

# BINGYU XIA

## PORTFOLIO



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01

## BREAKFAST NEIGHBORHOOD UNITS Collectivize the Breakfast

Columbia University | Countercollapse Studio | Summer 2021  
Instructor | Ignacio G. Galán  
Site: Harlem, NY  
Research Team Partner | Daniela Beraún, Chiun Heng Chou  
Designs and drawings done by Bingyu Xia.

The research “The Organizations of Child Care” consisted in a research of different models of child care in the world. We consider each of the models as organizations that are actively responding to many different underlying issues.

To deal with current situation, this project is to expand the current breakfast program, make it available to all children at no charge but separate them from the school system. Children will have breakfast at a breakfast unit in their neighborhood before they go to school. The program, which will continue to be a Federal Program, will be managed by each city in collaboration with Community Boards. All the units in New York are over the streets, where they guarantee the right of way for kids and ensure protected areas under. The units also contribute to environmental justice by reducing additional emissions in nyc. And they are transportable responding to dramatic changes in children’s population in each breakfast area.

Although the design is specific to the situation in Harlem NYC, the breakfast program should be nationwide.

**'Through the Night' Review: Tucking In Children When Their Parents Can't**  
A new documentary looks at a 24-hour day care center a couple runs in their home.

**Harlem NYCHA Buildings To Be Renovated Under New City Deal**

**Why It's So Hard to Stop Being Homeless in New York**  
The city spends \$1.2 billion a year on homelessness. Yet the crisis only gets worse. Eight homeless New Yorkers explain why.

**Mothers locked up at Rikers Island reunited with their kids at museum under test program**

**The Child Care Crisis Is Keeping Women Out of the Workforce**  
By Letta Schochet March 28, 2019, 8:00 am

**Why Child Care Staff Had to Show Up While Teachers Worked Remotely**  
The pandemic has spotlighted disparities in working conditions between child care workers and teachers.

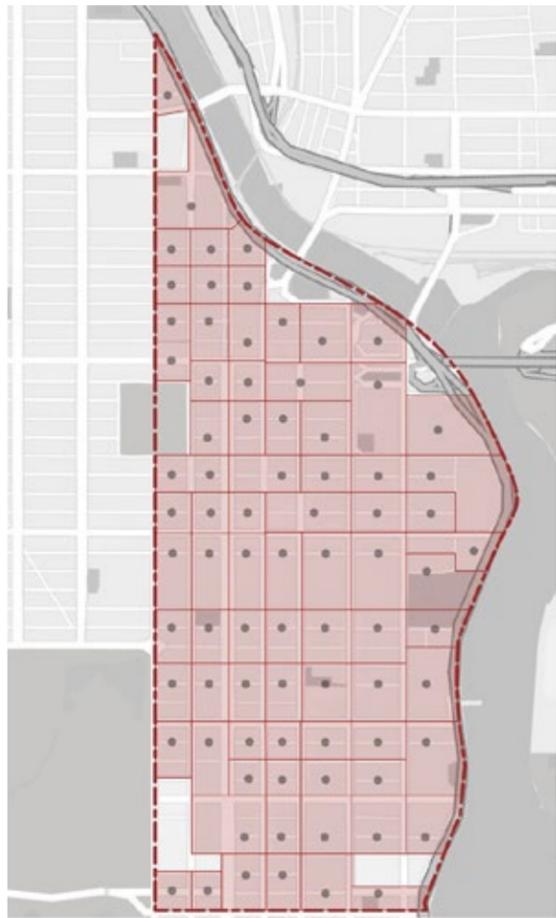
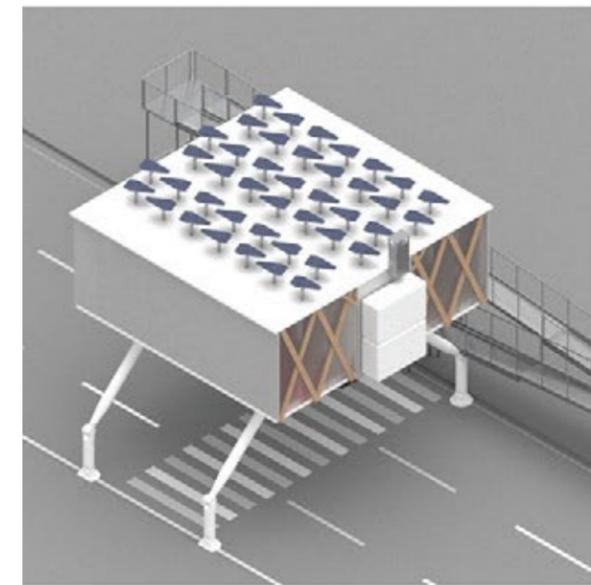
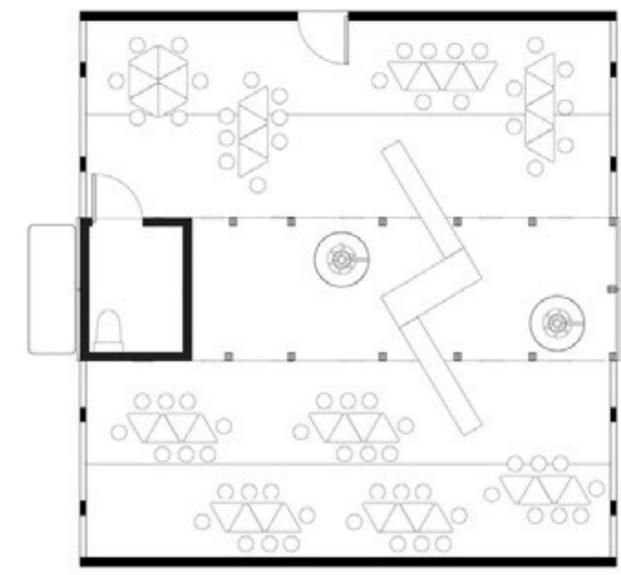
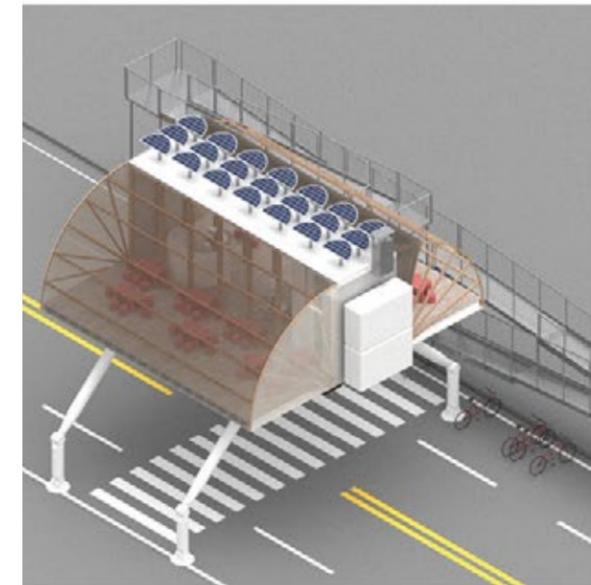
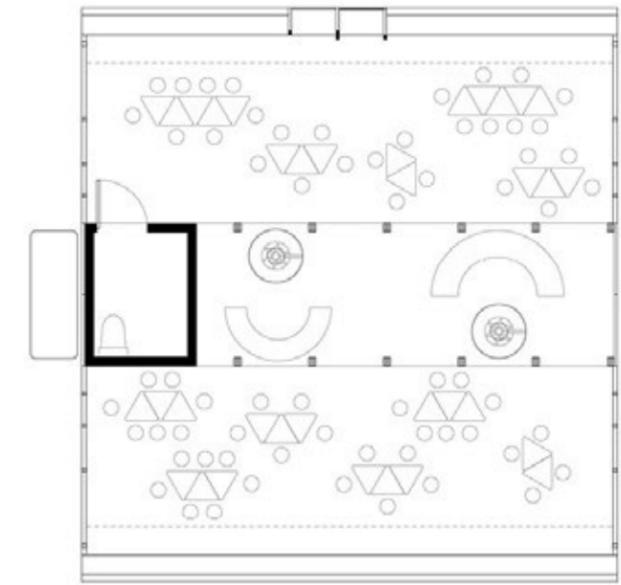
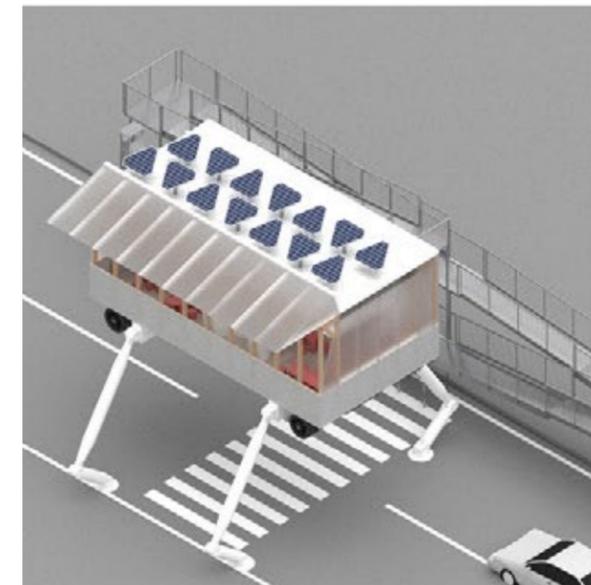
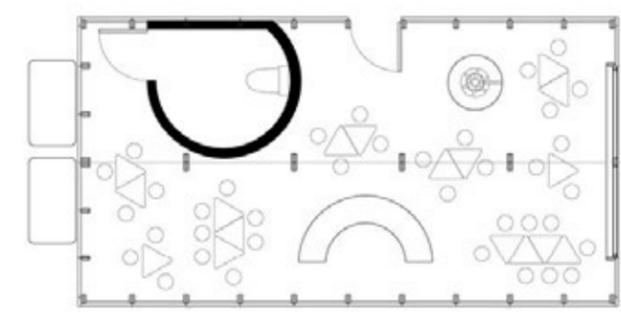
**Why Women Still Can't Have It All**  
It's time to stop fooling ourselves, says a woman who left a position of power: the women who have managed to be both mothers and top professionals are superhuman, rich, or self-employed.

**Daycare Syndrome and Frequent Infections**  
By Vincent Iannelli, MD  
Medically reviewed by Sarah Bahal, MD  
Updated on January 05, 2021

**How the Black Panthers' Breakfast Program Both Inspired and Threatened the Government**  
By ERIN BLAKEMORE (NEW YORK TIMES/BLAKEMORE) 17 FEBRUARY 6,

**Caring Across Generations - You Are Not Alone**  
We are families, caregivers, people with disabilities, and aging Americans creating a new way to live well and age with dignity.

**Policymakers Used to Ignore Child Care. Then Came the Pandemic.**  
Experts who sounded the alarm about the care economy were often shunted to the side of policy discussions. Not anymore.



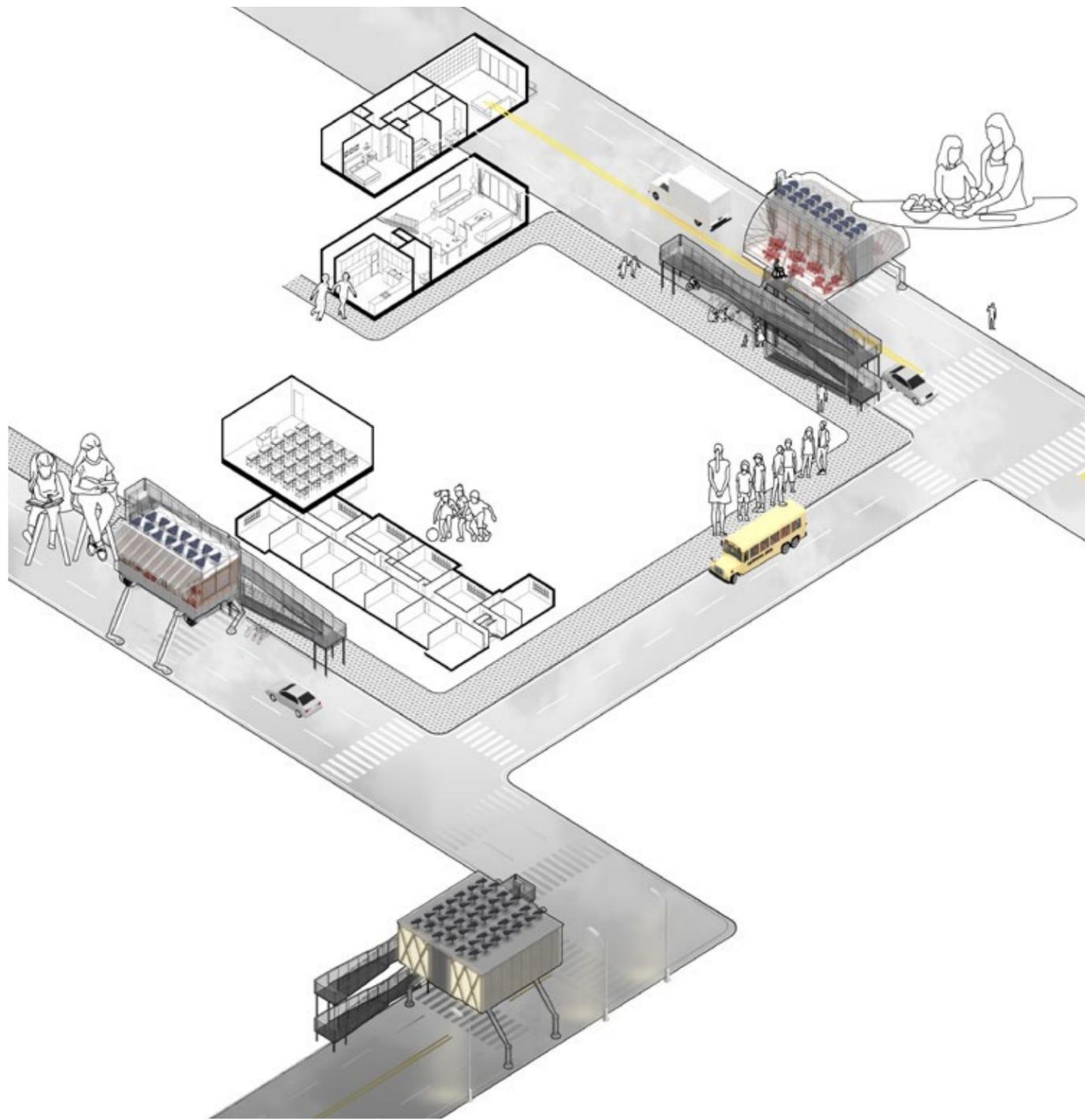
### 3 Types of Breakfast Units

As our research shows, childcare is a complex network that affects society. It's unseperable from problems like infrastructure, housing crisis, low income, gender roles, health, and in some rare cases, incarceration. Childcare, therefore, should be the collaborative work of society rather than constrained to families.

This federal project is execute in different ways throughout the nation. The breakfast units in NYC community board 11, East Harlem's community Board, are above street and transportable, as the city mandated. Each is paired with telescopic accessible ramps and lifting equipment (legs). The solar panels and grey water harvesting system contribute to environmental justice by reducing additional emissions in areas such as Harlem that have historically received a lot of infrastructures adding pollution to the neighborhood.

A breakfast unit in each area is operated by community leaders. Each unit contains 30 to 60 children from the nearby 2 to 3 blocks as divided in the map. A total of 80 units provide breakfast for all children in the area. Breakfasts will be cooked on site by community leaders with children participating, following the USDA FNS guidelines and respecting children's dietary restrictions, such as religion-related ones or vegetarianism. The units are also subject to other activities of gathering and socializing for the community, as a sort of enclosed park that increases community life in the neighborhood and cultivates urban leadership.

### The organizations of Child Care



## TRANSPORTABILITY

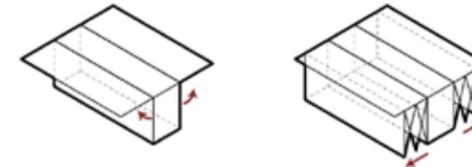
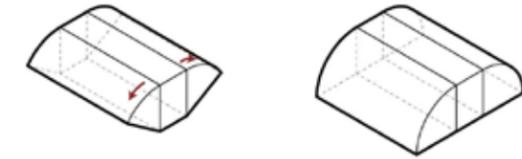
TYPE 1



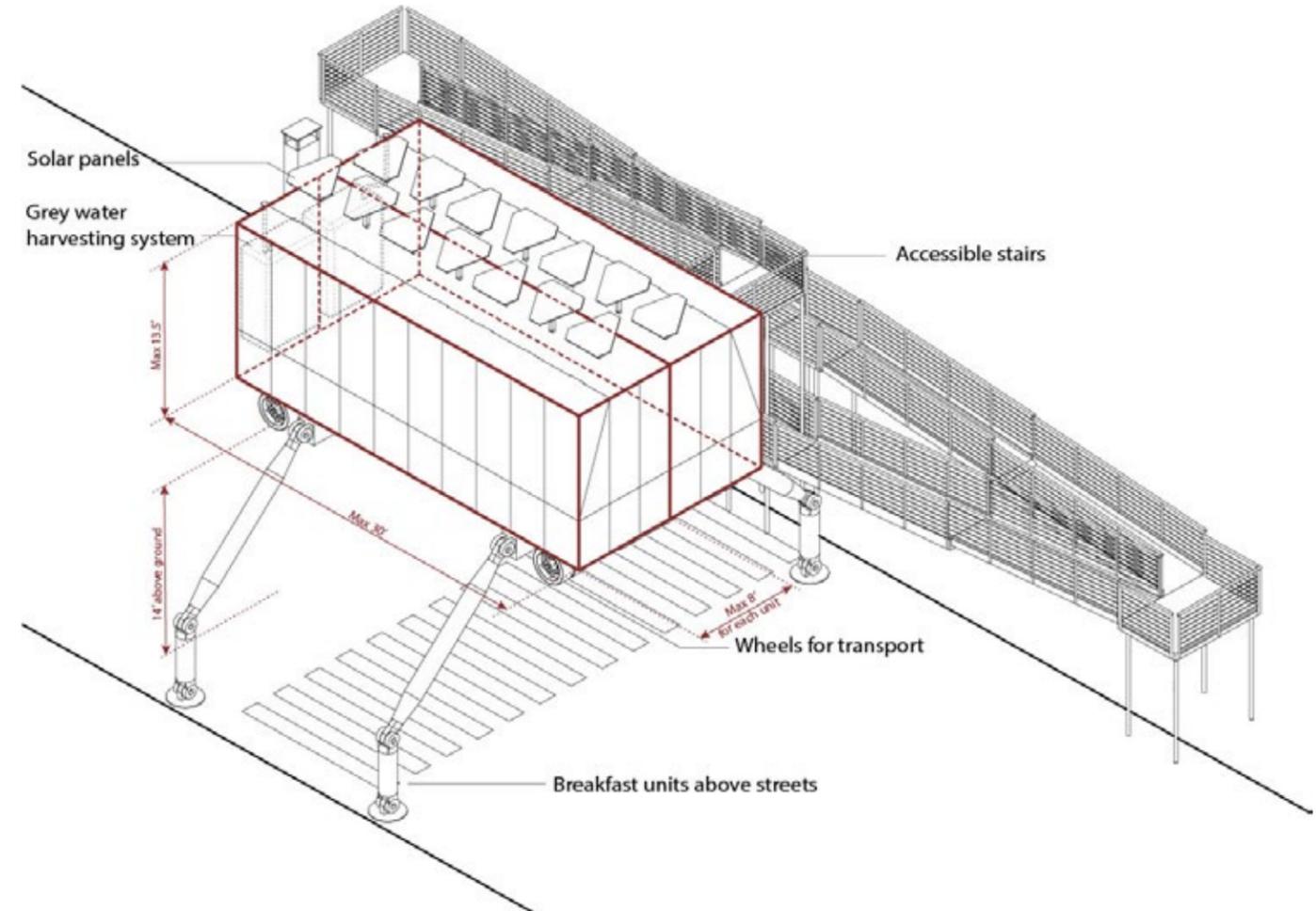
TYPE 2



TYPE 3



Breakfast units are bolted in site, or expand themselves in site, so that they are transportable by trucks on the road. The height, width and length of each unit is under the maximum allowed in nyc.



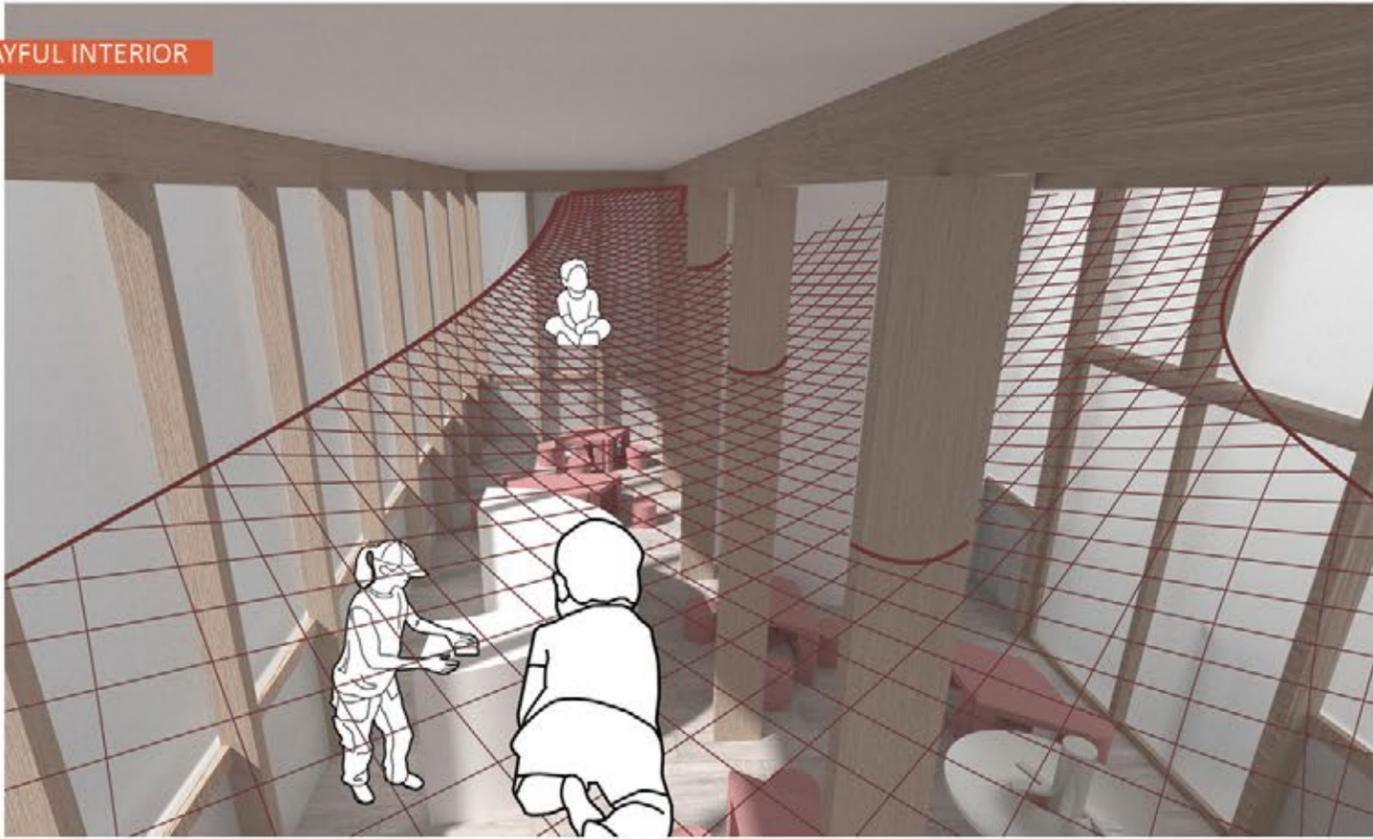
ARTISTS PAINT THE EXTERIOR TEXTILES



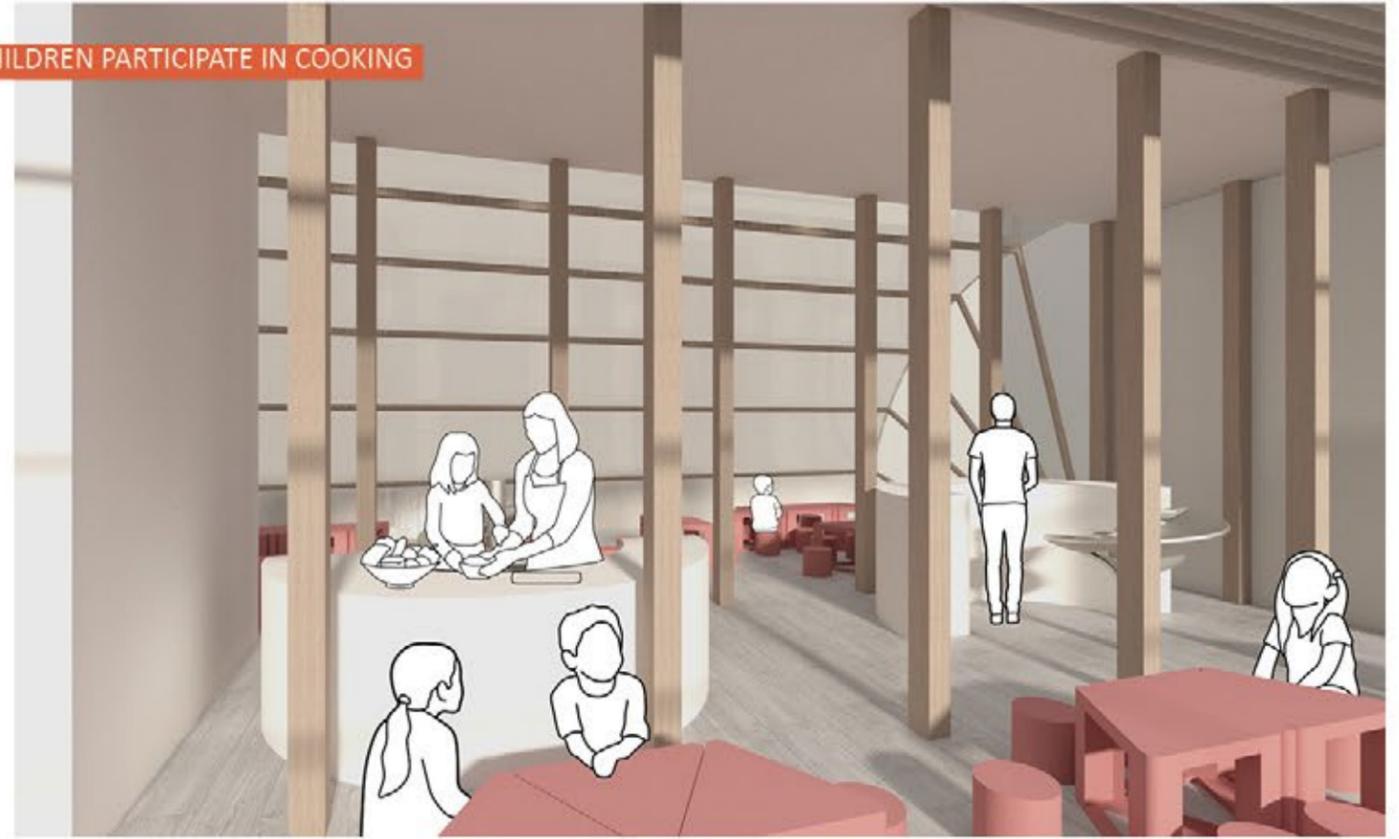
ADAPTATION TO OTHER ACTIVITIES



PLAYFUL INTERIOR



CHILDREN PARTICIPATE IN COOKING





02

## LUFFA HOUSE Undoing Cleanliness, Unplastify and Decolonizing the world

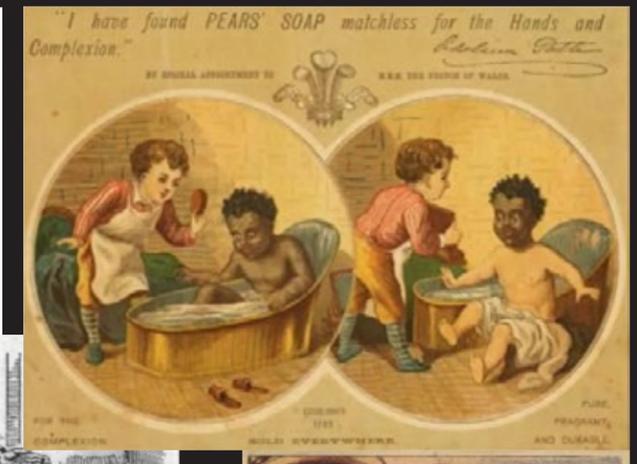
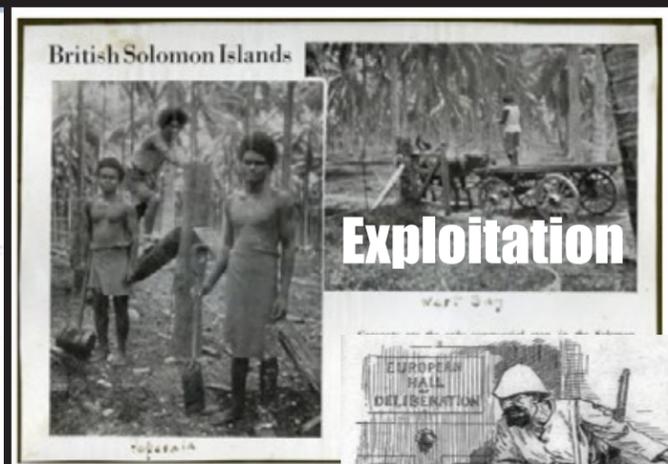
Columbia University | Undetailing Studio | Fall 2021  
Instructor | Andrés Jaque  
Site: New York, NY  
Team Partner | Xumin Chen, Yang Lu

Lever House was the headquarters of the Lever Brothers company, a British cleaning product company. The project started with the research on the building details, and connect them with political issues.

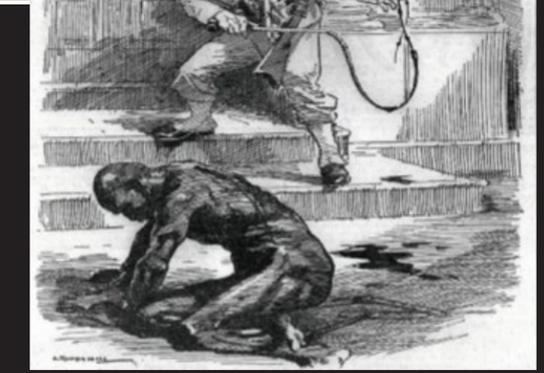
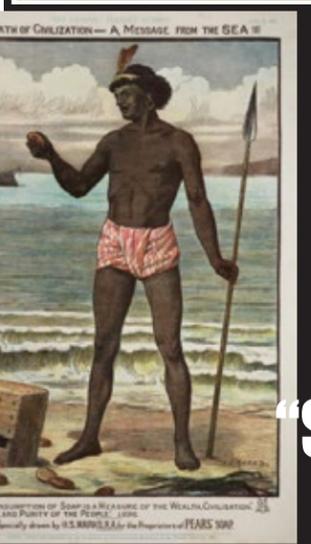
The details of Lever house reveals how the company and the cleaning industry enact cleanliness in 19th century, and how architecture enact cleanliness through building details.

The proposal is to grow luffa on the clean curtain wall facade of the building. The building does not have to be clean; the building does not have to be sealed; people do not need to be segregated from the outside. The dried luffa accumulated through years will become a layer of insulation. In the end, the Lever House becomes the Luffa House.

Cleanliness in 1885

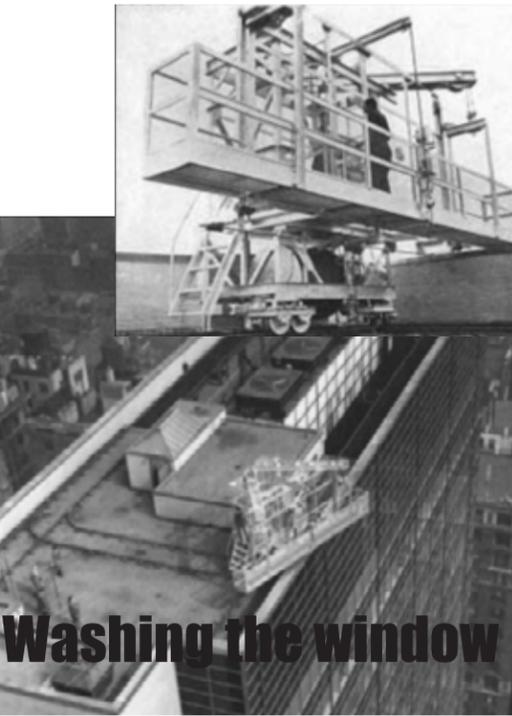
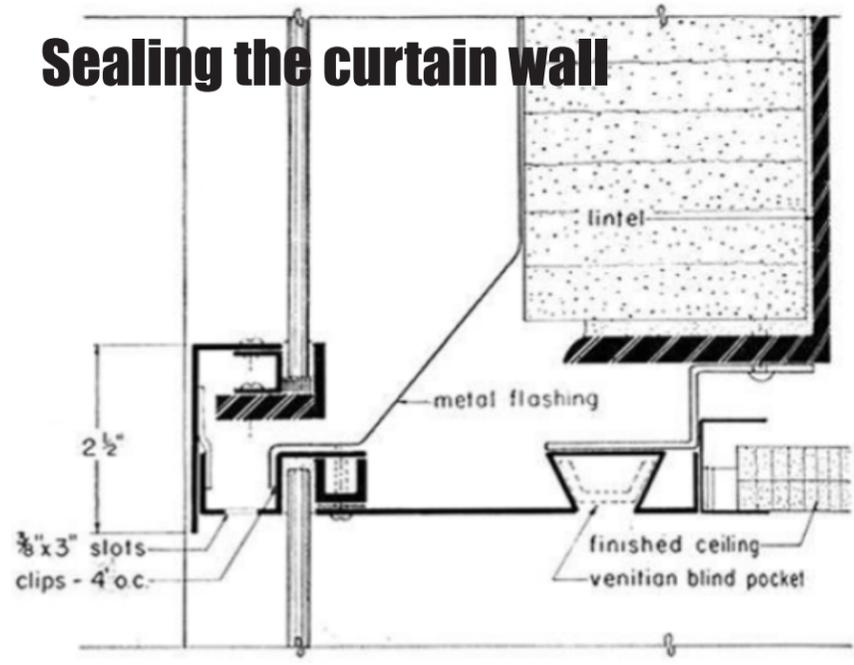


Imperial Colonization

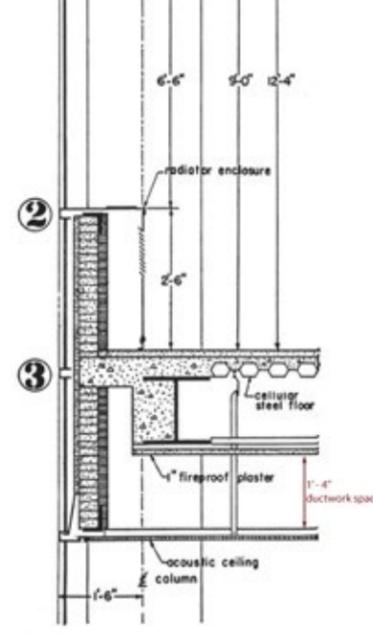


"Soap is civilization." -Lever Company's Slogan

Cleanliness in 1952

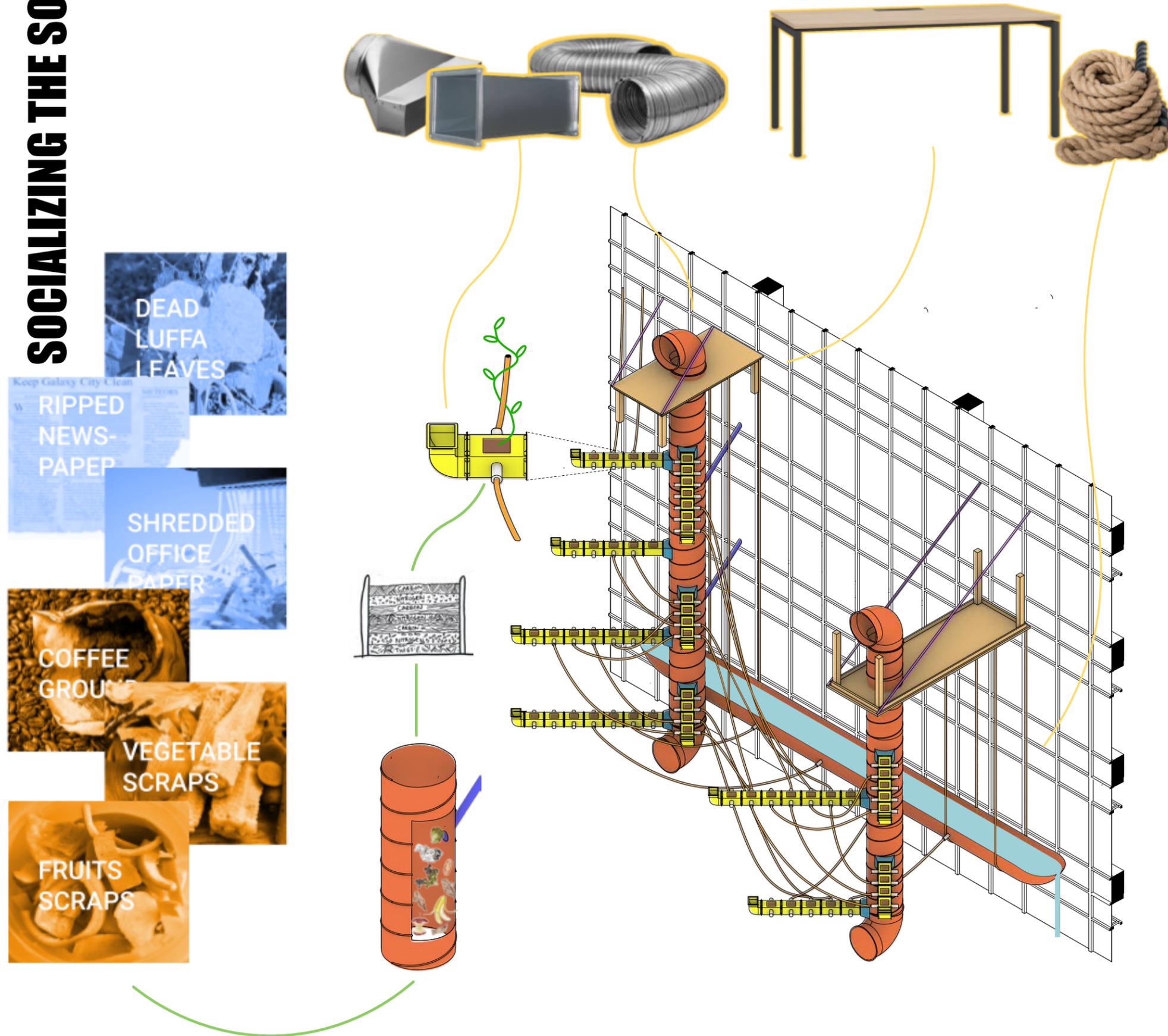


Maximizing transparency



# SOCIALIZING THE SOIL

## MINING THE INTERIOR



### The New Facade

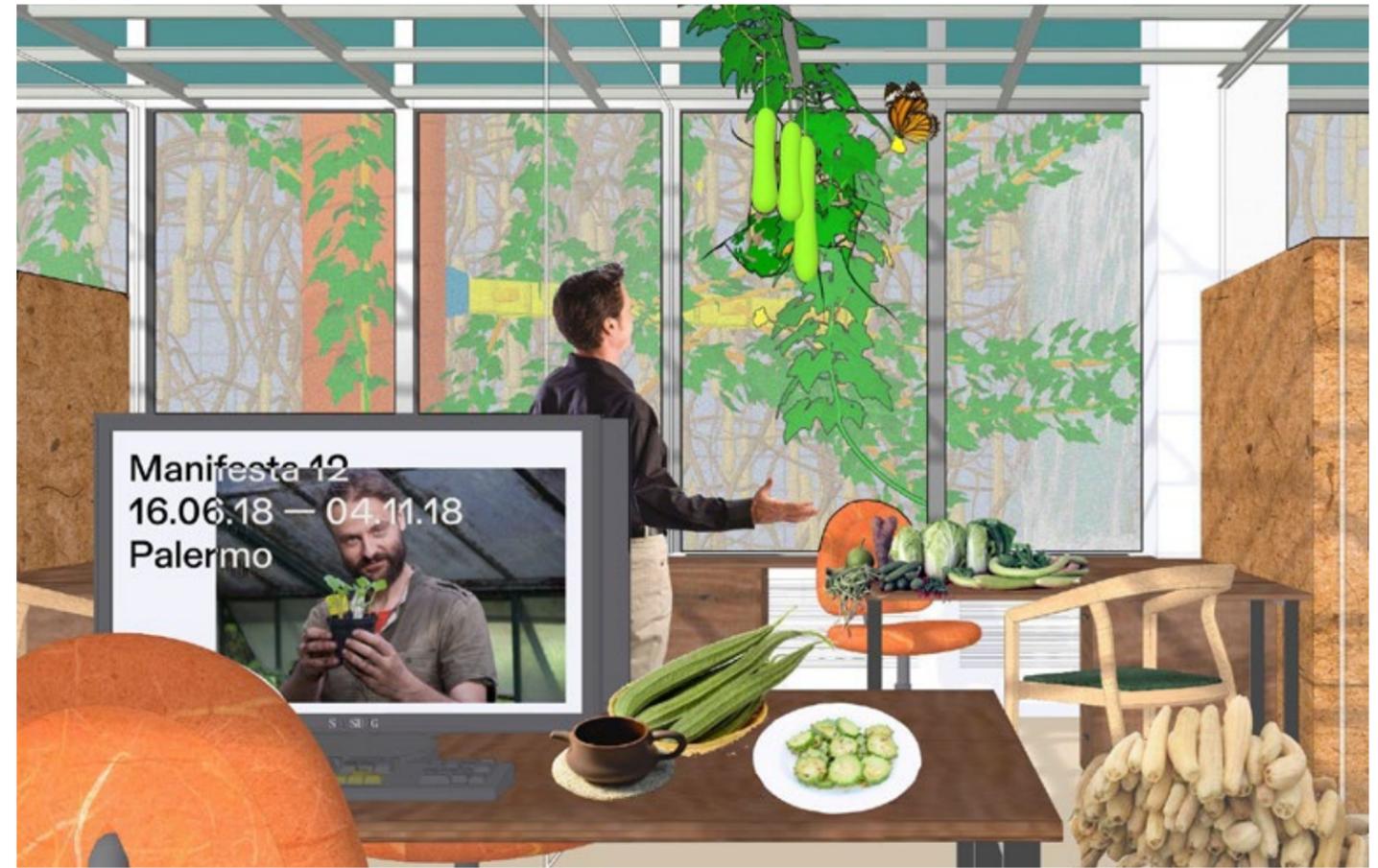
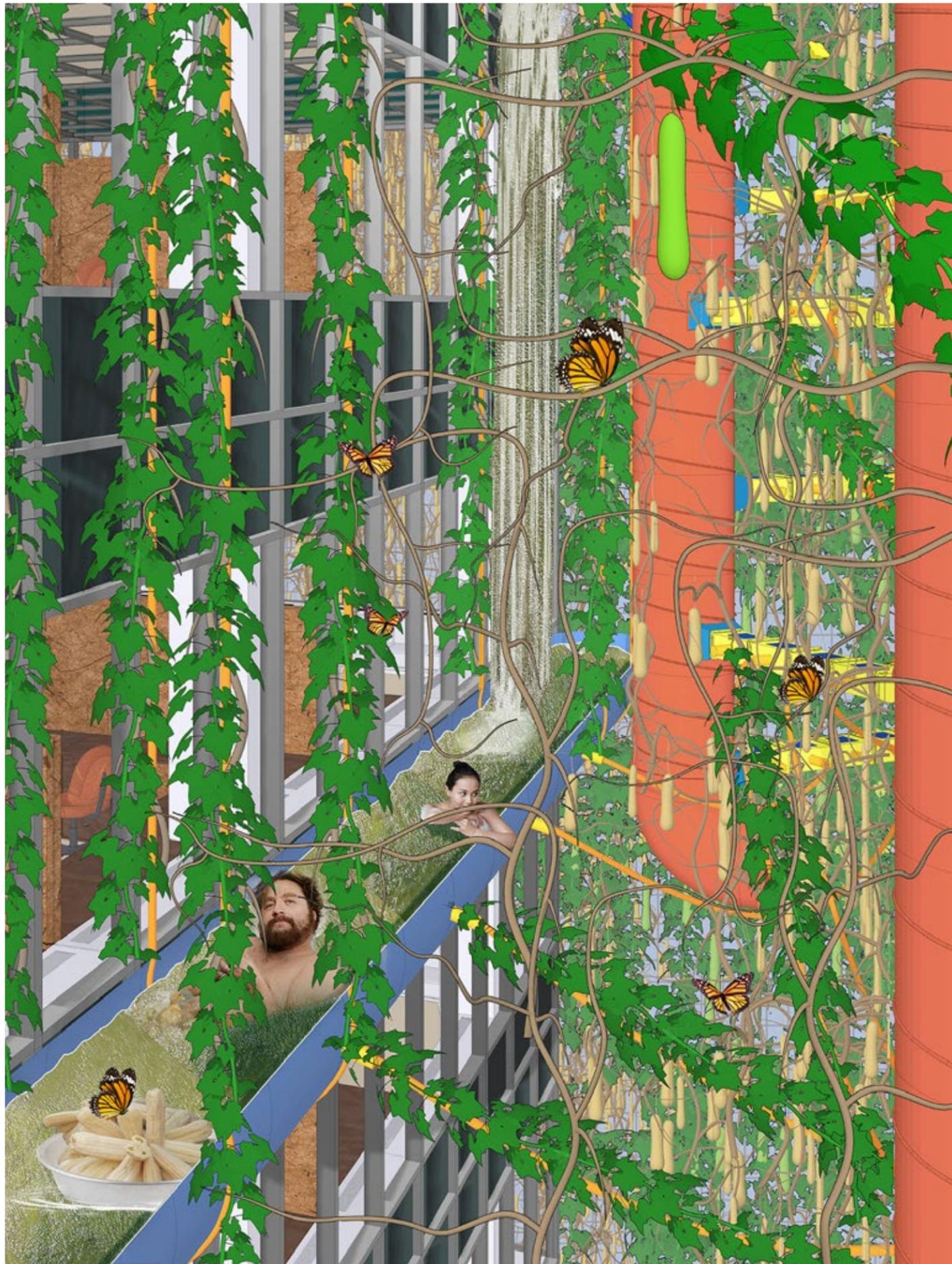
Our project tries to mine the interior. Elements such as some of the office desks, ropes and HVAC ducts are removed from the interior. The whole exterior system of luffa house is the combination of these elements. Soil, water, plant container and plant growing frame are integrated in one system.

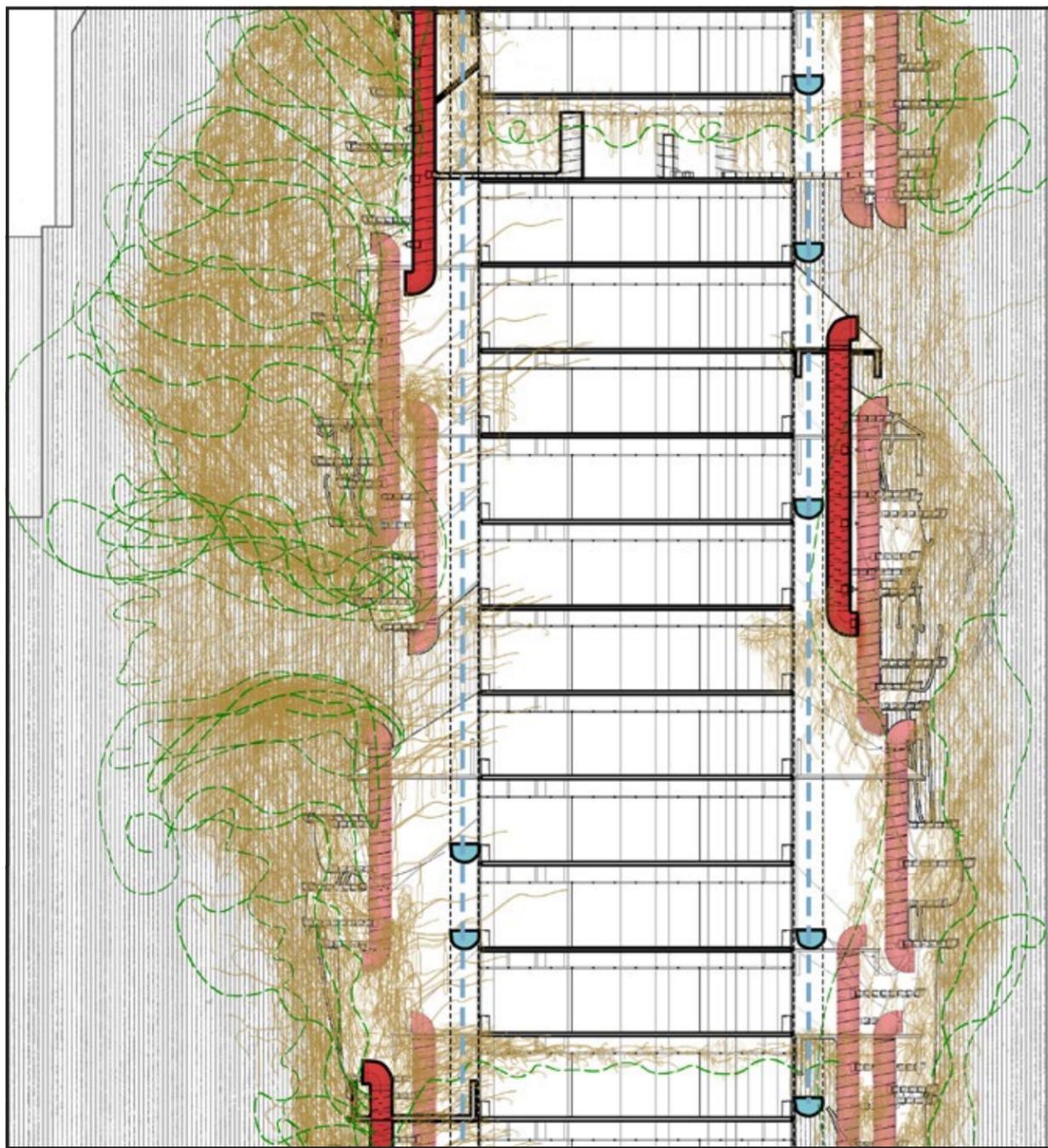
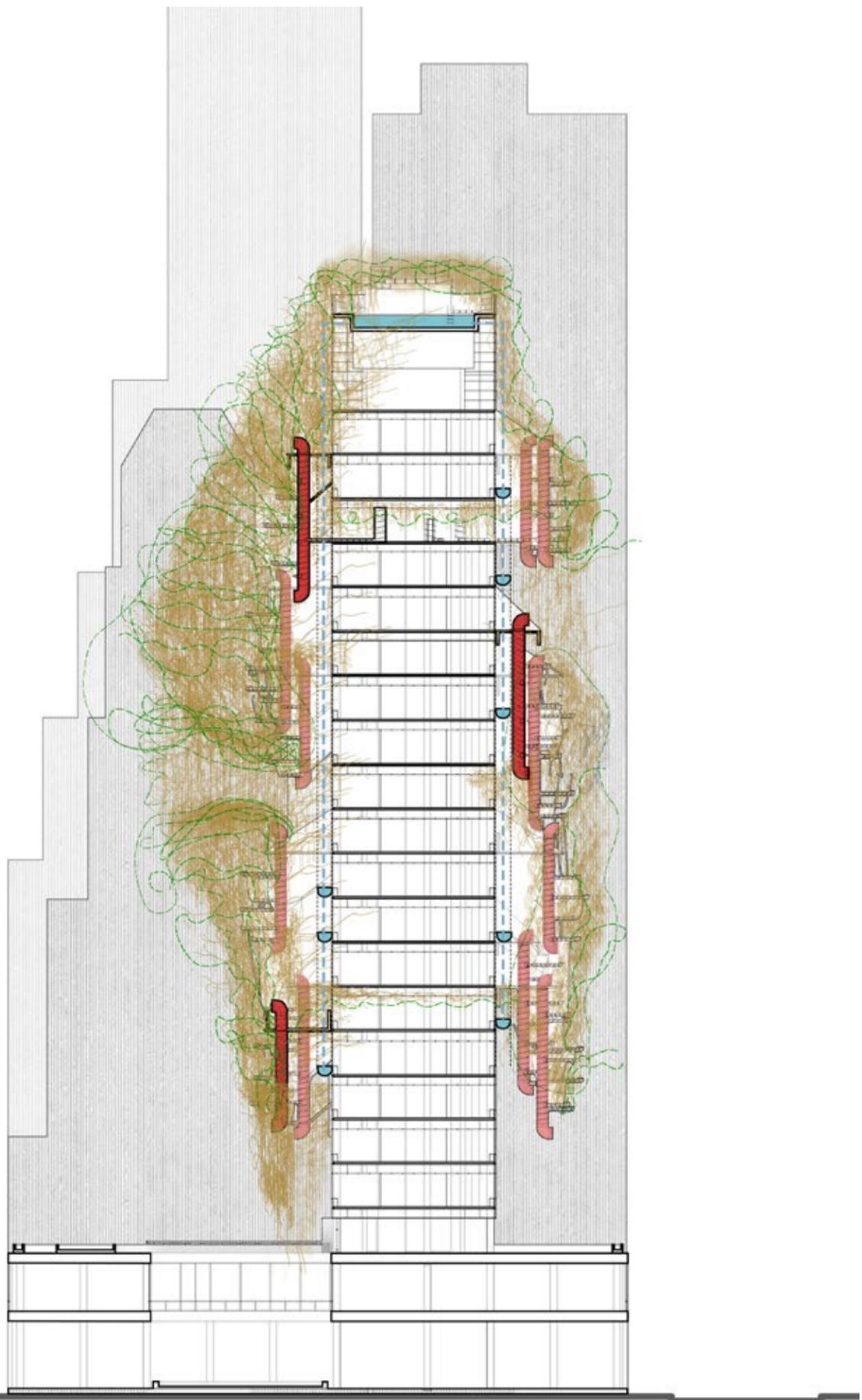
Soil is an important element to support luffa's persperious. In luffa house, people collect dead fallen luffa leaves to make compost. Also, paper can't be just thrown away - they are a crucial composition of compost. Besides, office workers throw fruit and vegetable scraps inside the vertical cylinder duct. Vertical cylinder ducts store and compost these office daily waste. People throw waste through the long tubes and after one year, waste in the duct will become nutritious soil.

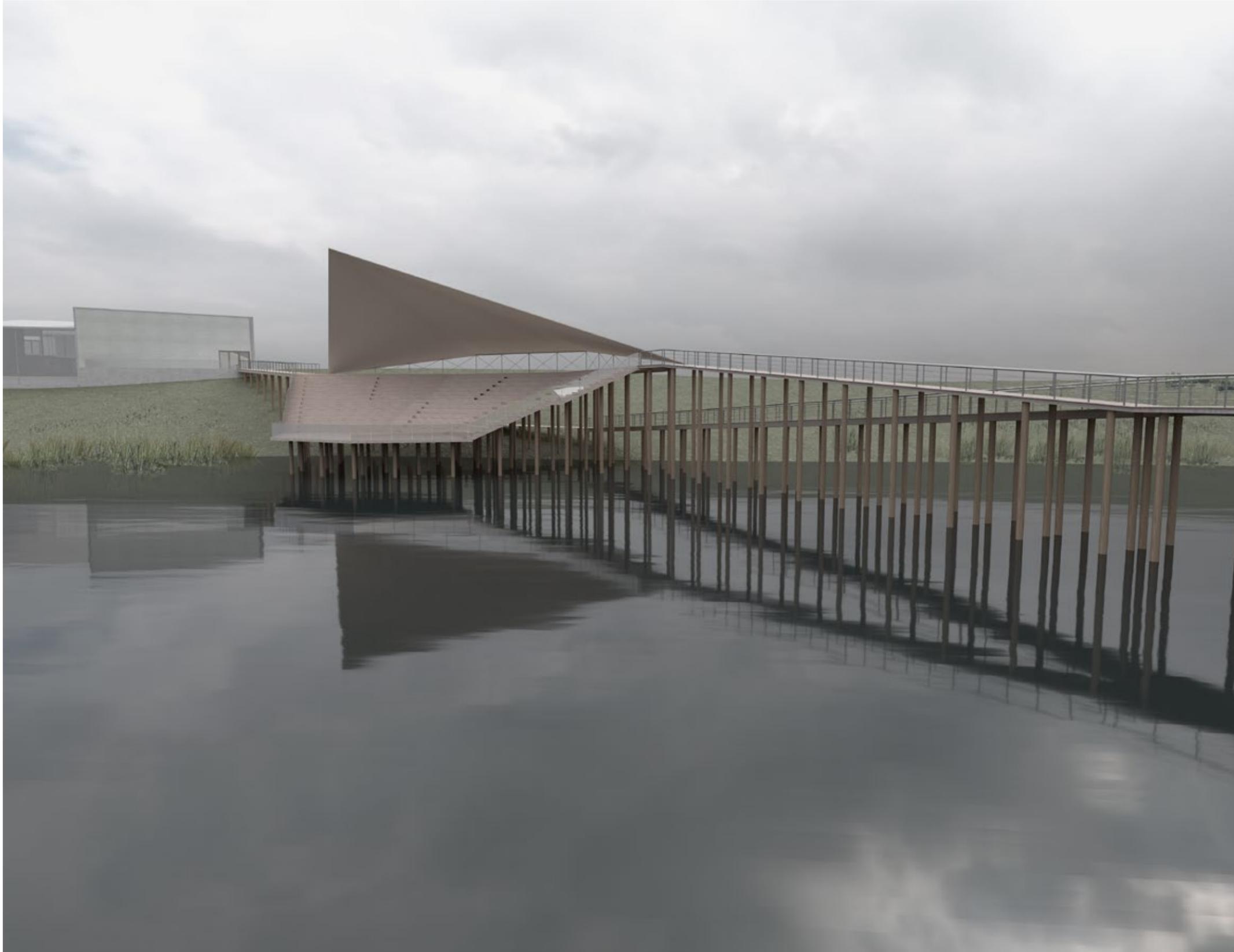
The cooling tower on the top becomes a pool. It collects rainwater for irrigation. Luffa containers and the pool are connected by ropes instead of plastic pipes. Because of the capillary effect, water can be guided to each container from the pool. These ropes also provide a frame for luffa to grow.

Once the system is set, time will transform the building. We use the straw bale R-values to estimate the insulation the dried luffa layers can provide. In 10 years, the layers of luffa become as thick as 2.5m for enough insulation. In 20 years, the luffa wall cracks the glass with its own weight, about 283lb per panel.

The Interior changed gradually. The window is cracked by the humidity and weight of the plants, but people do not feel cold, because the dry luffa becomes a thick layer of insulation. People take out the interior wall, plant luffa as the divider. People eat luffa, and drink luffa water, instead of coffee. They can go rowing, swimming or bathing in the water harvesting pool. The water station also can be used for bathing. No soap is needed during bathing. The wastewater can be used for irrigation.







03

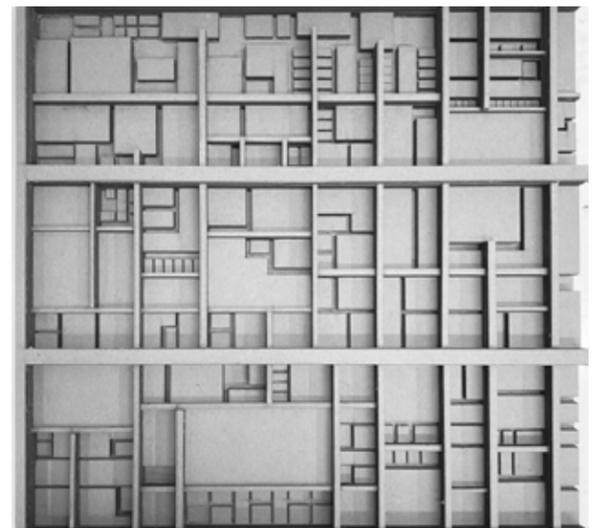
## WATER EDUCATION PARK Water and Flooding

Columbia University | LA Water Studio | Spring 2022  
Instructor | Laurie Hawkinson  
Site: Los Angeles, CA  
Individual Work

The site Sepulveda Basin is an important land to hold floodings in LA. In 1980s, the basin was planned to become ARTSPARK LA, but the the plan was aborted. Today, it was mostly golf courts and recreational area surrounded by living area. In 2028 LA Olympics, part of the site will become fields for sports.

The project focused on developing a part of the site. It is developed as a water education park. The design aims at emphasizing the natural beauty on site, preserve and clean the LA River goes through the site, and deal with flooding in 100 years.

The active programs contain an exhibition center, a cafe, an auditorium, and a museum of water. A water infiltration facility and a solar facility support the programs.





**WATER CYCLES:**

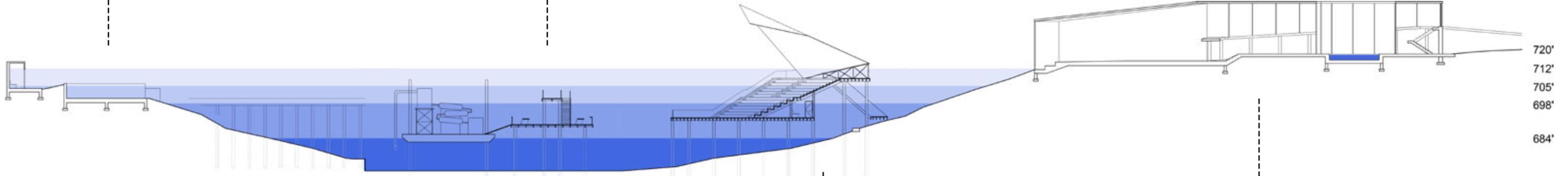
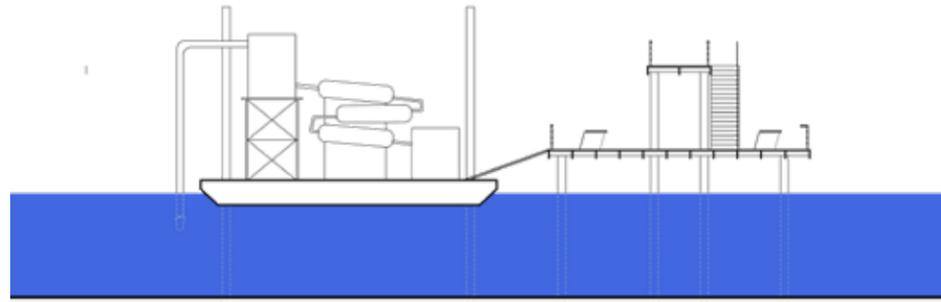
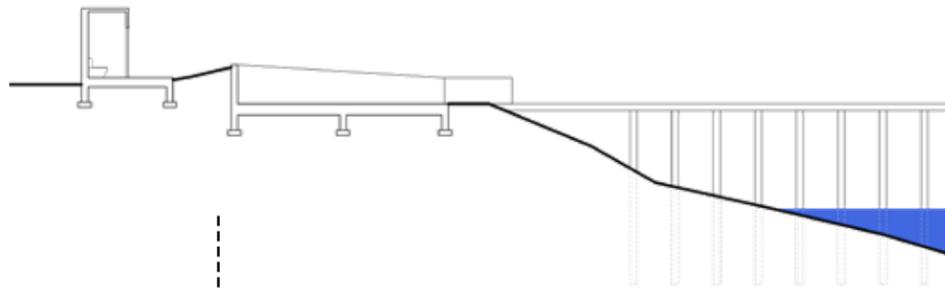
Rainwater Storage

Retreated Water: drinking, washing dishes (without detergent), mist in pavilion

Greywater: flushing the toilets, irrigation.

Blackwater: fertilized water for plants





720'  
712'  
705'  
698'  
684'

