

Design, Research, and Spatial Politics

TRACE

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Columbia GSAPP

FOREWORD

TRACE presents an evolving body of work shaped by territory, ecology, labor, memory, and colonial structures. Moving across design, research, writing, and enactment, the portfolio engages landscapes, infrastructures, and bodies as sites of ecological transformation, territorial conflict, and systems of power.

Working across multiple media and scales, the works range from interrogating how dioramas function as pedagogical tools that naturalize colonial ideology, to proposing sugarcane as an Indigenous-led non-extractive system for centuries-colonized Formosan communities, to engaging contestations surrounding freedom of expression, and to developing landscape-based responses to California's recurring wildfires. Together, the works position architecture not only as a mode of representation, but as a spatial practice shaped through material systems, environmental conditions, and the social realities produced by extractive structures.

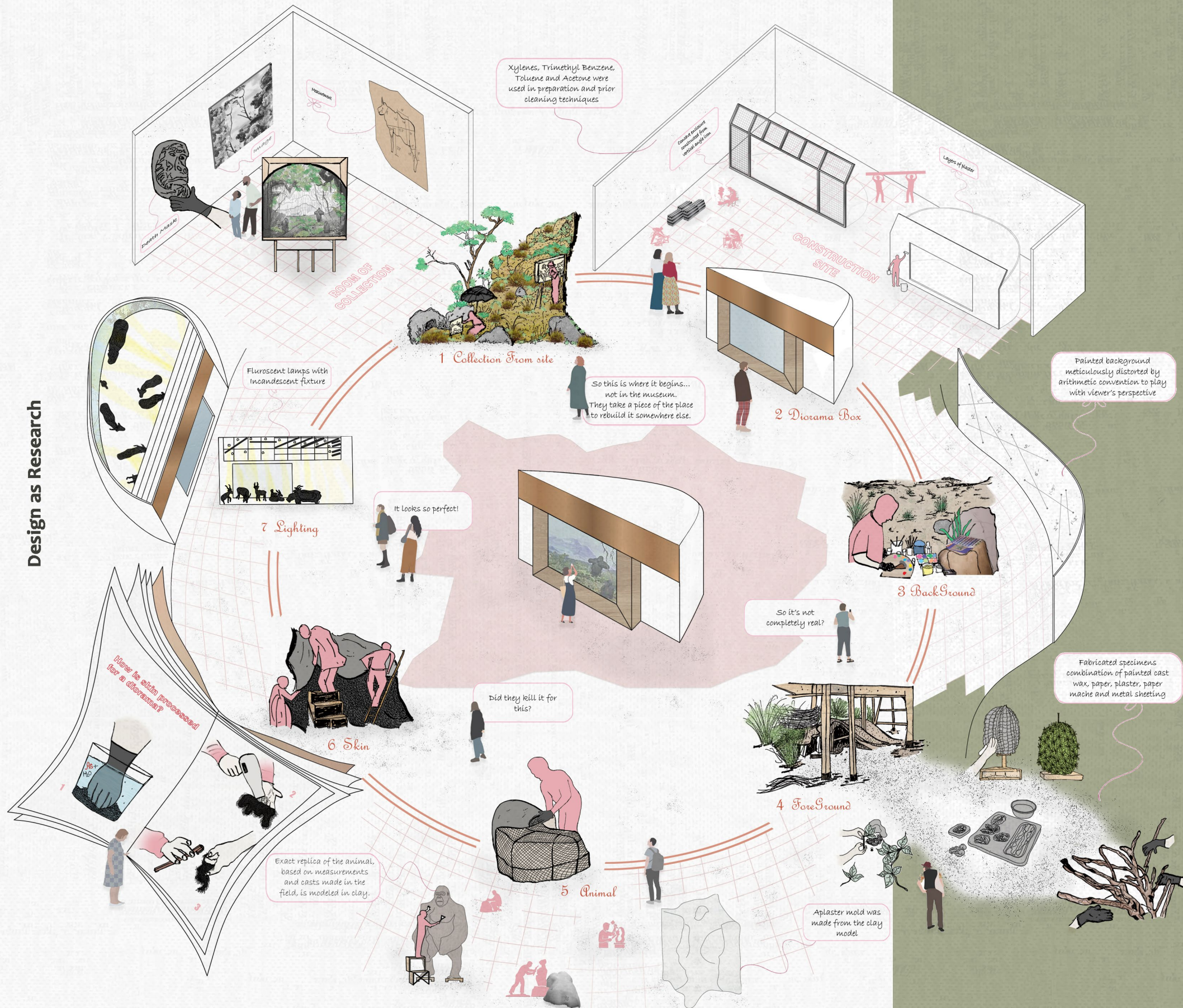
From exposing hidden systems of violence to imagining futures beyond colonial grammars, **TRACE** reflects the promise of an evolving spatial practice grounded in social engagement, ecological awareness, and collective responsibility.

SP 26	Adv VI - Design As Research Decolonizing SugarCane Diorama: Sweet at Both Ends
P 04-19	
SU 25	Transscalarities Enactment
P 20-23	
FA 25	Adv V- Architecture of Solidarity Free to Speak?
P 24-37	
FA 25	Architecture Technology, and The Environment A Breaching Experiment
P 38-39	
SP 26	Research Paper: Contested Grounds Unfinished Terrain: Space, Power, and Contestation at Columbia University
P 40-43	
FA 25	Architecture Technology, and The Environment Living With Other Species
P 44-45	
SU 25	Adv IV- Wildlands Coexisting Habitat
P 46-55	
SU 25	Research Paper: Transscalarities Agency And Adaptation Amid Environmental Violence: Beyond Sustainable Design
P 56-57	
SU 25	Arguments: Discursive Book What memories Could this object hold if it could speak?
P 58-59	
P 60-61	Acknowledgement

Decolonizing SugarCane Diorama: Sweet at Both Ends

Adv VI- Design as Research
Lydia Kallipoliti + TA DJ Fan





While studying the African Hall dioramas at the American Museum of Natural History in Manhattan, several questions guided my investigation.

What does it mean to claim that a diorama tells a unified story—a biography essential to nature? What are the contents of that story, and what must one do to see them? What did “typical” mean for Carl Akeley, and how did he decide when to stop the hunt?

To answer these questions, we must follow Akeley into the field and trace how animals were selected, constructed, and displayed.

The process begins with killing the animal, collecting the death mask, and recording measurements. Field models are made on site, and resources are collected directly from the landscape. It then continues in museum workshops, where workers construct the diorama boxes while being exposed to harmful chemicals. The specimens themselves are fabricated using materials like painted wax, paper, and plaster, and treated with substances such as arsenic. Some constructions even involved hazardous materials like asbestos.

At the same time, the background landscapes are mathematically composed and distorted to manipulate the viewer's perception of depth and

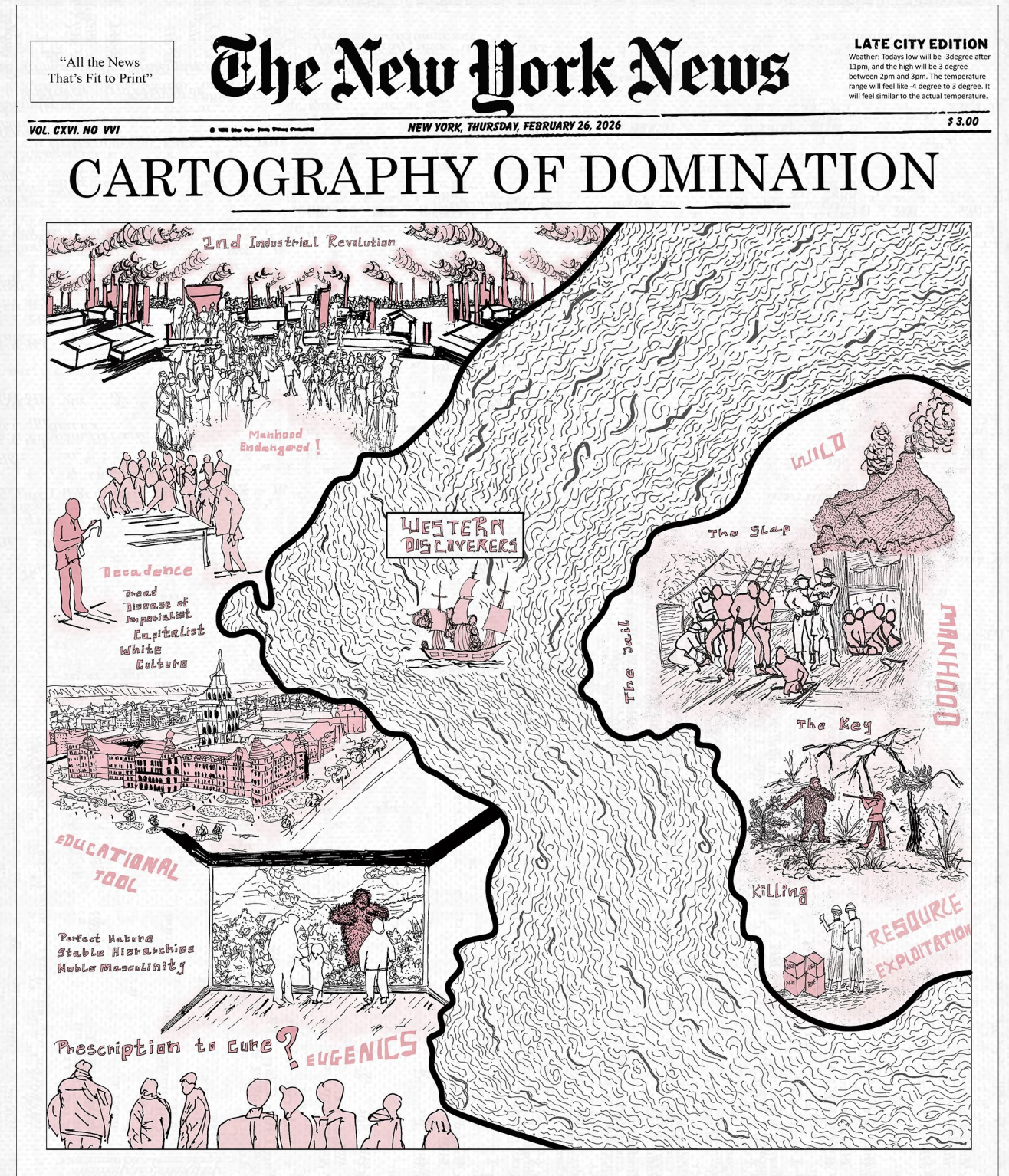
realism. Lighting is carefully used to illuminate foreground elements, giving them a heightened sense of reality. So what appears as a unified and natural scene is, in fact, highly constructed.

This reveals the production of a diorama depends not only on extraction of animals and resources, but also on dangerous labor conditions and toxic materials.

Looking at this process through the lens of Forensic Architecture, the tools and techniques used to create an educational display also reveal a deeper colonial history embedded within its production.

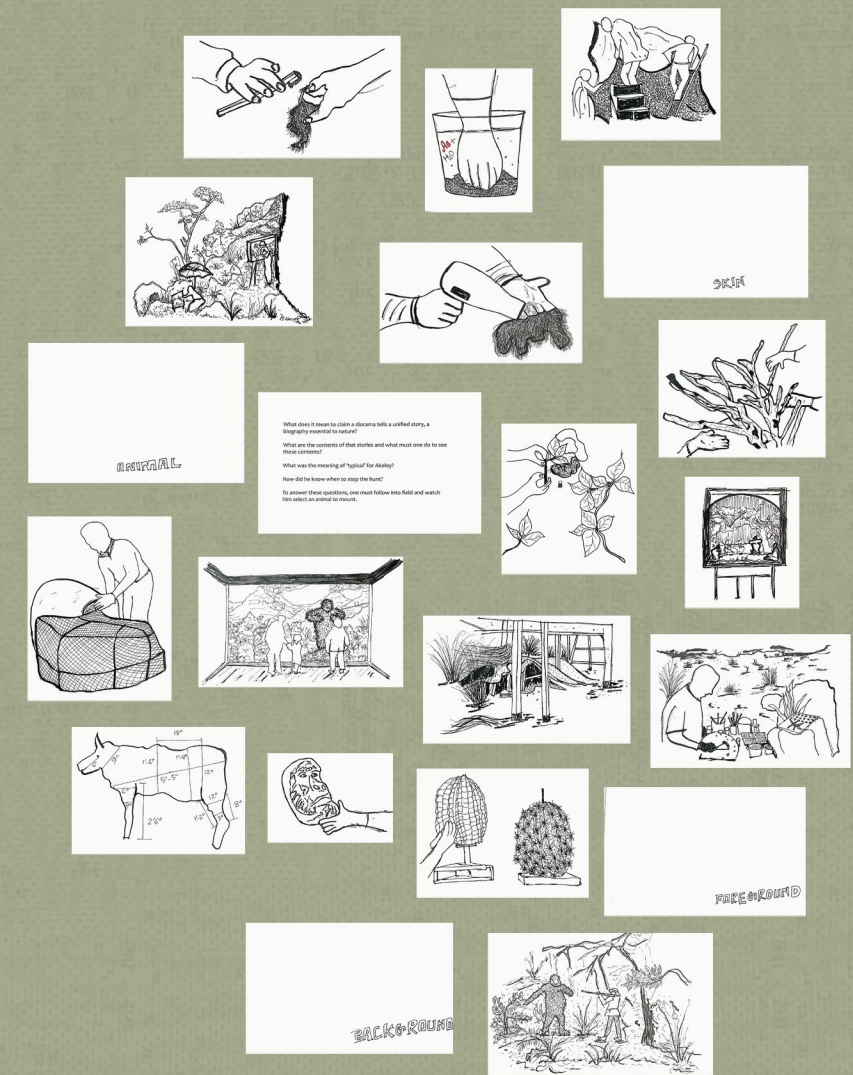
During this period, expeditions into colonized territories enabled the extraction of animals and resources. At the same time, local workers were subjected to systems of control and violence. They were denied access to hunting and punished when they resisted, reinforcing colonial hierarchies of power.

The dioramas that result from these processes present a carefully constructed vision of nature—one based on stability, hierarchy, and control. They position colonized landscapes as static and timeless, while concealing the conditions of their production.



This raises a question for architecture:

How can we work with representation and material systems without reproducing those same logics of extraction?





This project is a **speculative proposal** based in Hualien, Taiwan, where **sugarcane production and railway infrastructure historically enabled the extraction and distribution of resources**. The railway became a key instrument within that system. In this project, the centralized infrastructure is replaced with a **decentralized network** embedded within the community itself.

I focus on sugarcane because it is historically tied to plantation economies and monoculture. It is a material associated with labor, control, and uneven distribution. Instead of rejecting it, I rework it into a communal architectural system.

The project operates across three scales.

At the **building scale**, sugarcane byproducts such as bagasse and bundled fibers are used to construct walls, enclosures, and structural components.

At the **infrastructural scale**, sugarcane is transformed into a network of suspended lines that connect houses and allow the movement of resources across the settlement.

At the **communal scale**, this network becomes a system of exchange, where





water, food, and materials circulate continuously between households rather than being extracted outward.

Infrastructure is no longer centralized or hidden, but visible, distributed, and shared. It organizes not only movement, but also social relationships and forms of living.

The village becomes a network **where each point both receives and contributes**. There is no single center of accumulation—value moves continuously across the system. **This is where the title comes in: Sweet at Both Ends.**

There is a saying in Taiwan that not both ends of sugarcane are sweet, implying uneven distribution. This project challenges that idea.

It imagines a system where **sweetness—understood as value, resource, and benefit—is shared across all points of connection, rather than extracted from one side to benefit another.**

Through this, The project does not change the past, but **proposes an alternative model of material, spatial, and social organization—one where infrastructure supports collective life without repeating the logics of extraction and colonization.**



I am the westerly wind.

I have seen things no one should see.

Once, Gaza's land was alive.
The fields below me bloomed—
crops swayed and danced with my breath,
dust rising in rhythm.
Farmers worked from sunrise to dusk,
but they did not tire.
I cooled them.
I moved with them.
Animals wandered freely,
and sometimes, their voices carried softly in my breeze.
Our days were filled with story, scent, and light.

But one day, I felt it—
a strange heaviness.
The air thickened with dread.
Above the border, I saw them—

They sprayed something into me.
A mist. A chemical.
They called them glyphosate, diuron...
I only knew their sting.
I carried it without wanting to.
It clung to me, sharp and burning.
I was no longer just the wind—

I became a weapon!

I tried to escape, but there was no escape.
I drifted low over Gaza's fields,
and saw what I had done.
Leaves blackened,
plants shriveled.
They no longer moved with me.
They no longer danced.
They no longer spoke.

I turned toward the farmers.
Their crops were gone.
Their soil, ruined.
Their hands were empty.
Their faces—silent.
I heard someone whisper:

“Even in our bodies, the poison remains.”

And it was true.
The chemicals I carried—
now inside them.
In their water. In their breath.
In their urine.

People began to fall ill.
Some died.
Some never walked again.
The animals—
they had no food, no air, no water.
Birds vanished.
It was as if no life had ever been here at all.

Except me.
I remained.
Alone.
Still moving. Still carrying.
Still asking— **why?**
What did they do to deserve this?
What did we all do?

We cared for this land.
We moved with it, not against it.
We protected it.

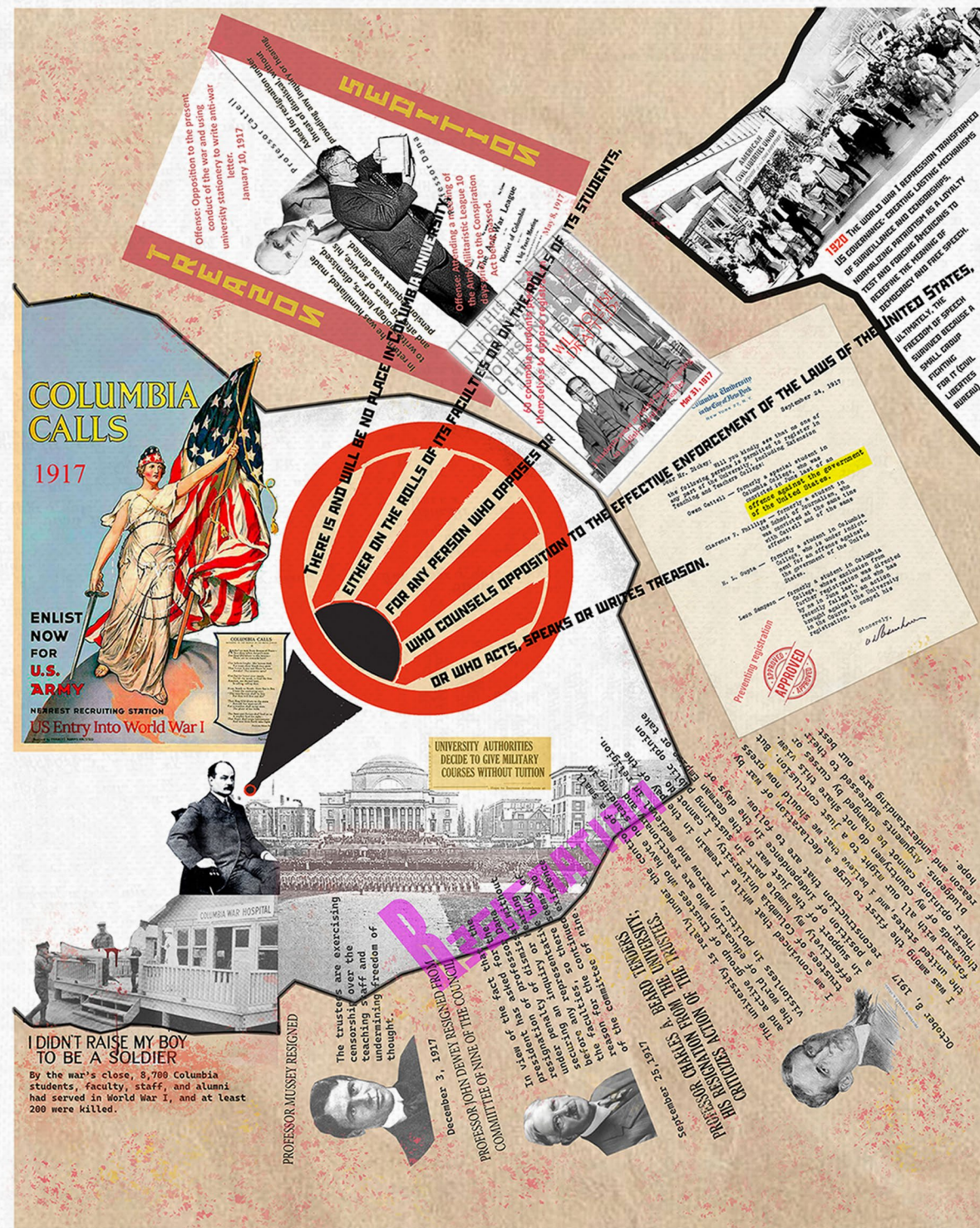
And yet—
even now—
they still spray me.

**Still turn me into something I was never
meant to be.**

Free to Speak?

Adv V - Architecture of Solidarity
Imani Jacqueline Brown + André Barros Santos
TA Khloe Swanson





On March 13th, 2025, Columbia student and president of Student Workers of Columbia United Auto Workers, Grant Miner, was expelled and fired from job for participating in the protest movement against the ongoing genocide in Gaza.¹

On August 1st, 2025, Palestinian-American historian Rashid Khalidi, the former Edward Said Professor of Modern Arab Studies, cancelled his course on modern Middle East History following Columbia's adoption of the IHRA² definition of antisemitism—which misleadingly conflates Jewish identity with the Israeli State, rendering teaching around the issue of Palestine virtually impossible.³

What does academic freedom mean when students face disciplinary consequences for standing up against genocide?

What does it mean when faculty must withdraw courses to preserve their freedom to teach?

To begin unpacking these questions, one must situate the present moment within Columbia University's long and complicated history of struggles over political expression and academic freedom.

1. Spencer Davis and Daksha Pillai. "Columbia Expels Student Workers of Columbia-United Auto Workers President, Union Says." Columbia Spectator, March 14, 2025.
2. International Holocaust Remembrance Alliance. "About the IHRA." <https://holocaustremembrance.com/>.
3. Rashid Khalidi, "I Spent Decades at Columbia. I'm Withdrawing My Fall Course Due to Its Deal with Trump," The Guardian, August 1, 2025

In 1917, during World War I, anti-war expression at Columbia was treated as treason: students were arrested for distributing anti-war leaflets, and faculty were dismissed for dissent.⁴

In 1936, students protested President Butler's ties to Nazi Germany and his acceptance of an invitation to Heidelberg University's 550th anniversary, an event aligned with Nazi ideology. At the time, Heidelberg had dismissed two Jewish professors. Students who expressed dissent were expelled.⁵

In 1968, students protested the University's involvement in military research for the Vietnam War and its racially segregated gym construction, which confined Harlem residents to a basement entrance. They occupied campus buildings, and former University president Grayson Kirk called in the police to remove them. Students were beaten, arrested, suspended, and faced widespread accusations of "anti-American mindset."⁶



30

1969
THE FIRST AMENDMENT PROTECTS ADVOCACY OF VIOLENCE UNLESS IT INCITES IMMINENT LAWLESS ACTION, REPLACING THE "CLEAR AND PRESENT DANGER" TEST.

1968
FACULTY MEET IN PHILOSOPHY HALL. FACULTY MEMBERS CREATE A WHITE-ARMED LINE TO PREVENT VIOLENCE. APRIL 24, 1968

YOU WERE NOT FORCED TO COME HERE AND IF YOU DON'T LIKE THE WAY WE RUN OUR BUSINESS YOU CAN PACK UP YOUR CLOTHES AND BEAT IT BUT AS LONG AS YOU REMAIN HERE YOU ARE GOING TO ABIDE BY OUR RULES.

1969
STUDENTS DO NOT LOSE THEIR FIRST AMENDMENT RIGHTS AT SCHOOL AND CAN EXPRESS POLITICAL OPINIONS, SUCH AS SUITS, ROTUNDS, ROOMS, ETC.



Acting president Andrew W. Cordier, 1969

The acting president reduced the suspensions to censures for the 42 students involved in the May 22nd occupation of Hamilton Hall. While this has been referred as leniency, the university did not have sufficient evidence against every individual student. A panel of 10 members from the Faculty of Law attended each hearing and trial to request leniency.

151 CASES NOT INCLUDED IN DISMISSAL
31 FORMER STUDENTS
33 LOCAL RESIDENTS
87 OTHERS NON-STUDENTS

**5 FACULTY,
4 STAFF WERE CHARGED,
73 STUDENTS BEEN SUSPENDED (42 OF THEM WERE LATER CENSURED)
MORE THAN 700 ARRESTED.**

UNIVERSITY SENATE
Joint Committee on disciplinary affairs, composed of 7 students, 7 members of faculty, 3 administrators. New students and faculty members will be elected to this body before October 30, 1968.

out of 150 thousand 35 classes were disrupted and less than half needed to require to dismissal September 12, 1968 freedom to rally and protest approved, but prescribe appropriate penalties for actions which disrupt university functions.

Anti-American minds
5 students single trespass dismissed (May 18)
160 non students been discharged one single trespass



"A FIRM WARNING ... THAT THE ADMINISTRATION WILL NOT TOLERATE EFFORTS TO MAKE THE UNIVERSITY AN INSTRUMENT OF OPPOSITION TO THE ESTABLISHED ORDERS OF SOCIETY."
May 12, 1967

Anthropology Dept. Will Not Perform Defense Research

Kirk Bans Pickets In CU Buildings
Picketing and demonstrations will no longer be permitted inside University buildings, according to a memorandum released Friday by President Grayson Kirk.
The ruling reverses a previous September 25, 1967 which permitted demonstrations within buildings as long as they did not interfere with normal University activities.



Columbia Confirms Charge Of CIA-Funded Research
October 17, 1967

The Strawberry Statement:
Notes of a College Revolutionary
"a university is definitely not a democratic institution. When decisions begin to be made democratically around here, I will not be here any longer. WHETHER STUDENTS VOTE YES or NO on an issue is like telling me they like STRAWBERRIES."
-John Lewis, 1968



CANNOT BE EXTENDED SO FAR THAT COLUMBIA IS PERMITTED



Today's Gaza solidarity encampment movement at Columbia stands in continuity with these earlier battles over expressing solidarity, and contesting authoritarian power.⁸

8. Dasha M. et al., "Palestine Is the Vanguard for Our Liberation: Insights from the Students".

Free to Speak? is a Zine exploring how Columbia has functioned as a testing ground for the articulation of solidarity. Through a history of suppression and protest, it highlights the ongoing struggle for political expression and the right to assemble on campus, showing how the university authorities attempted to silence dissent through policy, police intervention, expulsion, suspension, threats, and censure; how the University became entangled in global political conflicts from World War I to the present; and how the ACLU has stepped in to defend students and faculty.

Across these decades, students and faculty exercised solidarity and the right to speak through many forms—resignations, occupations, encampments, fasting, leaflets, posters, banners, buttons, symbolic clothing and masks.

If more than a century after Columbia's first major speech controversies, the ability to expose, criticize and confront oppressive regimes on campus and in the classroom remains disputed,

Free to Speak? asks: what forms of expression might solidarity take next?



A breaching experiment conducted in public space helps us understand how people react to behaviors that fall outside accepted social norms. In this experiment, I held an umbrella inside a moving train, as if it were raining. By using an ordinary object outside its expected context, the experiment disrupted everyday social behavior within a shared public environment. Most people ignored the act; no one looked directly, intervened, or attempted to correct the behavior.

Rather than confronting it, the people standing in front of me looked away and positioned themselves to avoid eye contact. Only one woman briefly glanced back.

This experiment reveals how socially disruptive situations can become normalized in public life, reflecting a tendency toward detachment and non-intervention within shared spaces.

It also suggests how people often hesitate to respond or speak up due to fear of involvement, discomfort, or the desire to avoid conflict.



Methodology

This paper adopts a spatial-analytical methodology, treating Columbia University campus not merely as a physical environment but as a political text.

Drawing on Henri Lefebvre's theory of the production of space, the analysis operates across three dimensions':

- 1. Conceived space:** the planned and designed campus.
- 2. Perceived space:** patterns of movement and institutional regulation.
- 3. Lived space:** experiences shaped by protest, occupation, and everyday practice.

This framework recognizes that public space is not inherently open or neutral, but structured through rules of access, use, and control. Even spaces that appear public may be privately governed, with behavior regulated by institutional authority.² In this sense, the campus operates as a controlled environment in which access, movement, and expression are subject to institutional oversight.

Rather than separating design from use, this approach demonstrates how spatial form actively structures social relations while remaining open to disruption through protest, occupation, and collective action.

1. Lefebvre, *The Production of Space*, 38-39.

2. Neil Smith and Setha Low, "The Imperative of Public Space," in *The Politics of Public Space*, edited by Setha Low and Neil Smith (New York: Routledge, 2006), 3-4.

Sovereignty, Control, and the Campus as Territorialized Space

The contested nature of Columbia University can be understood through the lens of sovereignty and spatial control. **As Achille Mbembe argues , modern power operates through the production and regulation of space through the creation of boundaries, hierarchies, and zones that determine who may enter, move, and exist within a given territory.³**

Sovereignty is therefore exercised not only through law, but through territorial organization and the regulation of movement.⁴

Columbia campus exhibits analogous spatial logics of control and differentiation. The gates function as mechanisms of territorial regulation, defining who belongs within the institutional boundary. Restrictions on access, the presence of security personnel, and the authority to remove or arrest individuals demonstrate how sovereignty is enacted through spatial management. Similarly, the South Lawn, often perceived as open and democratic, operates as a regulated field of visibility where collective action remains continuously observable. **In this sense, the lawn functions within a system of disciplinary control, where bodies are organized, observed, and managed.**

At the same time, student protests disrupt this spatial order. **Those actions can be understood as attempts to reclaim what Mbembe identifies as the right to presence, the right to exist, assemble, and act within a given territory.**

3. Achille Mbembe, "Necropolitics," *Public Culture* 15, no. 1 (2003): 25-26.

4. Mbembe, "Necropolitics," 25.

Landscape, Memory, and the Politics of What Is Remembered

The contested nature of Columbia University is not only a matter of visible political struggle, but also of memory embedded within its landscape. Spaces such as the South Lawn or the steps of Low Library carry traces of past conflict. Yet in their everyday appearance, these histories often remain invisible. The lawn appears as a place of leisure, the monument as a stable symbol, and the campus as an ordered environment.

As Michel-Rolph Trouillot argues, memory and history are shaped by processes that determine what is preserved and what is erased.⁵ Certain events enter institutional narratives, while others remain marginalized or forgotten. The landscape thus becomes a site of selective memory, where histories are unevenly distributed across visibility and silence.

The campus is not a static entity but an accumulation of overlapping narratives, each protest, each act of control, each moment of resistance adding another layer. In this sense, the South Lawn is a palimpsest of political action, where past and present coexist. Similarly, the Alma Mater statue can be understood not as a fixed monument but as a site of evolving memory. While it projects a stable institutional identity, its meaning is repeatedly altered through acts of protest and reappropriation.

The struggle over space is therefore inseparable from a struggle over memory over what is remembered, what is forgotten, and who defines the past.

5. Michel-Rolph Trouillot, *Silencing the Past: Power and the Production of History* (Boston: Beacon Press, 1995), 26–27.

From Monument to Counter-Monument

The critique of the monument can be extended through the concept of the counter-monument, which challenges not only what monuments represent but how they function. Traditional monuments tend to impose stabilized meanings, reducing viewers to passive spectators and externalizing the work of memory.

This insight is crucial for understanding the role of the Alma Mater statue at Columbia University. Its permanence and symbolic clarity present a unified narrative that contrasts sharply with the conflicts and political struggles that have shaped the campus.

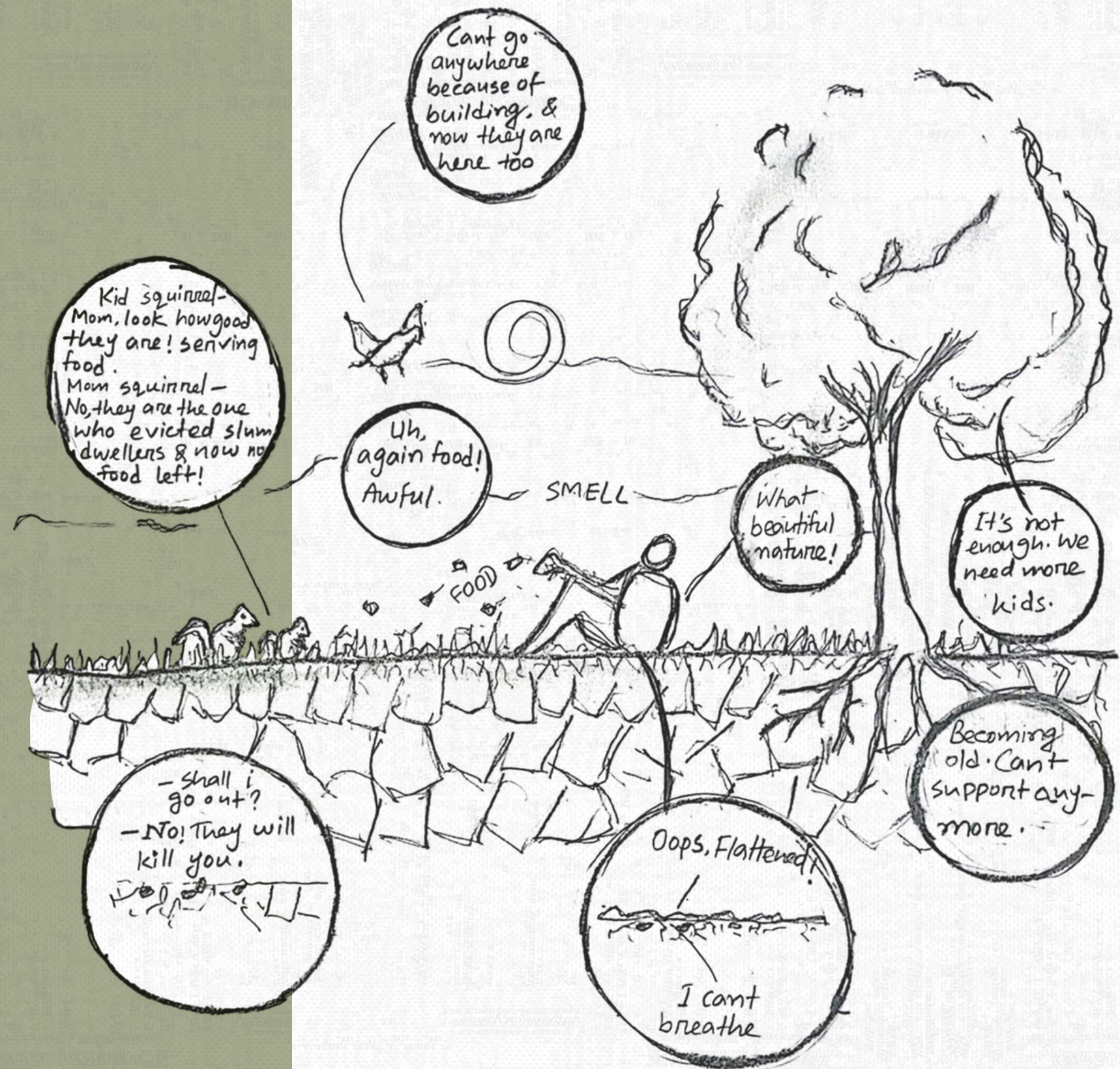
In response to such limitations, contemporary artists and theorists have proposed counter-monuments forms that resist closure, permanence, and didactic meaning. Rather than presenting a fixed narrative, these works create spaces of absence, uncertainty, and participation, challenging the traditional authority of monumental form.

This framework offers a powerful way to reinterpret Columbia's campus. While Alma Mater operates as a traditional monument, repeated acts of protest around it transform the space into something closer to a counter-monumental condition. When students gather on the steps, occupy the surrounding space, or alter the monument's symbolic meaning, they shift the site from passive representation to active engagement.

Rather than stabilizing identity, these spaces remain open, contested, and unfinished dependent on continuous participation.

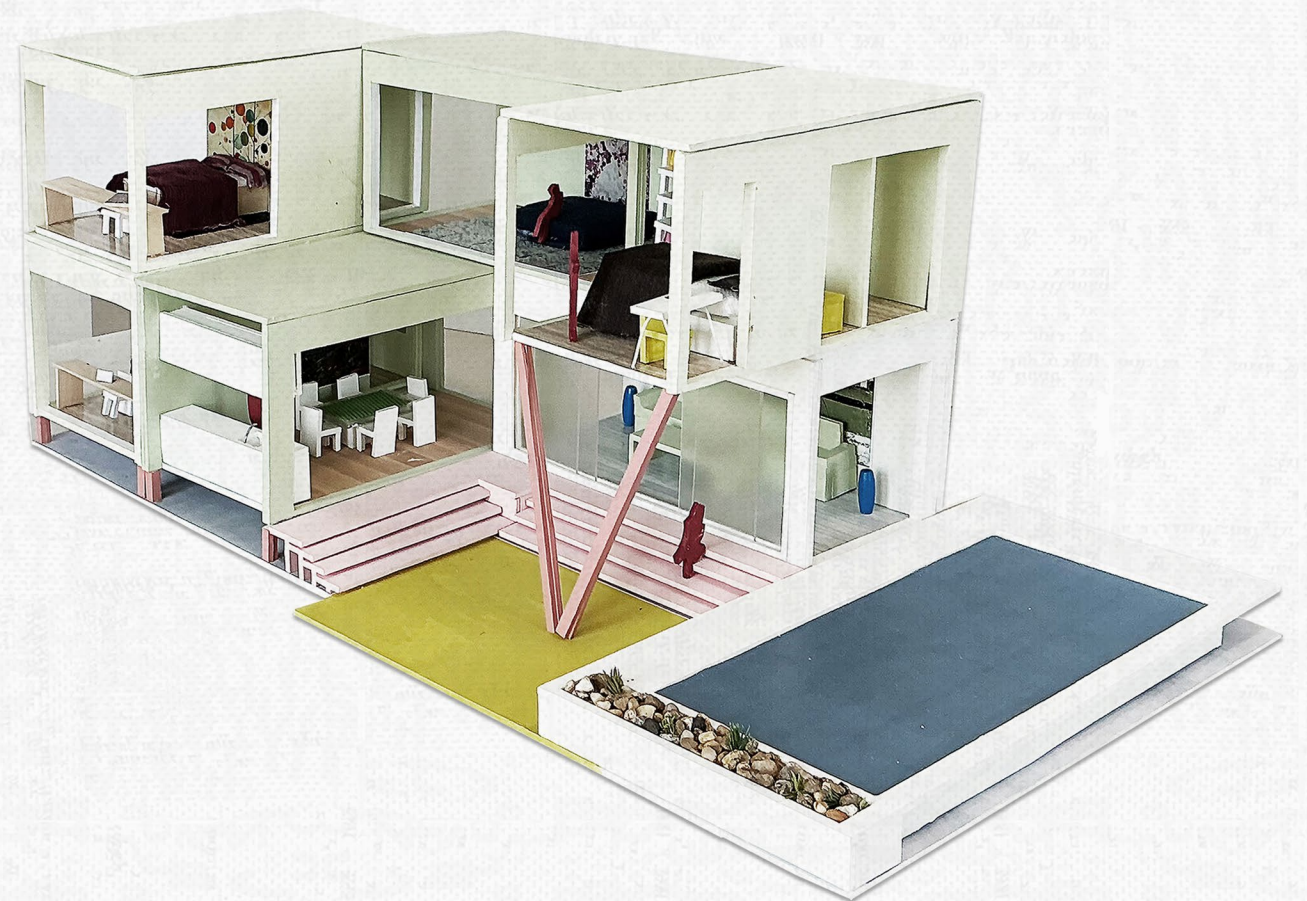
This drawing represents Central Park as a Contested urban environment where human comfort is prioritized while non-human life struggles to survive. Although the park appears natural and beautiful, the ground is fragmented and compacted, limiting habitats and food sources for animals. Elements such as construction, waste, and constant human presence reveal how architectural and technological interventions reshape natural systems.

The drawing highlights how designed landscapes often function selectively supporting human leisure while simultaneously degrading ecological balance. It reflects on the responsibility of architecture and technology to create environments that sustain both human and non-human life.



Co-Existing Habitat

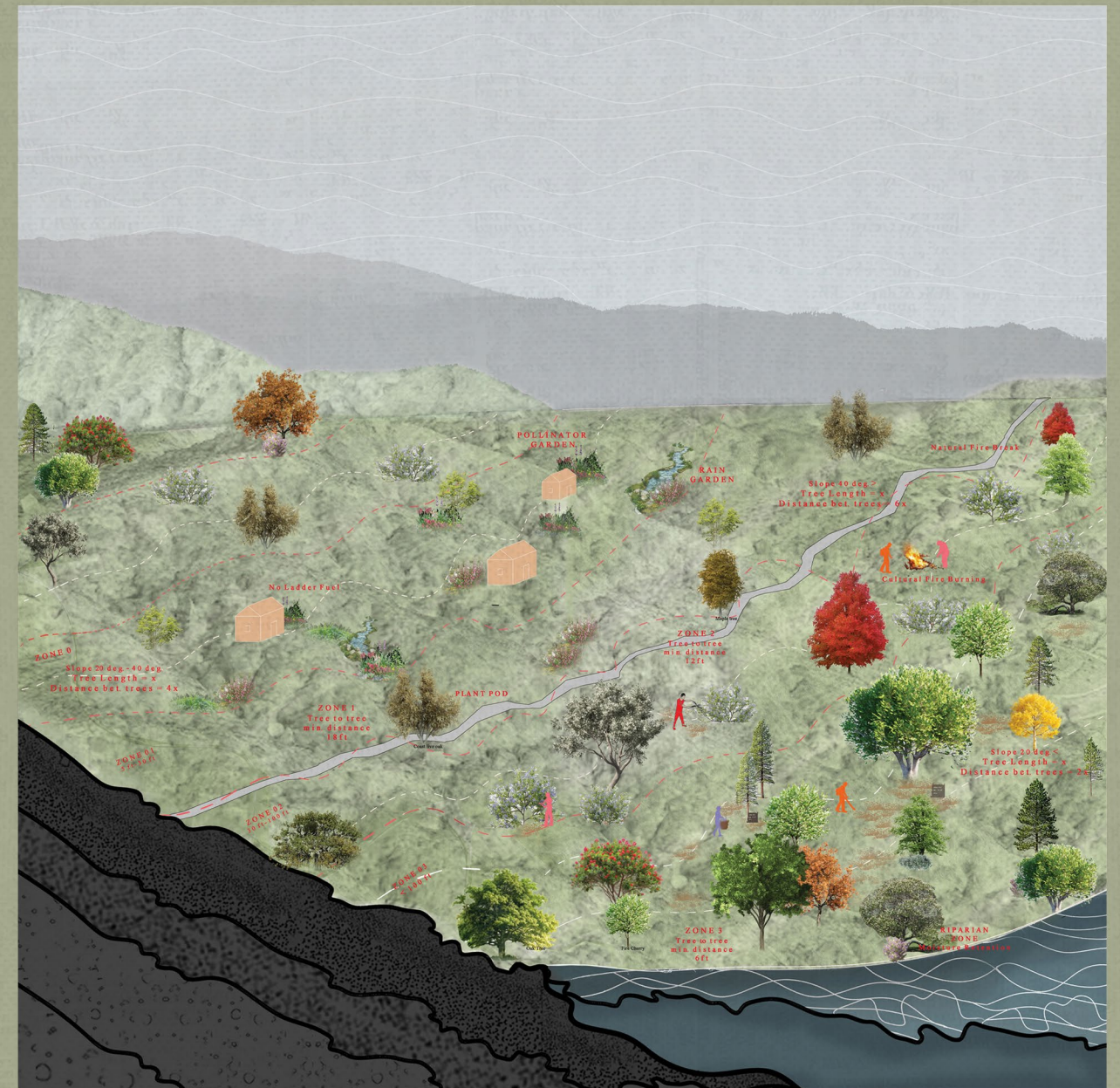
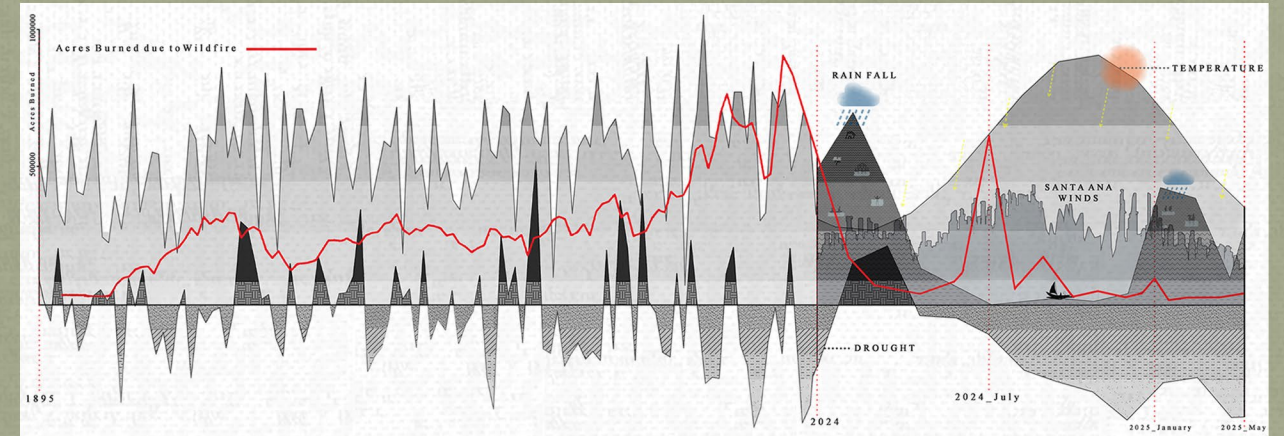
Adv IV - Wildlands: City's Edge in the age of The Pyrocene
David Eugen Moon + TA Min-Han Lin

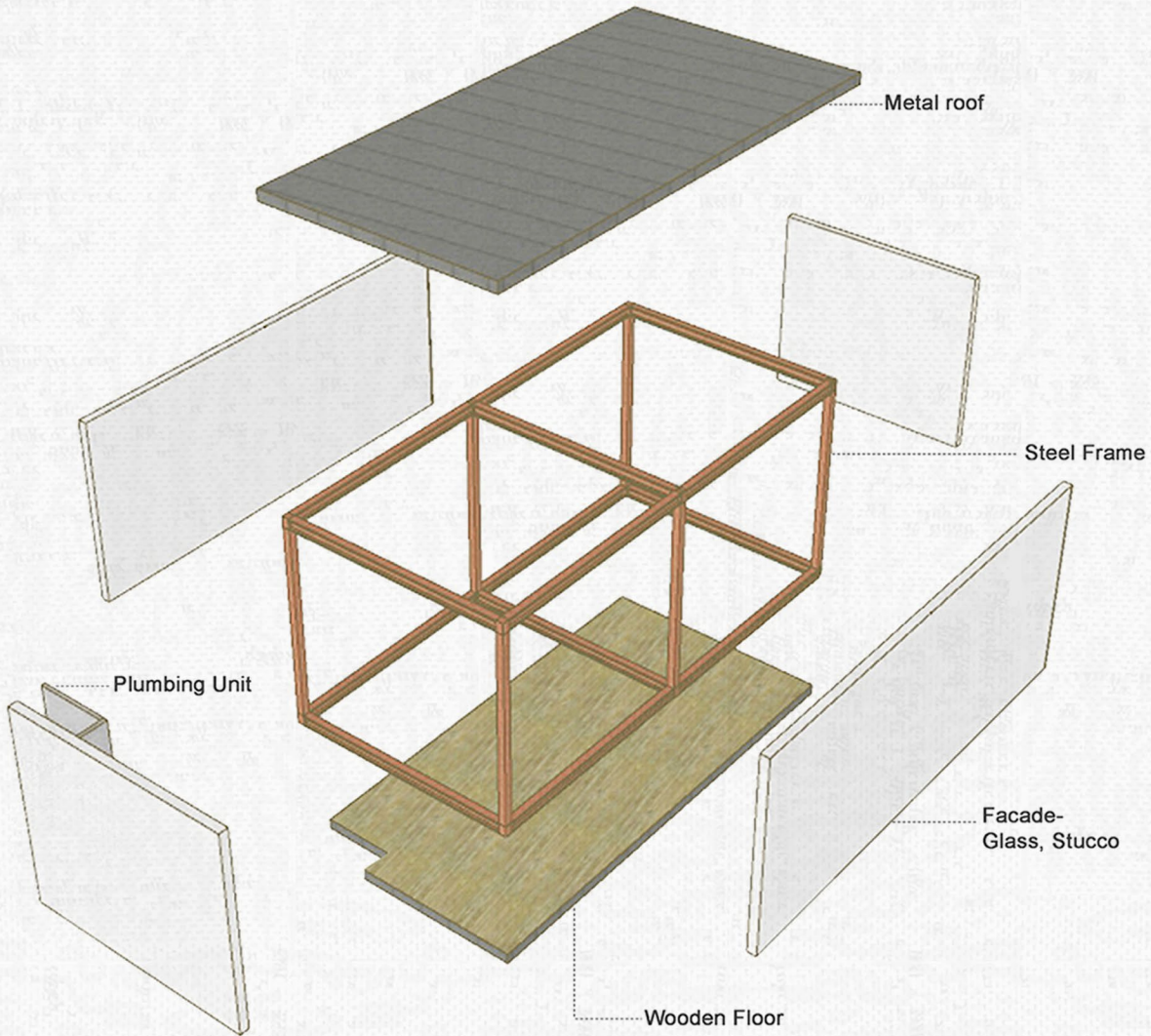
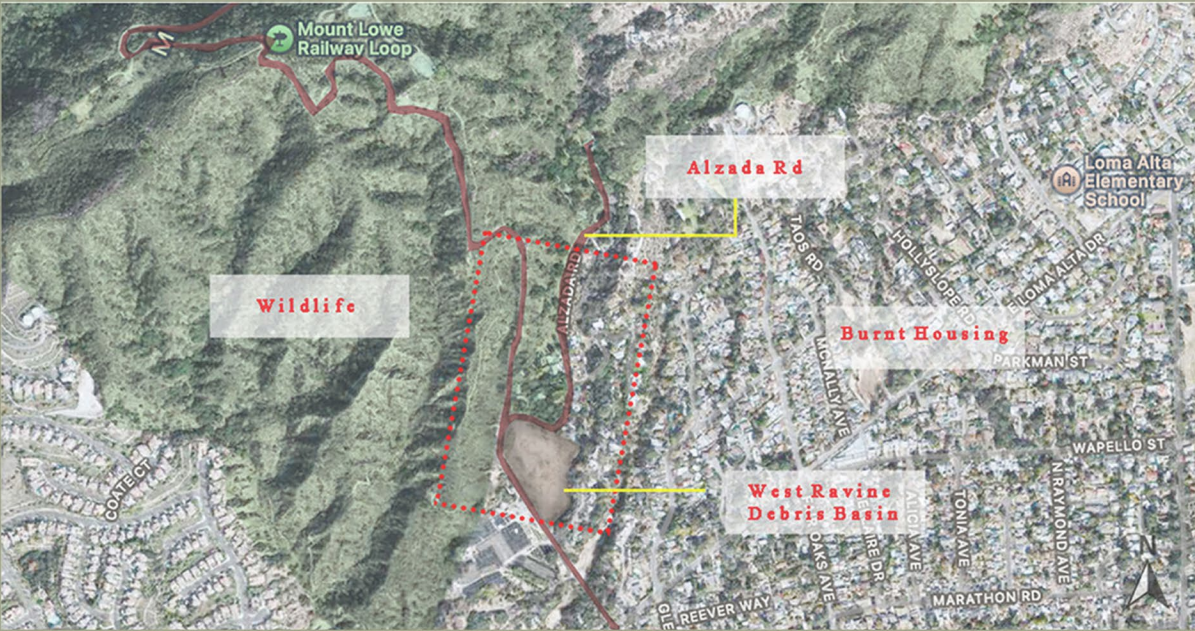


This project is situated on Alzada Road in Altadena, California, a site devastated by the Eaton Fire. It addresses California's recurring wildfires, intensified by climate change through rising temperatures, shifting rainfall, and reduced soil moisture.

Framed within the "age of the Pyrocene," it rethinks the relationship between built form and landscape, using design to support resilience. Zonal landscapes are created, including fire-resistant areas, windbreaks, pollinator habitats, riparian corridors, and zones managed through ladder fuel removal, temporary hard-surface firebreaks, and cultural burning, slow fire spread and protect soil and biodiversity. For post-wildfire recovery, modular living units with existing foundations provide displaced residents with rapid, cost-effective housing that restores a sense of home while using resilient materials such as glass and stucco.

Together, architecture and landscape operate in synergy to resist and recover from wildfire.

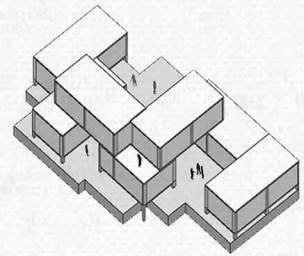




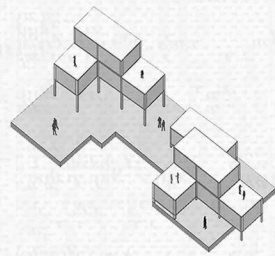
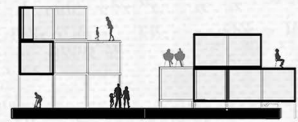
6 meter X 3 meter
Used for Living,
Dining +Kitchen,
Bedroom +Bathroom,
Living+Dining

4.5 meter X 3 meter
Used for Living,
Dining +Kitchen,
Bedroom +Bathroom

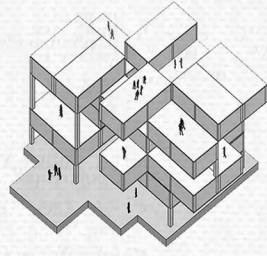
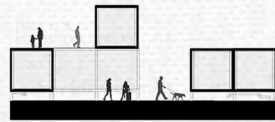
3 meter X 3 meter
Used for Living,
Study,
Family Gathering,
Bedroom



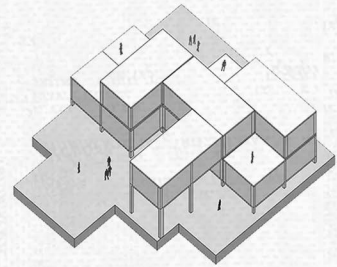
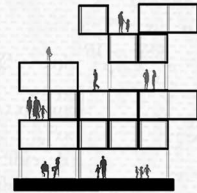
Connected through Courtyard



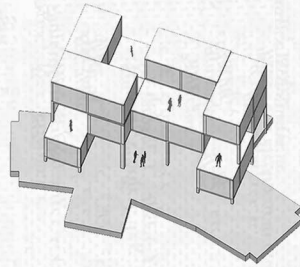
Twin House



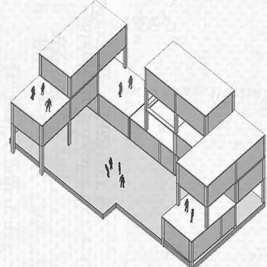
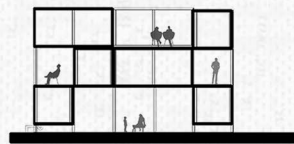
Co-Housing



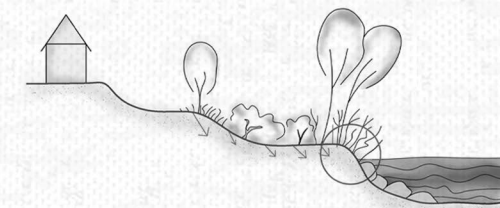
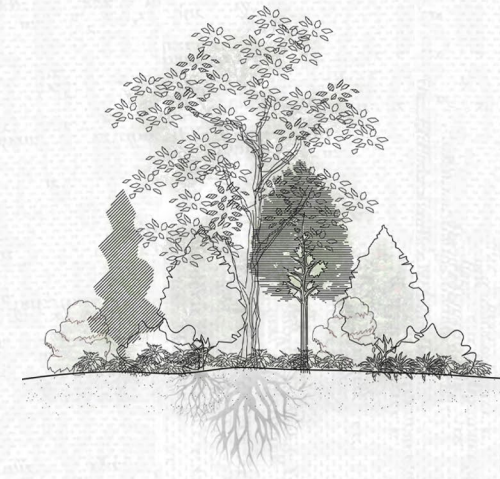
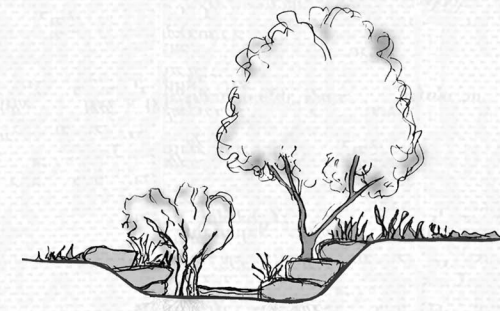
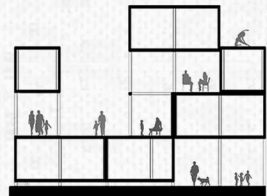
Stack & Shift



Solid-void



Terrace Housing





While technological progress continues to capture global attention, environmental violence remains a hidden yet persistent crisis, one that disproportionately impacts marginalized and vulnerable communities worldwide. Beneath narratives of innovation lie stories of deliberate or systemic destruction, transformation, and neglect of natural and built environments used as tools of control, displacement, and erasure.

This paper defines environmental violence as intentional or structural harm to environments that deeply affect communities, particularly those lacking political or economic power. Such violence may be immediate or unfold slowly, but it leaves lasting scars on landscapes and populations.

Drawing on Forensic Architecture's investigative work, this study situates various global cases within the broader phenomenon of environmental violence. Notable examples include the 1948 Nakba, where villages such as Al-Tur, Al-Zagh, and Al-Dawayima were destroyed and erased, and the Gaza Strip, where military actions have caused long-term ecological damage. These cases reveal how environments become both witnesses to and instruments of violence.¹

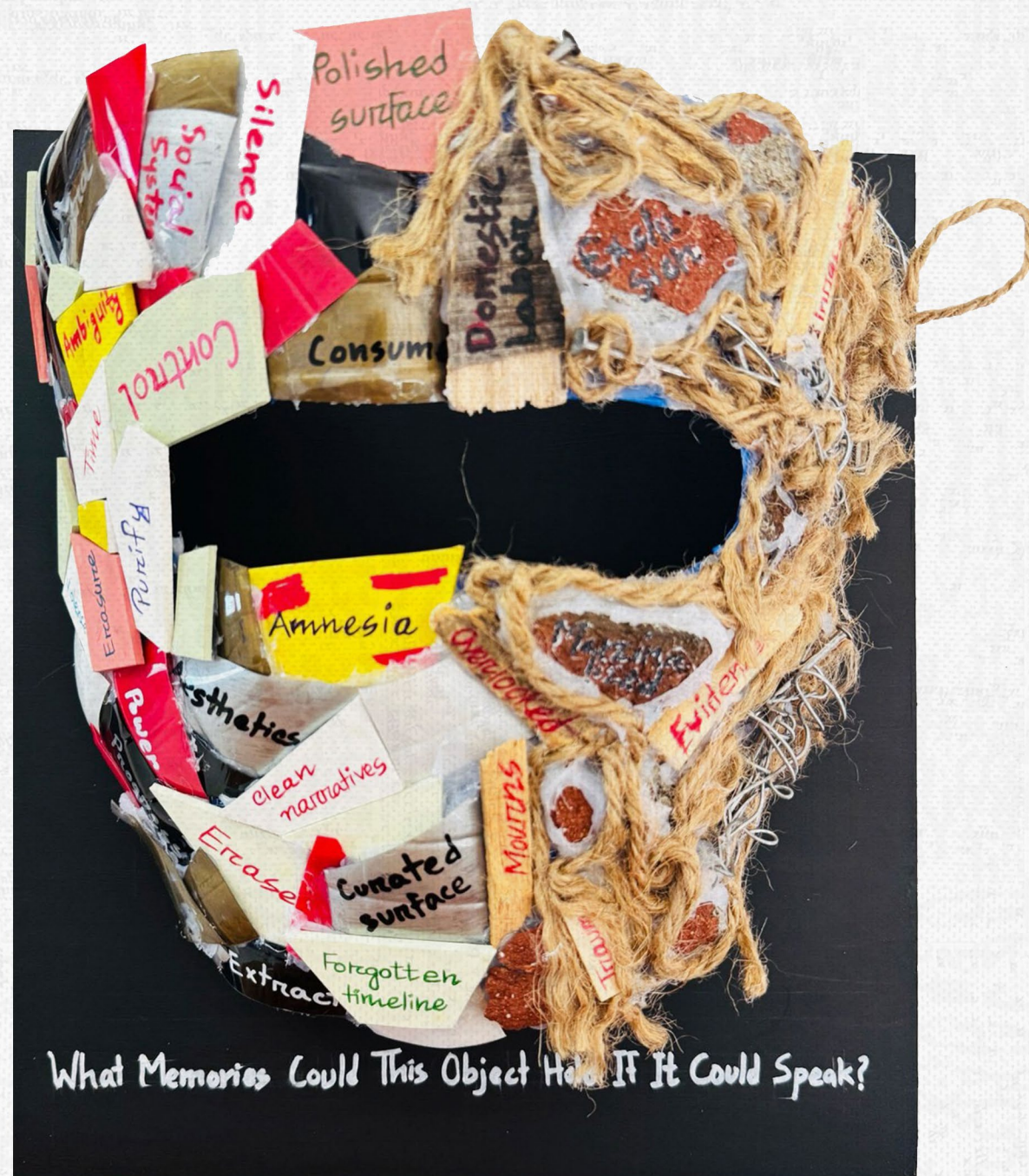
Building on this framework, **the paper critically examines two architectural responses to environmental violence through the lens of Forensic Architecture: Martin Pawley's garbage housing and Hassan Fathy's New Gournia Village.**

Through this analysis, the research explores whether architecture can challenge environmental violence or whether it may unintentionally reinforce patterns of displacement and control.

1. Forensic Architecture, "The Massacre at Tur Al-Zagh: Al-Dawayima, 29 October 1948," published February 7, 2025, accessed July 10, 2025, <https://forensicarchitecture.org/investigation/the-massacre-at-tur-al-zagh-al-dawayima-29-october-1948>; Forensic Architecture, "Herbicide Warfare in Gaza, 1 January 2014–Ongoing," published July 19, 2019, accessed July 10, 2025, <https://forensicarchitecture.org/investigation/herbicide-warfare-in-gaza>. Further detailed analysis of this topic of Environmental Violence will be presented in my forthcoming paper.

Arguments

Lydia Kallipoliti + Section Marie De Testa



This object is made from discarded construction waste- brick chips, plastic, tarps, wire mesh, pins, and wood salvaged from a disposal site. These forgotten materials mirror how marginalized communities and overlooked laborers are erased from dominant histories. Just as construction waste is unseen and undervalued, so are the displaced and forgotten behind celebrated architecture. For example, Central Park's creation displaced slum dwellers; indigenous peoples were uprooted for Jewel Changi Airport; many workers died building landmarks like Zaha Hadid's Stadium.

Visitors admire polished facades, unaware of these hidden costs.

The object contronts society's sanitized narratives by making visible what it calls "waste", both material and social. It challenges neat, harmonious stories by assembling fragments that resist smooth surfaces and linear narratives. Each fragments hold hidden histories of extraction, consumption, and discard. Together, they form a vessel of memory and critique, revealing what we live with and what we erase. Wearing it invites viewers to experience exclusion and exploitation firsthand. Waste is not failure but evidence of human neglect, ecological harm, and social exclusion. If the object could speak, it would haunt rather than explain.

Arguments
Lydia Kallipoliti + Section Marie De Testa



Are you the one who prefers clean narratives that erase complexity?

Wear this mask

Tell...

What it feels like to be marginalized?

To be exploited?

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Architecture is not only about designing spaces, but questioning who gets to stay, where, and how.