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YOON AH KIM

Selected Works
2025-2026



2025 SUMMER

2025 FALL

2026 SPRING

STUDIO



ELECTIVE



- | | | |
|---|---|---|
| 4 | 3 | 1 |
| 2 | 6 | 5 |
1. 2026 SPRING STUDIO
Zero-to-Zero
 2. 2025 SUMMER ELECTIVE
Transscalarities: Crisis and Architecture
 3. 2025 FALL STUDIO
Transcription
 4. 2025 SUMMER STUDIO
Mirrors in the Desert
 5. 2026 SPRING ELECTIVE
Re-thinking BIM: Calibrated Comfort
 6. 2025 FALL ELECTIVE
Seedbomb

01

Zero-to-Zero

New System of City that Exposing Freedom

Transscalarities
2026 Spring
Instructor Juan Herreros + Aistaya Shanning
Group Project Research, Concept, Residential

Abstract

This project redefines housing as a regenerative system that integrates waste, ecology, and habitation. Located on the southeastern edge of Madrid, the site is shaped by three conditions: conflicting urban fabrics, the informal settlement La Canada Real, and long-term contamination from waste treatment facilities.

The project reveals and reorganizes marginalized populations and infrastructures as active components of an operative urban system.

The proposal introduces a growing loop infrastructure, where waste is collected, sorted, and transformed into construction resources. This process establishes a circular system that supports incremental spatial growth and on-site production.

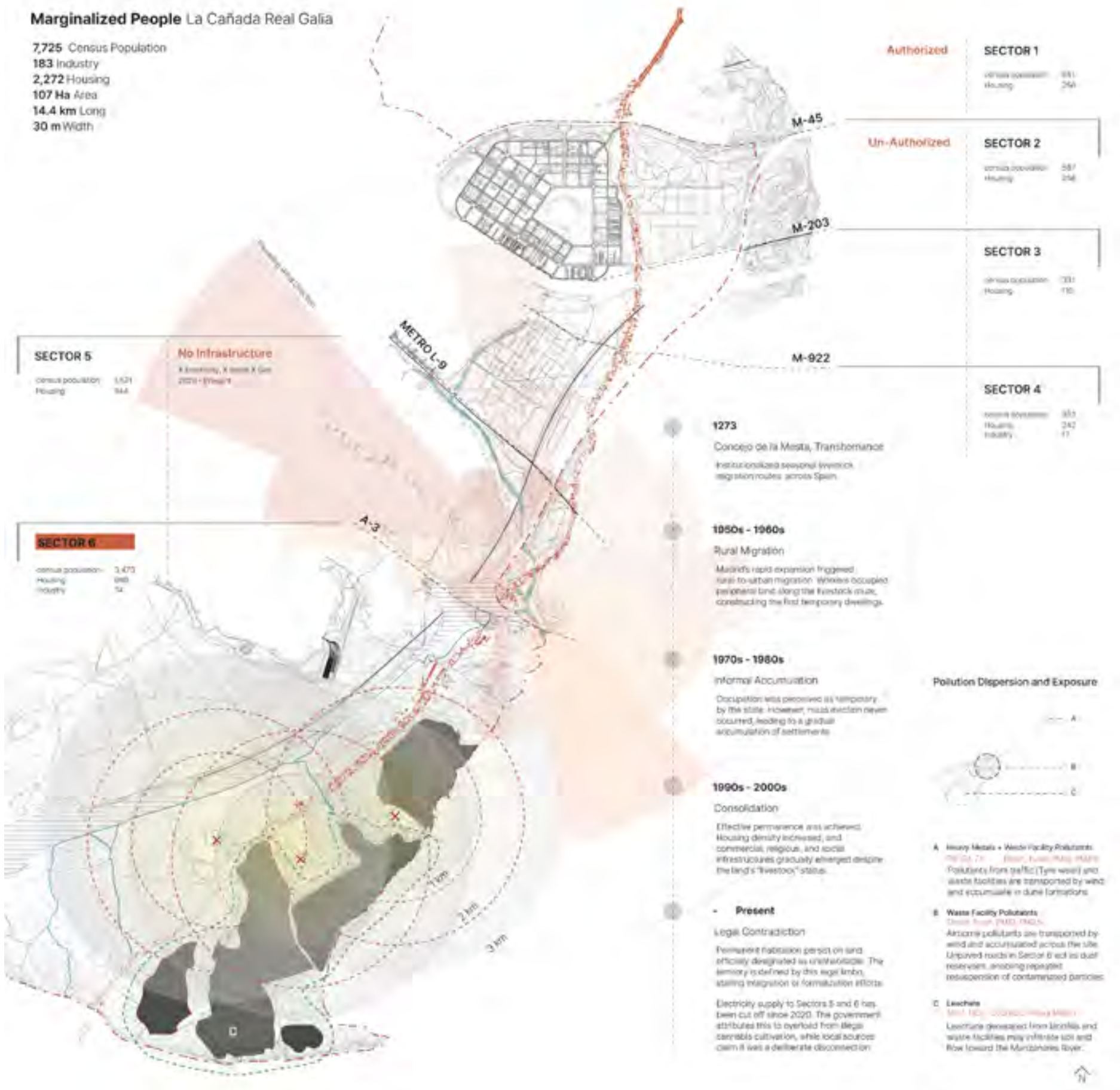
Structured as a ring-based framework, the project reconnects territories divided by infrastructure while enabling diverse forms of dwelling. Residents actively participate in construction, production, and ecological remediation, forming a self-sustaining system that links human and non-human habitats.



Rhino, Illustrator, Photoshop, Nano Banana

Marginalized People La Cañada Real Galia

7,725 Census Population
183 Industry
2,272 Housing
107 Ha Area
14.4 km Long
30 m Width



01

Largest Informal Settlement in Europe

The route La Cañada Real is a designated royal livestock route(1273), but it transformed into an informal settlement during rural-to-urban migration(1950s-60s).

Sector 6, in particular, is considered the mosst precarious area, where electricity has been cut off since 2020, exposing residents to extreme climatic coonditions.

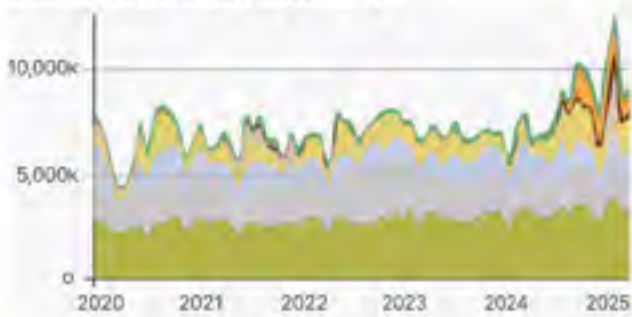
While the government attributes this to power overload cause by illegal activities, residents widely perceive it as a strategic measure to pressure relocation.

SYSTEM OF CONTAMINATION Waste Facilities & Landfills

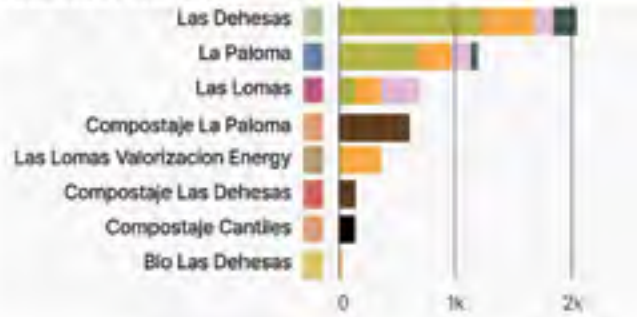
Most waste is concentrated in the area where economic activity and organic waste are processed in these conditions. This process generates chemical pollutants and leachate that severely impact air, water, air quality, and the health of nearby communities.

Process generating leachate: 100% waste, 100% leachate, 100% pollution, 100% contamination.

Monthly Weight of Recycle Waste [t]



Facilities x Process Amount [t]



SITE AND IMPACT MAP



- Inert Waste**
Stable / Non-Active
Minimal pollution
- Solid Waste**
Decomposing / Reactive
Leachate + Gas + Pollution
- Waste Truck Route**
- Leachate**
Decomposing / Reactive
Leachate + Gas + Pollution



1. Environmental Inspection Road
2. Garblon Used as a Containment Wall
3. Runoff Water Drainage Ditch
4. Grooved Pipe For Collection of Rainwater from percolation
5. Min. 1m Soil
6. Synthetic Geotextile
7. Polyethylene Geotextile
8. Polyethylene Sheet
9. Mass of Waste
10. Jute Mesh
11. Kermes Oaks
12. Protection Berm
13. Drainage Layer of 0.50m of Gravel
14. 0.25m Gas Drainage Layer
15. Portuguese Oaks, Pyrenean Oaks, Holm Oaks...
16. Riparian Vegetation

02

Largest Waste Treatment Facilities + Landfills in Europe

These waste treatment facilities supposed to only treat recyclable materials, but they are dealing with recyclable materials and organic waste unsorted, and processed under unsafe conditions.

The process generates chemical pollutants and leachate, contaminate the soil, water, air quality, and directly affecting nearby communities.

This facilities remain active just because of profit-driven interests.

03

Urban Structure

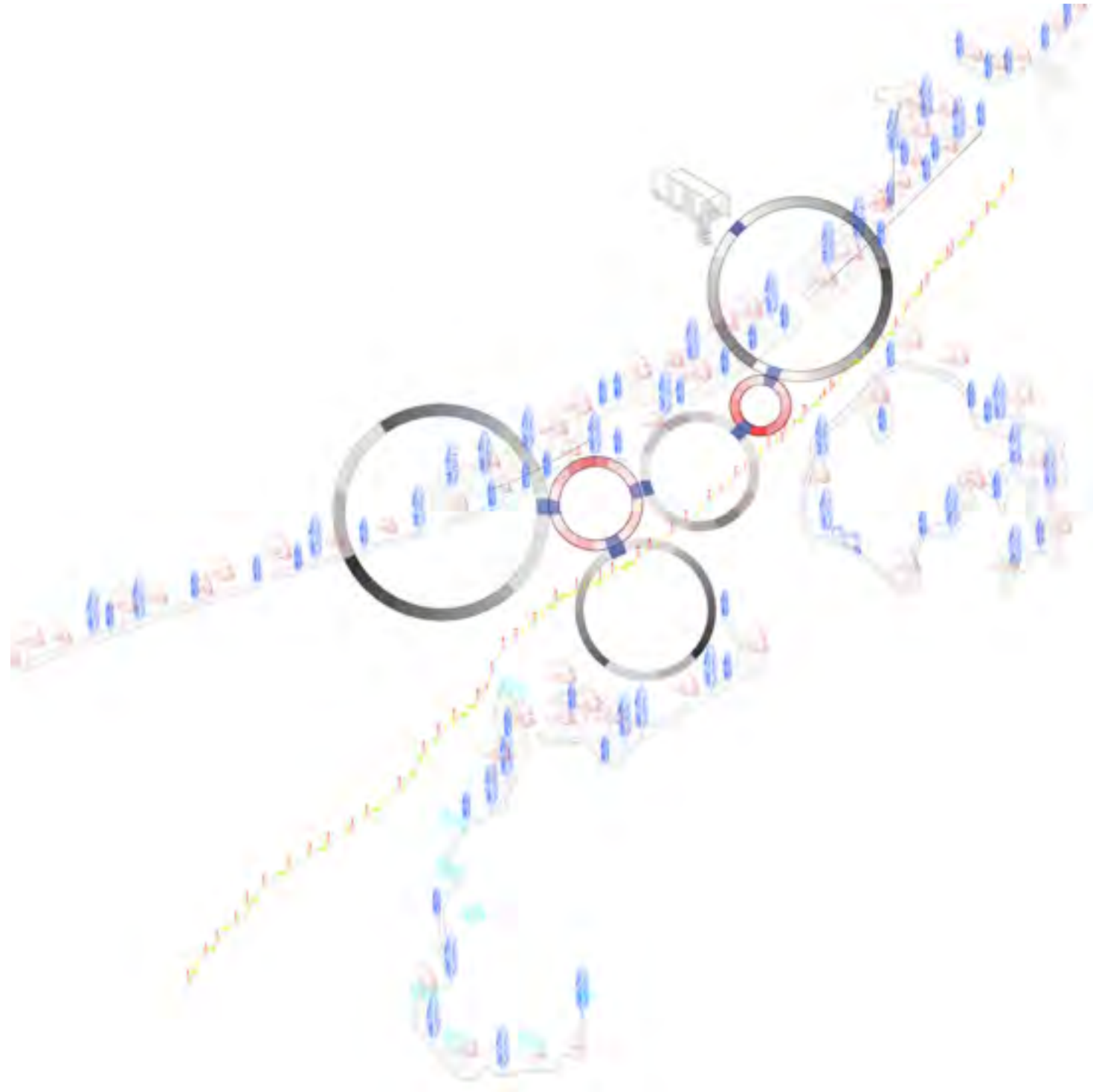
The historic center of Madrid is medieval informal fabric. The city has growing organically overtime.

In contrast, the outskirts are rapidly expanding to accommodate population growth, adopting grid-based planning for efficiency.

Grid-pattern refers the imaginary as "The City", highest urban quality of life.

Developers are keep copying the urban structure in order to disillusion people with sense of quality.

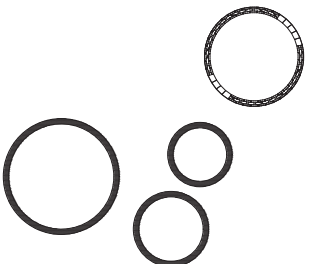




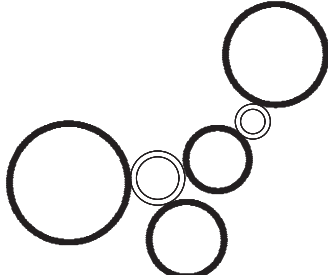
This project rejects existing urban structures and proposes a new urban model in which waste, environment, and human habitation operate as an integrated ecological cycle.

The circular system is spatialized over time, allowing it to be constructed from zero to deconstructed back into zero. The circular form enables bi-directional growth, management, and expansion through segmentation. Rather than a fixed form, the project becomes an evolving system over time.

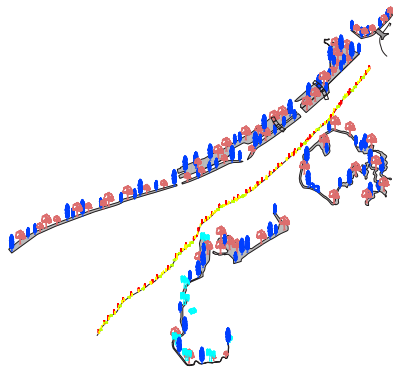
TYPE A Centers on human activity as recycled-material production system. It not only relocates residents into improved living conditions but also provides opportunities for economic self-sufficiency. Type A is anchored within existing urban conditions.

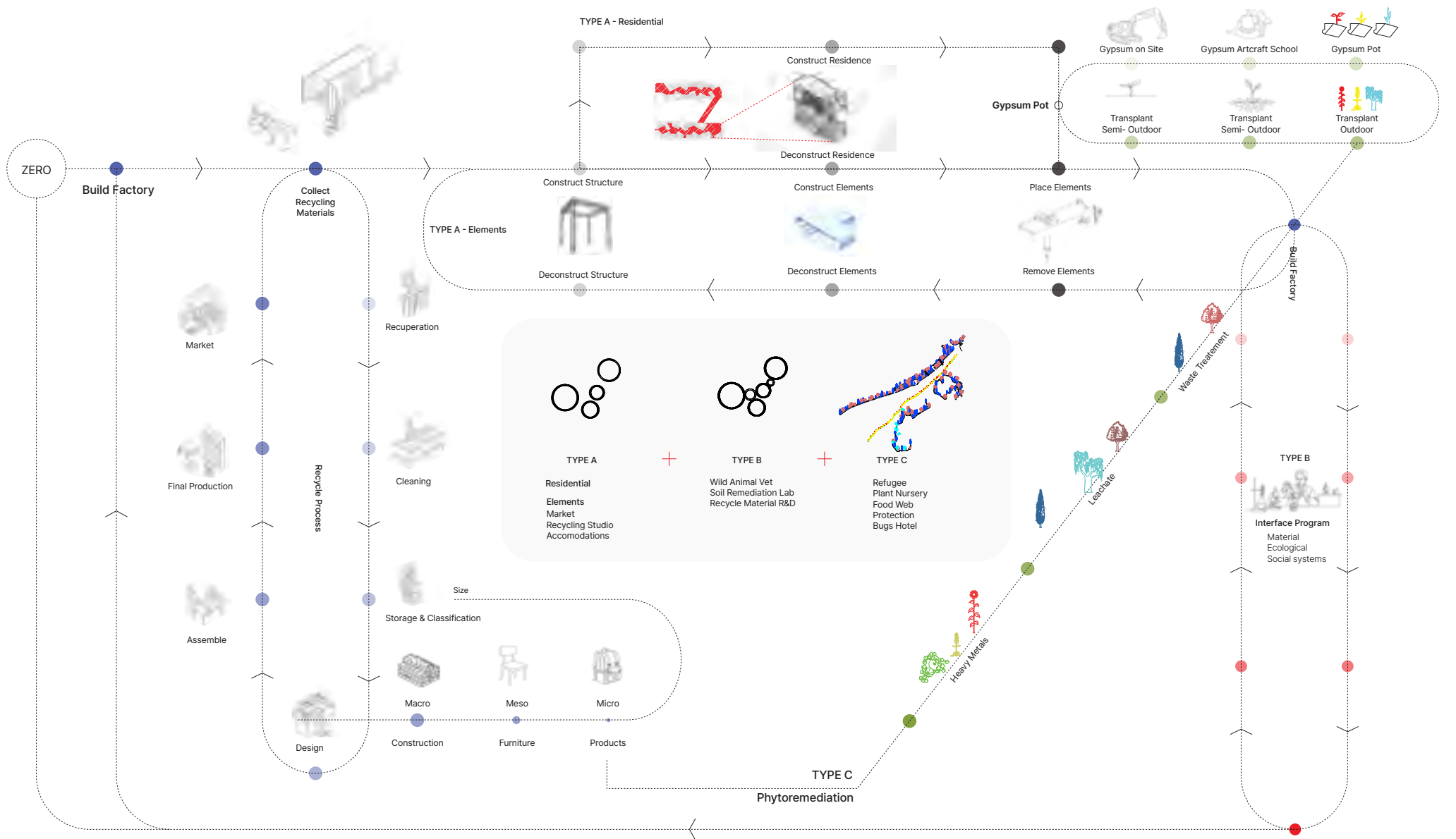
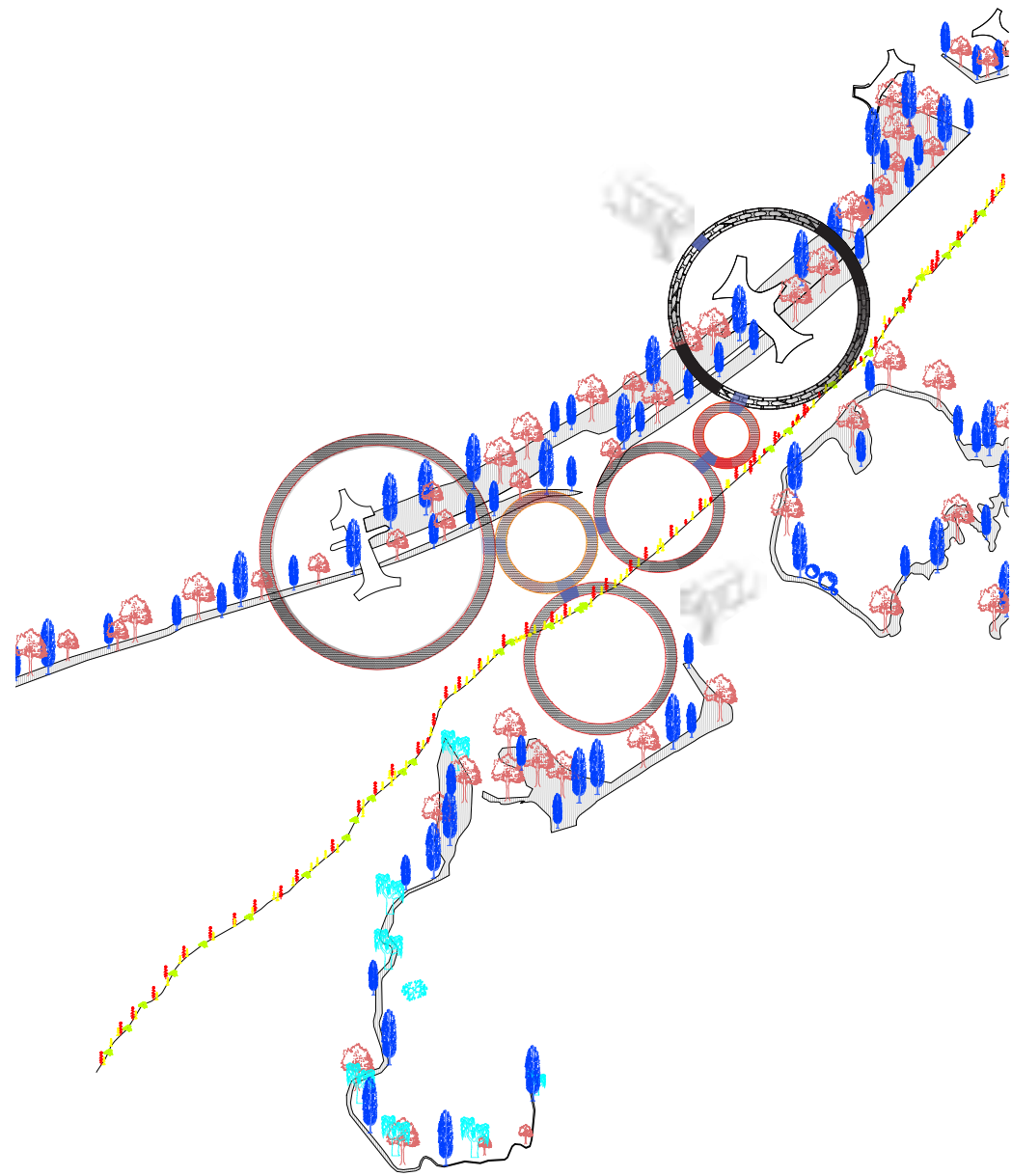


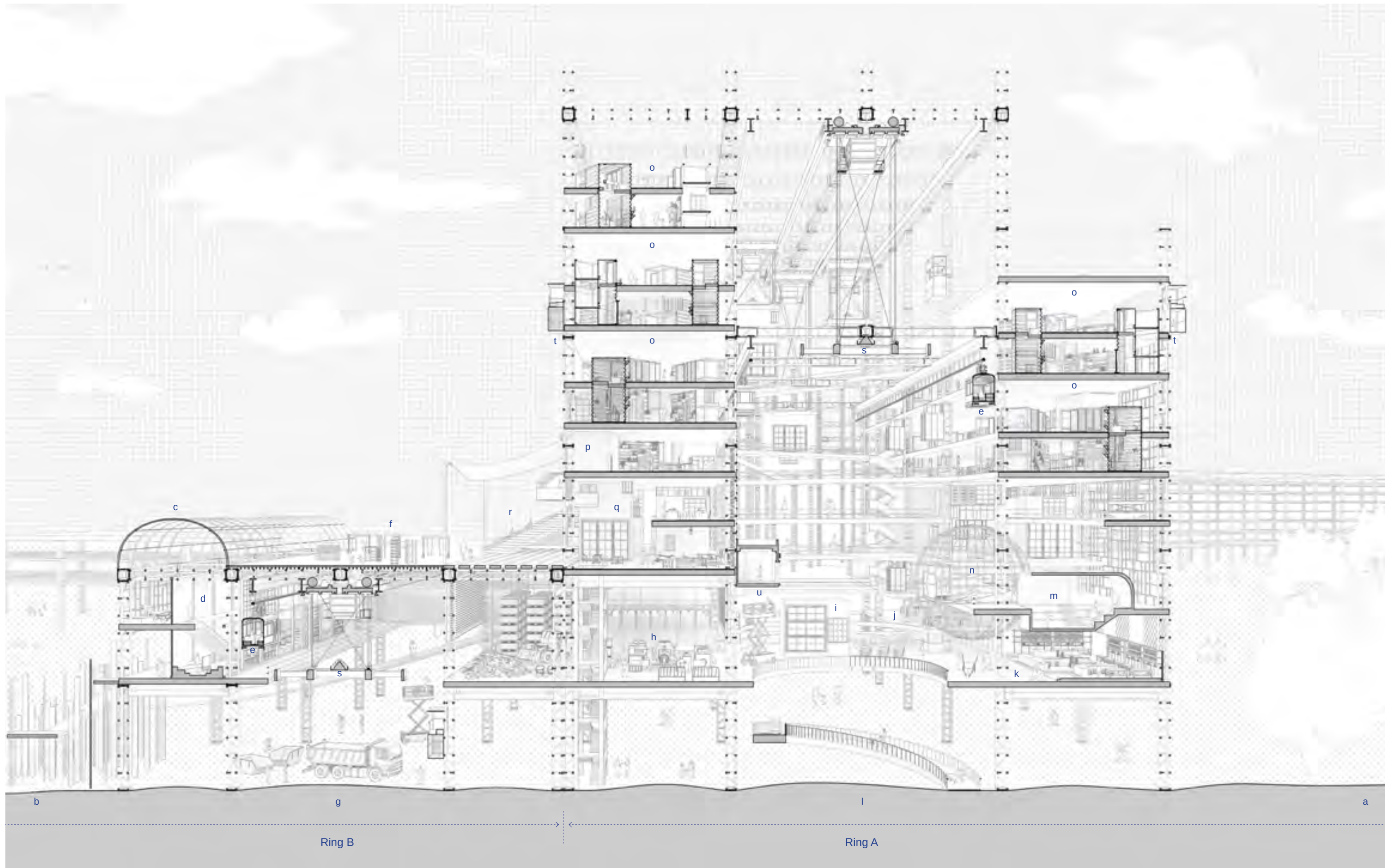
TYPE B Operates as an intermediate between human and non-human systems. It includes programs for non-human species that are managed by humans. Type B is linking to Type A through human-managed ecological programs.



TYPE C Dedicated to non-human species through a phytoremediation system. It is deployed along ecologically sensitive areas that require restoration and protection.

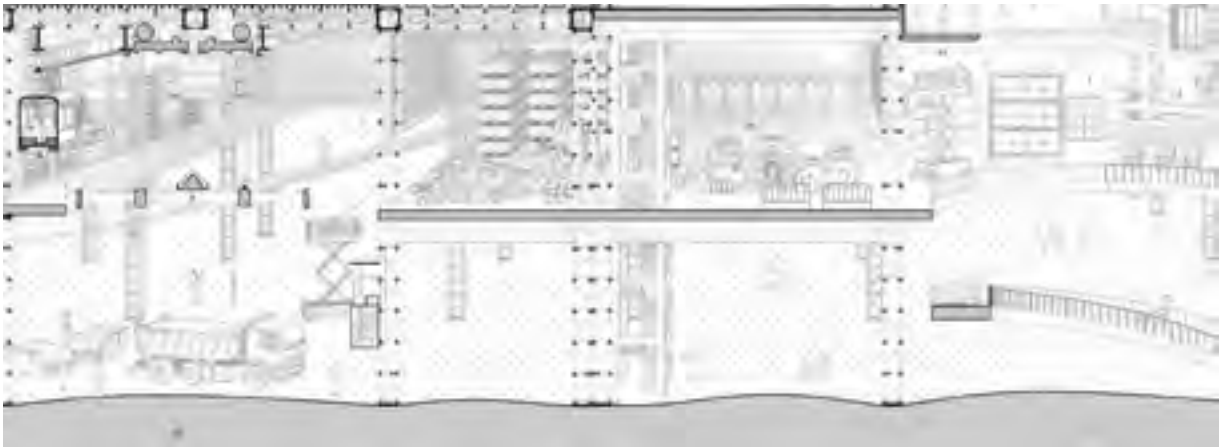






Upcycling Factory

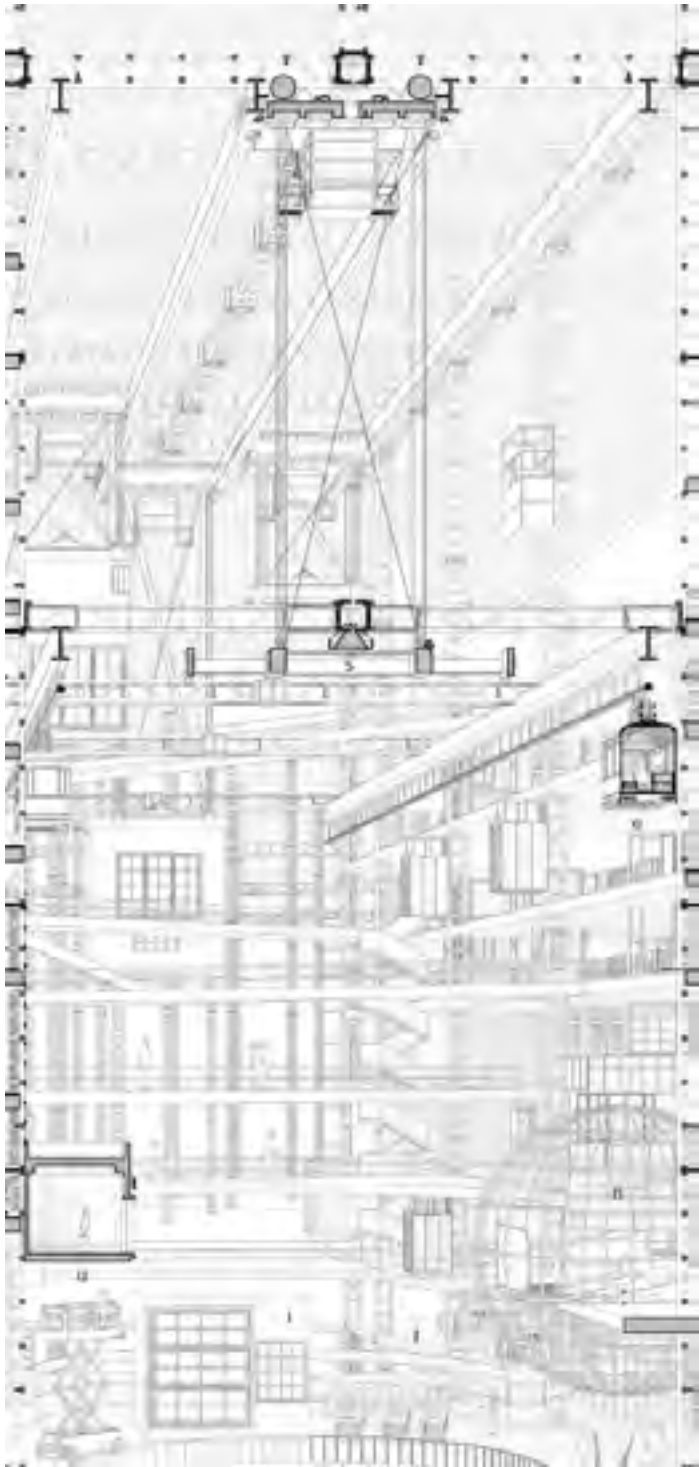
Ground Level, upcycling workshops and markets allow residents to produce, exchange, and sell furniture, façade panels, and other materials.



Overhead Crane + Monorail

Central void supports crane operation, crane is used for unit insertion, main circulation.

Monorails are starting from residential levels, connects movement across the whole ring.



Common Area

On residential level, there are open kitchens, workplaces, and green corridors.

All the materials are produced with upcycling materials.



Upcycling Workshop and Market

Residents are producing, exchanging, and selling furnitures, façade panels, and other materials, and byproducts they made.



TYPE A

Residential

Type A functions as the central structure where production and housing are integrated.

Residential units are primarily located in the upper levels, while recycling facilities occupy the lower levels.

Programs

Residential Unit, Recycling Workshops, Material R&D, Gypsum Craft School, Herding School, Marketplace

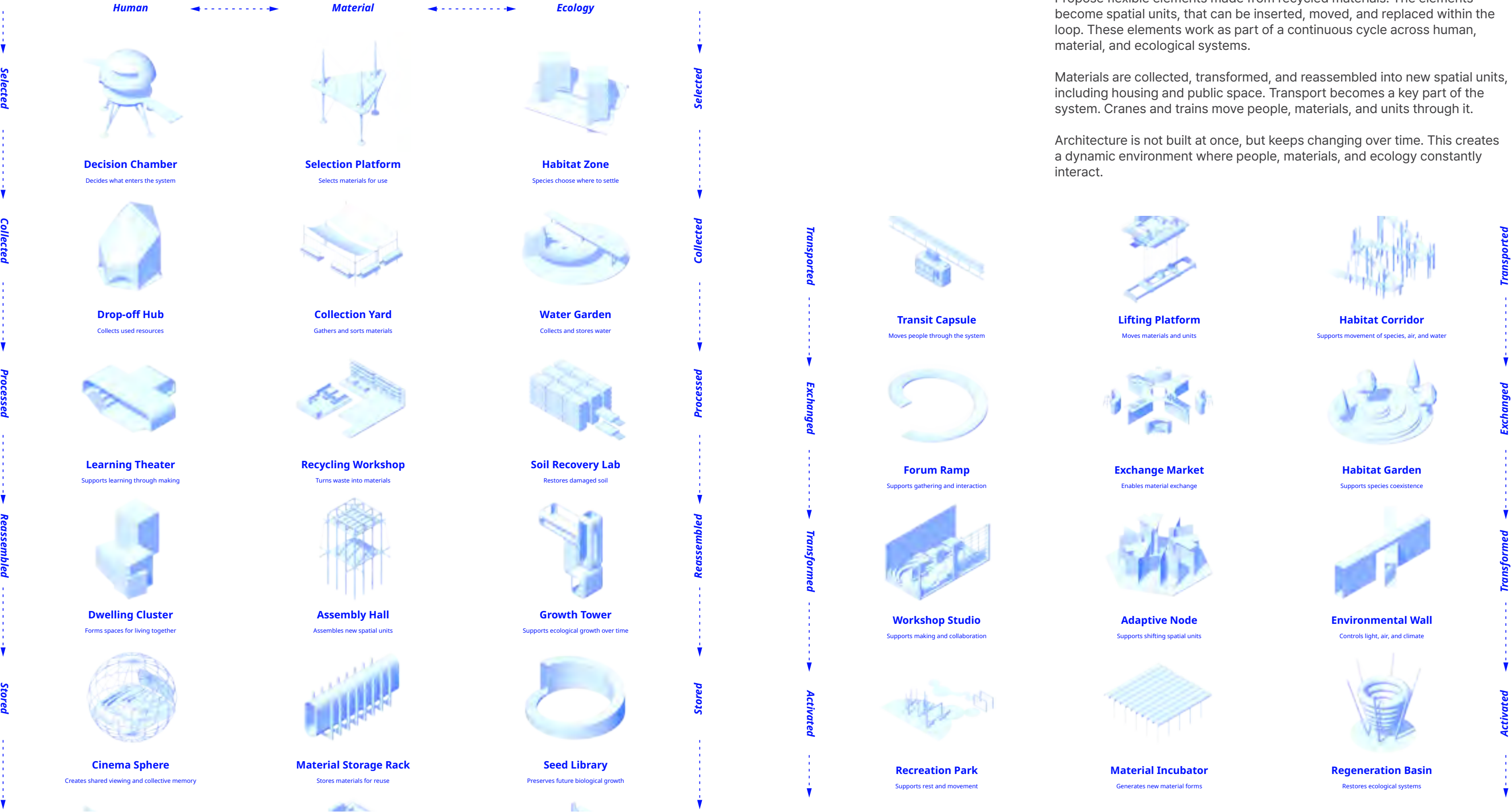
Residential Unit

Residential units occupy the upper level of Type A. With a 4.5 floor-to-floor height. The housing is built from upcycled materials, where daily life is organized around recycling and plant cultivation.



Metabolic Elements

Nothing is Fixed. Everything is Transforming.

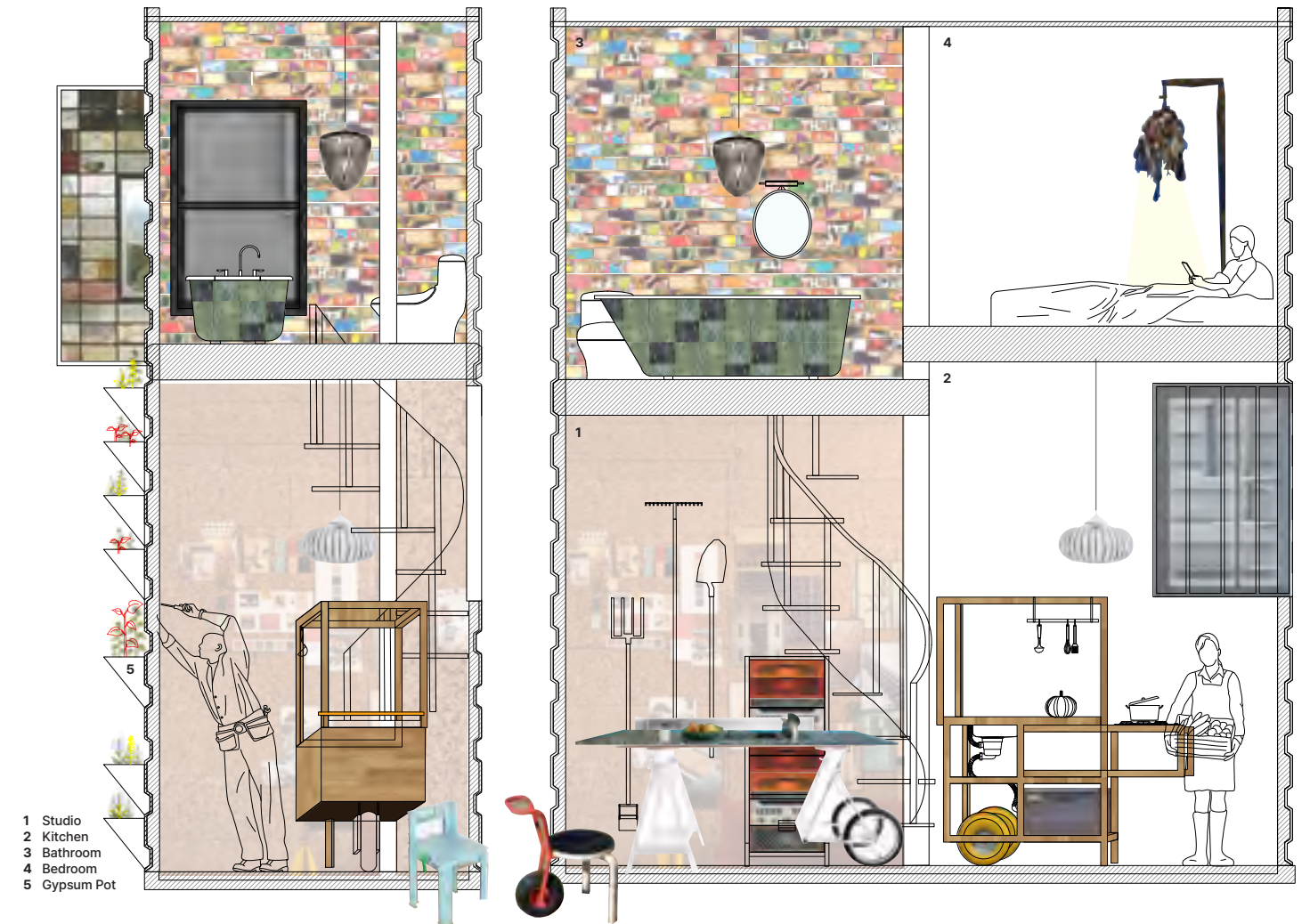
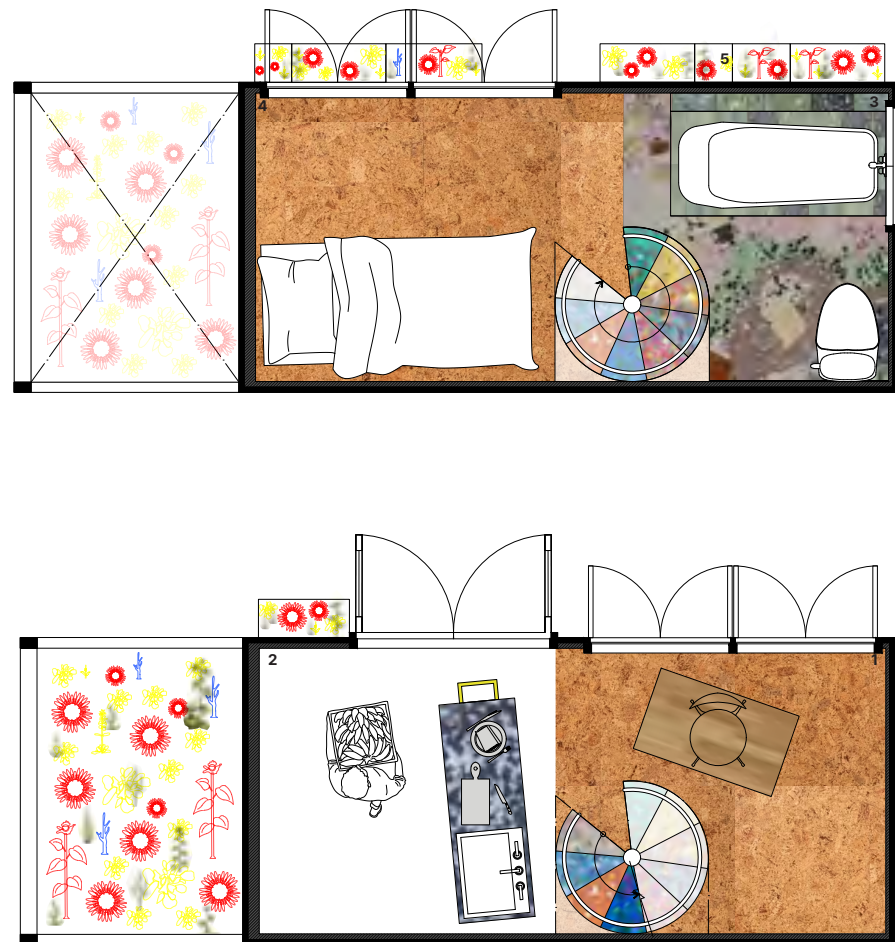


TYPE A Elements Lower Level

Propose flexible elements made from recycled materials. The elements become spatial units, that can be inserted, moved, and replaced within the loop. These elements work as part of a continuous cycle across human, material, and ecological systems.

Materials are collected, transformed, and reassembled into new spatial units, including housing and public space. Transport becomes a key part of the system. Cranes and trains move people, materials, and units through it.

Architecture is not built at once, but keeps changing over time. This creates a dynamic environment where people, materials, and ecology constantly interact.



Each Unit is based on two stacked shipping containers as the primary uit. Windows and doors are reclaimed and reused materials. An extension structure is introduced on one side of the unit, allowing residents to expand and adapt the space according to their eneds.

Each unit is organized into two levels. The ground floor accommodates workshops and kitchens, while the upper level contains a bedroom and a restroom. All furniture within the unit is movable and made with recycled materials.

Through the relationship between workspaces, shared corridors, and plant cultivation, the housing system fosters a community strcutrued around both ecological care and material production.

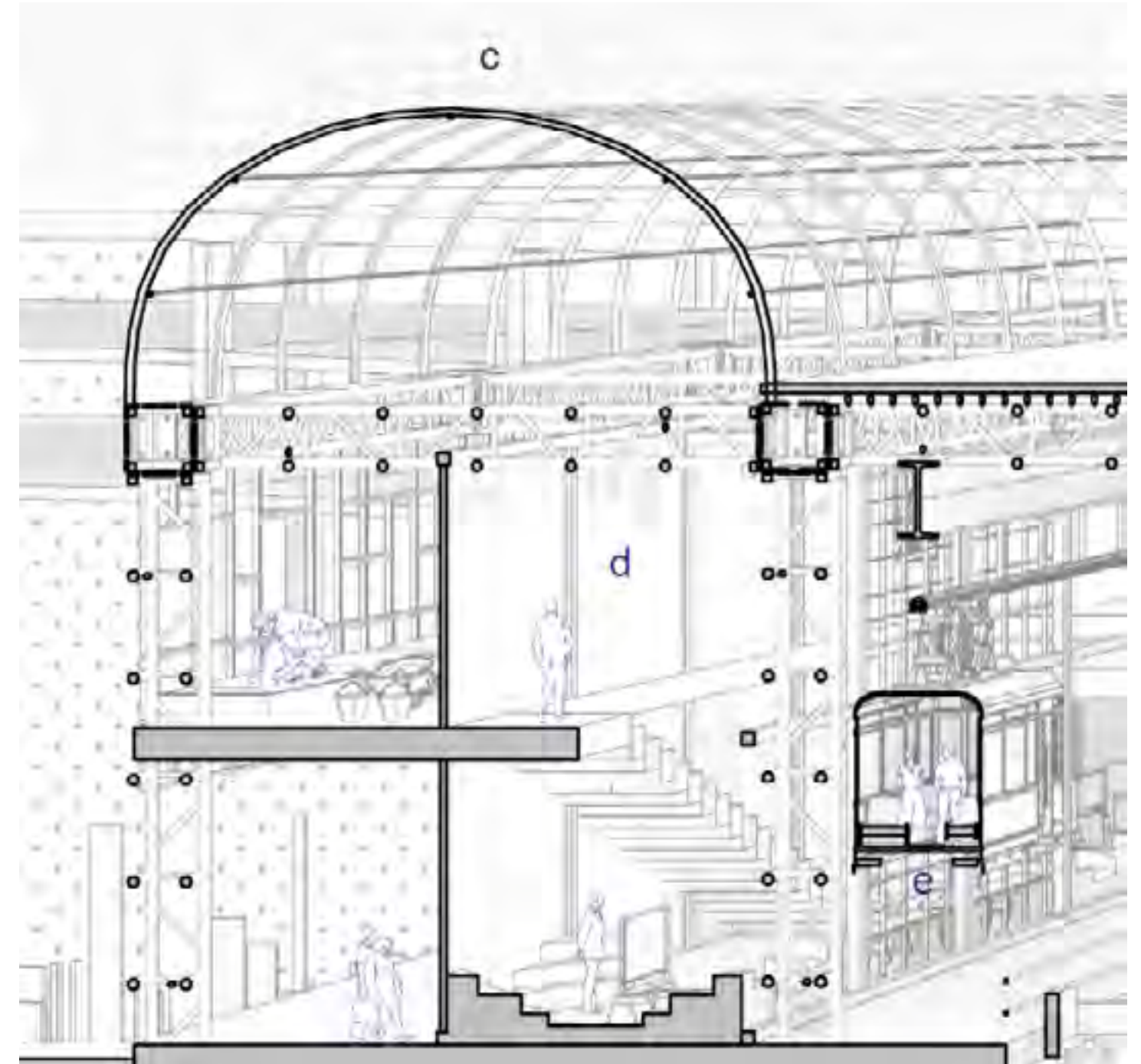
TYPE B

Inbetween
Human and Non-human

Type B act as an Intermediate layer connecting Type A clusters. It accommodates programs that mediate between human and non-human systems.

Programs:

Soil remediation monitoring lab,
leachate research lab, Wild animal
vet, Urban Farming and Lab



TYPE C

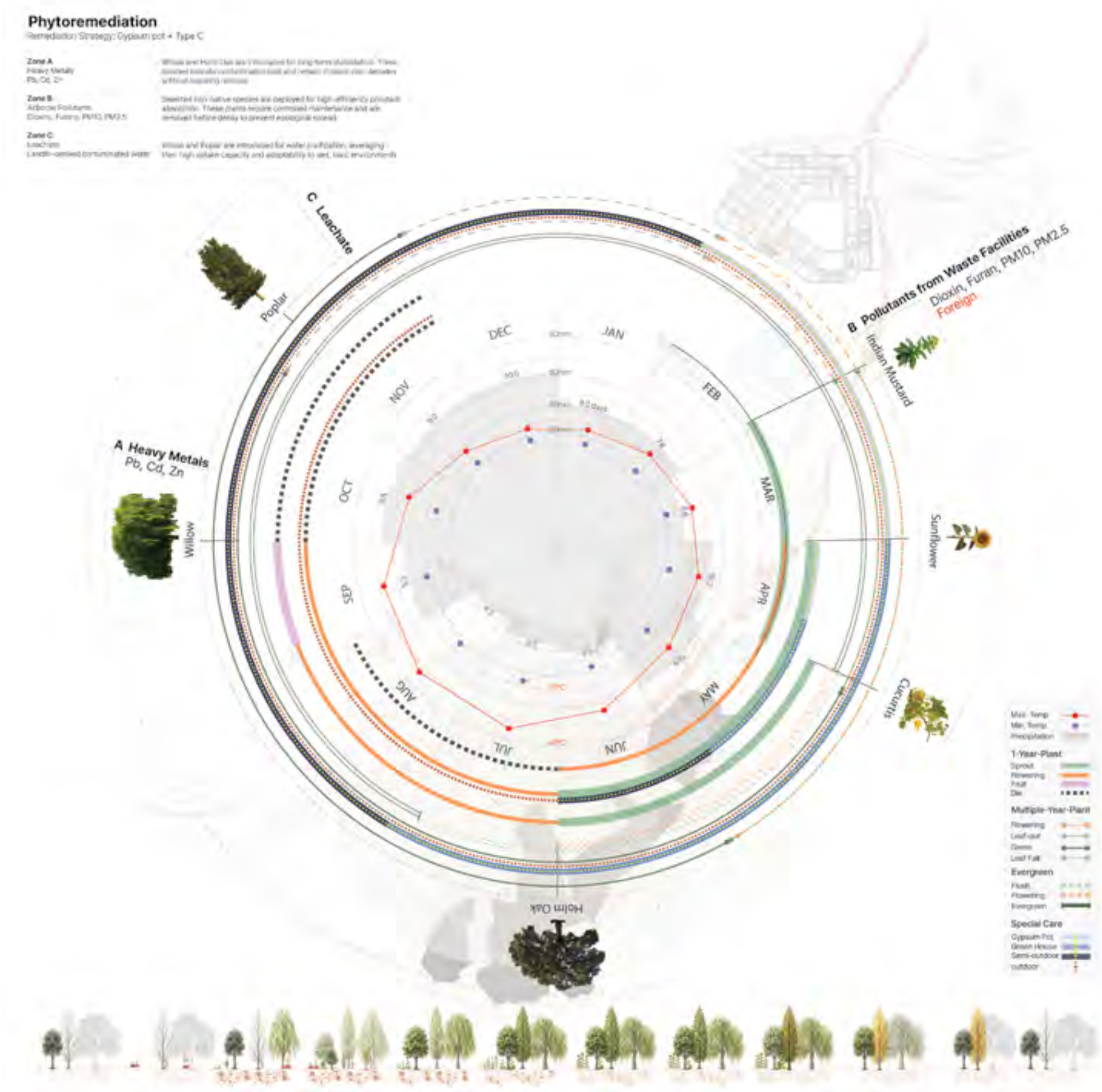
Phytoremediation

Type C is a linear phytoremediation system dedicated to environmental remediation and wildlife protection.

It is deployed across three critical zones:

- Highway Buffer Zone
- Informal Settlement Zone
- Active landfill Zone

Some plants used for phytoremediation require special care in their early stages. These are initially cultivated and managed by residents, and later transplanted into the site.





Transscalarities
2025 Summer
Instructor James Heard

Abstract

This paper investigates architecture not simply as the production of physical form, but as an active political and social agent that engages with crisis across historical periods. Through a comparative study of three distinct cases—nineteenth-century yellow fever infrastructural interventions in U.S. port cities, Lina Bo Bardi’s SESC Pompéia project (1982) in São Paulo, and Forensic Architecture’s Triple-Chaser project (2019–present)—the paper examines how architecture participates in crisis management, post-crisis recovery, and the visualization of invisible systems of violence.

Each case corresponds to a particular temporal moment in the crisis continuum: immediate intervention (yellow fever), collective recovery (SESC Pompéia), and forensic activism (Triple-Chaser). While differing in scale, materiality, and media, all three reveal how architecture mediates between visible form and hidden power. Yellow fever-era infrastructures such as quarantine stations, sewage systems, and disease maps demonstrate how public health architecture operated as biopolitical governance, often reinforcing social and racial hierarchies. SESC Pompéia transformed an industrial ruin into a democratic cultural and welfare platform, reflecting architecture’s capacity to contribute to social healing during Brazil’s political transition. Triple-Chaser extends architectural thought beyond physical space into digital media, functioning as a critical extension of the discipline rather than traditional practice, deploying machine learning and crowdsourced analysis to expose transnational corporate complicity in state violence.

The paper argues that architecture’s agency today lies in its hybridity—combining physical, social, and digital interventions according to shifting political and technological conditions. Rather than restoring pre-crisis normality, architecture constructs new spatial, social, and evidentiary realities that acknowledge both historical trauma and future potential. By analyzing architecture’s expanded role from infrastructure to media-based activism, the study proposes a redefinition of architectural ethics and responsibility in the twenty-first century. In an era marked by pandemics, surveillance capitalism, climate crisis, and systemic violence, architecture must reposition itself as an essential tool for constructing more just and resilient societies.

Architecture is framed here as a biopolitical instrument—one that not only organizes space but shapes the conditions of life, visibility, and survival. Drawing primarily on Michel Foucault’s concept of biopolitics, the paper explores how architecture functions at the intersection of crisis, governance, and power.

Across three case studies—the 19th-century yellow fever interventions in the U.S., Lina Bo Bardi’s SESC Pompéia in São Paulo, and Forensic Architecture’s Triple-Chaser project—the paper analyzes how architecture responds to crises not just functionally, but politically: as a technology of regulation, resistance, and reconfiguration. These cases span from physical infrastructure to participatory media activism, reflecting architecture’s expanding agency in the management of life and death.

Architecture, conventionally defined by physical form, possesses a broader latent capacity as a political and social instrument. Beyond providing shelter or aesthetic statements, architecture can intervene in societal crises, mediate collective recovery, and make invisible structures of power visible. This paper analyzes three cases: infrastructural interventions during the Yellow Fever outbreaks in 19th-century United States of America, Lina Bo Bardi’s SESC Pompéia in 1980s São Paulo, and Forensic Architecture’s Triple-Chaser project (2019-present). Each reflects a distinct temporal phase of crisis response: mid-crisis intervention, post-crisis recovery, and invisible crisis visualization. Framing architecture as an active agent rather than a passive backdrop, this comparative study highlights its evolving roles amid shifting political, economic, and social contexts. ^(figure 1.)

While each case represents a specific moment and condition, they collectively illustrate a continuous evolution in how architecture engages with crisis: from physical infrastructure to social platforms to media-driven activism. Understanding this continuum is essential for rethinking architectural practice today.

Yellow Fever Infrastructure
: Architecture Amid Crisis

This historical precedent illustrates how crisis can spatialize ideology. The yellow fever infrastructure cases are an early example of how architecture organizes life and death under pressure. In the mid-19th century, U.S. port cities such as New Orleans, Memphis, and Philadelphia were repeatedly struck by Yellow Fever epidemics. These outbreaks occurred amid rapid industrialization, urbanization, and mass immigration, alongside fragile public health systems. Yellow Fever was seen not only as a medical problem but as a divine punishment or moral failing, particularly stigmatizing the poor and racial minorities¹. Such

perceptions reflect a pre-modern understanding of disease, where social and moral codes intertwined with public health concerns. Epidemics exposed urban vulnerabilities, including overcrowded tenements, inadequate sewage systems, and inequitable access to medical care. Class and race dictated survival odds, revealing public health as inherently political. Quarantine zones, pest houses (isolation hospitals), improved sewage and drainage systems, and disease mapping emerged as key responses. Notably, public health mapping evolved from mere record-keeping into a political tool, shaping perceptions of where risk was concentrated². For instance, John Snow’s cholera maps in London inspired similar practices in the U.S. ^(figure 2.) Urban planning adjusted to include broader streets, parks, and sanitary reforms, positioning architecture and infrastructure as direct agents of biopolitical governance. These interventions also redefined the social fabric of cities, introducing new spatial hierarchies based on health risk zonesA. Quarantine stations, isolation hospitals, and delineated “risk zones” functioned as spatialized states of exception—where certain populations were governed through exclusion and suspension of normal rights³. The architectural production of these zones did not merely respond to disease but enacted power over life itself, echoing Michel Foucault’s idea of biopolitics as the regulation of populations through spatial and technical mechanisms⁴. Maps were not neutral; they shaped public opinion, influenced zoning laws, and justified the displacement of marginalized communities in the name of sanitation⁵. The political aspect of these interventions was often disguised as purely technical or medical solutions. Yet decisions about who had access to clean water, where quarantine lines were drawn, or which neighborhoods were deemed unsanitary involved deep moral and political judgments. The design of sanitation infrastructure, therefore, became a form of spatial justice-or injustice. Health crises such as Yellow Fever functioned as catalyst, forcing cities to grapple with the spatial consequences of inequality and governance.

Additionally, infrastructure investment during Yellow Fever outbreaks became a catalyst for institutional reforms. The creation of health boards, sanitary commissions, and building regulations indicated an evolving recognition that urban environments must be actively shaped to protect public welfare. This marked a turning point in the relationship between architecture, public policy, and governance, cementing the idea of the city as a site of active crisis management.

At the time, these interventions marked a pivotal shift: health became a public, rather than private, responsibility. They laid foundations for contemporary public health infrastructure and embodied Michel Foucault’s notion of biopolitics⁶. Today, especially post COVID-19, such historical precedents underscore the political

nature of public health measures and the embeddedness of architecture in managing collective crises. Additionally, disease maps from the era highlight the enduring relevance of data visualization in public health and its political implications. The resurgence of interest in epidemic-era infrastructures emphasizes how crisis architecture continually informs future urban resilience strategies. Contemporary public health initiatives still rely on spatial analyses pioneered during this period, evidencing the lasting influence of 19th century architectural and infrastructural responses. If the yellow fever response shows architecture as governance, SESC Pompéia reveals its potential as a platform for healing and democratization. While the Yellow Fever infrastructures show architecture entangled with governance and control, SESC Pompéia shifts that engagement toward healing and democratization in a post-authoritarian context.

SESC Pompéia
: Architecture as Post-Crisis Recovery Tool

As Lina Bo Bardi once noted, ‘architecture is not just building, but above all a social activity’—a conviction that materialized vividly in her design for SESC Pompéia. São Paulo in the late 1970s and early 1980s was transitioning from military dictatorship towards democracy. Industrial urban fabric dominated the cityscape, while economic disparities intensified. Public demand for accessible cultural and welfare spaces grew, especially among commercial workers. The political context was marked by a cautious opening, where institutions like SESC (Servico Social do Comércio) played an intermediary role between state control and citizen needs⁷. Brazil’s broader social landscape was characterized by resistance movements, worker strikes, and a rethinking of cultural production’s role in democratization.

Lina Bo Bardi’s 1982 SESC Pompéia project repurposed a disused factory into a multifunctional welfare center. It integrated cultural facilities, sports areas, libraries, and communal spaces housed within Brutalist towers, dramatically linked by elevated walkways. ^(figure 3.) The project exemplified socially engaged architecture that valued existing structures and local communities over tabula rasa redevelopment. Bo Bardi’s design language reflected a conscious resistance to both authoritarian architectural forms and neoliberal privatization trends⁸. SESC Pompéia can be interpreted as an architecture of affirmative biopolitics—one that does not merely shelter or organize bodies, but enables forms of collective life and expression⁹. Where authoritarian regimes relied on space to control visibility and movement, Bo Bardi’s project used spatial openness, material honesty, and programmatic diversity to resist spatial oppression. It restored what Foucault describes as “political

political life”—bios—by creating space for play, creativity, and public engagement, especially for marginalized workers and communities.

Moreover, SESC Pompéia’s internal spaces were deliberately unpolished, embracing raw concrete and visible structural elements. ^(figure 4) This aesthetic was not simply stylistic but ideological: architecture as a transparent, honest platform for collective life. The building’s openness and flexibility facilitated spontaneous cultural activities, reflecting Bo Bardi’s belief in architecture as a living organism. Furniture and signage were crafted to emphasize user participation, rejecting elitist design conventions in favor of democratic accessibility.

SESC Pompéia also navigated tensions between preservation and innovation. By retaining much of the original factory’s materiality, Bo Bardi honored São Paulo’s industrial past while signaling its transformation. This approach contrasted sharply with global trends of the time, which favored spectacle architecture or commercial redevelopment. The project’s material honesty and programmatic diversity encouraged a broad range of social interactions, from organized sports to informal cultural gatherings, creating an adaptable public realm.

SESC Pompéia became a platform for non-elite cultural expression and a symbol of democratic recovery. It challenged top-down urban renewal models, proposing instead a participatory, inclusive public space. Today, it stands as a reference point in debates on urban regeneration versus gentrification, illustrating how architecture can mediate post-crisis social healing. The project also offers lessons for contemporary architectural practices that seek to balance preservation, adaptation, and social engagement in post-industrial contexts. Its continued popularity demonstrates how architectural values grounded in social equity can produce enduring relevance. SESC Pompéia’s success underscores architecture’s potential as an agent of civic transformation, promoting inclusivity without succumbing to commercialization or exclusion.

The SESC Pompéia case also foregrounds the importance of architectural authorship within politically charged environments. Unlike corporate led regeneration, Bo Bardi’s approach was deeply personal, informed by her background as both an architect and activist. This blending of professional practice with ethical commitment enriches our understanding of architecture’s role in post crisis reconstruction not as a neutral service but as an intentional cultural political act. Bo Bardi’s authorship challenges traditional notions of architectural neutrality. In reclaiming a ruin not as spectacle but as public infrastructure for democratic life. Her architecture stood as a spatial form of resistance replacing control with care, and exception with inclusion. While Bo Bardi’s work rooted resistance in physical

space, Forensic Architecture moves that resistance into the digital realm, expanding the terrain of architectural intervention.

Triple-Chaser
: Visualizing Invisible Crises

Unlike Yellow Fever and SESC Pompéia, the Triple-Chaser project does not respond to an immediately visible crisis. Instead, it addresses hidden systems of state violence and corporate accountability, particularly through the use of tear gas canisters produced by the U.S. company Safariland and deployed in global protest zones like Palestine, Hong Kong, and Latin America. These crises are structural and often overlooked by mainstream media, necessitating new forms of evidence and advocacy. The project intersects with broader debates on surveillance, crowd control technologies, and the privatization of state violence. Triple-Chaser highlights the complexities of transnational justice in a globalized economy where human rights violations often evade straightforward documentation.

Forensic Architecture, based at Goldsmiths, University of London, employs spatial analysis, open-source investigations, and AI image training to identify Safariland’s products in conflict zones¹⁰. ^(figure 5.) Through public calls for participation, they trained neural networks using synthetic images, making weapon usage traceable. Here, architecture detaches from physical buildings entirely, functioning instead as a media and evidentiary tool.

The Triple-Chaser project also introduced methodological innovations in how architectural knowledge intersects with machine learning. By generating synthetic images of the tear gas canisters, Forensic Architecture expanded the archive beyond actual photographs, allowing for broader detection possibilities. ^(figure6.) This practice questions the boundaries of architectural materiality and the epistemology of evidence. Triple-Chaser reveals how violence is outsourced and obscured through corporate and state networks, and how architecture—reimagined as digital forensics—can expose these hidden regimes of control. It shows that architecture, far from being immaterial in this context, plays a crucial role in the politics of visibility and accountability.

Furthermore, the project’s participatory structure marked a significant evolution in architectural activism. By inviting citizens to contribute to the machine learning process, Forensic Architecture blurred the line between expert knowledge and public engagement. Architecture, in this framework, becomes not just a spatial practice but a socio-technical platform for collective investigation. Triple-Chaser’s reliance on distributed intelligence and crowdsourcing illustrates a new model of architectural agency

that is simultaneously decentralized and highly networked. At its inception, Triple-Chaser reframed architecture as an activism and evidence, blurring disciplinary boundaries. In 2025, this project exemplifies architecture’s expansion into digital human rights advocacy, where media tools, data visualization, and citizen participation replace bricks and mortar as primary materials. It highlights architecture’s role in visualizing otherwise invisible forms of violence and complicity, extending the discipline’s ethical scope. The project’s influence extends into legal contexts, influencing court cases and policy debates on the regulation of crowd control technologies¹¹. By establishing precedents for using spatial data as legal evidence, Triple-Chaser contributes to evolving standards in international human rights law.

Unlike the previous two cases, Triple-Chaser’s lack of a fixed physical site emphasizes architecture’s capacity to operate as a fluid, networked system. This paradigm shift reflects broader transformations in both technological society and architectural thought. If the quarantine hospital was the spatial device of biopolitics, and the cultural center a vehicle of social healing, Triple-Chaser represents a new architectural typology: the algorithmic architecture of resistance. It neither shelters nor constructs in the traditional sense; instead, it maps, reveals, and contests sovereign violence through collective intelligence. Architecture, in this case, becomes a tool for reclaiming agency in a digital biopolitical order. Today’s most urgent crises-climate collapse, mass surveillance, disinformation-require forms of architectural intervention that are equally distributed and dematerialized.

The three case studies reveal architecture’s evolving capacities across crisis timelines: Mid-crisis (Yellow Fever): Architecture as emergency infrastructure and biopolitical governance. Post-crisis (SESC Pompéia): Architecture as a tool for social recovery and cultural democratization. Invisible crisis (Triple-Chaser): Architecture as media, revealing latent systems of violence and corporate complicity. Crucially, these shifts demonstrate that architecture’s agency is not confined to physical construction. It operates as a political tool, mediating between visible form and invisible structures of power. From sanitation maps to AI-driven investigations, architecture becomes central to how societies navigate both tangible and intangible crises. Furthermore, these cases collectively challenge the disciplinary boundaries of architecture. By including data, media, and collective human rights actions as architectural concerns, the field expands its responsibilities. This expanded framework is particularly relevant in today’s global context, marked by pandemics, climate change, surveillance capitalism, and social unrest.

Comparatively analyzing these cases underscores the importance of flexibility in architectural practice. No single mode-whether

¹Valentine Seaman, *An Inquiry into the Cause of the Prevalence of the Yellow Fever in New-York* (New York: T. and J. Swords, 1798), <https://babel.hathitrust.org/cgi/pt?id=loc.ark:/13960/t0sr01p97>

²Charles E. Rosenberg, *The Cholera Years: The United States in 1832, 1849, and 1866* (Chicago: University of Chicago Press, 1987)

³Agamben, *Homo Sacer*, 166–169.

⁴Foucault, *The History of Sexuality*, 135–159.

⁵Kathryn Olivarius, *Necropolis: Disease, Power, and Capitalism in the Cotton Kingdom* (Cambridge, MA: Belknap Press, 2022), <https://www.jstor.org/stable/j.ctt6wr9c9>.

⁶Michel Foucault, “Right of Death and Power over Life,” in *The History of Sexuality*, trans. Robert Hurley (New York: Pantheon Books, 1978), 135–159.

⁷Lina Bo Bardi, *Tempos de Grossura: O Design no Impasse* (São Paulo: Instituto Lina Bo e P.M. Bardi, 1994).

⁸Lina Bo Bardi, *Lina Bo Bardi: Un Maravilloso Entrelazamiento* (Tokyo: TOTO Publishing, 2008).

⁹Lina Bo Bardi, *Tempos de Grossura: O Design no Impasse* (São Paulo: Instituto Lina Bo e P.M. Bardi, 1994), 23.

¹⁰Eyal Weizman, *Forensic Architecture: Violence at the Threshold of Detectability* (New York: Zone Books, 2017).

¹¹Forensic Architecture, “Triple-Chaser,” Goldsmiths, University of London, accessed May 2025, <https://forensic-architecture.org/investigation/Triple-Chaser>.

infrastructural, spatial, or digital-can suffice across all crisis types. Instead, architecture must cultivate hybrid forms of engagement, combining traditional skills with technological innovation and political awareness. Recognizing architecture's potential beyond buildings reframes the discipline's ethical and political responsibilities. In an era marked by pandemics, inequality, and algorithmic governance, architecture's active engagement with crisis becomes not optional but essential. Architectural education, practice, and theory must therefore adapt, embracing both traditional spatial design and new forms of media-driven, evidence-based advocacy. By drawing lessons from the past while innovating new participatory methodologies, architecture can continue to serve as a vital instrument in constructing not just spaces, but more equitable societies. It is through these layered, historically informed, and technologically adaptive practices that architecture affirms its relevance as a truly political art in the 21st century.

Ultimately, architecture's entanglement with biopolitics positions it not just as a reactive discipline, but as a constitutive force in shaping the contours of life, power, and survival. Whether through bricks, policy, or pixels, architecture governs visibility, access, and rights—often deciding who is protected and who is exposed. As crises multiply across epidemiological, ecological, and political dimensions, architectural practice must evolve into a biopolitical ethics: one that refuses neutrality, embraces accountability, and reclaims the built and digital environment as a terrain of political struggle and collective care¹².

¹² Foucault, *The History of Sexuality*, 143–145.

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Figures



Figure 1.
Valentine Seaman’s map of yellow fever cases, New York City, 1798. Source: HathiTrust Digital Library

Valentine Seaman's 1798 map of yellow fever cases in New York City. The dots represent reported locations of yellow fever patients in the city, concentrated mainly around densely populated port areas. This map is one of the earliest examples of spatial disease mapping, providing a visual tool for understanding the distribution of the epidemic and informing public health interventions.



Figure 2.
John Snow’s map of cholera cases in Soho, London (1854).

John Snow's 1854 cholera map of Soho, London. The map marks locations of cholera cases clustered around the Broad Street water pump, which Snow identified as the outbreak’s source. This pioneering spatial epidemiology map demonstrates how mapping can reveal disease transmission patterns and inform public health action.



Figure 3.
SESC Pompéia, São Paulo. View of the pedestrian bridge connecting old and new buildings.

Photo: © Nelson Kon
<https://archeyes.com/sesc-pompeia-factory-lina-bo-bardi-architecture-sao-paulo/>

SESC Pompéia, São Paulo: Pedestrian bridge linking historic factory buildings with modern additions. Designed by Lina Bo Bardi, the elevated walkway physically and symbolically connects the industrial past with new community-focused functions, embodying the project’s emphasis on accessibility and social interaction.



Figure 4.
Interior view of communal space at SESC Pompéia.

Photo: © Nelson Kon.
<https://archeyes.com/sesc-pompeia-factory-lina-bo-bardi-architecture-sao-paulo/>

SESC Pompéia, São Paulo: Pedestrian bridge linking historic factory buildings with modern additions. Designed by Lina Bo Bardi, the elevated walkway physically and symbolically connects the industrial past with new community-focused functions, embodying the project’s emphasis on accessibility and social interaction.



Figure 5.
Still from Forensic Architecture’s Triple-Chaser investigation.

Source: Forensic Architecture, 2019
<https://forensic-architecture.org/investigation/cv-in-triple-chaser>

Still from Forensic Architecture’s Triple-Chaser investigation. This image shows the digital analysis and spatial mapping processes used to track tear gas canisters across global protest sites, exemplifying the project’s use of AI and crowdsourced data to visualize otherwise invisible systems of state violence.



Figure 6.
weathering and wear effects are parameterized in substance designer.

Source: Forensic Architecture, 2019.
<https://forensic-architecture.org/investigation/cv-in-triple-chaser>

Parameterization of weathering and wear effects in Substance Designer for the Triple-Chaser project. This digital rendering illustrates how Forensic Architecture models physical evidence—such as tear gas canisters—using computational tools, enabling machine learning algorithms to identify and analyze material traces of state violence.

02

Transcription

Architecture produced by human actions



Transscalarities
2025 Fall
Instructor Michael Bell
Individual

Can human actions change architecture?

Through the Berlin Free University and Stanley's Transvaal House, I investigate architecture not as a finished object but as a process produced through the accumulation of human behavior. The Berlin Free University's Mat Building strategy non-hierarchical circulation, dispersed programs, ramps, and courtyards—was designed to embody democratic values. From this, I frame a central inquiry: do actions themselves produce space?

To test whether this intention still operates today, I analyzed satellite imagery, user photographs, and archival records. A 2019 protest photograph taken in one of the university's courtyards revealed the building's democratic logic most clearly, showing collective agency enacted through space. Using principles of chiaroscuro, I analyzed the spatial composition of historical images through color extraction and figure modeling. To represent the building's layered spatiality: its simultaneity of time, action, and interior–exterior relations, I developed a new drawing language inspired by the Korean GeumO-GyeCheop, which unfolds architectural space and human activity into a single axonometric frame.

This analysis revealed that the courtyard no longer functions as a communicative space in contemporary life. I argue that communication today occurs through movement rather than stillness. Translating three actions from the protest—pushing, lifting, and collective pushing—into architectural triggers, I applied NASA's origami-based structural logic, allowing minimal forces to generate large spatial transformations. Individual movements create small alcoves, small groups lift communal platforms, and collective action opens entire walls to form civic space. Here, the façade becomes a surface where actions directly reshape form, while the courtyard operates through temporary, action-generated centers. Together, these layers demonstrate how human behavior can continuously rewrite both the form and meaning of architecture. This project suggests that space is not a completed object, but something “generated through the accumulation of human movement over time”.

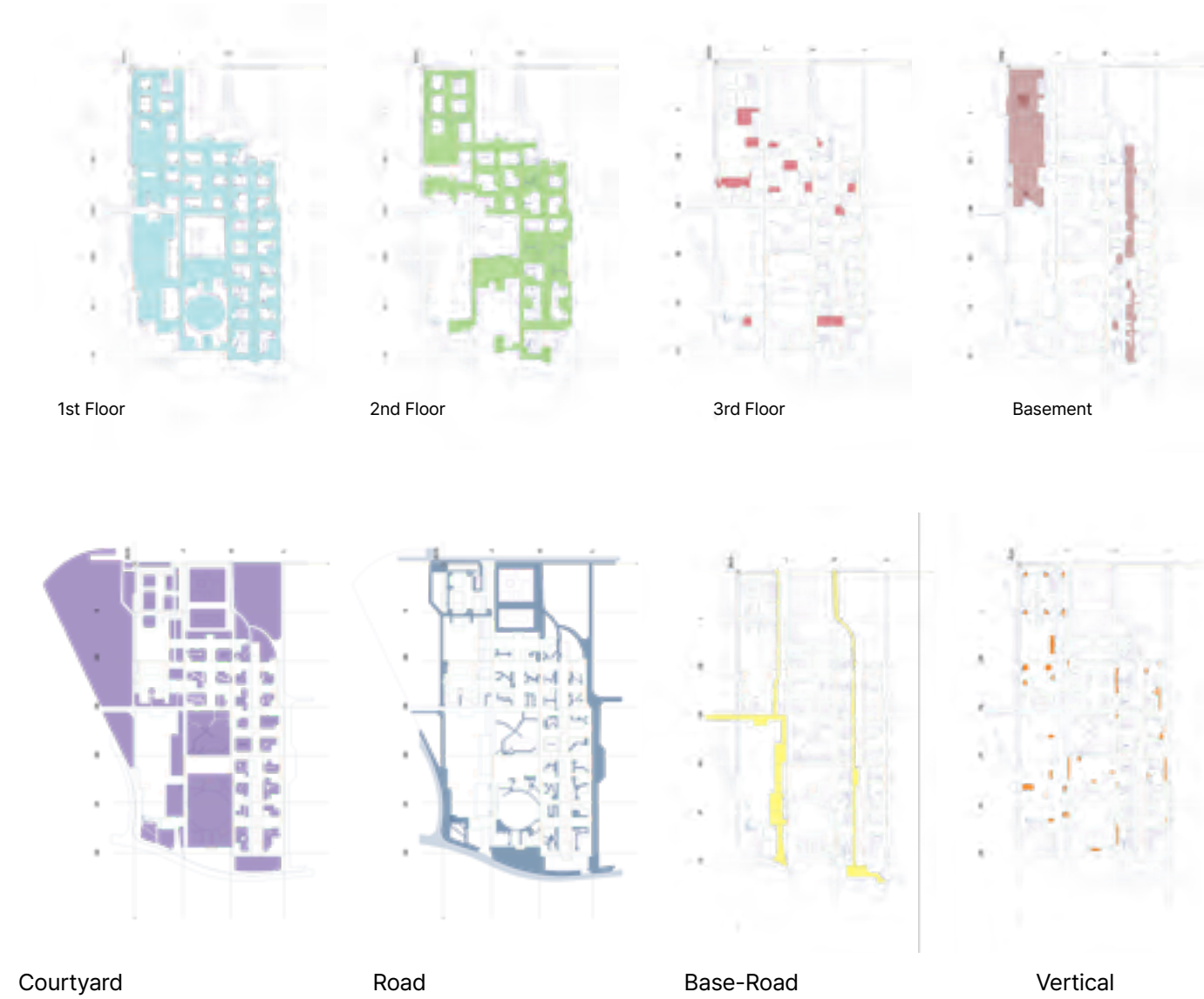


Rhino, Illustrator, Nano Banana

Free University of Berlin

Case Study_Plan and Historical Images based on Plan

The Free University of Berlin was constructed after World War II as a spatial embodiment of democratic ideals. Departments were dispersed, courtyards were introduced, and circulation was designed to encourage encounter, dialogue, and non-hierarchical interaction. At first glance, the building appears as a flat grid of repetitive forms, but its true complexity emerges through section, movement, and occupation.



Satellite images and conventional drawings fail to capture the spatial richness of the univeristy. Brdiges, level changes, courtyards, and informal gathering spaces are flattened into abstract diagrams, obscuring how the building is actually lived and used. This gap prompted a shift from plan-based analysis to image-based spatial reconstruction.



The Deposition Rafael

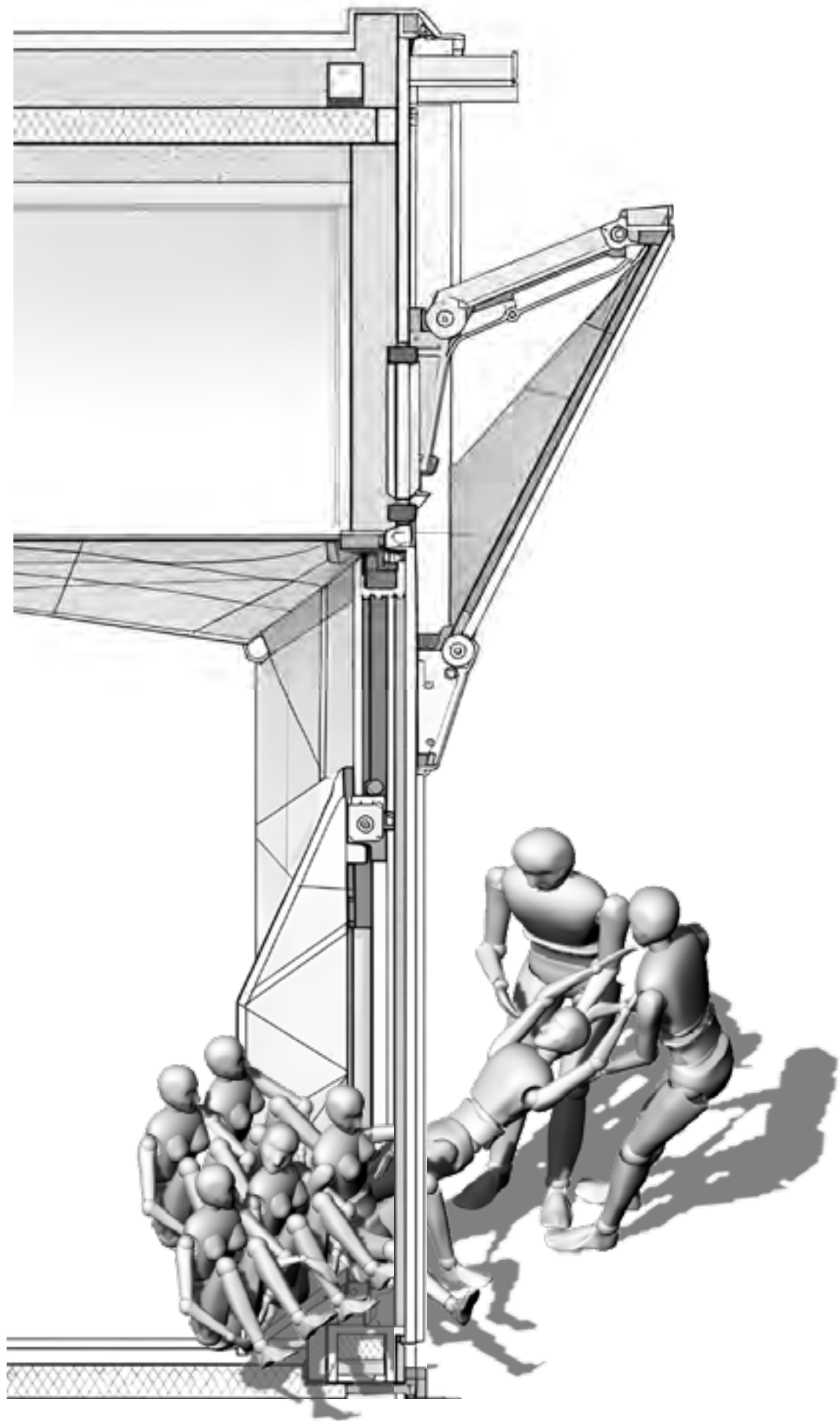


Working Space_Frank Stella, 1986

Chiaroscuro; Express 3D in 2D

This is a very rich painting; there is a full gestural expressiveness that sweeps back and forth across the panel. The splendor of figurative definition is augmented by a surfeit of color, and this in turn reinforces the painting's compositional armature in a refined, powerful way. The color travels from one edge of the painting to its opposite, holding up Christ's dead body on one side while on the other it successfully blends the supporting cast of figures into a blue-green landscape.







Full Video

03

Mirrors in the Desert

Reimagining Green Infrastructure Beyond
Hidden Ecological Costs

Transscalarities
2025 Summer

Marco Ferrari + Elise Misao Hunchuck Instructor
Group Project

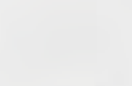
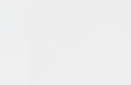
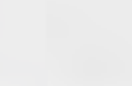
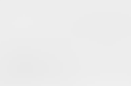
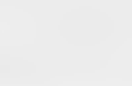
Critical Exploration of how renewable infrastructures create unseen ecological harm and how they might be reimagined as multispecies sanctuaries

This project interrogates the ecological costs of “green” infrastructure through the case of the Ivanpah Solar Electric Generating System in California. While heliostat towers generate renewable energy, they also produce lethal flux zones that incinerate insects and birds in mid-air. Drawing from Kathrin Stumreich’s Mid-Air Collisions as a point of departure, the work combines maps, layered visualizations, and a narrated film to reposition infrastructure not from above, but from within—tracing how non-human species encounter risk, attraction, and survival in this engineered landscape.

2040, Mega Trap → Micro Sanctuary

The project documents Ivanpah’s present conditions and specualtes forward to 2040, when the site may shift from a “Mega Trap” to a “Micro Sanctuary” — repurposed for multispecies repair rather than extraction. Critical cartographies reveal where tower geometries intersect with migration routes and mortality points, reframing sustainability as a terrain of loss as well as innovation. Rather than proposing solutions, the work invites a perceptual shift: to see infrastructures of energy not only as symbols of progress, but as spatial systems whose hidden costs demand architectural attention.

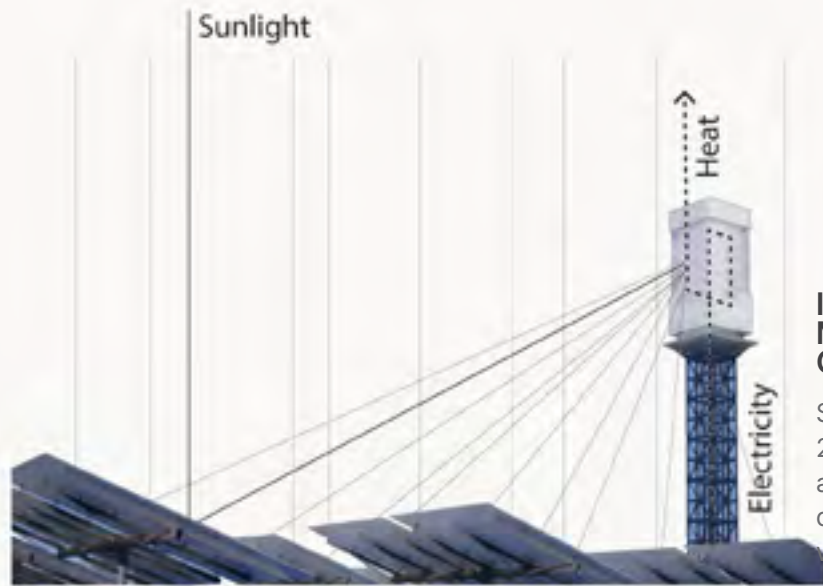
Species Mortality at Ivanpah Solar Electric Generating System in California

													
Mortality Count						65	22	21	11	10	9	6	
Common Name	Delhi Sands Flower-loving Fly	Desert Tortoise	Desert Blister Beetle	California Carpenter Bee	Green Darner Dragonfly	Unidentified Bird (Small)	Yellow Warbler	Yellow-rumped Warbler	Unidentified Swallow	Unidentified Swallow	Brown-headed Cowbird	Chipping Sparrow	
Scientific Name	<i>Rhaphiomidas terminatus abdominalis</i>	<i>Gopherus agassizii</i>	<i>Lytta magister</i>	<i>Xylocopa californica</i>	<i>Anax junia</i>	Unidentified	<i>Setophaga petechia</i>	<i>Setophaga coronata</i>	Unidentified	Unidentified	<i>Molothrus ater</i>	<i>Spizella passerina</i>	
Habitat Altitude	0 - 1.5 m	-	0 - 5 m	1 - 20 m	1 - 50 m	-	-	10 - 200 m	-	-	2 - 50 m	1 - 10 m	
Flight Speed	0 - 1 mph	0 - 0.3 mph	0 - 10 mph	10 - 15 mph	0 - 60 mph	-	-	-	-	-	20 - 47.8 mph	22 - 32 mph	
													
6	6	6	5	5	4	4	4	4	3	3	3	3	
Northern Rough-winged Swallow	Swallow	Unidentified Sparrow	Nashville Warbler	Violet-green Swallow	Brewer's Sparrow	House Finch	Northern Mockingbird	Wilson's Warbler	Black-throated Sparrow	Lazuli Bunting	Orange-crowned Warbler	Rufous Hummingbird	
<i>Stelgidopteryx serripennis</i>	<i>Hirundinidae</i>	Unidentified	<i>Leiothlypis nasicapilla</i>	<i>Tachycineta thalassina</i>	<i>Spizella breweri</i>	<i>Haemorhous mexicanus</i>	<i>Mimna polyglottos</i>	<i>Cardellina pusilla</i>	<i>Amphispiza bilineata</i>	<i>Passerina amoena</i>	<i>Leiothlypis celata</i>	<i>Selasphorus rufus</i>	
2 - 40 m	50 - 100 m	-	1 - 20 m	10 - 100 m	1 - 2,000 m	2 - 30 m	2 - 50 m	1 - 15 m	1 - 10 m	1 - 3,900 m	0 - 2,900 m	1 - 3,840 m	
-	40 - 60 mph	-	-	40 - 60 mph	-	24 - 30 mph	20 - 30 mph	20 - 25 mph	15 - 25 mph	-	-	40 - 80 mph	
													
3	3	3	3	2	2	2	2	2	2	2	2	2	1
Townsend's Warbler	Tree Swallow	Unidentified Woodpecker	White-crowned Sparrow	Black-tailed Gnatcatcher	Black-throated Gray Warbler	Blue-gray Gnatcatcher	Bullock's Oriole	Hermit Warbler	Northern House Wren	Savannah Sparrow	Unidentified Bird	Bank Swallow	
<i>Setophaga townsendi</i>	<i>Tachycineta bicolor</i>	Unidentified	<i>Zonotrichia leucophrys</i>	<i>Poliopila melanura</i>	<i>Setophaga nigrescent</i>	<i>Poliopila caerulea</i>	<i>Icterus bullockii</i>	<i>Setophaga occidentalis</i>	<i>Troglodytes aedon</i>	<i>Passerculus sandwichensis</i>	Unidentified	<i>Riparia riparia</i>	
5 - 40 m	1 - 3,840 m	5 - 40 m	1 - 20 m	-	5 - 30 m	5 - 15 m	10 - 40 m	10 - 20 m	1 - 20 m	1 - 20 m	1 - 3,840 m	1 - 2,100 m	
20 - 30 mph	80 - 80 mph	20 - 30 mph	18 - 25 mph	-	20 - 30 mph	15 - 25 mph	30 - 35 mph	20 - 30 mph	15 - 20 mph	24 - 32 mph	40 - 80 mph	-	
													
1	1	1	1	1	1	1	1	1	1	1	1	1	1
Barn Swallow	Bewick's Wren	Black-headed Grosbeak	Cliff Swallow	Cooper's Hawk	Fox Sparrow	Green-tailed Towhee	Lark Sparrow	Lesser Goldfinch	Mourning Dove	Pine Siskin	Red-breasted Nuthatch	Rose-breasted Grosbeak	
<i>Hirundo rustica</i>	<i>Thryomanes bewickii</i>	<i>Phaethon melanocephalus</i>	<i>Petrochelidon pyrrhonota</i>	<i>Astur cooperii</i>	<i>Passerella iliaca</i>	<i>Pipilo chlorurus</i>	<i>Chondestes grammacus</i>	<i>Spinus psaltria</i>	<i>Zenaidura macroura</i>	<i>Spinus pinus</i>	<i>Sitta canadensis</i>	<i>Phainopepla nitens</i>	
0 - 10 m	1 - 1,740 m	-	-	-	-	-	300 - 2,400 m	1 - 1,500	-	-	800 - 1,600 m	5 - 3,800 m	
40 - 72 mph	-	-	-	-	-	-	-	-	-	-	0 - 32 mph	37 - 56 mph	
													
1	1	1	1	1	1	1	1						
Ruby-crowned Kinglet	Swainson's Thrush	Unidentified Accipiter	Unidentified Blackbird	Unidentified Trail	Vesper Sparrow	Yellow-headed Blackbird							
<i>Corthylio columbula</i>	<i>Catharus ustulatus</i>	Unidentified	Unidentified	Unidentified	<i>Pooecetes gramineus</i>	<i>Xanthocephalus xanthocephalus</i>							
-	1 - 2,600 m	-	-	-	-	-							

Western EcoSystems Technology, Inc. Ivapah Solar Electric Generating System Avian & Bat Monitoring Plan: 2017-2018 Annual Report, January 2019
Invertebrate sampling data from the Ivapah Solar Electric Generating System (ISEGS) Facility Recorded by the OSGS during Spring and Fall 2019
U.S. Department of the Interior, Bureau of Land Management, Environmental Assessment, 2024

Western EcoSystems Technology, Inc. Ivanpah Solar Electric Generating System Avian & Bat Monitoring Plan: 2017-2018 Annual Report, January 2019
Invertebrate sampling data from the Ivanpah Solar Electric Generating System (ISEGS) Facility Recorded by the USGS during Spring and Fall 2019
U.S. Department of the Interior, Bureau of Land Management, Environmental Assessment, 2024

This catalog of insects, birds, and desert tortoises reveals how design logics optimized for energy production inadvertently generate systemic patterns of ecological loss. Mortality is not accidental but patterned - structured by ower geometries, Flux intensities, and Flight behaviors



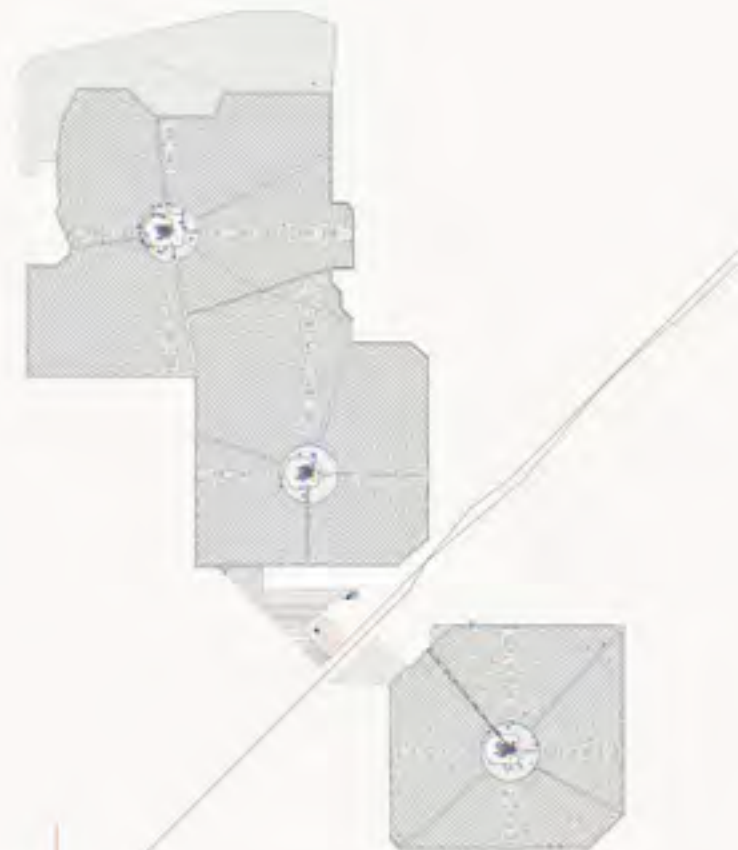
Infrastructures and Ecologies: Mapping Risk at Ivanpah Solar Generating System

Scientific monitoring and field surveys between 2012 and 2018 document consistent mortality across dozens of species - from desert tortoises disturbed on the ground, to migrating swallows and warblers incinerated mid-air.

Ivanpah Solar Electric Generating System

The Ivanpah Solar Electric Generating System operates through more than 170,000 heliostats, each reflecting sunlight toward three central towers. This massive apparatus, optimized for efficiency, unintentionally produces vertical corridors of extreme solar flux. These invisible shafts of heat turn the air itself into a lethal medium, burning insects and birds as they fly across the sky.

Sections reveals how heliostat arrays cut through ecological strata - from tortoise burrows underground to bird flyways overhead



This events are not random anomalies but pattered consequences of the site's spatial and atmospheric configuration. Mortality clusters appear repeatedly in the same zones, tied to tower geometries, heliostat alignments, and the seasonal timing of migrations.

The expanded maps reframe Ivanpah not only as an energy plant but as a layered ecological terrain. They visualize how migration routes intersect with flux fields, where underground infrastructures cut across tortoise habitats, and how the reflective desert surface attracts insects in search of water. What emerges is a picture of sustainability that is neither neutral nor benign: a system whose design logics actively inscribe risk into the landscape.

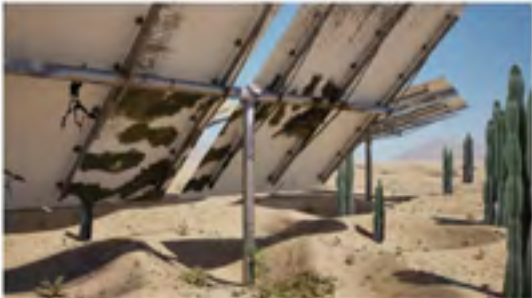




2040, From Mega Trap to Micro Sanctuary

Ivanpah is projected to be decommissioned by 2040
This proposal speculates on its transofrmation: repurposing towers and heliostat fields as infrastructures of care. No longer machines of extraction they harvest fog, provide habitats, and sustain fragile life in the desert.

From energy plant to sanctuary, the site becomes a terrain of repair inviting us to imagine infrastructures not only as symbols of progress, but as systems of survival.



Microclimates
As Heliostats fall dormant, their tilted surfaces cast stable shade across the desert floor. These pockets of shadow create cooler microclimates where condensational and scarce water begin to collect



Infrastructural Transformations
Moisture and shelter allow fungi, moss, and lichens to grow on the abandoned infrasturcutre. What once functioned as an engine of extraction becomes a scaffold for new ecological succession



Ecological Return
With the site decommissioned, desert tortoises and other species gradually reclaim their habitats. The landscape transitions from engineered exclusion to fragile coexistence, sustaining multispecies presence.



Revit BIM, Grasshopper, Illustrator, X-figura

04

Calibrated Environment

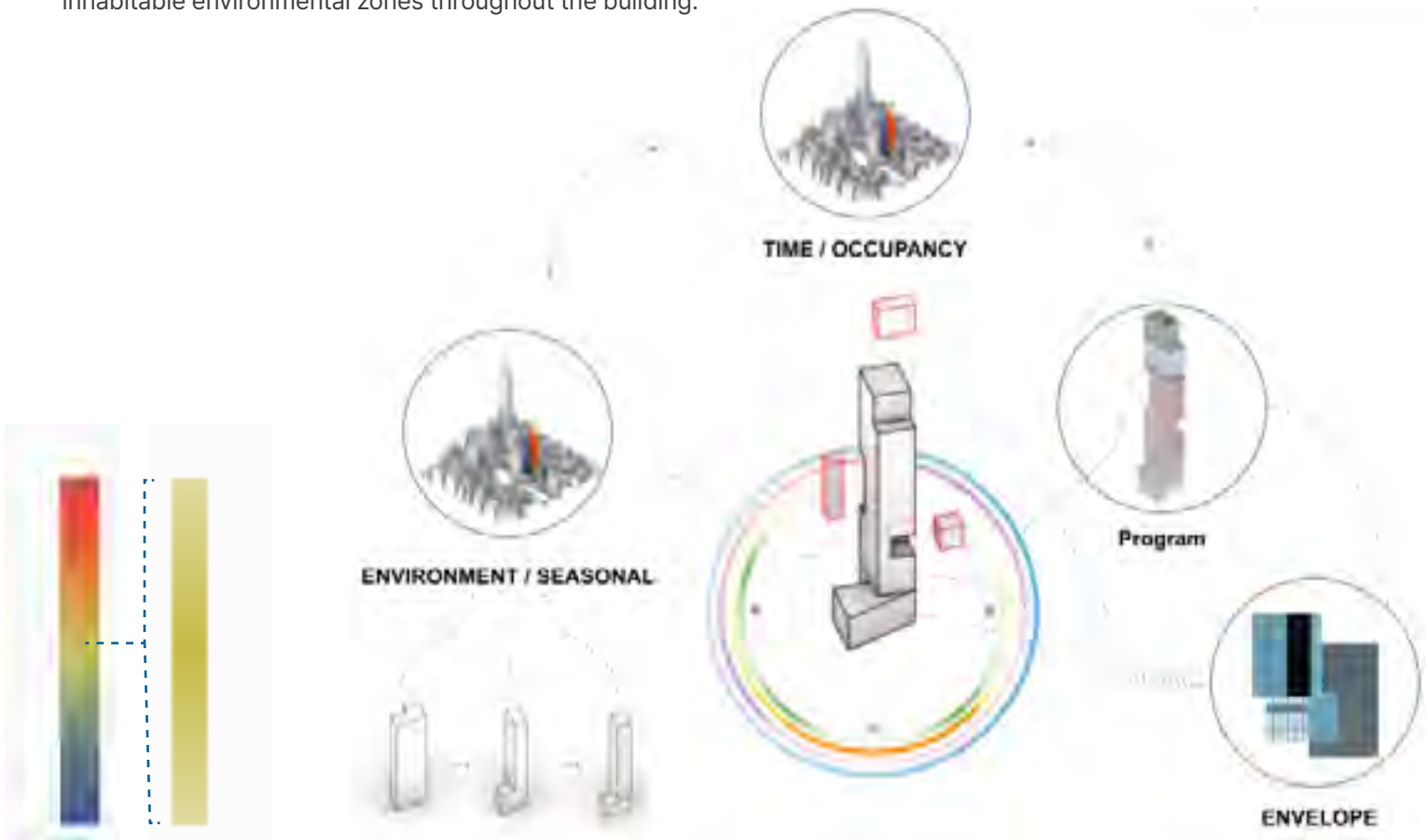
Tower Environmental Analysis

Re-thinking BIM
2026 Spring
Instructor Joseph A. Brennan
Group Project

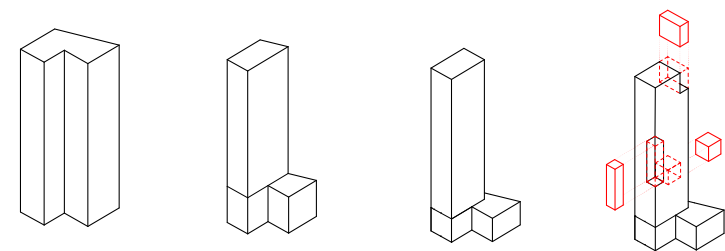
Calibrate mixed-use tower through environmental data : daylight exposure and thermal comfort

The project explores how environmental performance can shape architectural organization and spatial experience. Through seasonal day light analysis, thermal mapping, and occupancy-based program distribution, the tower develops as a calibrated environmental system rather than a fixed object.

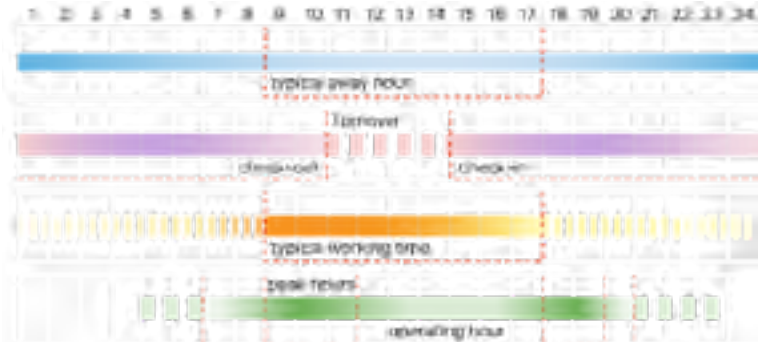
Unlike conventional mixed-use towers organized only through zoning and efficiency, the project uses environmental calibration as a spatial driver. Adaptive massing and facade strategies respond to changing climatic conditions, creating differentiated microclimates and inhabitable environmental zones throughout the building.



Program Distribution & Massing

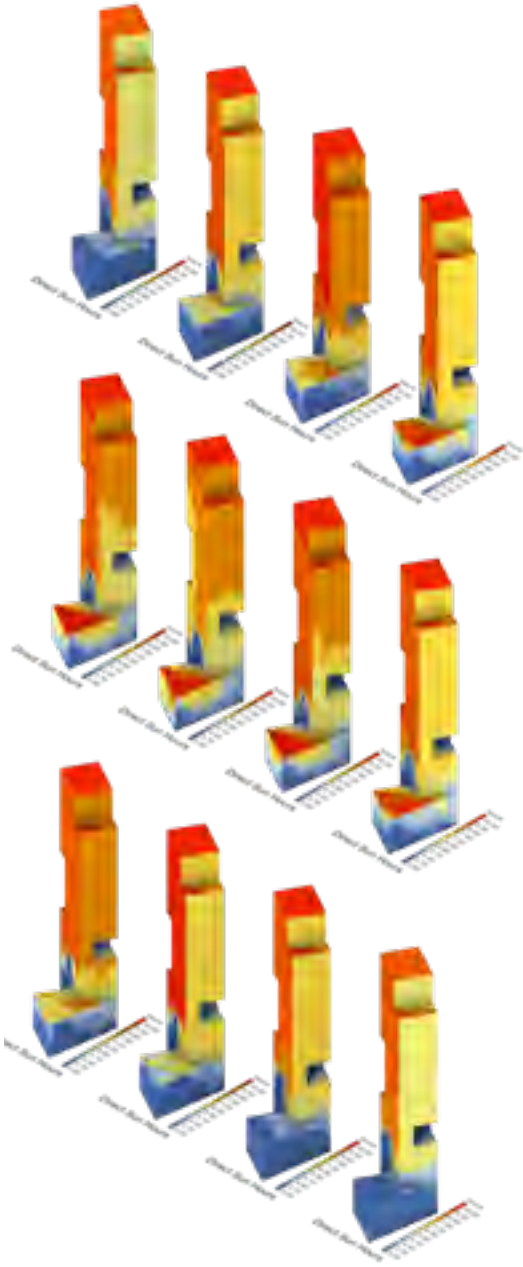
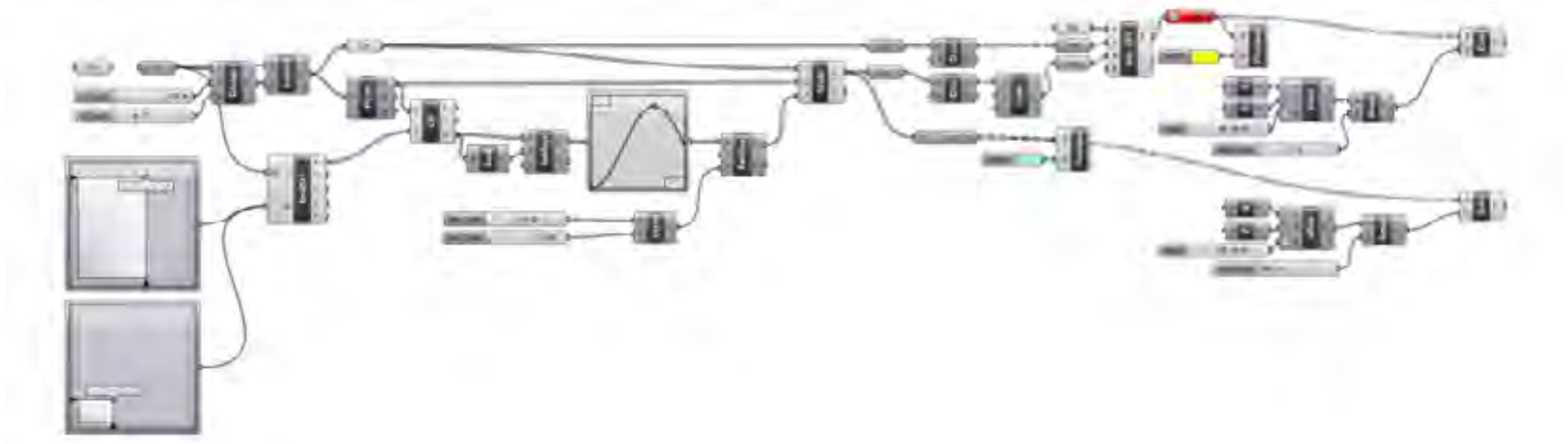


The tower is organized through a mixed-use vertical system integrating retail, office, hospitality, and residential programs. Envrionmental simulations across seasonal conditions informed massing adjustments, facade exposure, and terrace placement to improve daylight access and thermal comfort throughout the year.



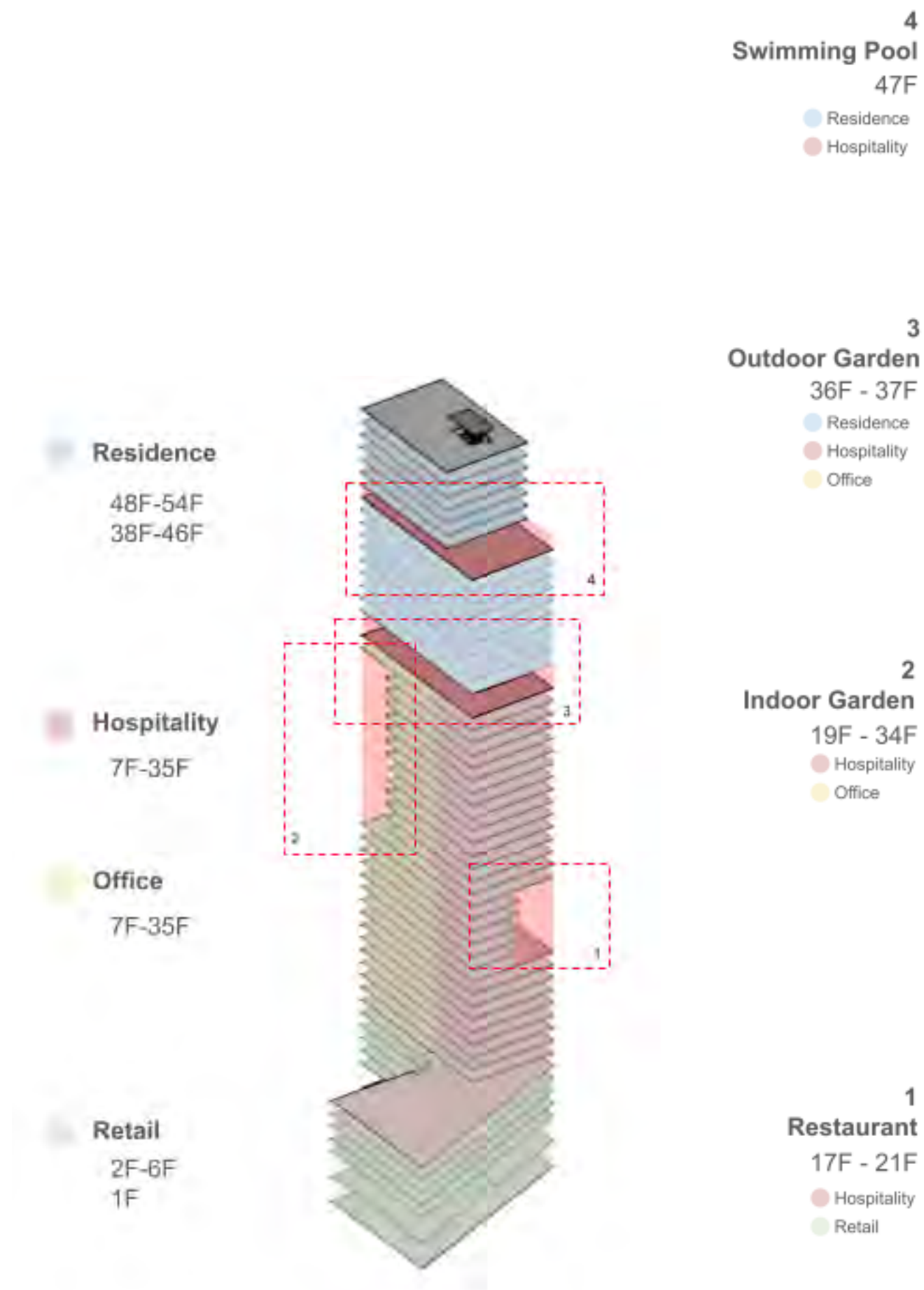
Temporal Occupancy & Ground-Level Calibration

Program disttriction is calibrated through temporal occupancy patterns, solar exposure, and urban edge conditions. Different program types operate across overlapping daily cycles, allowing the ground plane and lower levels to respond to changing environmental and social intensities throughout the day.



Adaptive Facade System

The facade system was developed through parametric workflows linking solar radiation, daylight exposure and programmatic requirements. Panel density, opening size, and shading depth adapt according to facade orientation and interior use, producing differentiated environmental conditions across the tower envelope.



04

SEED BOMB

Biodegradable Floating Project

Seed bomb
2025 Fall
Instructor Emily Bauer-Cieslikiewicz
Group Project

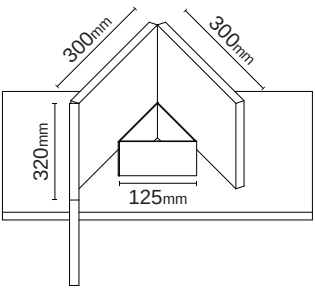
This project redefines housing as a regenerative system that integrates waste, ecology, and habitation. Located on the southeastern edge of Madrid, the site is shaped by three conditions: conflicting urban fabrics, the informal settlement La Canada Real, and long-term contamination from waste treatment facilities.

The project reveals and reorganizes marginalized populations and infrastructures as active components of an operative urban system.

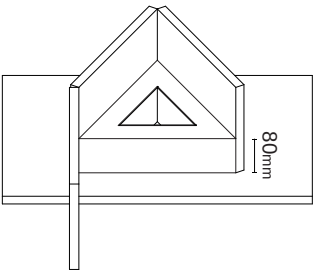
The proposal introduces a growing loop infrastructure, where waste is collected, sorted, and transformed into construction resources. This process establishes a circular system that supports incremental spatial growth and on-site production.

Structured as a ring-based framework, the project reconnects territories divided by infrastructure while enabling diverse forms of dwelling. Residents actively participate in construction, production, and ecological remediation, forming a self-sustaining system that links human and non-human habitats.



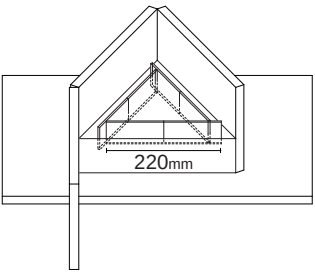


STEP. 01
Prepare the Mold



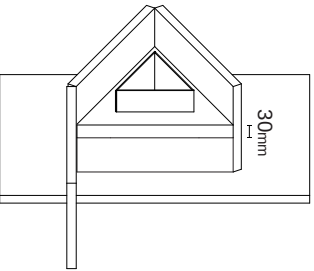
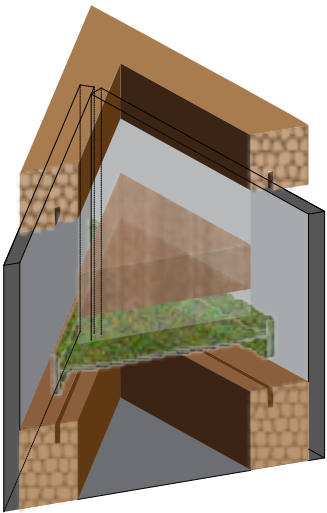
STEP. 02
Mix Cork Granule(4-5mm) with Latex
Granule: Latex = 100: 18-20

Pour the mixture up to 80mm



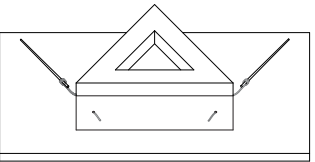
STEP. 03
Make the inner layer by weaking coconut
scouring pads with thread

Put on top of the mixture



STEP. 04
Mix Cork Granule (2-3mm) with Latex
Granule: Latex = 100:18-20

Pour the mixture for 30mm



STEP. 05
Use chopsticks to punch holes in the corners,
then tie and pass jute rope through

Cure it 48-72h in room temperature

