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Columbia GSAPP
2022-2023

# Edges of Existence: Designing Ephemera

# Foreword

Designing ephemeral spaces to engage the human senses can reposition our heightened awareness to controlled narratives within political structures and agendas, describe the complex yet delicate nature of environmental forces and its materiality, and most importantly, teach us to pay closer attention to qualities that don't last forever, hinting that they must be preserved.

In this collection of works, I imagined a new architecture of encounters, instrumentalizing sight, smell and touch to expose critiques on social, political and environmental issues.

I want to thank and acknowledge all of my instructors, collaborators, and mentors throughout my time at Columbia for allowing me to roam and explore the intangible.

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# Seeing, Not Seen

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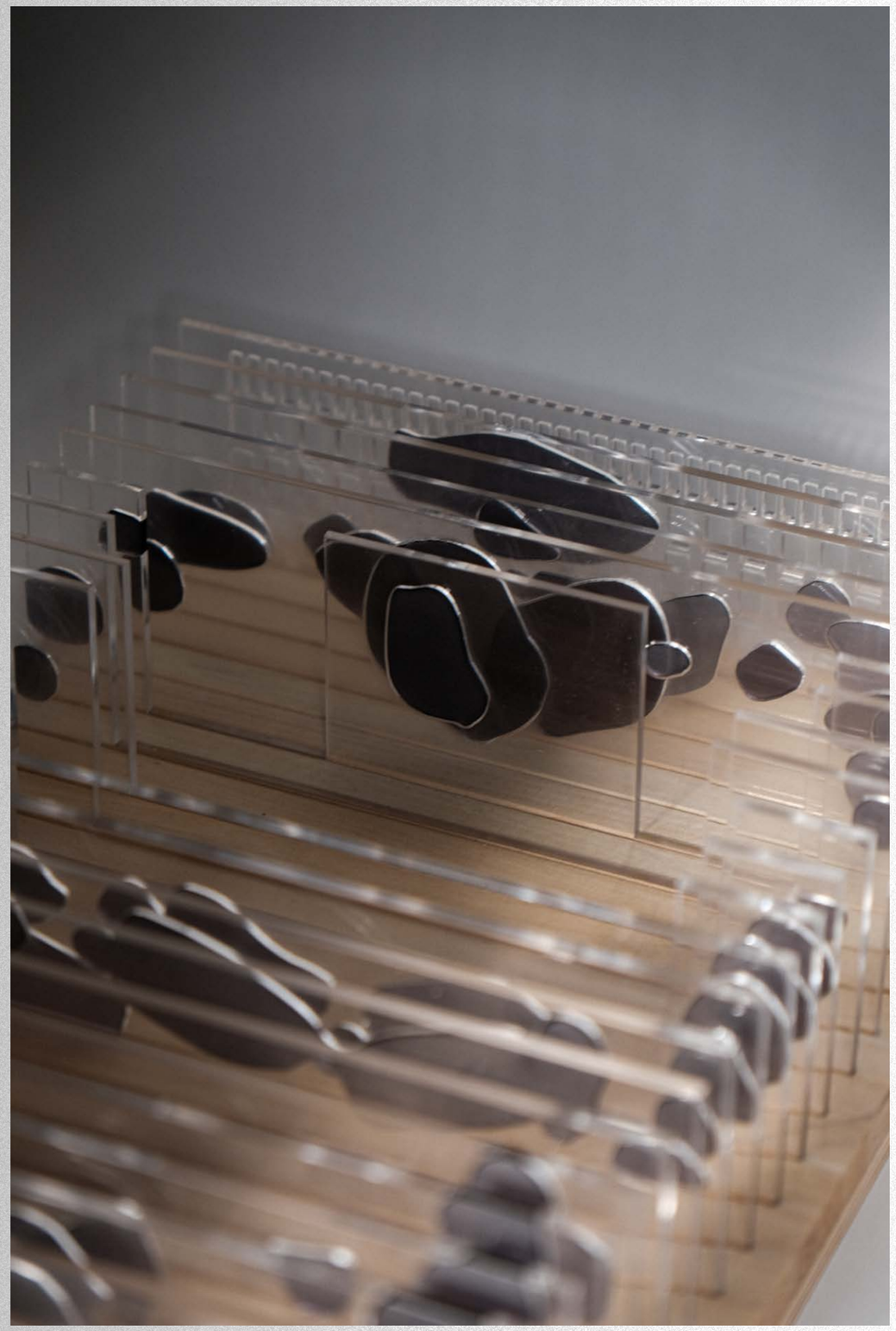
|---|---|
| Adv IV Studio | Afterimages: On Restitution, Animism, and Diaspora |
| Critic | Emanuel Admassu |
| Semester | Spring 2023 |
| Partner | Ted Pisutigomol |
| Location | Berlin |

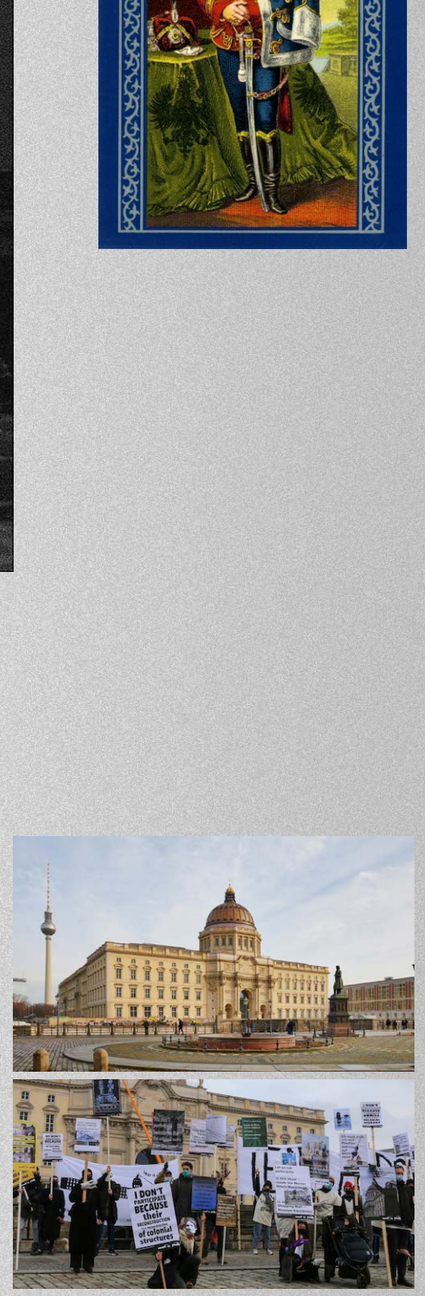


## Humbolt Forum: a Prussian palace reconstructed as an ethnological museum of looted artifacts

Why do western ethnological museums still exist? Do these cultural institutions still have a place in the contemporary world?

Charged with highly visible symbolisms and violence inflicted on cultures by the Prussian monarchy, the Humboldt Forum in Berlin is a modern reconstruction representing the State's criminal past and colonial entitlements. It currently houses and displays some 500,000 objects and artifacts from cultures and nations around the world: most of which were acquired through colonial looting.

As such, the palace must be unseen from this world. The ethnographic museum must be dissolved.

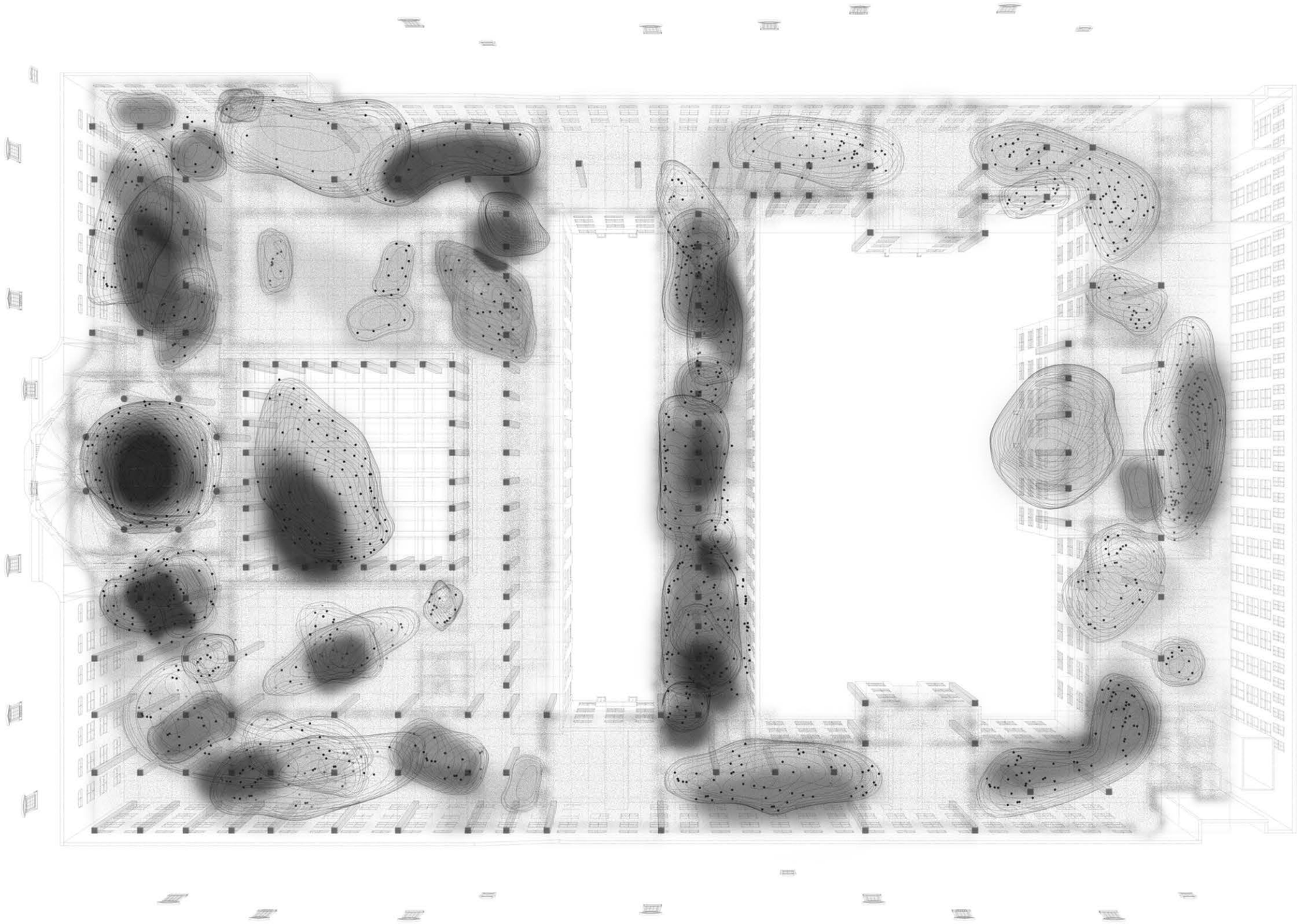


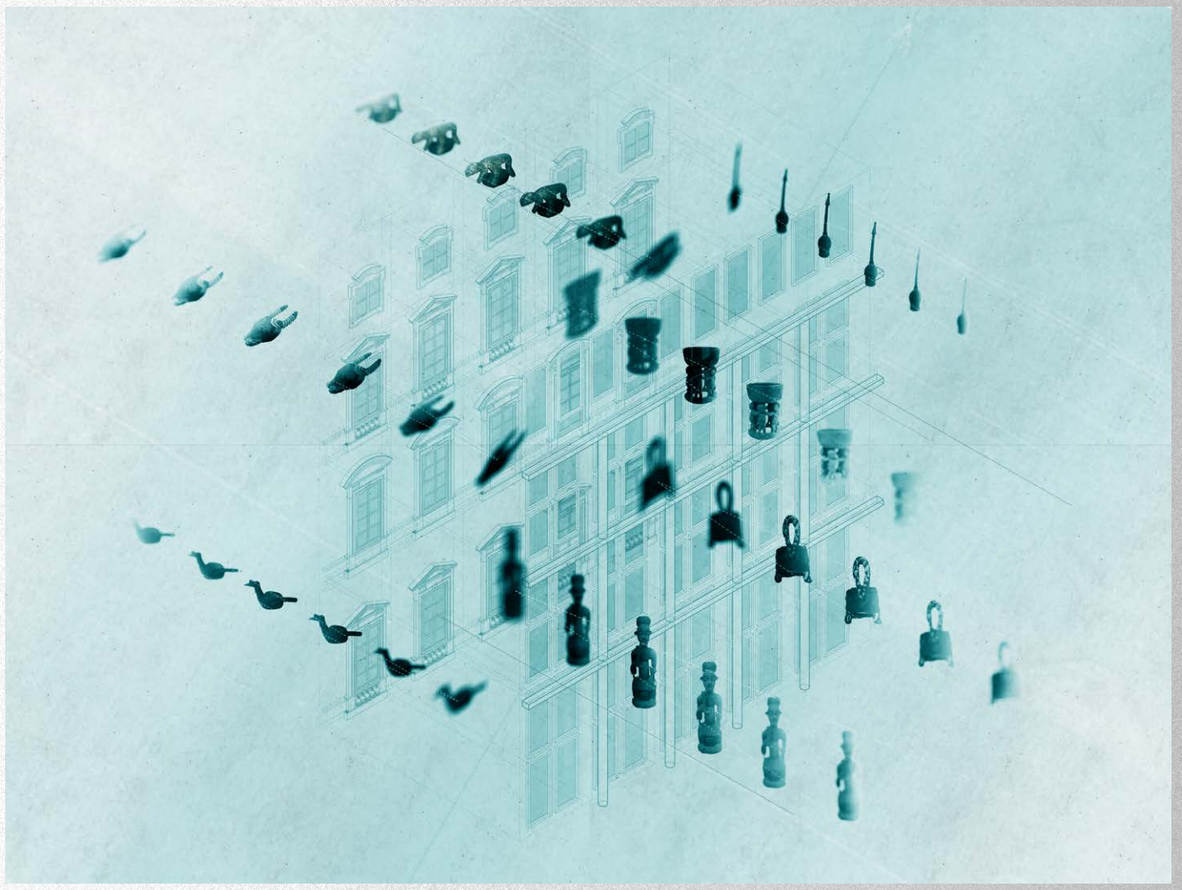


## Lesions of the Forum

The ability to control sight is a powerful tool wielded by states and individuals throughout history and museums are no exception. By using light as a means to expose, impair and obscure, the institution holds the power to distort its problematic past and render the peoples and cultures of those stolen artefacts helpless in their pursuits for reparation and repatriation.

This drawing represents an initial imagination of a transparent Humboldt Forum, dissolved until only traces of it remain. This was done to identify the most obvious and visible attractions: stolen objects and artifacts. Analogous to identifying cancer cells within a body, we scanned for the density of imprisoned objects currently housed within. These become rendered as dark and light zones of varying opacity.



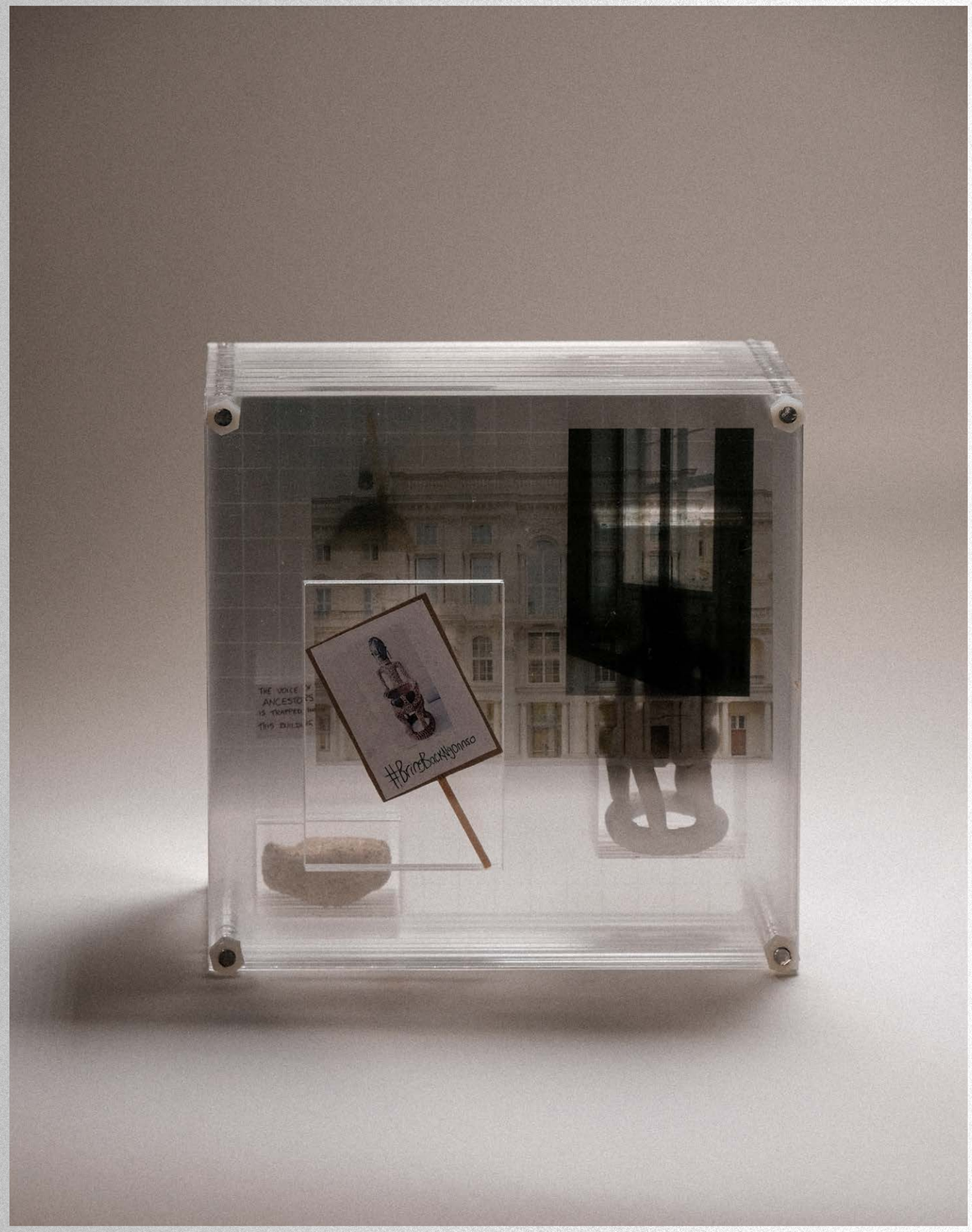


## Inverting Visibility

Using selective visibility to bring attention to objects that are in need of restitution, we started to think about how visibility can be re-thought by dissolving the reading of the institution itself. We then propose subjecting stolen objects to darkness, altering the ability to see them as seductive objects.

Once the monumental elements of the Humboldt are made transparent, the shadowed darkness of objects will be made greatly apparent from all views all around the city. Darkened objects become suspended in in a transparent entity that can no longer hide the enormous collection of imprisoned objects.



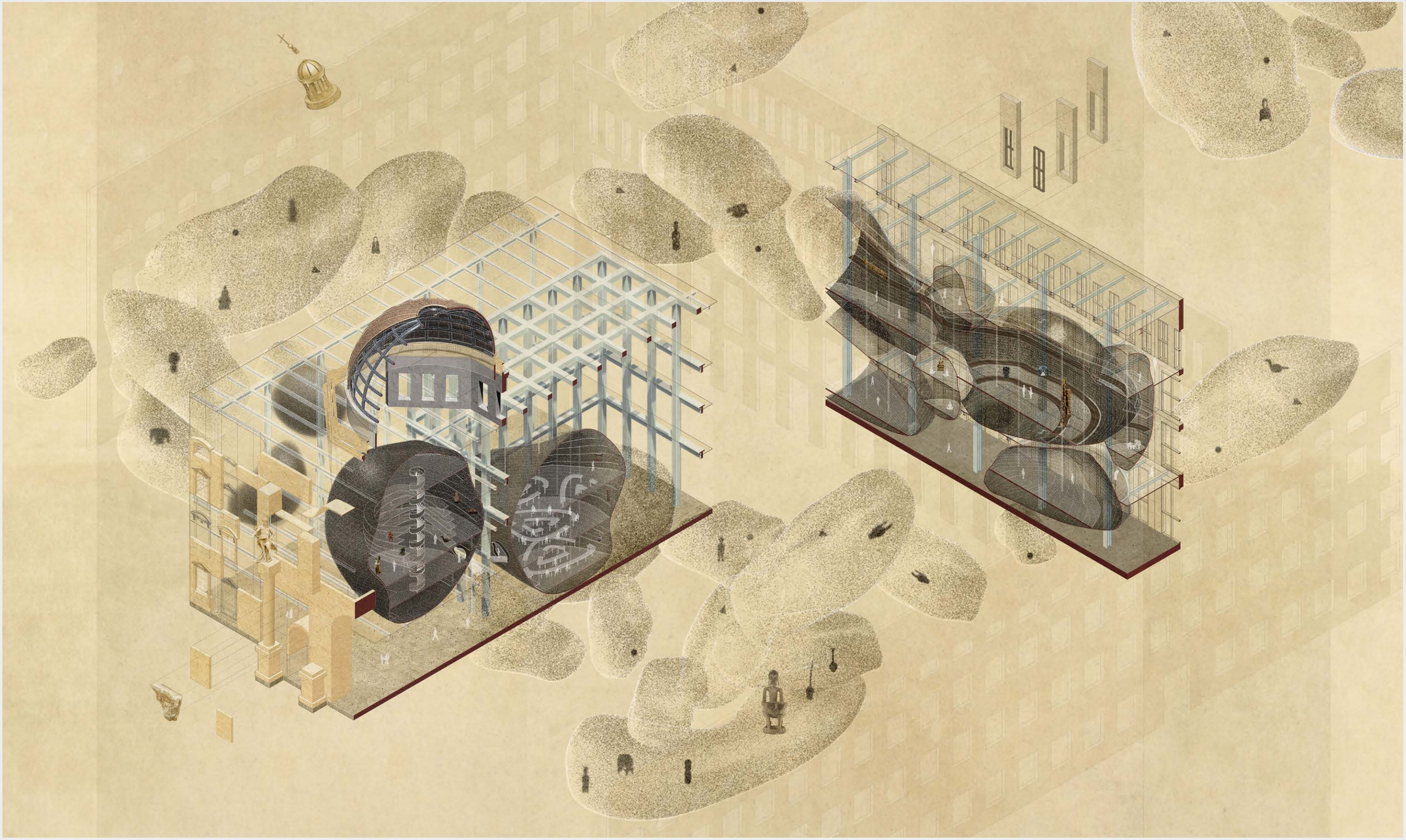



## Stripping away emblems of power to reveal the crimes of stolen artifacts

By physically converting the museums opaque mass into transparent materials, what was once a monolithic palace can now read as a transparent entity: a glass house in both literal and metaphorical terms. Now, the crimes of the museum is made visible to the public as zones of stolen artifacts that are now shrouded in darkness can be seen all around the city. Through these operations, we deny the museum's ability to hide behind its emblems of power and force it to own


The fragmented mass and ornaments removed during the process of reparation are scattered back into the domestic realm of Berlin, dissolving and stripping away the meaning and power behind stone and symbolism. Fragments are returned as mundane household objects, true to its description as a museum and a palace built by and for the people.





## Spaces of Making

The interstitial light zones as a result from the occupation of these dark entities then become light-filled spaces for artists to create new bodies of work, to translate and to interpret the artefacts on its way back to their rightful owners. These new bodies of work in place of the ethnographic artefacts intend to hand back the power to the artists, giving them the agency to narrate and dictate what we and the institution gets to see.



## Spaces of Refuge

As consequence, the interior of the Humboldt, or what is leftover from this transformation is then consumed by dark spaces of refuge, a sanctuary and a depository for the artefacts in limbo, awaiting for their return.

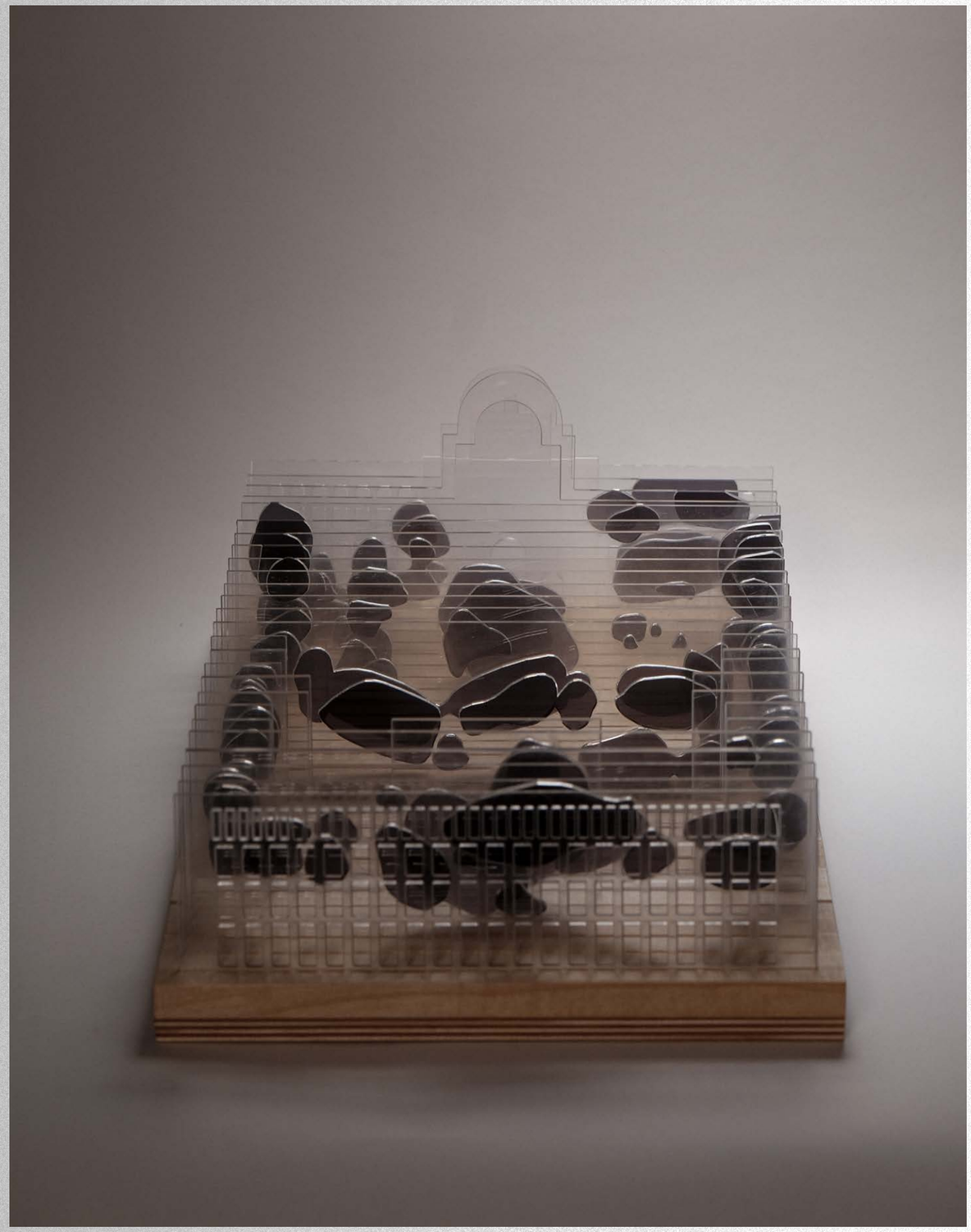
## Spaces of Ritual

To allow for this process to happen, the procedure of reconditioning too needs to take place. Straddling between the dark and light zones, the intermediate spaces perform as a binder between the two worlds where rituals and performances take charge of the reconditioning process and allowing for the objects to pass from the dark to light.



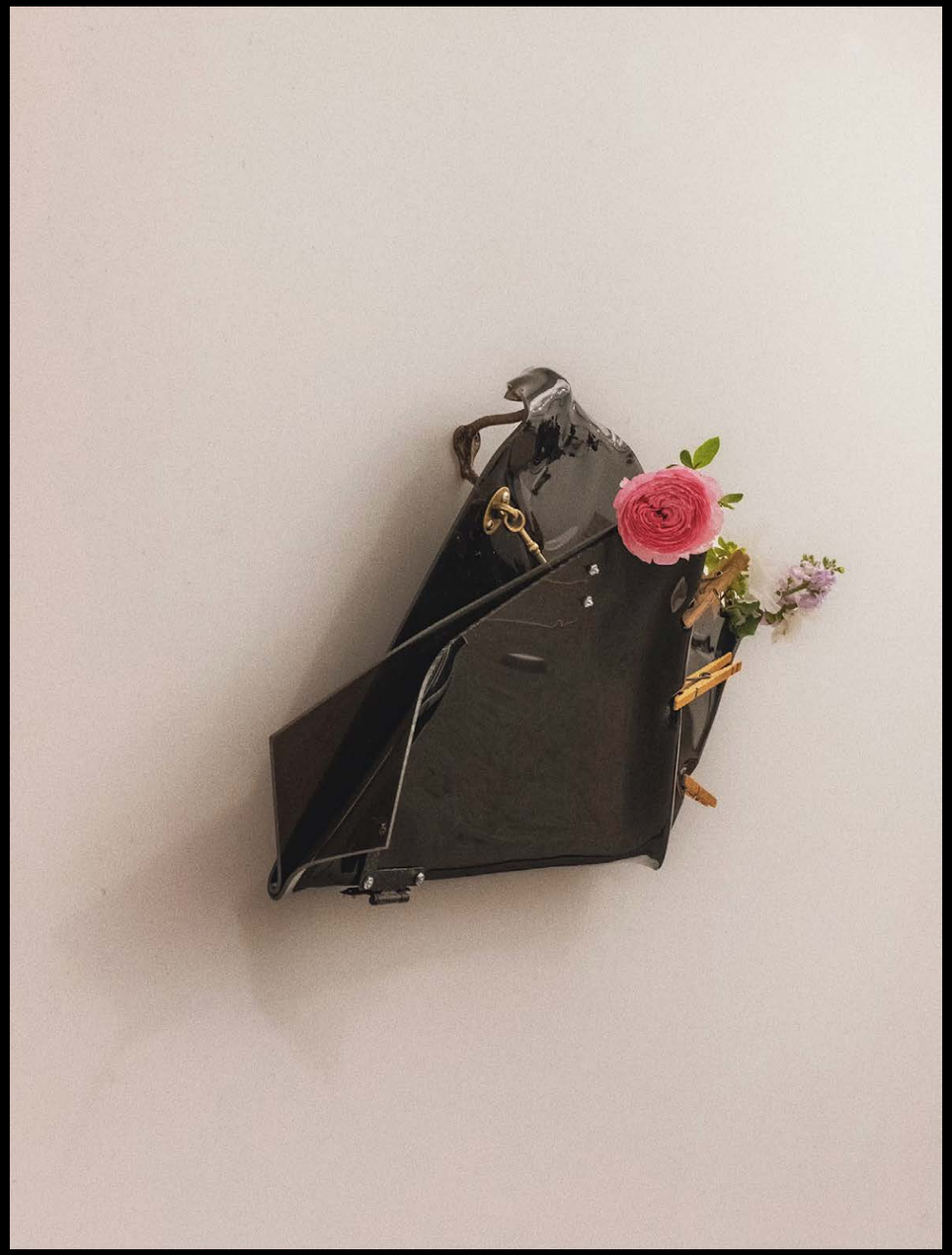
Our project then is not a definitive solution but an intervention in flux. As these dark entities gradually expand and contract in response to the number of restituted artefacts, the Humboldt forum transforms into a fully transparent organism with its inner workings open for all to see. The transparency and fragility that is the result of this transformation is beyond the control of the institution and as such begs the question whether this new transparent palace can be seen as anymore legitimate former monumental self.

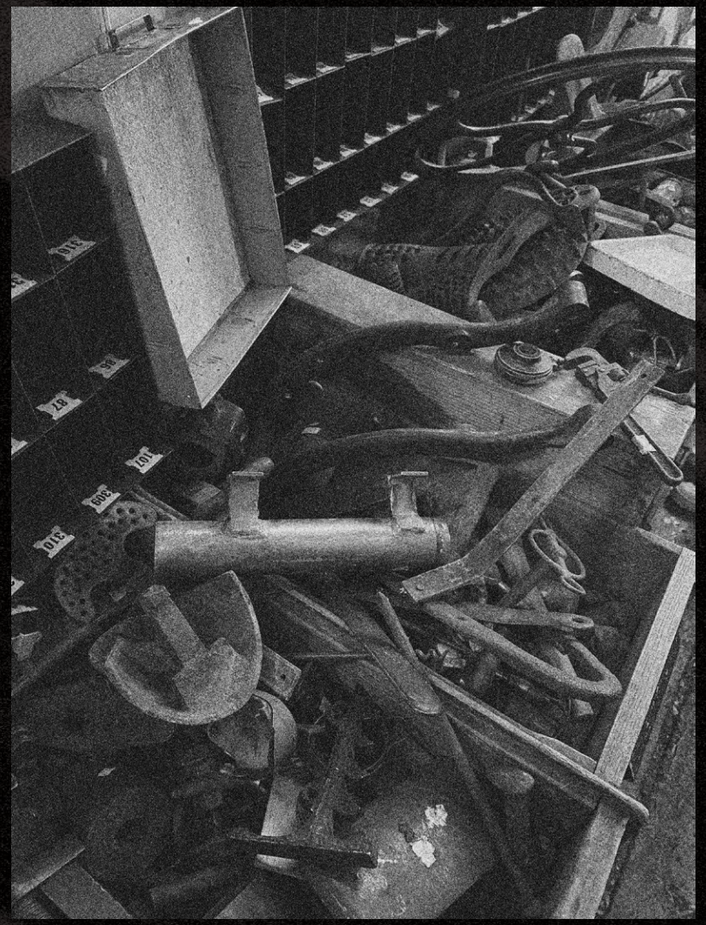




# Tools Giving Life

Tech Elective Subject_Object
Instructor Suchi Reddy
Semester Spring 2023
Partner Caroline Smith



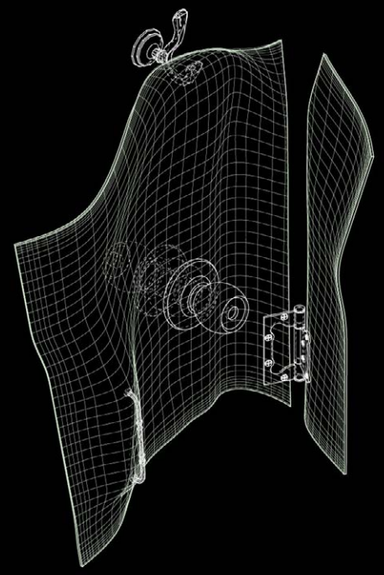


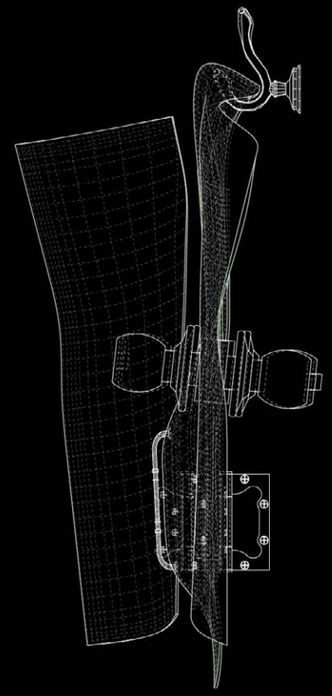
Mother of Junk, Brooklyn, NY

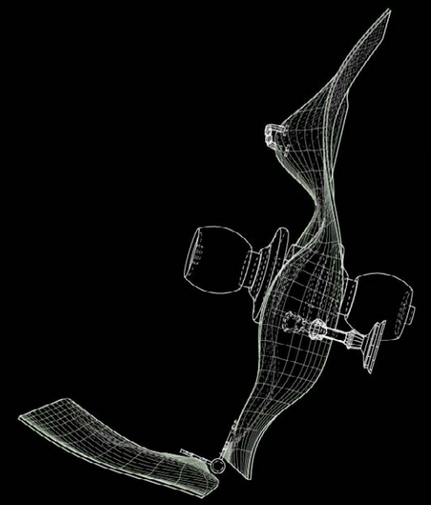
## Discarded Mundane Tools, Collectively Powerful

Our reliance on mundane tools in domestic spaces is often taken for granted. The repeated forces that simple hardwares, such as cabinet pulls, coat hooks and hinges, endure are immense yet invisible. When they fail,  interior elements are rendered inoperable, inaccessible and useless. To represent and highlight their collective importance, we connect them through transparent acrylic, softened and transformed with heat to become near liquid. The acrylic will drape, slump, pull and become punctured to visibly articulate the dynamic forces that are subject to these objects, demonstrating the power they have over our lives.









Surface deformation by clothespin

Resultant pressures and forces imprinted

## Enacted Force and Surface Studies

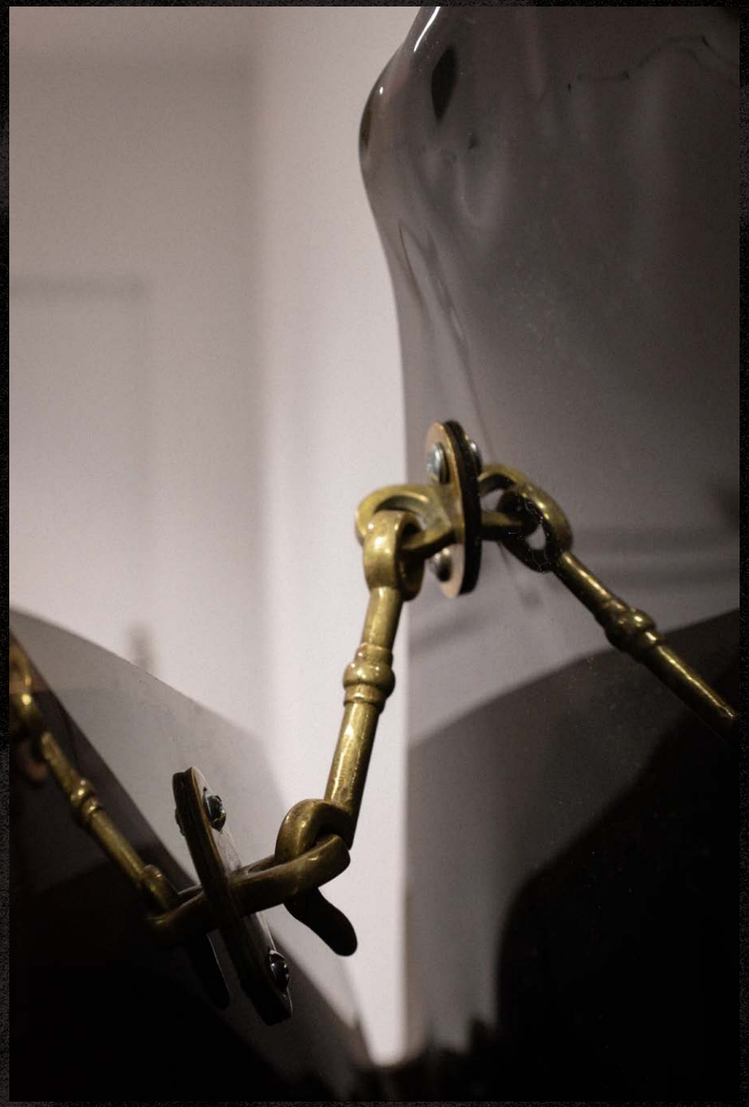
Acrylic is heated and deformed, tracing the forces enacted on tools that keep our built environment functioning. Once cooled and the tools are removed, a new object is revealed with the memories of the actors whose only presence is the marks they left behind.





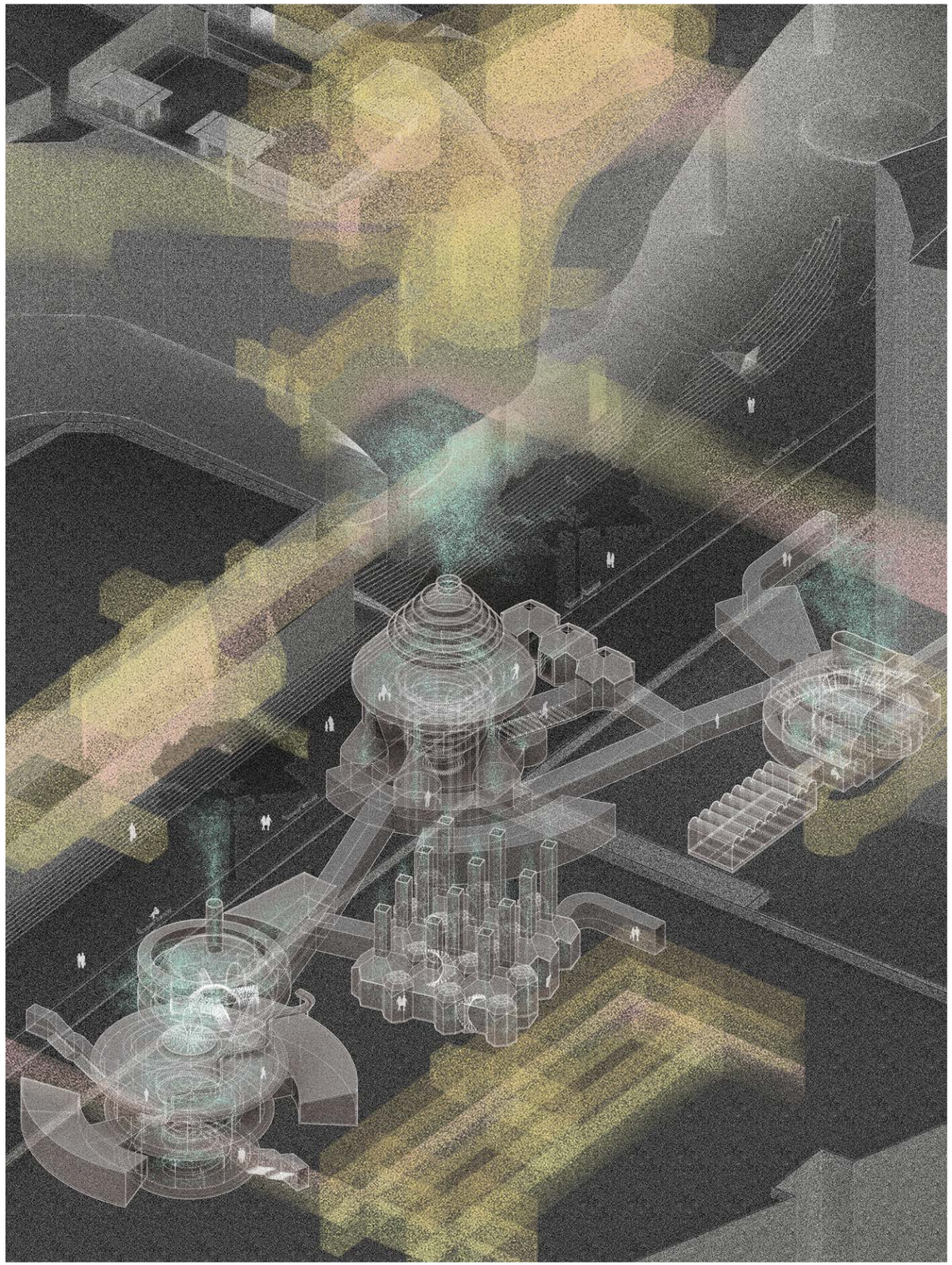
Steel screws, wooden clothespin, antique bronze drawer pull, acrylic

These objects now live a new life, returning back to the domestic realm generated by the tools that were discarded. These tools can now be reused further to produce new objects without limits.





**Folio Vase**, hammered steel door hinge, wooden clothespin, antique brass latch, antique cast-iron coat hook, acrylic



# De-Cologne-izing Singapore

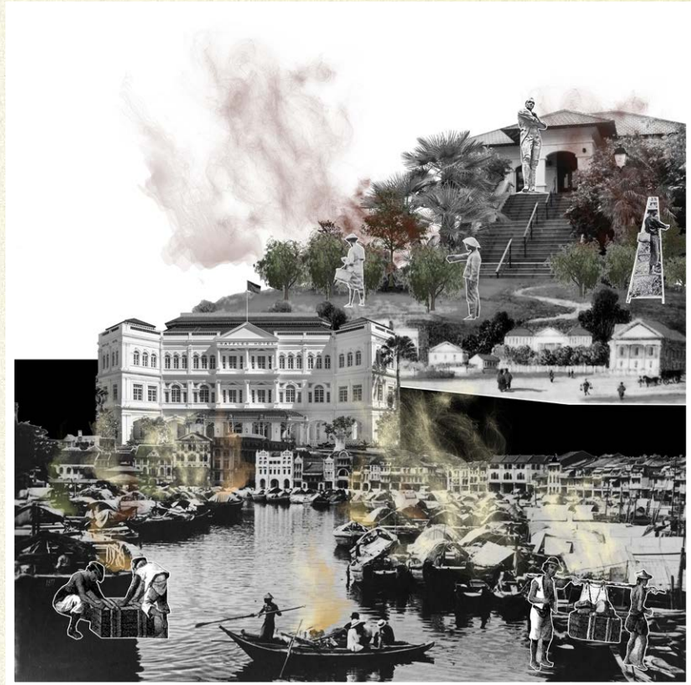
| | |
|---|---|
| Adv V Studio | Plein Air |
| Critic | Nahyun Hwang |
| Semester | Fall 2022 |
| Partner | Alison Lam |
| Location | Singapore |

## Colonial Control and Commodification of Scented Air

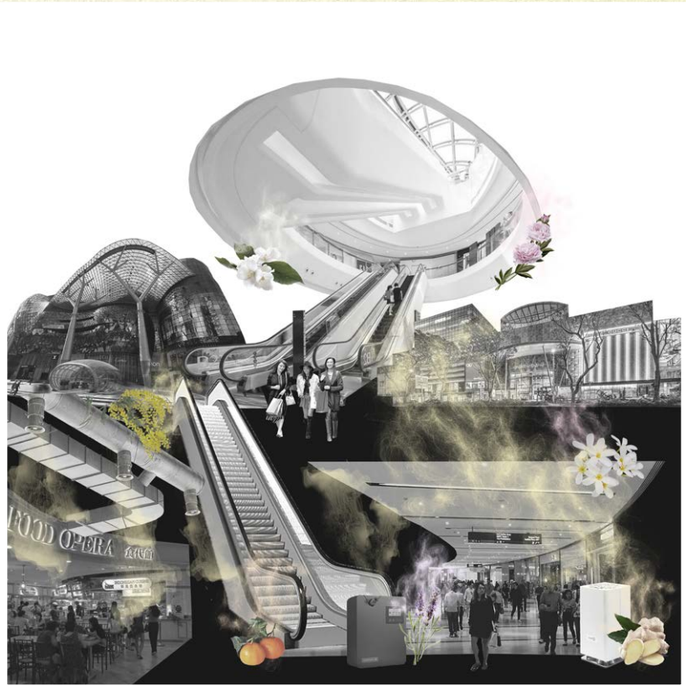
When the British empire first colonized Singapore in the 1820s, they exploited lands and culture in order to trade and commodify scent. Spearheaded by Stamford Raffles, the governor of the British East Indies Colonies, the imperial trading company came to Singapore to establish experimental spice plantations along Orchard Road, producing cash crops for export back to Britain. This was a common practice of colonial empires that participated in Spice Trading in the 1800s. Among the profitable spice crops cultivated included nutmeg, pepper, gambier and cloves. These crops exhausted the soil drastically and left much of orchard road and its surrounding lands infertile after just 15 years.

After the abandonment of the plantations, various sites along Orchard Road became burial grounds for plantation workers, namely the Chinese Teochew people.

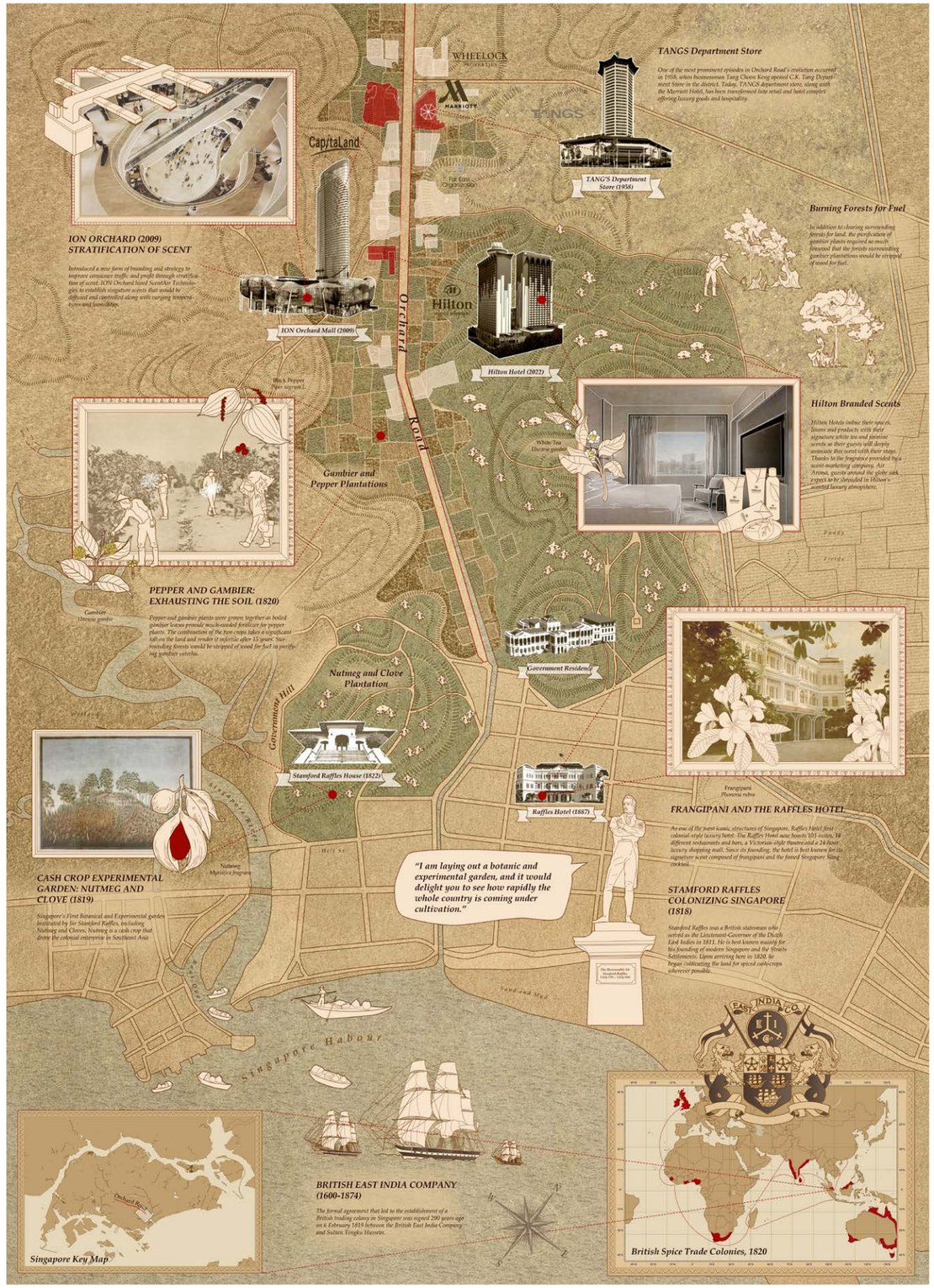
As the lands became commercially valuable, the teochew graves were exhumed to make way for the development of retail and hospitality.



Stamford Raffles' experimental spice garden and spice trading port



Commodification of scented air in commerical malls and hotels on Orchard Road.




Opposite: Colonial map of Singapore: spice plantations, land exhaustion, and perfumed air.

## Scented Attractions of Singapore

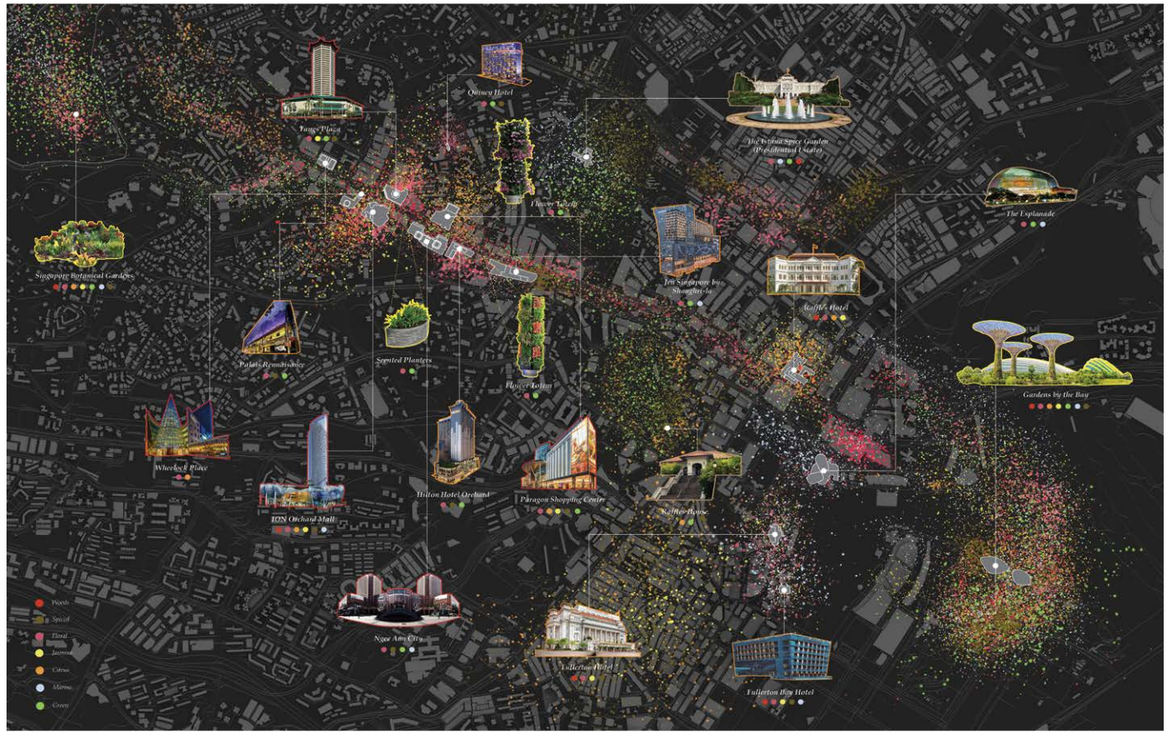
Over the next 200 years, Orchard Road would reflect Singapore's rise to becoming the world's major trade hub and has now become a leading place of tourism and commercial activity. Densely dotted along Orchard road are malls, hotels, themed gardens and other attractions, serving as the backbone to Singapore's tourism.

The changing scentscape caused by the commercialization of Orchard road is emblematic of the displacement of communities and cultures in Singapore. Scents that were once owned by native dwellers of Singapore are now displaced by commercialized and controlled scents, most of which are imported and manufactured elsewhere.

Opposite: Jasmine perfume production: plantations, distillation, distribution, and 'Le Nez'



Singapore's landfills have disrupted ecosystems and displaced native scents for the construction of tourist attractions



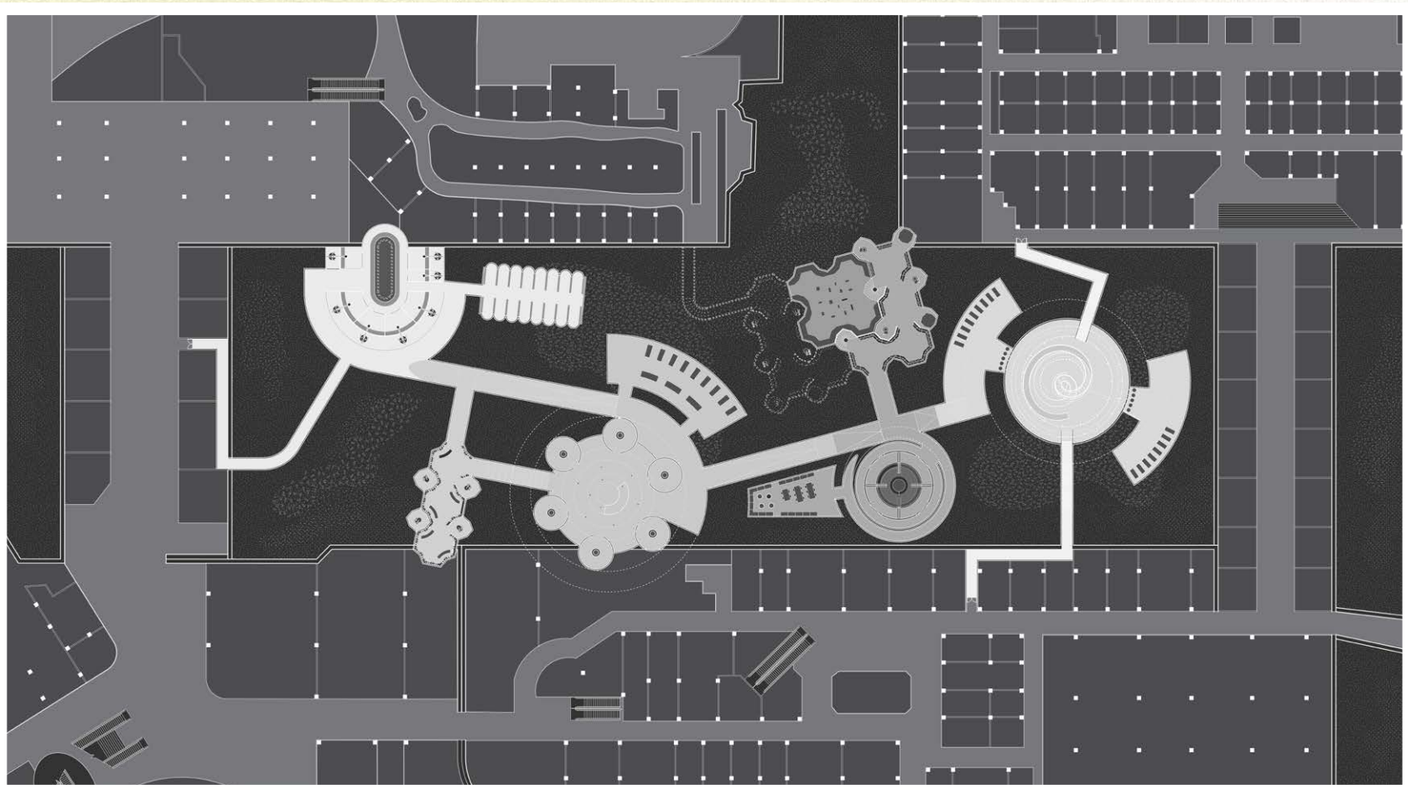

Scentscape Map of Orchard Road and its connection to Downtown and Marina Bay

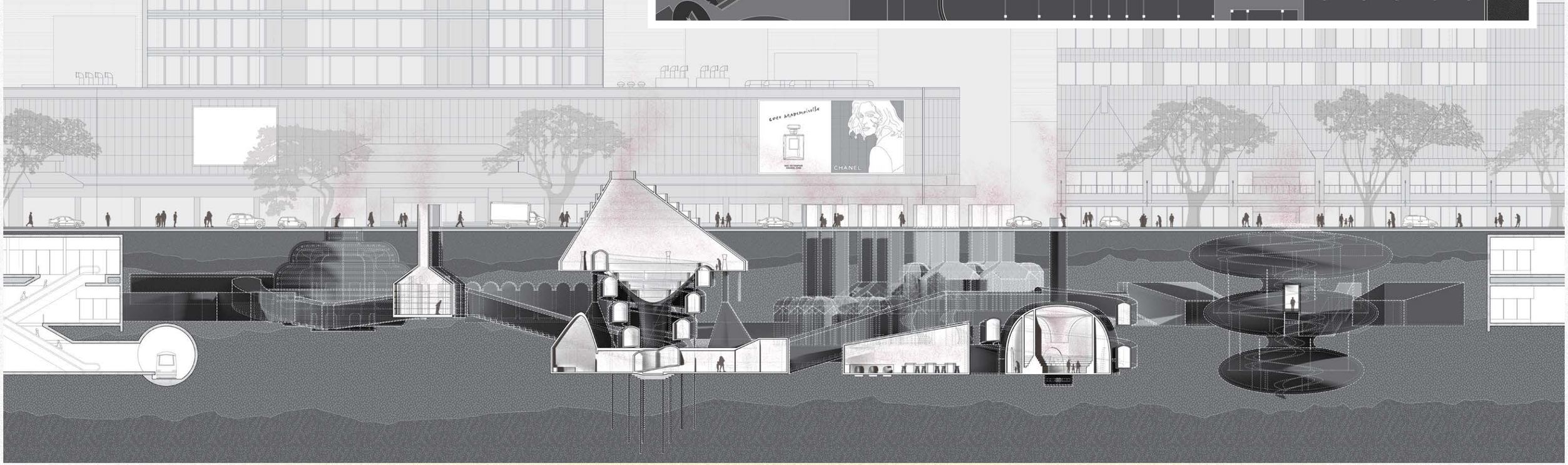
## A Parallel Scentscape:
## Olfaction as Repositories of Memory

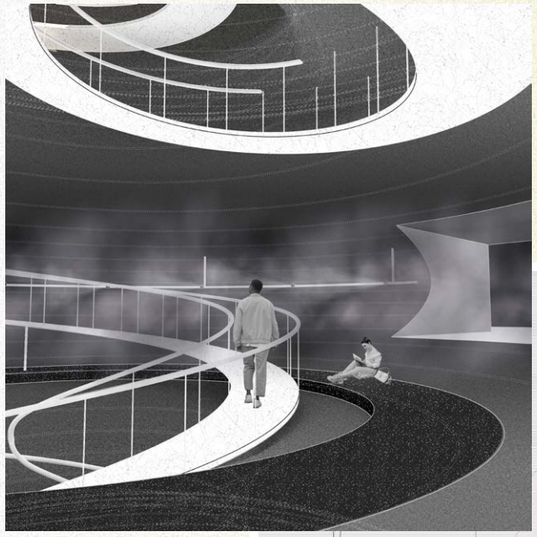
The project proposes to intervene Orchard road's highly controlled scentscape by creating a series of spaces underground that provides a parallel world for local people to retrace, preserve, and recreate scents that were displaced by commerical development. Scents that are produced from these spaces are partially discharged to the streets to secretly disrupt the current scentscape of Orchard Road.

Organized into a network of hidden spaces that discreetly connects with the shopping network underneath, the project proposes five major spaces for the preservation, creation and experience of different types of scents that conveys cultural and historical values.

These sites of scent preservation and production are highly participatory and communal, bringing people together to relive significant memories of Singapore. We recognize olfaction's significance as repositories of memory, utilizing scent production as a practice to preserve cultures and collective memories.

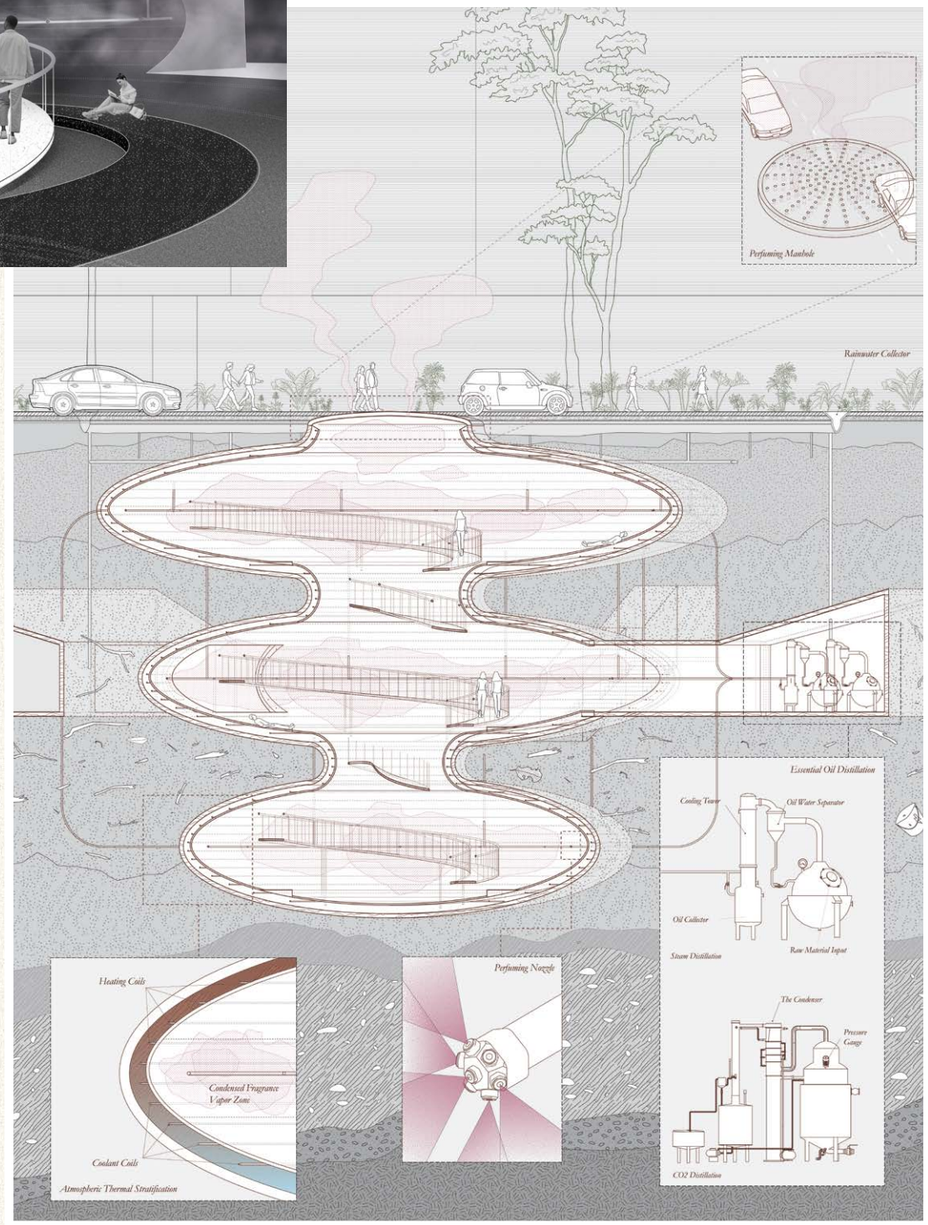




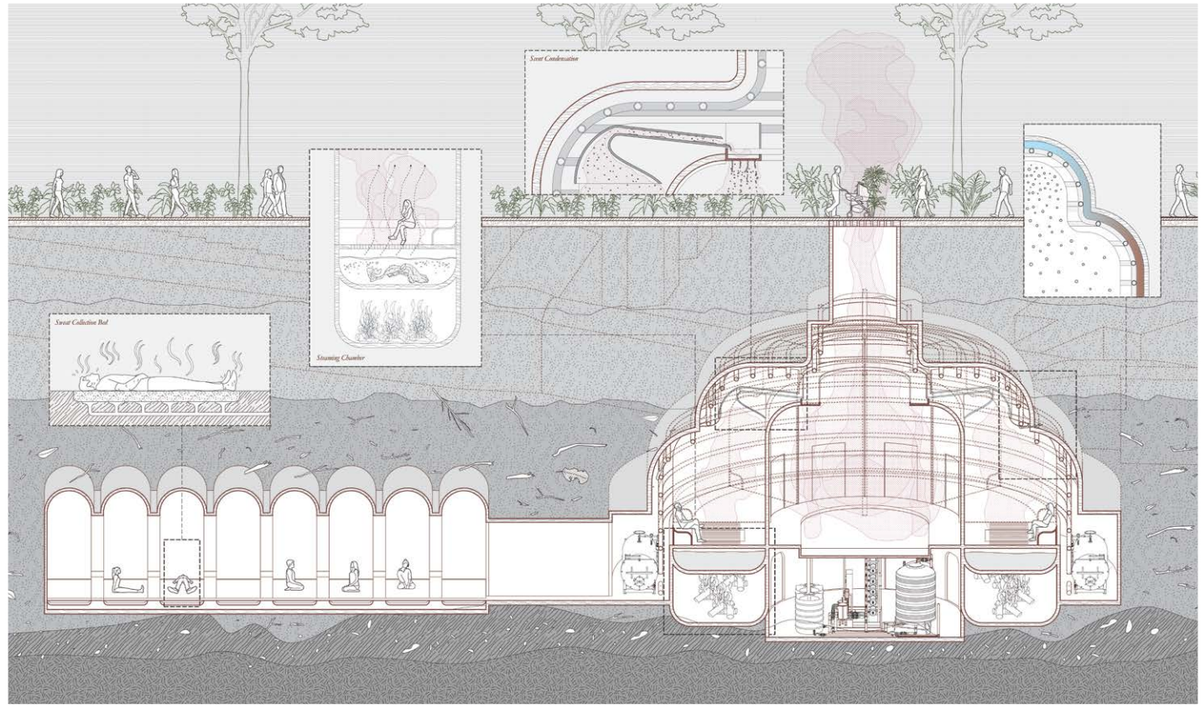


### Odor Cloud Temple

The odor cloud temple recreates atmospheres of displaced places in Singapore, such as the Kampong fishing villages and disappeared forests. Each elliptical volume is odorized with atmosphere scents recreated in adjacent labs with scent production equipment. Rainwater from the streetscape is collected as a medium to be mixed with scent molecules before being sprayed into the tower through nozzles.






A stable thermal stratification of the air is then created by heating and cooling coils that causes vapor clouds to coalesces into single layers. This process materializes clouds of scents that visitors can see and smell.

### Essence Spa

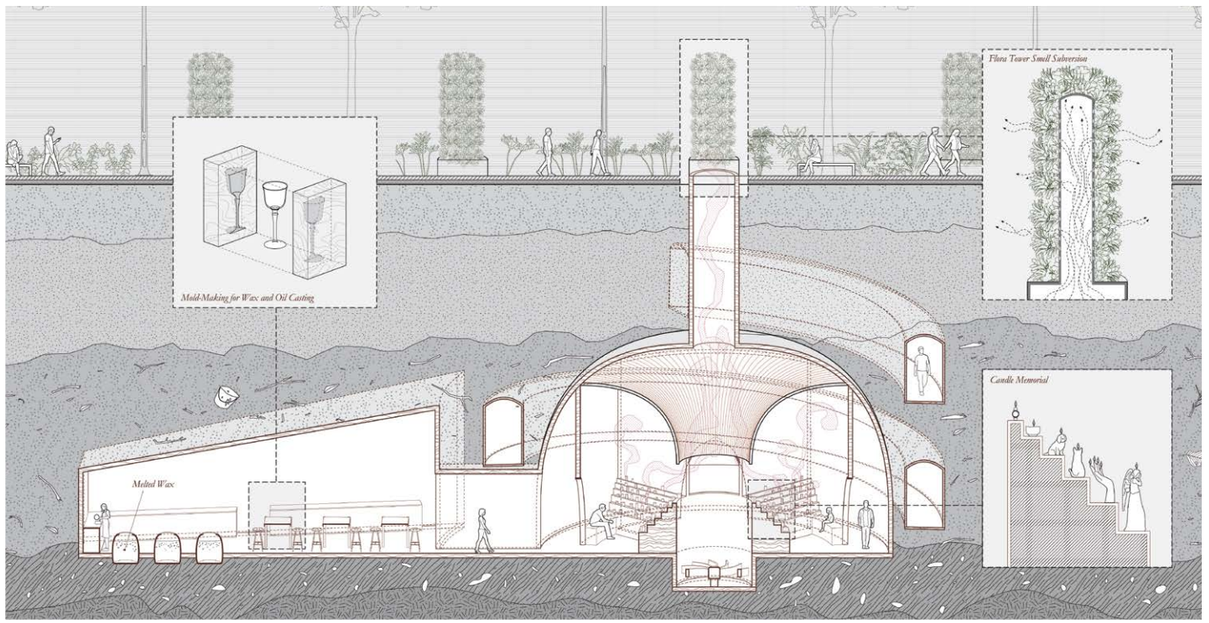
In the Steaming Rooms, personal smells and odors are collected and diffused. People can place garments and textiles into steaming water. Through a distillation process, the solution vaporizes into water vapor through individual rooms where people can smell the vaporized scents. The vapor then condenses as it passes through the cooling area and turns into essence which trickle down as a curtain of scented rain. Adjacent to it is a heated inducing space where sweats of individuals are collected.

### Wax Chapel and Candle Workshop

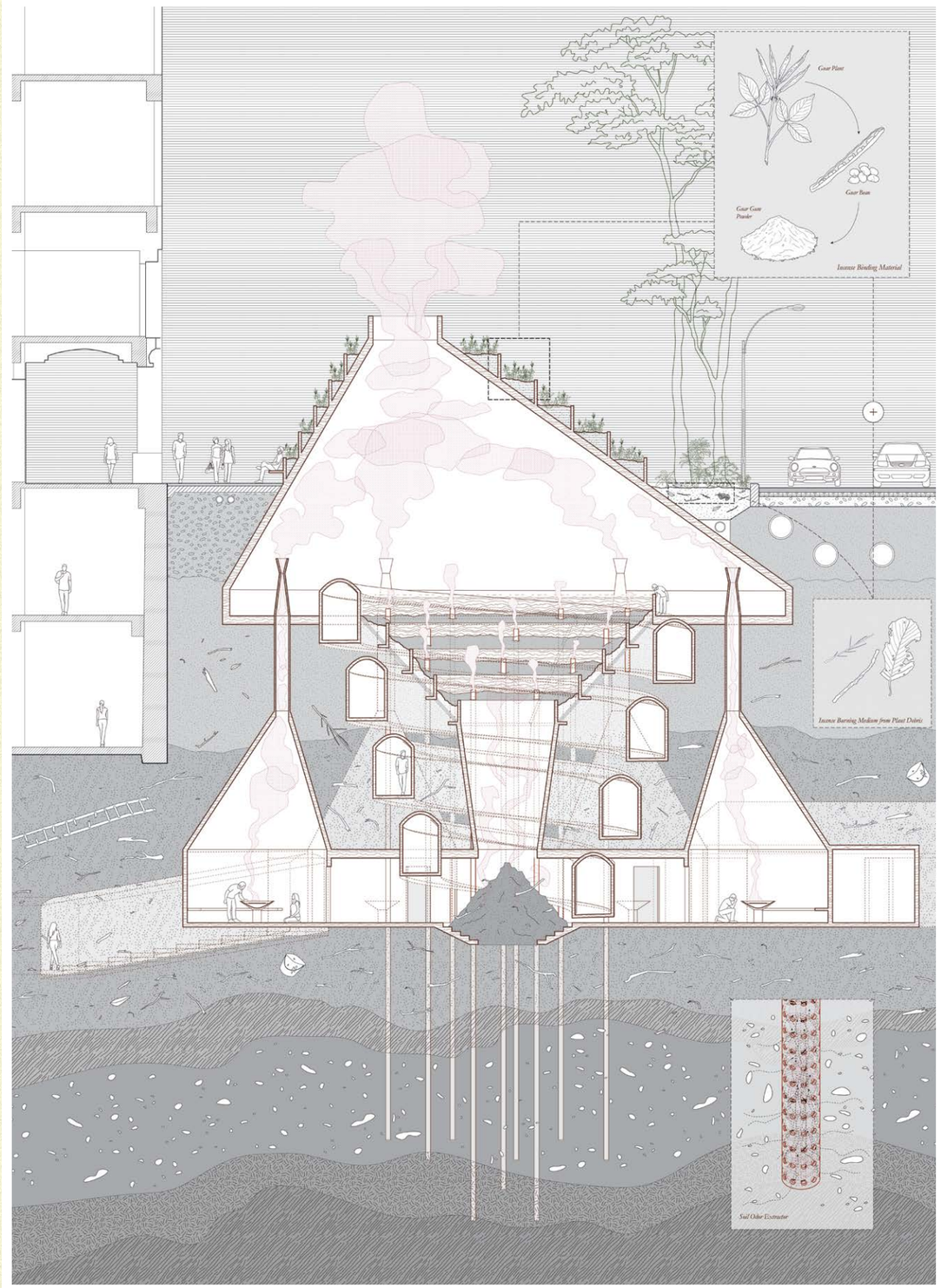
A candlelit memorial with a scented wax making studio allow people to bring in objects significant to them, such as belongings sourced from the deceased, casting them and capturing scent molecules into candles. These candles can be brought into the dome-shaped memorial chamber and lit up for the remembrance and honoring of lost family members.

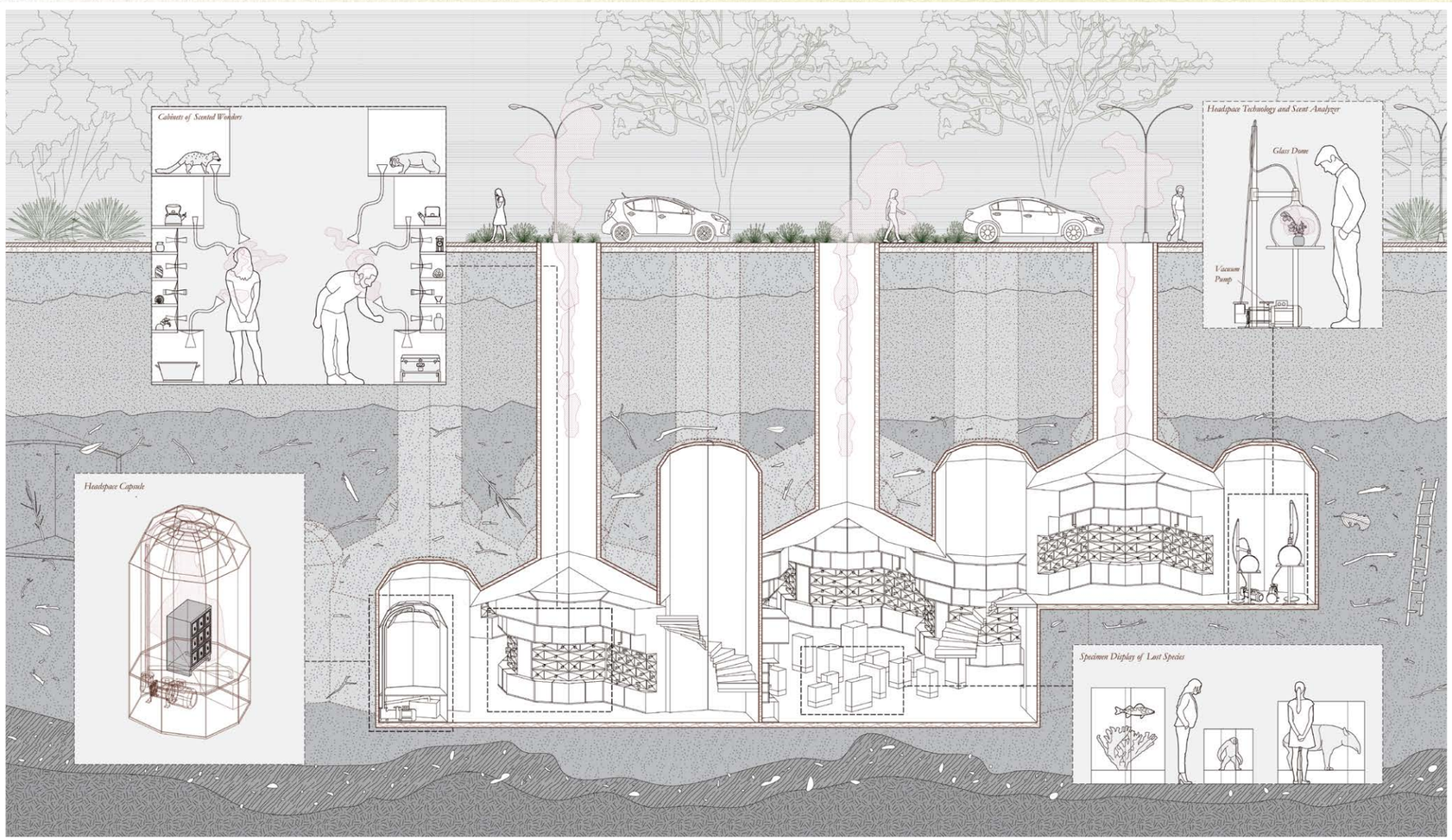
### Incense Tower

By excavating and probing soil layers beneath, odors are released from the depths, drawing out original scents of Orchard Road. Organic matter from spice plantations in the lower level is burnt and released into the memorial hall, eventually escaping out onto the street. The cone shaped volume above ground is integrated into the landscaped sidewalk of Orchard road with terraces of plants for growing Guar gum, a key ingredient for the production of incense.








**Scent Archives**

In the scent archives, smell cabinets that preserve the scent of uniquely Singaporean objects that are displaced by the commercialization of Singapore. The larger space in the lower level holds preserved animal and plant species, such as the Malayan Tiger,  which have become extinct due to deforestation, landfills, and continual human developments of Singapore.

# The Loess Collector

| | |
|---|---|
| Adv Tutorial | Notes on Architecture, Practical Theories |
| Critics | Elias & Yousef Anastas |
| Semester | Summer 2022 |
| Partner | Ming Ding |
| Location | Loess Plateau, China |

# Can loess, an ever-changing natural feature and phenomenon, become a building material?

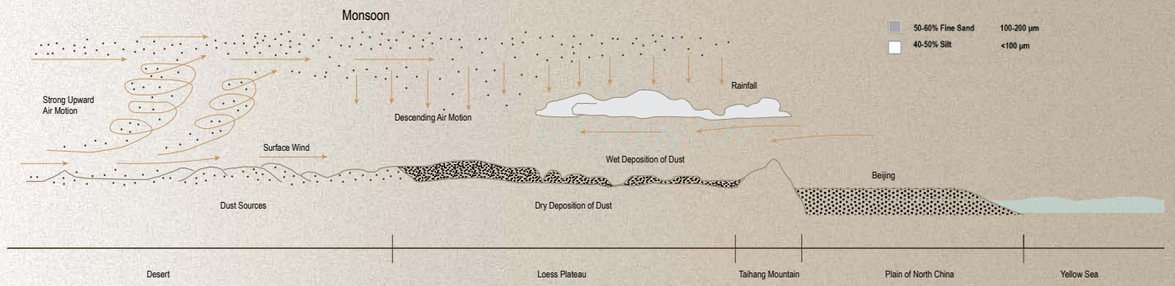
Home to more than 50 million people, the famous Loess Plateau in north-central China takes its name from the thick, silt-like sediment Loess. Loess is a loosely compacted yellowish-gray deposit of windblown sediment of which extensive deposits occur. Through prevailing winds from the Gobi Desert and the river networks of the Yellow River, the plateau is formed largely by wind and water, alternately depositing dust or removing dust in the region over the last 2.6 million years.

Although loess is composed of fine solids, they move like water when subjected to wind and gravitational forces. This became the driving force behind our attitude towards sand as a material, using architecture as a canvas to feature sand's movement so that they can be experienced. The concept of time is also strongly tied to sand, through its creation and its ability to travel, shape and erode. By understanding this, it made us adapt and accept that we cannot freeze-frame sand into something permanent. It is an ever-changing matter through time that's a natural occurring part of our universe.

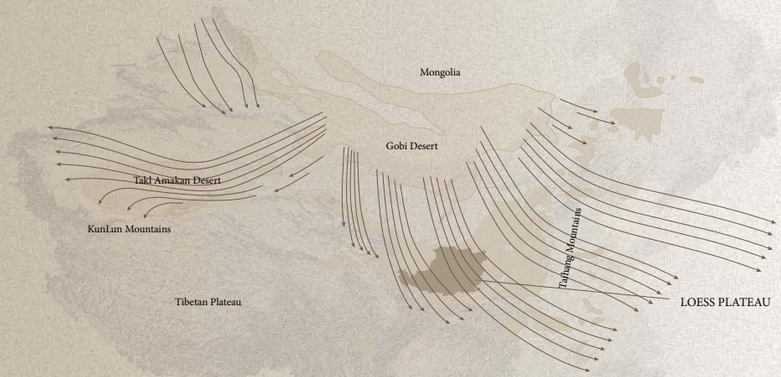
In recent years, climate change has intensified the deadly forces of change through wind and water. Drought induced dust storms and monsoon driven floods and mudslides are becoming more frequent. In response to these climate effects, the project aims to mitigate Loess' movement through the region, capturing it through the air or and redefining new ways to make space that are naturally formed.

## Chinese Loess Plateau Formation Process

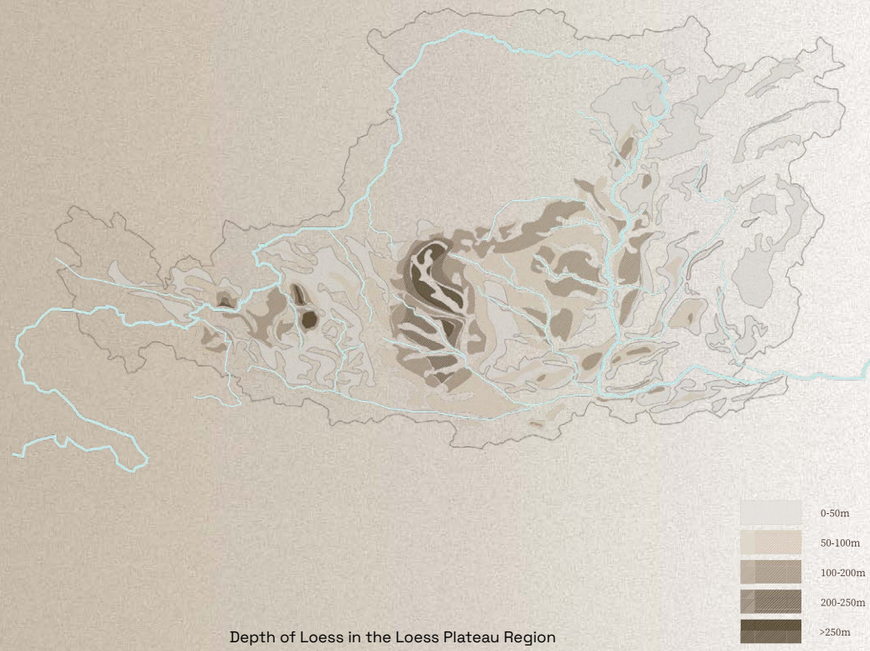
Panoramic view of a highly eroded and rugged landscape near Suide County, typical of what is found across the loess region of northern China



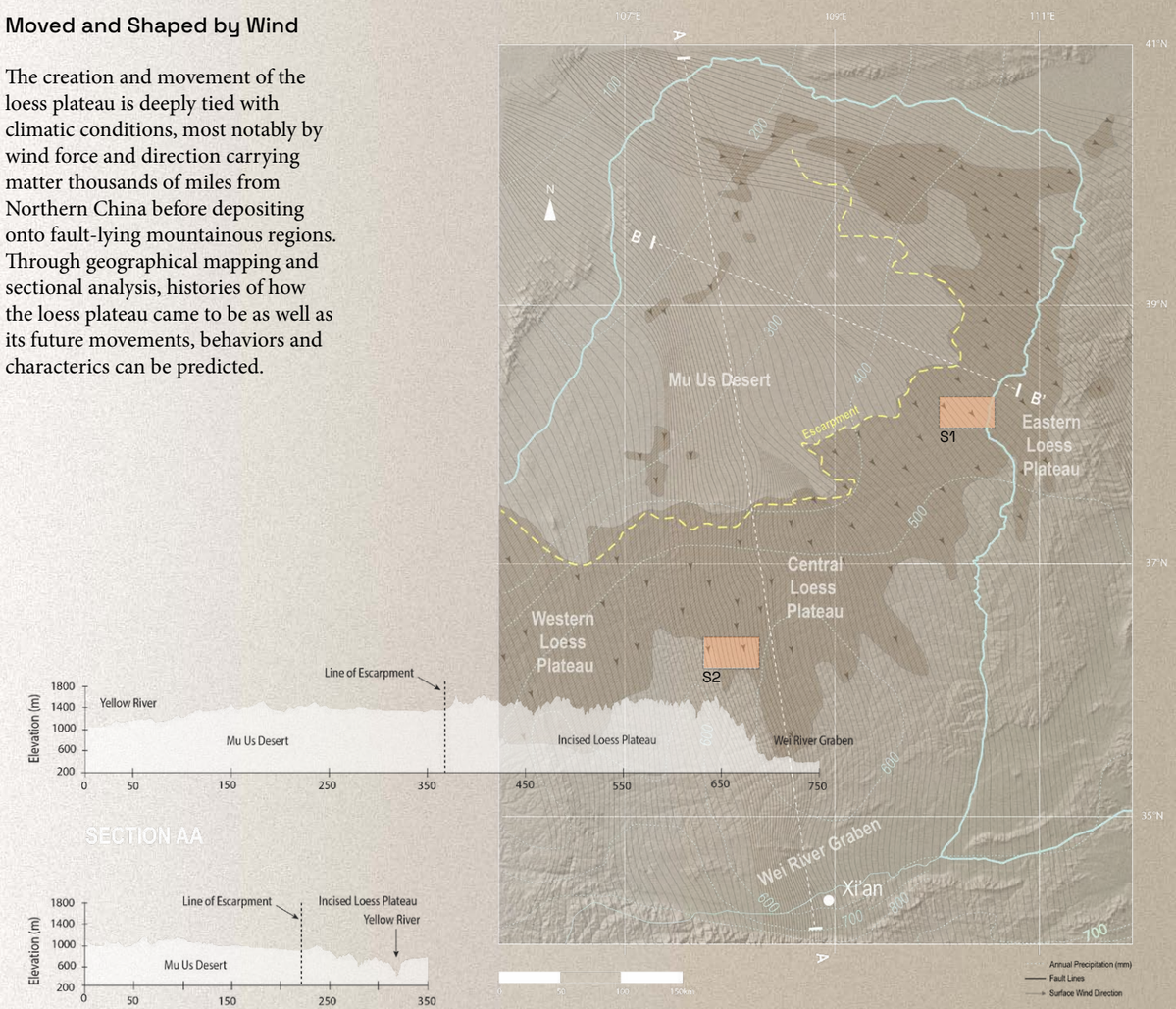

Loess distribution in China via near-surface prevailing winds

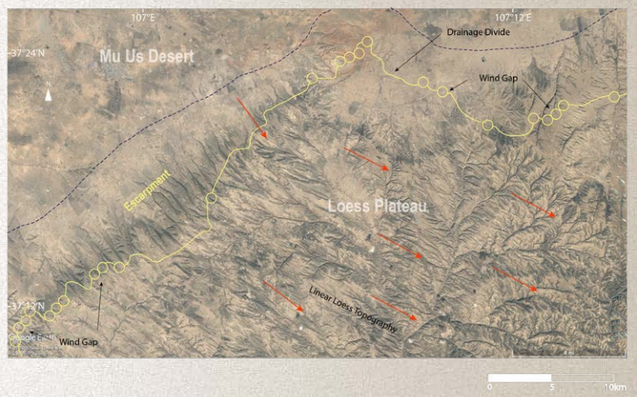



Depth of Loess in the Loess Plateau Region

## Moved and Shaped by Wind

The creation and movement of the loess plateau is deeply tied with climatic conditions, most notably by wind force and direction carrying matter thousands of miles from Northern China before depositing onto fault-lying mountainous regions. Through geographical mapping and sectional analysis, histories of how the loess plateau came to be as its future movements, behaviors and characterics can be predicted.




Linear ridge on top of China's Loess Plateau and looks across a river valley at another of the plateau's linear ridges.

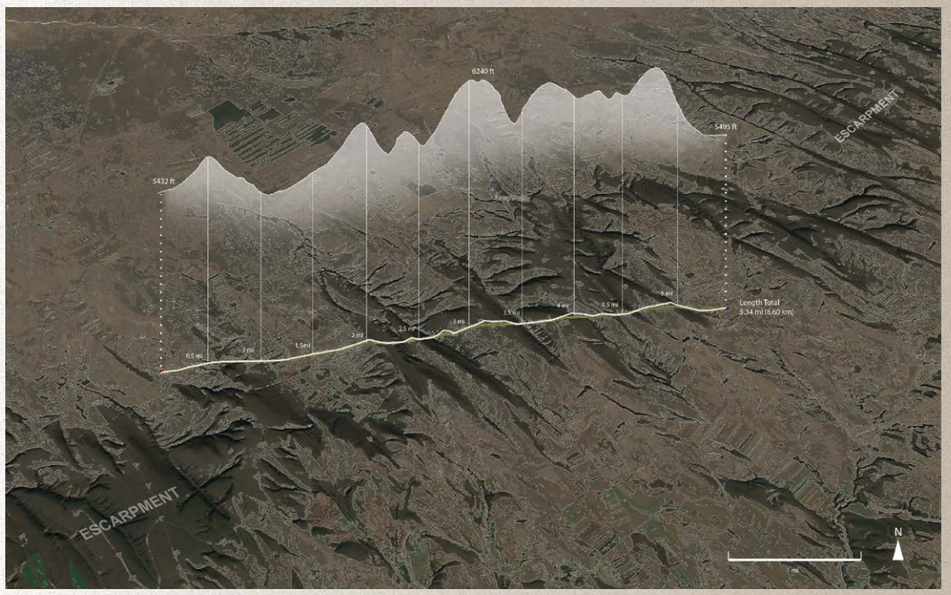


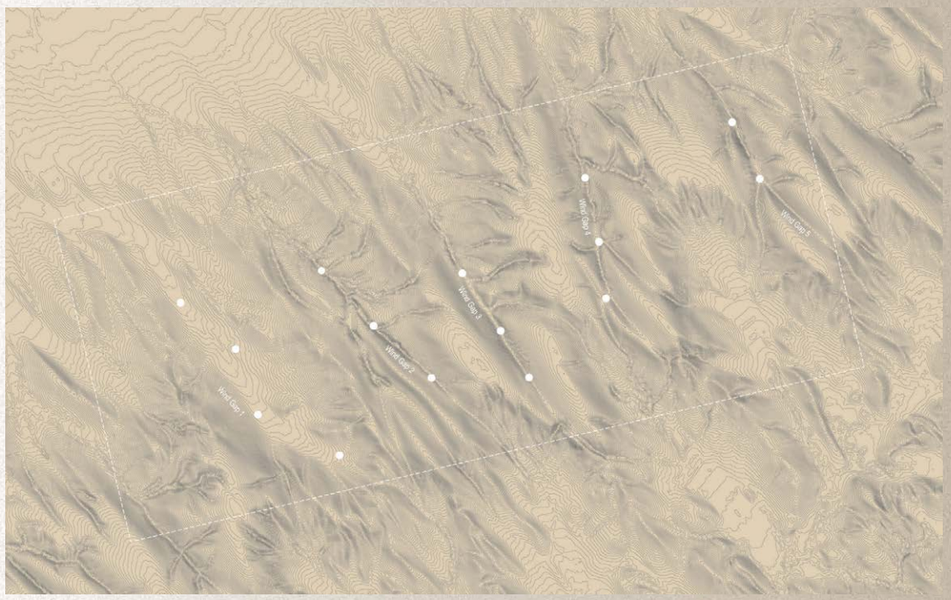
## Patterns in the Loess

Comparing two separate sites with satelite imagery reveal surface incisions in the loess known as loess ridges. These ridges run parallel to surface wind directions suggesting that Loess Plateau's creation and its subsequent geological features are strongly tied to wind directionality and force.

S1

S2

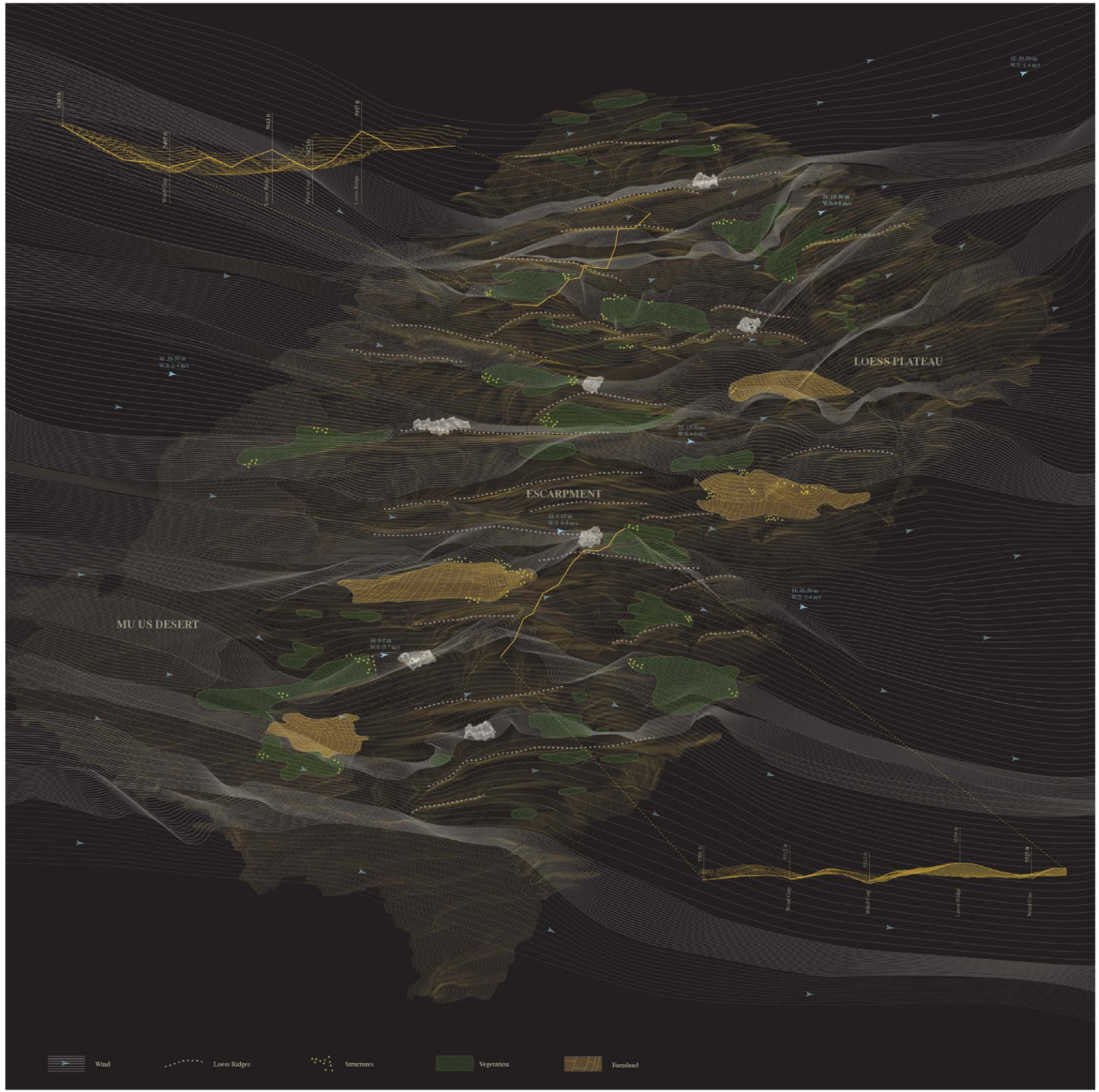


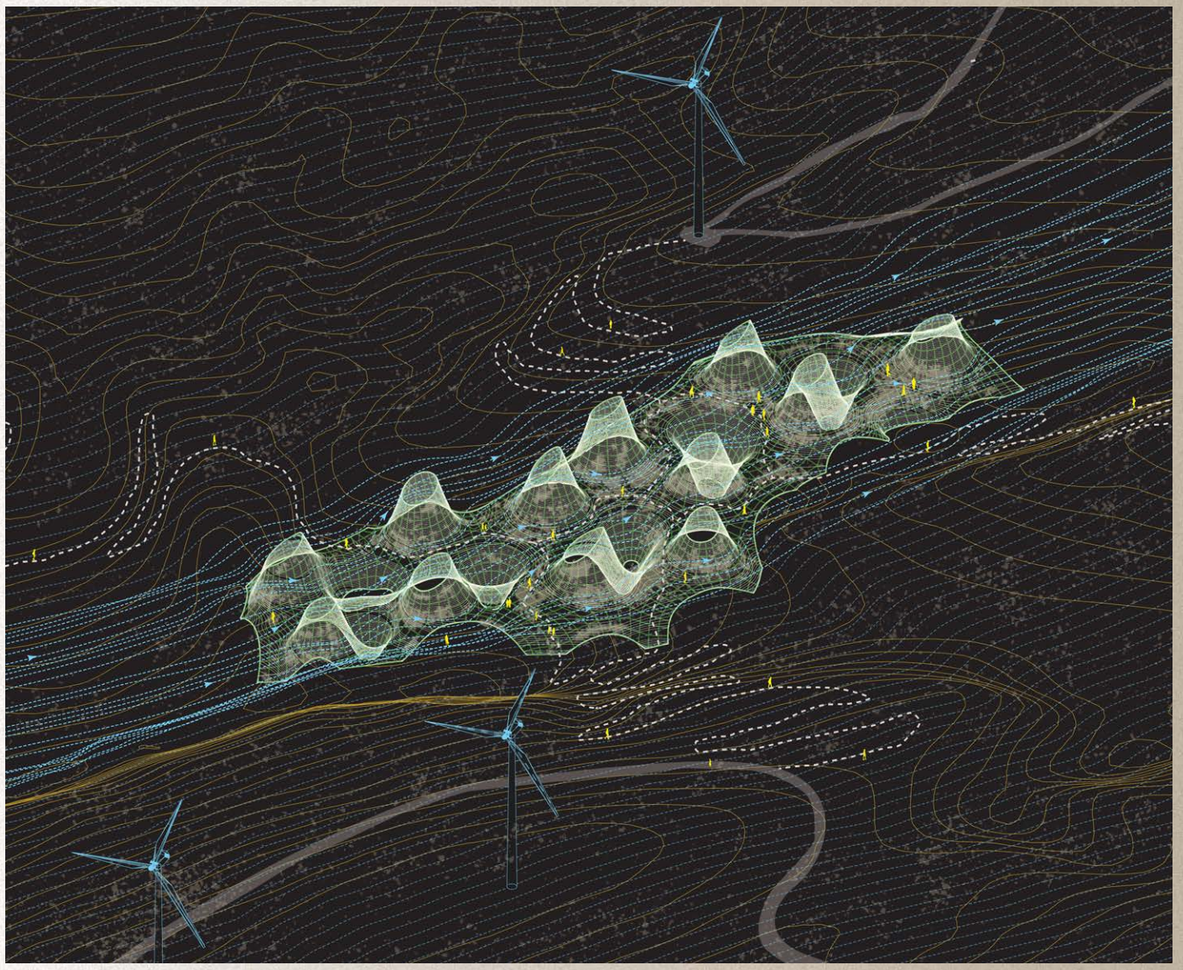



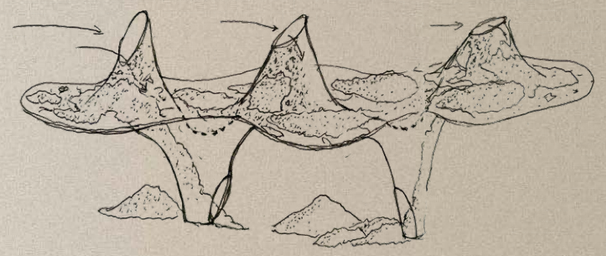

## Situated within Wind Gaps

The escarpment region of the Loess Plateau is carved wtih wind-gaps, appearing as valleys that bridge the edge conditions between different environments. Wind gaps create wind tunnels with increased wind speeds of up to 6-8 meters per second compared to areas outside the wind gaps at 2-4 meters per second. These conditions are favorable for siting loess capturing devices.



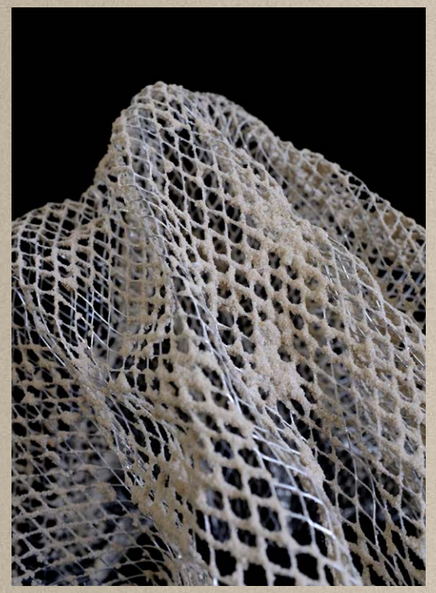






Wind-driven forms with undulating surfaces direct, split and slow down wind to allow loess deposition. With time, the loess will permanently encase the collector into the landscape, blending into the plateau.





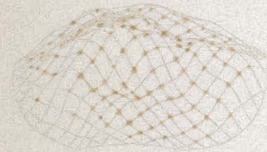
## Loess Capturing Form

Using excavated form to create an inverted mesh structure that can suggest growth accumulation patterns of sand. Due to the deformity of the forms, sand accumulates and appear to densify on surfaces parellel to the direction sand is dropped. This suggests that there is a relationship between the directionality of shape versus the wind for material density.

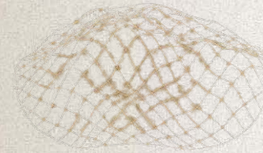


Excavate and Form Mesh

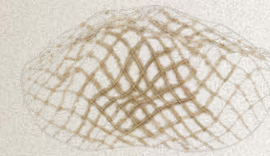
Inverted Mesh



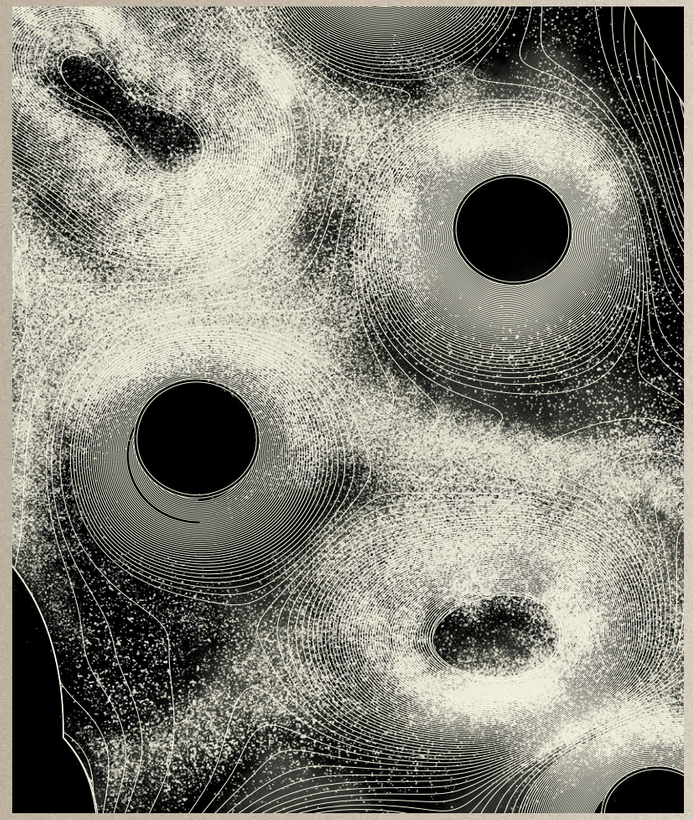
Pass 1

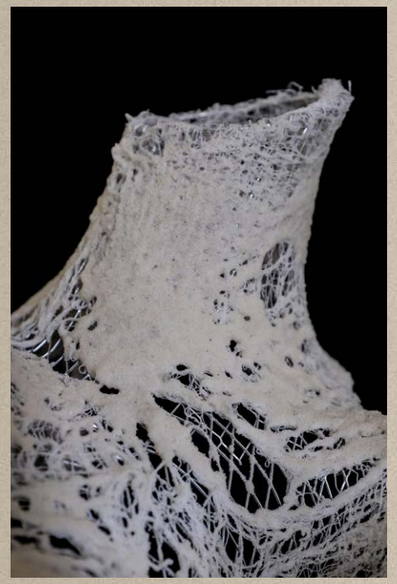


Pass 2



Pass 3



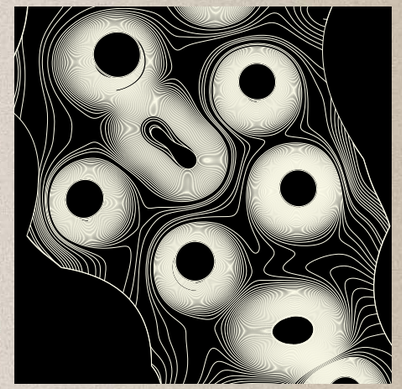


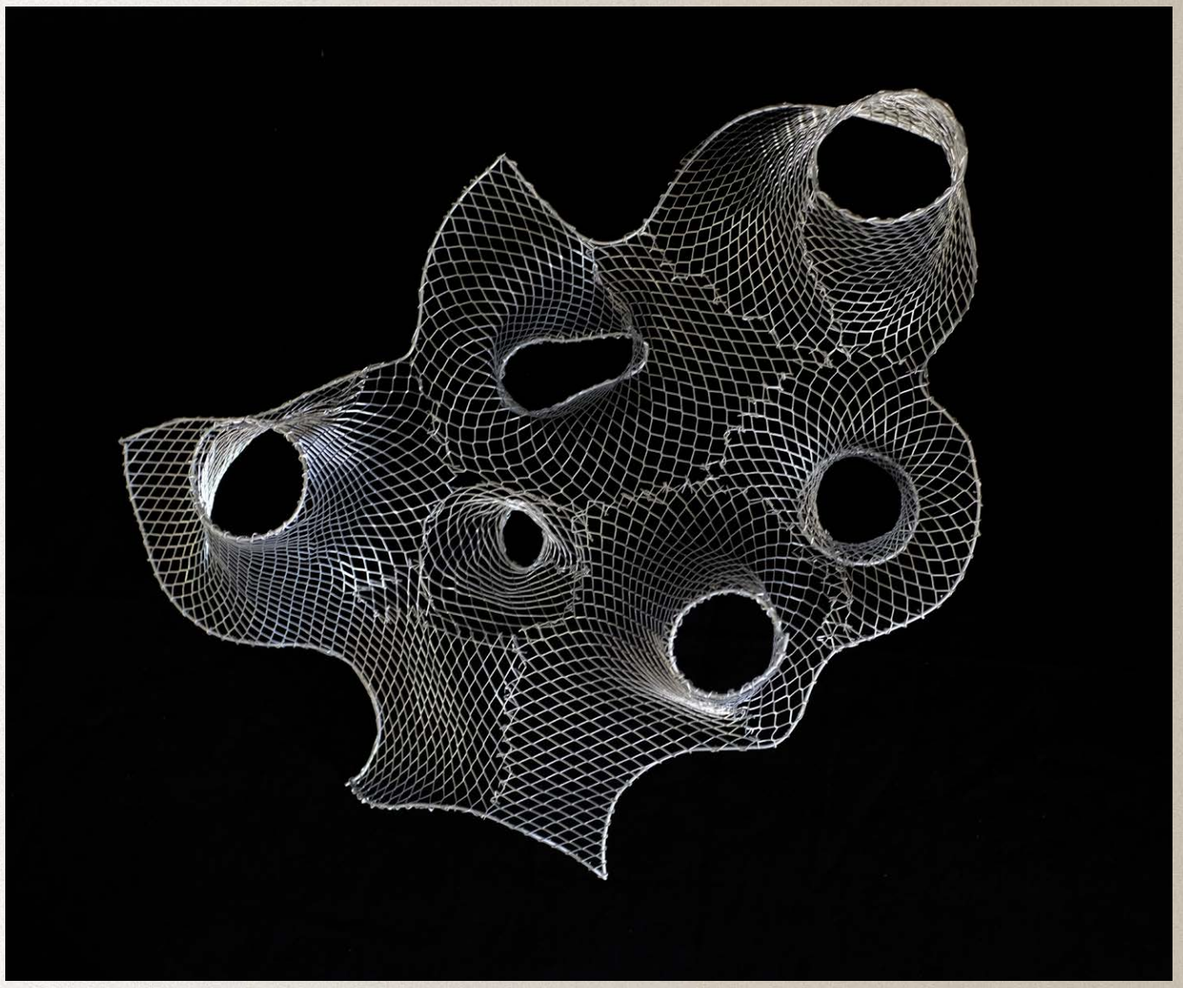
Wireform, PVA, crinkle-weave cotton gauze, medium sand



## Wind-Driven Loess Accretion and Form Studies

A series of physical and digital models provide a basis to study how wind-blown loess can accumulate based on surface manipulation and geometries designed with aerodynamics.







Form model; white sand, copper mesh, white sand

D1

D2

D3

D4

D5

D6

## Lighting Studies: Atmosphere of Loess

D1 Fiberglass cloth (1.2mm thick), resin, fine sand

D2 Fiberglass cloth (1.2mm thick), resin, fine sand

D3 Fine cotton gauze, PVA, medium sand

D4 Crinkle-weave cotton gauze, wireform, PVA, medium sand

D5 Fine cotton gauze, PVA, medium sand

D6 Fine cotton gauze, PVA, medium sand

High density foam, 3D print in resin, fine sand

## Luffa as Furniture

| | |
|---|---|
| Tech Elective | Making with Earth |
| Instructor | Lola Ben Alon |
| Assistant | Khadija Ann Tarver |
| Semester | Spring 2023 |
| Team | Paul Edward Liu, Justin Wan, Neil Potnis |

# The Luffah Squattah

Luffah Squattah experiments with the possibility of using Luffah as a formwork. Using a unique mix-design of clay-soil and coffee grounds, this project aims to produce a circular life cycle for food wastes. As a result of the experiment, a stool is created to test the strength of these organic materials for a possible load bearing construction substance.

The luffa sponge is examined as one of the possible ingredients to create new mix-designs as it exhibits physical properties rivaling, and comparable to, conventional building materials, but for much less weight. The luffa sponge, made from a dried luffa fruit, is a cellular material made up of complex networks of interconnected structs or plates, forming the edges and faces of cells.

The core region exhibits lower yield stress and energy absorption (as determined by the area under the stress-strain curve).

When compressed longitudinally, a luffa sponge is able to absorb comparable energy per unit mass as aluminum foam compared to the hoop region due to its greater porosity.



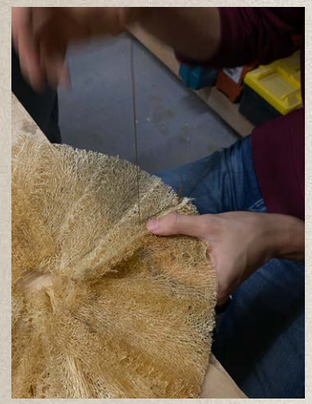
D1

D2

D3

D4

D5



D6

D1 Shredded luffa fibers as additive to strengthen and lighten soil mix for stool seat design

D2 Energy absorbing properties of exterior luffa skin is used for seat cushion

D3 Cross-sections of luffa reveal porus structure once housing seeds and nutrients. These voids become opportunities and formwork to casting fibrous and clay-rich soils for support and structure of the stool.

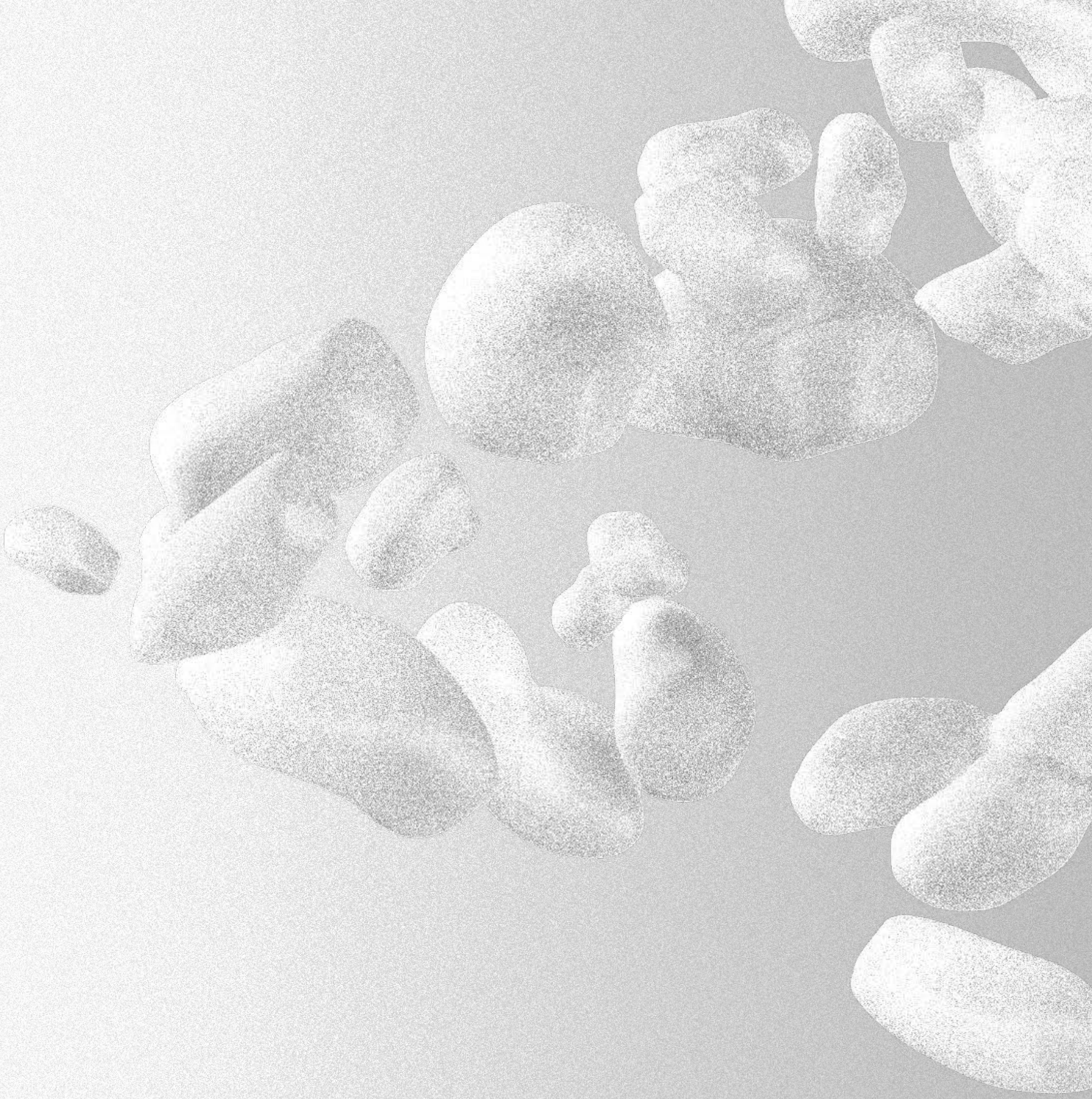
D4 Casting of clay-rich, luffa fiber infused earth into legs

D5 Soil-mix design with coffee grounds for added insulative properties and color

D6 Sewing and stitching of luffa skin into a round, seat cushion

Luffah Squattah on display at 1014 Gallery, New York

Opposite: Installation view of collective class exhibition of Making with Earth at 1014 Gallery on 5th Avenue, New York



Columbia GSAPP
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Ting-Hao Chen