

MICRO
BEHEMOTHS



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OUT OF
SIGHT

OUT OF
MIND



THE PROBLEM

THE MICRO BEHEMOTHS

Exhibition Hall

As we all know, plastics have become an integral part of our daily lives, and their convenience and versatility make them difficult to replace. However, with this convenience comes a great cost to our environment, particularly in the form of microplastics. Microplastics are tiny plastic particles measuring less than 5mm in diameter, and they are present in our oceans, rivers, and even our food and drinking water. Their presence poses a significant threat to the health of our planet, and in turn, to our own health. For example, over 1,000 tons of microplastics have been found floating above the western United States (Baker) and in 2018, they were discovered in the brains of human embryos for the first time (Ramesh). The widespread use of microplastics in industries such as textiles, cleaning, and cosmetics has caused significant harm to the human ecosystem. This project will create an exhibition hall and force people to face plastic pollution and make them realize the impact of their actions on the environment and take positive steps to reduce plastic pollution.

The history of plastic dates back over 150 years and has become ubiquitous in our daily lives due to its low production cost and versatility. Initially, plastic was invented as a substitute for ivory to protect animals. In the 14th century, over 10,000 elephants were hunted for their ivory to make billiard balls in England. In 1907, Bakelite, a high-temperature resistant plastic, was invented and it brought new advantages such as being heat resistant, corrosion resistant, non-flammable, and

a good insulator. The widespread use of plastic soon followed its invention and it was used in a variety of daily necessities, industrial production, and even the first atomic bomb. To this day, plastic continues to be a crucial material in our daily lives, and we may not even realize the extent of its presence in household products like textiles, cosmetics, bath products, cleaning products, and more.

The decomposition of plastic is a slow process and it eventually breaks down into microplastics. These tiny particles can end up in our bodies through the air we breathe, the food and drink we consume, and even the products we use daily. On average, two million plastic bags are used every minute, with each one being used for an average of only 12 minutes. Unfortunately, only 9% of the 900 million plastic products produced are recycled (Ferris), and 12% are incinerated (Robert), while the rest end up in landfills, on roads, in lakes and rivers, and even in our bodies and those of animals. Microplastics are particularly concerning as they are less than 100 nanometers in size and are invisible to the naked eye. A human can ingest up to 70,000 microplastics in a year, and those who drink only bottled water may ingest an additional 90,000 microplastics per year (Brigit). In a recent study, researchers found plastic particles in the blood of 77% of the participants tested. While there is currently no evidence of harm caused by microplastics in the human body, the accumulation of these particles will only continue to increase if we don't take action to reduce plastic production and usage. Dietary intake

is a significant source of microplastics in our bodies, as they can enter through plastic bottles, straws, food packaging, and disposable utensils.

The negative impacts of plastic pollution on the environment and human health are undeniable, and yet many people are still unaware of its seriousness. The continued overuse of plastic products could have irreversible consequences for our health and the planet. Microplastics have been found in virtually every corner of the world, from oceans to the soil, from the equator to the poles, and even in the air and food and drinking water. Studies have shown that microplastics can enter the human body through various routes, including drinking from plastic bottles, eating seafood, and using plastic utensils. It's crucial that we raise awareness and take steps to reduce our plastic footprint, before the situation becomes irreversible. Only by working together can we prevent the harmful consequences of plastic pollution from affecting our health and the environment. From reducing the plastic usage, to supporting organizations that work towards this goal, to educating people about the issue, every little effort can make a difference. The most important thing is to start taking action, from small things. The future of our planet depends on all of us working together to create a more sustainable world.

DECOMPOSITION TIME



20 years



100–1000 years



450 years



NEVER

The invisible but ubiquitous giant

**It is able to cause disaster to the world,
no one is immune.**



PLASTIC POLLUTION FACTS

Plastic pollution is an urgent global crisis.

plastic have been found everywhere around the world. It is found in the water we drink, the food we eat, the air we breathe, the soil below us, and even inside of our bodies.

Plastic pollution is a human health, social justice, environmental, climate, and wildlife issue. People and communities across the world are finally waking up to the fact that **plastic pollution impacts everything.**

CLIENT

Plastic Pollution Coalition

Who is Plastic Pollution Coalition?

The Plastic Pollution Coalition (PPC) is a non-profit communications and advocacy organization that collaborates with an expansive global alliance of organizations, businesses, and individuals to create a more just, equitable, regenerative world free of plastic pollution and its toxic impacts.



PlasticPollutionCoalition

Why Plastic Pollution Coalition?



13 YEARS

Working To Stop
Plastic Pollution



1,300+

Coalition Member
Organizations
And Businesses



75+

Countries
With Coalition
Members



34k+

Advocates
Mobilized To Dign
Petitions

PPC asserts that plastic recycling is unhelpful. Instead, they endorse taxes on plastic bags, propose the elimination of single-use plastics. And that is also the goal of this project.

USER

Young Adult

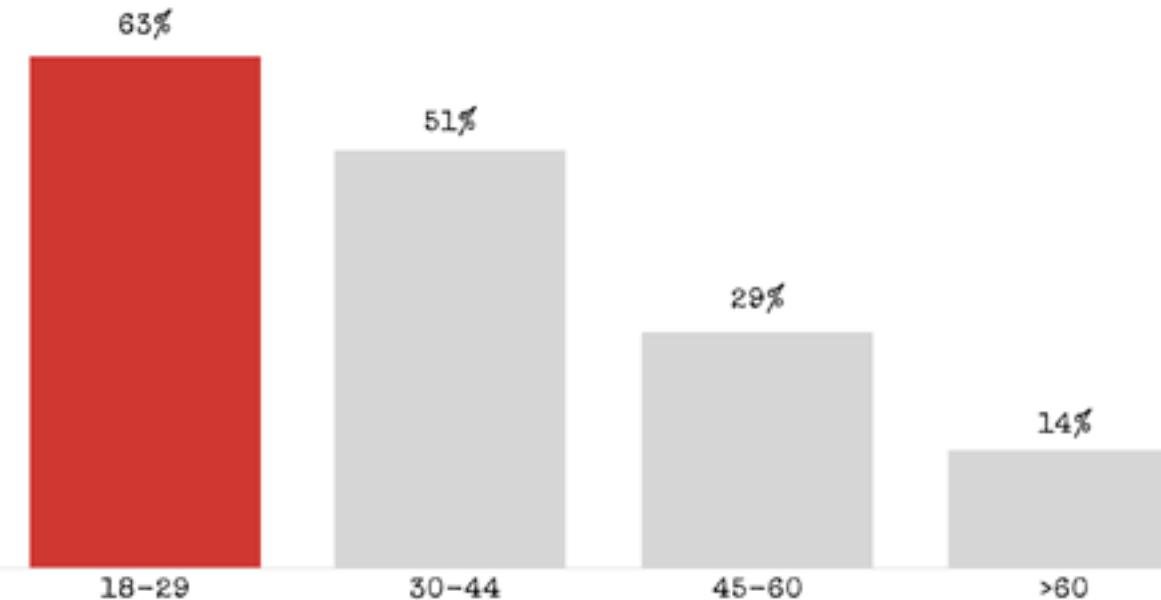
Target User



The users are all people of the whole city, especially young adults, who like to go shopping frequently, are the largest group of order delivery food and drive bottle water.

Why Younge Adult?

DELIVERY FOOD MARKETING PERCENTAGE BY AGE



CLIENT QUESTIONNAIRE

TO PLASTIC POLLUTION COALITION

01/23/23

Can you briefly explain the seriousness of plastic pollution today?

Plastic pollution is a serious problem that harms the environment, animals, and people. Plastic is tough and lasts a long time, so it can harm animals that eat it or get tangled in it. It also changes the environment and can release harmful chemicals. A lot of plastic is produced every year, and a lot of it ends up in the ocean. We need to take action to reduce plastic waste and be more careful about how we use plastic.

If plastic pollution is not controlled, what is the worst situation that can happen?

If we don't control plastic pollution, it could lead to major problems. It could damage ecosystems and make animals and humans sick. It could also be very expensive to clean up, and could hurt industries that depend on healthy environments. Eventually, it could become a global crisis that is very difficult to solve.

Does your organization have any countermeasures against plastic pollution?

1. Use less plastic, especially single-use items.
2. Recycle properly or dispose of plastic waste responsibly.
3. Governments can implement laws to reduce plastic waste, such as banning single-use plastic items.
4. Organize clean-up efforts to remove plastic waste from the environment.
5. Encourage research and development of alternative materials to plastic.

Are these methods of controlling plastic pollution as effective as expected?

The effectiveness of methods to control plastic pollution can vary depending on factors such as context, scale, and implementation. Reducing plastic use, proper disposal and recycling, legislation, clean-up efforts, and innovation and technology can all be effective but have their own challenges. A combination of these methods, along with education and awareness, is likely the most effective approach.

What's the most effective countermeasures against plastic pollution so far?

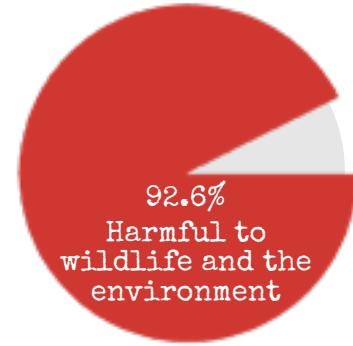
There is no single most effective method to control plastic pollution. Approaches such as reducing plastic use, recycling and proper disposal, legislation, clean-up efforts, and innovation and technology have all shown some promise in reducing plastic pollution. **The most effective solution will likely involve a combination of these methods and public education and awareness.**

Do you know why plastic pollution may not be taken as seriously as it should be?

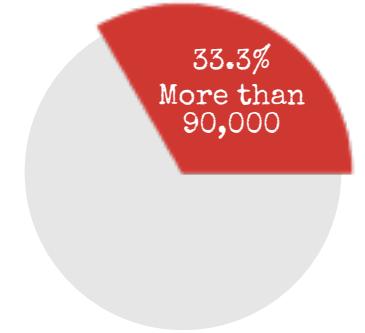
1. **Invisibility:** Plastic pollution often accumulates in remote areas such as the ocean, making it difficult for people to see and understand the scale of the problem.
2. **Normalization:** Plastic has become so ubiquitous in our daily lives that many people may not consider the impact it has on the environment.
3. **Lack of awareness:** Many people are not aware of the negative effects of plastic pollution on the environment and human health.
4. **Lack of immediate impact:** Unlike other environmental issues, such as air pollution or climate change, the effects of plastic pollution may not be immediately visible or felt.
5. **Industry influence:** Plastic production is a massive industry, and companies may have significant influence over policymakers and public opinion.
6. **Limited resources:** Addressing plastic pollution requires significant resources, and governments may not have the necessary funding or infrastructure to address the problem effectively.

USER QUESTIONNAIRE

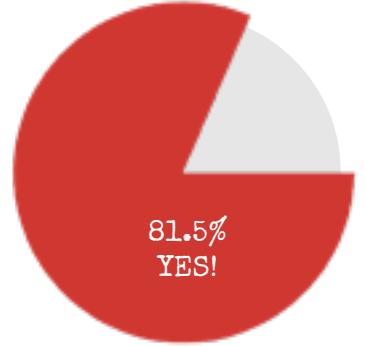
User Insight



Do you know what plastic pollution is?



How many microplastics enter our body per year?



Will you stop using a paper cup if it releases 25,000 microplastics into the hot coffee?

Why do you think plastic pollution has not been taken seriously?

“Because our society is obsessed with convenience”

“Because people don’t want to take the time and effort to develop better solutions”

“Since we can’t see the the pollution in the ocean or all the microplastics”

“Out of sight, out of mind”

“It is too cheap and convenient”

“Because we don’t hear that kind of information often”

“We need them and have no other better replacements”

What I found.

- People lack knowledge of plastic pollution
- People do not know what microplastics are and how many entered the human body
- Humans would reduce or stop using microplastic products if their health may be at risk
- “Out of sight, out of mind”

PRODUCTION



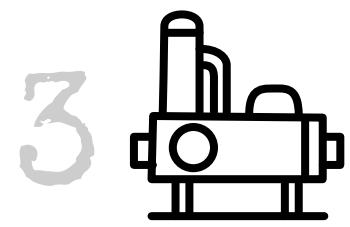
1

Extracting The Oil



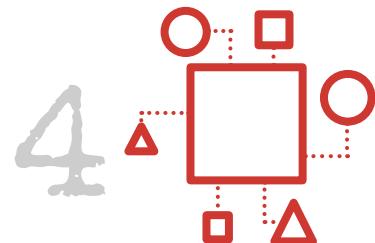
2

Refining The Oil



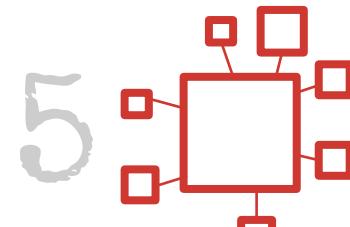
3

Fractional Distillation



4

Cracking The Hydrocarbons



5

Polymerization



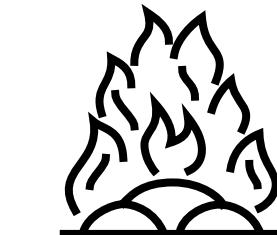
6

Processing



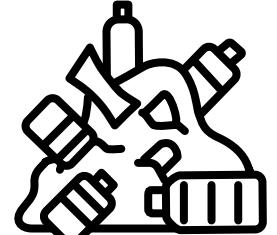
Oceans and Waterways

- Harm marine life
- Cause pollution



Incinerators

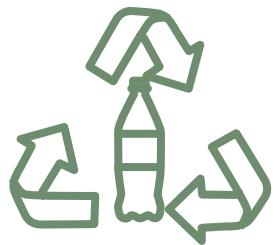
- Release pollutants
- Cause greenhouse effect



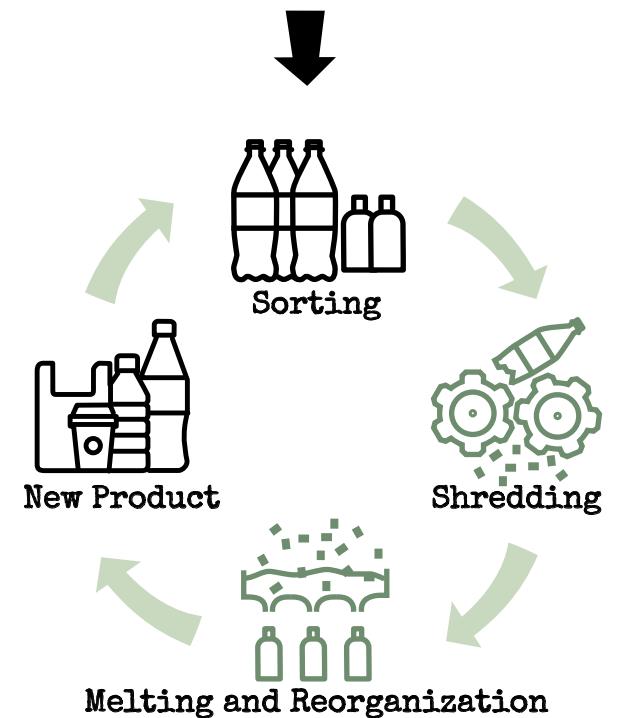
Landfills

- Remain for centuries

DISPOSAL



Recycling



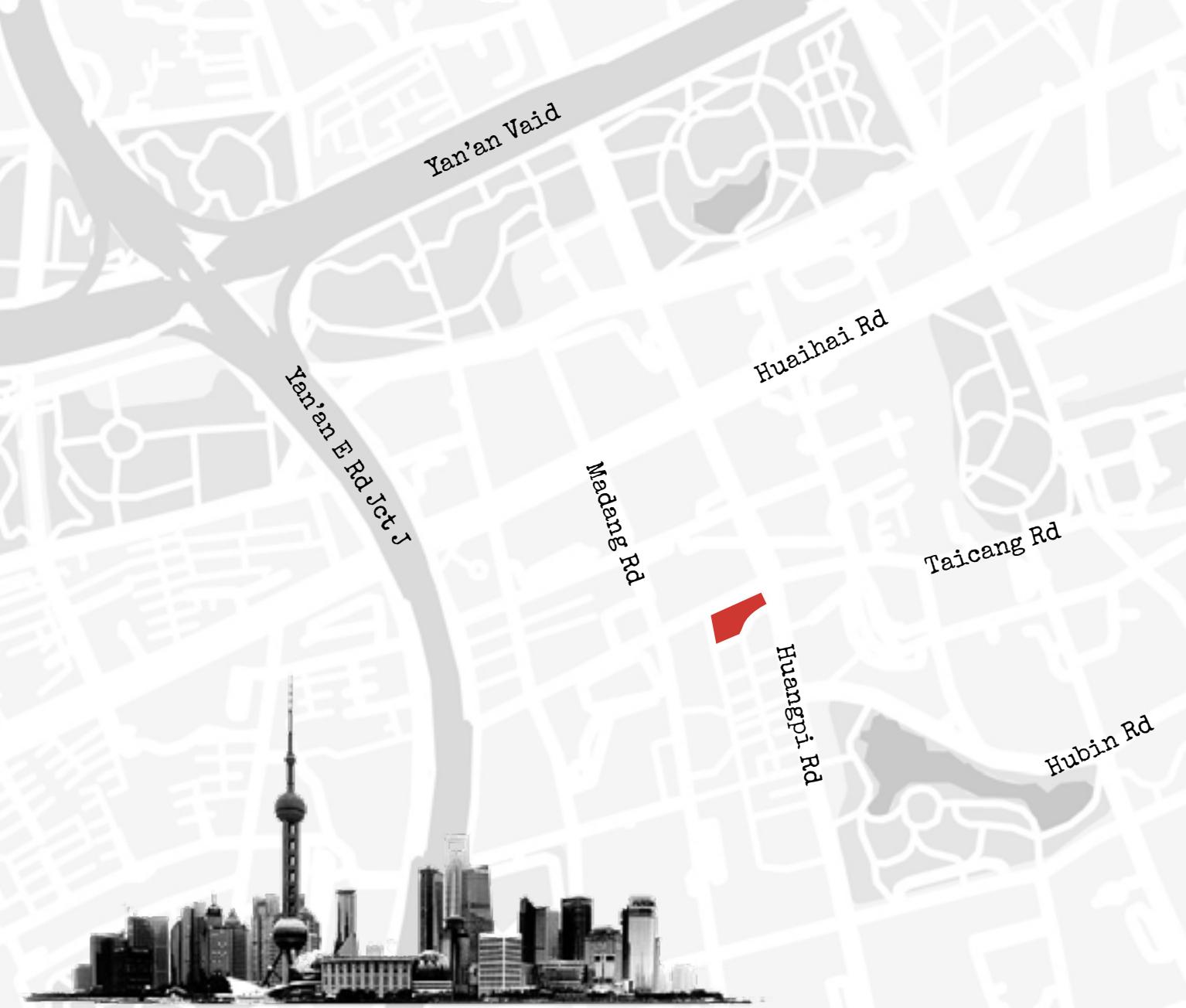
7



Building Analysis

LOCATION

181 Taicang Road, Huangpu District, Shanghai, China



WHY SHANGHAI?

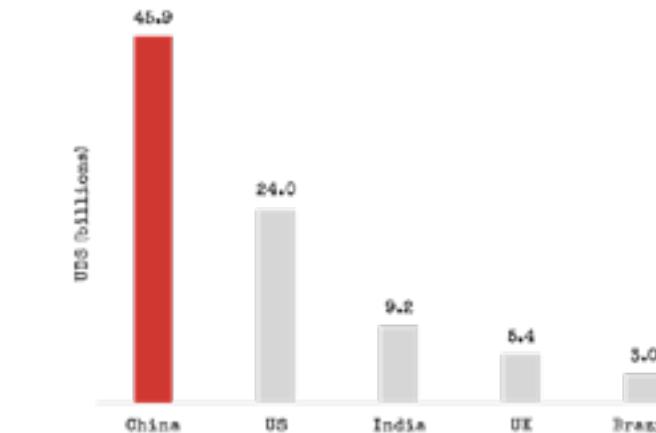
TOP CITIES WITH THE LARGEST POPULATIONS

1	TOKYO, JAPAN	37 MILLION
2	DELHI, INDIA	29 MILLION
3	SHANGHAI, CHINA	26 MILLION
4	SÃO PAULO, BRAZIL	21 MILLION
5	MUMBAI, INDIA	21 MILLION

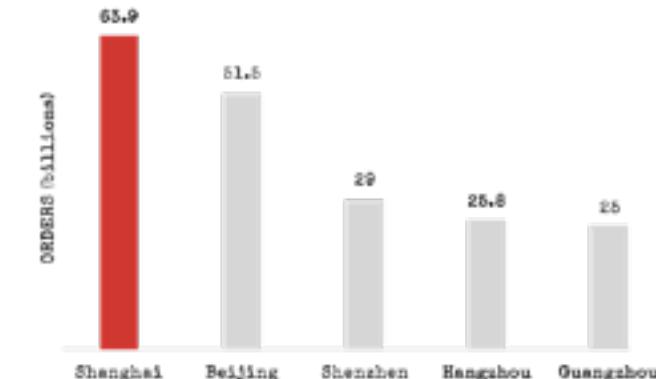
TOP CITIES WITH HIGH CONSUMER VITALITY

1	NEW YORK, US	6	SINGAPORE
2	LONDON, UK	7	SHANGHAI, CHINA
3	TOKYO, JAPAN	8	LOS ANGELES, US
4	PARIS, FRANCE	9	SYDNEY, AUSTRALIA
5	HONG KONG, CHINA	10	SEOUL, SOUTH KOREA

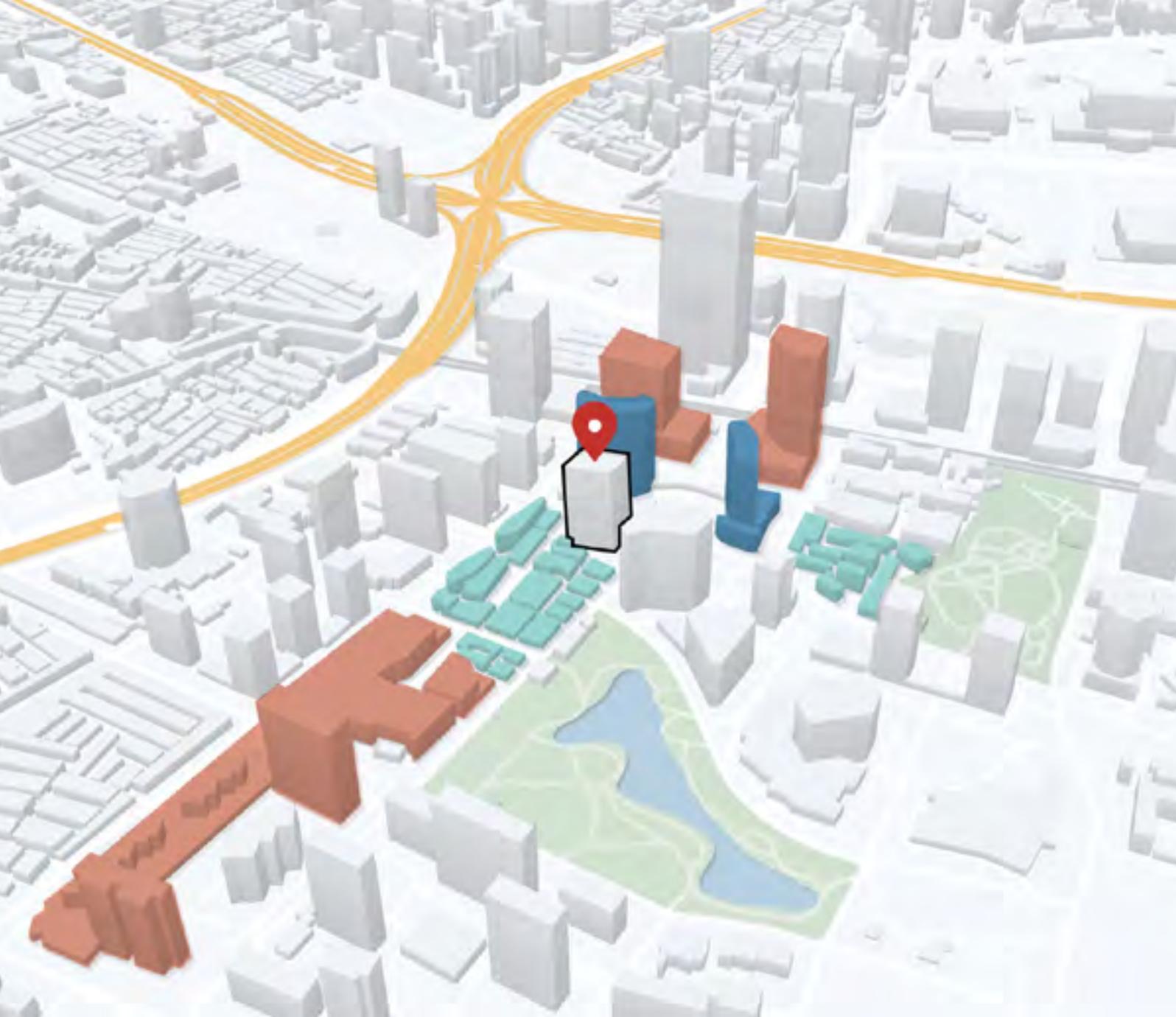
TOP 5 FOOD DELIVERY MARKET IN THE WORLD



TOP 5 FOOD DELIVERY MARKET IN CHINA



Plastic Products Come with Delivery Orders



 SHOPPING CENTER

 HOTEL

 EATERY

 PARK

 FREEWAY

SITE ANALYSIS

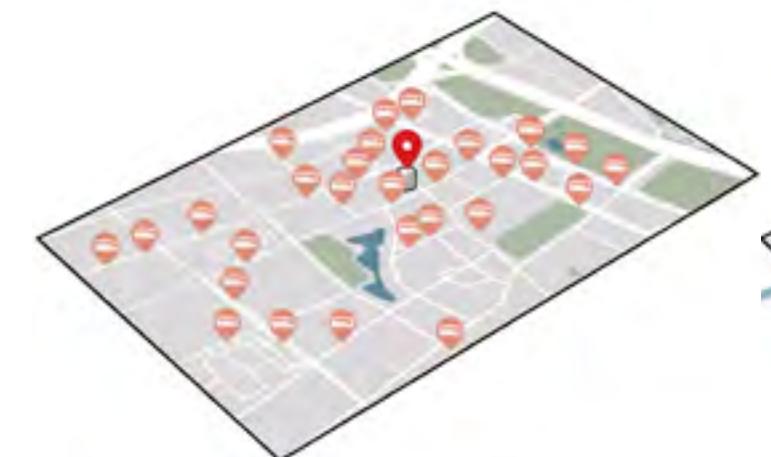
TRAFFIC



WALKING PATH



PARKING



BUS STOP



SUBWAY STATION

BUILDING SELECTION

The Helix Quartier of EmQuartier Mall

Fifteen-story shopping mall
Located in downtown Bangkok,
Thailand

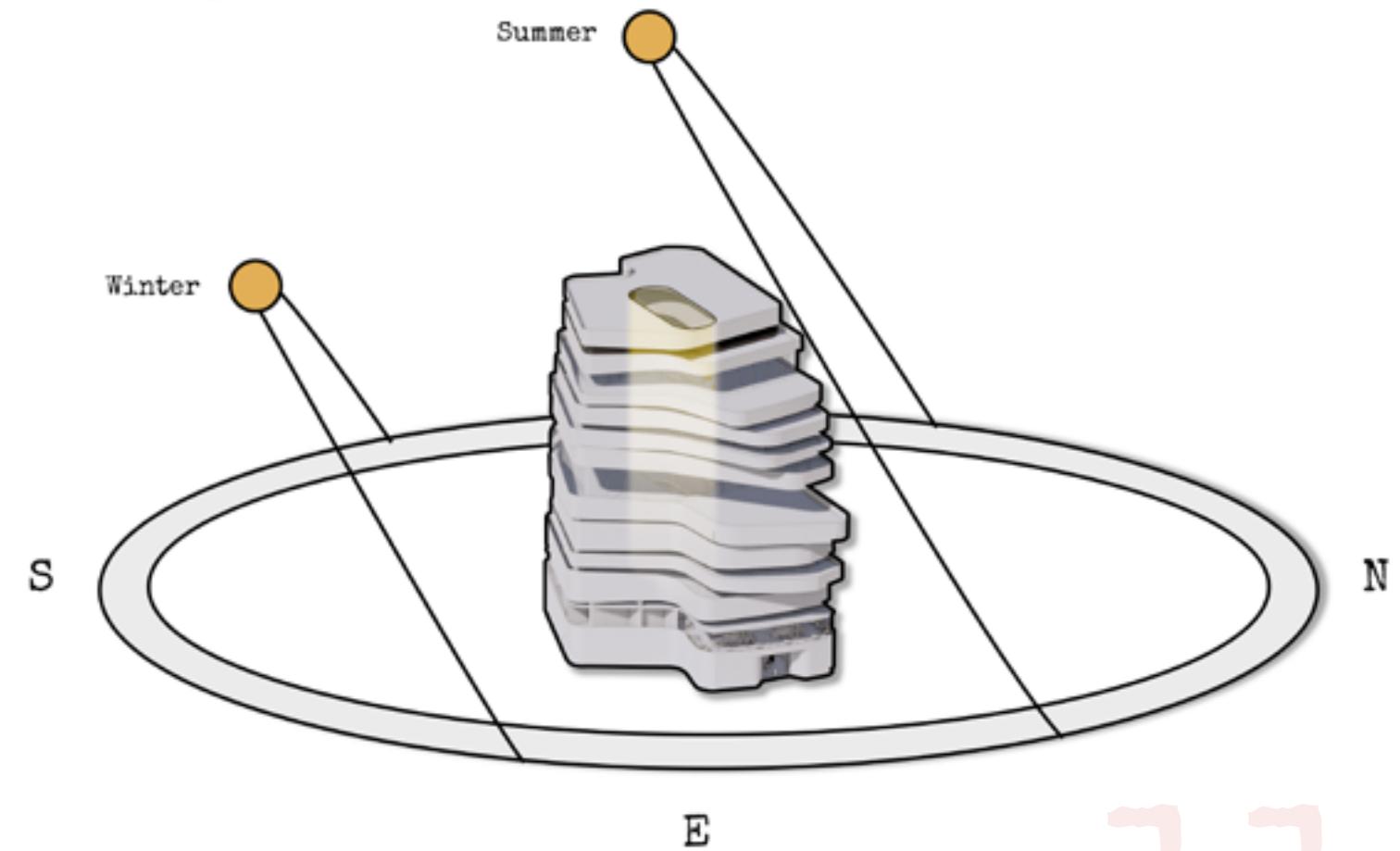
Opened in May 2015

Architect: Thomas Leeser

The 1st and 2nd floors will be
used, and the total is 15308sf.



Natural light passes
through the building.



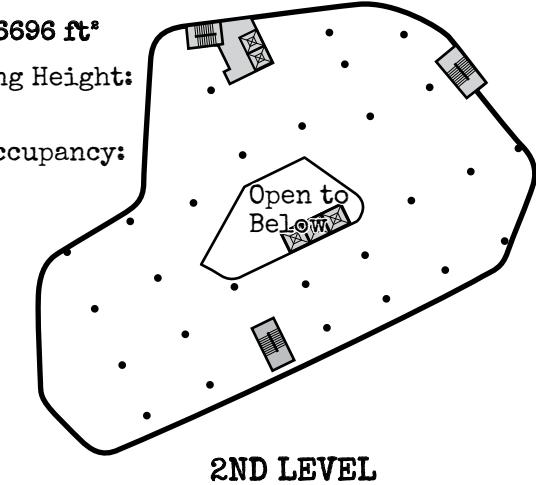
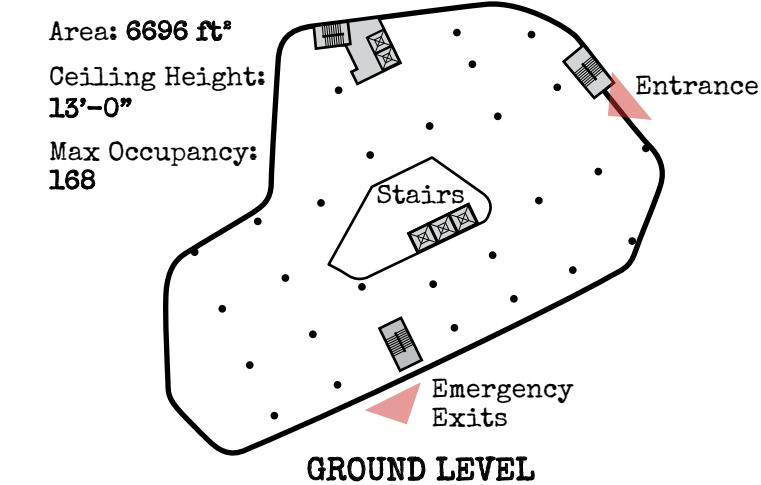
CODE ANALYSIS

INTERNATIONAL COMMERCIAL BUILDING CODE

- Entrance doors, doorways, and gates must be on an accessible route.
- A minimum of 60% of public entrances must be accessible.
- Accessible routes must be identified by directional signs and signs bearing the International Symbol of Accessibility.
- A stairway between stories must have at least 48" (1219 mm) between the handrails and must either be accessible from an area of refuge or incorporate an area of refuge.
- Clear Width of Door openings: 32" (813 mm) min.
- Clear openings of swinging doors must be measured between the face of the door and the stop, with the door open 90°.
- Ramp runs may not have a running slope steeper than 1:12, or a cross slope steeper than 1:48.
- The clear width of a ramp run must be 48" (1219 mm).
- A landing is required at the top and bottom of each ramp run. Landings must be a min. of 60" (1524 mm) wide.
- Ramps that change direction must have a clear landing at least 60" (1524 mm) by 72" (1829 mm) in the direction of downward travel.
- Handrails are required on both sides of ramps. Handrails must be continuous within the full length of a ramp run.
- Elevator landings must provide a clear floor space of at least 30" (762 mm) by 48" (1219 mm).

- Stairways must have a clear width of 48" (1219 mm) min. between handrails.
- Stairways must have handrails between 34" (864 mm) and 38" (965 mm) above walking surfaces & stair nosings. The handrails must extend a min. of 12" (305 mm) beyond the landing & the bottom stair nosing.
- Clearance between handrails & adjacent surfaces must be a min. of 1-1/2" (38 mm).
- Each sign must be 60" (1524 mm) above the floor landing, positioned to be readily visible whether doors are open or closed.
- Where dining surfaces are provided for the consumption of food and drink, at least 5% of the seating and standing spaces at the dining surfaces must be accessible.
Clear floor space of 30" (762 mm) x 48" (1219 mm), positioned for forward approach, is required.
- The clear width of an aisle must be 36" (914 mm) if it is only serving one side, and 44" (1118 mm) if it is serving both sides.
- Check-writing surfaces must be between 28" (711 mm) and 34" (865 mm) above finish floor.
- At least one accessible check-out aisle is required to be available at all times.
The accessible route to the check-out aisle must be at least 36" (914 mm) wide, with a running slope of no more than 1:20, and a cross slope of no more than 1:48.

OCCUPANCY CALCULATION

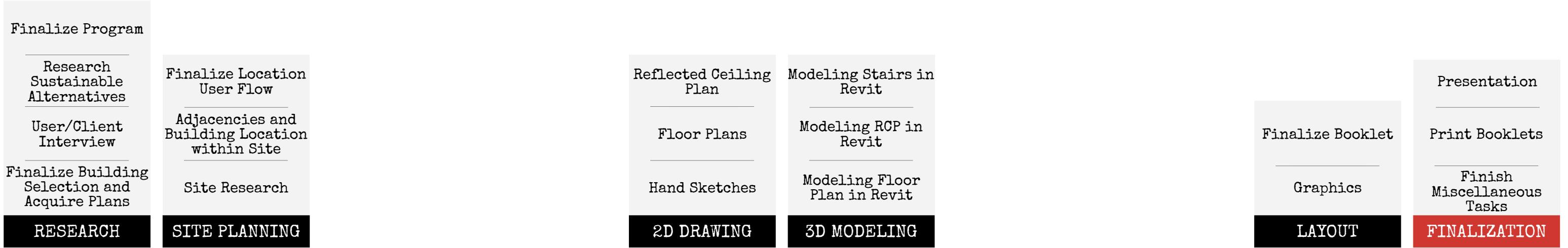


PROGRAMS	OCCUPANCY	FOOTPRINT (ft ²)
GROUND LEVEL	Reception	10%-20% 600
	Staff Room	5%-10% 400
	Storage Room	10%-20% 600
	Manager's Office	1 Manager 100
	Restroom x 4	Every 50 Occupants 4 x 60
	Exhibition Area	The Rest 4756

PROGRAMS	OCCUPANCY	FOOTPRINT (ft ²)
Retail Store		600
Tea House		3436
Kitchen	20%-30% of Tea House	600
Storage/Staff Room	10%-20%	600
Restroom x 6	Every 50 Occupants	6 x 60

*The footprint is an approximate estimate and may deviate from the actual

PROJECT TIMELINE



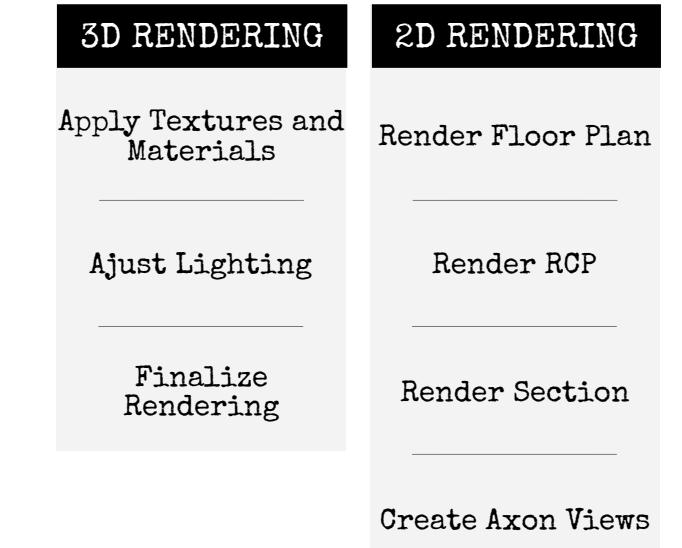
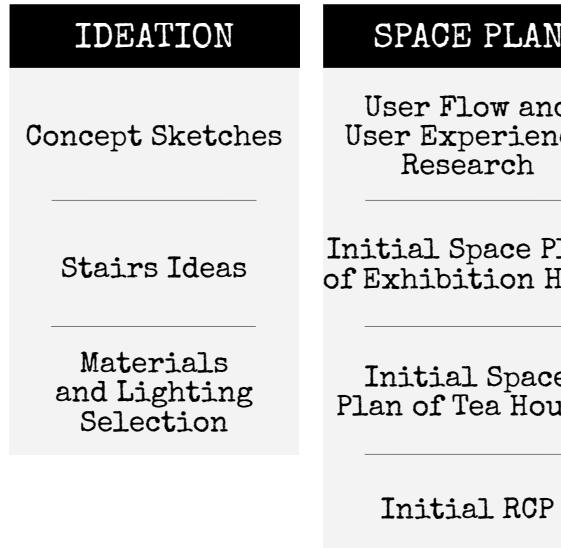
JANUARY

FEBRUARY

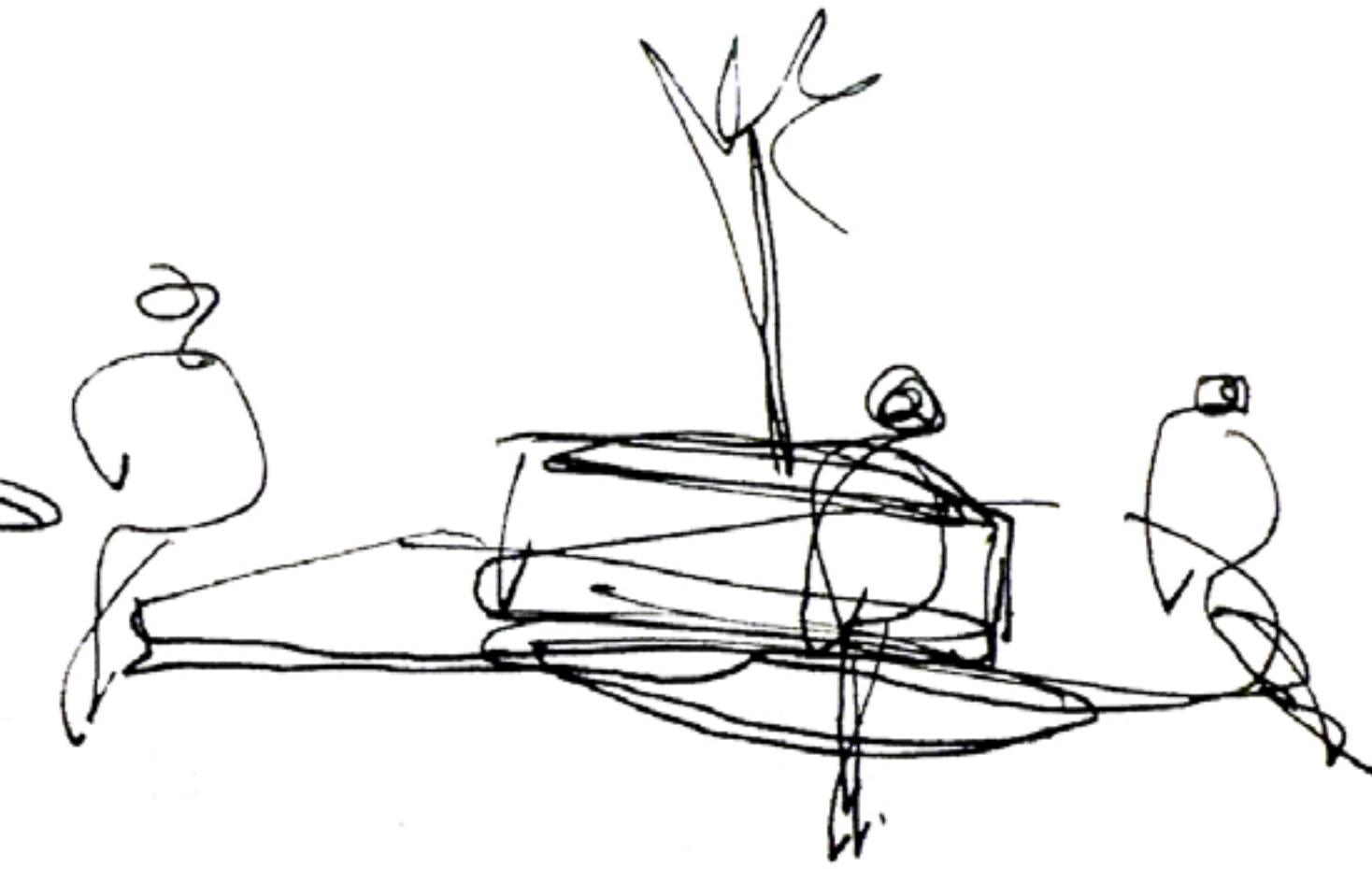
MARCH

APRIL

MAY

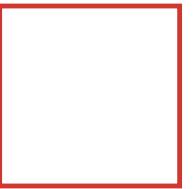


13

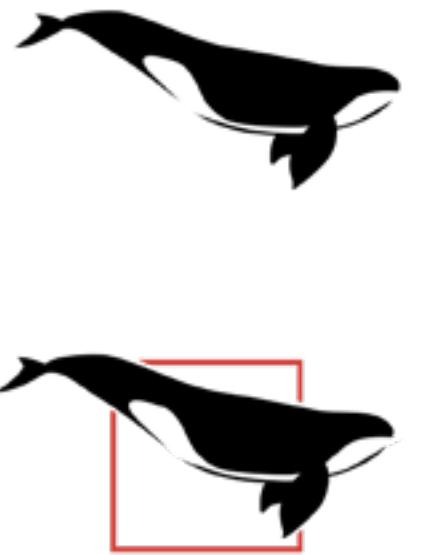


Design
Development

LOGO DESIGN



Microplastic Plastic fragments which less than 100 nanometers and invisible



Whale is the largest animal known in the world

Microplastics and plastics are the biggest killers of whales by stuck in whales' esophagus and stomach

USER QUESTIONNAIRE

Interior Design Survey

What color do you think of when talking about plastic?

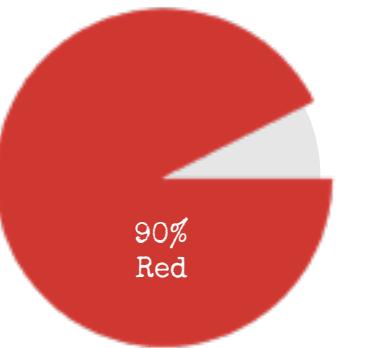
Transparent

White ^{Black}

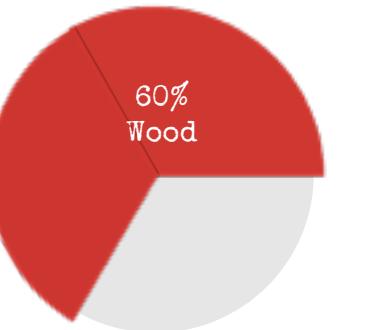
What kind of light make you feel uncomfortable and being at risk?



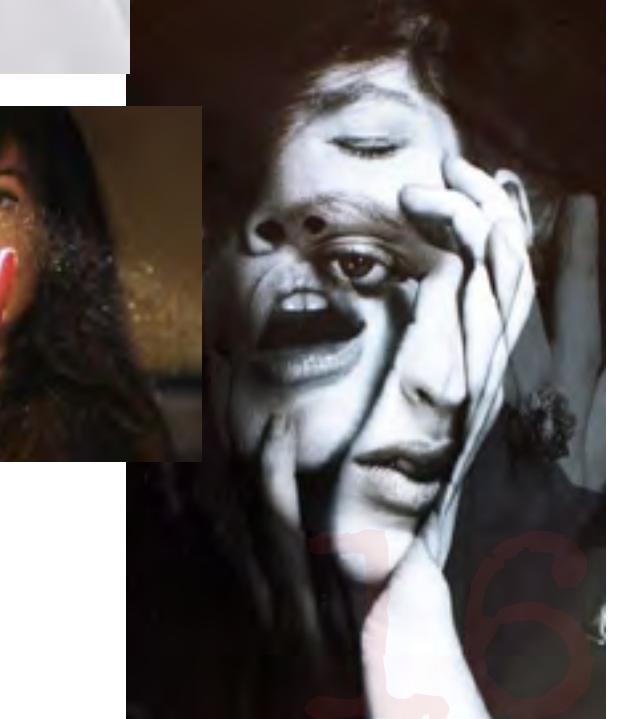
What color make you feel warning and crisis?



What material can make you feel nature and texture?



MOODBOARD



16

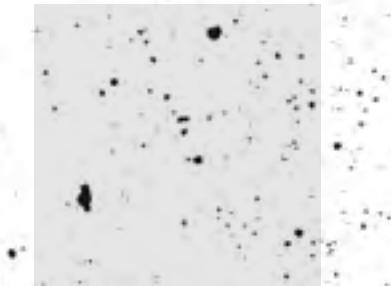
COLOR PALETTE



INSPIRATION

[https://atlante.
design/wall-cover-
ing-surfaces/maioli-
che-di-pietra/](https://atlante.design/wall-covering-surfaces/maioli-che-di-pietra/)

Ground Level (Primary)



Transparent

Bright White
R242 G242 B242



Black Onyx
R46 G39 B42

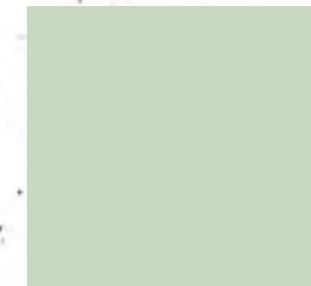


Crisis
R207 G55 B49

Second Level (Minority)



Dazzling
R242 G226 B207



Light Tea
R201 G217 B192



Sage
R110 G140 B110

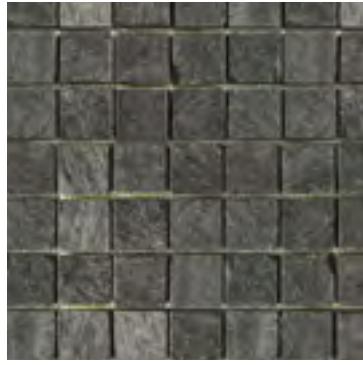


Chianti
R103 G71 B54

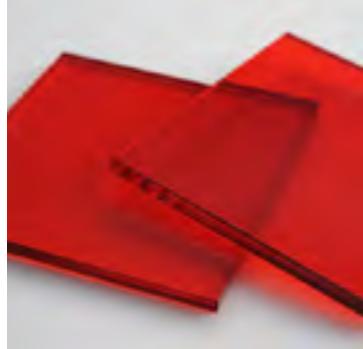
Existing



CEDAR



SLATE SCRAPS



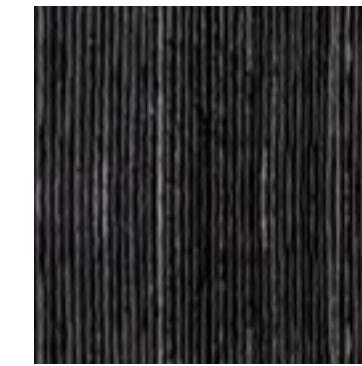
PLEXIGLASS



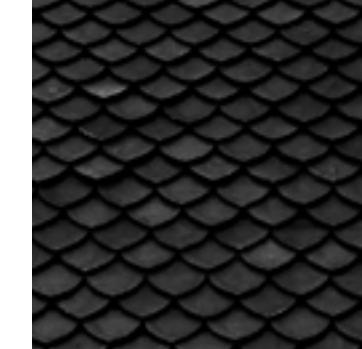
BLACK WALNUT



RAMMED EARTH



TILE



RECYCLED TILES



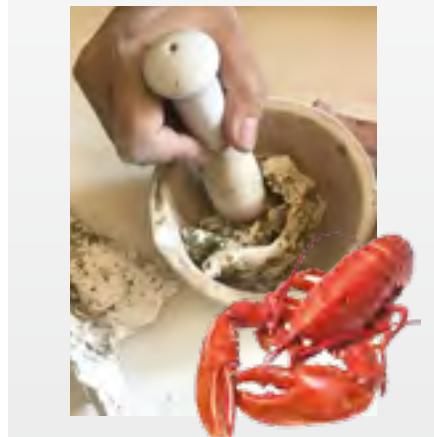
REPLASTIERAL



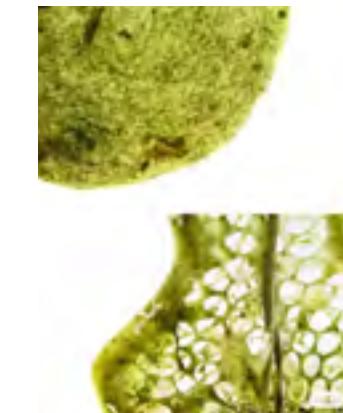
Replastieral is a 100% recycled environmentally friendly material independently developed by [REMAKEHUB Studio](#). It uses discarded plastic bottle caps, Shredding, and melting. It can be used for furniture, flooring, wall panels, and more.



BIO-CONCRETE



SEAWEED FABRIC



Jerusalem based designer, [Daniel Elkayam](#), presents 'SEAmathy' – a project that explores using algae to make a series of vegan materials. It is a sustainable and eco-friendly fabric.

CONCEPT

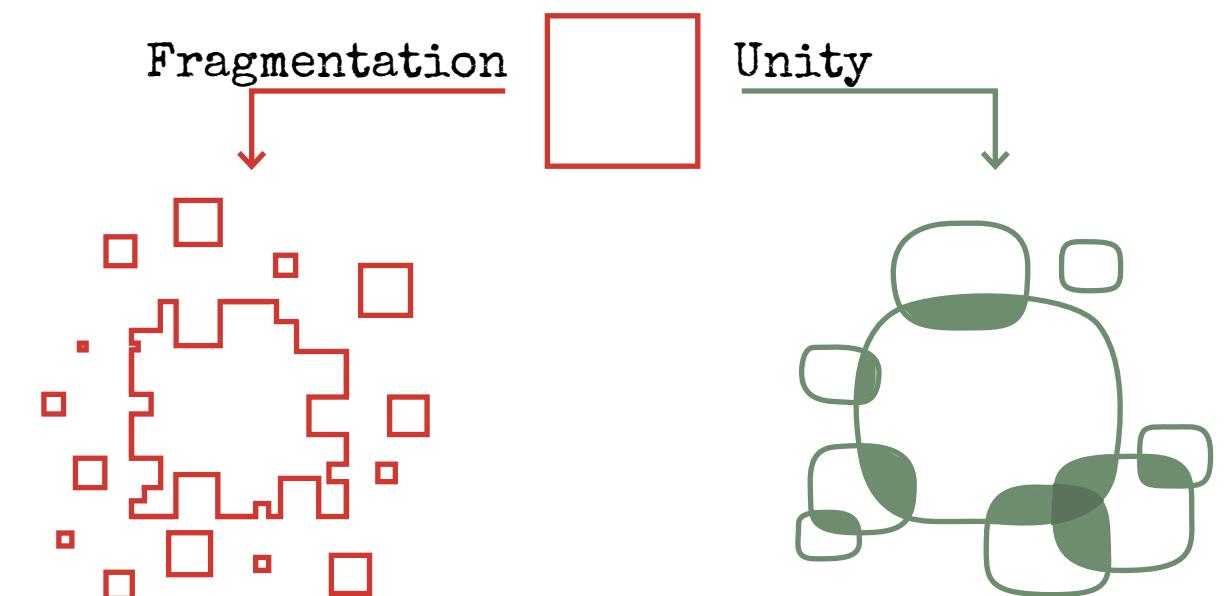


The concept running through this exhibition hall is **LITTLE THINGS MATTER**. From microplastics invisible to the naked eye to every small action we take every day, they all have significant consequences and impacts on the environment and society.

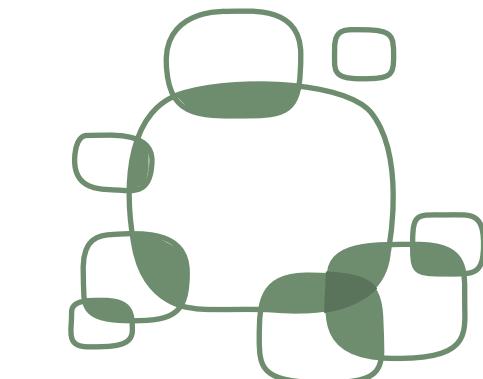


CONCEPT DEVELOPMENT

In order to reinforce the concept of **little things matter** and make a strong impression on visitors, the exhibition hall will incorporate a secondary concept of fragmentation and unity.

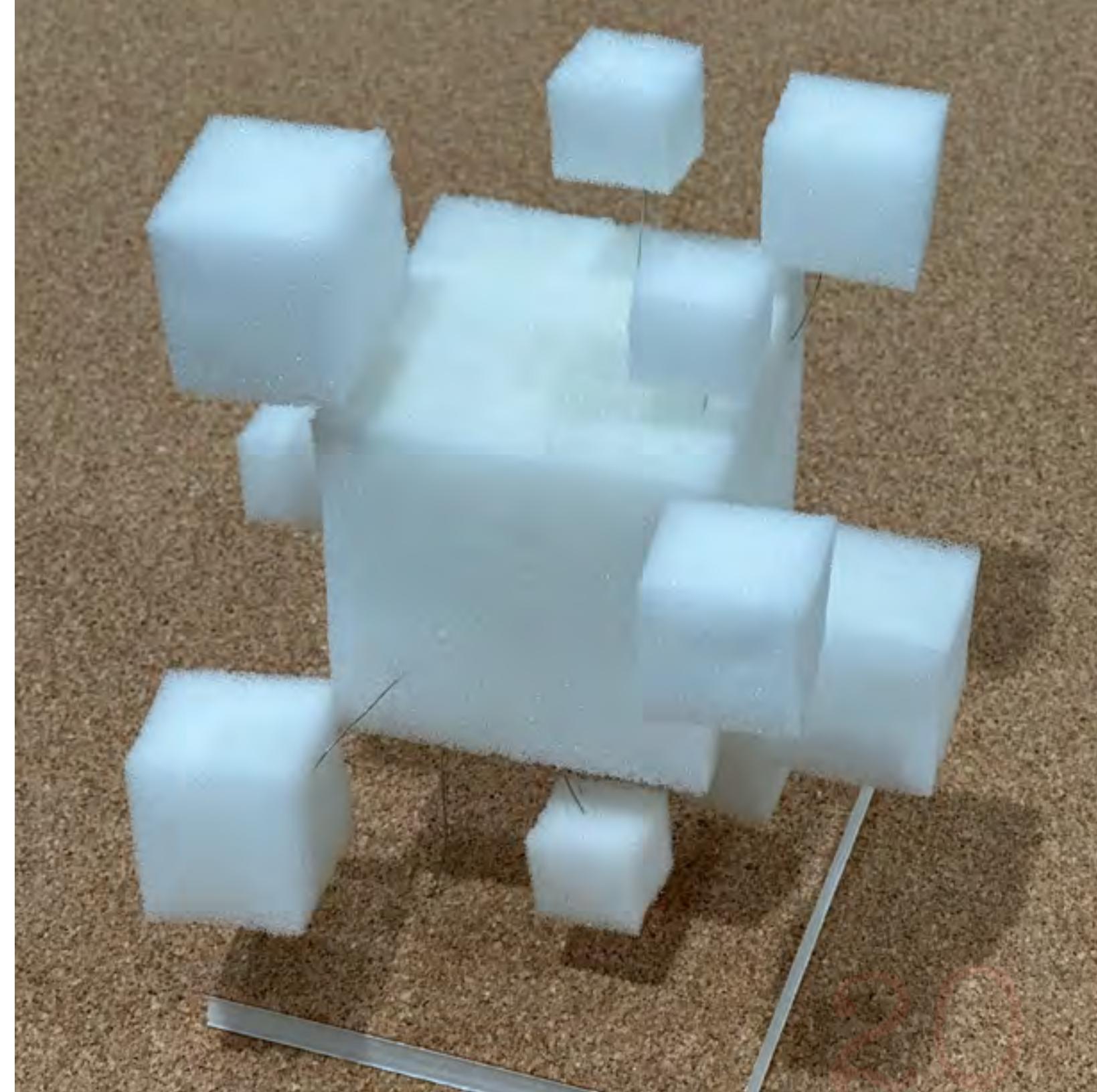
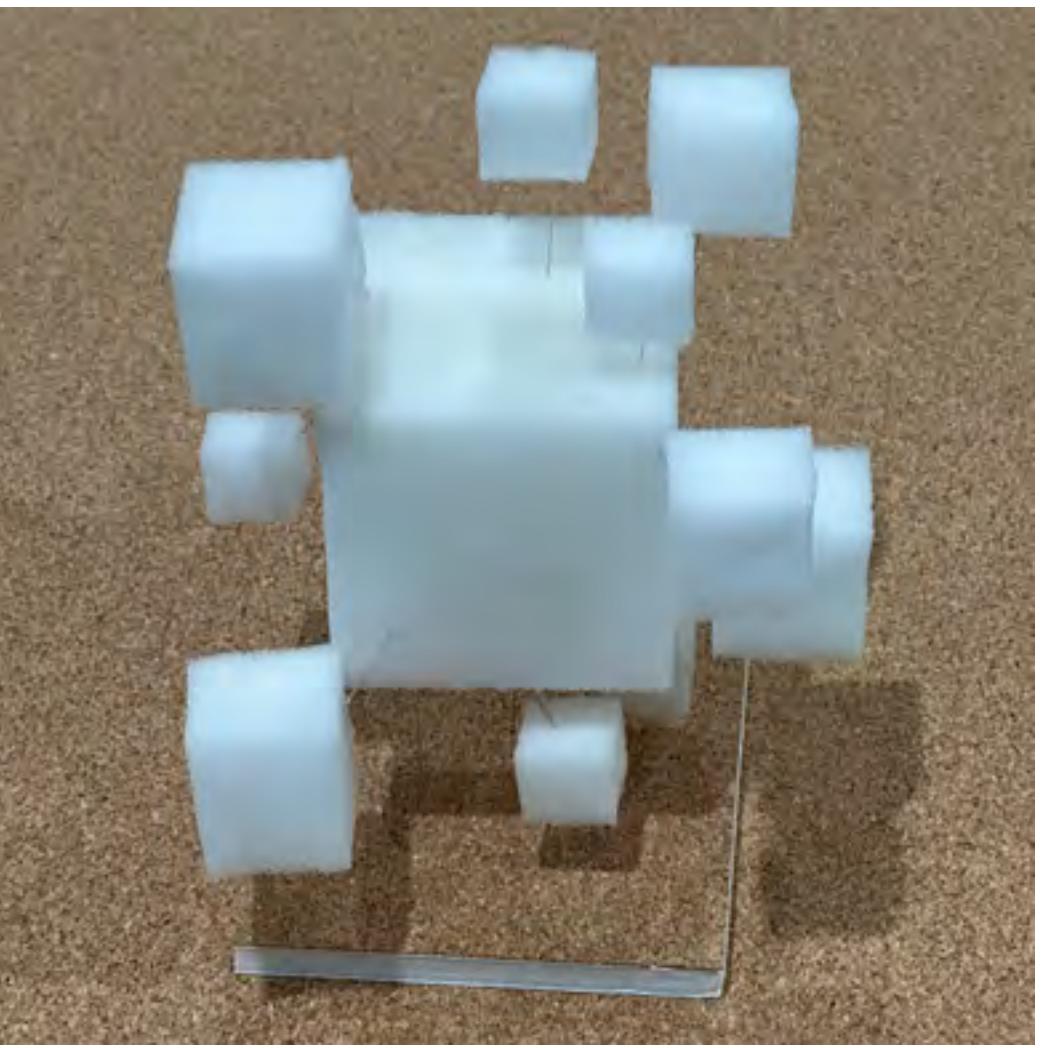


Symbolizes the fragmented nature of microplastics



A hopeful reminder that we can all come together to contribute towards solving the issue of plastic pollution

CONCEPT MODEL



PROGRAMS & USER FLOW

EDUCATION/EMOTIONS/EMPATHY

Plastic Lifecycle
SERIOUS



- History
 - Production
 - Usage
 - Disposal
 - Decomposition
 - Microplastic
- Approx. 950 ft²

Ecological Impact
GUILTY



- Environmental Impact
 - Climate Impact
 - Wildlife Impact
- Approx. 800 ft²

Pathways Into Human
Harm To Humans
Approx. 600 ft²



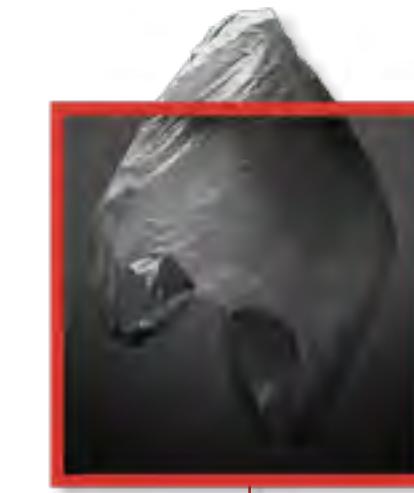
Plastic Visualization
Microplastics Around Us
Microplastics Inside Us
Approx. 450 ft²



Visualization
TERRIFIED

- Plastic Pollution Lv.10
- Plastic Pollution Lv.9
- Plastic Pollution Lv.8
- Plastic Pollution Lv.7
- Plastic Pollution Lv.6
- Plastic Pollution Lv.5

Approx. 2000 ft²



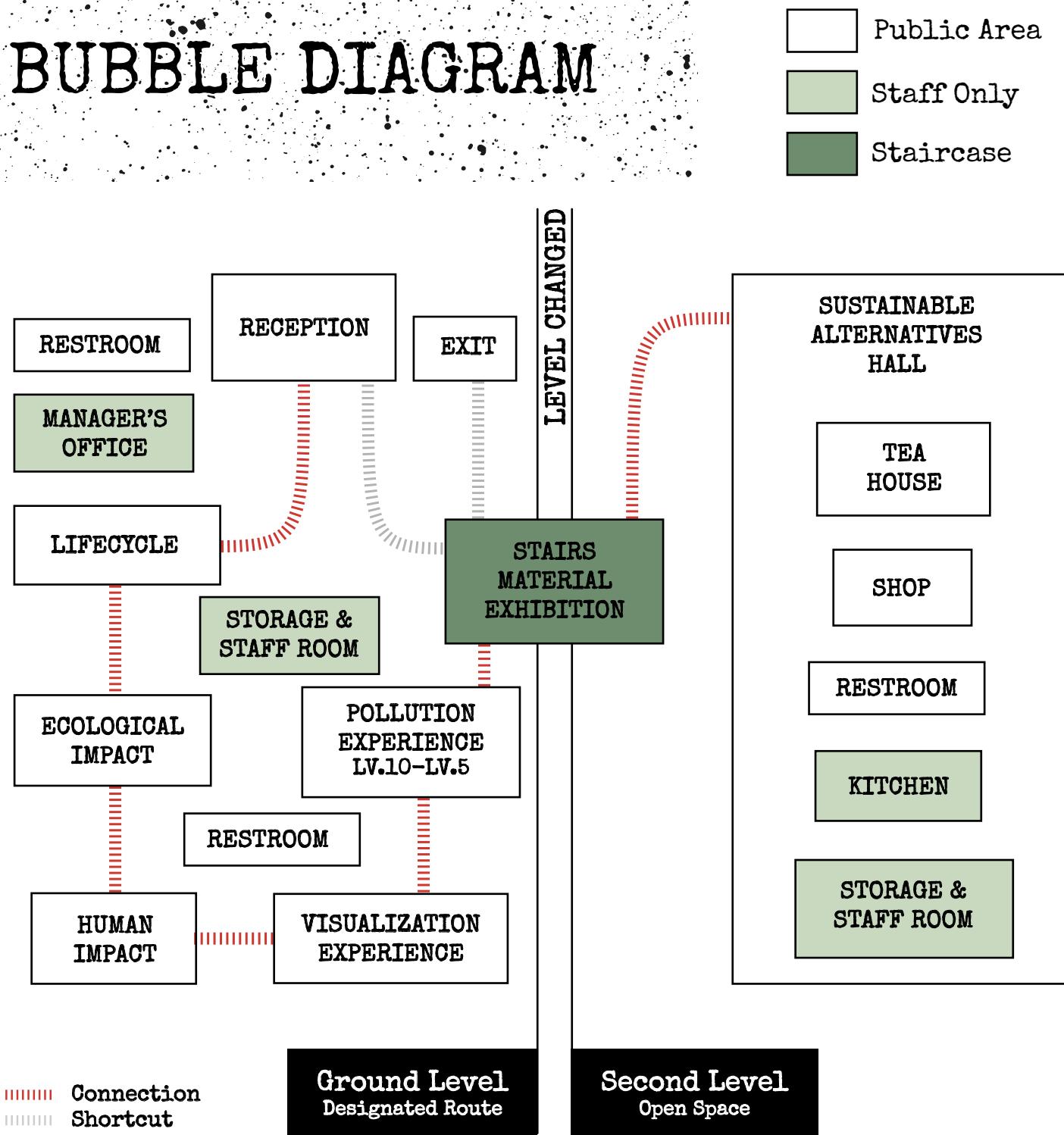
Pollution Experience Lv.10-Lv.5
DESPAIR
RELIEF



- Sustainable Alternatives Hall
 - Sustainable Alternatives Shop
 - Tea House
- Approx. 6696 ft²

Second Floor
PROACTIVE

BUBBLE DIAGRAM



ACKNOWLEDGMENTS

(Spring 2023, 441B)

Alec, Johnson

Alec Johnson graduated with a Bachelors of Architecture from SCI-ARC, [Southern California Institute of Architecture] and studied at the Hochschule Fur Angewandte Kunst Wein, Austria [School for Applied Arts] under renown architects Coop Himmelb(l)au. His experience ranges from complex medical centers, educational facilities, commercial interiors and custom residential.

Professional Mentor
(3+ years professional experience)

Simonian, Bill

Bill Simonian is a graduate of USC where he studied Architecture and Art History. His professional experience encompasses some 40+ years. Bill was one of the founder of the Southern California Institute of Architecture (SCI-Arc). During his 34 years there, he initially taught undergraduate design studios, architectural drawing and architectural history. He eventually assumed the full-time role as the school's Academic Counselor until his retirement in 2007.

Recent Graduate Mentor
(1-2 years of professional experience)

Qu, Jianghui

Graduated spring 2022 from California State University Long Beach, now is in the program of master of architecture in USC.

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DESIGN
SOLUTION

MICROPLASTIC

Tiny fragment of plastic,
ranging from 5mm to 1nm.

微塑料



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GROUND LEVEL FLOOR PLAN



GROUND LEVEL RCP



SECOND LEVEL FLOOR PLAN

0' 4' 8' 16' 32'
2' 8'



LEGEND

- Recessed Light
- | Pendant Light
- oooo LED Strip

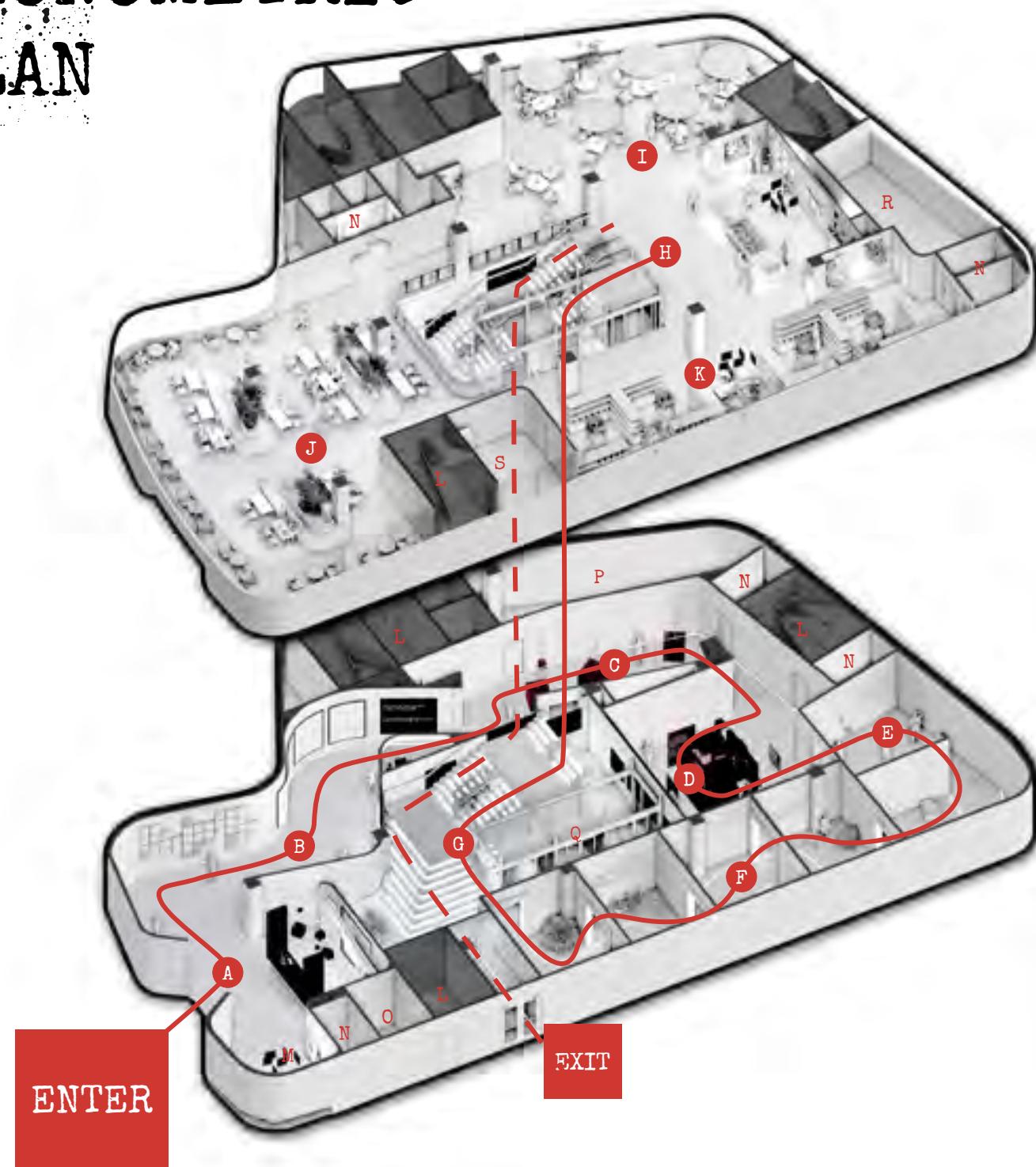


SECOND LEVEL RCP

0' 4' 8' 16' 32'
2' 8'

25

AXONOMETRIC PLAN



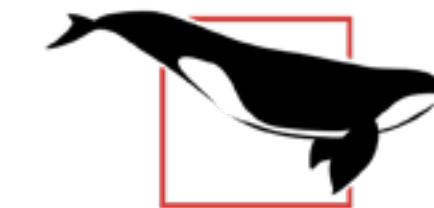
LEGEND:

- A Reception
- B Lifecycle Hall
- C Ecological Impact Hall
- D Human Impact Hall
- E Visualization Hall
- F Pollution Experience Hall
- G Stairs with Showcase
- H Tea House Bar
- I Seating Area
- J Large Seating Area
- K Sustainable Shop
- L Exist Facilities
- M Waiting Area
- N Unisex Restroom (9)
- O Manager's Office
- P Staff Room
- Q Lifts
- R Kitchen
- S Storage Room

RECEPTION



Serious



The reception is designed with a minimalist and clean aesthetic, and features the exhibition's logo. The logo uses red to symbolize warning, crisis, and plastic pollution.

The whale, which is the largest animal on earth, however, microplastics and plastics are the biggest killers of whales by getting stuck in whales' esophagus and stomach.



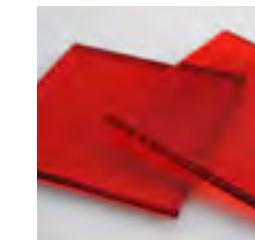
Design Key



Simplicity

The reception area is designed to be both simple and welcoming, with a color scheme featuring a strong contrast of red, white, and black. It creates a sense of intrigue and curiosity, while also providing a subtle warning that visitors are about to embark on an exciting and engaging experience.

MATERIALS



PLEXIGLASS



BIO-CONCRETE



RAMMED EARTH





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LIFECYCLE HALL

Serious

The first hall is the “Lifecycle Hall,” which introduces the history of plastic, plastic production, the six major types of plastics, and the decomposition time of common plastic products. This hall also provides some basic knowledge about plastic, such as the average usage time of a plastic bag being 12 minutes, while it takes 200 years to degrade. Plastic bottles need 450 years, and to-go boxes will never degrade. The process of plastic degradation begins with large fragments breaking down into small fragments, becoming smaller and smaller until they are microscopic microplastics that are invisible to the naked eye. In this hall, I hope visitors will gain a deeper understanding of plastic and its impact on our planet, and start to take the plastic pollution problem seriously.



Design
Key

Linearity

This hall presents the history of plastics, production, processing, degradation, and microplastic creation in a linear way. The design and path of the exhibits guide visitors through this journey.

MATERIALS



PLEXIGLASS



BIO-CONCRETE



REPLASTIERAL



Refining The Oil

煉油

Fractional Distillation

分馏

Major Plastic Types Decomposition Time

PET or PETE Polyethylene Terephthalate

This type of plastic is lightweight and has good clarity, making it commonly used for food and beverage containers such as water bottles, soda cans, and juice bottles. It is also used for packaging products like mouthwash, shampoo, and peanut butter.

聚對苯二甲酸乙二酯

这种塑料重量轻、透明度高，适用于食品和饮料容器，如瓶装水、苏打水瓶和沙拉瓶等。它还用于包装产品，如果汁水、洗发水和花生酱。

The average usage time of a plastic bag being 12 minutes, while it takes 200 years to degrade.
塑料袋的平均使用时间是12分钟，却需要200年的时间降解。



ECOLOGICAL IMPACT HALL



Guilty

Only 9% of the 900 million plastic products produced are recycled, and 12% are incinerated. The majority of plastic waste ends up in landfills, on roads, in lakes and rivers, and even in our bodies and the bodies of animals. Plastic pollution harms and kills millions of wild animals every year. This hall showcases how plants and animals are persecuted by plastic pollution. Inside a transparent box, there are exhibits of animals killed by plastic, making visitors feel guilty about the excessive use of plastic.



Design
Key



Display

The hall displays the impact of plastic pollution on various species equally, using an unbiased approach.

MATERIALS



PLEXIGLASS

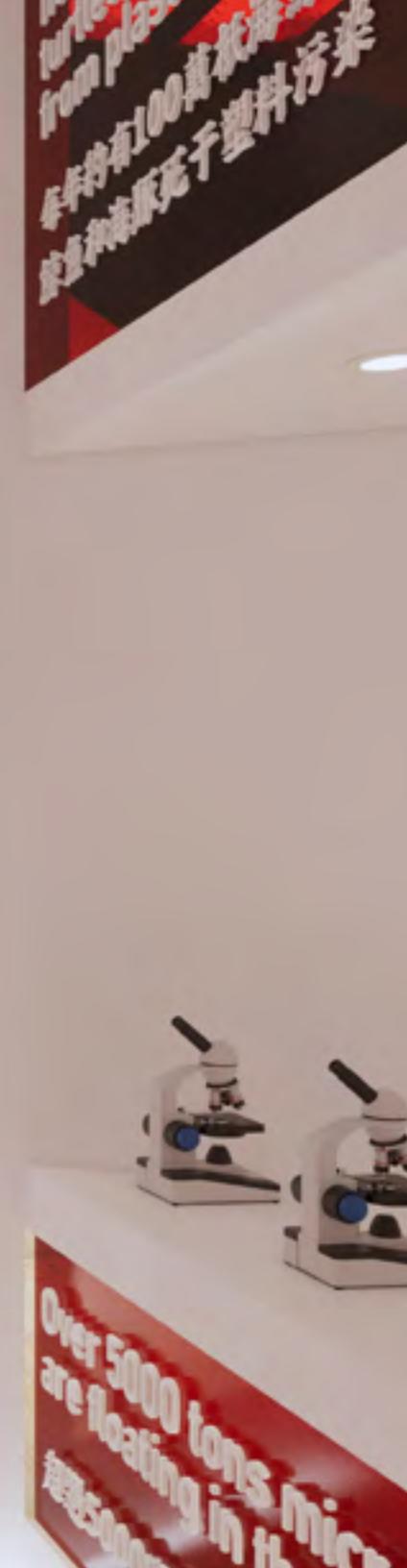


BIO-CONCRETE



REPLASTIERAL

Staff Only



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HUMAN IMPACT HALL



Fear

Humans eat seafood with microplastics in their bodies, over a thousand tons of microplastics float in the sky of the American West, and even the drinking water and sea salt we consume contain microplastics. A human can take up to 70,000 microplastics in one year, Bottled water drinker may take 90,000 additionally per year, and Microplastics were found in the brains of human embryos in 2018. Here, people learn about the negative effects of plastic entering their bodies and start to feel afraid, realizing the need to take action.



Design
Key

Centralized



PLEXIGLASS



BIO-CONCRETE



REPLASTIERAL



In the center of this hall is a large cube that breaks into many pieces, each piece displaying the ways microplastics enter the body. The cube displays the consequences of microplastics inside the body, such as lung disease, vascular disease, and Alzheimer's disease.

MATERIALS

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Microplastics can be found in certain personal care products such as exfoliating scrubs, toothpaste, and shower gels, which can be absorbed through the skin.

塑料微粒可以存在于某些个人护理产品，例如去角质产品、牙膏和沐浴露中。这些产品可以被皮肤吸收。

Sea salt passes sizes likely due to salt pollution to the oceans. Microplastics, likely due to salt pollution to the oceans, have been found in oysters, mussels, fish, and shellfish.

海水盐分含有塑料微粒，海洋的牡蛎、贻贝、鱼类和贝类摄入人体。

Cigarette smoke

吸烟烟雾

Microplastics can be found in cigarette smoke, which can be absorbed through the lungs.

塑料微粒可以存在于吸烟烟雾中，它们可以被肺吸收。

影响氧气运输功能

影响红细胞的功能
导致缺氧

Effects of the normal function of plastic cells and membranes

塑料细胞和膜的正常功能

影响红细胞的功能
导致缺氧

Lung disease

肺部疾病

Microplastics

塑料微粒

Microplastics can be found in some processed foods such as microwave popcorn, where they are used as a coating to prevent the popcorn from sticking together.

塑料微粒可以存在于某些加工食品中，例如微波爆米花，它们可以被用作涂层以防止爆米花粘在一起。

人类摄入

人类摄入

人类摄入

Microplastics can be found in the brains of human embryos.

塑料微粒可以存在于人类胚胎的大脑中。

Microplastics can be found in the brains of human embryos.

塑料微粒可以存在于人类胚胎的大脑中。

Microplastics can be found in the brains of human embryos.

塑料微粒可以存在于人类胚胎的大脑中。

Sea salt has also been found to contain microplastics, likely due to the pollution of the oceans.

海水盐分含有塑料微粒，可能由于海洋污染。

Microplastics can be found in the brains of human embryos.

塑料微粒可以存在于人类胚胎的大脑中。

Microplastics can be found in the brains of human embryos.

塑料微粒可以存在于人类胚胎的大脑中。

A human can take up to 70,000 microplastics in one year.

一个人在一年内可摄取多达70,000塑料微粒。

A human can take up to 70,000 microplastics in one year.

一个人在一年内可摄取多达70,000塑料微粒。

A human can take up to 70,000 microplastics in one year.

一个人在一年内可摄取多达70,000塑料微粒。

Bottled water drinker may take 90,000 additionally microplastics per year.

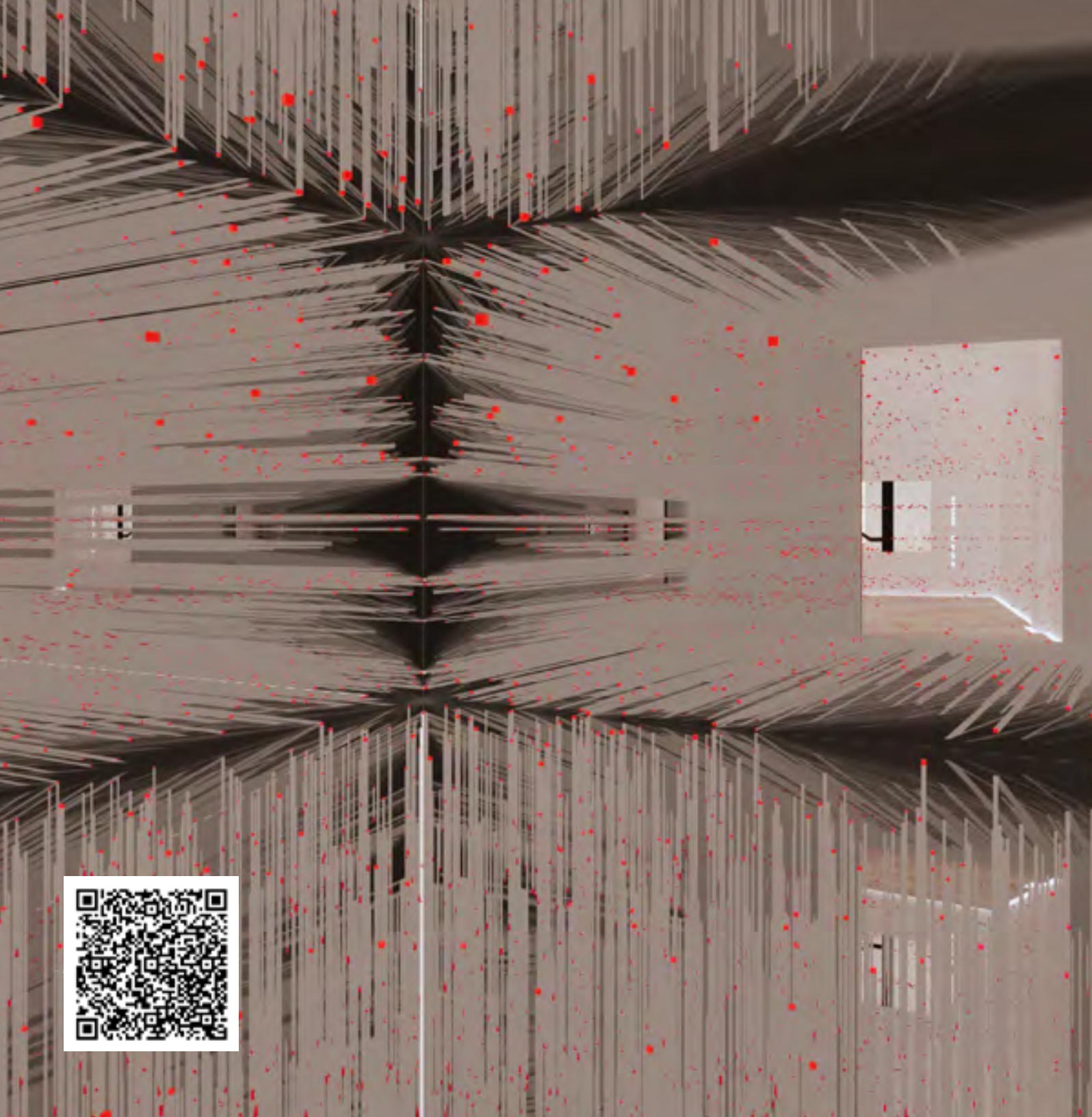
喝瓶装水的人每年可能额外摄取90,000塑料微粒。

Bottled water drinker may take 90,000 additionally microplastics per year.

喝瓶装水的人每年可能额外摄取90,000塑料微粒。

Bottled water drinker may take 90,000 additionally microplastics per year.

喝瓶装水的人每年可能额外摄取90,000塑料微粒。



VISUALIZATION HALL



Terrified

The next hall is the Visualization Hall, which features special lighting that reacts with plastic. Visitors can see the microplastics around them, on their bodies, and even inside their bodies. This time, they finally seeing the microplastics in terrified.



Design
Key



Repetition

To create a sense of infinite eeriness, mirrors are strategically placed to reflect multiple times, amplifying the feeling of unease and creating an unsettling atmosphere.

MATERIALS



MIRROR



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POLLUTION LEVEL EXPERIENCE HALL



Lv.10: earth is full of plastic, and no longer supports any form of life.



Lv.9: only a few humans survive and wear mask all the time.



Lv.8: all marine life is now extinct.



Lv.7: humans are not able to consume seafood or engage in ocean activities.

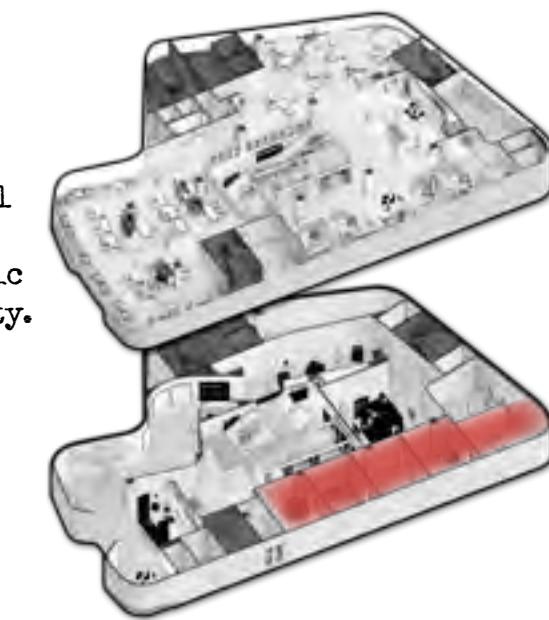


Lv.6: the incidence of cancer and diseases has surged.



Despair

The next hall is the Plastic Pollution Level Simulation Experience, which takes visitors through different levels of plastic pollution. Starting at level 10 to our current world at level 5. The goal is to allow visitors to deeply feel the destructive impact of plastic pollution on the environment and its threat to humanity.





Level 9

Only a few humans remain as the last surviving species on Earth, and they wear masks all the time.

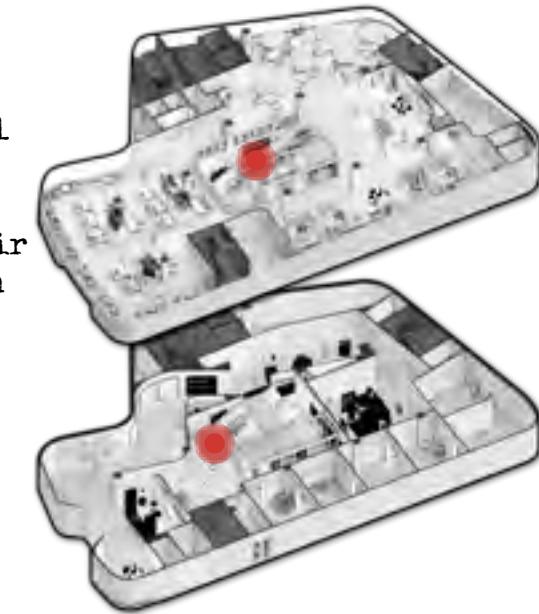
地球上僅剩一小部分永遠戴著口罩的幸存者。



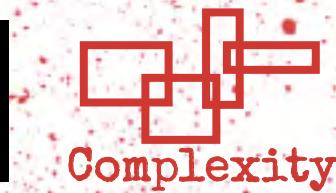
STAIRCASE

😔 Depressed

After the pollution experience hall, visitor will arrive a staircase, where some sustainable materials, recycled materials, and reused materials used in the exhibits will be displayed in the middle. Also, the stair is leading visior back to our real world, the pollution level 5.



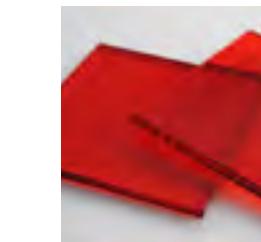
Design
Key



Complexity

The staircase is entwining many parts together, to make people feel compact and entering an open floor.

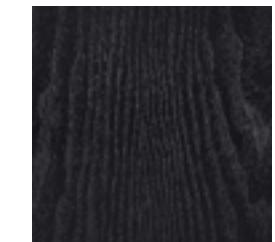
MATERIALS



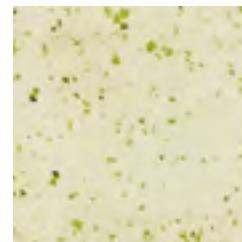
PLEXIGLASS



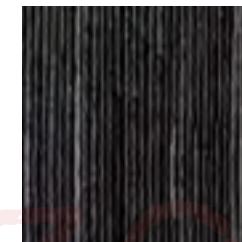
BIO-CONCRETE



PAINTED WOOD



BIO-FABRIC



TILE



SUSTAINABLE ALTERNATIVES HALL



TEA HOUSE BAR

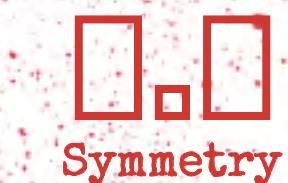


Upon reaching the second floor, visitors will enter the Sustainable Alternatives Hall, which is divided into two parts: a traditional Chinese tea house and a sustainable alternatives store.

Why traditional Chinese style? Firstly, because the exhibition is located in China, we hope to create a traditional tea house that incorporates local culture, making it easier to attract local people. Secondly, Chinese style has a deep cultural heritage that can better reflect the concept of sustainable development combined with traditional culture, allowing people to appreciate the fragrance of tea and gain a deeper understanding of sustainable development in the tea house.



Design
Key



Symmetry

Symmetry is one of the characteristics of traditional Chinese style, which balance the left and right by pattern, arrangement of furniture, and colors. Make people feeling of stability, calmness and dignity.

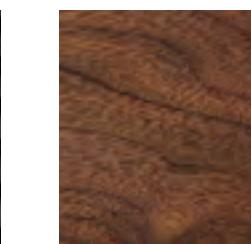
MATERIALS



SLATE SCRAPS



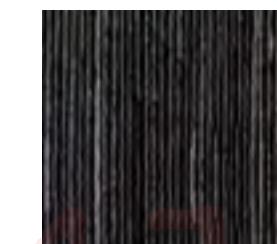
RECYCLED TILES



WALNUT



CEDAR



TILE

4

SUSTAINABLE ALTERNATIVES HALL

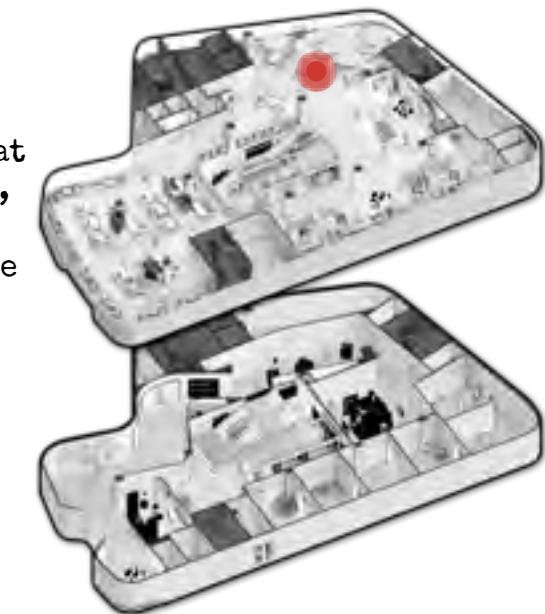




SEATING AREA



In the seating area, people can freely discuss what they have seen, digest information, stabilize emotions, adjust their mindset. Visitor feeling the sensation of losing and regaining what we have now. This experience will encourage visitors to cherish our world and actively participate in reducing plastic pollution.



Design
Key



Compartmentalized

To differentiate between tables in this space, bamboo paper umbrellas, a traditional Chinese element, are used as markers.

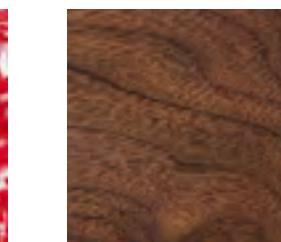
MATERIALS



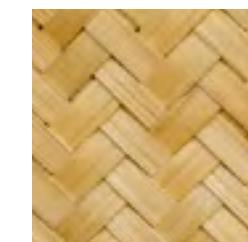
SLATE SCRAPS



PLEXIGLASS



WALNUT



BAMBOO RATTAN



TILE

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LARGE SEATING AREA



Relief

People enjoy life here with their relatives and friends, gain a clearer understanding of the impact of their actions on the environment, thereby taking positive action to reduce plastic pollution. This is also a way of unity, allowing everyone to participate together in protecting the environment and promoting sustainable development.



Design
Key

OPEN

Without walls to break up the flow of the room, it allows people to move around more easily, both for accessibility and socializing.

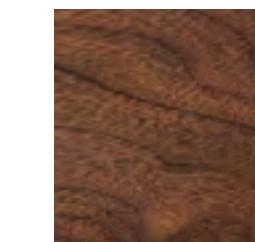
MATERIALS



SLATE SCRAPS



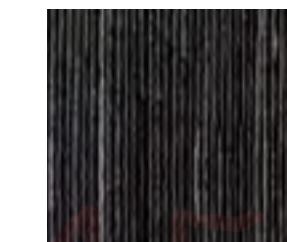
CEDAR



WALNUT



BAMBOO RATTAN



TILE





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SUSTAINABLE ALTERNATIVES SHOP



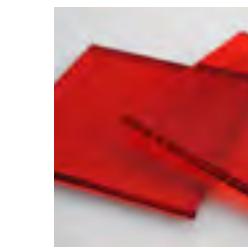
Relief

The sustainable alternatives shop is selling some daily products without plastic and microplastics.

In this sustainable alternatives hall, we have showcased many innovative products and materials related to sustainable development and environmental protection. Through this visit, we hope that everyone can realize the impact of their actions on the environment and take positive steps to reduce plastic pollution, starting with small things.



MATERIALS



PLEXIGLASS



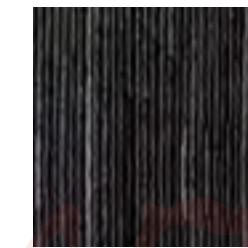
CEDAR



WALNUT



BIO-CONCRETE



TILE

4



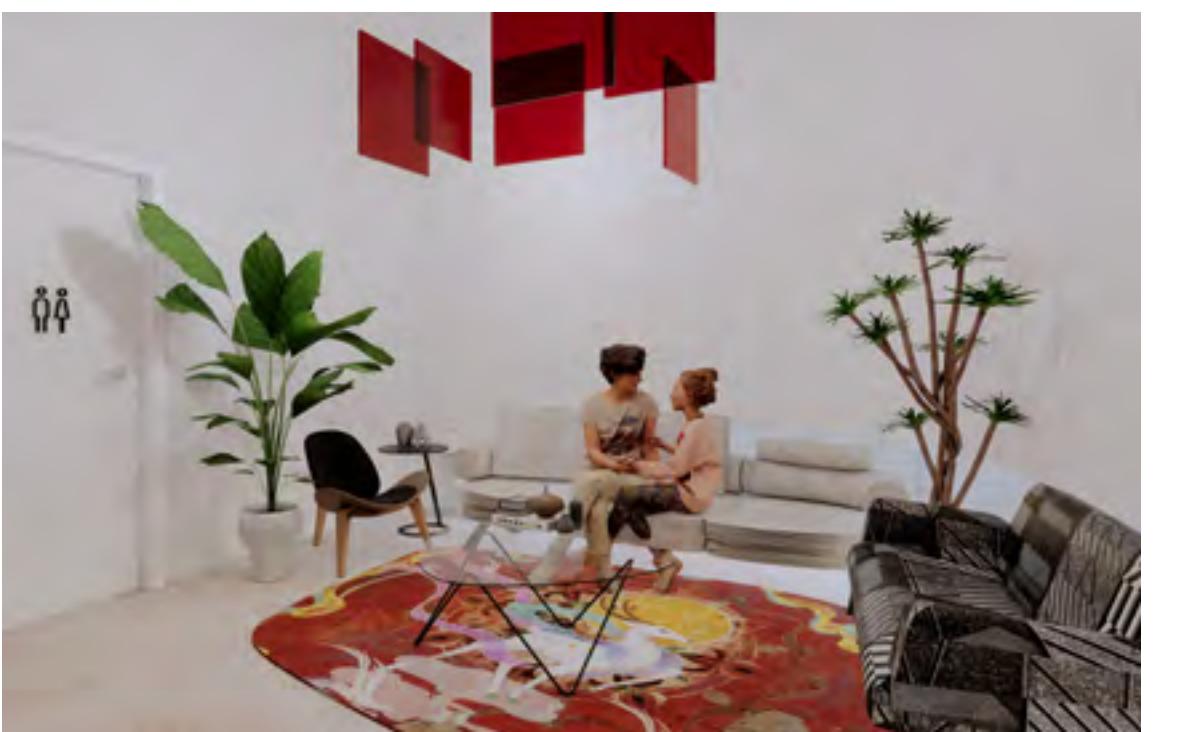
Sustainable Alternatives Shop
零塑朴微商店

SECTION





MORE
LITTLE
THINGS





Please follow me to visit the micro
behemoths exhibition hall



LITTLE THINGS MATTER
YOU MATTER

THE LITTLE THINGS WE CAN DO

Avoid buying single-use plastics such as straws, cutlery, and cups.

No littering of plastic bags and other wastes.

Choose products with less packaging.

Choosing eco-friendly cleaning products that are free of microplastics.

LITTLE THINGS MATTER

Educate others the issue of microplastic pollution is an important step in addressing the problem and the impact of our efforts.

Participating in beach cleanups can help to remove microplastics and other plastic debris from the environment.

Proper waste disposal includes recycling, composting, and responsible garbage disposal.

Choosing natural fabrics like cotton, wool, and silk can help to reduce the amount of microplastics that end up in the environment.



On May 7, 2023, I did my first beach cleanup in Manhattan Beach, Los Angeles.

ERIX CHEN

Spring 2023 DESN441B CSULB

erixchen@hotmail.com

www.ERIXCHEN.com