21 OTHER MAKOKO BUILDING PROJECTS

Hope Floats project: Makoko Amphibious Clinic

Isi Etomi: Canoe Stop

Student project: Water Hyacinth Harvesting

Student project: Empowering Makoko Wale Falde
CONCLUSIONS
FLOATING BUILDING

PHOTOVOLTAICS

ROOF

FURNITURE

SHELL

FRAME

GREEN AREAS

TOILET

FLOATING PLATFORM

MAKOKO FLOATING SCHOOL — AFRICAN WATER CITIES PROJECT
PROGRAM DISTRIBUTION

① FLOTATION PLATFORM
② SERVICES AREA
③ ACCESSIBILITY
④ OPEN GREEN SPACE
⑤ PLANTING AREAS
⑥ TOILET
⑦ CLASSROOMS
⑧ OPEN AIR CLASSROOMS
FLOTATION PLATFORM

BARRELS
Plastic

PLATFORM FRAME
Aluminium/Wood

FLOATING PLATFORM

SURFACE WATER
ROOF

PHOTOVOLTAICS
20 panels 174Wp

ROOF 03
Aluminium/Thatch

ROOF 02
Bamboo joists

ROOF 01
hardwood beams
SHELL

SOUTH FACADE
Bamboo Louvres

WALLS
Bamboo/Aluminium

NORTH FACADE
Bamboo Louvres
FRAME

hardwood
CONSTRUCTION PROCESS

1. MAKOKO FLOATING SCHOOL — AFRICAN WATER CITIES PROJECT
Rain and borehole water is stored in a 1000 Liters tank (1). The collected water then passes to a vortex filter and pressure pump. Afterwards, this water could be used for irrigation and domestic use (2). For drinking water further filtration is necessary (3). All the ‘grey waste water’ that is produced could be temporarily stored in a grease trap tank and then purified in a helophytes filter (5). The effluent from the constructed wetland is then used to rinse the toilet and as irrigation water for the plants (6). The water for rinsing the toilet is called black water. Black water settles into a septic tank (7) before final purification is carried out by a BIOROCK filter (8). The purified water then could be released in the lagoon surface or be re-used as grey water.
ELECTRICITY

Generating electricity is one of the most crucial aspects in a stand alone system. Based on the climate conditions solar energy is our best option to provide electrical energy to the school. Thus, we use PV Panels. At the same time, as a supplementary system, there could be the option of bio-gas production the toilet and kitchen waste. The surplus electrical production could power near by houses.
The idea is that the platform could function as a food production area (vegetables agriculture). The plants are watered with ‘grey water’ (1) filtered by the helophytes filters (2). If insufficient stock tank water can be made of use (4). The organic waste together with a portion of the waste water are collected in a 1000 Liter tank (5) in which methane is captured for biogas production for the possibility of cooking (6). The combination with black water is possible but could make the system significantly complex and harder to use the remaining effluent as a fertilizer for the vegetable garden.