

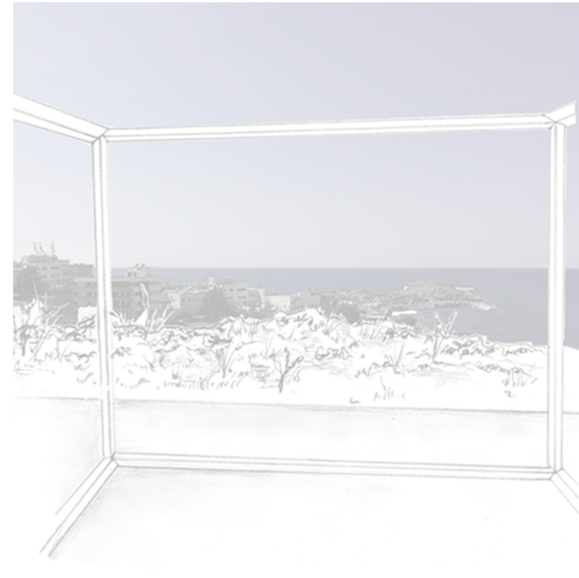
UNVEILING BIODIVERSE ANFEH



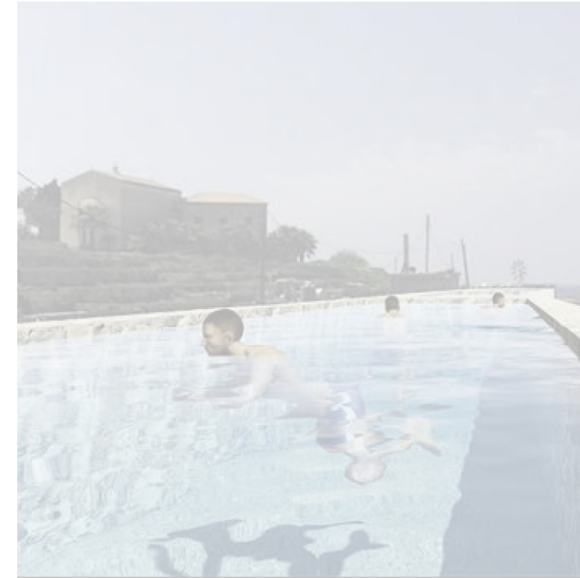
COASTAL WALKERS



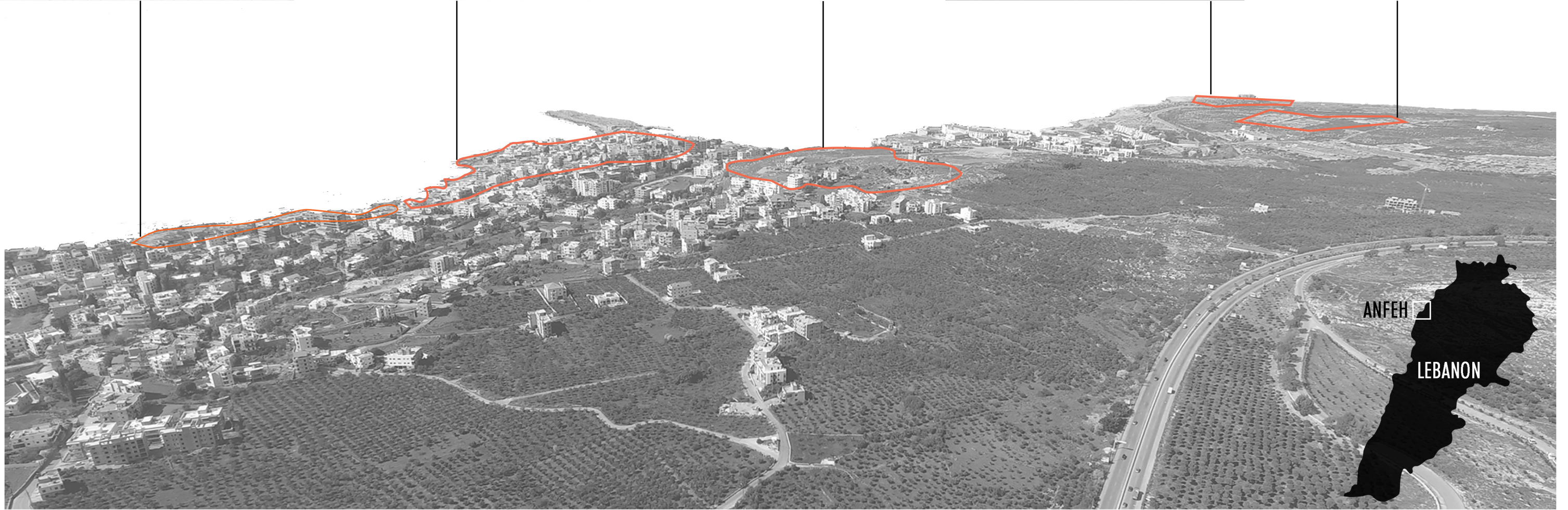
BEYOND THE SENSES: CONNECTING YOUR INNER AND OUTER LANDSCAPE



MEDITOSPHERE: TRANQUILITY, THERAPY, MEDITATION



EVOLUTIONARY DEGRADATION



Country / City **LEBANON / BEIRUT**
University / School **AMERICAN UNIVERSITY OF BEIRUT**
Academic year **YEAR 3**
Title of the project **UNVEILING BIODIVERSE ANFEH**
Authors **TARA KANJ**





PERFORMATIVE NATURE

Barcelona International Landscape Architecture Biennial

September 2018 **Barcelona**

SCHOOL PRIZE

X International Landscape Architecture Biennial

Máster d'Arquitectura del Paisatge -DUOT - UPC
ETSAB- Escola Tècnica Superior
d'Arquitectura de Barcelona
Avenida Diagonal, 649 piso 5
08028 Barcelona-Spain

TECHNICAL DOSSIER

Title of the project Unveiling Biodiverse Anfeh
Authors Tara Kanj
Title of the course Cultural Landscape Design
Academic year Landscape Year II - 2017
Teaching Staff Dr. Maria Gabriella Trovato and Ms. Nahida Khalil
Department/Section/Program of belonging Landscape Architecture
University/School American University of Beirut

Written statement, short description of the project in English, no more than 250 words

Anfeh, located on the northern coast of Lebanon, is one of the most culturally rich and biodiverse areas of the region. In this design, a previously neglected, uniquely scarce coastal area will be transformed into a sustainable marine protected site rich in biodiversity, which caters for educational and distinct marine studies. The objectives are as follows:



Protection of the site from surrounding threats, sources of pollution, and harmful activities, as well as the establishment of decrees ending illegal privatization.



Preservation of the site's distinct natural features and biodiversity, including the rare geomorphology, flora, and fauna.



Amelioration of the site's current condition by assisting in natural processes through providing services that have been depleted, synthesizing micro-environments that enhance biodiversity, and adding a research facility.



Education hotspot since the site is exceptionally unique in the entirety of the region, as well as the presence of explanatory signage, accessibility to previously unreachable areas resulting in a potential for sustainable studies.

For further information

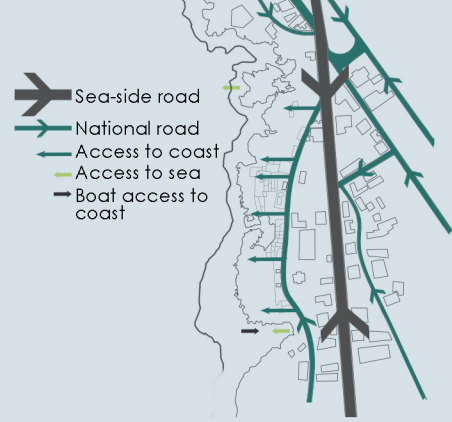
Máster d'Arquitectura del Paisatge -DUOT - UPC

T: + 34 93 401 64 11 / +34 93 552 0842

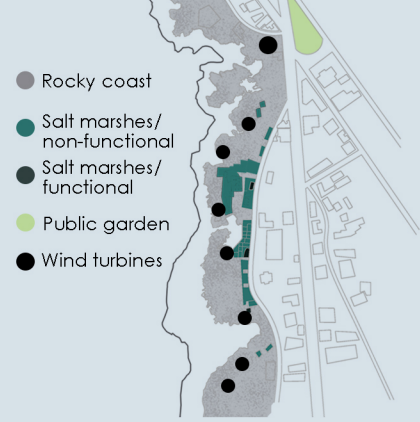
Contact via email at: biennal.paisatge@upc.edu

Consult the web page <http://landscape.coac.net/>

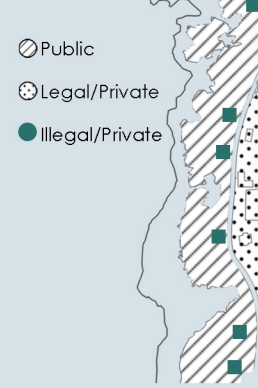
ACCESSIBILITY



LANDMARKS



LAND OWNERSHIP



DECREE No4810,241966/
(conditional use of the maritime public domain): by principle, the maritime public domain remains for the use of everybody, projects to be executed should have a public character

DECREE LAW No 144/S, 106
The maritime public domain consists of seashore till the farthest distance that the wave could reach in winter and sands shores and pebbles

LAW No4810
The privatization of the beach is possible, the built area should be synchronized with the environment.

SITE BEFORE INTERVENTION



GEOMORPHOLOGY

Vermetid Reefs

There exists a major risk of global extinction, so they need to be protected. Vermetid reefs host an abundant variety of biodiverse fauna and also prevent waves from crashing on the shore.

Shallow Pools

The penetration of sunlight enhances biodiversity

Fine Sand

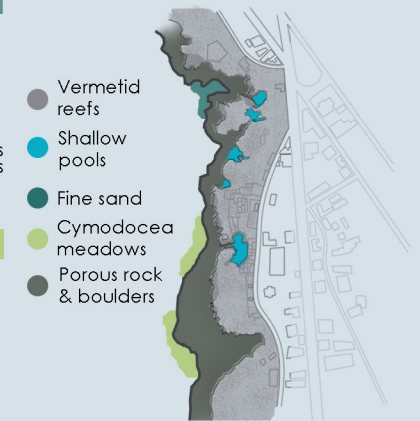
Enhances the seagrass growth and attracts many species.

Porous Rock and Boulders

Enhances biodiversity & prevents major erosion.

Cymodocea Meadows

Feeding ground for sea turtles and many other species.



SOCIO-CULTURAL PRACTICES



POLLUTION

Algae

Invasive form of algae which accumulates plastic, they retain so much plastic and toxins from the water and deposit them on the rocks. They cause diseases to the sea turtles since they feed on them.

Agricultural and sewage runoff

Poorly built septic tanks are leading to sewage leakage.

Eutrophication

Agricultural runoff from nearby lands causing eutrophication.

Sponges

Mutated planktonic residue from the accumulation of pollution.

Maritime Pollution

Las Salinas and Marina del Sol are causing major maritime pollution.



ECOLOGICAL THREATS



THE MARINE BIODIVERSITY

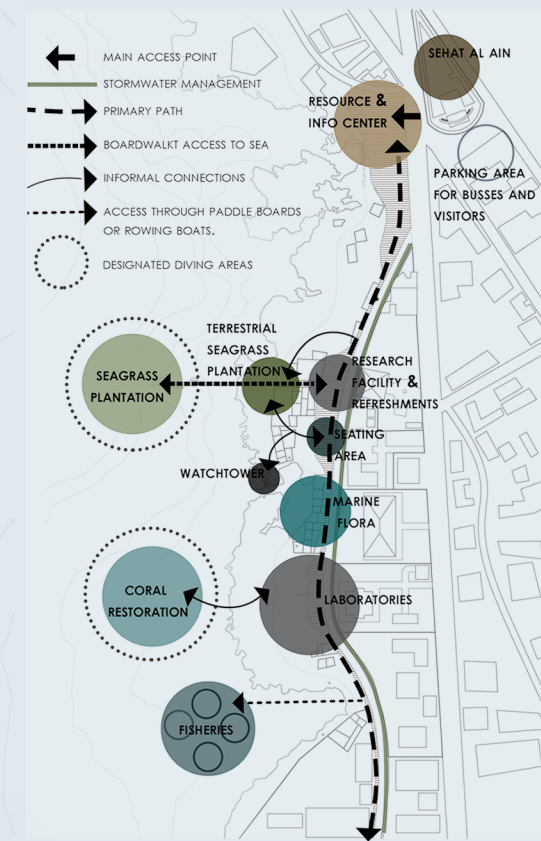
SPONGIA OFFICINALIS	LITHOTHAMNION CORALLOIDES	PHYLLANGIA AMERICANA	CYMODOCEA NODOSA	SAPLYSINA AEROPHOBA	SARGASSUM TRICHOCARPUM	CYSTOSEIRA VALIANTE	OCTOPUS VULGARIS	EROSARIA SPURCA	DIPLODUS CERVINUS	MYXEROPERLA RUBRA	EPINEPHELUS COSTAE	MAJA GOLTZIANA
SCIAENA UMBRA	EPINEPHELUS MARGINATUS	EPINEPHELUS AENEUS	CORALLINE ALGAE	PAPAVER SOMNIFERUM	ORNITHOGLOSSUM MONTANUM	MINUARTIA THYMIFFOLIA	SEDUM TITTOREUM	SALVIA VERBERACEA	POLYCARPON TETRAPHYLLUM	ARTIPLIX PATULA	ECHIUM GLOMERATUM	EROSARIA SPURCA



SITE BEFORE AND AFTER INTERVENTION



CONCEPTUAL DIAGRAM



KEY PLAN ALL SECTION CUTS



SITE AFTER INTERVENTION

- 1 VISITOR'S RESOURCE AND INFO CENTER
- 2 EXHIBITION ON HISTORICAL WALL REMAINS
- 3 BOARDWALK: A SIDEWALK AND PROTECTIVE BUFFER
- 4 RESTORATION OF TERRESTRIAL BIODIVERSITY
- 5 ON-SHORE SEA GRASS PLANTATION
- 6 EQUIPPED RESEARCH FACILITY
- 7 FOOD AND BATHROOM SERVICES
- 8 SHADED MULTIFUNCTIONAL SEATING AREA
- 9 BOARDWALK ENABLING ACCESS TO THE SEA
- 10 OFF-SHORE SEA GRASS TRANSPLANTATION
- 11 ON-SHORE AQUATIC FLORA PLANTATION
- 12 EQUIPPED MULTIPURPOSE LABORATORIES
- 13 OFF-SHORE CORAL TRANSPLANTATION
- 14 FISHERIES IN CONTROLLED QUADRATS
- 15 STORM-WATER MANAGEMENT PLANTATION BUFFER
- 16 RENOVATED SEWAGE SYSTEM SEPTIC TANKS
- 17 ROAD PAVED WITH COBBLESTONE TO PRIORITIZE PEDESTRIANS, LIMIT VEHICULAR POLLUTION AND ABSORB WATER RUNOFF.



QUADRAT FISHERIES

A GOOD COMPENSATION FOR THE OVERFISHING. BREED AND HARVEST IN ORDER TO REPOPULATE, AND STUDY.

PADDLE BOARDS

ACCESS TO FISHERIES THROUGH PADDLE BOARDS

ROWING BOATS

A SUSTAINABLE WAY TO GET TO THE FISHERIES. MADE POSSIBLE THROUGH THE REVIVAL OF THE PORT.

NATIVE MARINE FLORA

PLANTING SALT TOLERANT NATIVE FLORA IN RE-MEDIATED SALT PANS.

LABORATORIES

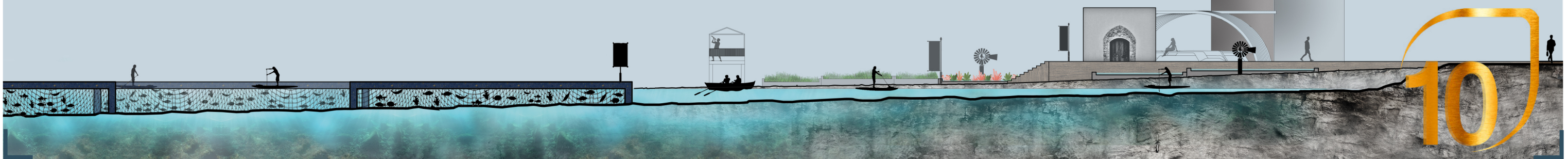
EQUIPPED MULTIPURPOSE LABORATORIES SPECIALIZING IN CORAL RESTORATION

RESTAURANT AND RESTROOMS

RESTAURANT AND BATHROOMS WITH SHOWERS. WATER IS REUSED FROM THE WATER HARVESTING SYSTEM

SMALL PORT

REVIVAL OF PORT THAT WAS INACCESSIBLE DUE TO ILLEGAL BUILDING

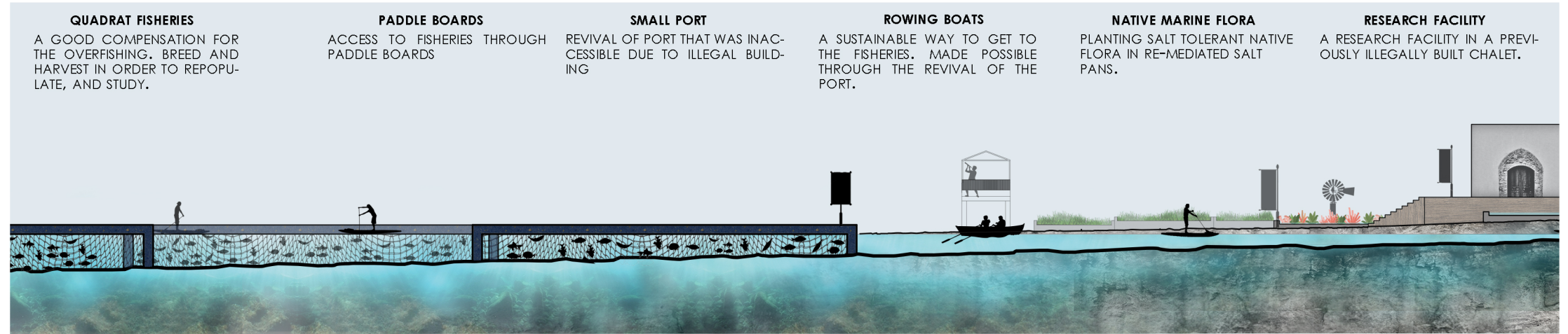


SECTION A-A'

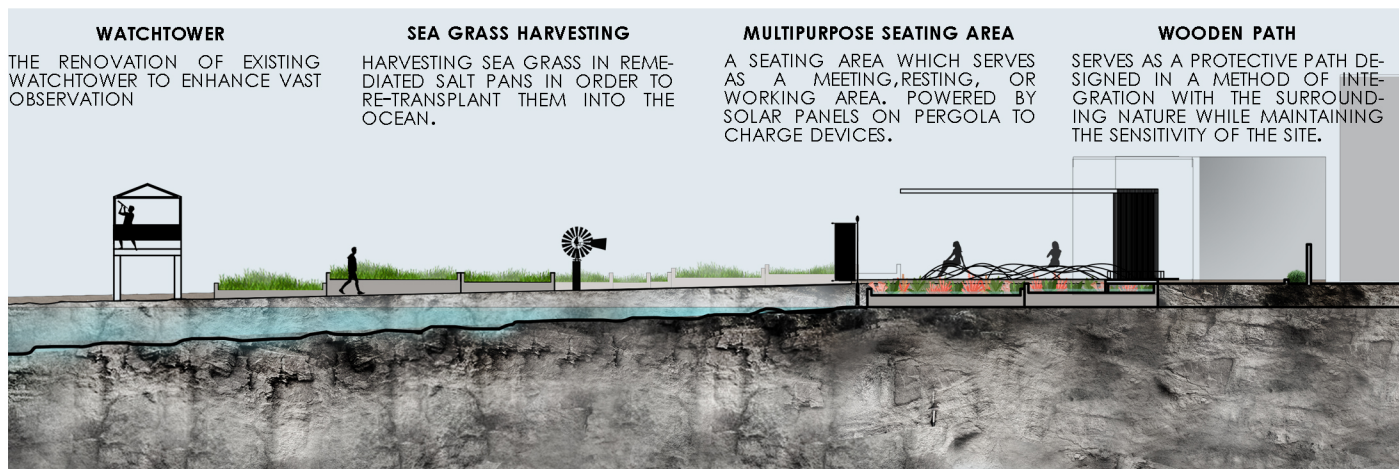




QUADRAT FISHERIES



SECTION A-A'



SECTION B-B'



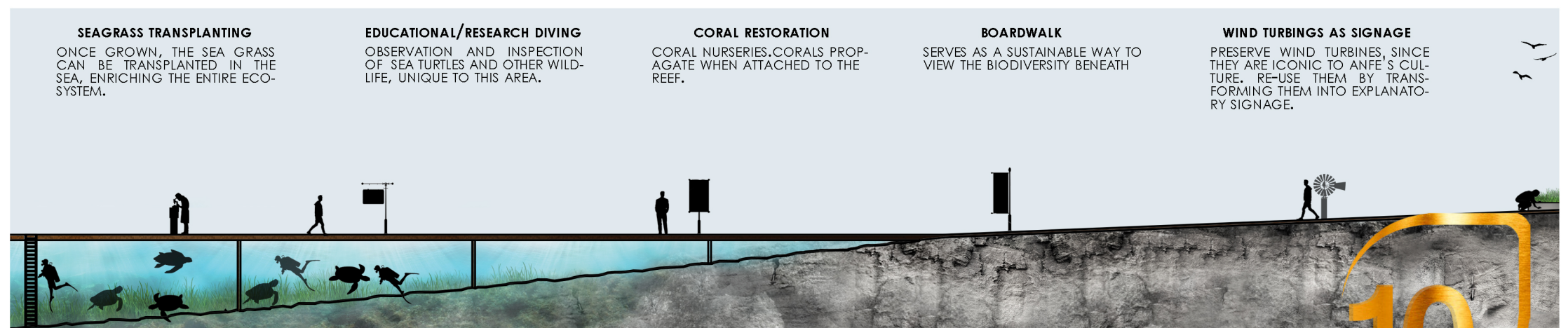
MULTIPURPOSE SEATING AREA



WOODEN PATH



BOARDWALK



SECTION C-C'