



Bamboo Cultural and
Community Center
by Nil Çelebi



“the future of the tradition ”



1. Introduction

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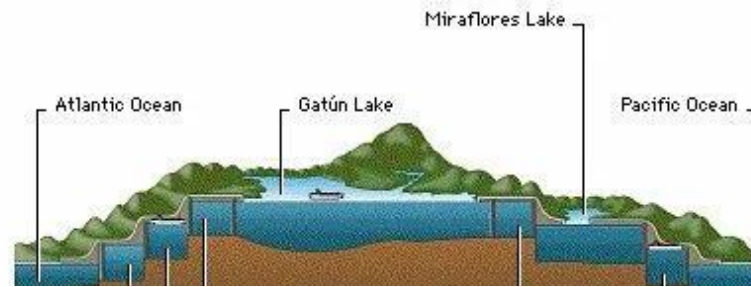
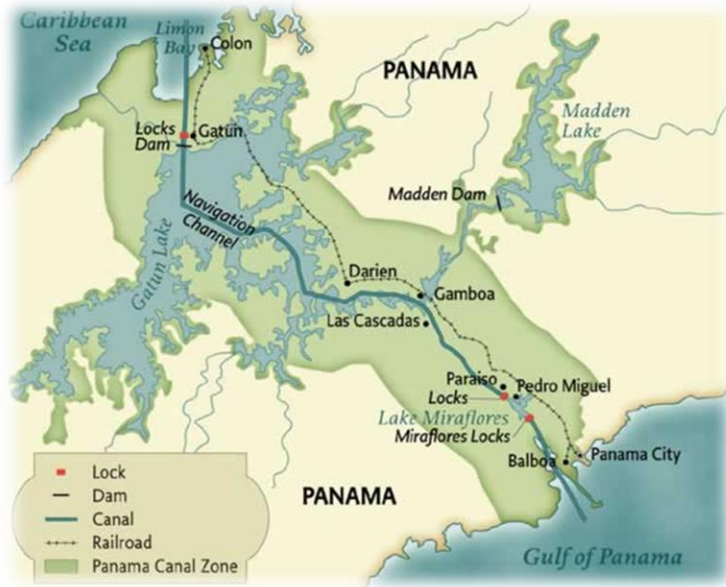
1. INTRODUCTION



Panama

Gamboa

Panama Canal



The Panama Canal is a waterway connecting the Atlantic and Pacific oceans. Thanks to the opening of this canal, ships traveling between the east and west coasts of the American continents have been saved from traveling about 8,000 nautical miles (approximately 2 months). Thanks to the reduction lift, the ships can gain mobility at points that are difficult to overcome. Despite heavy rains and unstable soils, the canal is regularly maintained to keep it operational.

Gamboa

“end of the road”



Gamboa is a small town in central Panama located on the southwestern end of Lake Gatun on the Panama Canal, where it meets the Chagres River. It is one of the canal zone towns built to house Panama Canal employees and their dependents. In this quiet and naturally beautiful town, the population dwindled rapidly in the 1970s, when the USA returned the canal to Panama. As people started to abandon the buildings in the town, those who noticed the water resources and the plants and animals that the town hosts opened the land to tourism in an unsustainable way without considering the local people.

Indian Tribes

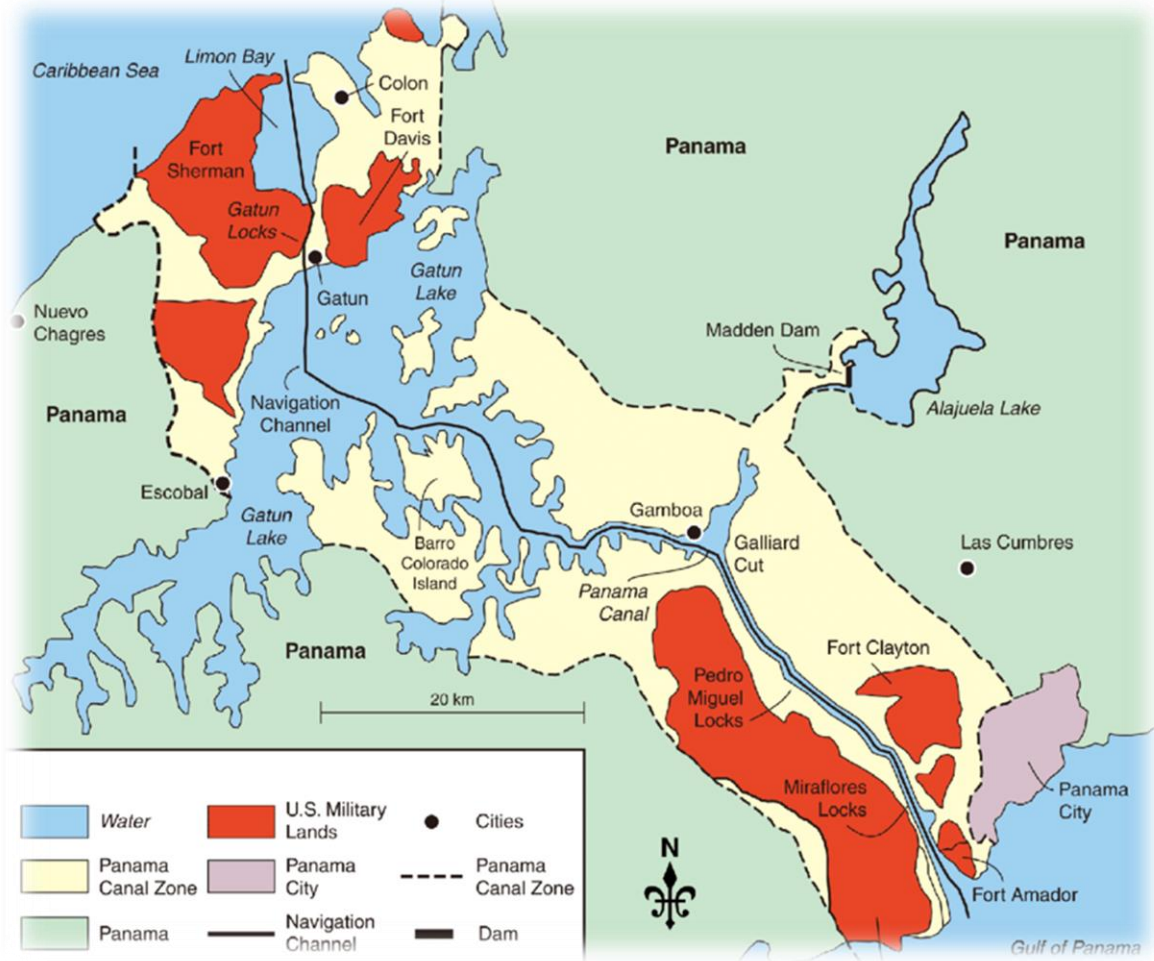
Panama has hosted people from many cultures and races due to its location. These include indigenous and tribal peoples. A special law was enacted for them and their rights were protected. There are 7 different local peoples in Panama. These are Ngäbe, Buglé, Guna, Emberá, Wounaan, Bri bri and Naso Tjërdi. Of these, Kuna has communities in Panama City, Colon, Gamboa and a few other cities. However, most of them live on small islands off the coast of the Kuna Yala commune known as the San Blas Islands. Kuna is a matriarchal society. It is famous for its glossy molasses, a colorful textile art form made with appliqué and reverse appliqué techniques.



2. SITE ANALYSIS







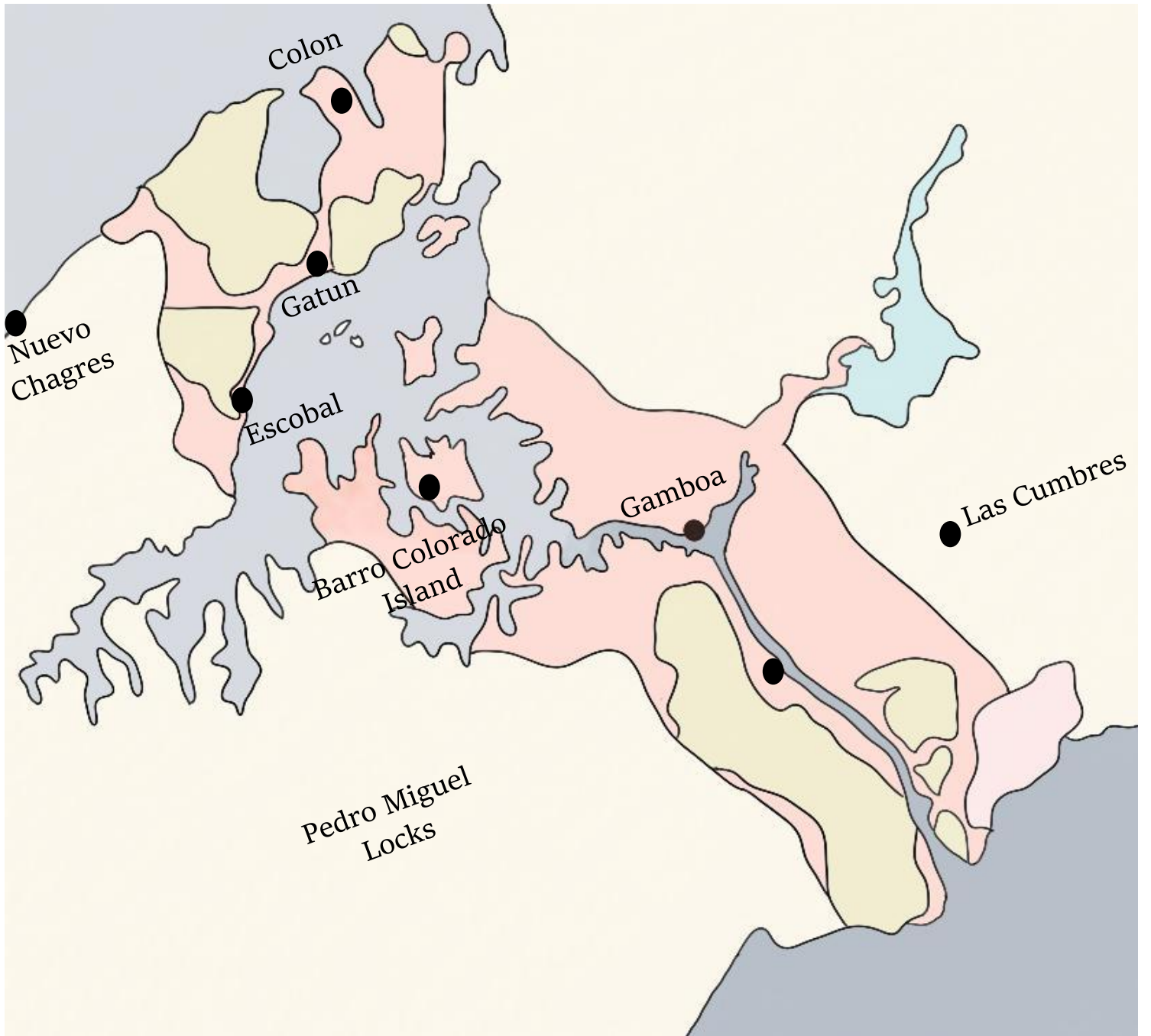
Panama Canal Zone

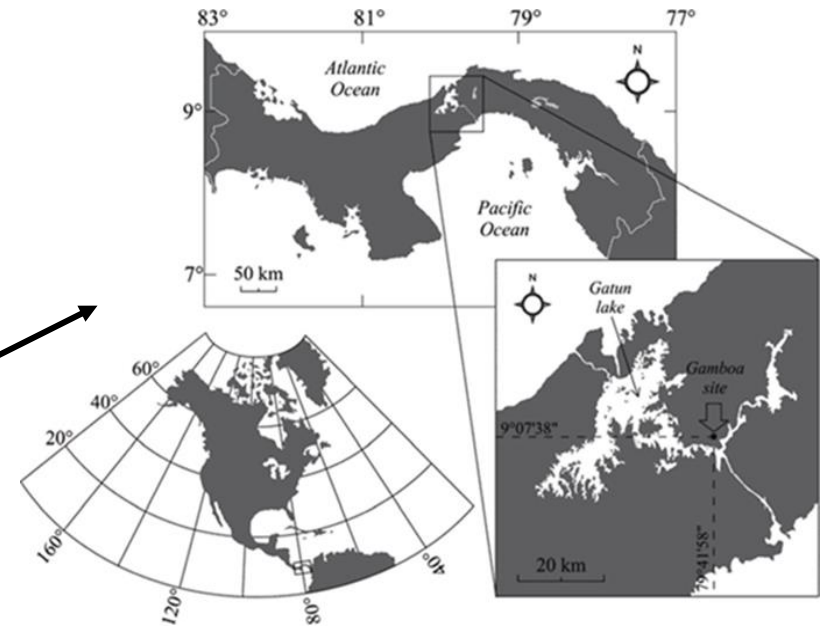


Transportation to Gamboa



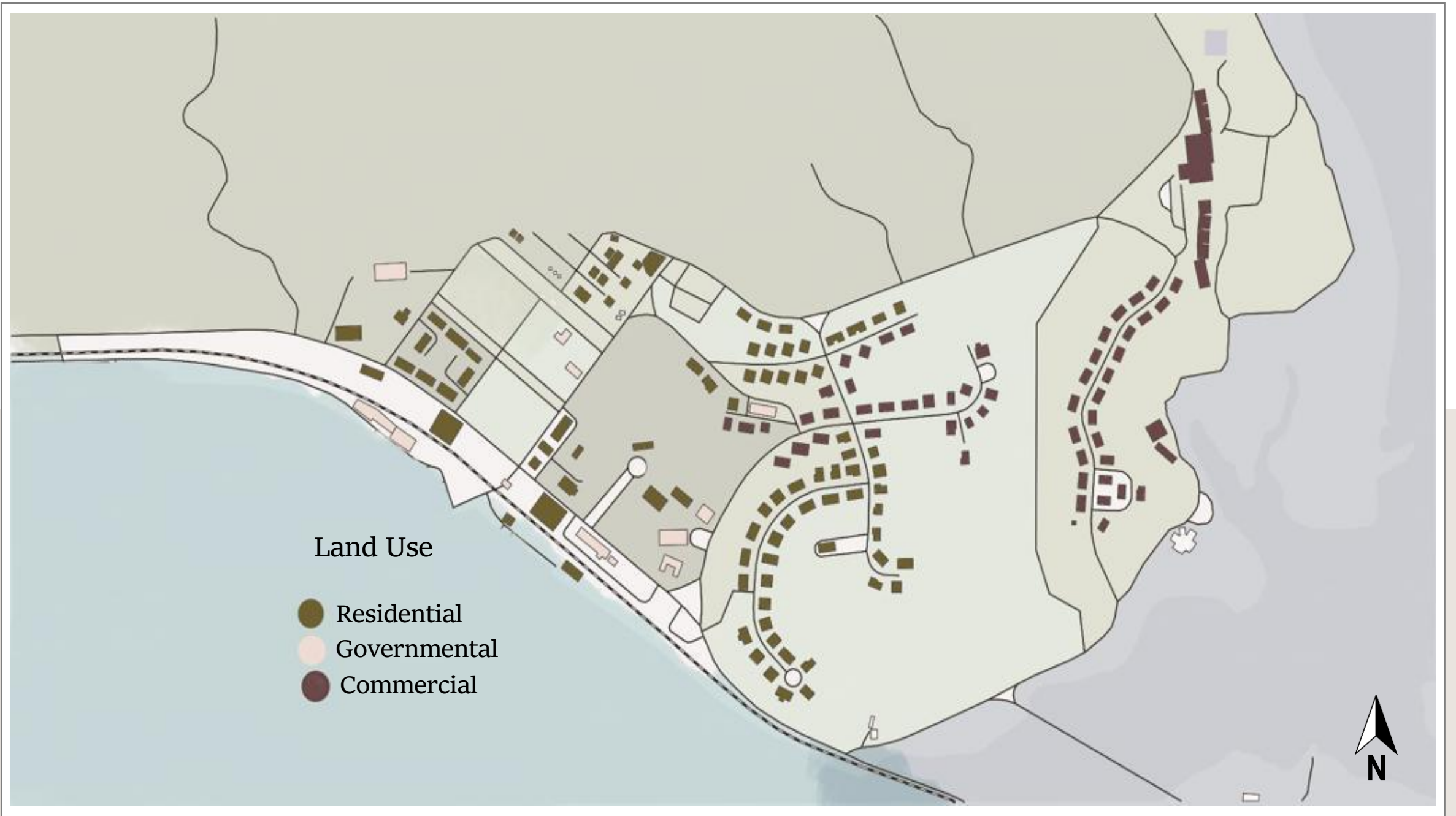
-  Water
-  Panama Canal Zone
-  Panama
-  Panama City
-  US Military Lands





Gamboa has a tropical climate due to its latitudes and longitudes. Temperatures are equally high with little seasonal variation. The daily ranges are low, with a minimum of 24 °C in the early morning and a maximum of 29 °C in the afternoon on a typical dry season day. The breezes tend to get higher after dark in Gamboa.







Residential Buildings



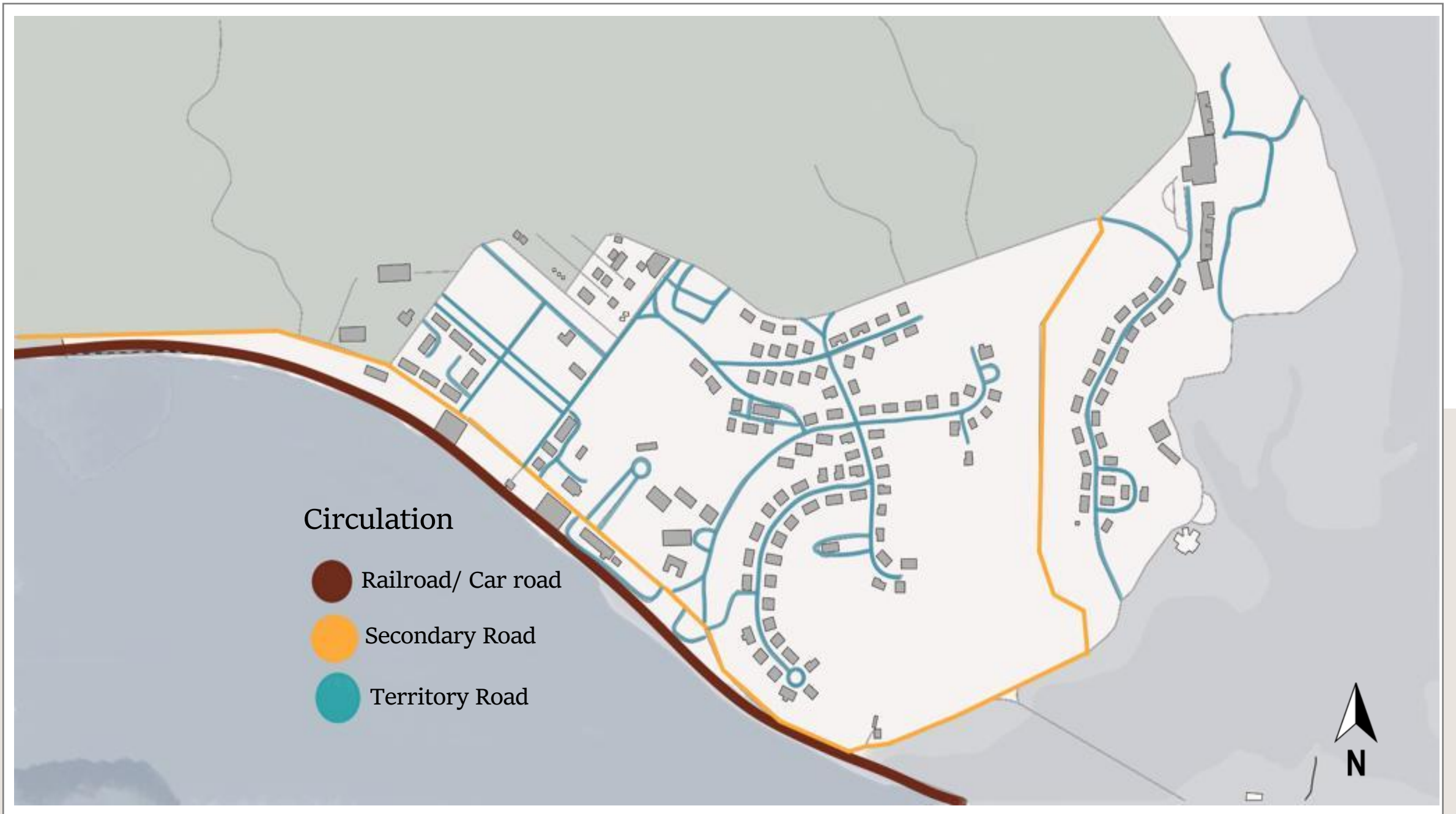
Church



Post Office (abandoned)



Restaurant



Circulation

-  Railroad/ Car road
-  Secondary Road
-  Territory Road



Railroad (connects Gamboa to Panama City and Colon in the northwest)



Car Road

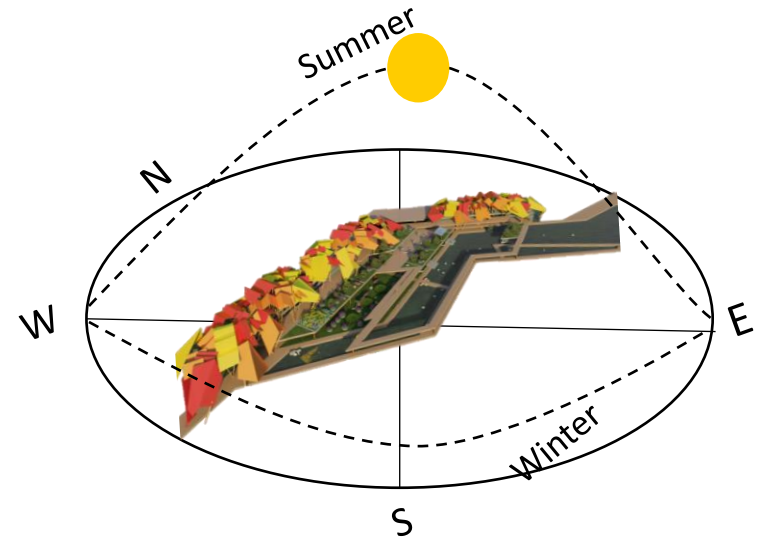
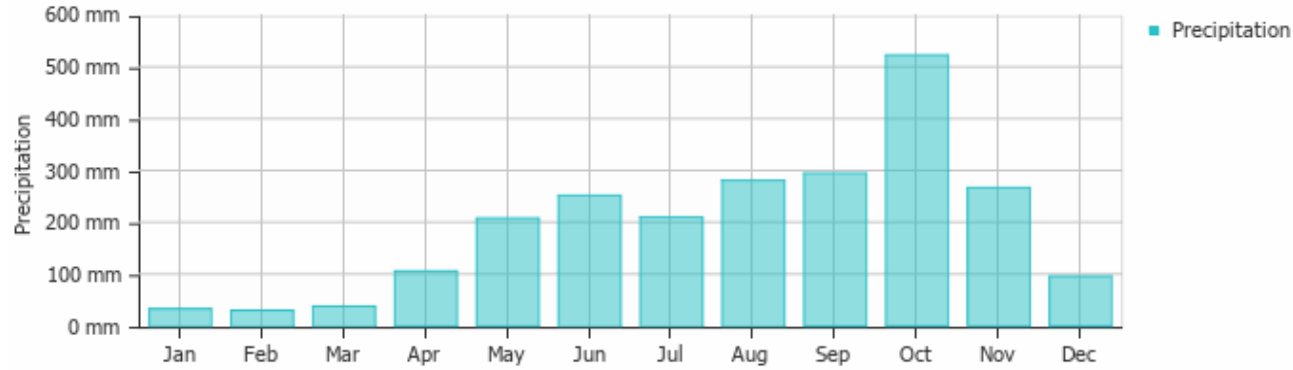


Secondary Road

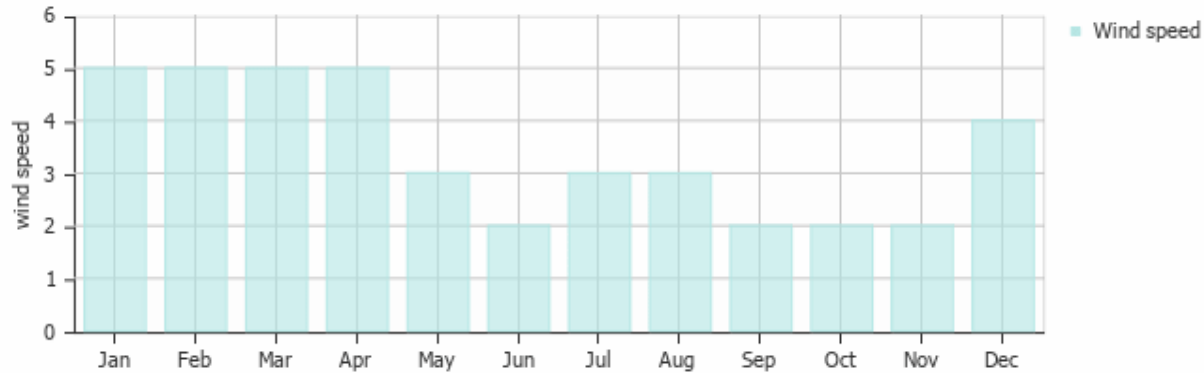


Territory Road

Average precipitation (rain/snow) in Gamboa, Panama



Average wind speed in Gamboa, Panama







In Gamboa, which is the combination of greenery and wildlife, the number and diversity of plants and animals is quite high. It is also a bird watching spot and a popular place for hiking. Iguanas, crocodiles, turtles, parrots, toucans, blue morpho butterflies, capybaras, and Holy Spirit orchids (the national flower) can be encountered on these hikes. Given its "end of the road" location and the only road connecting it to the rest of the Canal Zone, Gamboa is also adjacent to key tracts of relatively undisturbed rainforest.

3. LITERATURE REVIEW



Bamboo Nursery



Bamboo is one of the most fascinating useful plants in the world. It is considered as grass. There are 1200 species around the world. Because of the global warming, bamboo is a viable solution and it is considered one of the most sustainable renewable resource. Some bamboo species grow up to 4 feet a day and mature within 2 years. Bamboo is naturally antibacterial so there is no need for harmful pesticides. Bamboo can produce 35% more oxygen than an equivalent stand of trees.

Bamboo Item Production

Bamboo products and applications are sustainable alternatives for wood and new innovative uses are added every day. 88 species being used for building houses, structures, bridges, trusses, roof support systems, scaffolding, etc. Compressive and tensile strength of bamboo is 3 times higher than most conventional construction grade timbers. Bamboo can replace wood in almost any application which provides livelihoods for local people.



The Colourful Molas of Kunas

Mola is a hand-made textile which are simple yoke-type blouses richly decorated by intricate needlework that form part of the traditional women's clothing of the Kuna people from Panama. A mola can take two weeks to six months to make depending of the design because they use very difficult reverse appliqué technique. Each panel is constructed of multiple layers of cloth of contrasting colors then layers are peeled back to reveal underlying colors and pattern. Today they are worn as a symbol of national identity.



Ecotourism



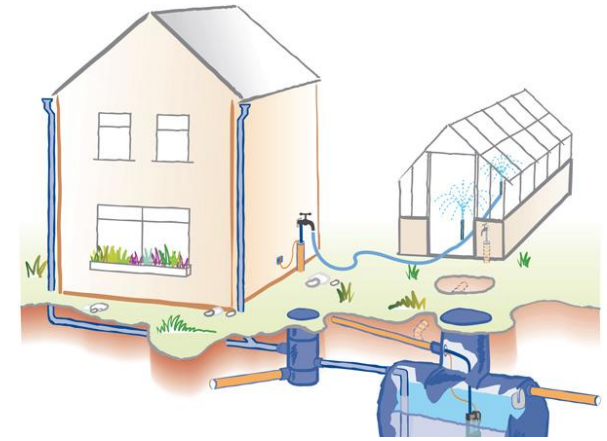
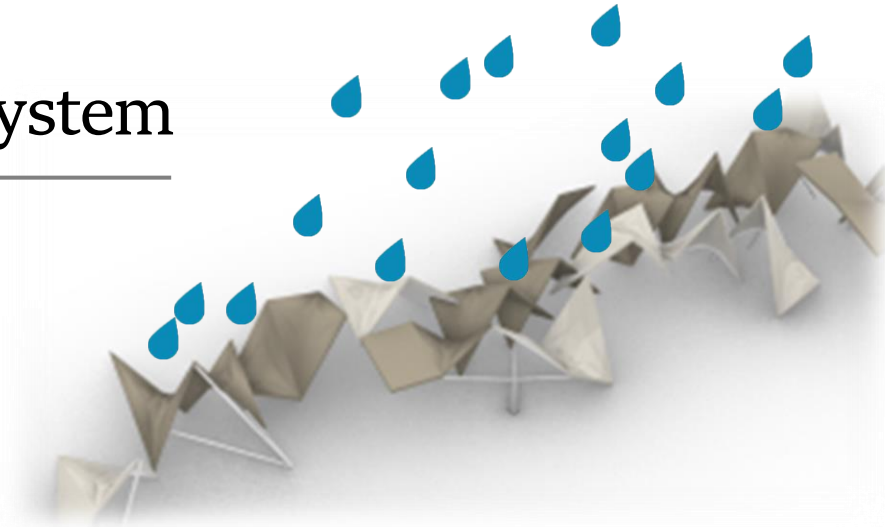
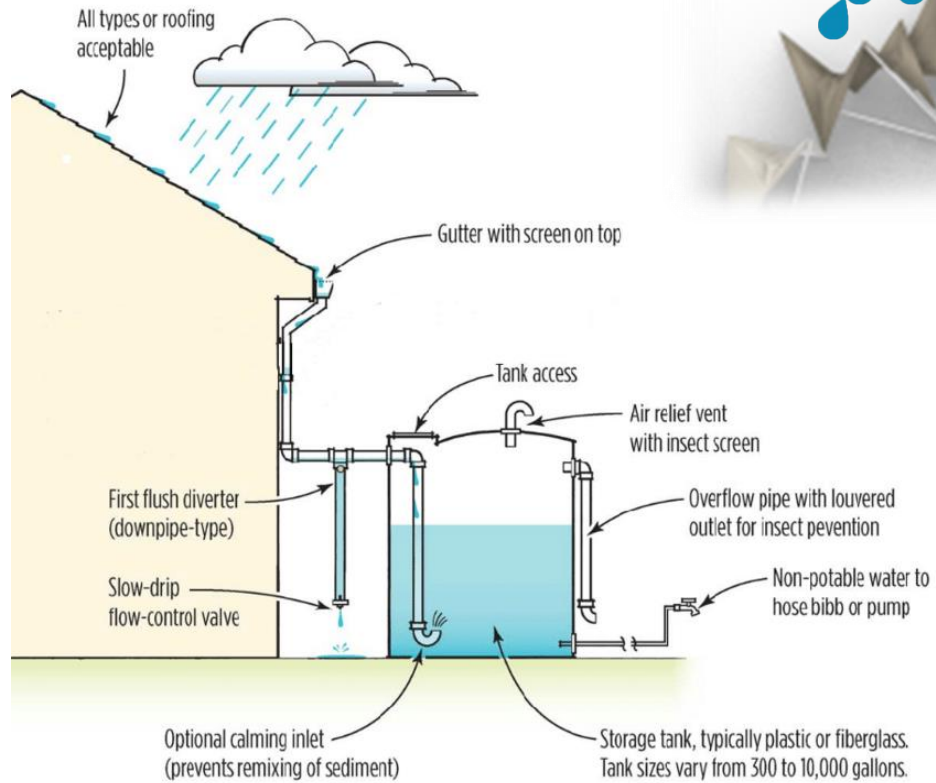
Ecotourism is a term used to describe travel to natural areas where active steps are taken to conserve and protect environment, improve the economic condition and well-being of local people while minimizing physical, social, behavioral, and psychological impacts.

Wetlands

Wetlands are a distinct ecosystem where land and water meet and considered among the most biologically diverse of all ecosystems, serving as home to a wide range of plant and animal species. 40% of the world's wildlife relies on fresh water wetlands. They contribute a number of functions that benefit people. Such as, water purification, groundwater replenishment, stabilization of shorelines and storm protection, water storage and flood control.



Rainwater Collection System



Rainwater collection systems range from simple rain barrels to more elaborate structures with pumps, tanks, and purification systems. It can be used with many types of roofs. The non-potable water can be used to irrigate landscaping, flush toilets, wash cars, or launder clothes, and it can even be purified for human consumption. In addition to this, in the design the water is also used in washing process of bamboos.

A man with long dark hair and tattoos is lying on his back in a wooden boat on a river. He is wearing a blue glove on his right hand and has a blue mark on his left foot. The boat is partially submerged in the water, and there are other boats and lush green foliage in the background.

4. CASE STUDIES

Gamboa Rainforest Resort



“the anger in the children”



Gamboa Rainforest Resort is a tourism-focused settlement of buildings covering 340 acres of protected land. Although it is called Eco resort, the income does not contribute to Panama, and tourists do not consider the environment while enjoying activities such as fishing, canal canoes, aerial trams. This causes local children to grow up with anger towards them.

Panamian Colorful Architecture



When the culture and architecture of Panama are examined closely, colorful buildings stand out. It is inevitable to encounter a cloudy sky and its main source, water, in Panama. Despite the gray sky, the buildings underneath are more colorful than the other. In some of the structures that contain different color palettes and tones, even color combinations that most people will not like can be encountered. However, it can be said that the color reflects their spirit, culture and character.

Bamboo Pavilion in China / IILab

Located in one of the most diverse landscapes in China, this structure is built on the land between endless greenery and huge karst rock towers. It is aimed to both protect the guests from the rain and create a pleasant walking area between the two points where there is very little interaction between them. A woven canopy is built between the bamboo clusters. With this canopy created, there are differences in design with the change of light during the day.



5. THE PROJECT



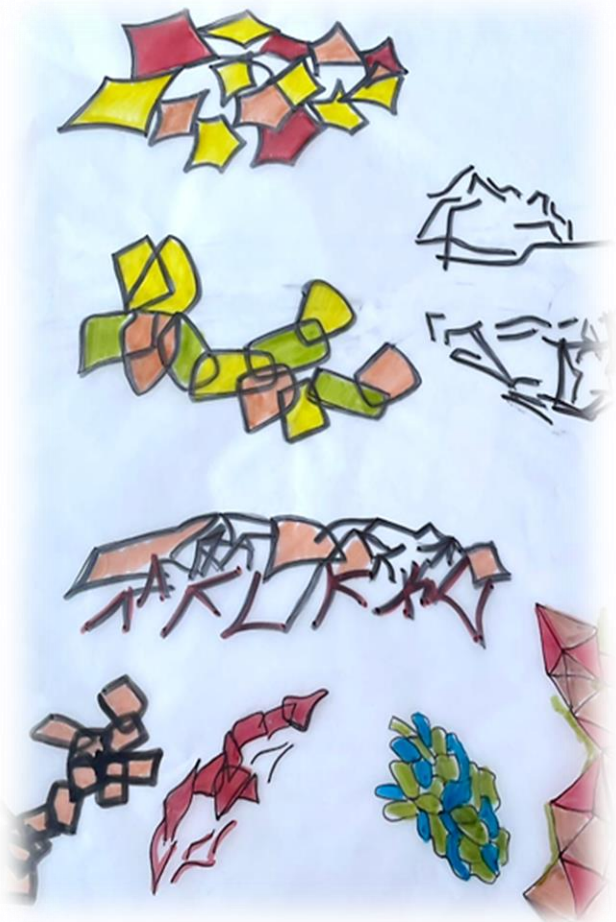
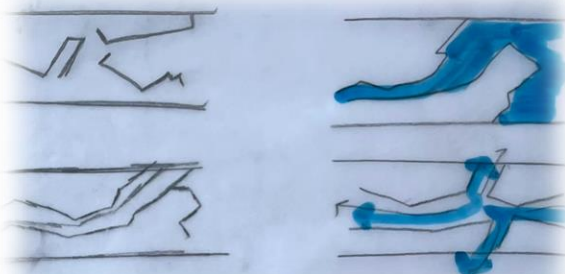
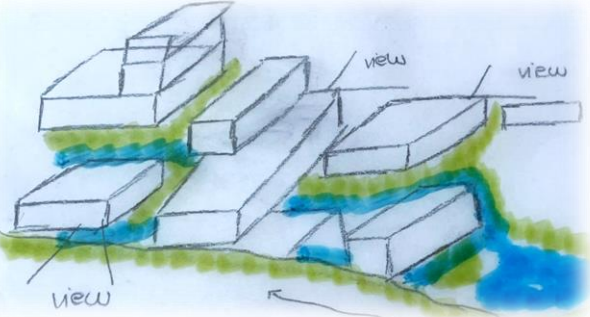
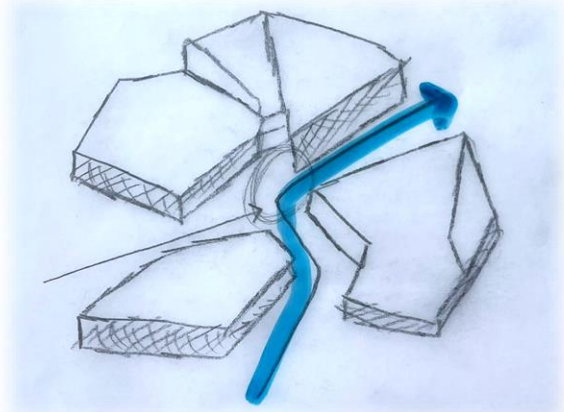
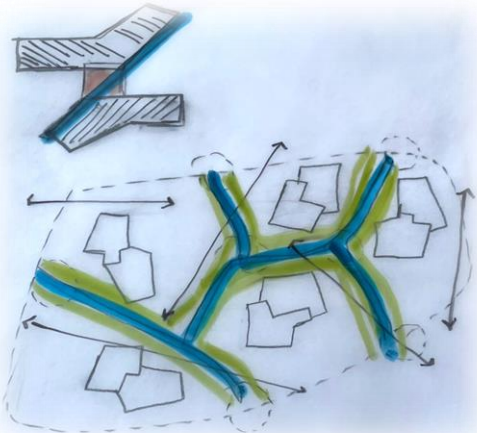
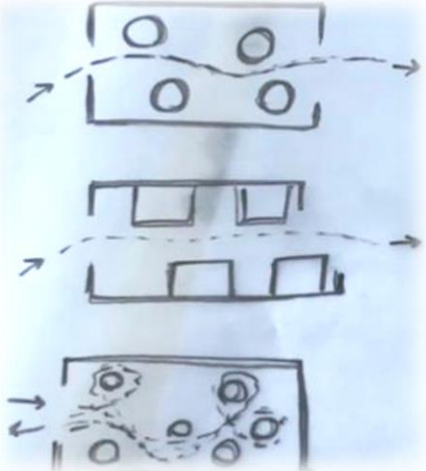
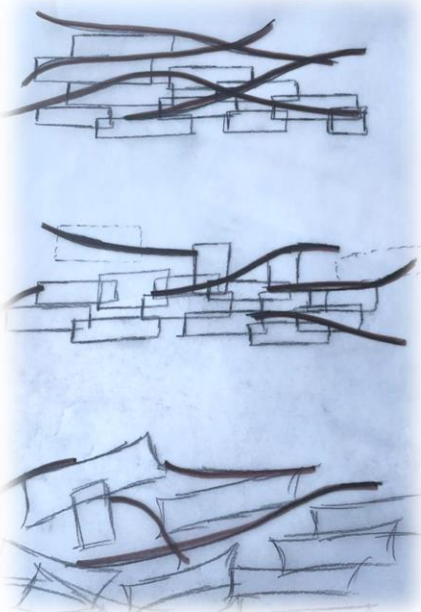
Is the concept

- Economically (creating new job opportunities, generating new sources of income for local people)
- Socio-culturally (respecting to existing community, providing social exchange without harming their lives?)
- Environmentally (designing in harmony with what exists in nature, being sensitive to the environment)
- Functionally (serving the needs of the site, being effective for the people)
- Aesthetically (having aesthetic sensitivity while considering the future of the site)

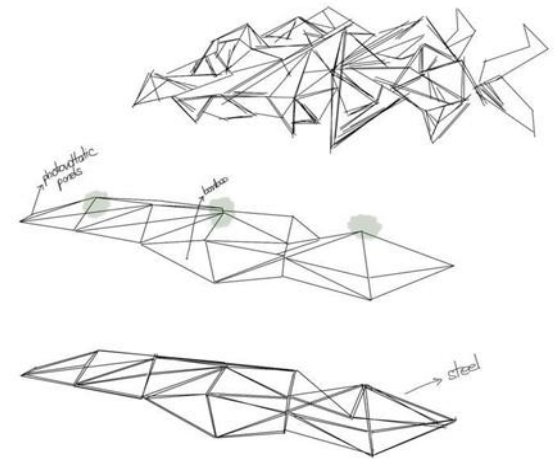
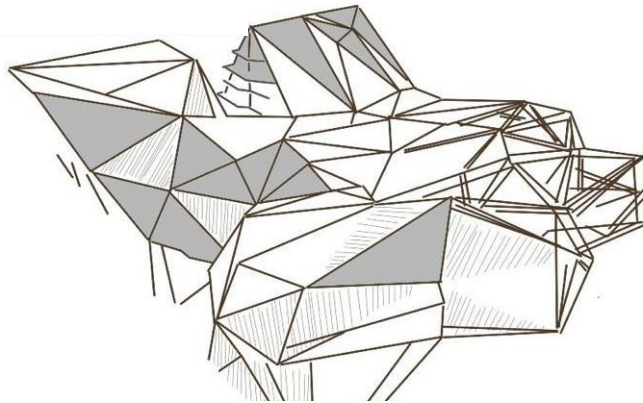
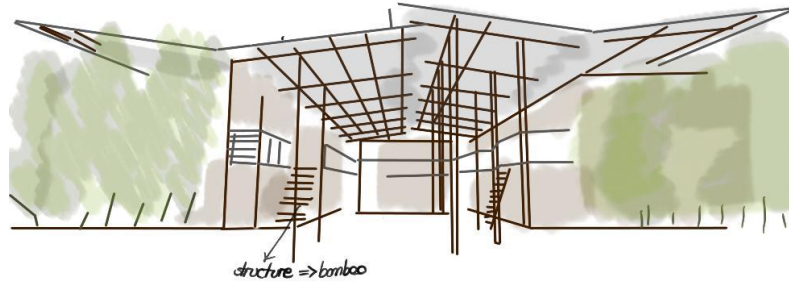
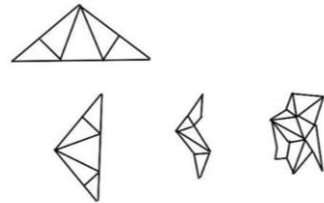
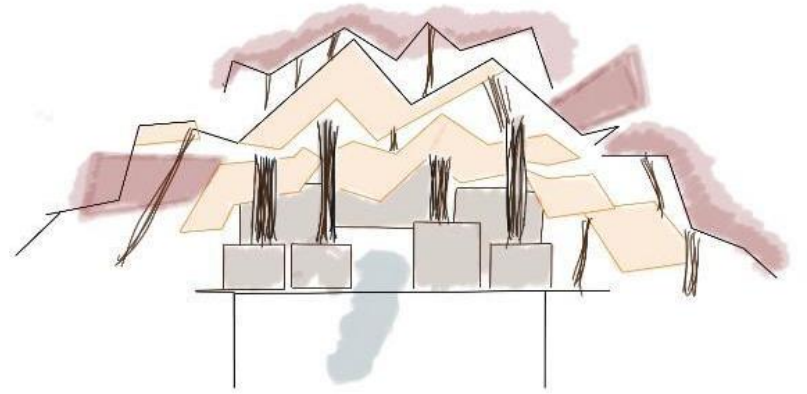
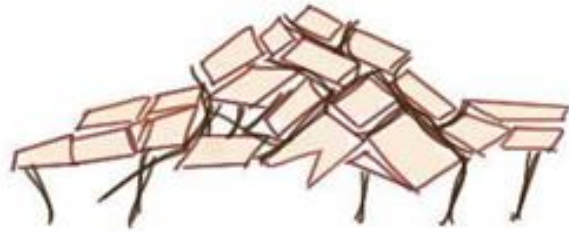
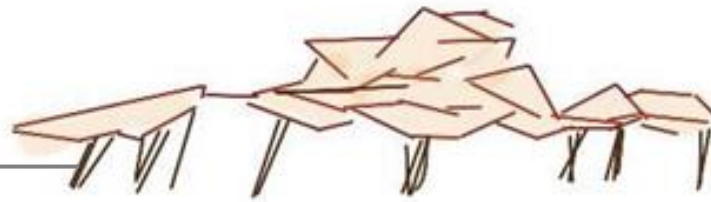
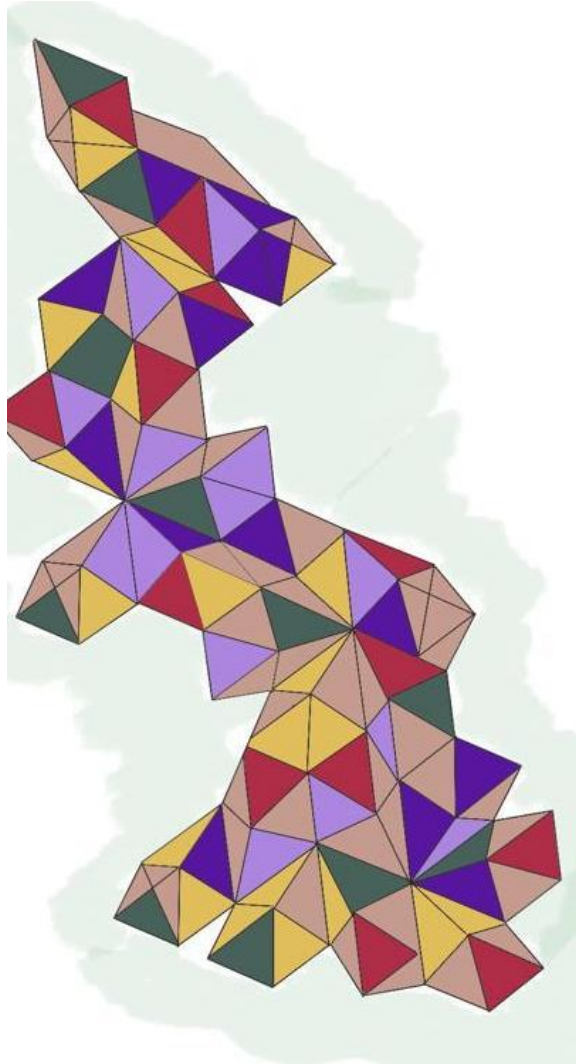


viable ?

First Design Sketches



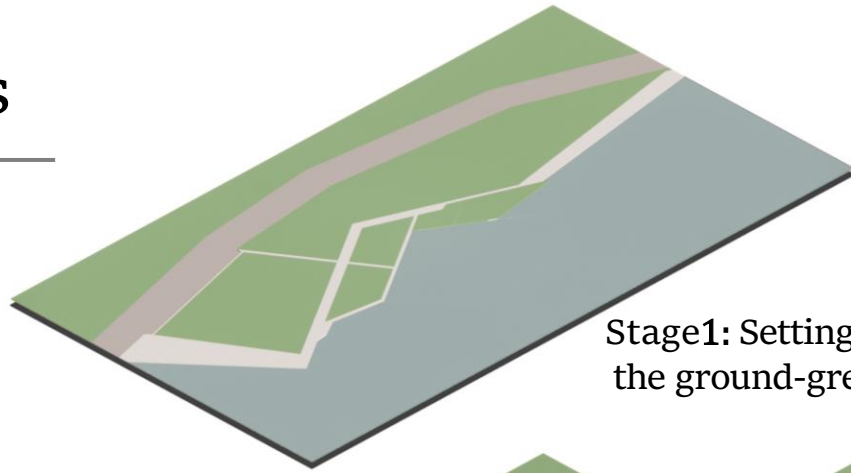
Roof Sketches



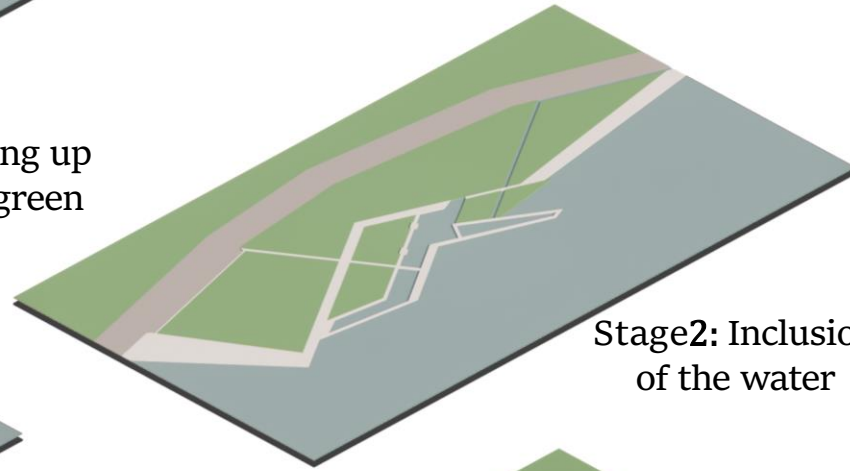
Project Area



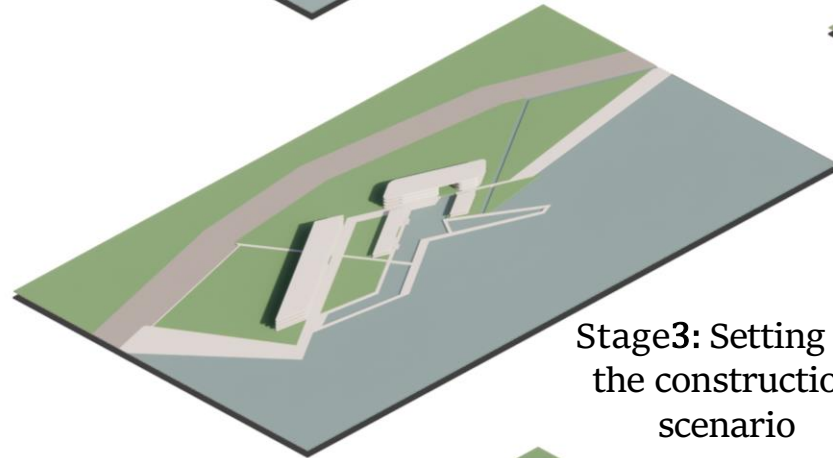
Design Process



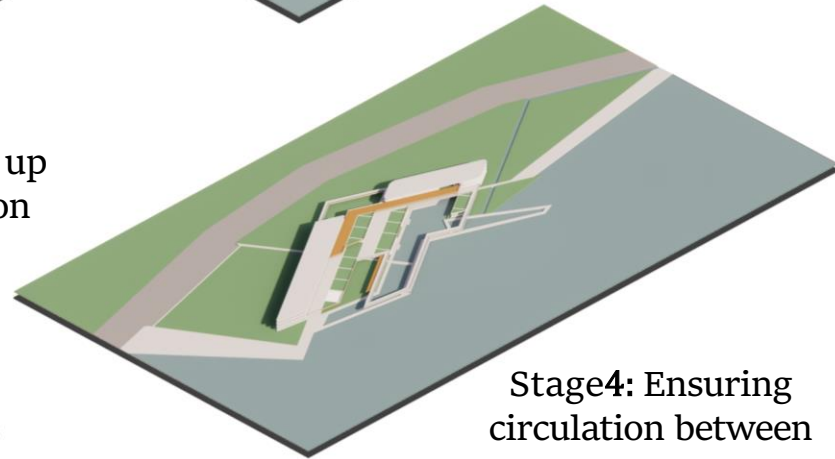
Stage1: Setting up the ground-green



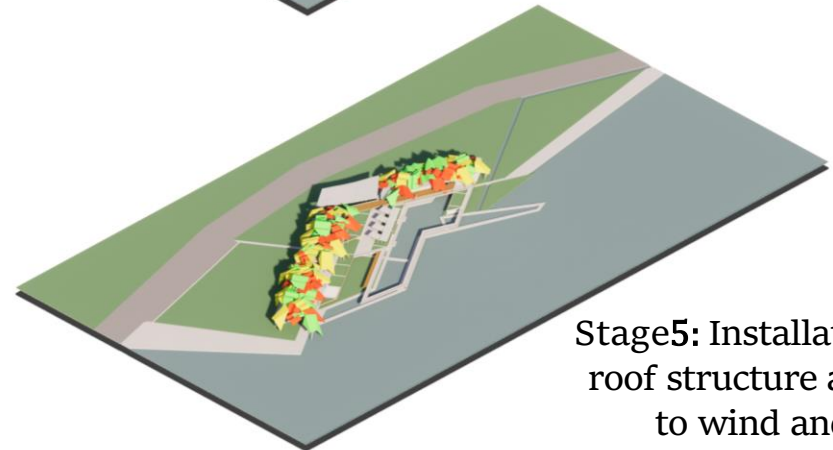
Stage2: Inclusion of the water



Stage3: Setting up the construction scenario



Stage4: Ensuring circulation between the structure



Stage5: Installation of the roof structure according to wind and sun

