



Country / City KIELCE, POLAND
University / School KIELCE UNIVERSITY OF TECHNOLOGY
Academic year 2019/2020
Title of the project MAKOKO'S ECOSYSTEM EQUILIBRIUM
Authors ALEKSANDRA HAJDENRAJCH, DOMINIKA DEROŃ, ELIZA CHRABĄSZCZ

TECHNICAL DOSSIER

Title of the project	MAKOKO'S ECOSYSTEM EQUILIBRIUM
Authors	ALEKSANDRA HAJDENRAJCH, DOMINIKA DERON, ELIZA CHRABASZCZ
Title of the course	THEORY OF CITY AND ESTATE PLANNING
Academic year	2019/2020
Teaching Staff	DR INZ. ARCH. MAGDALENA WOJNOWSKA - HECIAK, DR INZ. ARCH. JAKUB HECIAK
Department/Section/Program of belonging	DEPARTMENT OF ENGINEERING AND ARCHITECTURE, ARCHITECTURE
University/School	KIELCE UNIVERSITY OF TECHNOLOGY



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

Makoko - the world's biggest slum, located on the coast of mainland Lagos, is struggling with serious social and economic problems. It is the most vulnerable to the climate change area because of poor communities living there and the coastline location. Limited access to potable water, overpopulation, poor sanitation and expected sea flooding are just few out of many issues to solve.

The Makoko equilibrium is an idea of the new development path, regarding a fragile living slums' ecosystem. The design assumes a long-term process including a new amphibious house pattern (keeping the scale of the housing unit, just changing the space organization). Based on the idea of incremental housing the existing structures are built with local plant - bamboo. Widening the waterways and creating a system of bridges the circulation model is improved. Supporting the housing platforms with water barrels the flood risk is reduced. Despite the existing housing and a hospital, there are new uses such as a school, several outdoor markets (supporting the local tilapia fishermen trade) and new algae farms. Algae are simple to grow and have lots of uses in water purification, food, cosmetic, medicine industries.

The Makoko equilibrium is a living ecosystem, where nature gives a response to climate change and other problems of the community. Let's set the new Makoko's equilibrium.

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

Máster d'Arquitectura del Paisatge -DUOT - UPC

ETSAB- Escola Tècnica Superior
d'Arquitectura de Barcelona
Avenida Diagonal, 649 piso 5
08028 Barcelona-Spain



CLIMATE CHANGE AGAIN

11th International Biennial Landscape Barcelona

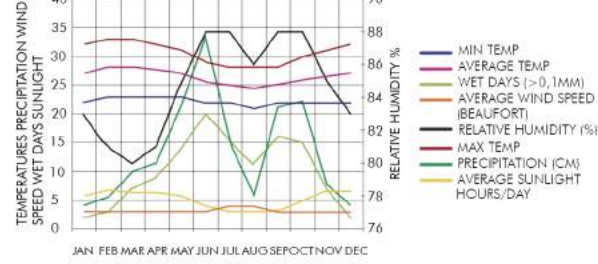
Barcelona September 2020

SCHOOL PRIZE

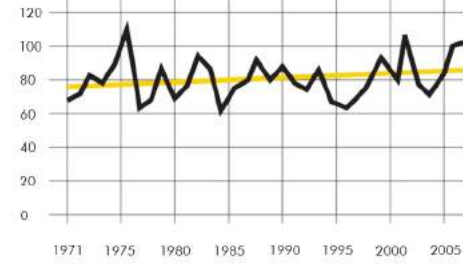
FLOODING AFTER A SEA LEVEL RISE OF 1M



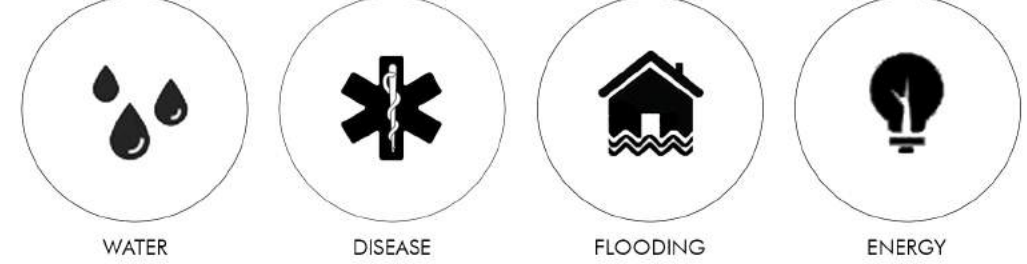
CLIMATE - MEASURED AT AN ALTITUDE OF 40M



RAINFALL MEAN



PROBLEMS OF MAKOKO



EXISTING MAKOKO



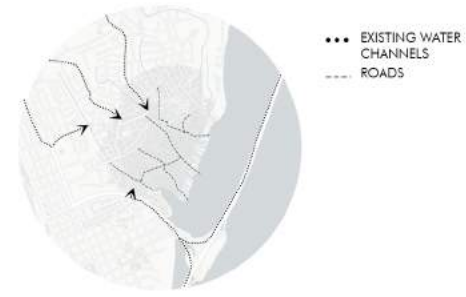
STRUCTURE OF BUILDINGS



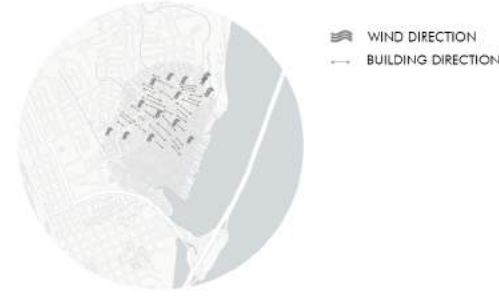
WATER LEVELS AFTER A FLOOD



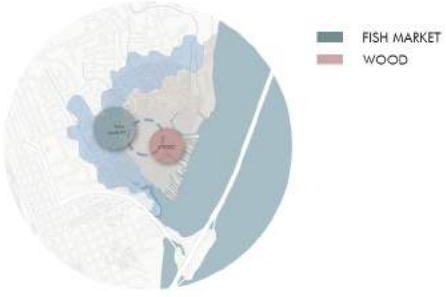
THE MAIN COMMUNICATION CENTER



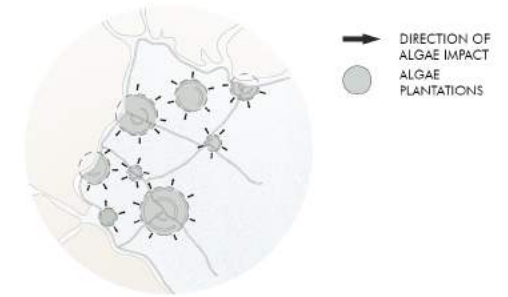
ORIENTATION OF BUILDINGS AND WIND DIRECTION



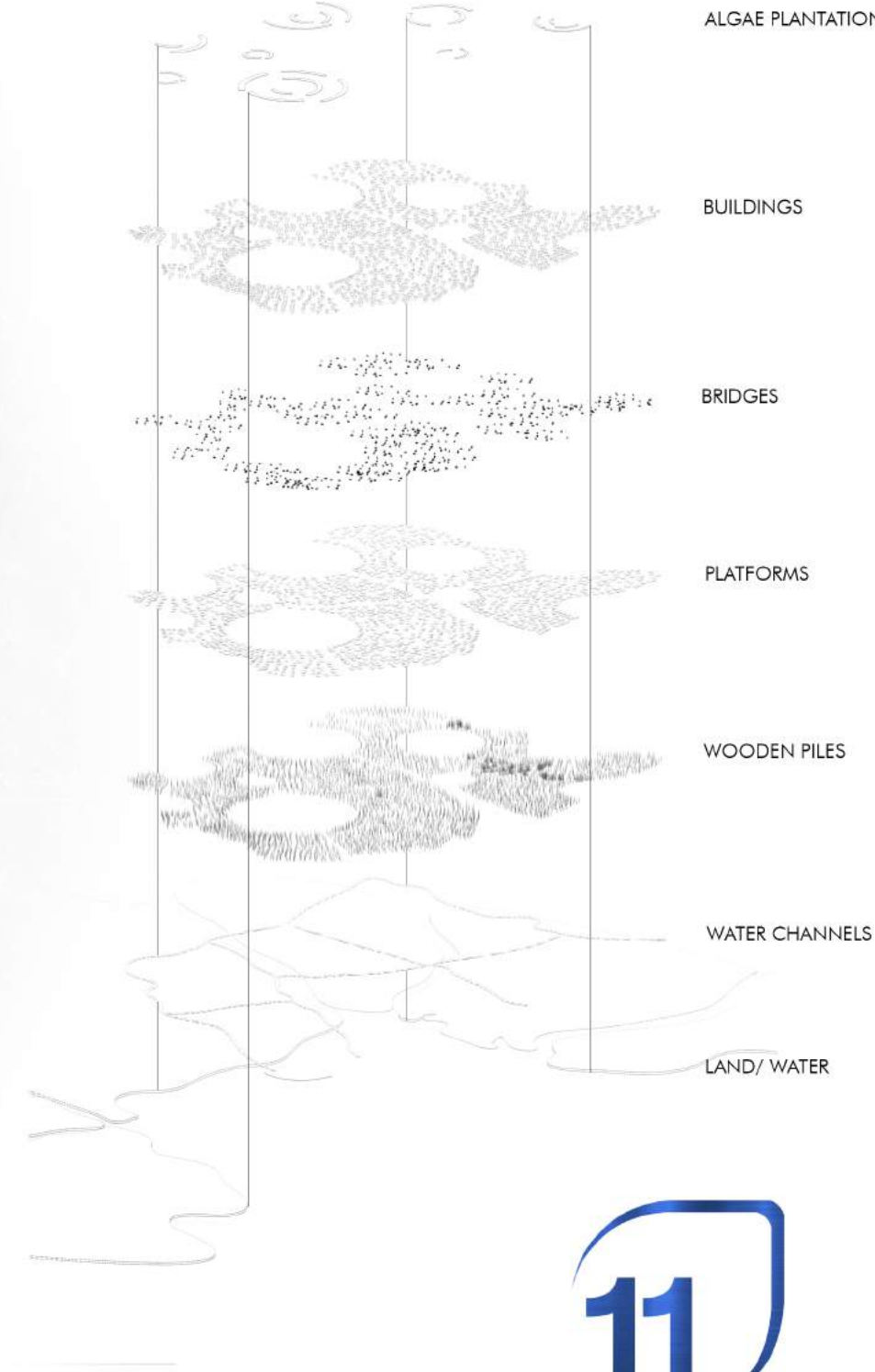
MAJOR ECONOMIC DRIVERS WITHIN MAKOKO



ALGAE PLANTATIONS



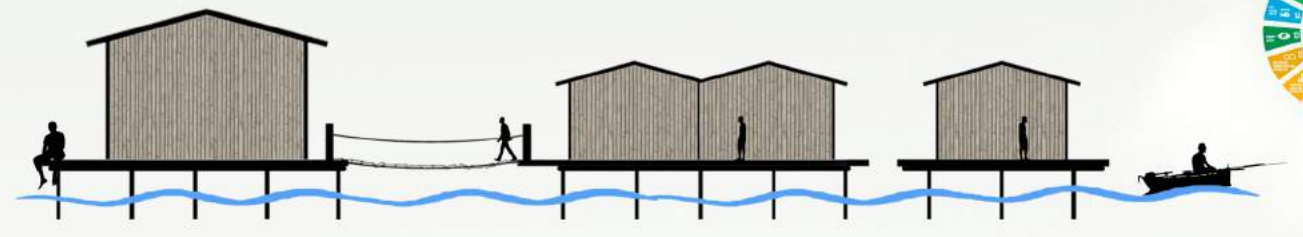
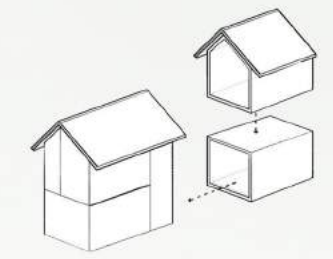
MAKOKO'S LAYERS



CREATING MAKOKO MODULE

INCREMENTAL BAMBOO HOUSING

SECTION



PLANT USED IN PROJECT

- HYDROCOTYLE BONARIENSIS
- NYPA FRUTICANS
- SPHAGNETICOLA TRILOBATA
- LAGUNCULARIA RACEMOSA
- IPOMOEA PES-CAPRAE
- IPOMOEA AQUATICA
- DALBERGIA ECASTAPHYLLUM
- COCONUT NUCIFERA
- CANAVALIA ROSEA
- RHIZOPHORA RACEMOSA

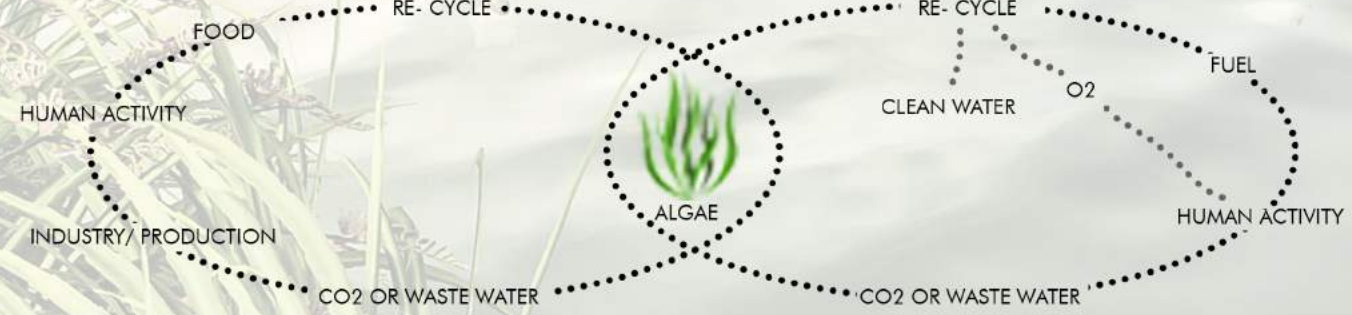
PLANT BENEFITS:



ALGAE WITH NO HUMAN ACTIVITY:



ALGAE WITH HUMAN ACTIVITY:



POSSIBILITY TO FUEL PRODUCTION:

