THE SUSPENDED HANG

A Floating Fisherman village

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A Floating Fisherman village

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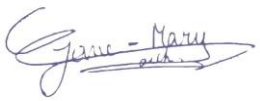

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UNDERGRADUATE DESIGN THESIS
IN
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THE SUSPENDED HANG

By

JANE-MARY CHALFOUN

ARCH 508/509– FINAL YEAR THESIS I & II
FALL/SPRING 2019-2020

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Karim Najjar, Assistant Professor
AUB Department of Architecture and Design

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I would like to thank my advisor Karim Najjar for his guidance and support throughout my FYP II study.

I would also like to thank my family and friends for their constant support in every way possible.

ABSTRACT

This thesis is about saving dying communities with floating systems.

In Thesis I, I chose to save the residents of Venice. I was inspired from spending my spring semester 2019 in Venice. And I realized that in today's world, the way people are travelling and flooding the cities are one of the main problems for the disappearance of the residents. When tourists invade a city, residents start leaving their own cities for many reasons and their houses are turned into hotels. The city then loses its identity and its traditions.
Instead of damaging and ruining the destination, how can tourists save it and revive it? How can tourists be self-sustained? How to design a system that is beneficial and brings positive exchange between the tourists and the residents?
So I created a plug-in technology and machinery system used by the tourists and the residents to leave a good impact on Venice. This system can be applied on any floating town that suffer from the same problems.

In Thesis II, I decided to work with another group of users, I switched from saving the residents of Venice with floating machines to saving another dying community «the fishermen on the coast of Lebanon» with the floating systems.

For thousands of years, Lebanon's coastline has been a vital source of sustenance for local residents. But because of the chaotic urban growth, real estate development, privatization of the coast and pollution have now made it increasingly difficult for fishermen to stay active, hence enormously affecting the decline of Lebanon's fishing industry which is increasing Lebanon's import for fish. All these new coastal constructions and project development have caused tension on the remaining fisherman to move away. So a lot of lebanese coastal cities are suffering from the tension of losing its cultural heritage by the disappearance of the fisherman community.
Where can the fisherman seek refuge in order to start growing again and not letting this important industry fade away and die? How do we revive the fishing industry in Lebanon? Would it be possible to move the fisherman to the sea, and build a sustainable floating village where fisherman can practice better and have a growing community and a base to lean on?
So I created a main structural floating system and its typologies depending on the functions needed. All these different typologies are clustered together to form a floating village for the fishermen.

TABLE OF CONTENT

A- THESIS I: «FUTOURISM»

B- THESIS II: «THE SUSPENDED HANG»

Futourism

A New World Order of a
Self Sustained Production

Acknowledgements

I would like to thank my advisor Ghazal Al Abbassy for her guidance and support throughout my FYP I study.

I would also like to thank my parents for their constant support in every way possible.

A.Contents of THESIS I

“To Move, to Breathe, to Fly, to Float, to Gain all while you Give, to Roam the roads of lands remote, to Travel is to Live.”

- Hans Christian Andersen

1.Introduction

In today's world people are travelling more every year, creating "a new travelling class," a group of consumers for whom travel is no longer a luxury but a part of life.

The sizeable increase in the number of tourists is causing significant problems for the destination and its residents.

When destinations are no longer able to manage the hospitality, we talk about 'overtourism'. Instead of damaging and ruining the destination, how can tourists save it and revive it?

How can tourists be self-sustained?

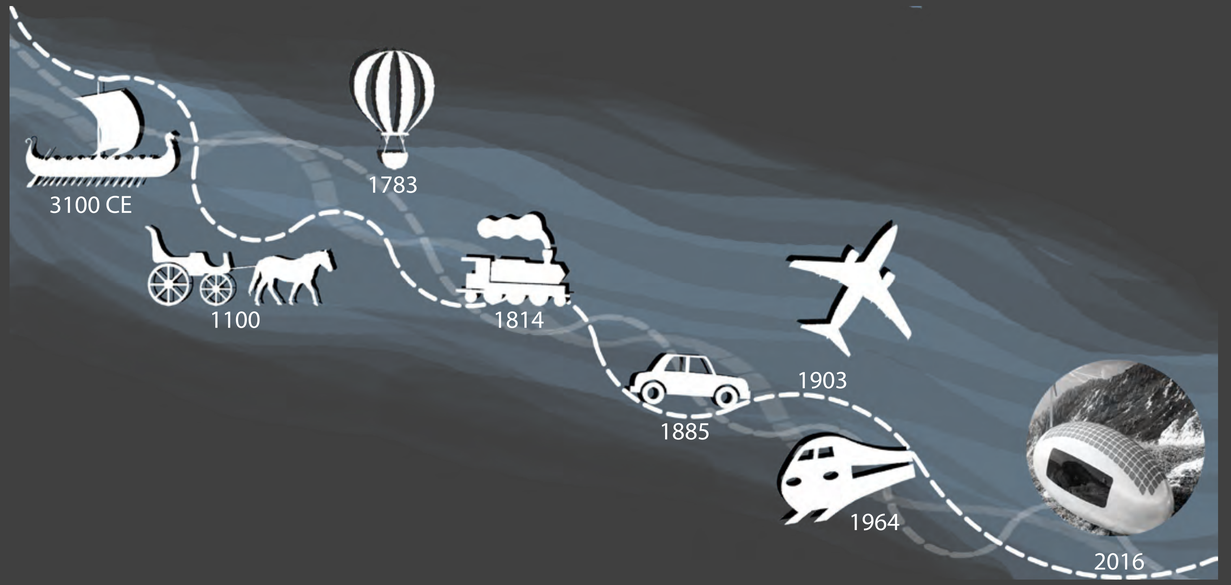
How can tourists rule the universe?

In a world where tourism is the last vestige of society as it allows itself to experience real pleasure, this thesis uses tourists to revive humanity and leave a good impact on the destinations.

The first step is understanding how every destination function. What are the problems that it faces and how can tourism leave a positive impact on it?

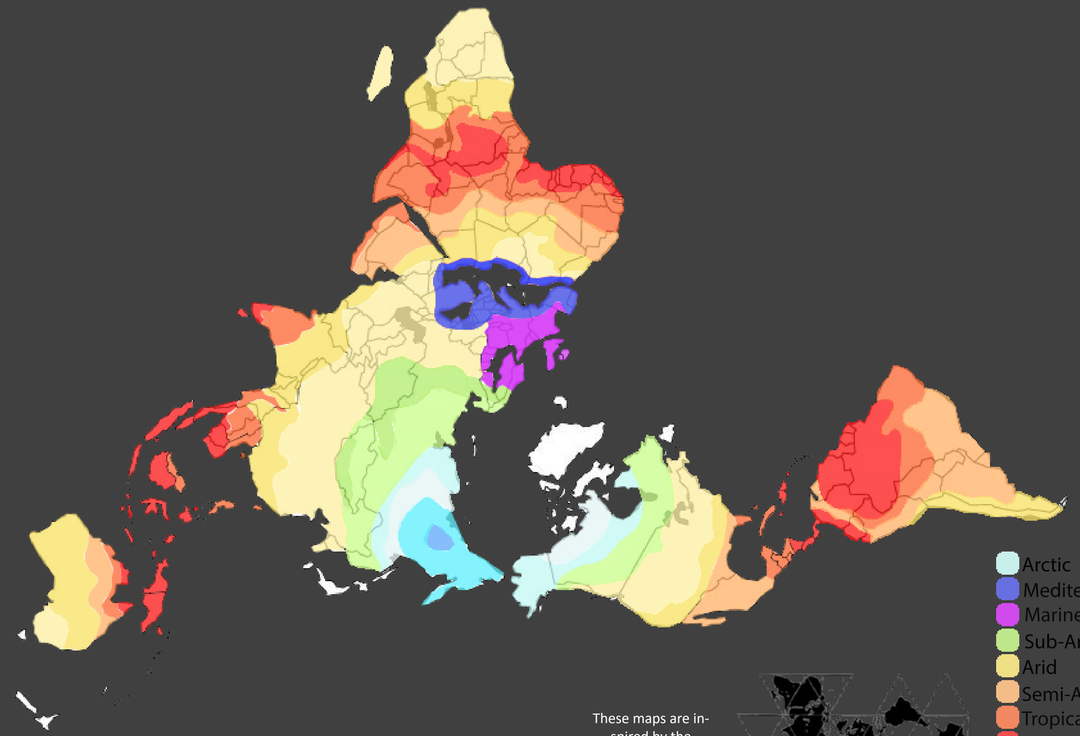
I scoped my research on two kinds of regions: The overcrowded regions and desolate regions. These two regions will benefit the most from the plug-in technology and machinery system.
This system provides relief for the crowded cities and it provides services in desolate areas.
In today's world, when tourists invade a city, residents start leaving their own cities and their houses are turned into hotels. The city then loses its identity and its traditions.
How can this system create a beneficial and positive exchange between the tourists and the residents?

Modes of Travel



2. Tourism on an international scale

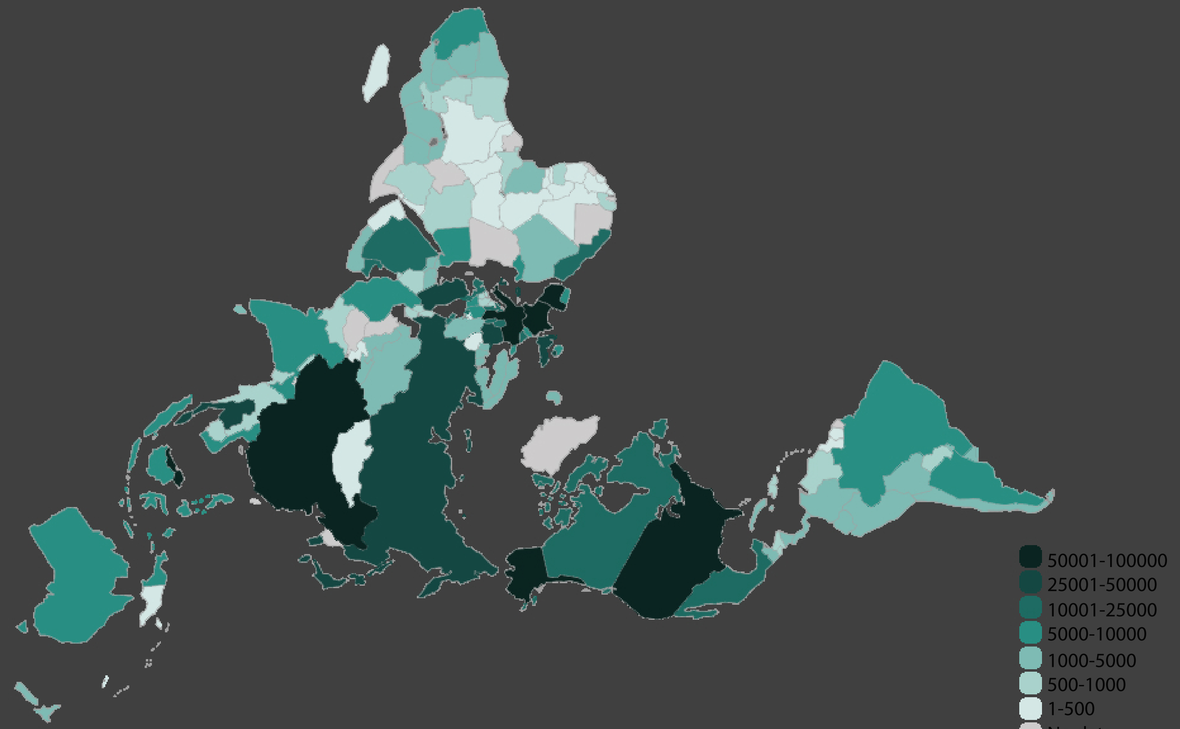
Climate around the world



These maps are inspired by the Dymaxion world map

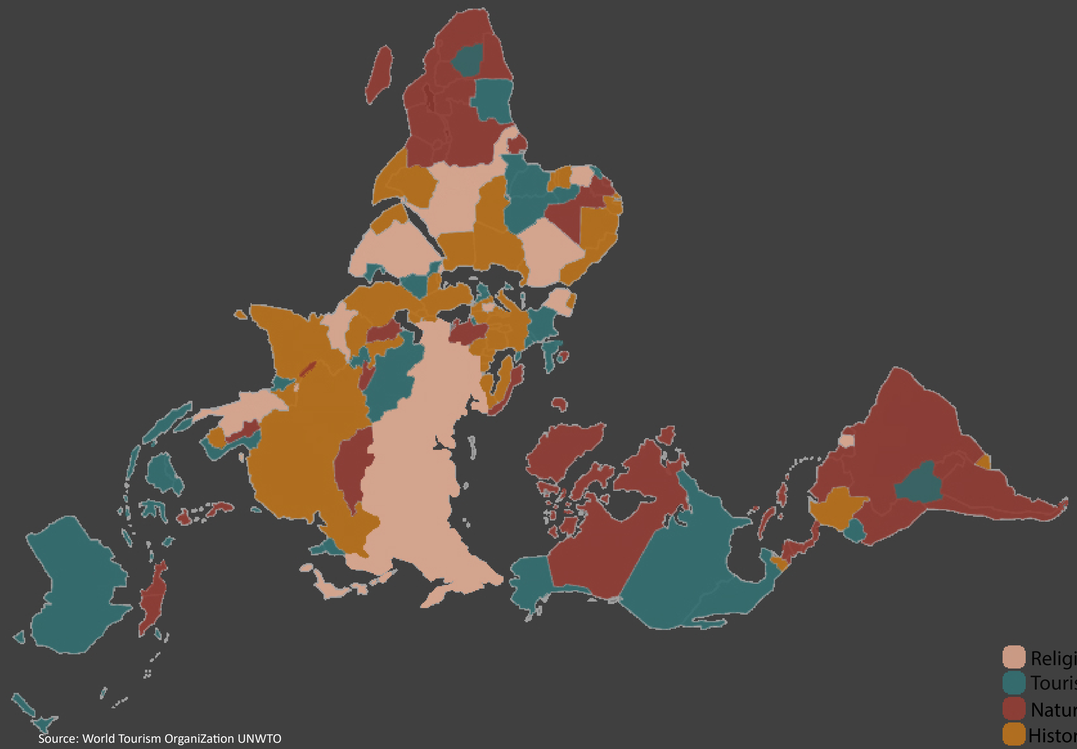
Source: World Tourism OrganiZation UNWTO

Countries with the most Tourism



Source: World Tourism OrganiZation UNWTO

Types of Tourism around the world



Source: World Tourism OrganiZation UNWTO

Problems caused by Tourism

Tourism often puts pressure on natural resources through over-consumption, often in places where resources are already scarce.

Tourism puts enormous stress on local land use, and can lead to soil erosion, increased pollution, natural habitat loss, and more pressure on endangered species. These effects can gradually destroy the environmental resources on which tourism itself depends.

Tourism can create great pressure on local resources like energy, food, and other raw materials that may already be in short supply.

Tourism contributes to more than 5 percent of global greenhouse gas emissions, with transportation accounting for 90 percent.

Increased construction of tourism and recreational facilities has increased pressure on these resources and on scenic landscapes. Direct impact on natural resources, both renewable and non-renewable, in the provision of tourist facilities can be caused by the use of land for accommodation and other infrastructure construction.

Reality vs Expectation

Wall of China, China

Niagra Falls, Canada

Palace of Versailles,

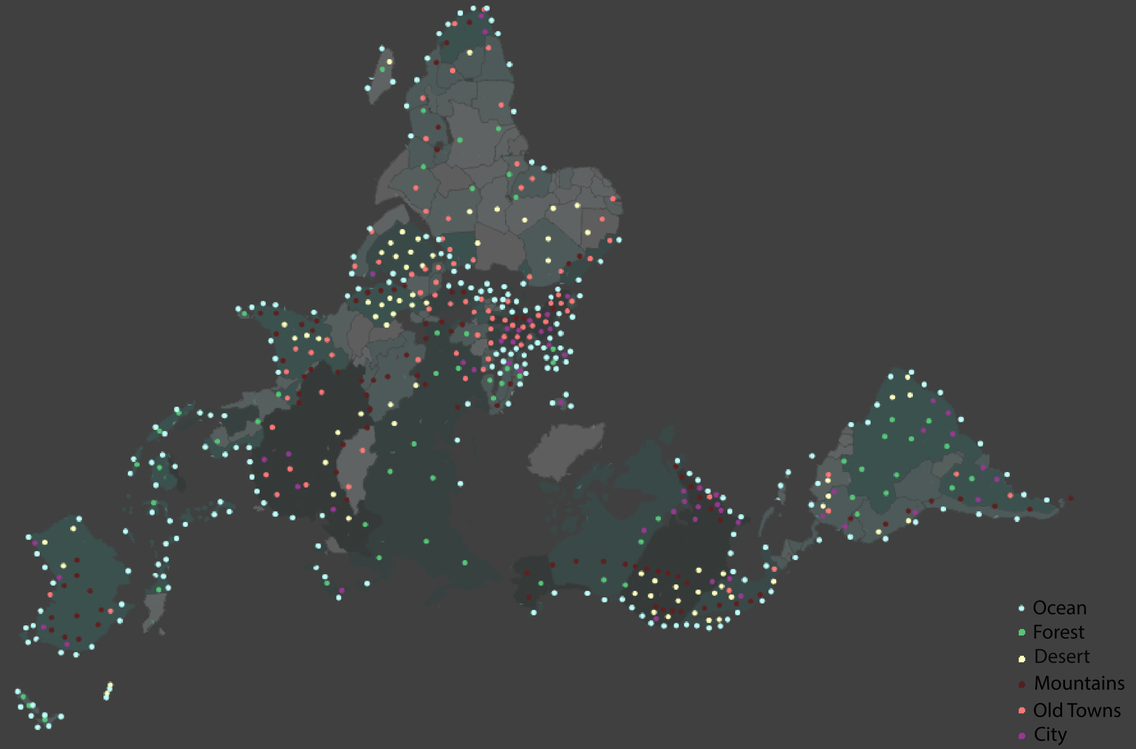
Residents and Overtourism

The residents of many tourism-dependent destinations are seeing the unique sense of place that characterized their hometowns vanish beneath a wave of souvenir shops, crowds, tour buses and rowdy bars. They are also suffering as local amenities and infrastructure are put under enormous strain.
Overtourism is creating gentrification in the cities. Residents are fed up with increasing property speculation and rising costs of living for local communities. Things are made worse by the fact that key destinations are mostly unprepared to deal with overtourism.
Locals fear of rising rent prices, overcrowding, and the loss of local supply as supermarkets make way to souvenir shops.
Residents have been complaining that their streets no longer belong to them and that the city is overcrowded with tourists. This is a truly global issue that should be addressed.

3. Primary Location of the system

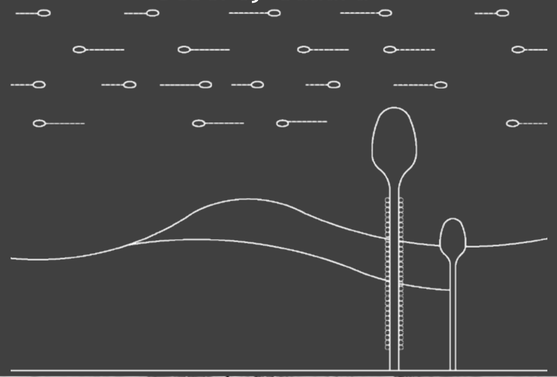
Overcrowded and Desolated

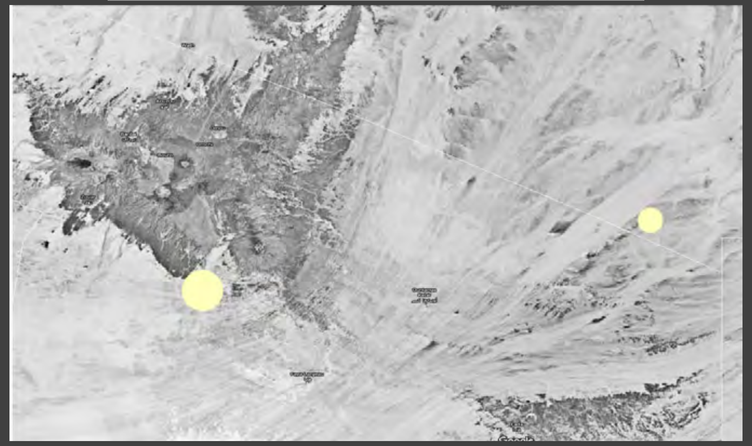
The System Location



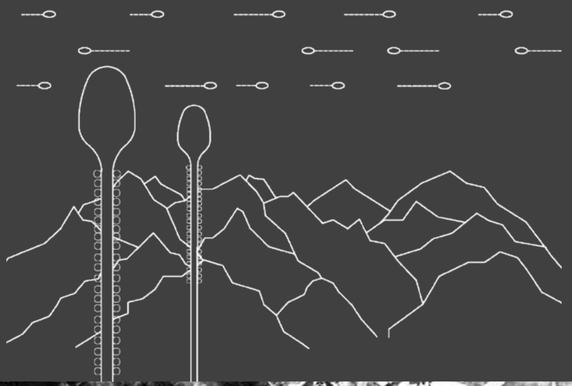
Old Town , Prague

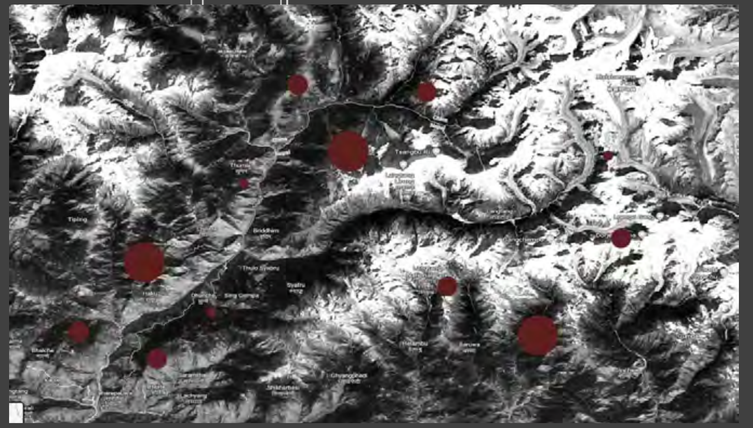
Desert, Sahara



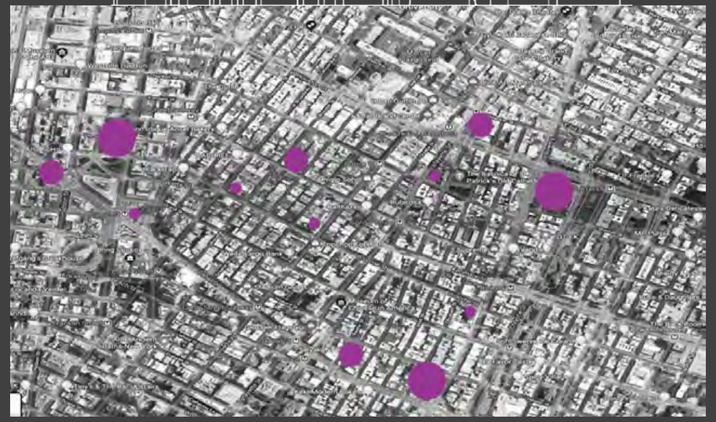


Mountains, Nepal

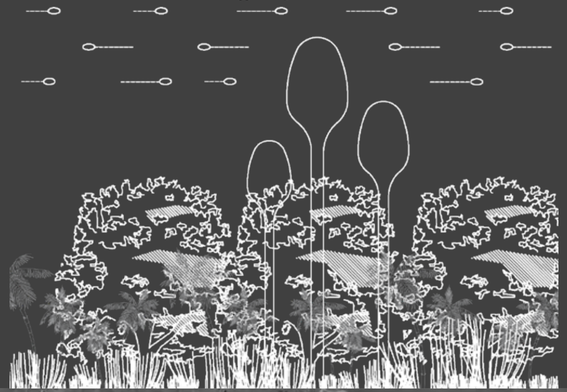




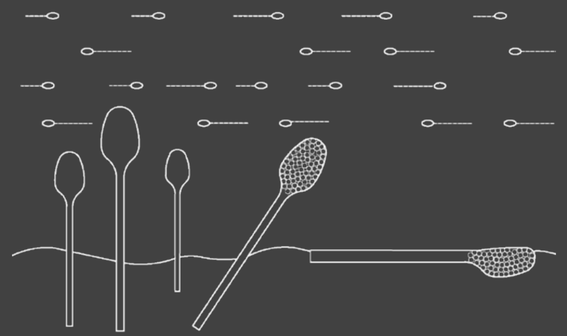
Cities, New York

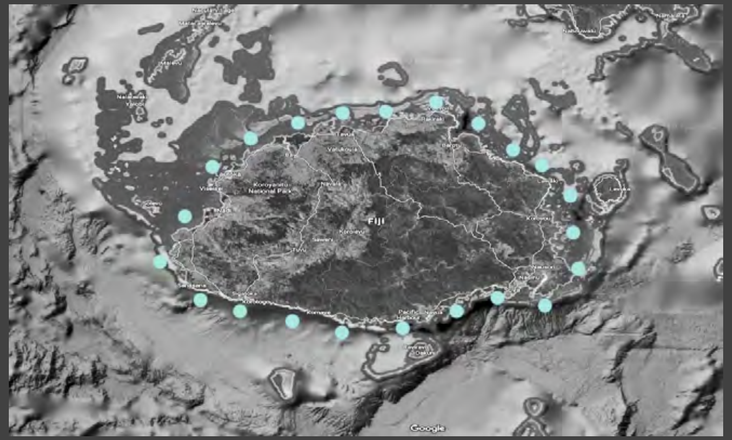


Jungle, Brazil



Water, Fiji



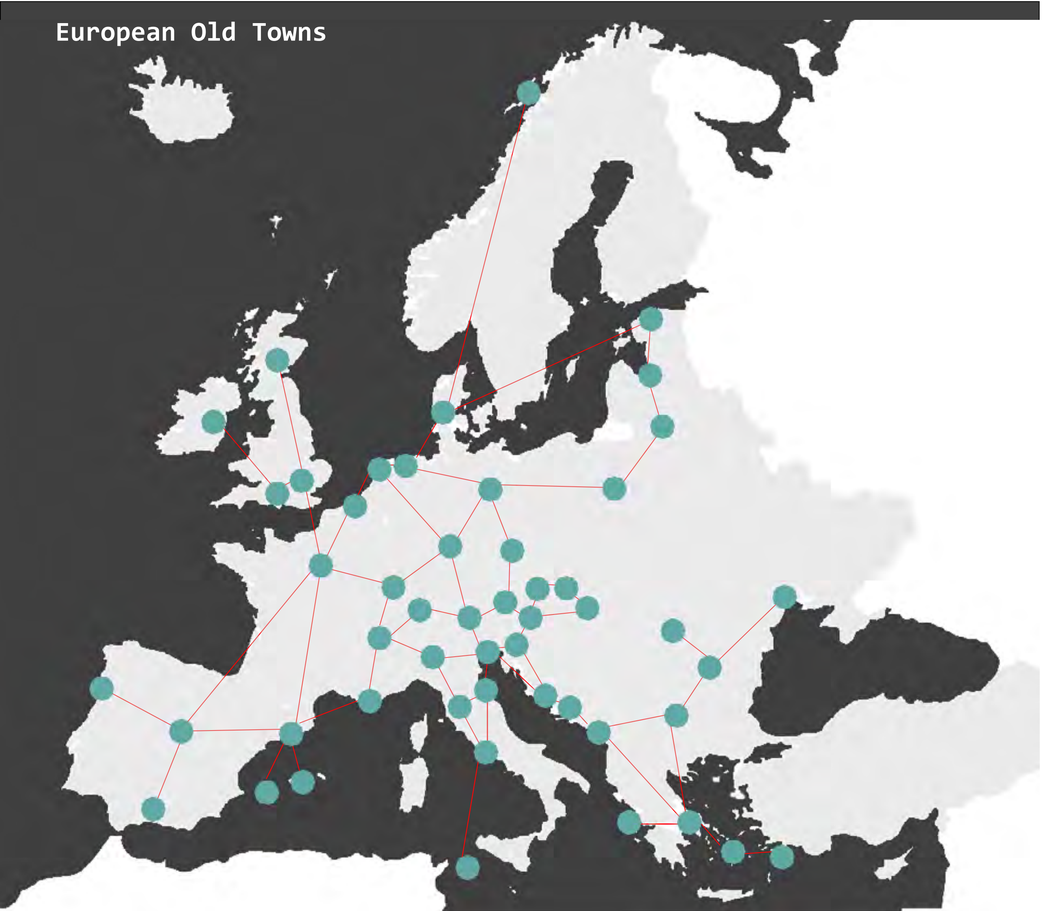


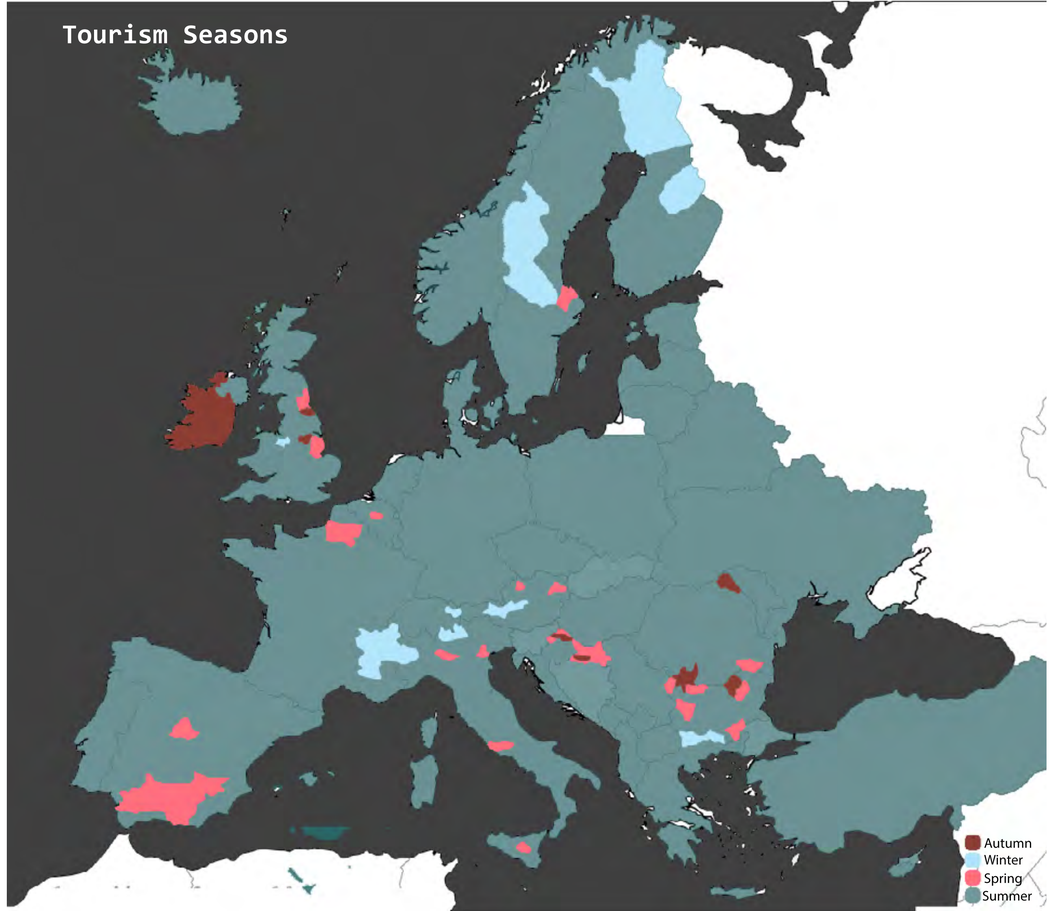
4. Tourism on an Continental Scale

In Spring 2018-2019, I spent a semester abroad in Venice and visited almost every single country in Europe. Europe is one of the biggest tourist hubs in the world so I decided to focus on it and highlight the touristic overcrowded cities there.

Numerous old towns in Europe are suffering from overcrowdedness which is leading to the deterioration of these towns. The high seasons in Europe are in the summer and the low seasons are in the winter. When I traveled in the high seasons, the towns were fully booked and packed with tourists. People are often not able to visit any attraction and stand in never ending lines for a view. I wasn't even able to take a picture without all the tourists in it. Meanwhile, these same towns were almost empty in the dead seasons.

This is because these towns full of diverse industries shifted into one main industry, which is tourism. The result is a significant reduction in local residents living there.


European Old Towns


Tourism Seasons
Autumn
Winter
Spring
Summer

Over Touristic european Old towns

10.6 Million
Prague, Czech Republic

8.3 Million
Bruge, Belgium

20 Million
Amsterdam, Netherlands

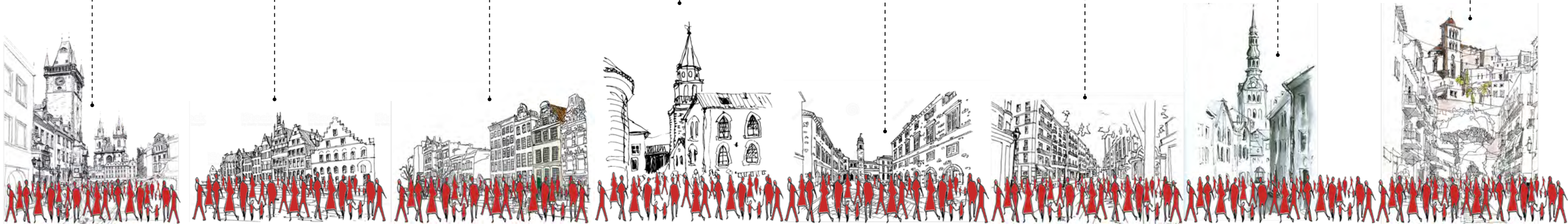
2.7 Million
Kotor, Montenegro

5.4 Million
Bratislava, Slovakia

32Million
Barcelona, Spain

Tallinn, Estonia

20 Million
Ibiza, Spain



5. Tourism on a Regional Scale :

Venice is a city in northeastern Italy. It is situated on a group of 118 small islands that are separated by canals and linked by over 400 bridges.
It has been known as “La Dominante”, “Queen of the Adriatic”, “City of Water”, and “The Floating City”.
Venice has been ranked many times as the most beautiful city in the world. It has been described by The New York Times as “undoubtedly the most beautiful city built by man”.
And it’s a pity for us to let it disappear...
I chose Venice because I lived there for 6 months as an exchange student in 2019, and because it is a major tourist region suffering from two aspects:
Social (Overtourism and Gentrification) & Environmental problems (Flooding).
So, I decided to implement my system on Venice and explore how tourism can save Venice instead of ruining it.

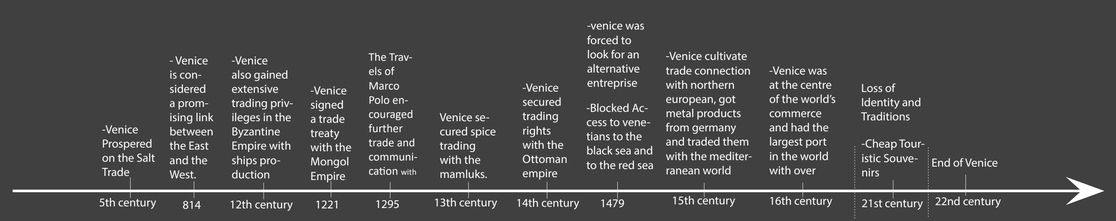
Zooming in on Venice, Italy

Venice as a Trading City

Venice was a major financial and maritime power during the Middle Ages and Renaissance.
As well as an important center of commerce, especially silk, grain, and spice, and of art from the 13th century to the end of the 17th. This made Venice a wealthy city throughout most of its history.

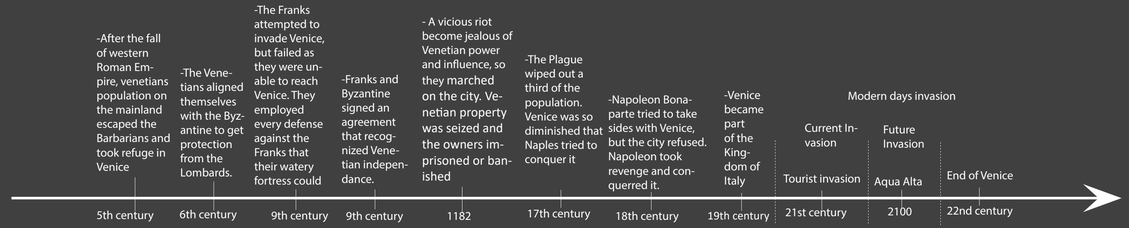
Whenever an empire shut down the trade with Venice so it doesn’t become stronger than them, Venice used to always make another trade with other regions and empires so it maintains its wealth and strength.

But ever since the fall of the Venetian Republic in 1797, locals have complained that Venice, is being flooded by visitors.
It went from a city of Production to a city who lost its identity and traditions by selling cheap touristic souvenirs.

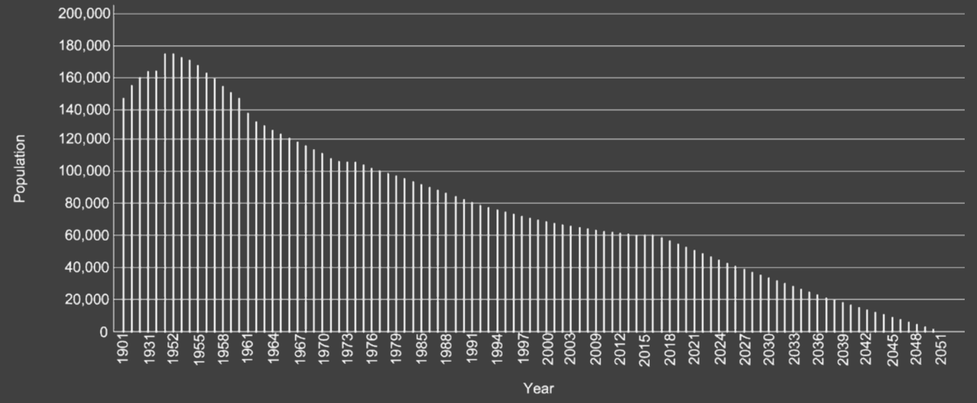


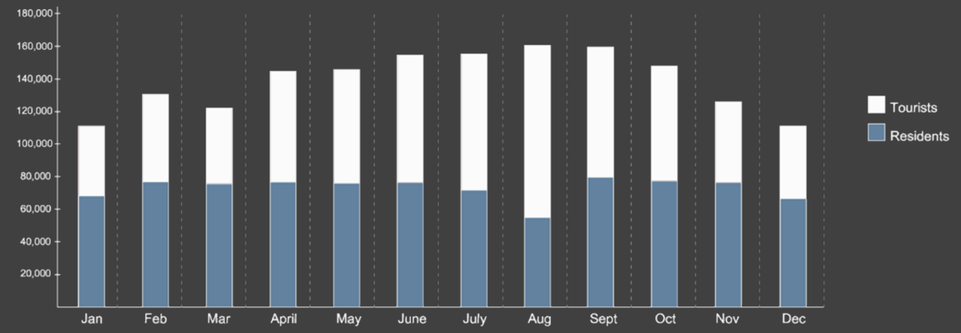
The Invasions of Venice

Venice was a very strong maritime fortress and no one could attack Venice because of its location and power.
But after years, Venice faced multiple wars until Napoleon conquered it. In the 19th century, Venice became part of the kingdom of Italy.
But the invasions didn’t stop as it evolved into modern day invasions of tourism. The tourists are flooding the city which is making the residents leave.
And this creates the “War of Tourism.”
When there’s war in a country, tourists don’t visit, but what if tourists are the ones that create this new kind of war? Then the residents leave and when that happens, the town loses its identity and traditions. And when it’s dead season and tourists also leave; the city becomes a ghost town.



Residents vs Tourists





The Unequal Distribution of Tourists

I got to experience living in Venice as a resident and I was so frustrated by the number of tourists and how they are always so concentrated in two specific regions: Rialto and San Marco.
The rest of Venice is inactive and empty. Some are dead areas and some are about to become dead areas.
The unequal distribution of tourists in Venice is a problem, and this creates tension and frustration for the residents and tourists.
The tourists don’t get to enjoy their experience in Venice and the residents can’t keep living in a place so overcrowded that they can barely comfortably move and can no longer afford the rising prices of living.

Mass Tourism Location

Current Hotels invasion

Full Hotels saturation

Loss of Production and Cultural Identity

Mask Production

Ship Production

Handmade shoes Production

Fabrics, wool, silk Production

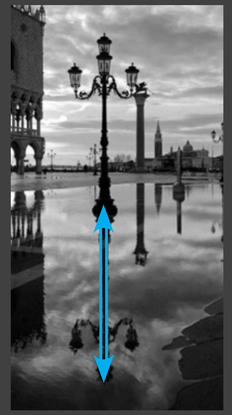
More touristic cheap chinese souvenirs

Acqua Alta

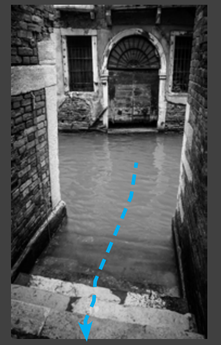
Venice suffers from Acqua Alta, which is the rise of the sea water level that floods the whole city and damages it.

Why does it happen?
-Rising sea level
-Low atmospheric pressure
-Very high tide (usually during a full or new moon)

When does it happen?
- Late September and April and especially in the months of October, November, and December.
-However, due to global warming, it now can occur at any time of year.
Acqua Alta can make Venice feel like the lost city of Atlantis.

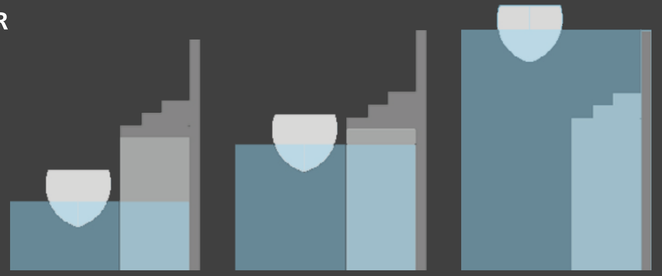


Stairs leading to water

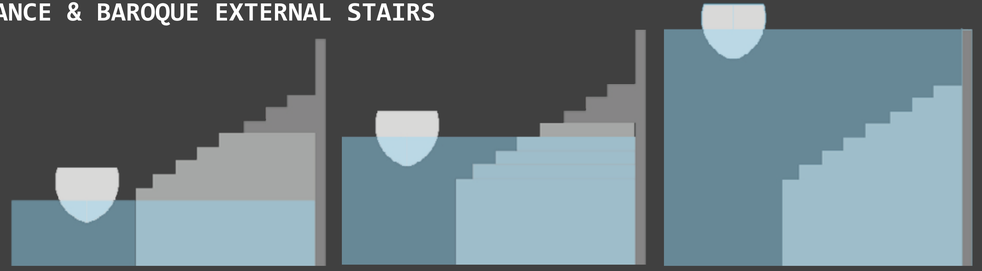


QUAY CROSS SECTION

GOTHIC EXTERNAL STAIR



RENAISSANCE & BAROQUE EXTERNAL STAIRS



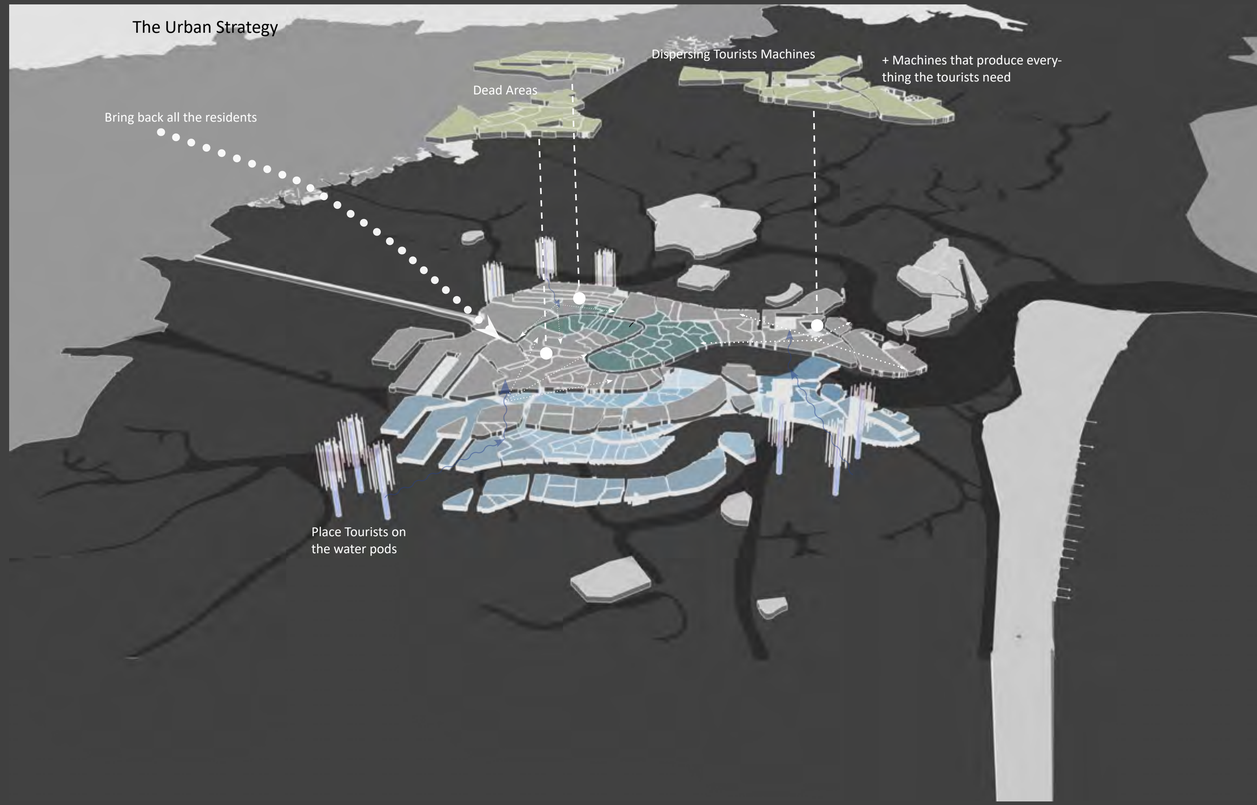
Flooding map of Venice

6.Urban Strategy

One of the strategies is to bring back all the residents to Venice and let them occupy the houses. Transforming back the hotels that used to be houses and giving them back to the residents.

The tourists would fly with their living capsules and plug it in the water system.
A connection from theses water towers to Venice will be designed in order to spread tourists out and not concentrate them in one or two areas. So, tourists reach Venice from all around the shore where.
Machines would be inhabiting abandoned buildings in Venice.
These machines produce services for the residents and for the tourists, to sustain the tourists and keep the city sustained as well.
This would create an exchange between the tourists and the residents, while reviving Venice through Production and bringing back the residents which will bring the cultural and traditions back to the city.

The Srategy

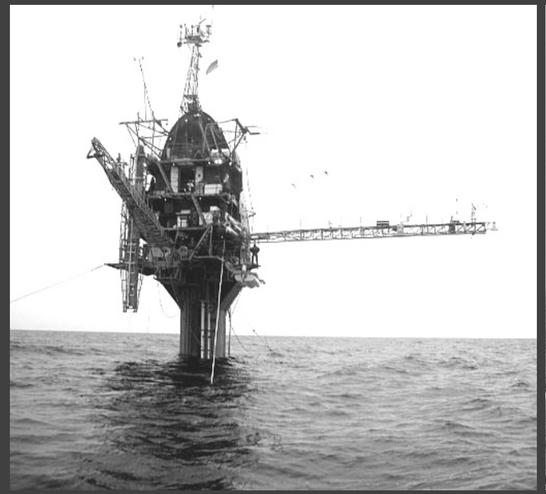


7.Program and Design Exploration

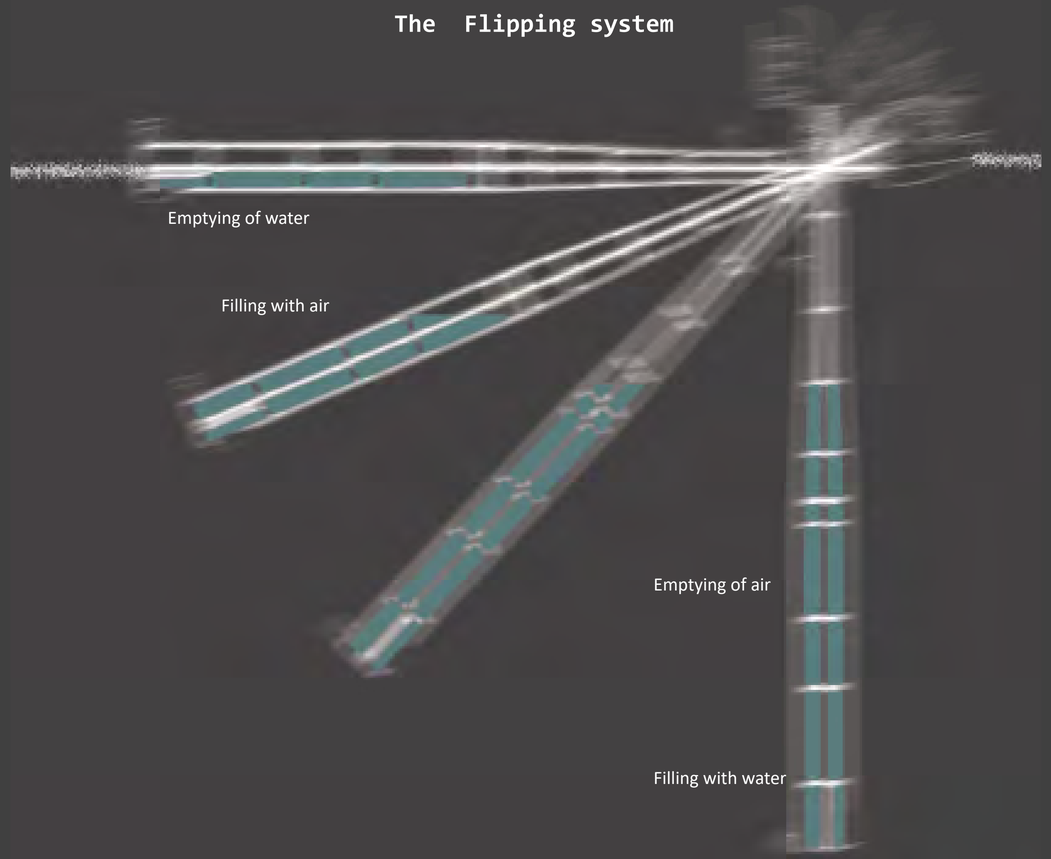
The Flipping Strategy : How can Tourists

This proposal saves Venice from flooding while housing the tourist’s plug ins and producing food from the aquaculture farming.
This design is a vertical structure/machine that is distributed in the water around Venice.
The machine flips to a horizontal position when there’s flooding, creating a ring around Venice to block the high tides from reaching the island and protecting the residents and the city.
This ship would also flip horizontally to connect with the shore of Venice to create pedestrian access to the city.
The main reference of the technological flip structure is the RP FLIP (Floating Instrument Platform), owned by the U.S. Office of Naval Research (ONR) and designed in the 1960s.
Kiyonori Kikutake adopted this boat, which is extremely stable when vertical, as his main reference for the design of his famous Water Cities proposals.

US NAVY “FLIP” inspiration

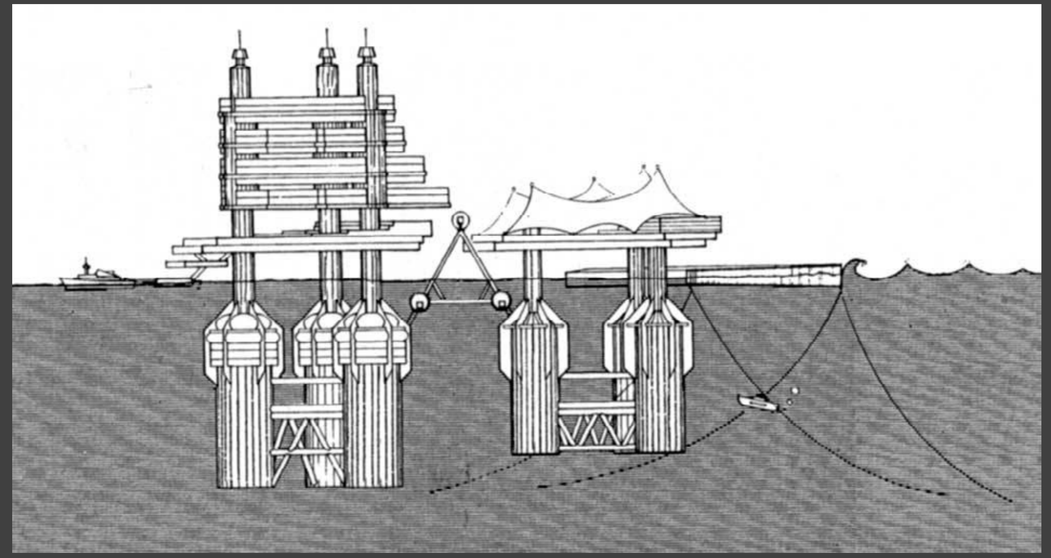


The Flipping system



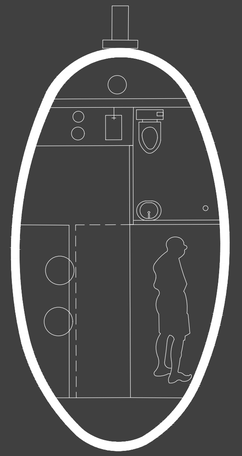
Kiyonori Kikutake water cities case study

kikutake's 'marine city' was one of the first major players in the movement, defining a new radical idea of creating a floating metropolis in the ocean; self sustainable, flexible, clean and safe, earthquake-proof, impervious to flooding and away from urban sprawl on the main land. the project is based around steel rings, measuring over two miles in diameter, on which towers would sit holding 1250 magnetized living units that could be easily replaced without causing any damage to the structure. the circular foundations would float on bottle-like forms boasting rich aquaculture farming.

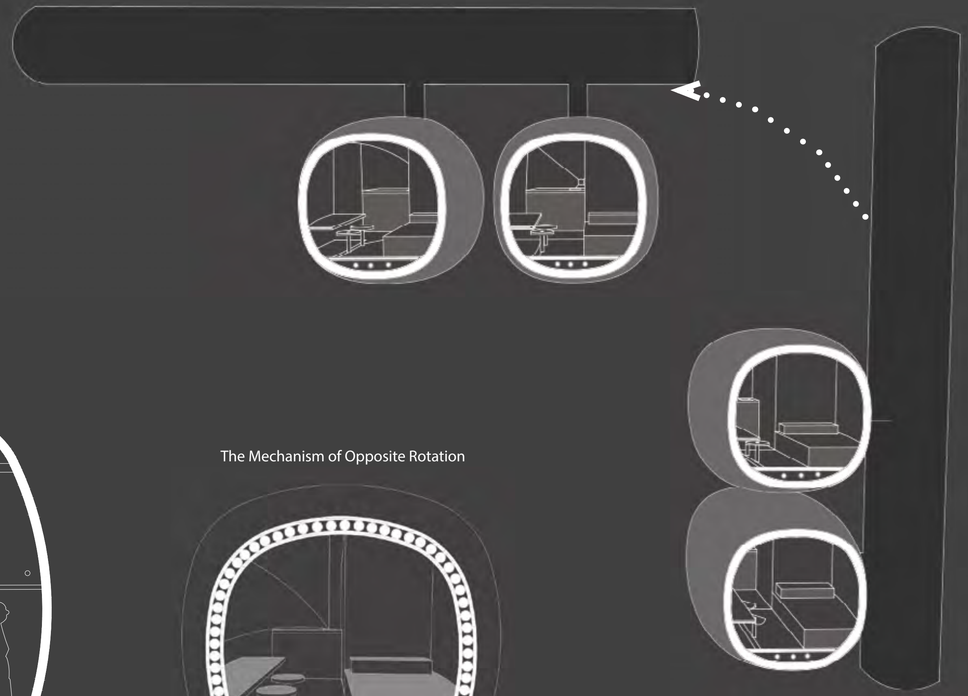


Capsule Design

The capsules are designed in order to function both horizontally and vertically.
The shape of the capsule is designed for the air friction when flying as well as this circular shape is best for the rotation of the capsule.
The system researched for the rotation of the capsule is the roller bearing element. It consists of roller elements in between the two shells of the capsules, the outer and the inner shells. So when the outer shell rotates in one direction the inner shell would automatically rotate in the other direction to keep the stability of the people living in the capsules.



Flying Capsule Design



The Mechanism of Opposite Rotation

Vertical state

There’s 175 Water Flipping Structures around Venice, each one can have 90 plug ins.
Every capsule can house 2 people in it. So the total number of tourists is :
90 x 175 x 2 = 31500 people

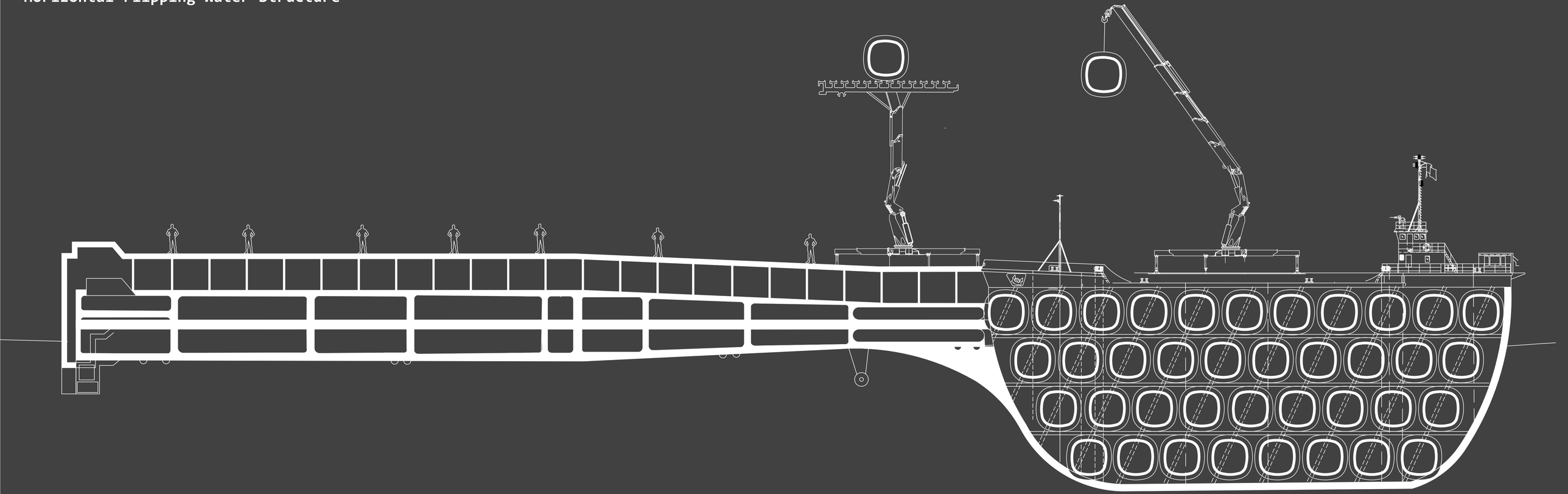
Pedestrian Access connection - Flipping Horizontal

The Residents own the plug ins structure and they charge money on every plug in.
The Residents don’t have to pay for the basic necessities while living in Venice.

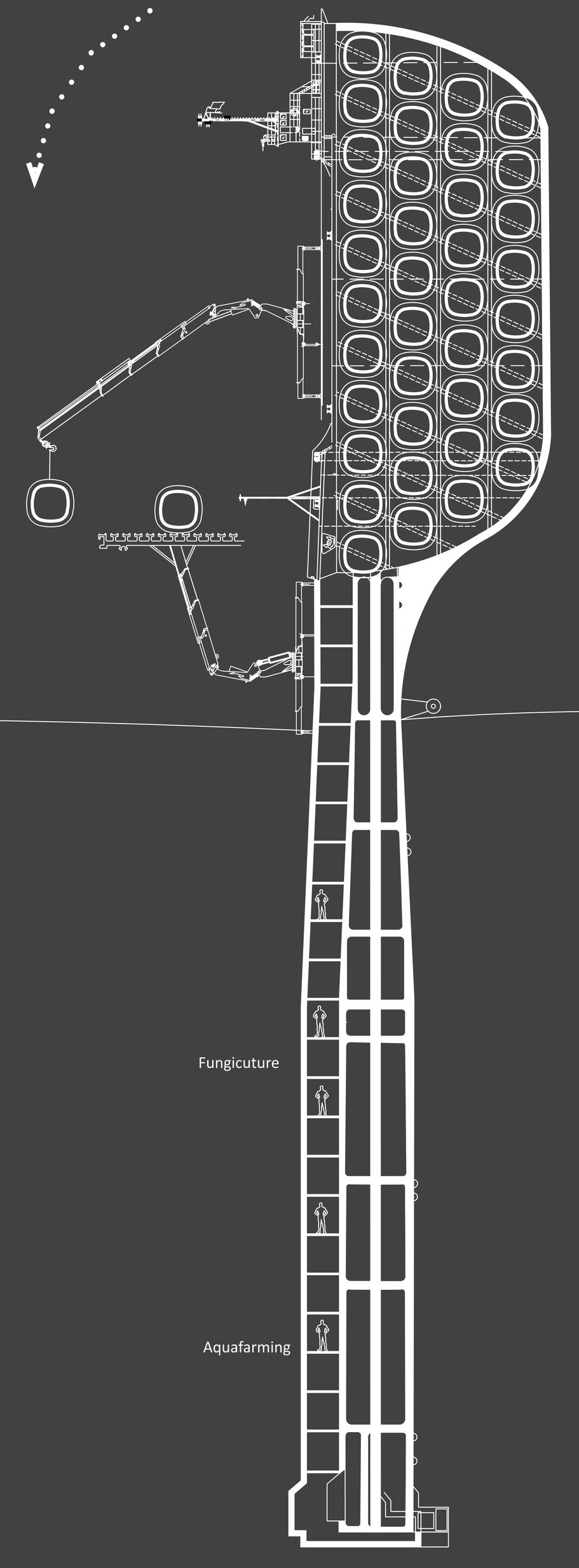
Ring wall Creation around Venice to Block the Acqua Alta-Flipping Horizontal

Communities creation for Aquaculture

Horizontal Flipping Water Structure



Vertical Flipping Water Structure



How Venice already Functions

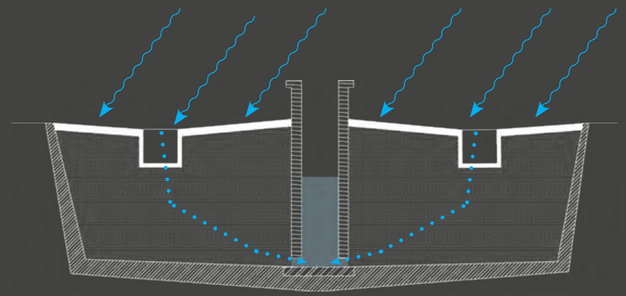
Recycling:

Trash Collec-

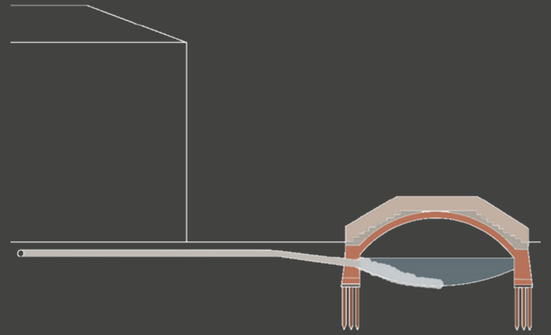
Transport to Mainland Venice to be recycled

Rain Catcher:

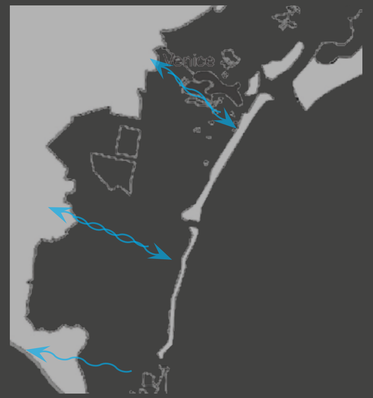
Not Functional anymore



Sewage/Water Treatment:

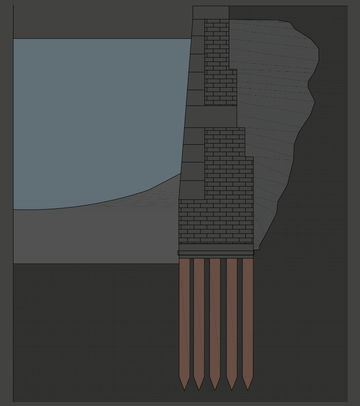


Renewal of Tides twice a day

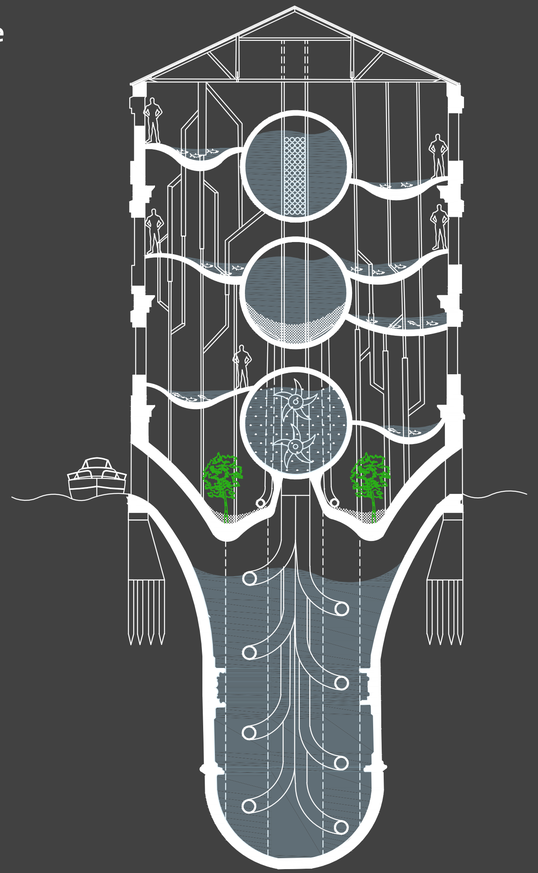


Aqua Alta Project- MOSE:

Wooden Piles Foundations

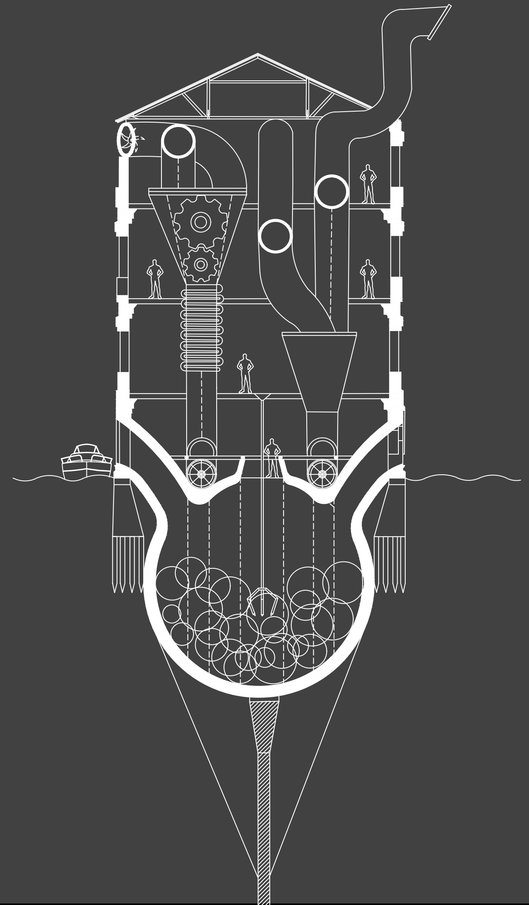


Water Treatment Machine



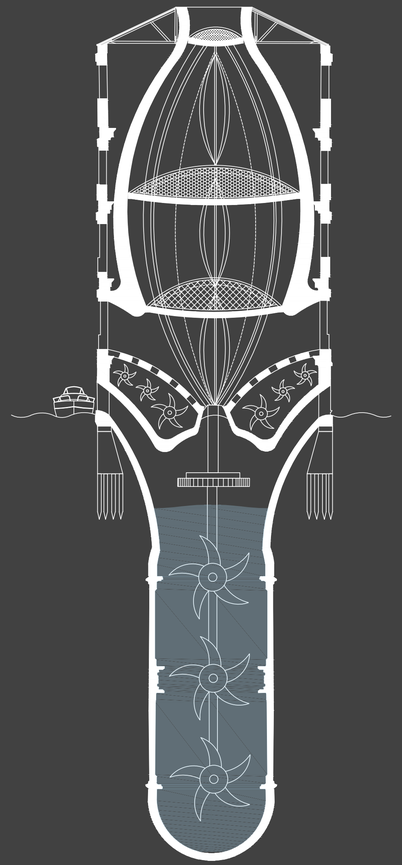
Every person consume 150L on average.
150,000 x 150 = 22500000 L/day = 22500 cubic meter
Volume of the Water container in this machine is: 640 cubic meter
22500/640 = 35 Water Treatment Machines

Recycling Machine



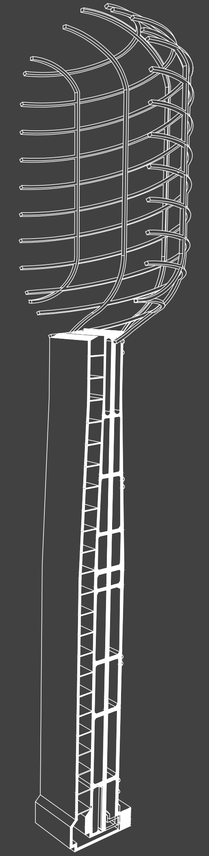
Around 2.6 kg is a person’s daily trash.
Assuming we have 150,000 people living in Venice:
150,000 x 2.6 = 390,000kg/trash/week
Volume of Machine Trash Container = 550 cubic meters
Volume = Mass/Density
Density of trash = 481
Volume of trash per week = 7000kg
7000/550 = 13 Recycling Machines

Air Cleaning Machine

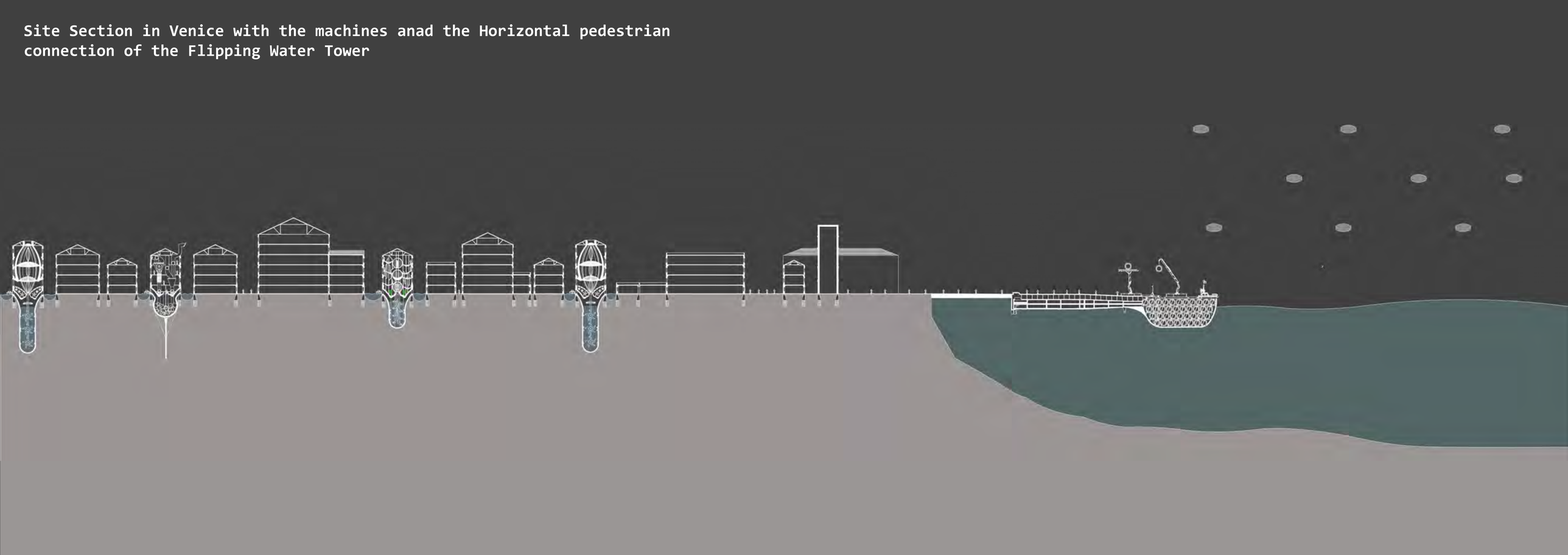


Every person consume consume 10,000L of clean air/day
10,000 x 150,000 = 1500000000 L/day
Volume of this air container = 7500 cubic meter = 7500000L
1500000000/7500000 = 200 Air Cleaning Machines

The Ribs system that provides the services and goods to the plug ins



Site Section in Venice with the machines anad the Horizontal pedestrian connection of the Flipping Water Tower



8.Conclusion

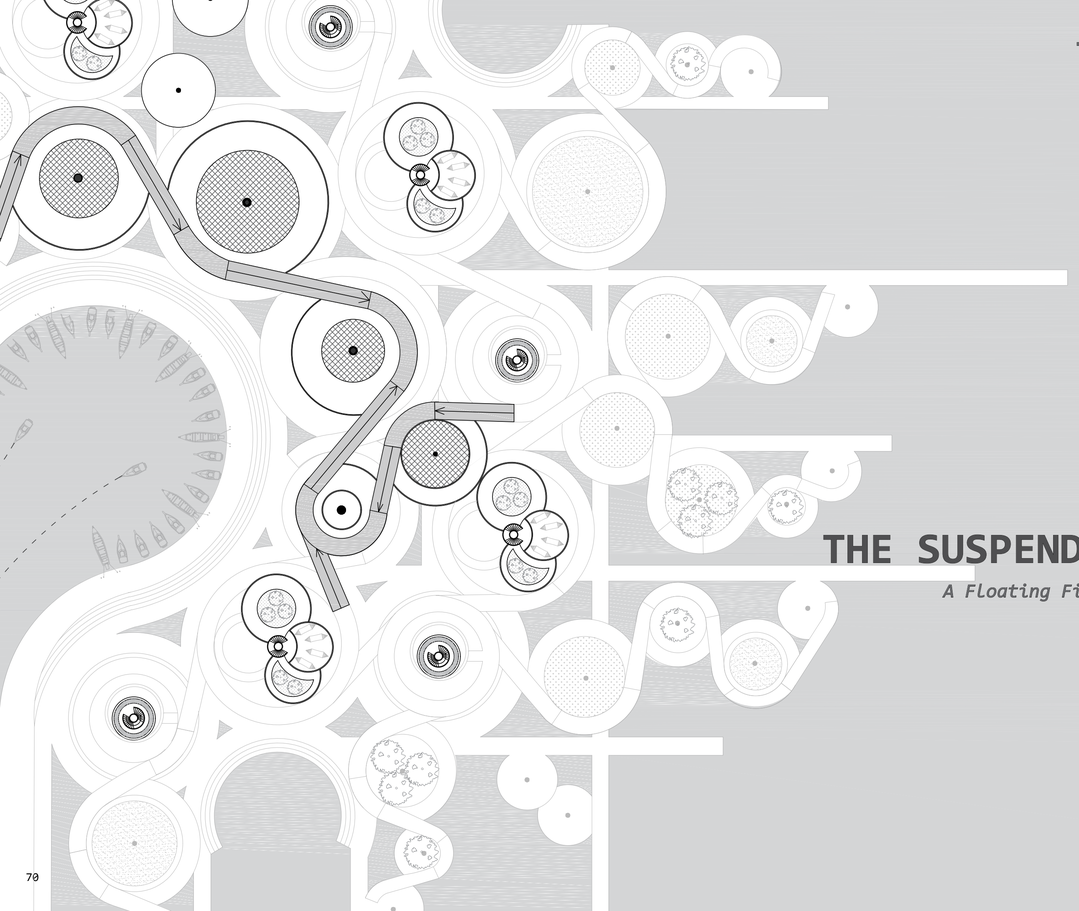
The war of Tourism is present in many overcrowded cities, where an excessive number of tourists invade the city with negligence. These overcrowded areas, are being suffocated by the tourists, and are no longer able to maintain the level of resources and services needed to keep the city sustainable while accommodating the influx of tourists. This creates a decline in many ways in these cities. Their previous industries shift to become primarily a tourism industry. In many cases like Venice, Barcelona and Dubrovnik, this touristic industry is failing the city itself, leading to the death of the city.

Locals are the main core of a city and are critical to maintaining the culture and traditions. However, due to rising prices, lower quality of life, overcrowdedness of the city, loss of jobs and other industries and productions, residents are being forced to leave the city, leaving a ghost town.
The main strategy is to bring back the residents, shift the industries to be more production focused, and provide more jobs for the residents. This will ignite a positive and beneficial exchange between the residents and tourists.

The implemented system consists of plug ins structures and machines that provide space relief for the city by supplying some of the tourists infrastructural needs and services so they don’t create more tension on the city. These machines clean the air, recycle, and treat the water to improve the quality of life for the residents while also turning Venice into a sustainable city.
Aquafarming will be utilized in the water when the water structures connect to each other in a square manner. Also, the implemented system will help save Venice from flooding.

In this way this system would revive these cities while providing relief for the residents and the city itself, to help prevent the destruction and abandonment of the city.

END OF THESIS I



THESIS II

THE SUSPENDED HANG

A Floating Fisherman village

In Thesis II, I decided to work with another group of users, I switched from saving the residents of Venice with floating machines to saving another dying community «the fishermen on the coast of Lebanon» with the floating systems

B.CONTENT OF THESIS II

Saving Dying Communities with Floating Systems

The Fishermen Communities

I- INTRODUCTION

For thousands of years, Lebanon's **coastline has been a vital source of sustenance** for local residents, the lebanese are historically ocean-origin people, consuming lots of fish in their diet. Local **demand for fish** is considerably higher than the neighboring Middle Eastern countries. However,due to the **low local fish production**, the Lebanese have been depending on **imported fish** that are generally of inferior quality.

Because of the chaotic **urban growth, real estate development, privatisation of the coast and pollution** have now made it increasingly difficult to scrape by on catches from the Mediterranean Sea, all leading to the **damage of the coast** of Lebanon, hence enormously **affecting lebanon's fishing industry.**

These several challenges **discourage the Lebanese fishermen** from practicing their hobby. Not only did these challenges lead to the d**ecrease in the number of fishermen**, but also to the gradual eradication of Beirut's cultural heritage. These challenges are reported by many fishermen who have considered the **shore as refuge** for so long. However, fishermen are still **fighting to keep their trade alive.**

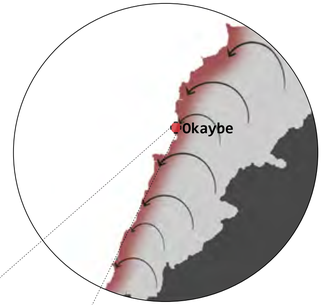
Where can the fisherman s**eek refuge in order to start growing again** and not letting this important industry fade away and die? How do we **revive the fishing** industry in lebanon? would it be possible to **move the fisherman to the sea**, and build a **sustainable floating villag**e where fisherman can **practice better and have a growing community and a base to lean on?**

I lived my life in a town called Okaybe where fishing was the main vital resource and activity. But nowadays, **the Fishing industry is rapidly declining and the fisherman community is dying.** A lot of **new construction and project development have caused tension on the remaining fisherman to move away**. So Okaybe like many other lebanese coastal cities is suffering from the tension of losing its cultural heritage by the disappearance of the fisherman community.

The Dying community of fisherman

Case Study: Okaybe

Saturation of the Coast

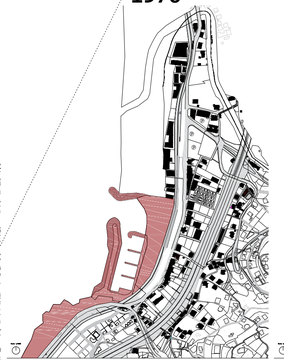


Moving Fisherman to the sea

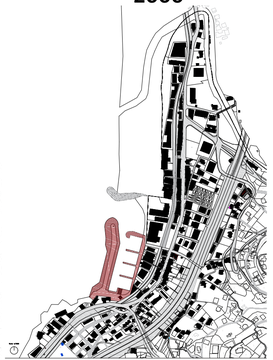
The Disappearance of Fisherman Community & Activity along the coast and through the years

1910

1970



2000



2025

I- INTRODUCTION

I visited a fisherman port in one of my testing coastal towns “okaybe” and interviewed some fishermen who were still there.
Interview with a local Fisherman “Zakhia El Azzi, 55 years old”:

-How did you start fishing?
“Since I was a kid, my father taught me how to fish. It is our tradition, our great grandparents used to be fisherman and they passed it on to their kids, so our parents passed it on to us. Unfortunately we didn’t pass it to our kids and we won’t! It is a dying industry, and nobody cares about us, there are no regulations for fishing here and we are feeling a lot of tension lately to move away.”

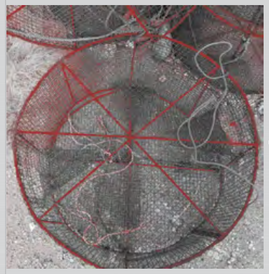
-What do you think will happen to the fishing industry in the next 30 years in Lebanon?
“30 years?? Let’s talk if we’re still going to be active in the next 5-10 years! We are reaching our end sooner than you think.”

-How important do you think it is to maintain the fishing industry alive?
Fishing is a very important resource for Okaybe and all the coast of Lebanon, we used to be completely independent of fishing and agriculture, but now both of these practices are dying, which is leading to a decline in the economy. Since we are importing everything from outside, instead of fishing and cultivating locally.

II- CONCEPT & INSPIRATIONS

When I visited the fisherman port, I was very inspired with their tools, like cages, ropes, nets, circular fish farms… so I mixed all these elements together and used them as a starting point to develop the main system of the final design.

Fisherman Tools:



CAGES

+

ROPES

+

CIRCULAR FISH FARMS

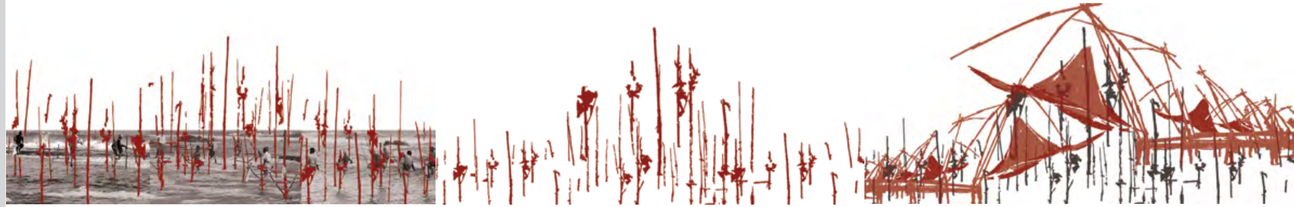
+

NETS

II- CONCEPT & INSPIRATIONS

In my travels to sri lanka, I was very inspired with the stick fishermen on the coast of sri Lanka. So I decided to build this vision of floating sticks and a net covering and connecting them all together.

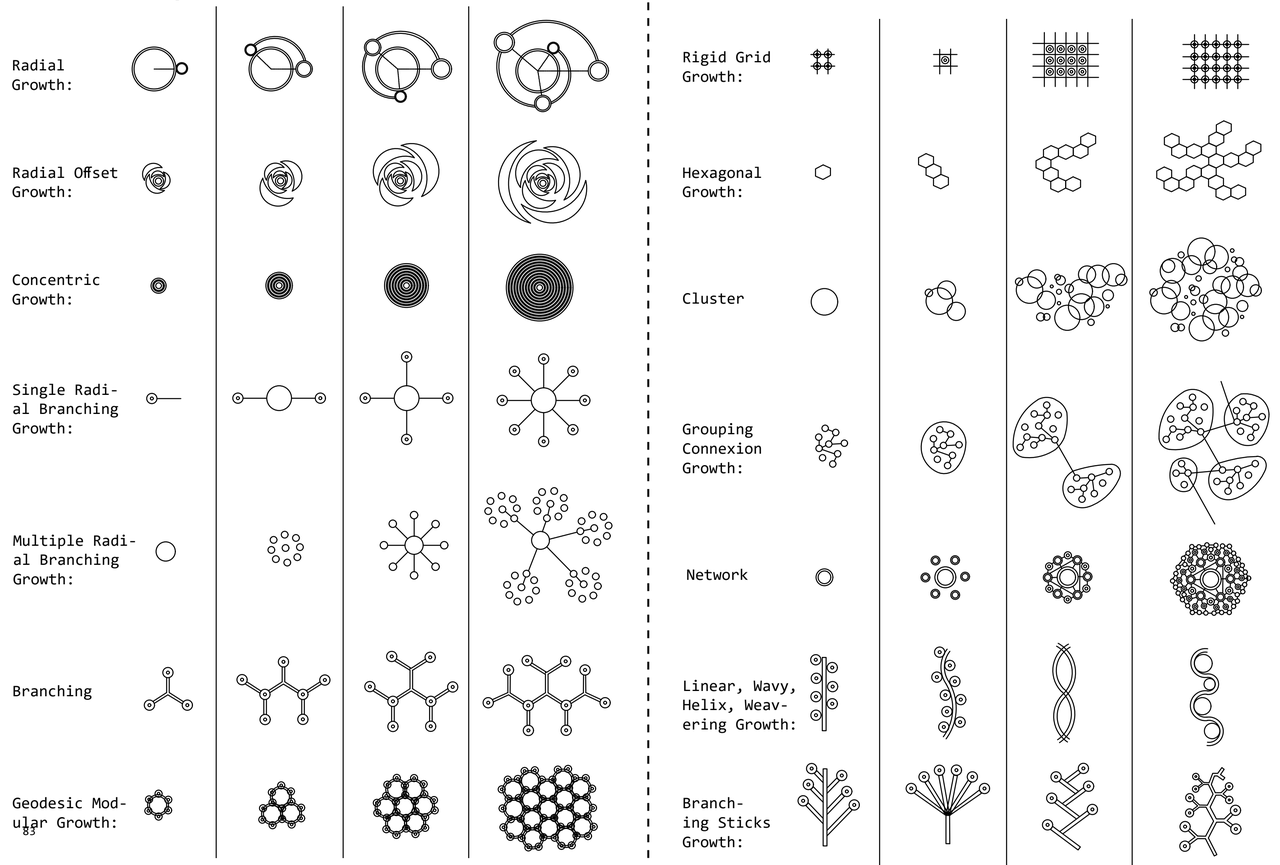
Social Practices of Fisherman and Inspirations



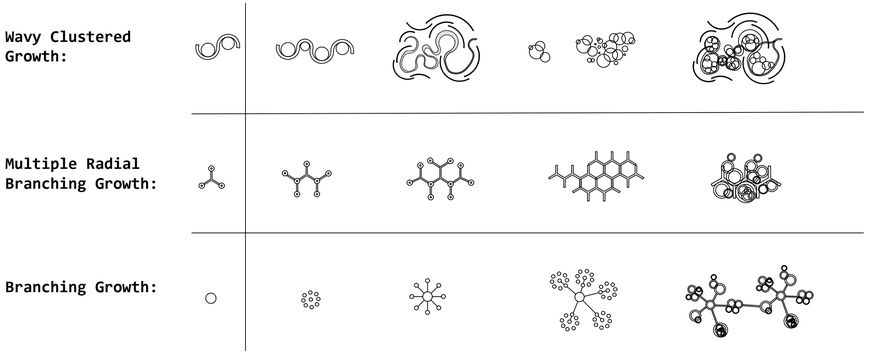
III- PATTERN & GROWTH

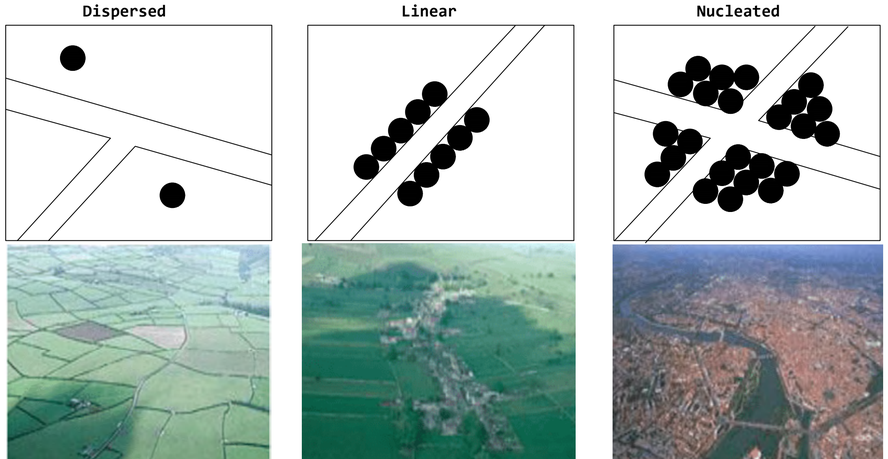
I started studying and exploring patterns and growth so I base this floating village on a pattern that grows and expands. Then, I developed few patterns into a settlement vision. And I explored how a settlement was being built from scratch. There's 3 types of settlements "Dispersed", "Linear" and "Nucleated". Nucleated is the most condensed one and it is usually clustered around a market. So after looking more in depth on the already existing floating fisherman villages, I concluded that the fisherman villages should be clustered and condensed, and this is for many reasons, like security against the wave and practicality for the village.

Pattern Explorations:



Potential Pattern Explorations for Settlements:



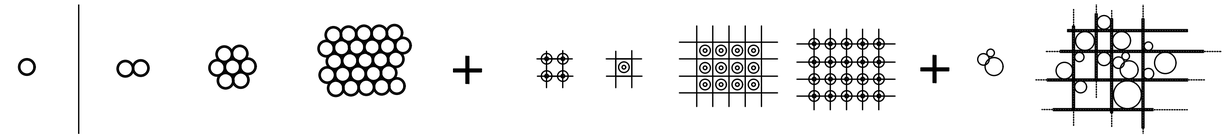


Typical Fisherman Floating Villages

III- PATTERN & GROWTH

I decided to merge many patterns together. So I started with the circular pattern and added a grid system on it and then made it a flexible grid depending on the function of these circles.
After developing these additions together, I created an open courtyard in the middle that is a public pier for boat parking and a place for people to gather, connecting the three neighborhoods together, while protecting the boats from the wave. The design developed with the horizontal grid acting as a Wave breaker and positioned towards the open sea, while the courtyard opening is facing the land, as it is seen in the two testing sites of Okaybe and Batroun. This floating village activates the water taxi boats of the ports, creating a connexion with the land, and at the same time economizing its fish market, while bringing visitors into the village to buy the goods.

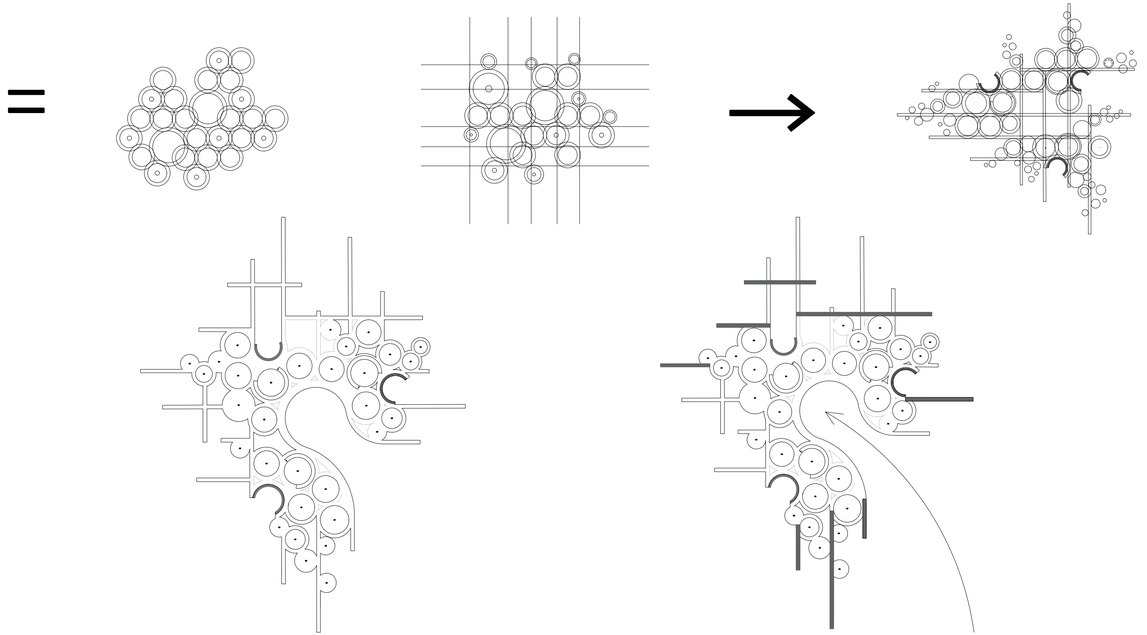
Pattern Development:



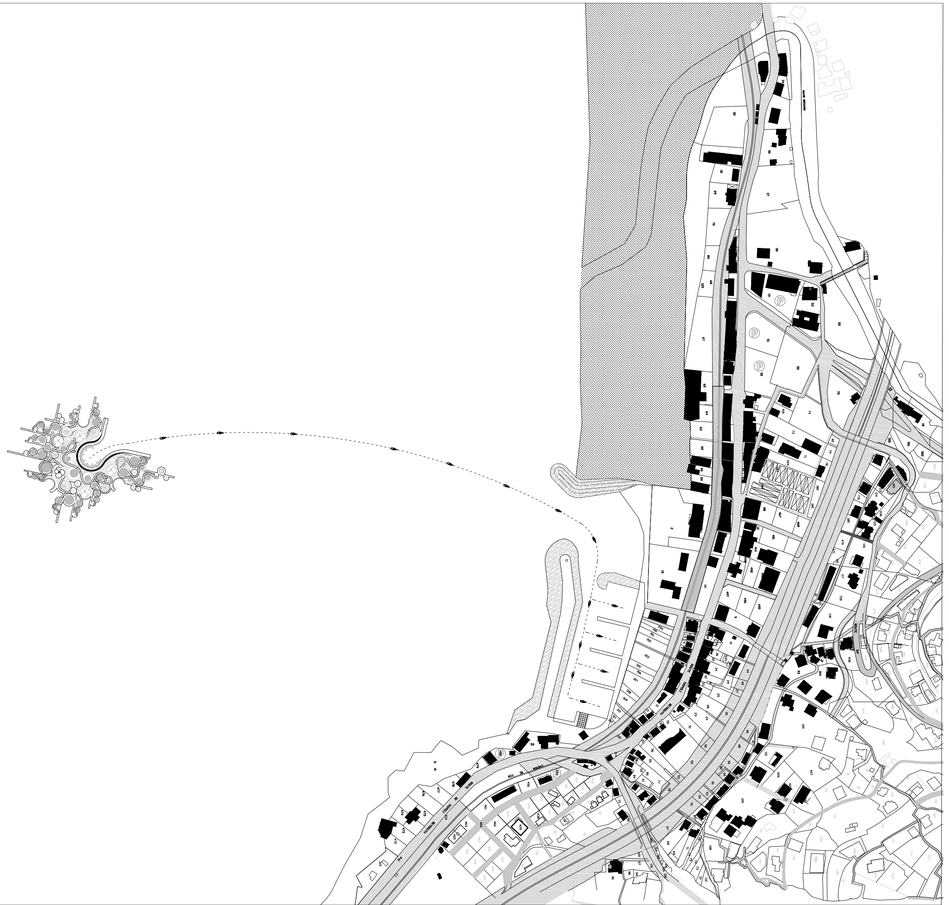
Circular Clusters

Grid System

Flexible Grid, Cluster



Okaybe Site Testing

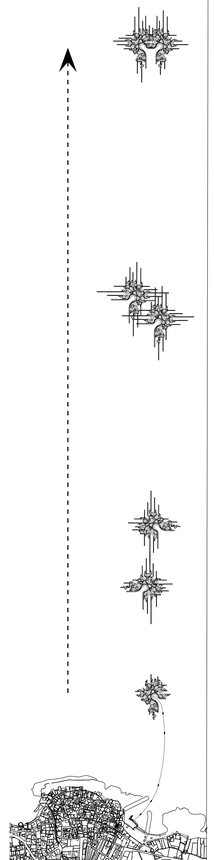


Batroun Site Testing

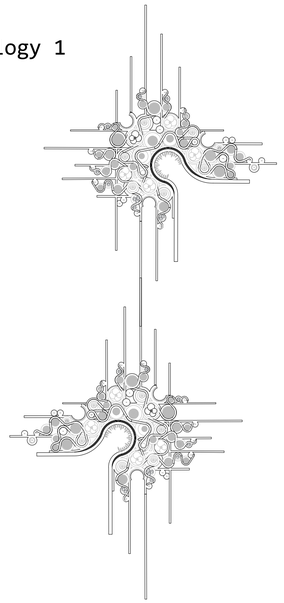
III- PATTERN & GROWTH

For the growth, there are three typologies. The first one is the linear typology that is the most dispersed and the closest to the shore. The second one is beginning to be more clustered so it’s farther from the first one. The third one is the densest and it is placed the farthest since it can withstand the most waves.

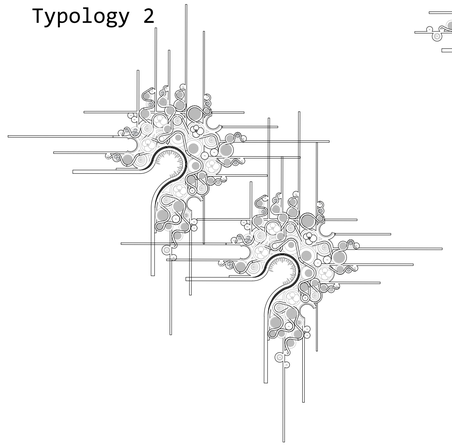
The Growth



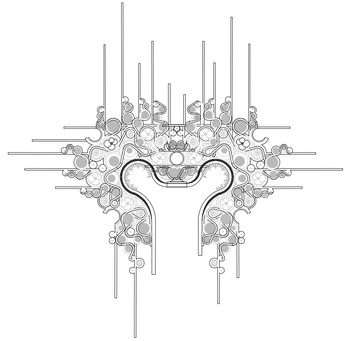
Typology 1



Typology 2



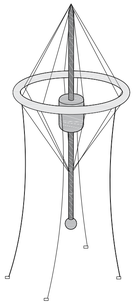
Typology 3

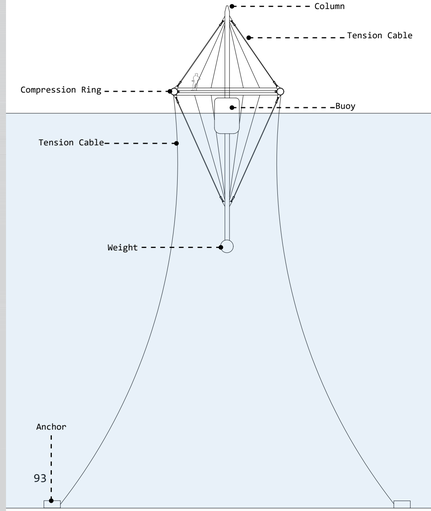


IV- SYSTEM & TYPOLOGIES

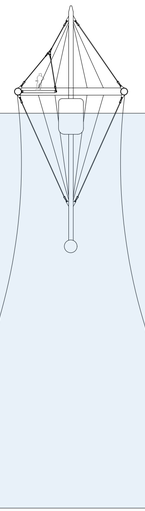
The village is based on one main structural system that is multiplied and clustered together. This system consists of a column, tensile cables, compression ring, buoy, anchors, and a counterweight. From this main system, different typologies emerge based on the functions they inhabit. Some of the functions are: Aquaponics and fish farming, outdoor agriculture, housing, public spaces, fish market, desalination..

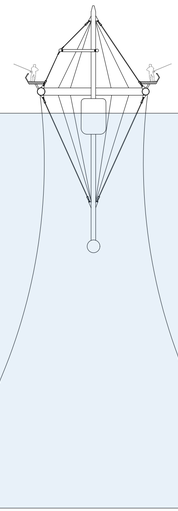
The Main Structural System



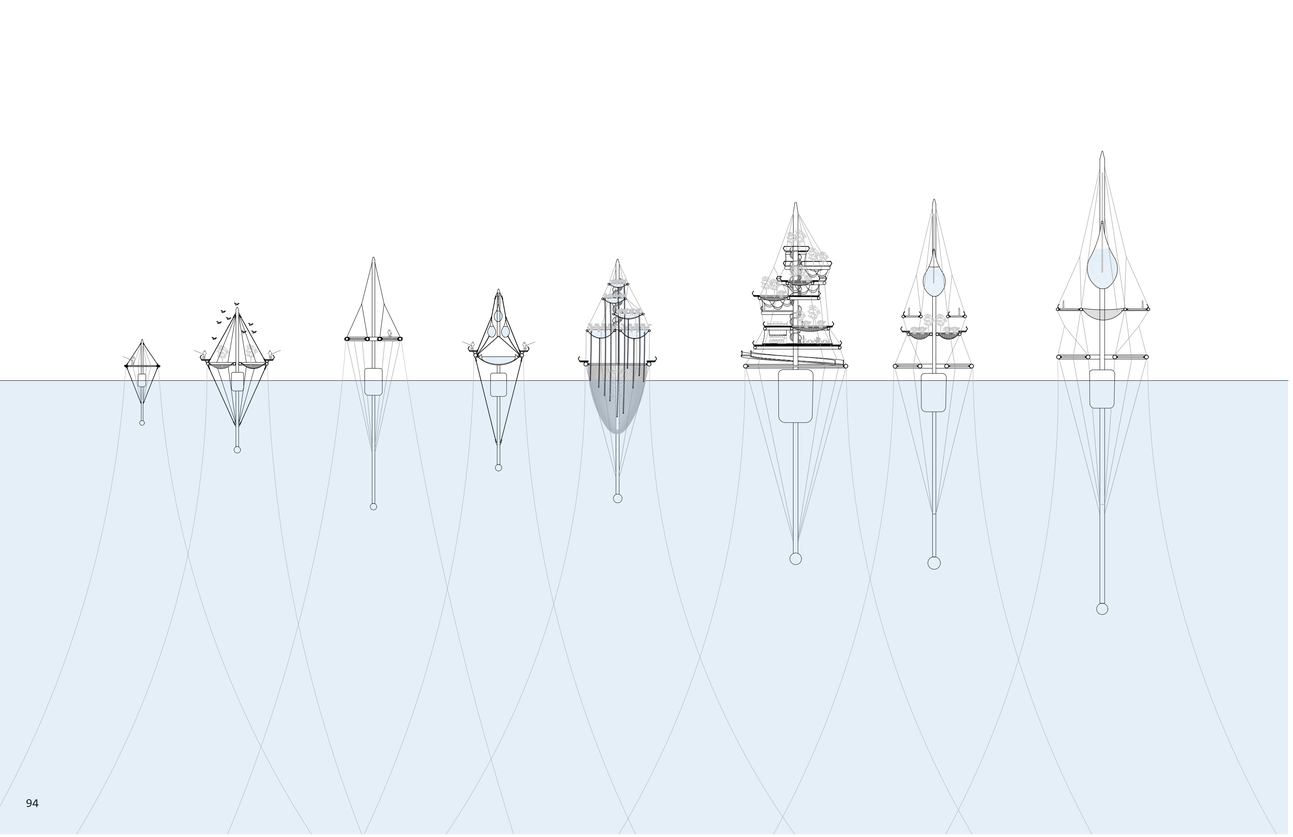


The behaviour of a cable

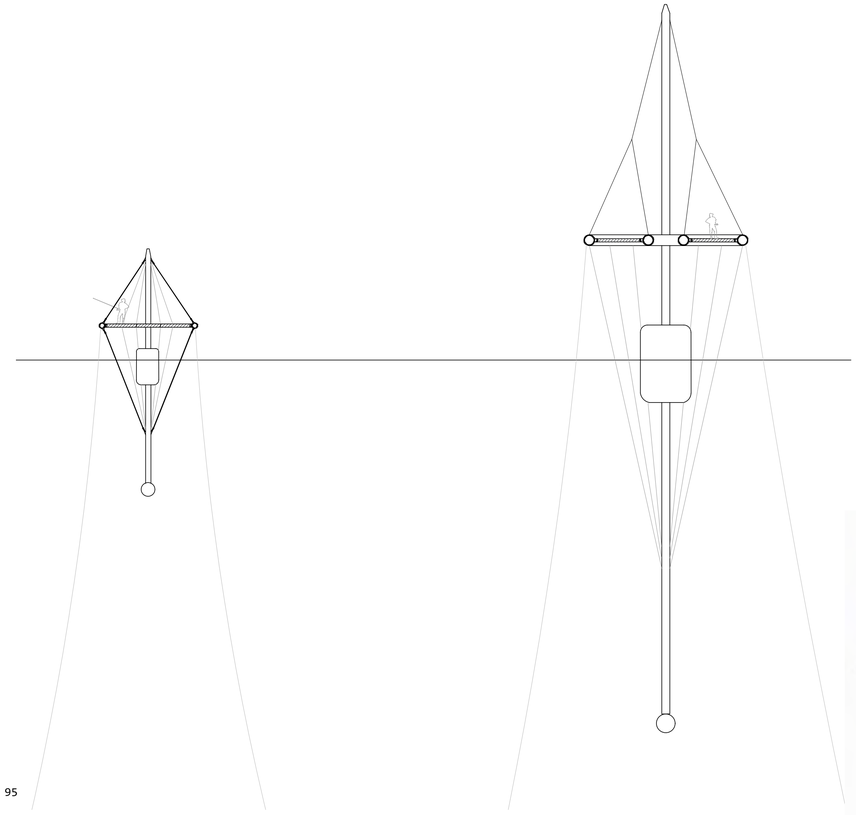




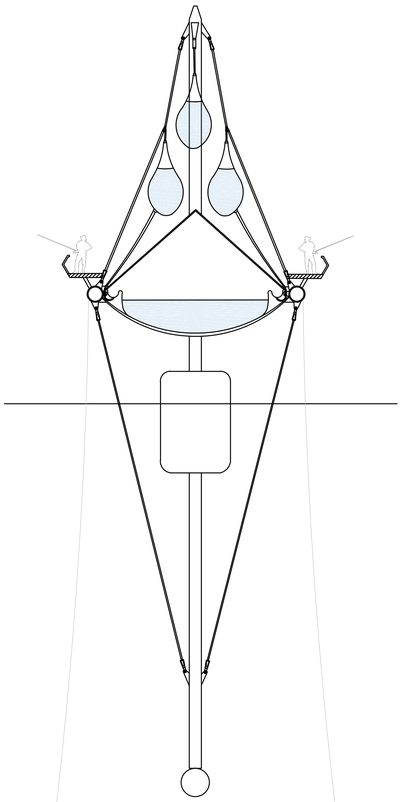
The Typologies of the system



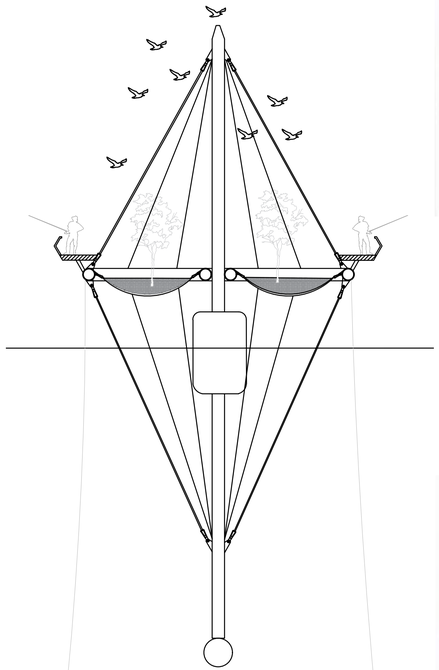
The Platfrom

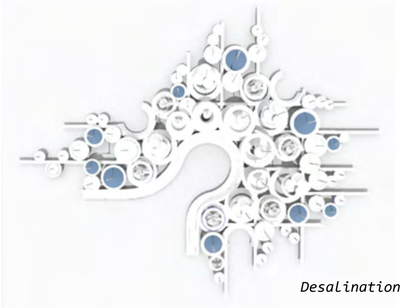


Desalination



Outdoor Farming

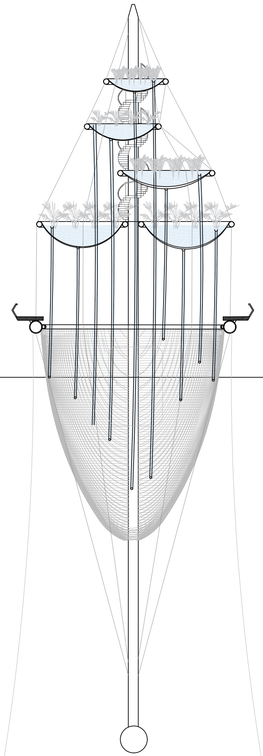




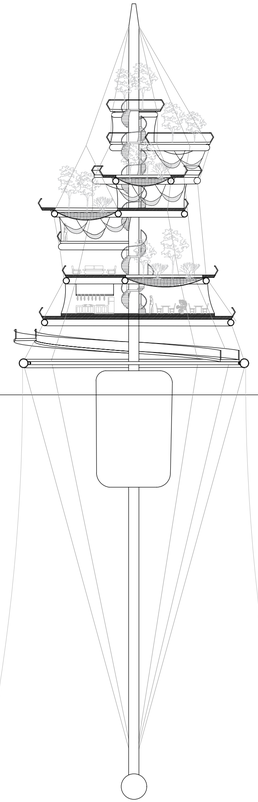
Desalination

Outdoor Farming

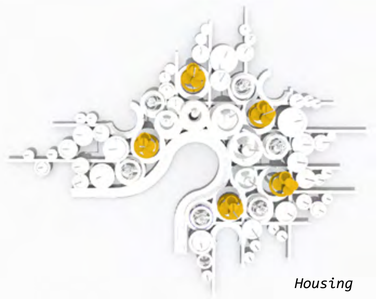
Aquaponics



Housing

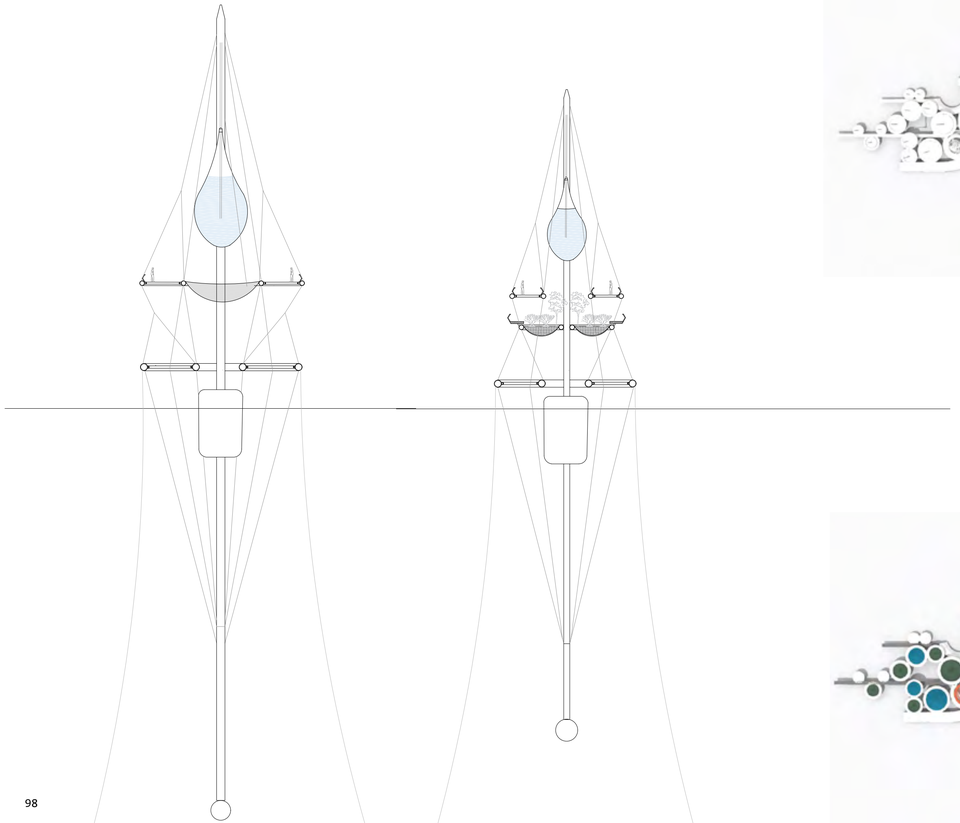


Aquaponics



Housing

Market and Public Space



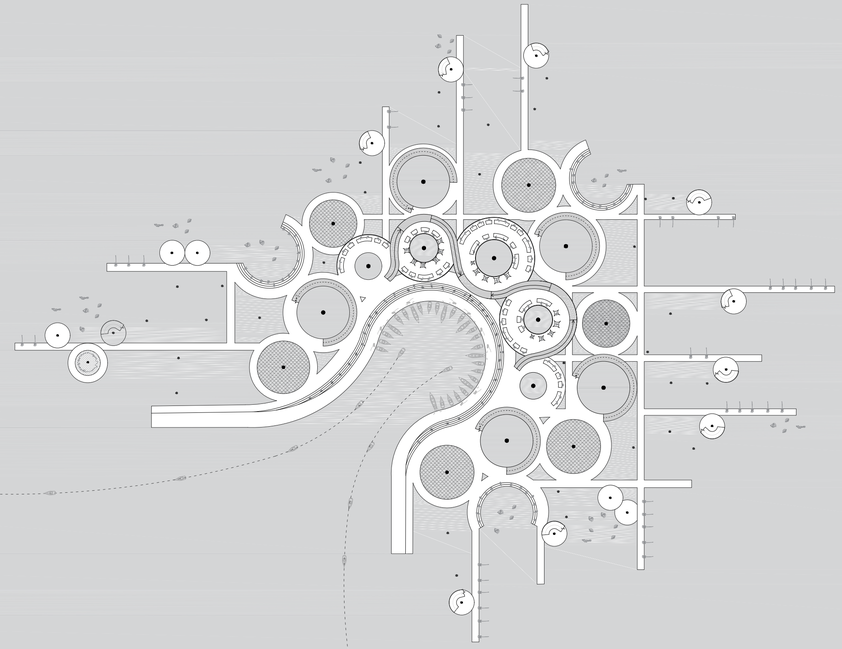
Community area

V- VILLAGE DESIGN

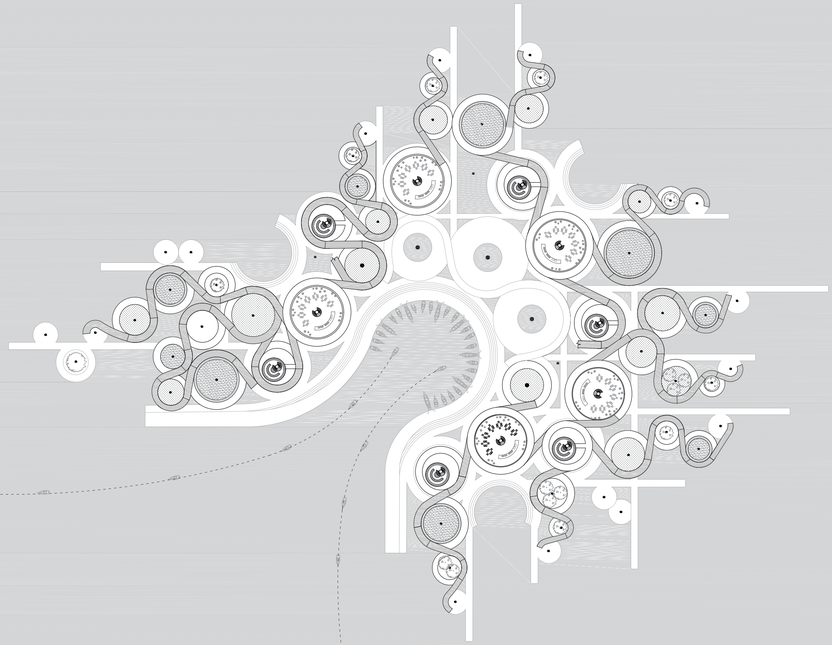
The village is suspended above water for security reasons. All the typologies are clustered together and connected by ramps. On top of the whole project is a structural tensile net connecting the village as a whole. On the ground floor there is ¬¬the grid system that creates passageways for the users. It is also used for fishing. The people go up to the village from the end of every grid line using the ramps. All the ramps leads to the community area on top. For faster circulation, there are spiral staircases cores connecting the ground floors to the housing areas.
The boats arrive on the pier, park, and then have a space to unload and load their tools and goods. After that, there is a big seating area all around the pier, close to the fish market and “souk l samak” where people buy fish and food harvested from this village.
On the ground floor there is the grid system, the fish farms, the market, the pier and the main seating area, greenery, platforms at the end of the grid and public spaces facing the sea.Above that comes the rest of the functions, like desalination, outdoor agriculture, aquaponics, and greenery. Taking the ramps will connect the user to all these functions and lead him to the top where lies the community area and suspended nets.

The Circulation

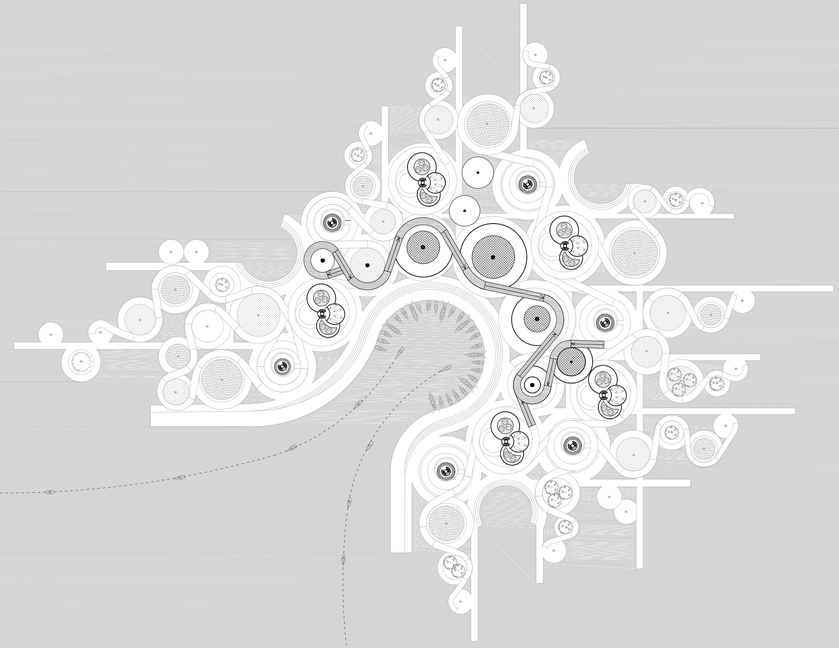
Plan 1



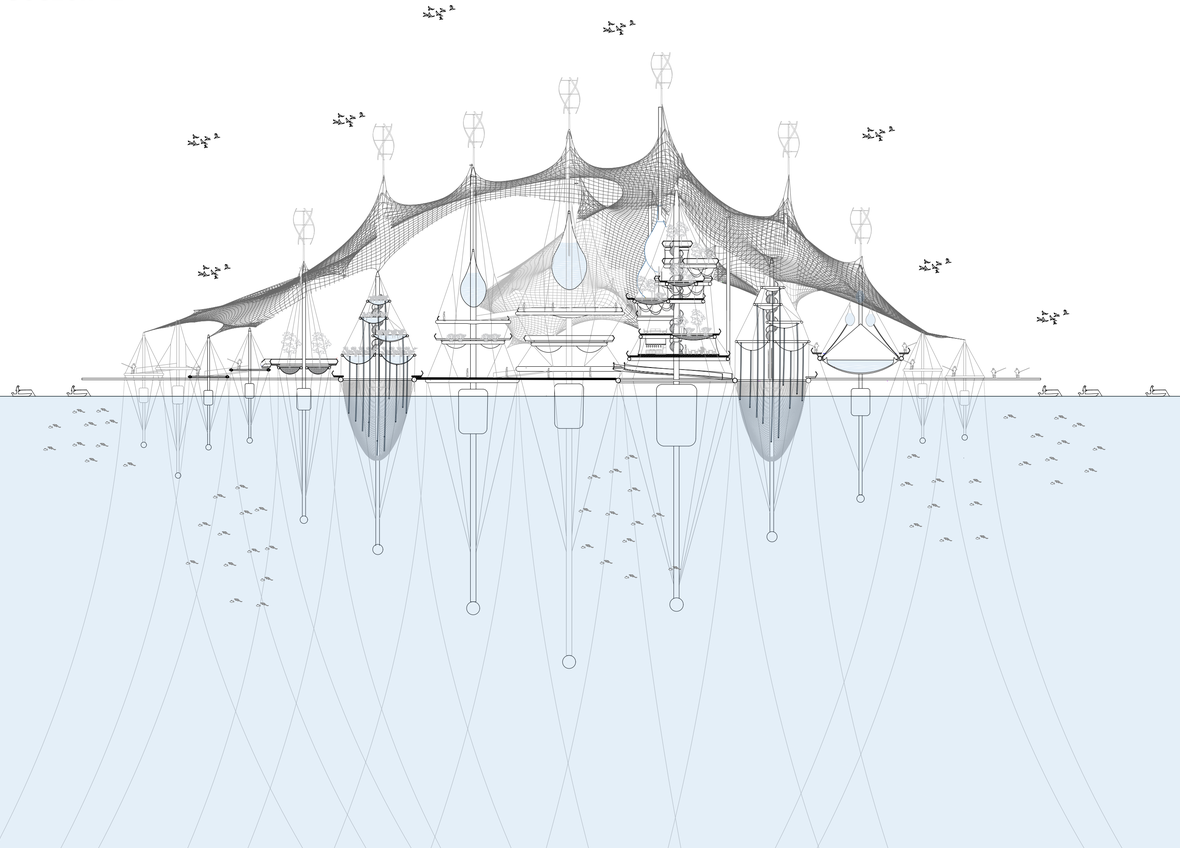
Plan 2



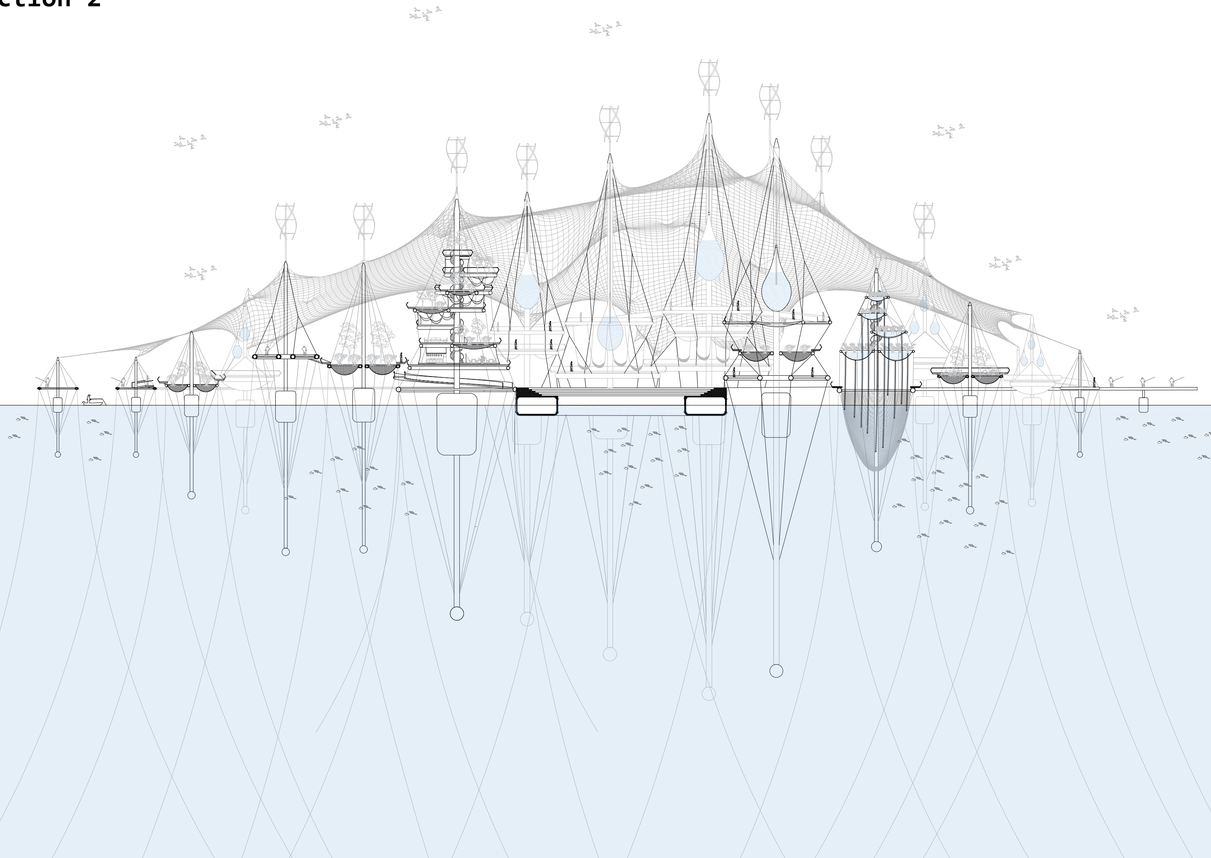
Plan 3



Section 1



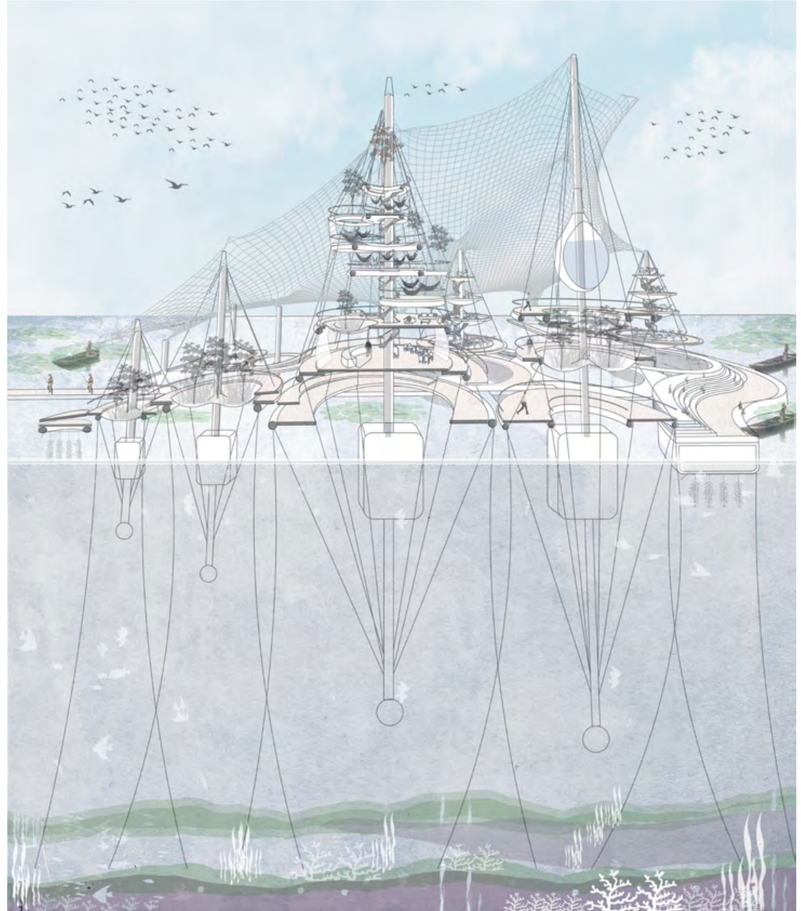
Section 2



V- VILLAGE DESIGN

The housing consists of a shared kitchen and living areas. The sleeping quarters are hammocks suspended from the roofs. The roofs are green roofs that are cultivated.
The spaces are enclosed with a curtain that can be opened and closed dependent on the fisherman’s needs. These areas are connected together by a central spiral open staircase.

Sectional Perspective

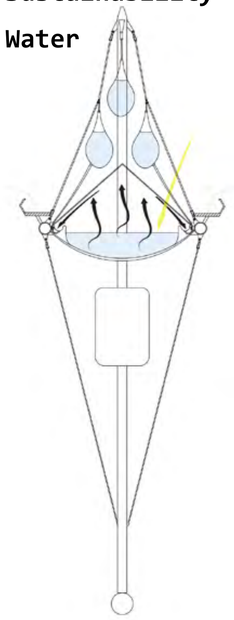


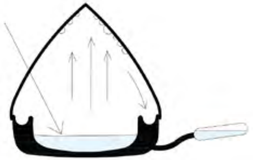
VI- SUSTAINABILITY

This village is sustainable in many ways. For the water aspect, it converts salt water into distilled water in desalination by evaporation. Buoys that harvest energy from the waves are placed under the grid system, in order to collect and directly store the energy. Having the elevated net, allow for cross ventilation all around the project. Wind mills are integrated on top of the columns to get energy from the wind.
The mesh is not perforated all around the project. It is opaque above the market and community areas to provide shading. On this shaded tensile area, rainwater is collected when it rains and stored in the hanged water reservoirs for future usage.

Sustainability

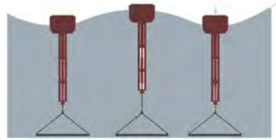
Water

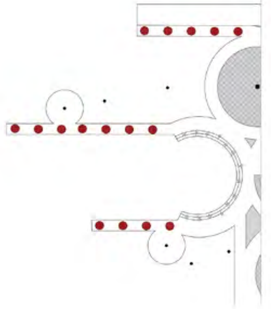




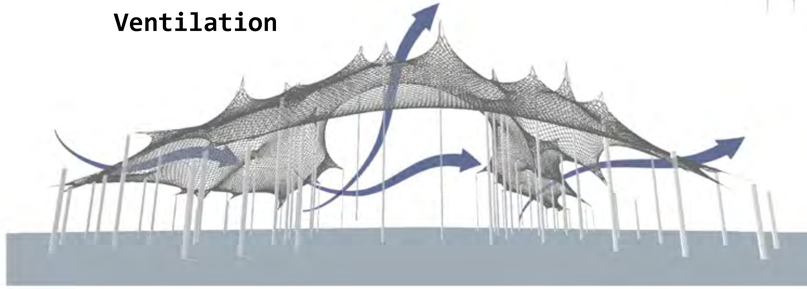
Desalination by evaporation

Wave Energy Harvesting

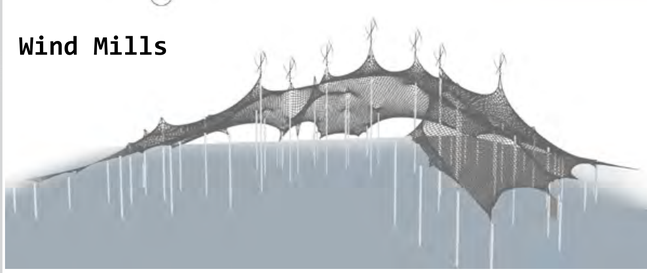


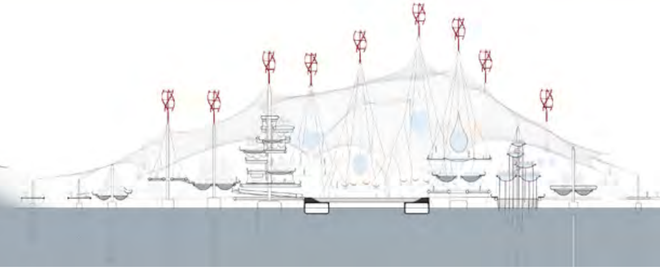


Ventilation

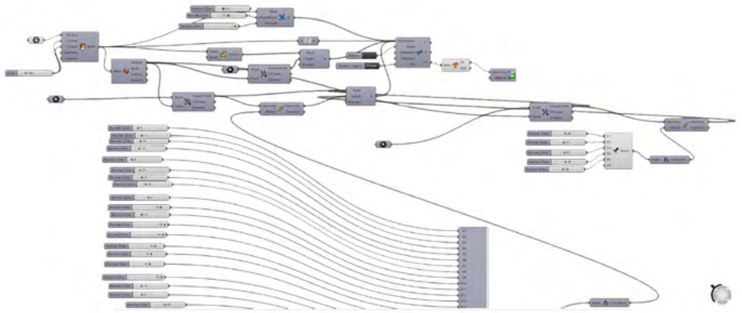


Wind Mills

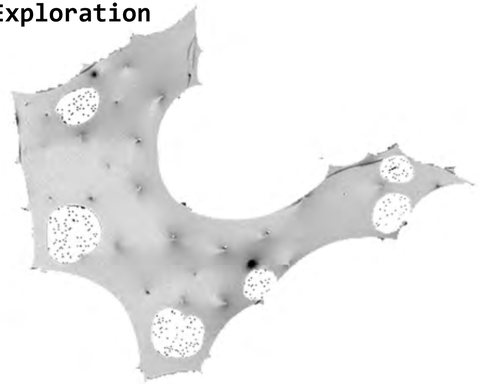




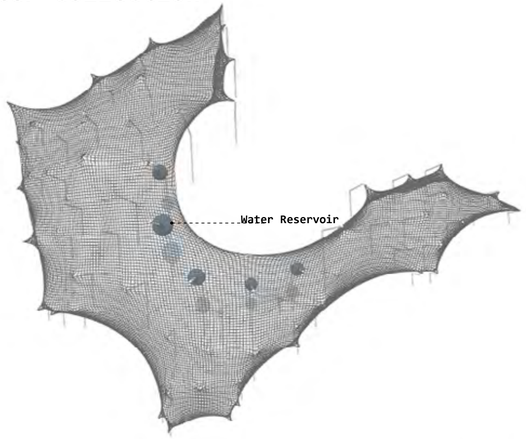
Mesh Design

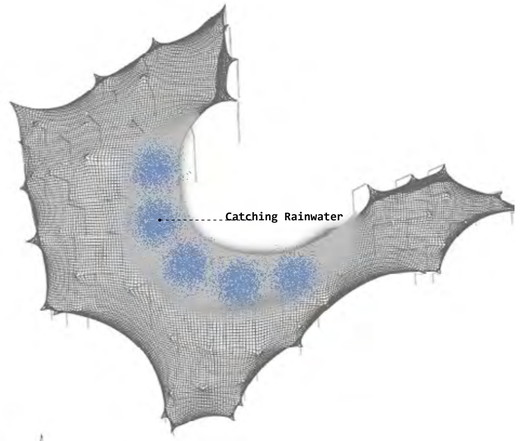


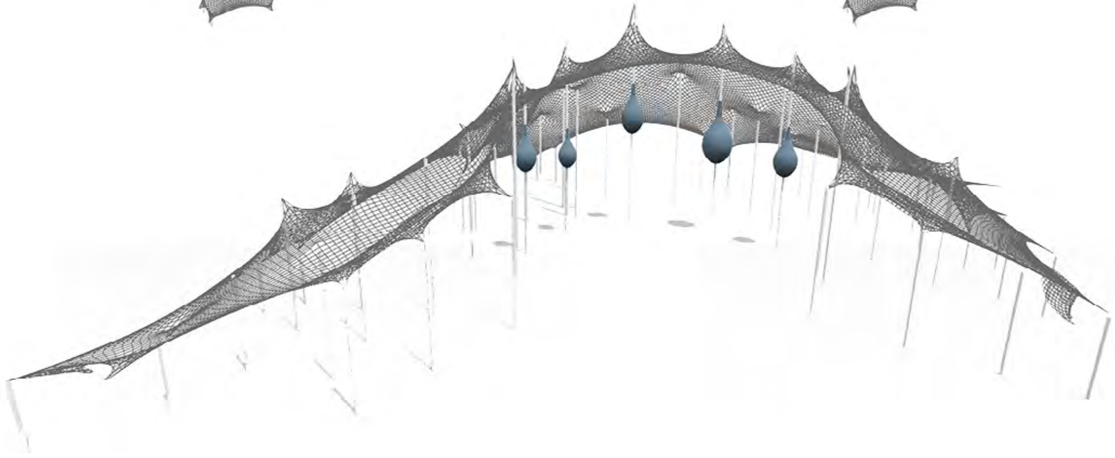
Exploration



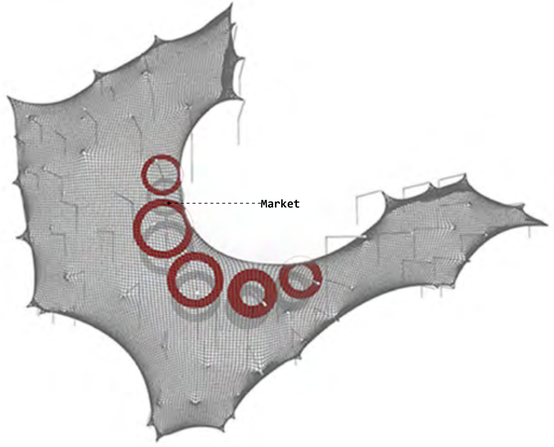
Rainwater Collection

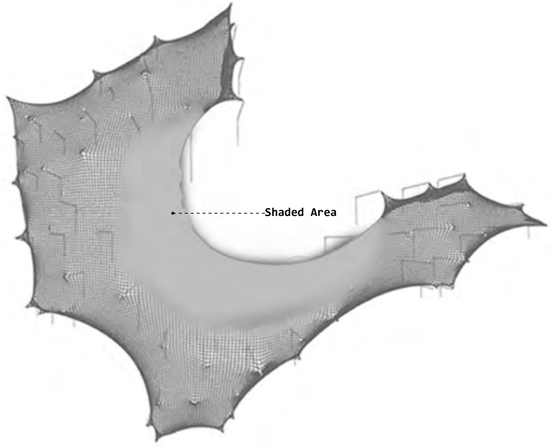






Shading above Market





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