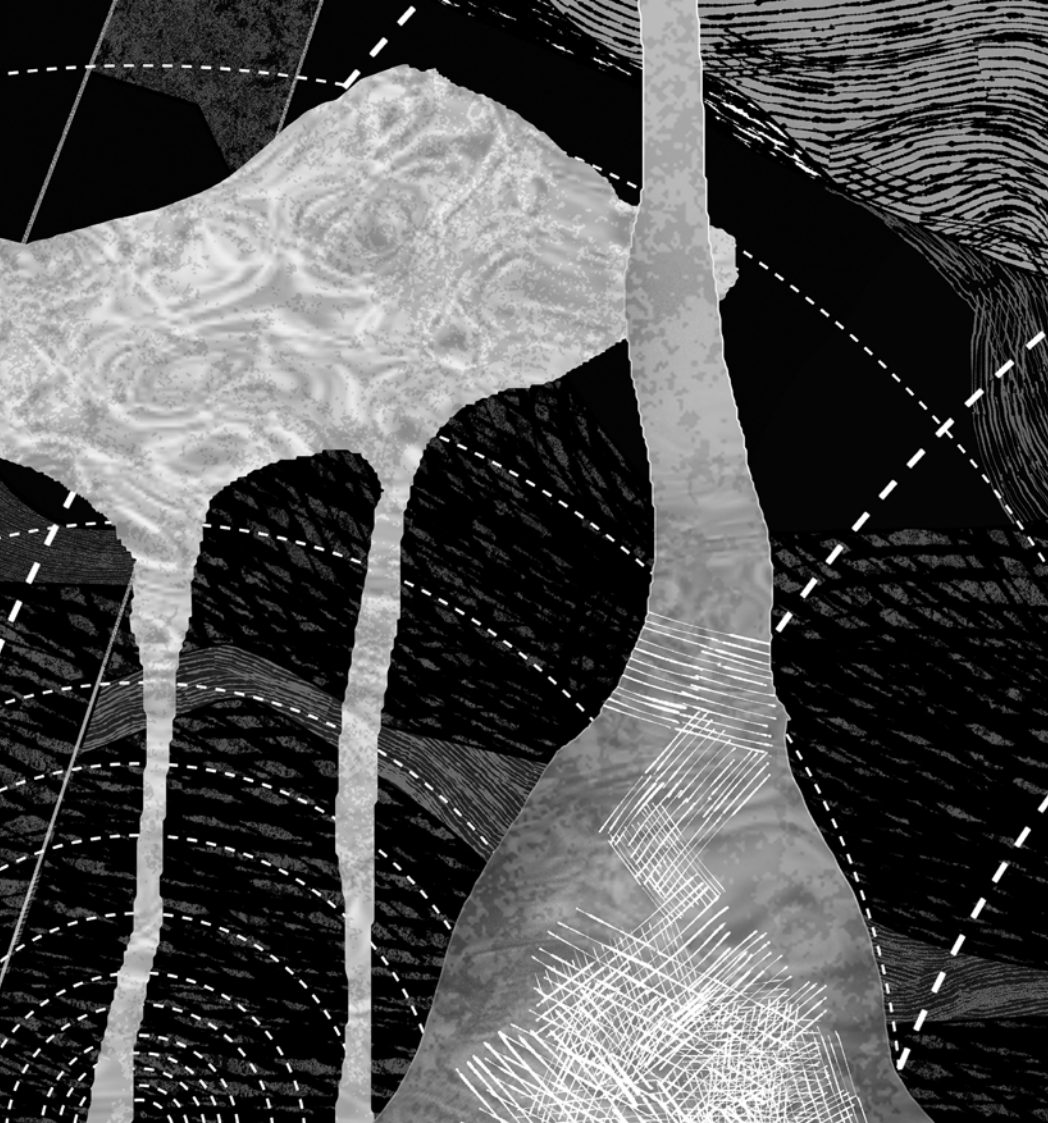
Movement, Displacement, and Repair
(Midterm)

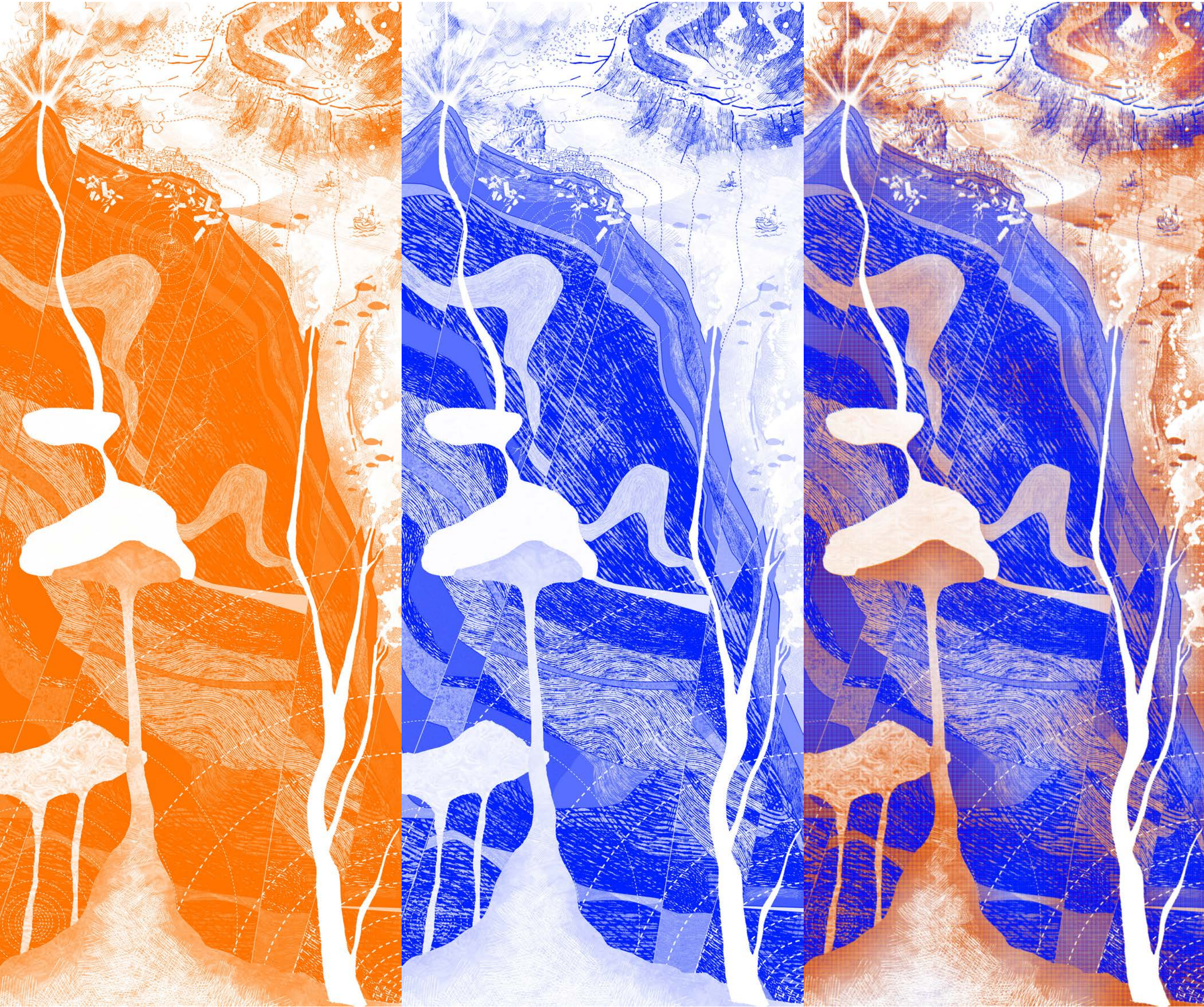
Advanced Studio VI, Spring 2026
Studio Critic: Ala Tannir
Location: Rione Terra, Italy

This project examines Rione Terra through the intersection of geological and human times. Built on unstable volcanic ground, the site is shaped by overlapping temporal processes where water, earth movement, settlement, and displacement continuously interfere with one another.



The drawings explore the shoreline not as a fixed boundary, but as an unstable interface shaped by rising ground, seismic activity, and human occupation over time. Layers, fragments, and shifting contours are used to represent multiple timescales operating at once.





Rather than understanding the city as stable or complete, the project reads instability as an ongoing condition. Coastal sites are continuously remade through geological movement, environmental change, and human intervention.

Architecture as Record:

Movement, Displacement, and Repair
(Final)

Advanced Studio VI, Spring 2026
Studio Critic: Ala Tannir
Location: Rione Terra, Italy

The project began by examining overlapping geological and human timescales through the shoreline condition at Rione Terra. In the final phase, the focus shifted toward architecture itself as a recording medium of ongoing geological movement.

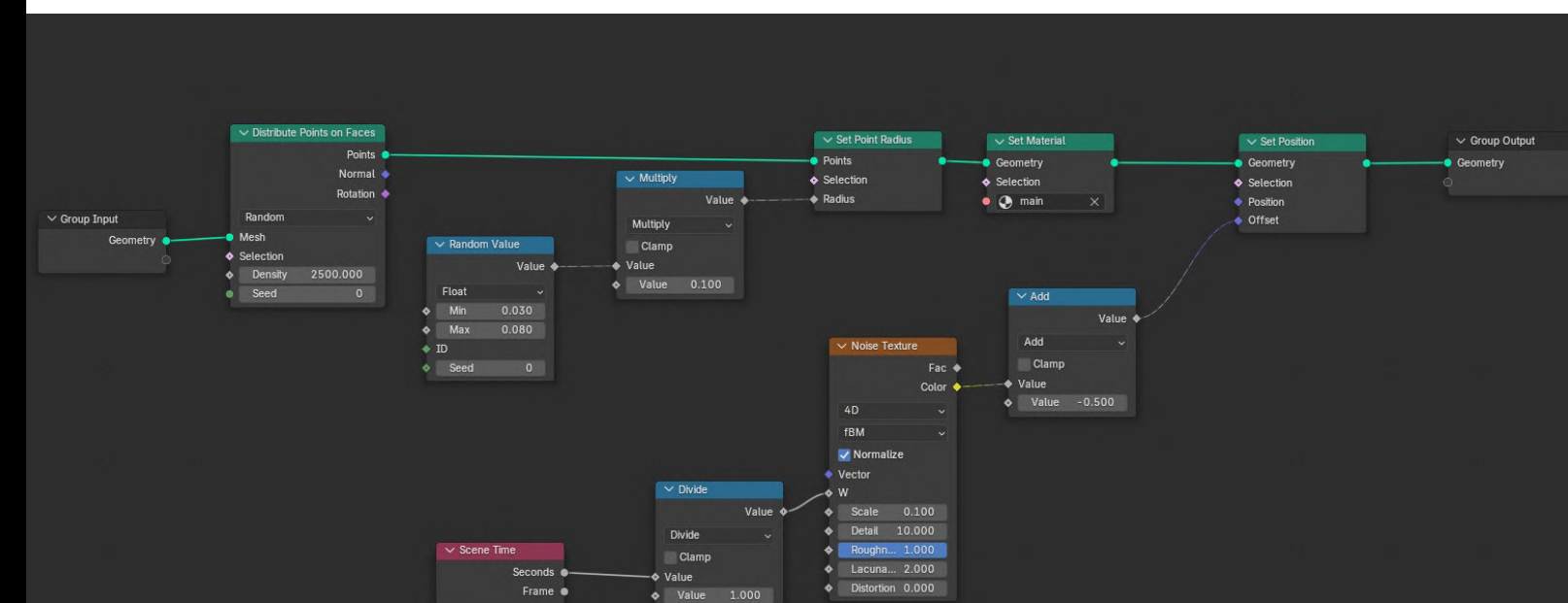
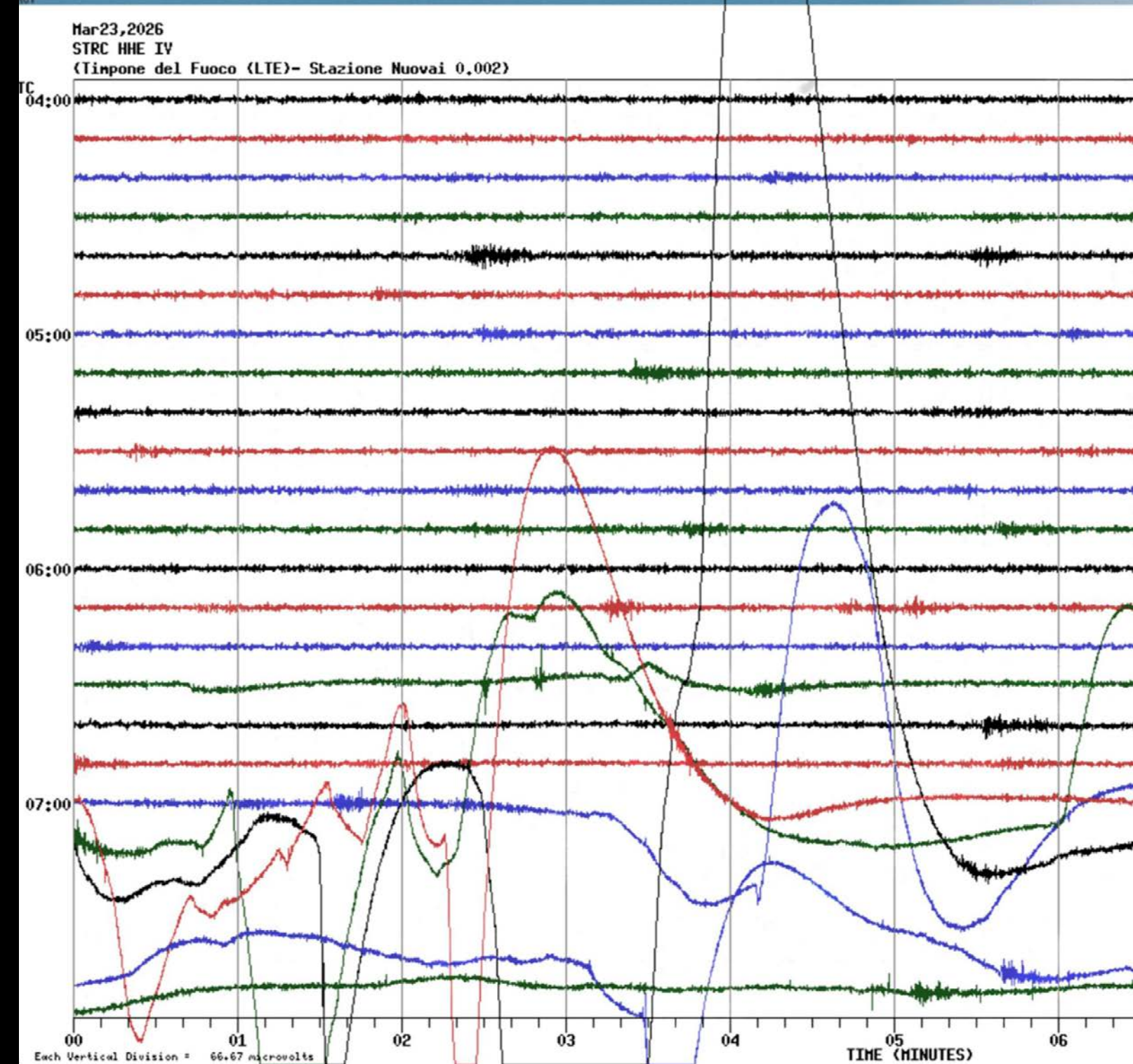
Rather than understanding architecture as fixed and stable, the project asks how buildings register movement that humans often cannot directly perceive.

*Here, architecture is a witness
holding the record of movement, change, development*



The project combines live seismic data with 3D scans of the site to translate invisible ground movement into spatial form.

Point clouds were used to avoid presenting architecture as complete or stable. Instead, the fragmented visual condition reflects instability and continuous transformation.





Here, architecture is a witness
holding the record of movement, change, development



Here, architecture is a witness
holding the record of movement, change, development



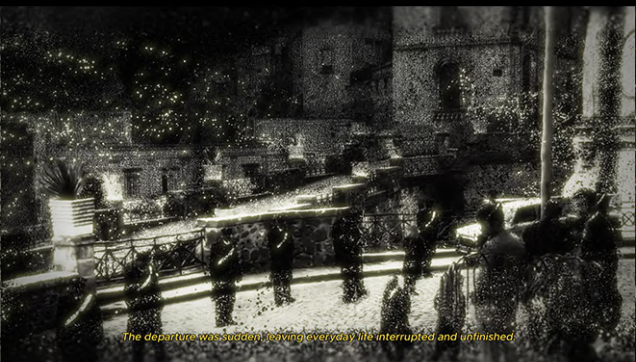
and bearing the traces of absence.



and bearing the traces of absence.



The streets of Rome Terra were once dense with residential and daily life.



The departure was sudden, leaving behind the interrupted and unfinished.



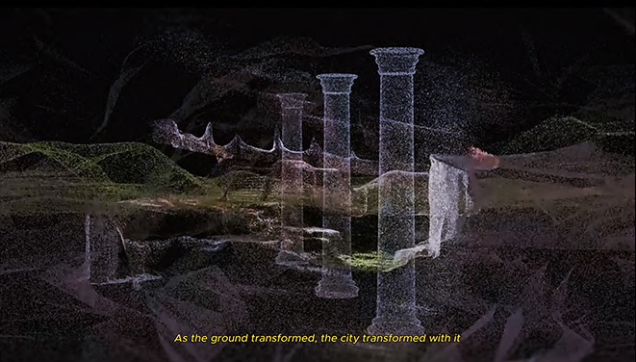
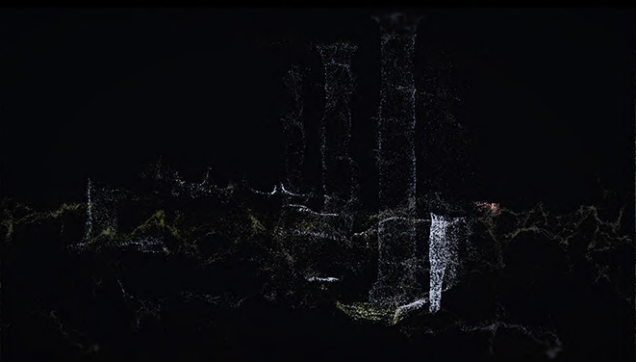
Roman foundations, early Christian structures, and later constructions
accumulate upon one another.



Roman foundations, early Christian structures, and later constructions
accumulate upon one another.



Roman foundations, early Christian structures, and later constructions
accumulate upon one another.



As the ground transformed, the city transformed with it.



The forces below eventually surface.



The forces below eventually surface.



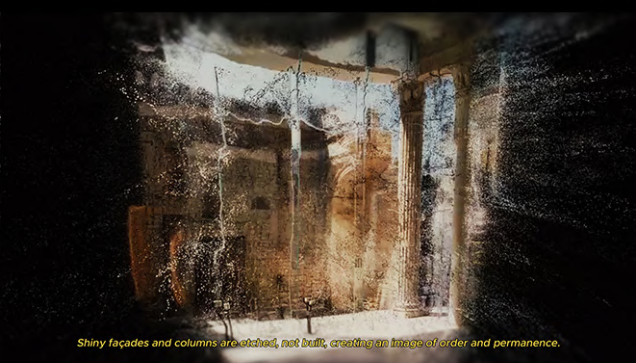
Cracks in walls, fractured floors, displaced thresholds
each a legible sign of pressure and stress.



Architecture registers what the body cannot always sense.



The site is repaired, reinforced, and carefully staged.



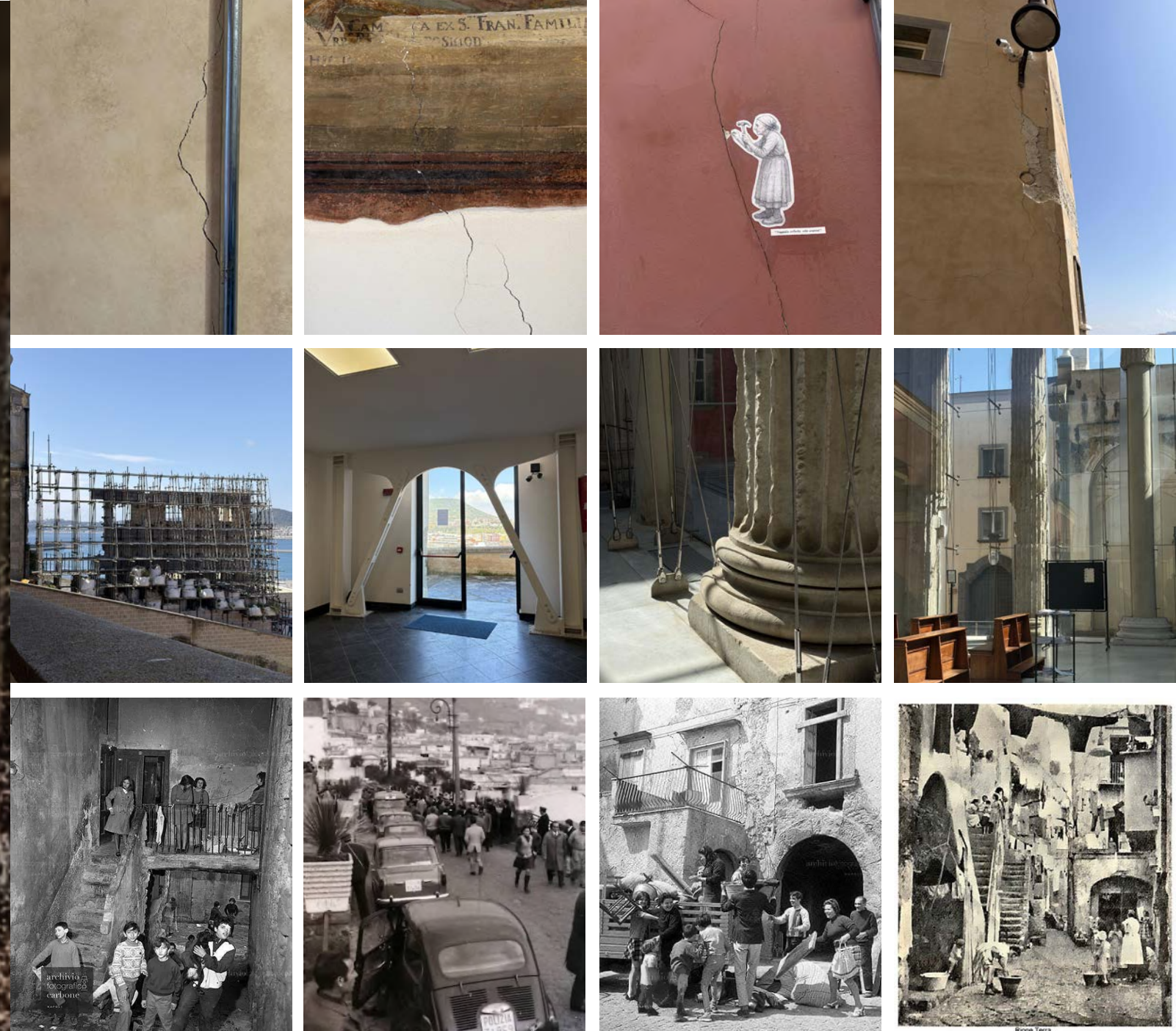
Shiny façades and columns are added, not built, creating an image of order and permanence.



Shiny façades and columns are added, not built, creating an image of order and permanence.



Here, stability is not condition, it is actively created.



Field of Evidence

Surface Evidence

Cracks, misalignments, and damaged frescoes reveal geological pressure becoming visible on architecture.

Layered Ruins

Roman ruins, early Christian structures, and contemporary architecture accumulate as the ground slowly rises and shifts.

Emptiness and Evacuation

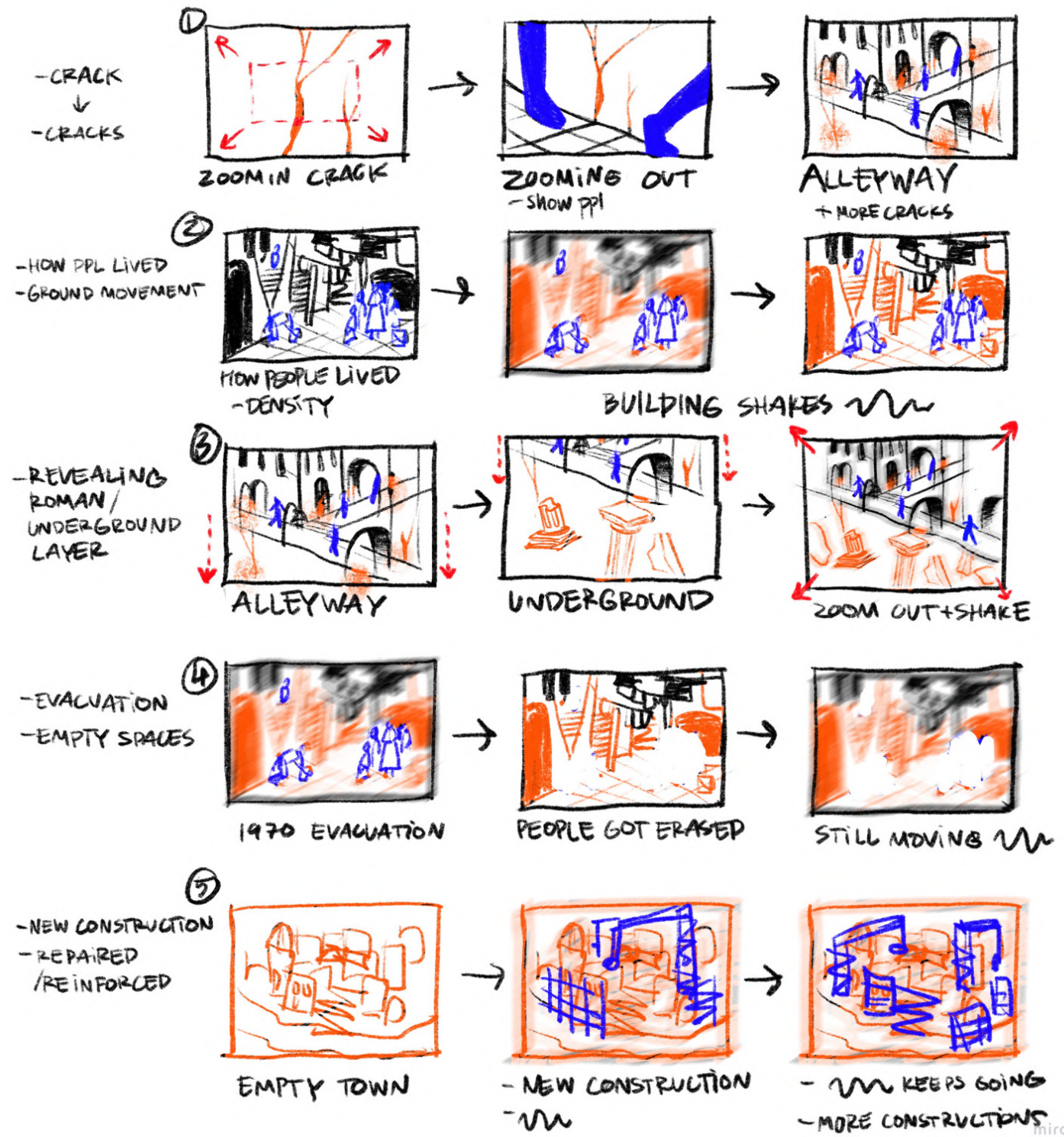
Following the 1970 evacuation, the absence of people became another form of evidence within the site.

Projected Stability

Ongoing repairs and reinforcement attempt to project permanence despite continuous movement below.

Rione Terra

Where Movement Remains



The final film combines point clouds, archival material, sound, and seismic data to bring these different forms of evidence together.

Rather than presenting architecture as solid and fixed, the project treats it as something that continuously registers change.



Architecture registers what the body cannot always sense.

Data Visualization of Speculative Behavior

Interactive visualization of financial volatility and online search behavior

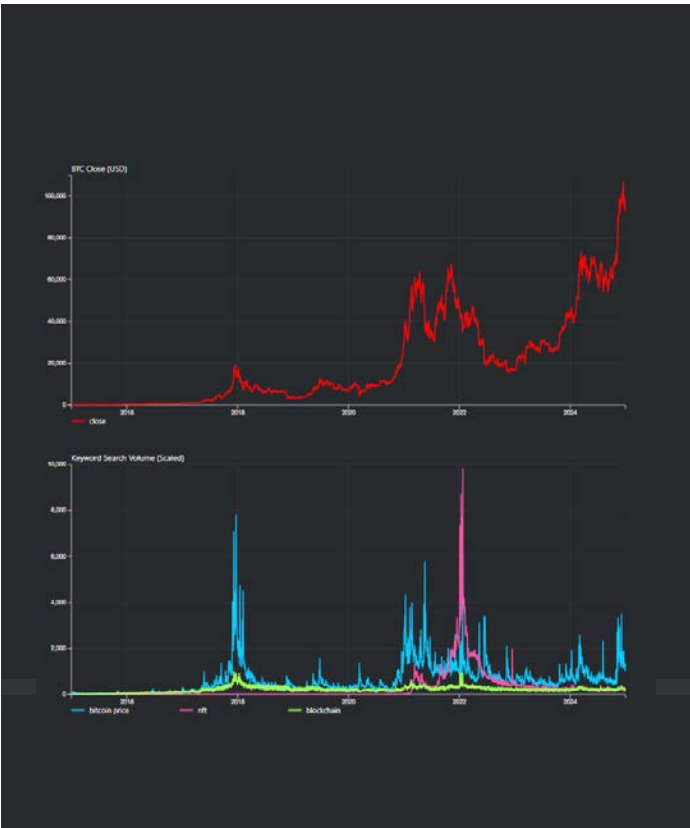
In association with:
Daegeun Kim
Ji-in Kang

Elective, Fall 2025
Professor: Jia Zhang
Tools :D3.js, JavaScript, HTML/CSS

This project explores data visualization as a method for understanding the relationship between financial volatility and collective online attention.

Using Bitcoin market history alongside keyword search activity collected over a ten-year period, the interface maps how moments of speculation, media visibility, and public curiosity intensify and decline across time.

Rather than presenting information as static data, the project constructs an interactive visual environment for reading patterns, overlaps, and instability across time.




```
(async function () {
const container = d3.select("#baseChart");
container.selectAll("*").remove();

const dataRaw = await d3.csv("btc_data_daily_scaled.csv", d3.autoType);

const data = dataRaw
  .map(d => ({
    date: d.date instanceof Date ? d.date : new Date(d.date),
    close: +d.close,
    bitcoin_price: d.bitcoin_price == null ? NaN : +d.bitcoin_price,
    nft: d.nft == null ? NaN : +d.nft,
    blockchain: d.blockchain == null ? NaN : +d.blockchain
  })))
  .filter(d => d.date && Number.isFinite(d.close))
  .sort((a, b) => a.date - b.date);
```

```
const outerW = 1000;
const chartH = 440;
const gap = 36;
const margin = { top: 22, right: 20, bottom: 36, left: 60 };
const innerW = outerW - margin.left - margin.right;
const innerH = chartH - margin.top - margin.bottom;
```

```
const x = d3.scaleTime()
  .domain(d3.extent(data, d => d.date))
  .range([0, innerW]);
```

```
function makeChart(titleText, series) {
const svg = container.append("svg")
  .attr("viewBox", `0 0 ${outerW} ${chartH}`)
  .style("width", "100%")
  .style("height", "auto");
```

```
const g = svg.append("g")
  .attr("transform", `translate(${margin.left},${margin.top})`);
```

```
g.append("text")A
  .attr("x", 0)
  .attr("y", -6)
  .style("font-size", "13px")
  .style("fill", "#ffffff")
  .text(titleText);
```

```
const values = series.flatMap(s => data.map(d => d[s.key])).filter(Number.isFinite);
const y = d3.scaleLinear()
  .domain(d3.extent(values))
  .nice()
  .range([innerH, 0]);
```

```
g.append("g")
  .attr("class", "grid-x")
  .attr("transform", `translate(0,${innerH})`)
  .call(
    d3.axisBottom(x)
      .ticks(6)
      .tickSize(-innerH)
      .tickFormat("")
  )
```

```
  .selectAll("line")
  .attr("stroke", "#ffffff")
  .attr("stroke-opacity", 0.08);
```

```
g.append("g")
  .attr("class", "grid-y")
  .call(
    d3.axisLeft(y)
      .ticks(6)
      .tickSize(-innerW)
      .tickFormat("")
  )
```

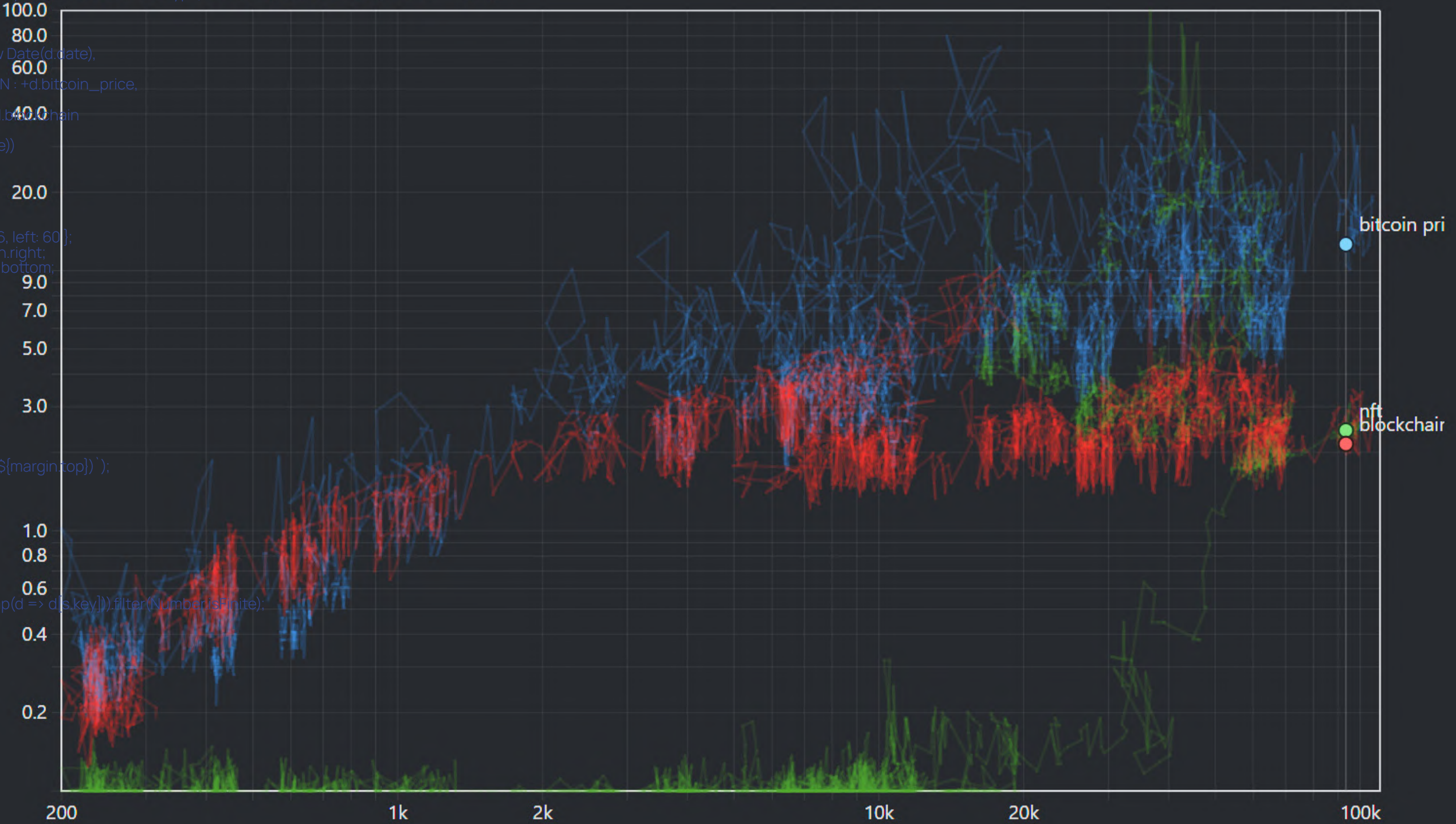
```
  .selectAll("line")
  .attr("stroke", "#ffffff")
  .attr("stroke-opacity", 0.08);
```

```
g.selectAll(".grid-x path, .grid-y path").remove();
```

```
g.append("g")
  .attr("transform", `translate(0,${innerH})`)
  .call(d3.axisBottom(x).ticks(6));
```

```
g.append("g")
  .call(d3.axisLeft(y).ticks(6));
```

Relative Search Volume (Normalized, Peak = 100)



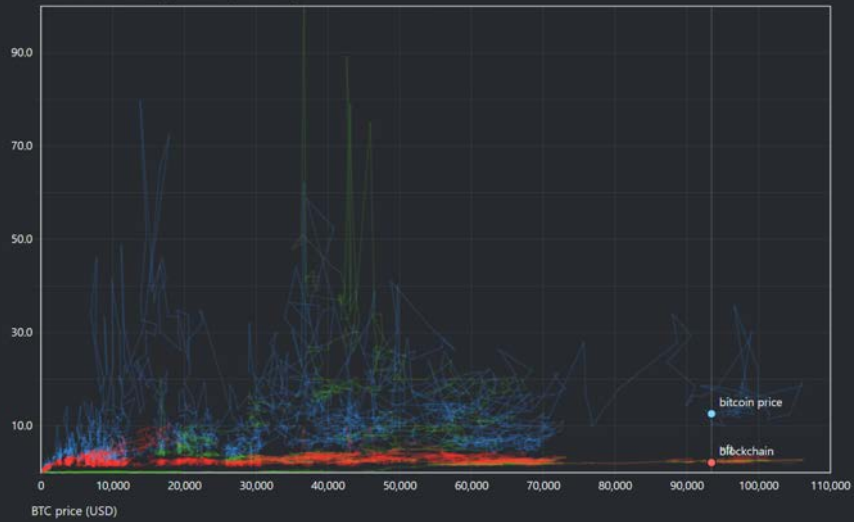
BTC price (USD)

```
const line = d3.line()
  .defined(d => Number.isFinite(d.v))
  .x(d => x(d.date))
  .y(d => y(d.v));
```

```
series.forEach(s => {
const pts = data.map(d => ({ date: d.date, v: d[s.key] }));
g.append("path")
  .attr("fill", "none")
  .attr("stroke-width", 2)
  .attr("stroke", s.stroke)
  .attr("d", line(pts));
});
```

```
const legend = g.append("g").attr("transform", `translate(0,${innerH + 26})`);
series.forEach((s, i) => {
const item = legend.append("g").attr("transform", `translate(${i * 180},0)`);
item.append("line")
  .attr("x1", 0).attr("x2", 22)
  .attr("y1", 0).attr("y2", 0)
  .attr("stroke-width", 3)
  .attr("stroke", s.stroke);
item.append("text")
  .attr("x", 30)
```

Relative Search Volume (Normalized, Peak = 100)



Developed through D3.js, the visualization focuses on layering, interaction, and temporal comparison as tools for making large datasets visually legible. Search terms including "bitcoin price," "blockchain," and "NFT" are mapped, against market fluctuations to reveal moments where public attention accelerates alongside, before, or after major shifts in the market

Reclaiming Underground Vacancy

Temporary Public Spaces

In association with:
Hao Lin
I Lok U

Elective, Fall 2026
Professor: Jelisa R. Blumberg
Location: Chinatown, Lower Manhattan

This project explores overlooked storefronts and semi-underground spaces across Lower Manhattan, focusing on Chambers Street Station, the Doyers Street tunnel, and East Broadway Mall. Located between Chinatown and the Financial District, these sites exist within a dense network of migration histories, informal economies, transit infrastructure, and abandoned commercial spaces.

Rather than proposing permanent redevelopment, the project investigates temporary and adaptable forms of occupation that respond to existing patterns of use. Across all three sites, the storefront becomes a threshold between visibility and concealment, vacancy and activity, permanence and improvisation.



UNDERGROUND and TEMPORAL

Time-based - Alley interior - Everyday making - Fold-out space - Improvised



Chamber Street
Vacant Activation Program



Vacant and Abandoned Storefront
in East Broadway Mall



Restricted Access:
Doyer Street Tunnel Shops

Vacant Unit Activation Program

Launched in late 2023, the Vacant Unit Activation Program aims to fill vacant former retail units in the subway system with creative non-traditional uses, such as art installations or cultural programming that can make currently underutilized spaces more vibrant.

As demand for retail space has evolved in recent years, these units have experienced vacancy because their size limitations, shape, or location, make them challenging for revenue-generating businesses to utilize them for traditional retail. The program is intended to encourage visually appealing and engaging uses to make stations more welcoming and whimsical spaces for riders.



Mahjong

In Lower Manhattan Chinatown, mahjong works as a daily social structure, especially around , where players gather in small groups and occupy leftover public space. The sound of tiles and repeated routines create a steady presence that shapes how the street and park are used. Rooted in traditions brought by early Chinese immigrants in the late 19th and early 20th centuries, the game became a way to maintain cultural continuity, build trust, and form community networks in a new city. It still holds that role today, especially for older residents, functioning as a space of social support, informal exchange, and everyday belonging.



Small-Scale Food Economy

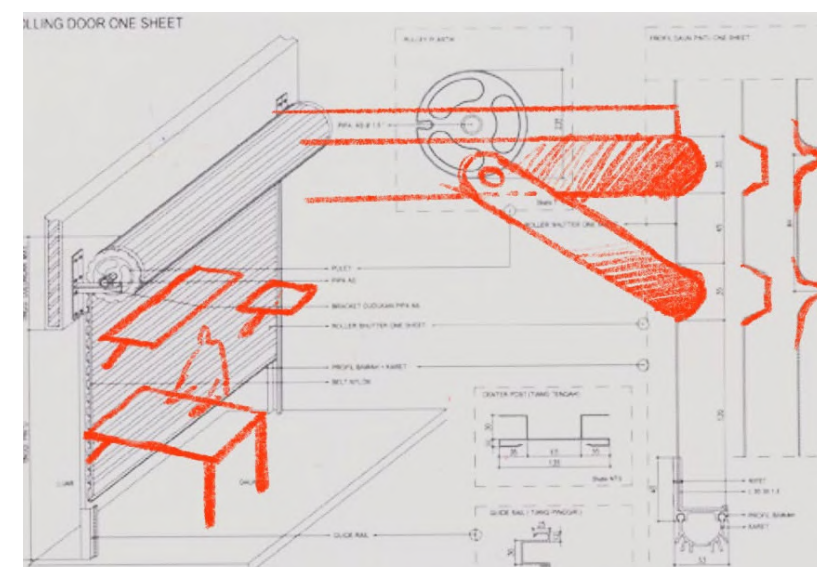
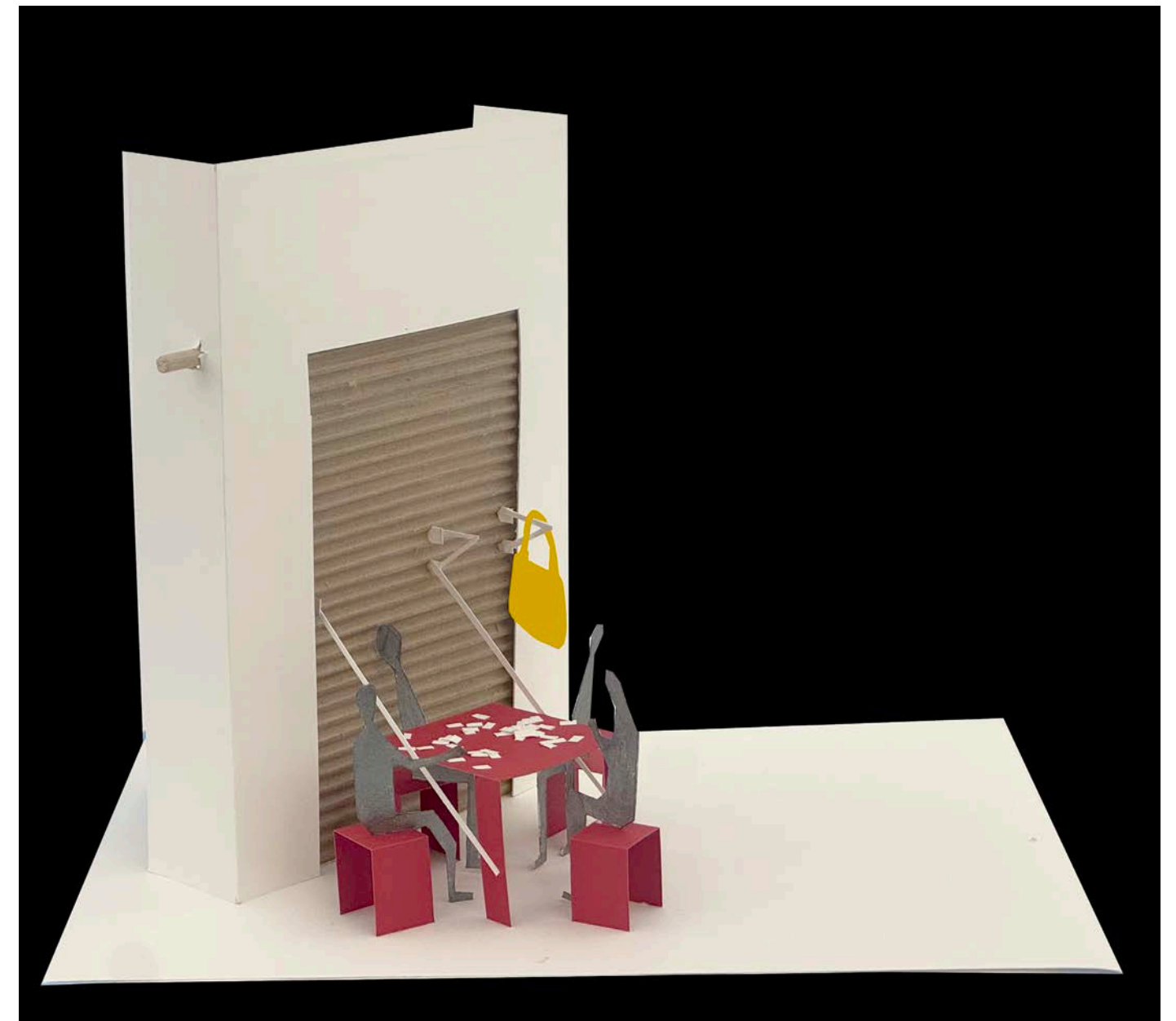
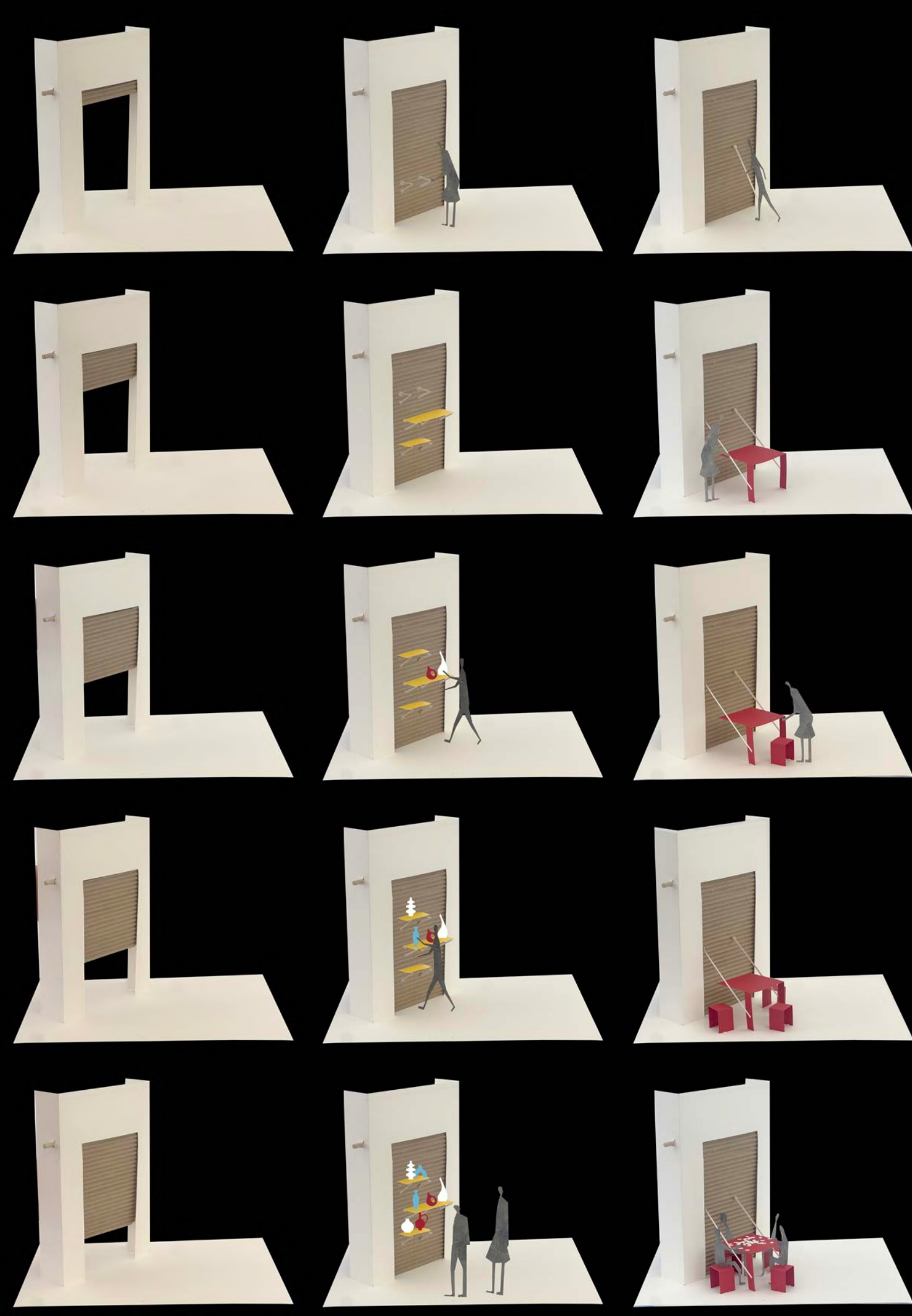
Along East Broadway, food activity centers on small Fujianese eateries, especially around the East Broadway Mall. These places serve everyday dishes like peanut noodles, fish ball soup, and dumplings, often in compact, informal spaces, sometimes below street level.

Even as parts of the area feel underused, food keeps it active, drawing a steady local crowd and maintaining daily routines within a quieter, partially vacant environment.



The project looks at how hidden or low-visibility forms of occupation already shape this part of the city. Stories surrounding Doyers Street describe underground escape routes and fragmented circulation systems connected to the Tong Wars and informal social networks within Chinatown. While many of these spaces no longer physically exist, traces of hidden movement and layered territorial histories still remain embedded within the urban fabric.

At the same time, East Broadway Mall and the surrounding streets continue to support everyday forms of gathering through food exchange, mahjong clubs, small businesses, and informal economies operating within marginal interiors and partially vacant spaces. Rather than treating vacancy as empty, the project understands these sites as spaces already containing social patterns, memory, and repeated occupation.



The rolling gate became the central architectural device of the project. Instead of understanding it only as a barrier, the proposal reimagines the gate as a transformable threshold capable of supporting temporary public activity. Seating, lighting, tables, displays, and small programs unfold outward from the storefront edge, allowing closed spaces to temporarily reconnect with surrounding circulation.