

PAST

PRESENT

FUTURE

AN ARCHITECTURAL TIME MACHINE

KENNETH AZARIA MARBURG

M.S. ADVANCED ARCHITECTURAL DESIGN

COLUMBIA GSAPP

2024-2025

“As an architect,
you design for the
present, with an
awareness of the
past, for a future
which is essentially
unknown.”

— Norman Foster

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PAST

**“When we build, let
us think that we
build forever.”**

– John Ruskin

REFLECTING ON THE PAST

IL PESCARIO DI VENEZIA

History of Fishing Museum and Aquarium

Kenneth Marburg

Fall 2024

JOINT ARCH/HP ADVANCED STUDIO

Professors: Mark Rakatansky and Jorge Otero-Pailos



PESCA + ACQUARIO = PESCARIO



01 IL PESCARIO DI VENEZIA

HISTORY OF FISHING MUSEUM AND AQUARIUM

TERM FALL 2024 | COLUMBIA UNIVERSITY, GSAPP

CRITS MARK RAKATANSKY & JORGE OTERO-PAILOS

TYPE STUDIO: **ENACTING OUR MATERIAL ENTANGLEMENTS:
VENICE'S GALEAZZE DELL'ARSENALE AS A SITE OF
PRODUCTION / SITE OF EXCHANGE**

To honor the historical significance of fishing in the Venetian Lagoon, I developed a museum and aquarium in the 16th century-built Galeazze, the abandoned twin warehouses located in the Venetian Arsenale. This adaptive reuse endeavor is dubbed Il Pescario di Venezia (Pesca + Acquario = Pescario). The first floor, or “Fishing Zone,” includes ten floor-to-ceiling tanks consisting of both edible and non-edible marine organisms, currently inhabiting the Venetian Lagoon. There are also seven interactive catch-and-release “fish farms,” as well as a timeline of the history of fishing in Venice. The museum consists of exhibitions and artifacts reflective of periods spanning from 421 CE to present day. The second floor is named the “Feeding Zone.” This is where customers can dine and indulge in traditional Venetian seafood specialties. Lastly, the third floor features a grand stadium for viewing live tuna and other large edible fish feedings. Live entertainment, and an interactive water table with miniature fishing-related vessels built in the Arsenale, are also incorporated.



0 3 6 9 12 15 18 21 24 30 FT



1 Tuna,
Sturgeon,
Swordfish



6 Seahorses



2 Musky
Octopus



7 Red Mullet



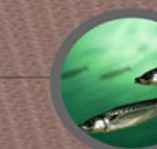
3 Barrel
Jellyfish



8 Sea Bass, Sea
Bream, Flounder



4 Lionfish



9 Mackerel



5 Frogs and
Toads



10 Tub Gurnard



a European Eel



b Crustaceans

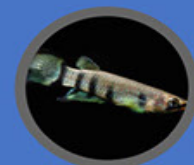


c Clams, Mussels,
Oysters



d Monkfish

**FIRST FLOOR PLAN
FISHING ZONE**



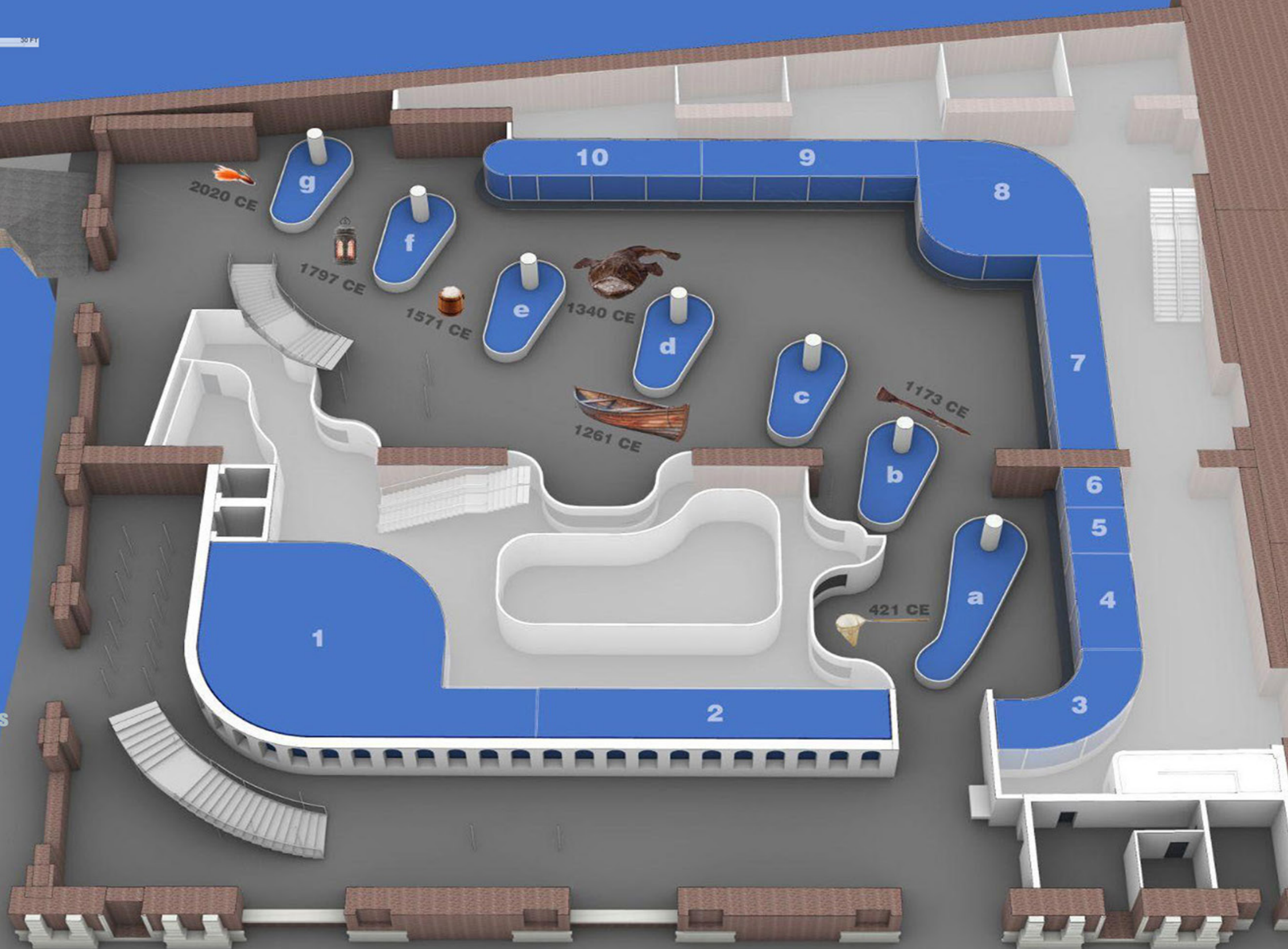
e Small
Lagoon Fish



f Cuttlefish,
Snails, Squid



g Amphipods

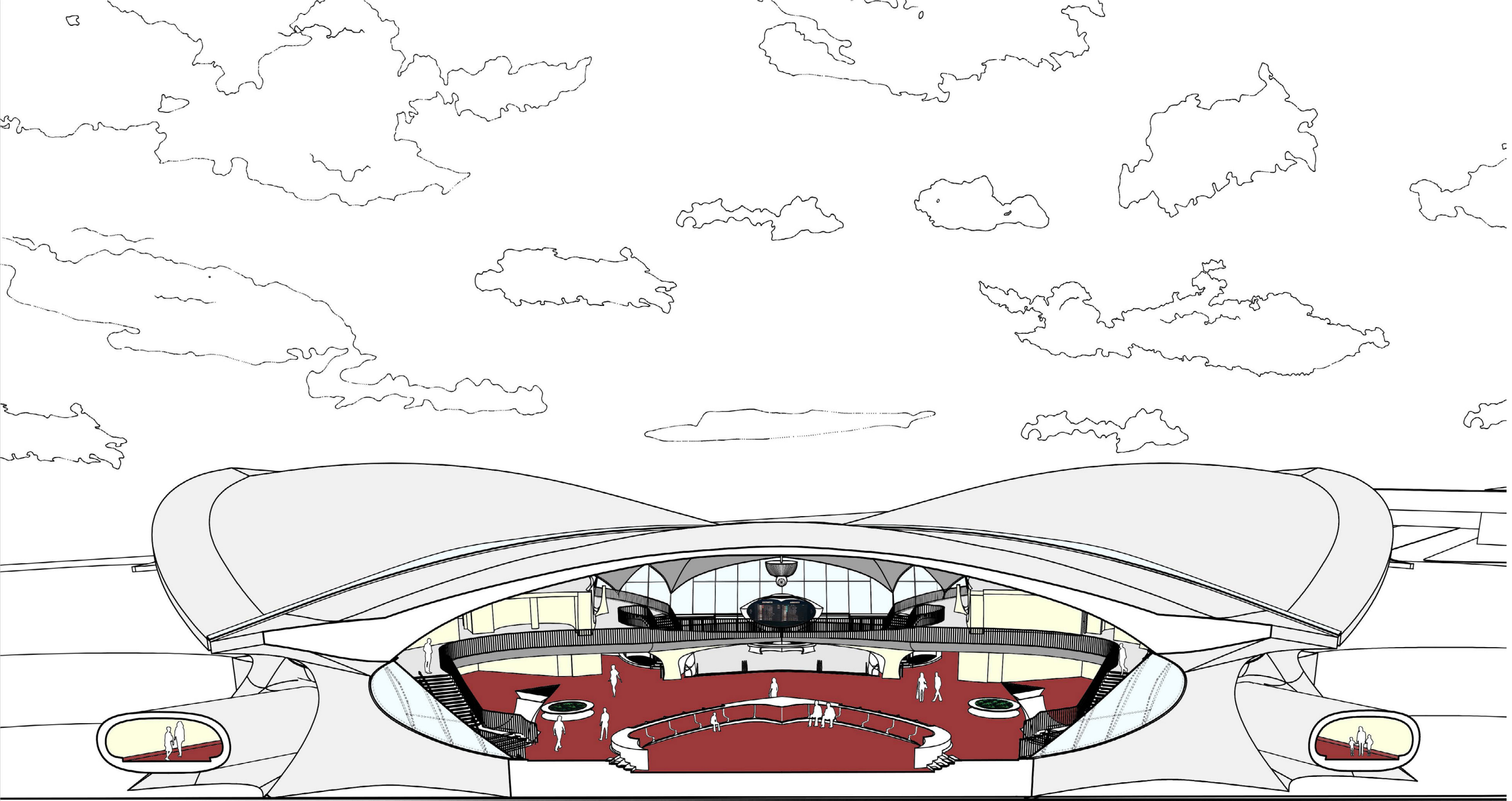












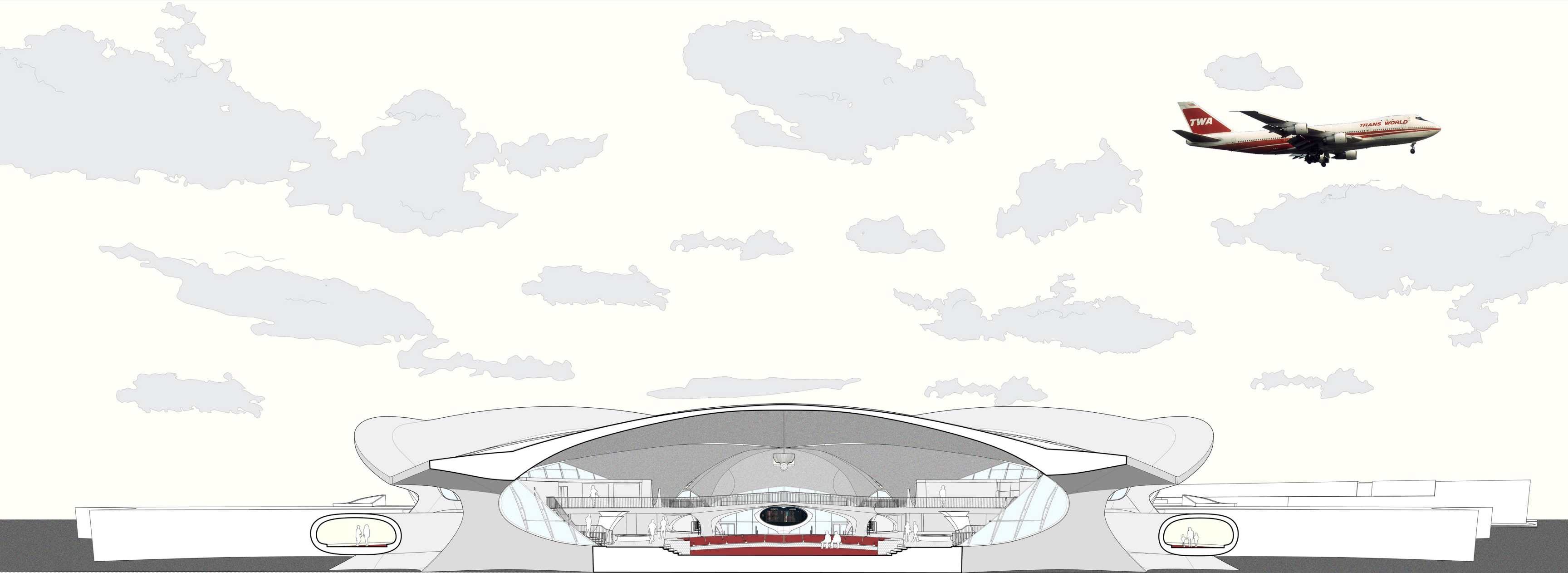
TWA FLIGHT CENTER
JOHN F. KENNEDY INTERNATIONAL AIRPORT
1 Idlewild Dr, Queens, NY 11430
Completed in 1962
Eero Saarinen and Associates
Drawing by Kenneth Marburg

02 TWA FLIGHT CENTER

REPRESENTING HISTORY THROUGH THE SECTION

TERM	SPRING 2025 COLUMBIA UNIVERSITY, GSAPP
CRIT	MARC TSURUMAKI
TYPE	ELECTIVE: SEMINAR OF SECTION

The TWA Flight Center, famously designed by Eero Saarinen, opened in 1962 at New York’s JFK Airport, epitomized the exuberance of mid-century air travel with its dramatic, wing-shaped concrete shell. Closed in 2001 due to operational constraints from increasing passenger volumes and evolving aviation demands, it underwent extensive restoration and reopened in 2019 as the TWA Hotel. Today, it stands as a significant architectural landmark, celebrating its unique expressionist design that evokes the sensation of flight. Over the course of the semester, I displayed the section of this historic building through two different vantage points. Both were cut through the Sunken Lounge in the rear of the “chapel,” facing the entrance of the terminal, the mezzanine balcony, the flight schedule board, and the renown clock. Additionally, the iconic passenger tubes that connected the public areas with the gates are highlighted. I also emphasized the significance of the chili-pepper red carpeting, pale yellow walls, white penny-tile floors and gritted ceiling throughout the building.



Trans World Airlines Flight Center | John F. Kennedy International Airport | Queens, New York, USA
1 Idlewild Dr, Queens, NY 11430 | Completed 1962, Eero Saarinen and Associates | Drawing by Kenneth Marburg

0 3 10 17 23 30 FT

REFLECTING ON THE PAST — BY STUDYING THE HISTORY OF OUR ECOSYSTEMS

BIOS-3 is the third project in a series of experimental, closed ecological systems, built by the Institute of Biophysics at the Siberian Branch of the Russian Academy of Sciences in Krasnoyarsk. This ongoing experiment consists of a small habitat, accommodating up to three people, designed as a planetary base prototype that could support human life during a Mars mission.

Construction for BIOS-3 began in 1965 and was completed in 1972. This involved a 315 cubic meter (11,100 cu ft) underground steel structure divided into four distinct compartments: one for crew living quarters; one algal cultivator (where algae provides oxygen from carbon dioxide); and two phytotrons (greenhouses for growing produce). The algal cultivator was later converted into a third phyton. Artificial sunlight was administered into each of the four compartments using 20 kW xenon lamps. Since 2005, the site has been used for closed ecosystem research, focusing on growing plants and recycling waste.

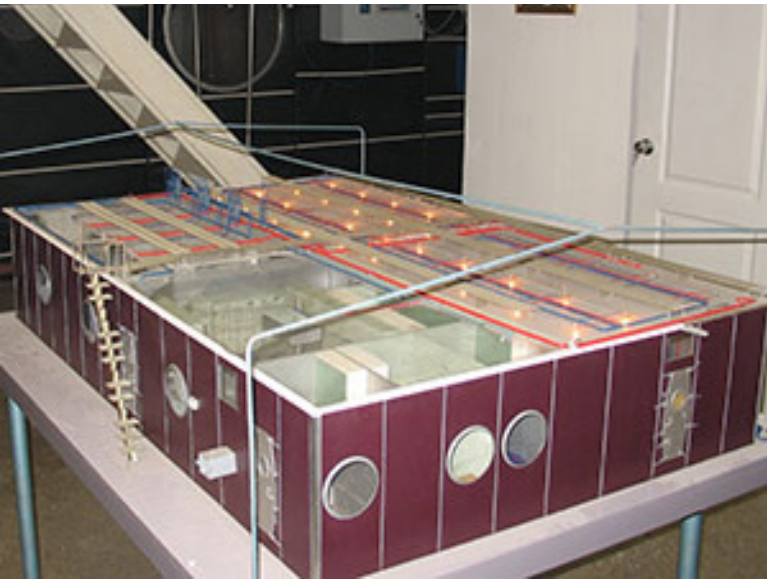
The system used for BIOS-3 called BLSS (Biological Life Support System) was developed as a reliable model for a Mars-based mission, and has the ability to be modified based on necessary tasks and requirements. Components of life support include air; food; water; microalgae and higher plants; and recycling of unused plant biomass and human waste.

In terms of its ecosystem, BIOS-3 was not fully self-sustaining or closed. It relied on large amounts of additional oxygen, energy coming from outside sources, and the manual removal of solid and liquid human waste. “Special consideration is given to problems of reliability and sustainability of material cycling in BLSS, which are related to production of additional oxygen inside the system.” Although Bios-3 operated efficiently at a small scale, a similar ecosystem built at a larger scale would require much more sophistication, in order to sustain a successful closed environment.

Long before Bios-3 was conceived, Russian Ukrainian geochemistry pioneer, Vladimir Vernadsky conceptualized a man-made, closed ecosystem. Vernadsky’s concept of the “noosphere” was to have an artificial version of Earth in outer space. Thanks to this inspirational figure, scientists have invented ways of achieving this goal.

Ultimately, it has also become clear that the space race between the US and Russia during the Cold War period, culminating in the 1969 US victory of Apollo 11, has triggered much research and advances on this topic. The newest US Mars project, called CHAPEA (Crew Health and Performance Exploration Analog), started in 2023, and is projected to last through 2026. This closed ecosystem, designed by Bjarke Ingels Group, holds many similarities to BIOS-3, including a feature for growing vegetables (although the former uses hydroponics, and the latter does not). This latest and more innovative US ecosystem is made to withstand 378 days on Mars for four individuals, with its “primary objective of human health and performance.”

Lastly, the implications for future improvements resulting from US and Russian experimentation have been impressive. Examples of such breakthroughs have included urban gardening, waste recycling, water purification, carbon sequestration, and insect cultivation as a food source.



03 LIFE ON MARS?

A HISTORICAL TRANSSCALAR ESSAY

TERM	SUMMER 2024 COLUMBIA UNIVERSITY, GSAPP
CRITS	ANDRES JAQUE AND MARIE DE TESTA
TYPE	AAD SEMINAR: TRANSSCALARITIES

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PRESENT

“A profound design process eventually makes the patron, the architect, and every occasional visitor in the building a slightly better human being.”

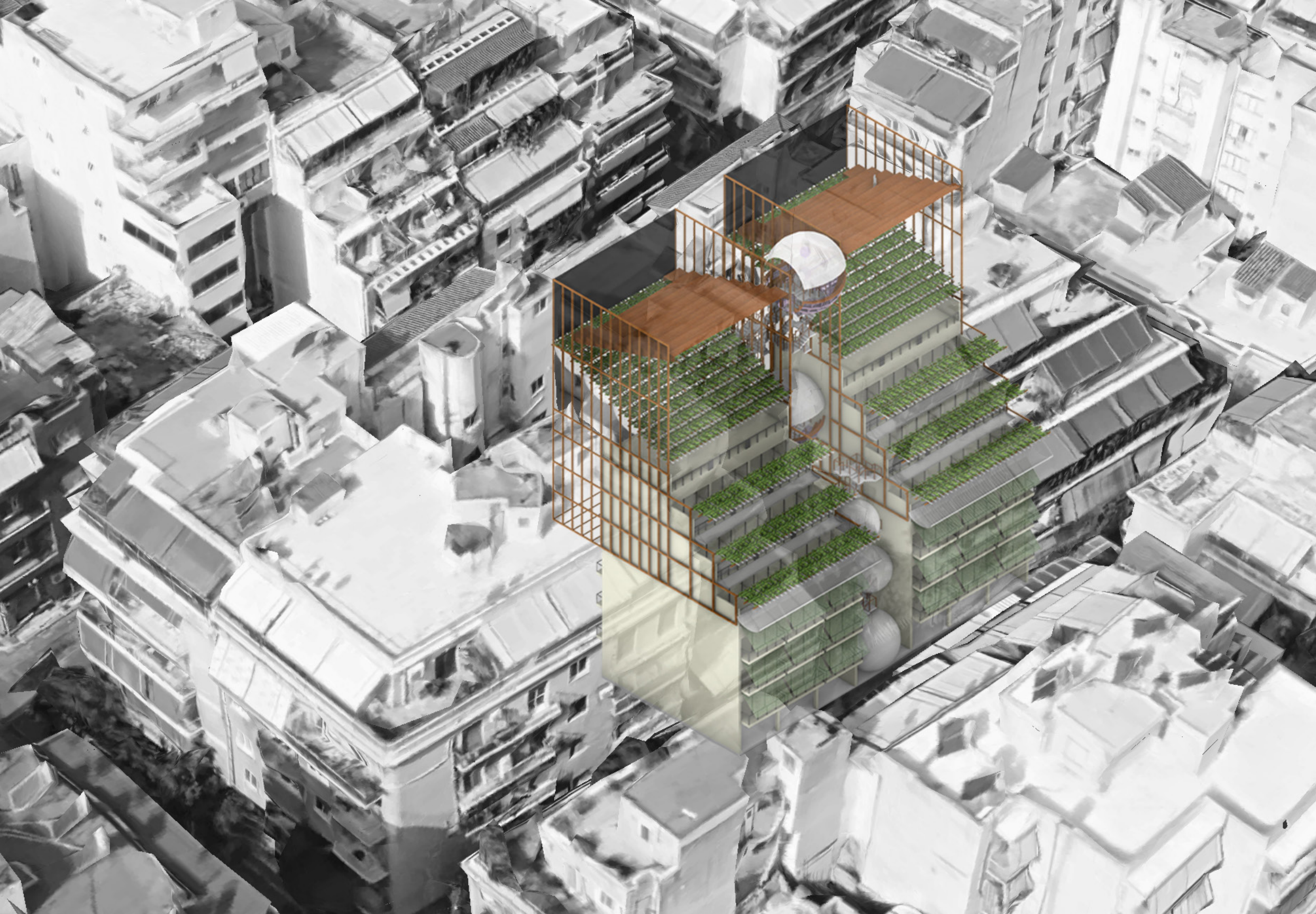
– Juhani Pallasmaa

**IMPROVING UPON THE
PRESENT**



Klimataria

(Κληματάρια)



04 KLIMATARIA

COHABITATION THROUGH URBAN GRAPE FARMING

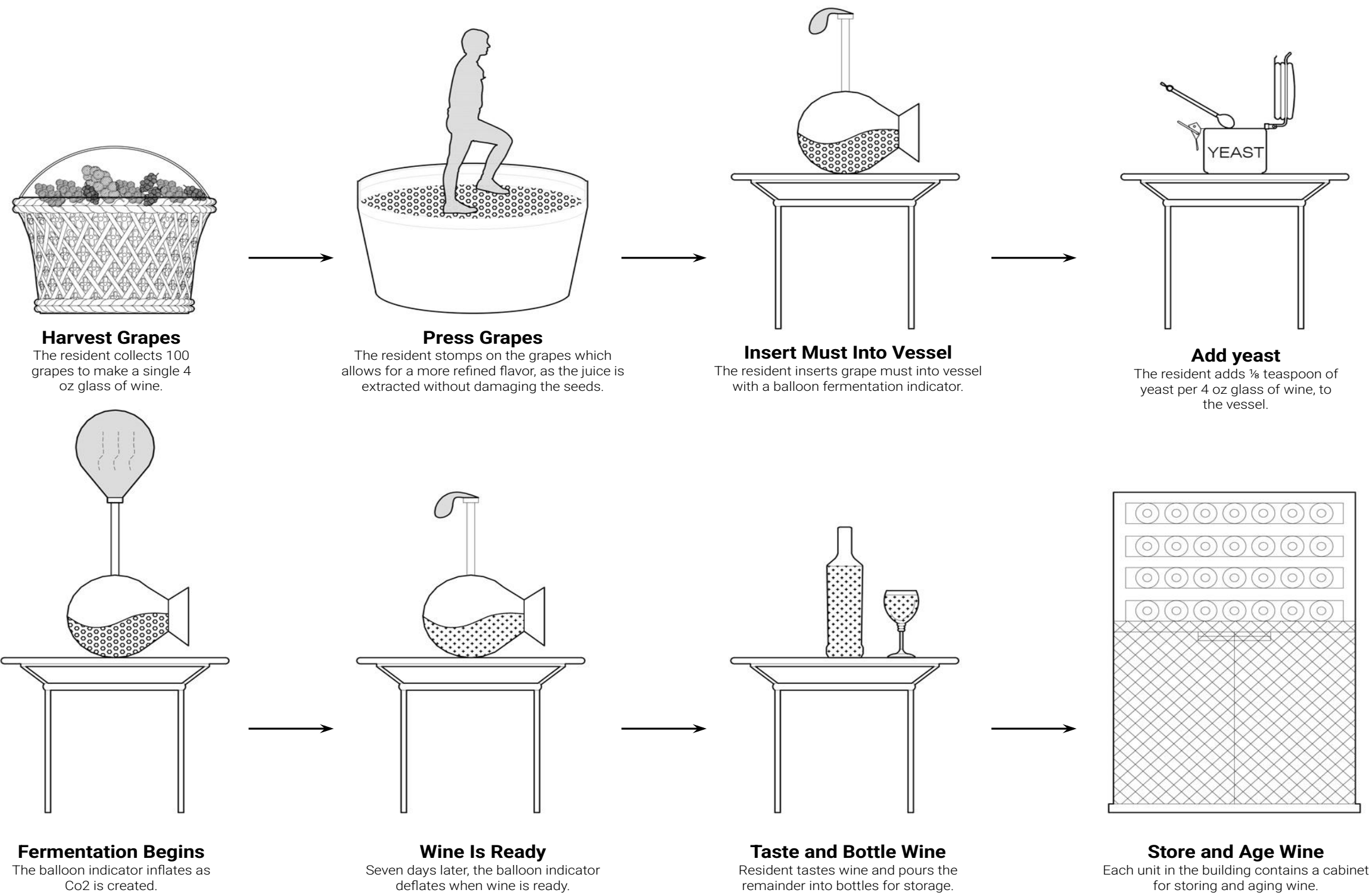
TERM SPRING 2025 | COLUMBIA UNIVERSITY, GSAPP

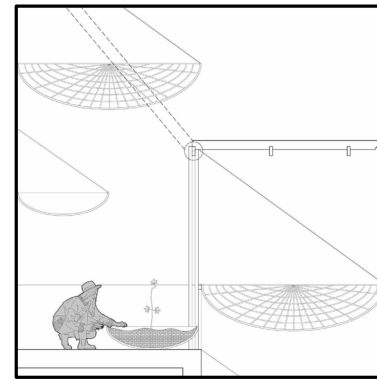
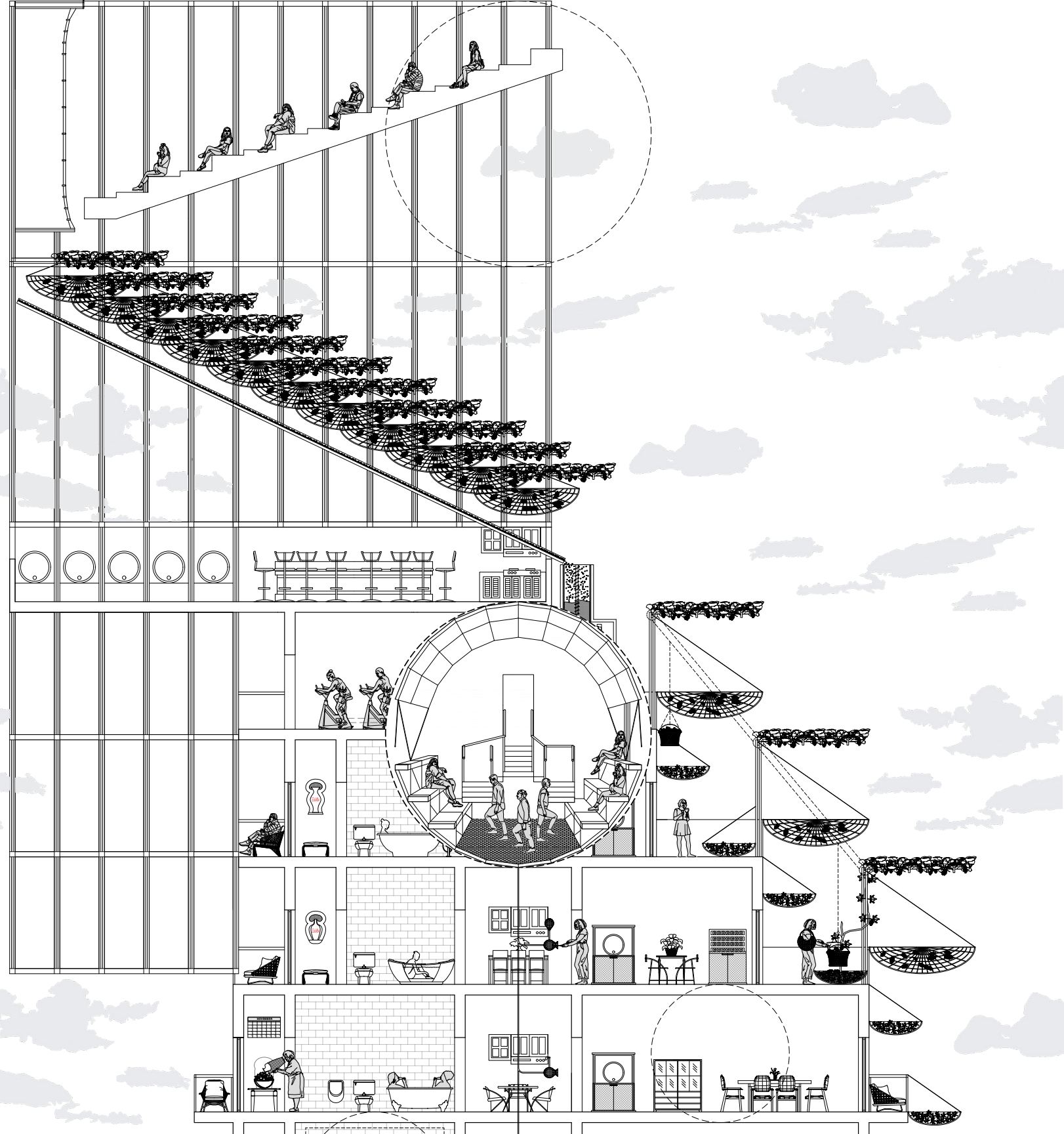
CRIT LYDIA KALLIPOLITI

TYPE STUDIO: **BUILDING METABOLISM + MICROBIOMES:
NEW FORMS OF COHABITATION AND DECARBONIZATION**

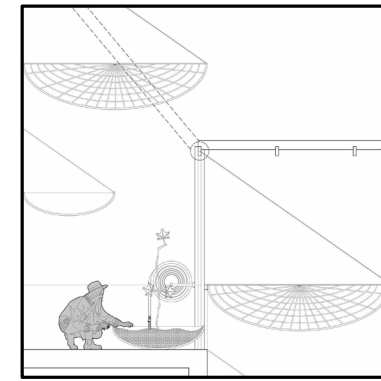
The city of Athens, with its dense urban fabric, presents a unique opportunity to reintroduce a traditional, rural Mediterranean practice into the contemporary urban environment. The klimataria, or grapevine pergola, historically served both aesthetic and functional purposes in Greek architecture. This project seeks to explore the integration of klimataria onto the rooftops, facades, and balconies of Athenian apartment buildings (polykatoikies) as a means of promoting sustainable urban agriculture, and fostering a sense of community in the Athenian built environment. Integrating klimataria into the polykatoikia could ultimately reduce energy consumption, improve air quality, and strengthen community ties through shared grape cultivation, wine-making, and the production of other grape byproducts, such as vinegar and particle board (made from dried-out stems). My site is located at Mavrikiou 3-7 in Exarcheia, Athens. This block includes an empty side yard of about 24 feet between two existing polykatoikies, which provides ample opportunity for urban development. My proposal serves to bridge together these buildings through shared community hubs.

Winemaking Process

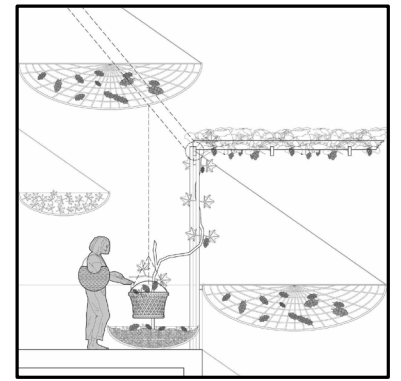




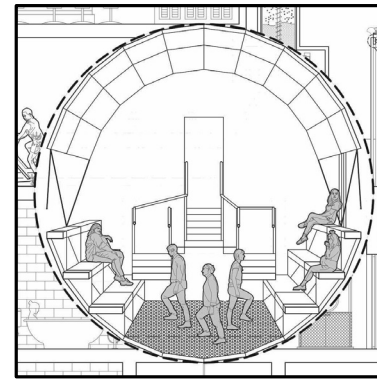
① Planting



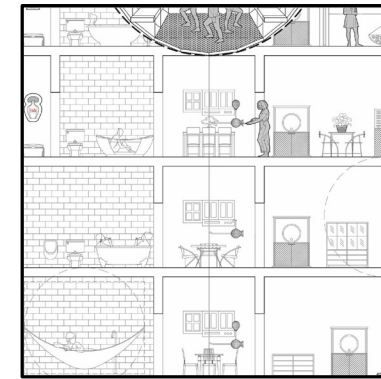
② Watering



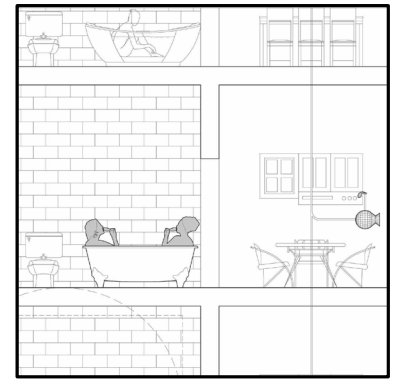
③ Gathering



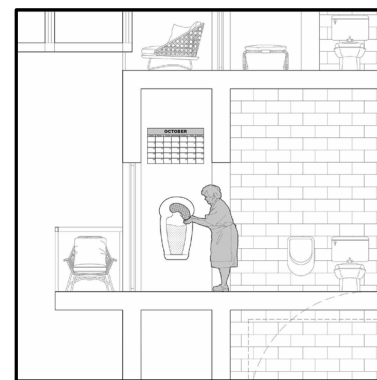
④ Pressing (Stomping)



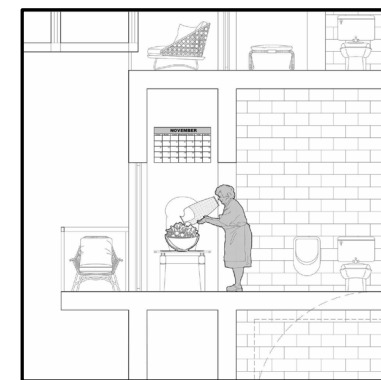
⑤ Fermenting



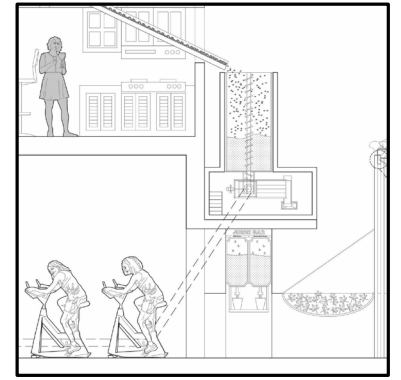
⑥ Wine Tasting



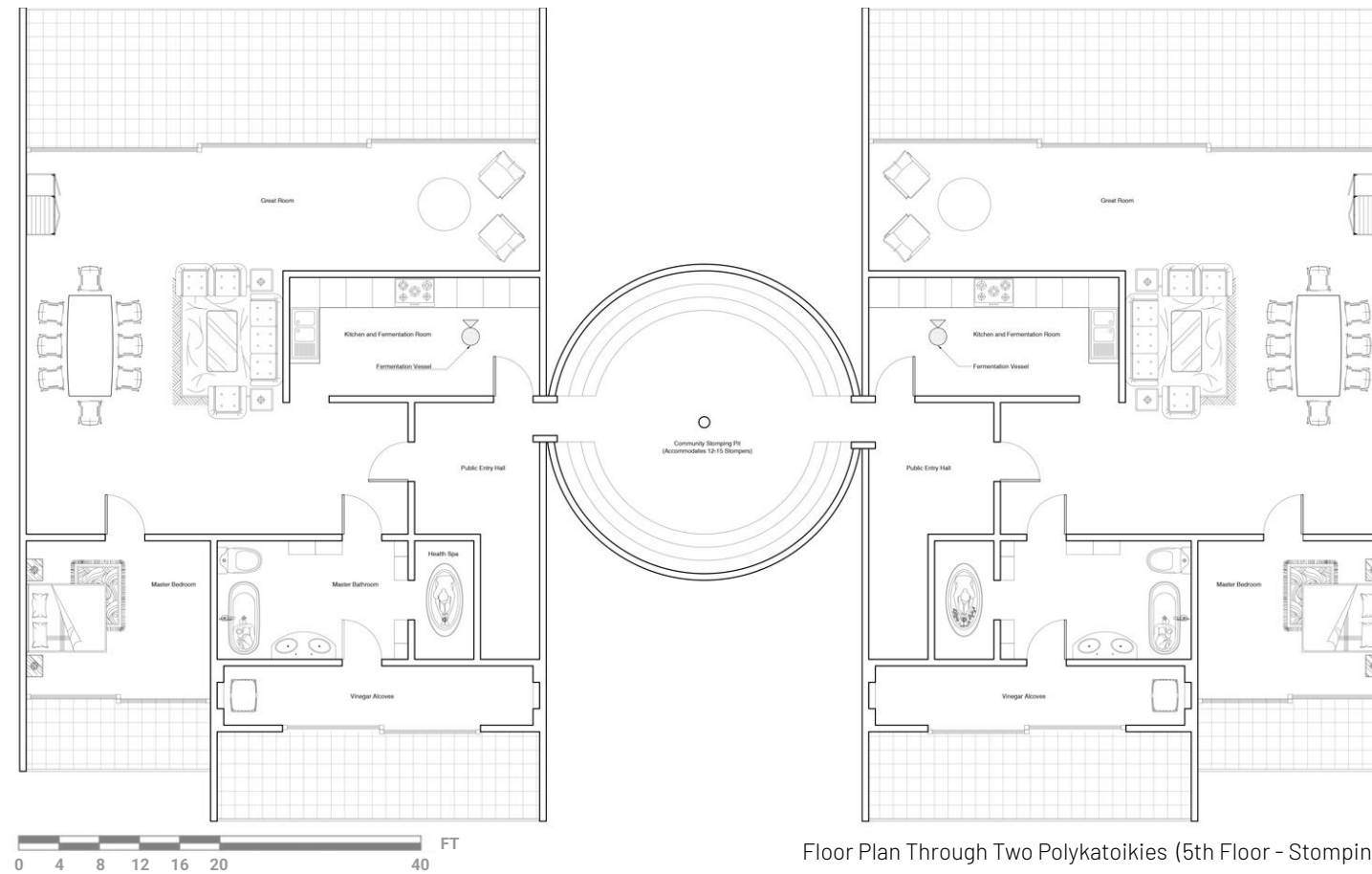
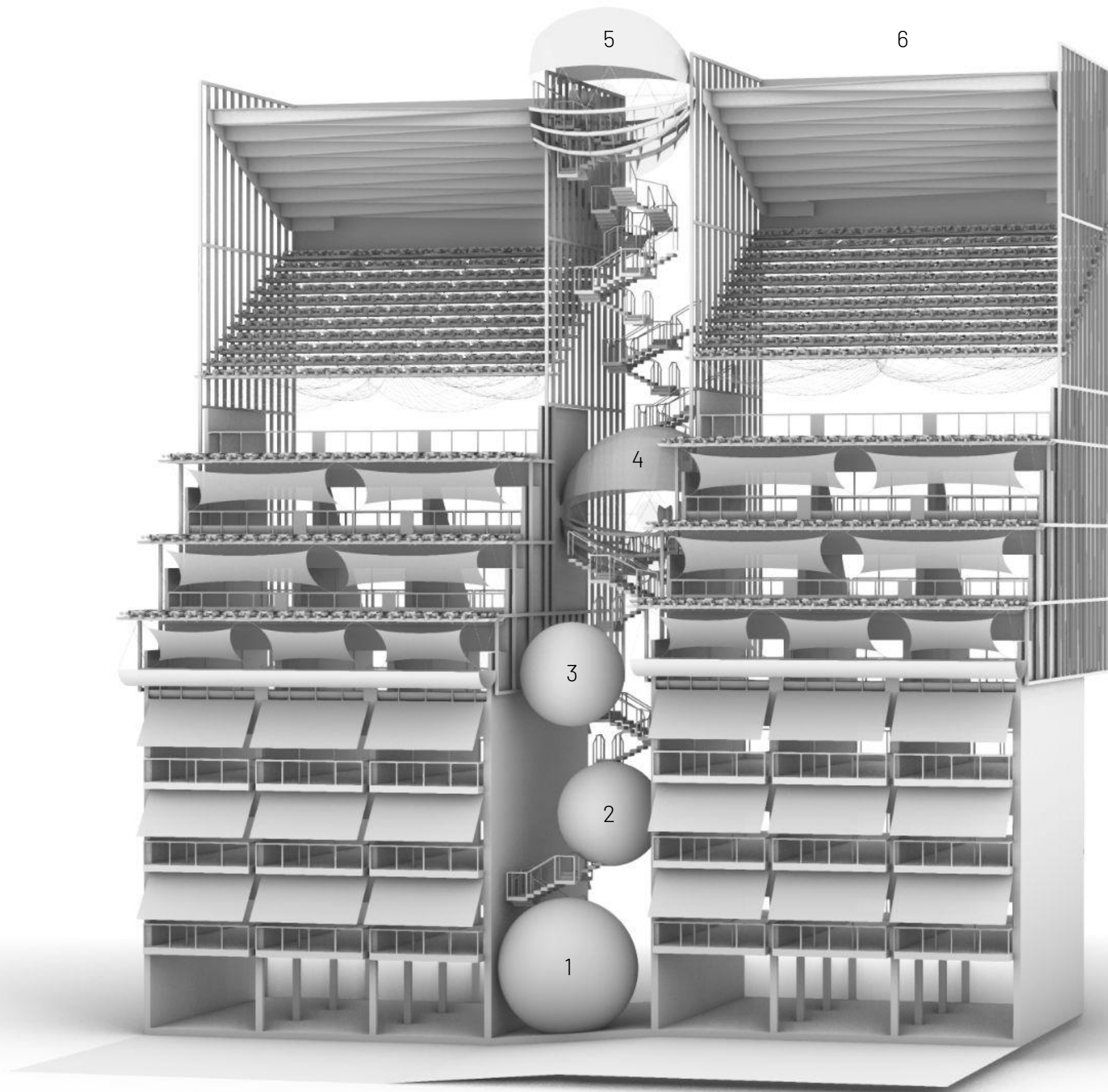
⑦ Acetifying (Souring)



⑧ Vinegar Tasting



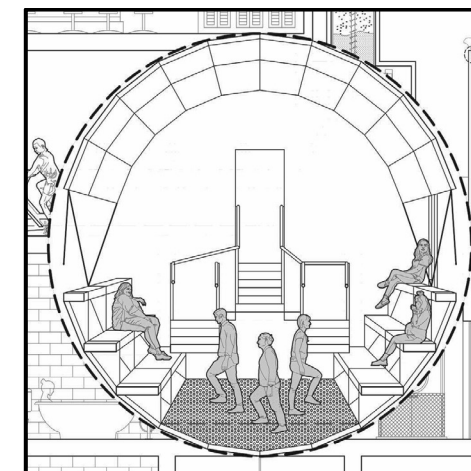
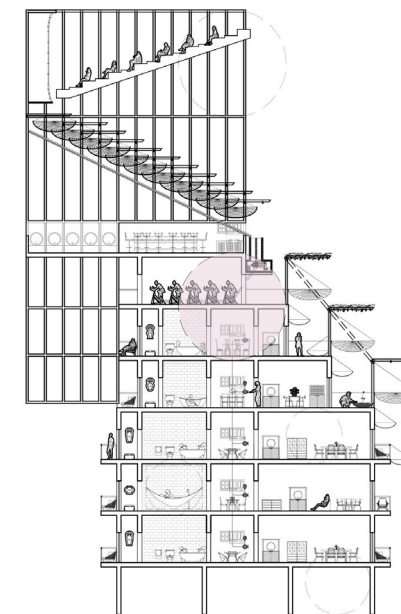
⑨ Juice Bar



Floor Plan Through Two Polykatoikies (5th Floor - Stomping Pit Level)

Program Key

1. Balsamic Vinegar Tasting / Ice Cream Shop
2. Wine Store / Dolma Market
3. Particle Board Workshop
4. Community Stomping Pit
5. Community Kitchen
6. Suspended Cinema



④ Pressing (Stomping)



Open Air Rooftop Cinema

IMPROVING UPON THE PRESENT — BY PARTICIPATING IN THE AWE OF OUR ENVIRONMENT

Olafur Eliasson is an Icelandic-Danish artist known for his large-scale installations, utilizing natural elements such as light, water, and temperature to intensify the experience of the observer. Green River by Eliasson was a series of art installations, utilizing six existing rivers located in Tokyo, Japan; Stockholm, Sweden; Bremen, Germany; Los Angeles, California; Moss, Norway; and Fjallback, Iceland. Between 1998 and 2001, as a social experiment, he temporarily colored them bright green, using a non-toxic, water-soluble dye. He specifically utilized uranine, a fluorescent dye traditionally used for testing ocean currents that only retains its green visibility for a few hours.

This concept is not a new one: since 1962, the Chicago plumbers’ union annually dyes the city’s river green to mark St Patrick’s Day. However, in the case of Eliasson, the purpose was not to celebrate a holiday symbolized by the color green, but to assist the public in appreciating the beauty of their daily environments. Ultimately, this can also serve to improve mental and physical well-being. In *Chromaphilia: The Story of Colour in Art*, Stella Paul stated, “Eliasson used colour in this work to draw viewers unwittingly into a new relationship with their surroundings.” This renewed interconnection allowed spectators to experience awe in response to nature. In lieu of this phenomenon, each of the rivers Eliasson transformed had major impacts on its viewers. In Stockholm, for instance, “pedestrians were mesmerized, and the downtown area came to a standstill.” There was immense attention paid to the Green River in Stockholm, and the headlines wrongly reported that the color was caused by a harmless government heating system leak. For this reason, Eliasson certainly accomplished his goal of “making the river present again,” by way of “encountering something familiar but wholly changed.”⁹ When discussing Stockholm, Eliasson stated, “For a moment, the city became real. The point was not even the Green River; the point was how it looked before and after. Understanding of past and future has been transformed, and the vehicle for this re-thinking is green.” I believe that although Eliasson “denaturalized” the river, he would not likely receive environmental criticism, as the dye was benign, and in the long run Eliasson aided in a greater respect for the environment. In addition, Eliasson’s other goal was to give the viewer a temporary feeling of wonder. This ephemerality expressly provided viewers with an even greater appreciation, and a more lasting impression of the rivers.

Lastly, both Olafur Eliasson and his exhibitions’ spectators were all actors in his evolutionary experiment. He was adept at allowing the public to knowingly and willingly contribute to his work by making his interventions explicitly clear. “By relying so heavily on a viewer’s active involvement, his projects turn spectators into participants...” Madeleine Grynsztejn, the Pritzker Director of the Museum of Contemporary Art in Chicago sums this point up by stating, “‘You always see the man behind the curtain in Olafur’s work. He shows you something that moves you to the core, and then he shows you how that happened. So you are a participant both ways--intellectually and just in terms of wonder.’”



05 FOR THE LOVE OF GREEN

A PHILOSOPHICAL TRANSSCALAR ESSAY

TERM SUMMER 2024 | COLUMBIA UNIVERSITY, GSAPP

CRITS ANDRES JAQUE AND MARIE DE TESTA

TYPE AAD SEMINAR: **TRANSSCALARITIES**

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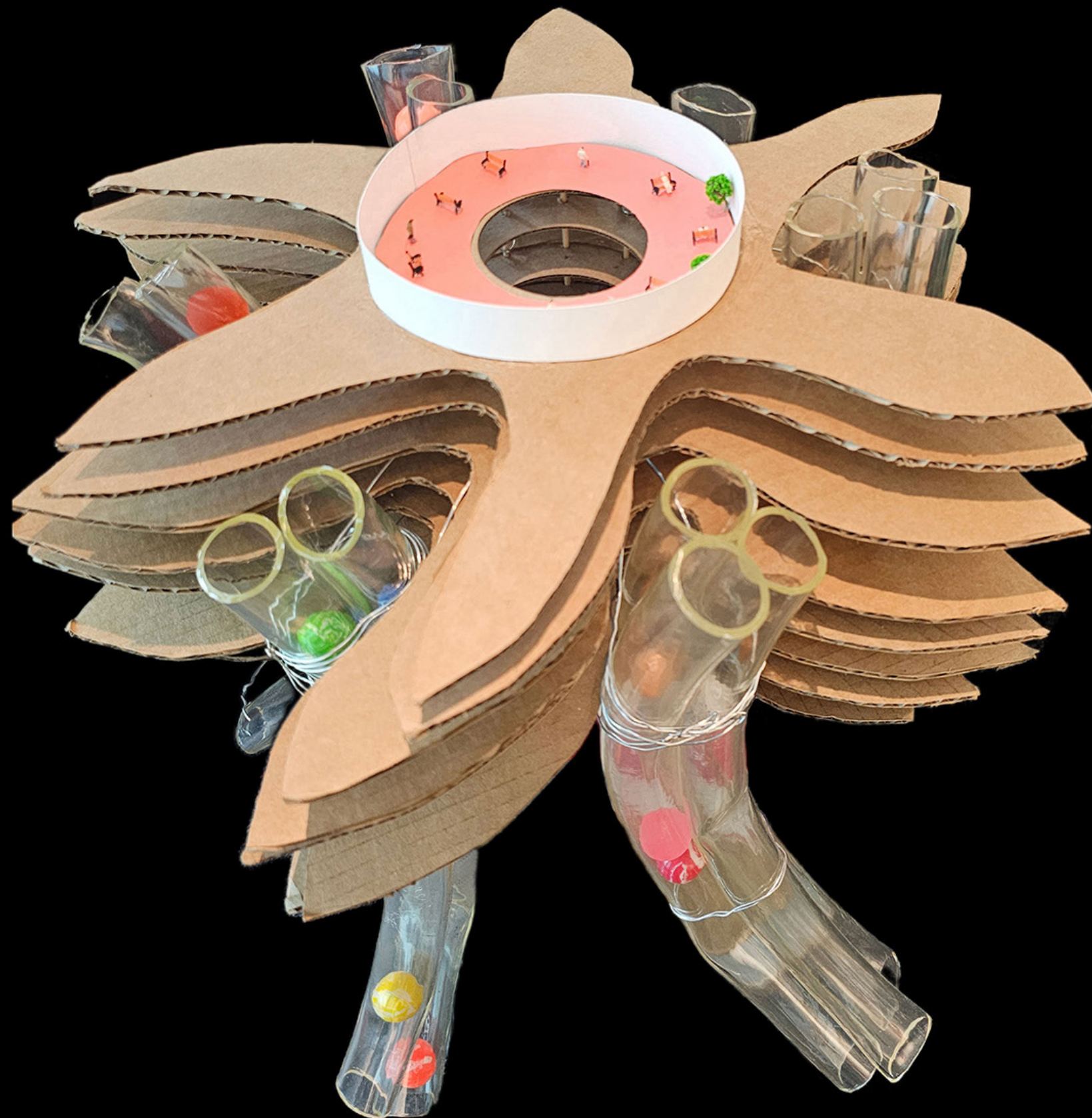
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FUTURE

**“Each new situation
requires a new
architecture.”**

– Jean Nouvel

**PROJECTING INTO THE
FUTURE**



06 PROSPECT PODS

THE MINISTRY FOR LAND TRANSPORTATION INNOVATION

TERM SUMMER 2024 | COLUMBIA UNIVERSITY, GSAPP

CRIT DAN WOOD

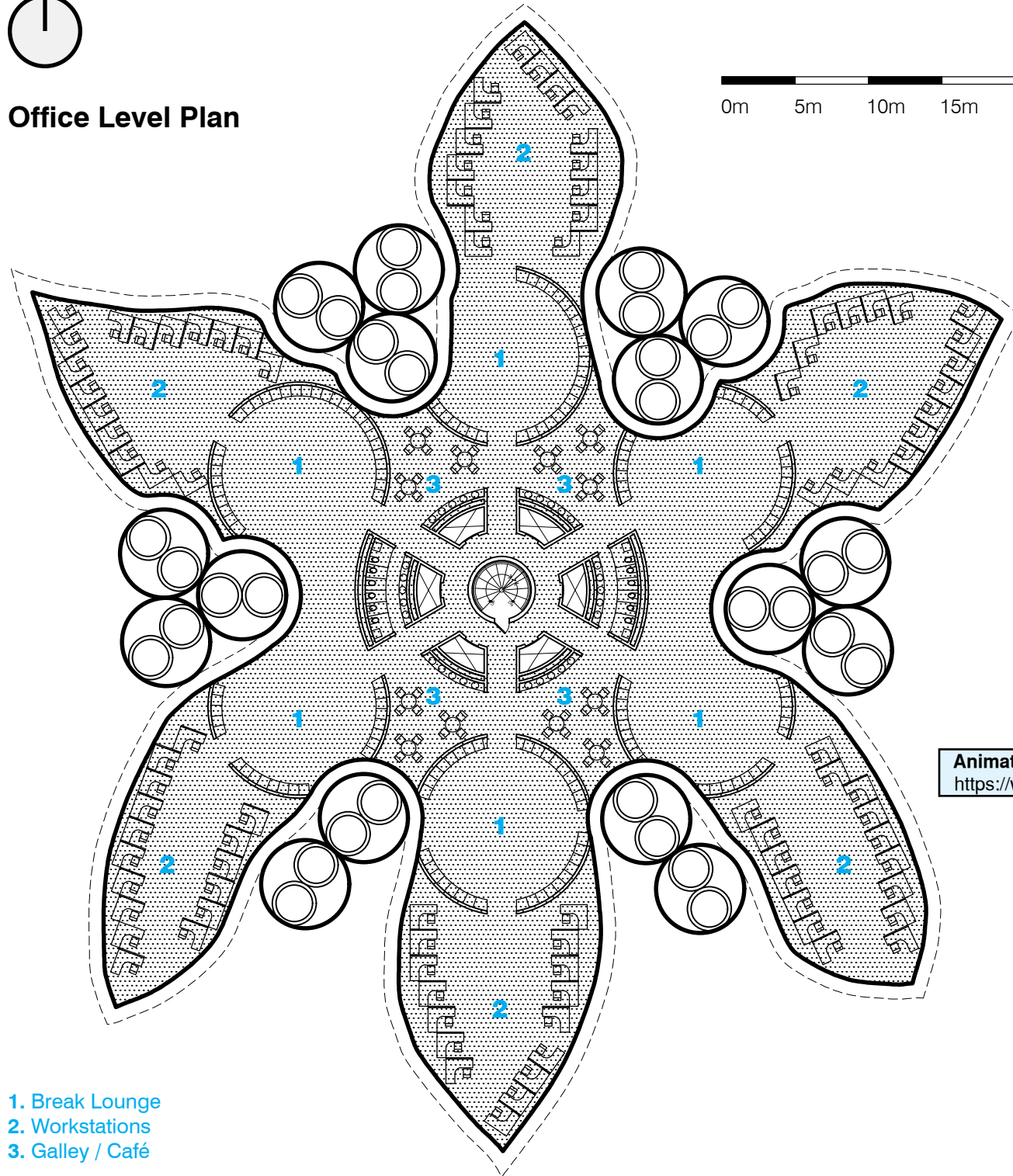
TYPE STUDIO: **THE FUTURE'S FUTURE**

In the future's future, set in the late 2050s, commercial jet travel is nearing obsolescence in an effort to reduce carbon burn. Although cross-continental high-speed rail exists by now, it still takes over a day for it to cross the U.S. mainland. As the world needs a much faster way to travel, the Ministry for the Future's Center for Land Transportation Innovation presents "Prospect Pods." This new technology can transport passengers through pneumatic tubes that plunge underground at ultra-high speeds, serving both international and domestic routes. The traditional method of embarkation, in which large groups board coupled train cars, will be replaced by an efficient singular train pod suitable for up to five people. These trains of the future will be accessible on demand through an app, and will be easy to board without the long wait. Additionally, Prospect Pods are situated between "cactus-like" leaves which hold the programmable spaces for the Ministry, such as public gathering forums, shops, observation decks, and office floors for Ministry workers who can view the transport tubes accelerating down in a parabolic form. Welcome aboard!



Office Level Plan

0m 5m 10m 15m 20m 25m

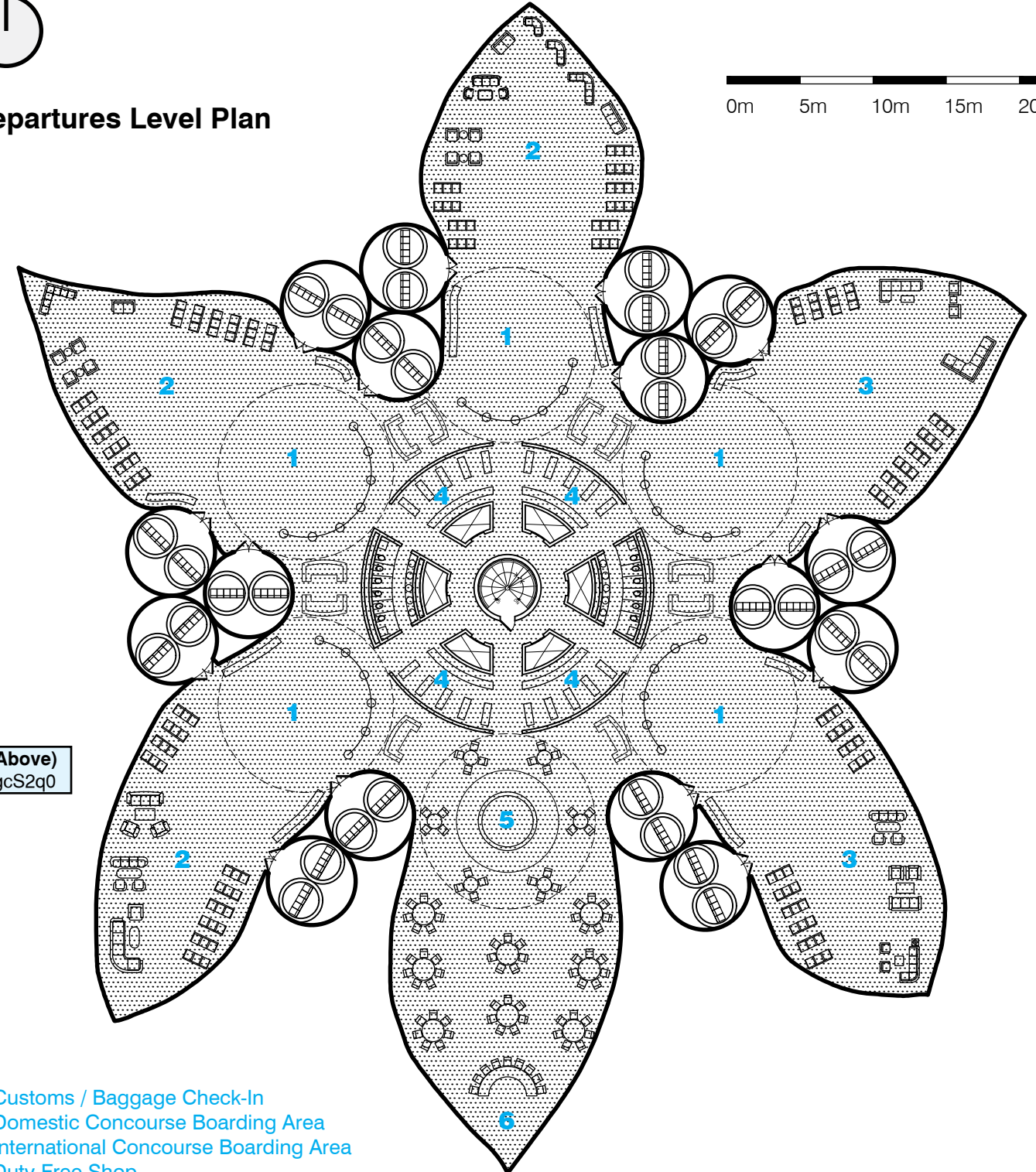


- 1. Break Lounge
- 2. Workstations
- 3. Galley / Café



Departures Level Plan

0m 5m 10m 15m 20m 25m

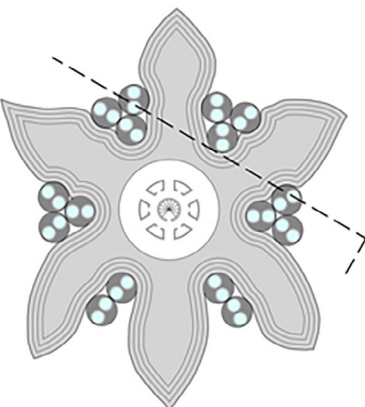
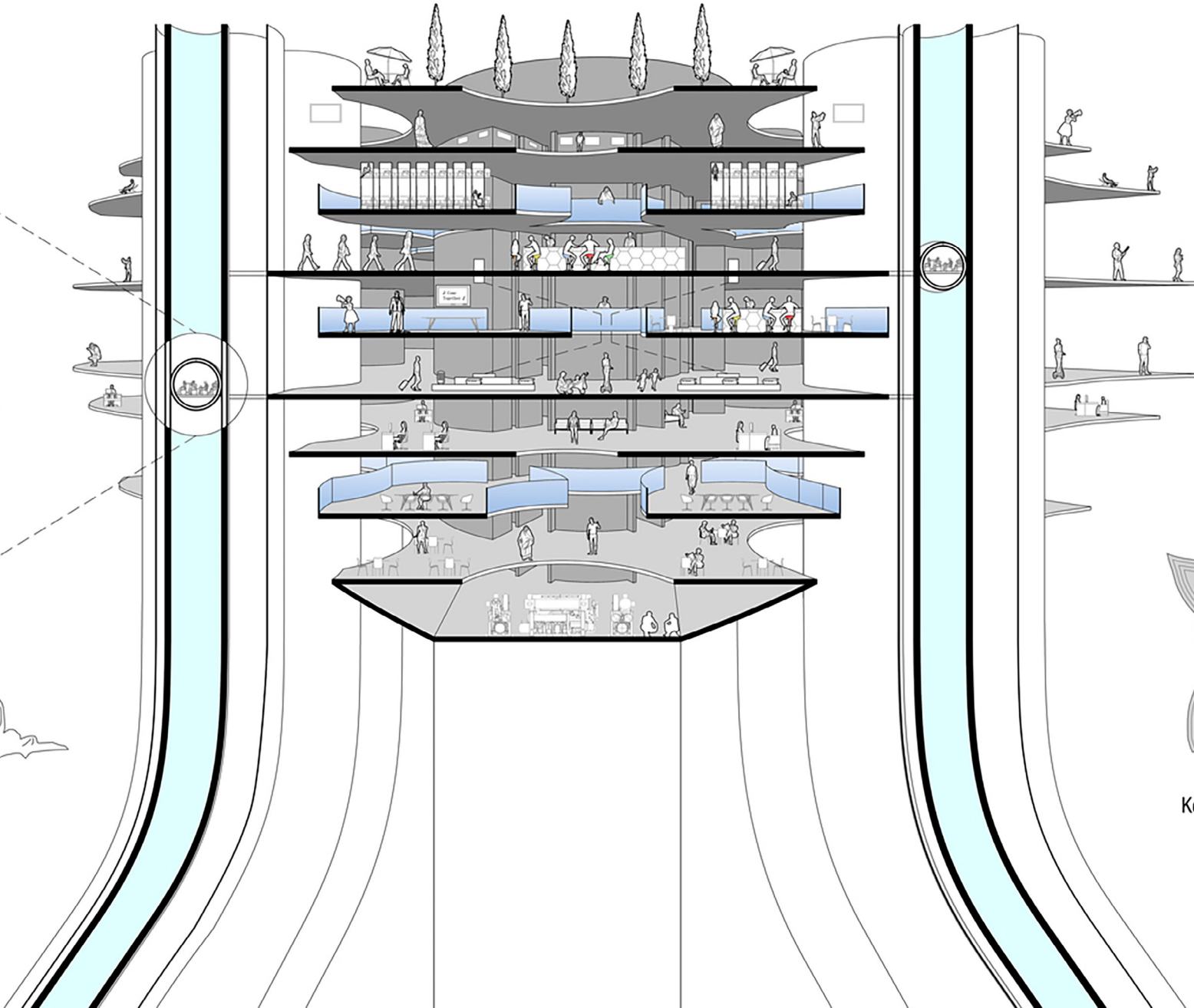
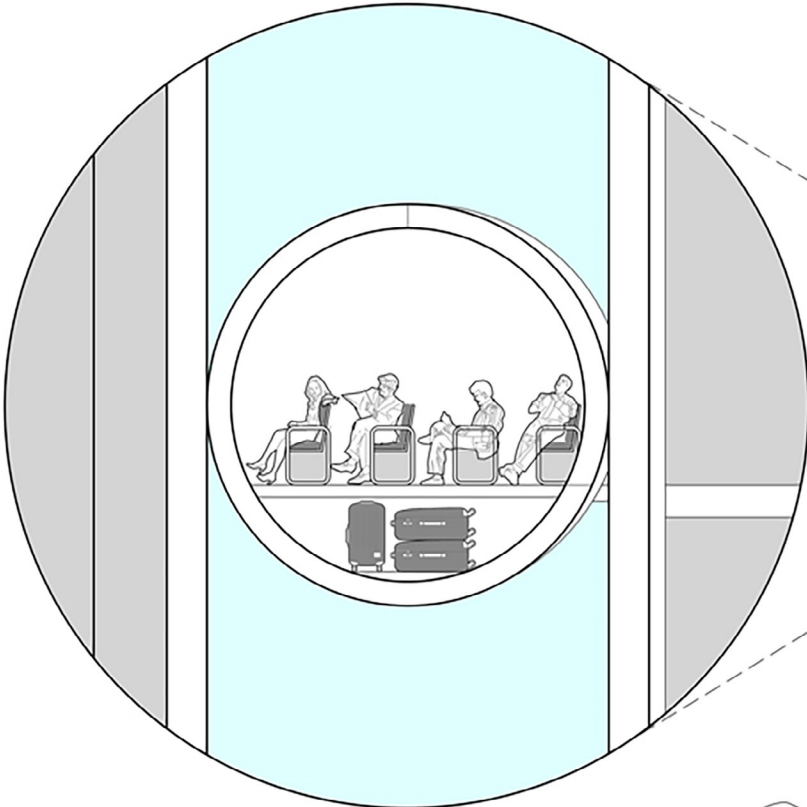


- 1. Customs / Baggage Check-In
- 2. Domestic Concourse Boarding Area
- 3. International Concourse Boarding Area
- 4. Duty-Free Shop
- 5. Food Court
- 6. Atrium Café



Animation of All Nine Floor Plans (Click Above)
<https://www.youtube.com/watch?v=RTDKpgcS2q0>

Perspective Section



Key Plan

PROJECTING INTO THE FUTURE — BY QUESTIONING OUR CONVENTIONS

Eileen Gray was the pioneer of “Forward Thinking Design,” a concept that shaped architecture forever, by combining aesthetics with functionality. A large part of that equation was the user’s individual comfort. Gray took great care to create every piece of furniture with that in mind, while ensuring the integration of those items into the spaces she designed. For example, in her most prized project, E-1027 in Roquebrune Cap-Martin, France, Gray left no stone unturned. Her furniture there was constructed from simple materials such as glass, tubular steel, upholstered leather, and lacquered wood, which were transformed into ergonomic and accessible prototypes. In addition, since Gray never conformed to a traditional narrative, neither did her furniture. Unique pieces in E-1027 included a curvy-necked lamp, a single-arm chair, and even an adjustable-height table, all meant to meet the needs and desires of the individual.

Within my interpretive work, I emulated Eileen Gray’s living room furniture components to create a “non-conformist” playground, accessible to both adults and children, at an architectural scale. This design features Gray’s adjustable table, turned into a fun elevator; her Bibendum Chair transformed into a two story summerhouse; her Transat Chair turned into a climbing structure with a spiral slide; her Blue Marine Rug converted into a third place for leisure; and her Monte Carlo Sofa morphed into a refuge, providing a view of the outside world without being seen. I am grateful for the opportunity to relive my fond childhood memories of visiting innovative playgrounds in New York City, and writing about them in my school newspaper. Thanks to Eileen Gray, I was able to do so, by simply questioning reality.



07 PLAYGROUND OF THE FUTURE

A NON-CONFORMING NARRATIVE

TERM	FALL 2024 COLUMBIA UNIVERSITY, GSAPP
CRITS	STEVEN HOLL AND DIMITRA TSACHRELIA
TYPE	ELECTIVE: ARCHITECTURE APROPOS ART

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Playground of the Future

In my model, I transformed Eileen Gray's living room into a “non-conformist” playground, accessible to both adults and children, at an architectural scale. This design features Gray’s adjustable table, turned into a fun elevator; her Bibendum Chair transformed into a two story summerhouse; her Transat Chair turned into a climbing structure with a spiral slide; her Blue Marine Rug converted into a third place for leisure; and her Monte Carlo Couch, now provides opportunities for to view the outside world without being seen (prospect and refuge).