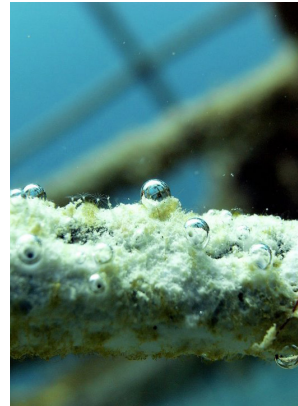
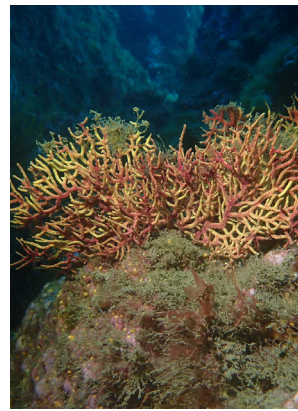
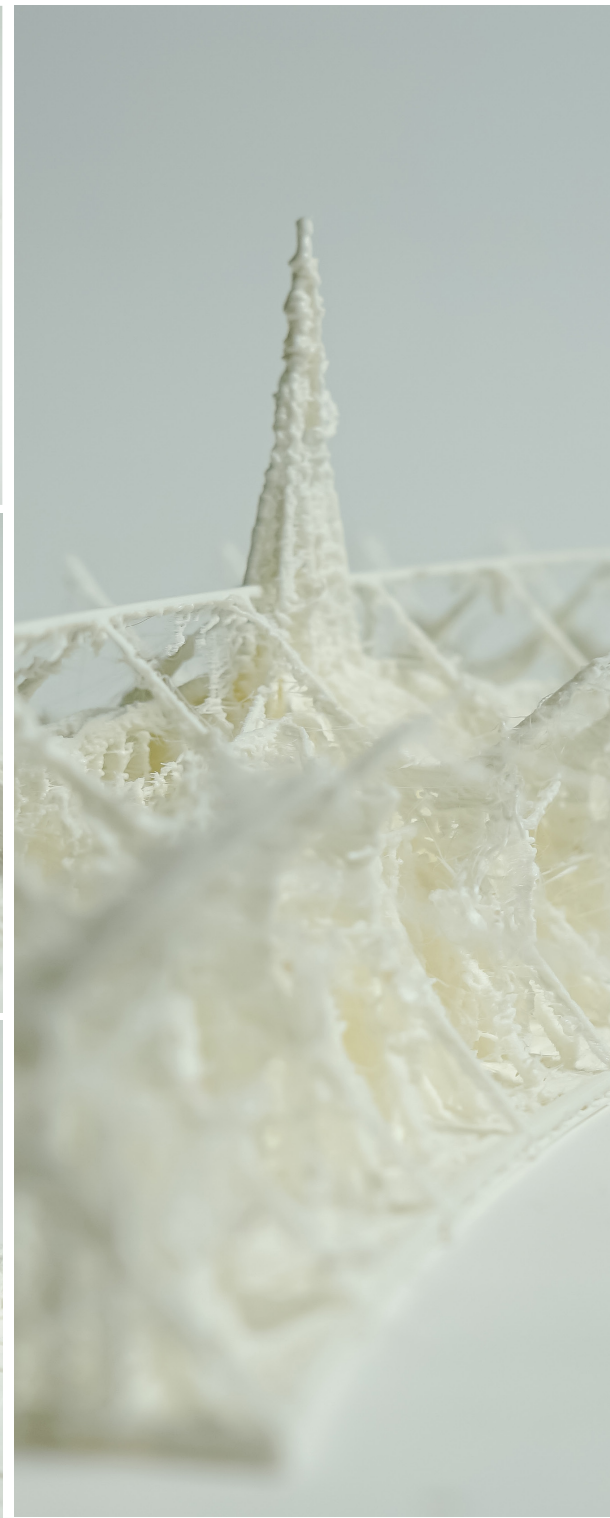
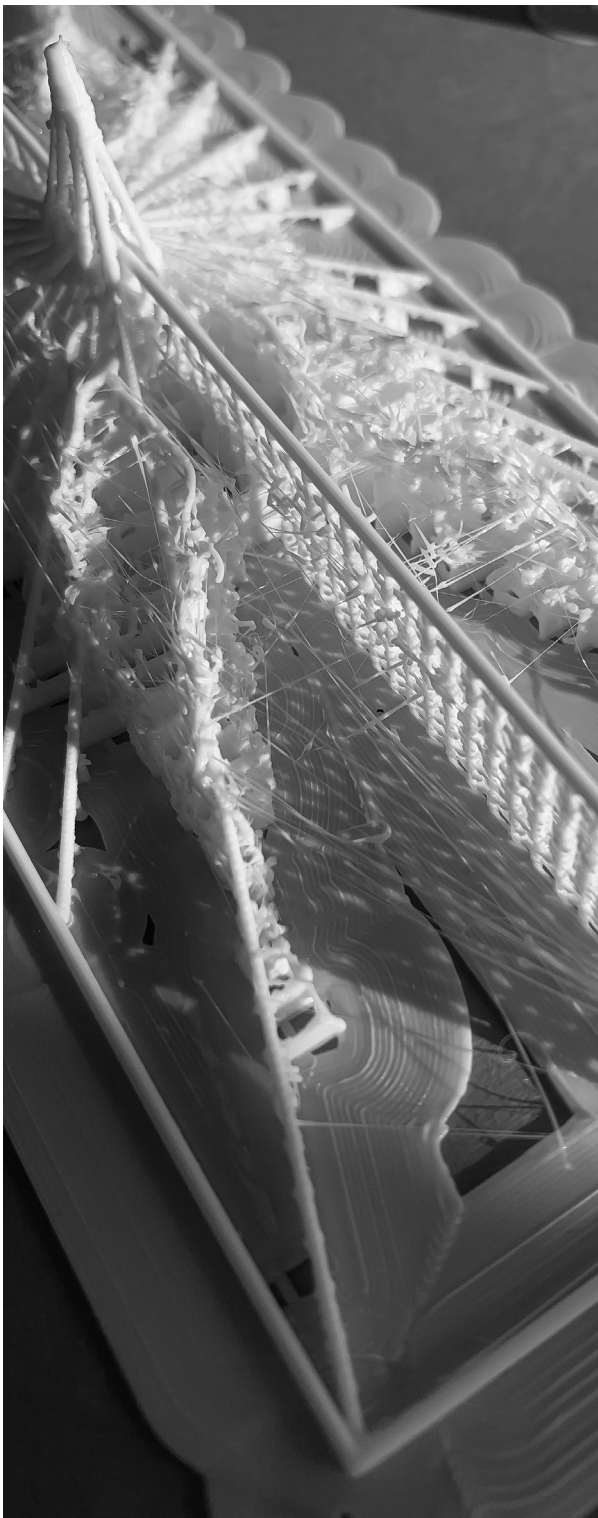


# A ballet of Land, Sea and Life through sustainable architecture

This year's project was driven by two main factors: firstly, the theme of my unit, "Wild City;" and secondly, the belief that architecture and nature can collaborate to address the challenges faced by the chosen location.. Titled "A ballet of land, sea and life through sustainable architecture" this project encapsulates a more environmentally conscious approach to tackle coastal erosion while promoting biodiversity .



Pedregalejo, situated in Malaga along Spain's southern coast, is a historic fishermen's town. Until the 1980's this area lacked breakwaters, leading to recurrent flooding of the fisher's houses. The subsequent construction of breakwaters, while addressing the flooding issue, severed the vital connection between the community and the sea. Pedregalejo is known for its beaches, typical restaurants and traditional activities like boat repairing.



The development of an artificial coral reef, served as the focus of my project's design. The reef will be created using biorock systems, which create a metal framework that is coupled to a low voltage power source underwater which will absorb wave energy, stop coastal erosion, and promote coral growth. By carefully locating these artificial reefs, we not only combat erosion but also foster the expansion and diversity of numerous marine species.

The model's fundamental goal is to establish an interaction between the city and the sea by connecting the boats to the surrounding coral growth. The approach also attempts to produce a sustainable and visually pleasant environment. The model will therefore produce an atmosphere that is both welcoming and functional. By visually linking the boats to the coral growth, the model will also establish a visual connection between the city and the water. By strengthening the link between people and the water, the model will also provide a space for leisure activities like as fishing and diving.

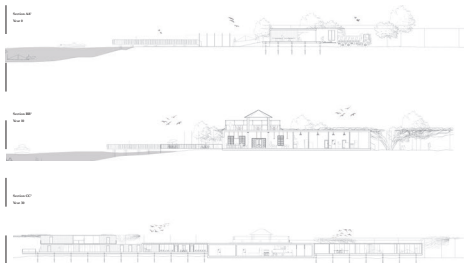
The coral and structure aim to slowly take on the existing breakwater in order to eventually remove it and act as a coastal defence. This idea will remove all the negative impacts that breakwaters have in the long run.



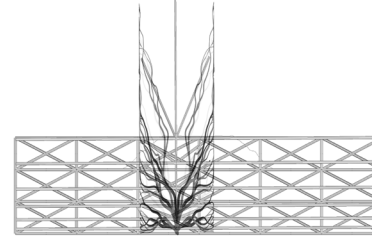
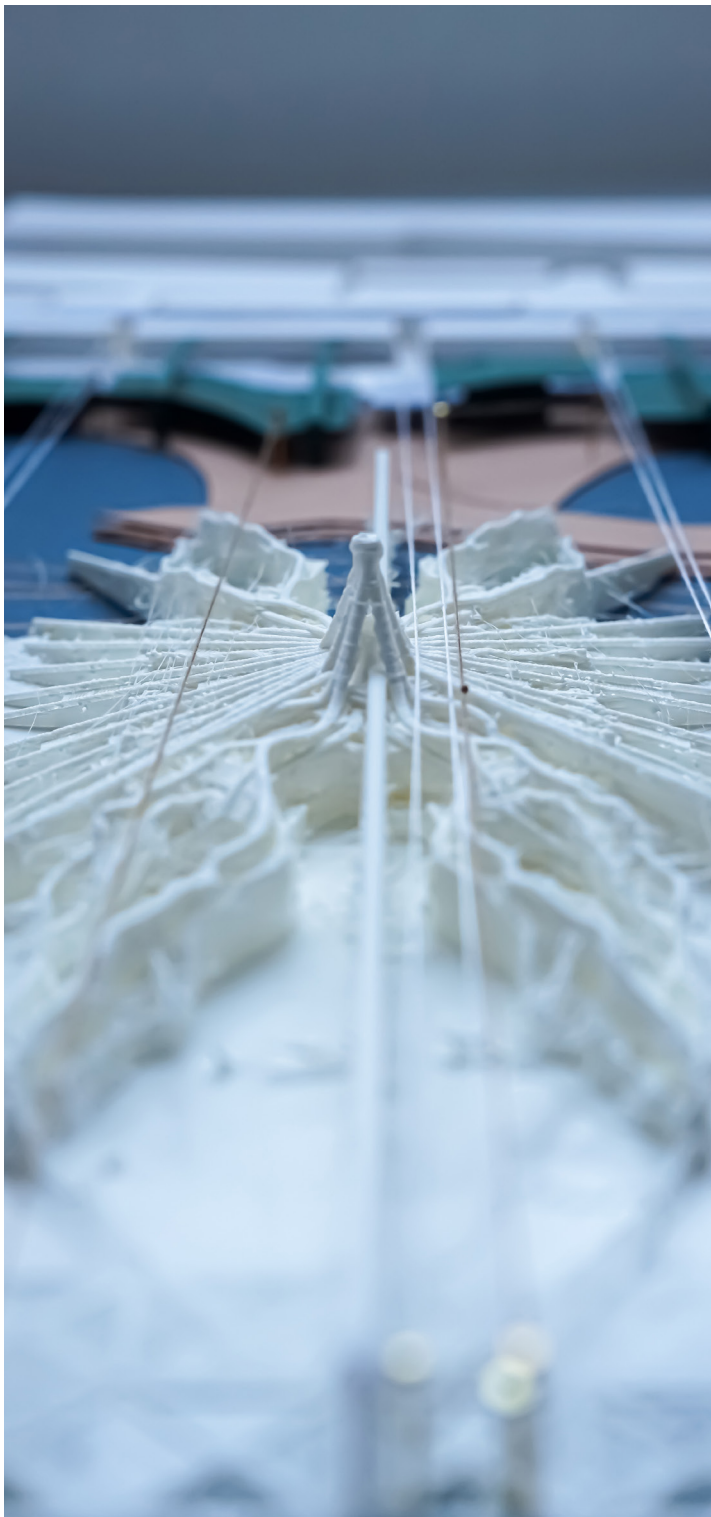
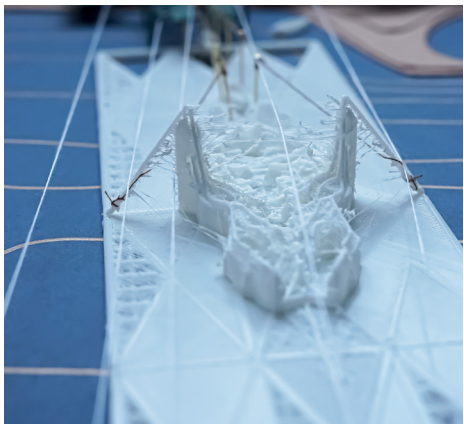
Original coastline before 1980's



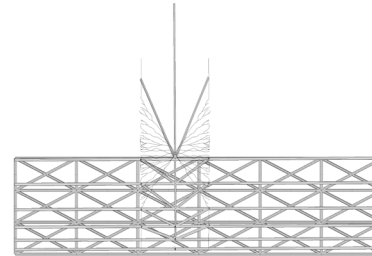
Current coastline with beach extension together with the use of breakwaters to reduce erosion and avoid flooding after 1980's



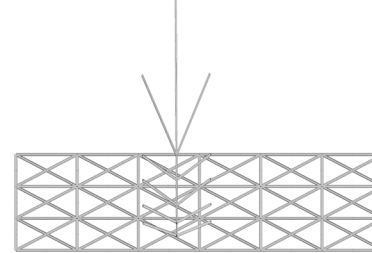
Although the development of a man-made coral reef and terrestrial vegetation differ, both may be observed over time. Here are thesections that describe their development and evolution.



100 years

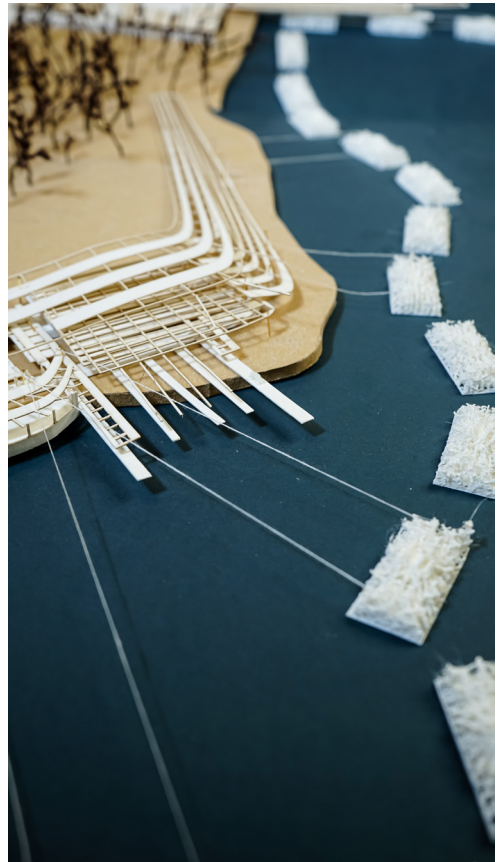
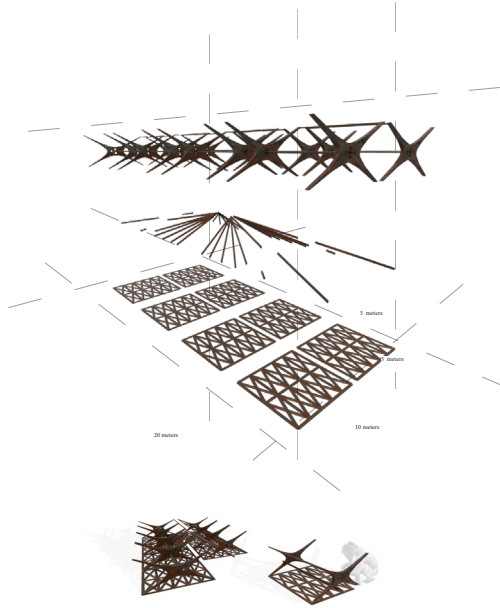
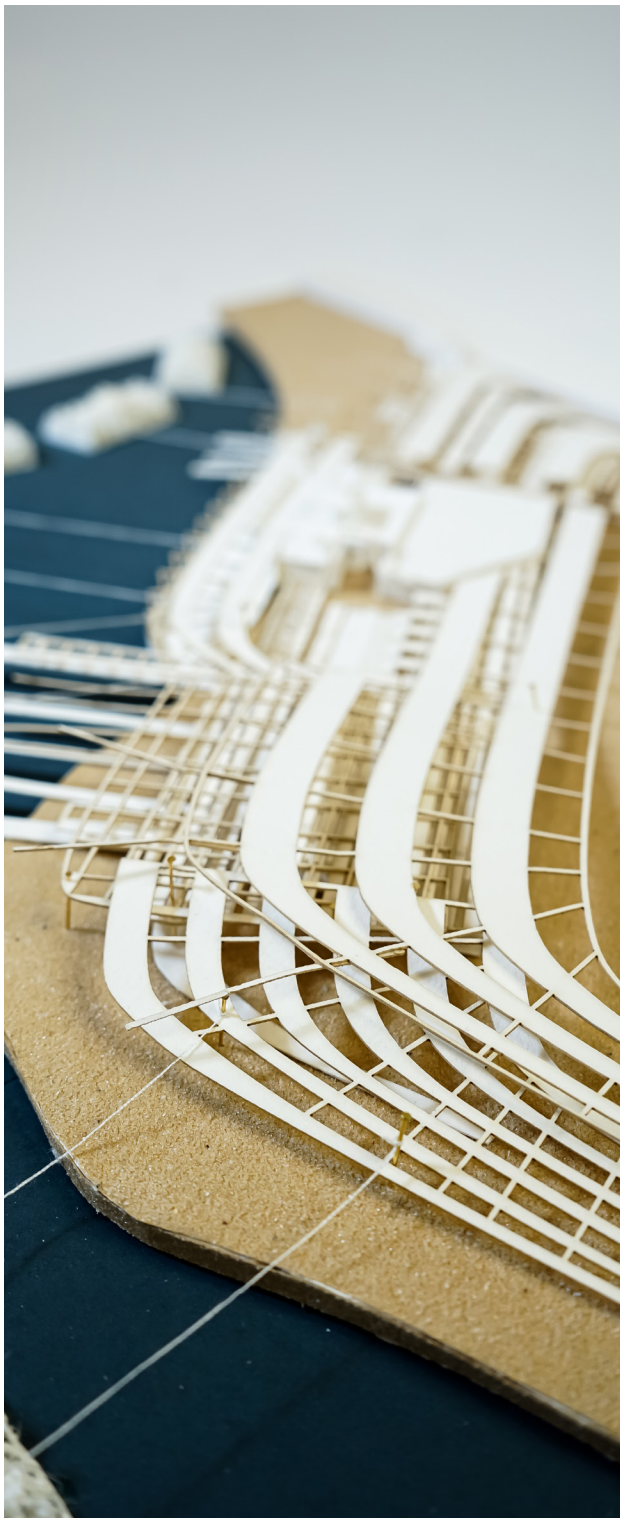


50 years

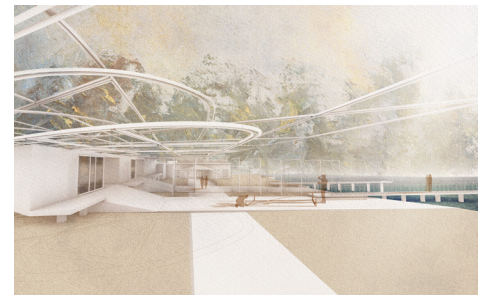
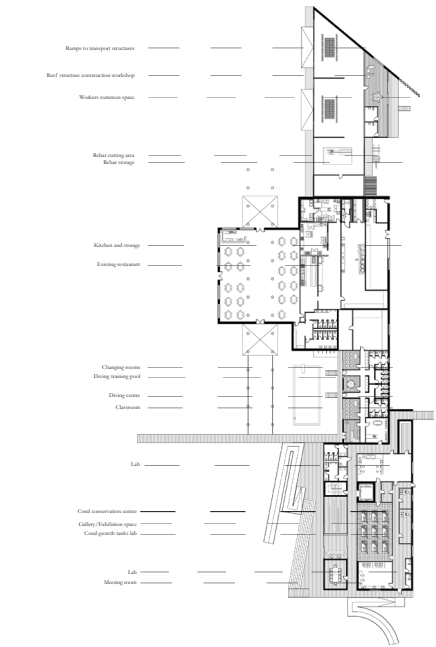


Installation - 0 years



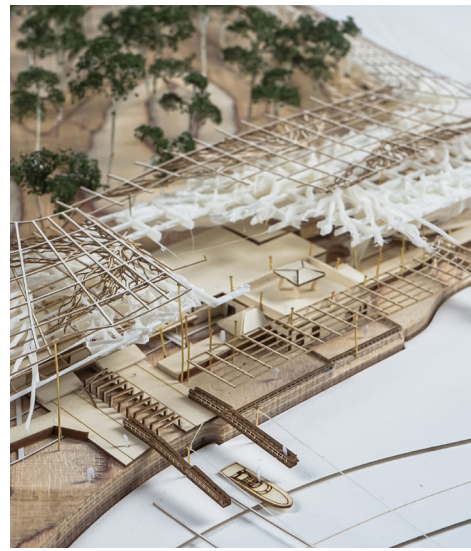


However, as the project developed, I picked the most controversial and vulnerable spot to erect the main structure. This is made up of three primary raised structures that house: A) the reef structure construction workshop, B) the diving centre, and C) the coral research centre, as well as the existing historic baths, which are now utilised as a restaurant. This will eventually provide a way for the community to be reconnected with the sea and potentially revitalizing the local economy. The rest of the coast will be used as a promenade, allowing visitors and residents to enjoy various activities such as fishing, sunbathing, surfing, and kayaking.





This final model offers the result of this project's study and design approach to combating coastal erosion and fostering coexistence between land and sea. By employing a biorock system to construct an artificial coral reef, I have proposed a sustainable ecosystem that not only defends against erosion but also fosters the interconnection of terrestrial plants and marine corals. This transformation will eventually allow to eliminate existing breakwaters and renew the community's bond with the sea.



Furthermore, the proposed building serves as a centre for study, preservation, and conservation. It raises awareness about the importance of marine ecosystems, showcasing the rich biodiversity found underwater. The facility will provide educational opportunities for visitors, allowing them to explore and understand the value of marine life while promoting the preservation of these resources.

