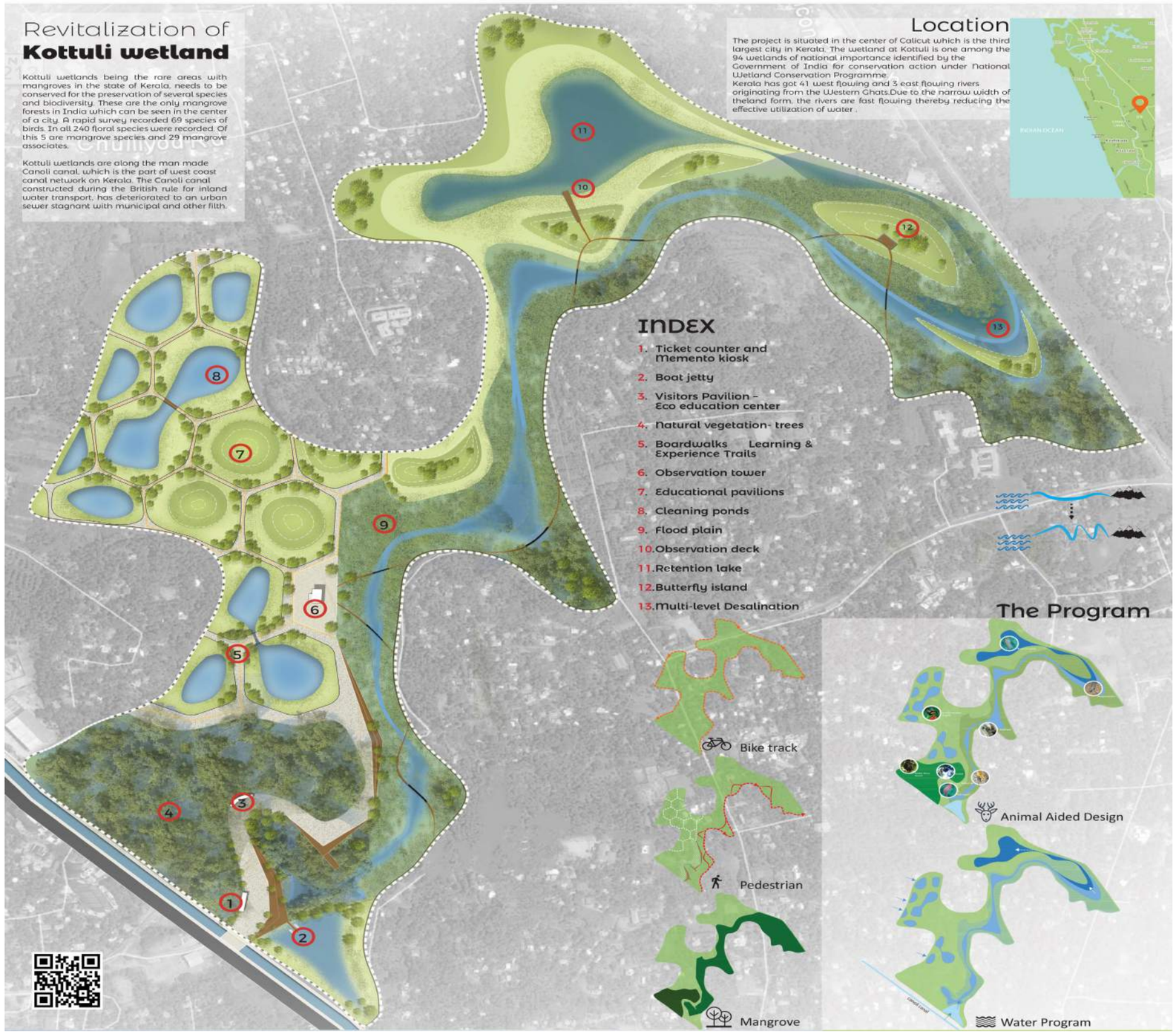

Country / City Germany/Bernburg

University / School Hochschule Anhalt University of Applied Sciences

Academic year 2015-2017

Title of the project Revitalization of Kottuli wetland

Authors Sarath Kapplangat Sarasan

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	Ecophilic Landscape Architecture and application in the revitalization of Kottuli Wetland
Authors	Sarath Kapplangat Sarasan
Title of the course	Masters of Landscape Architecture
Academic year	2015-2017
Teaching Staff	Prof.Dr.Nicole Uhrig
Department/Section/Programofbelonging	Department Agriculture, Ecotrophology and Landscape Development
University/School	Hochschule Anhalt, University of Applied Sciences

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

Wetlands, one of the most efficient ecosystems of the world, are rich in floral and faunal biodiversity and harbour wonderful quantity of species including numerous endangered and threatened ones. Wetlands shape breeding and feeding ground for numerous resident and neighborhood and migratory water birds and several different lesser recognized species. As a substantially productive life supporting element, wetlands have immense socio-economic, ecological, and aesthetically significance. The natural splendor and diversity of animals and vegetation makes wetland aesthetically fascinating. The project tries to lessen the effects caused by urbanization such as area loss, habitat fragmentation, and habitat alteration by the application of ecophilic principles. The project tries to find out a solution for the existing problem of water pollution by creating flexible spaces that can be responsibly used by people and yet functions a biological filter.
It also tries to analyses the availability and quality of public spaces in the study area in order to accommodate everyday life activities. This project addresses the need for the revitalization of Kottuli wetland, its importance how it can be sustainabily rejuvenated and can be benificial for the people in and around the area as a public space and ecol-tourism hub . Attention is given to analyse the reasons for the failiure of previous interventions and to view the matter in a city scale. The research part involves new innovations in the feild of public participation and how principles ecophilic landscape design can be implimented in the project.

For further information
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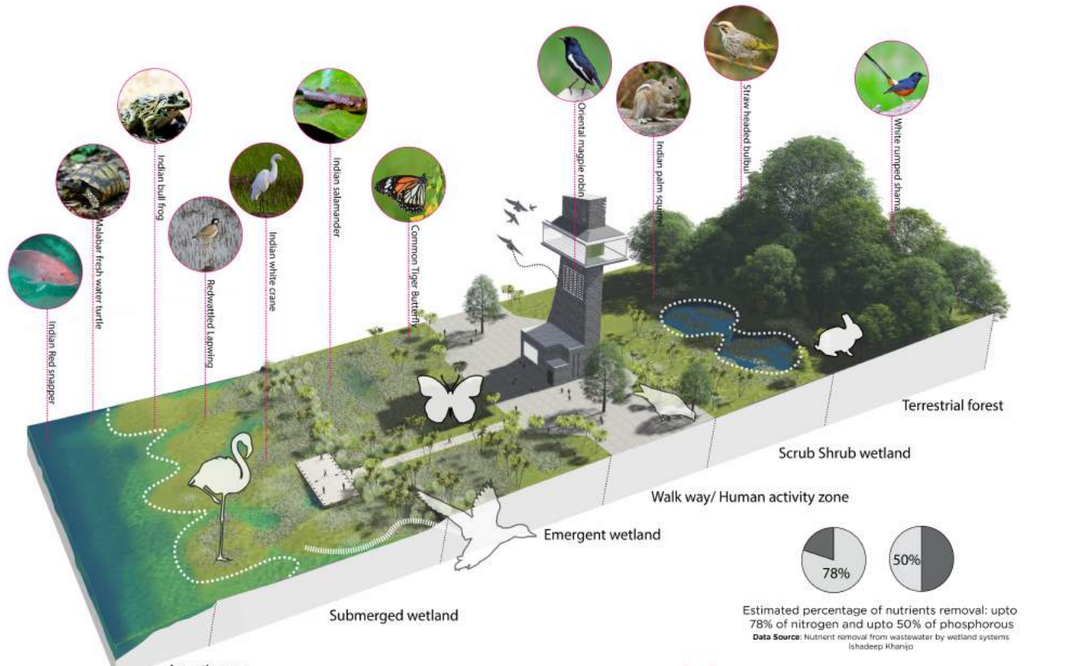
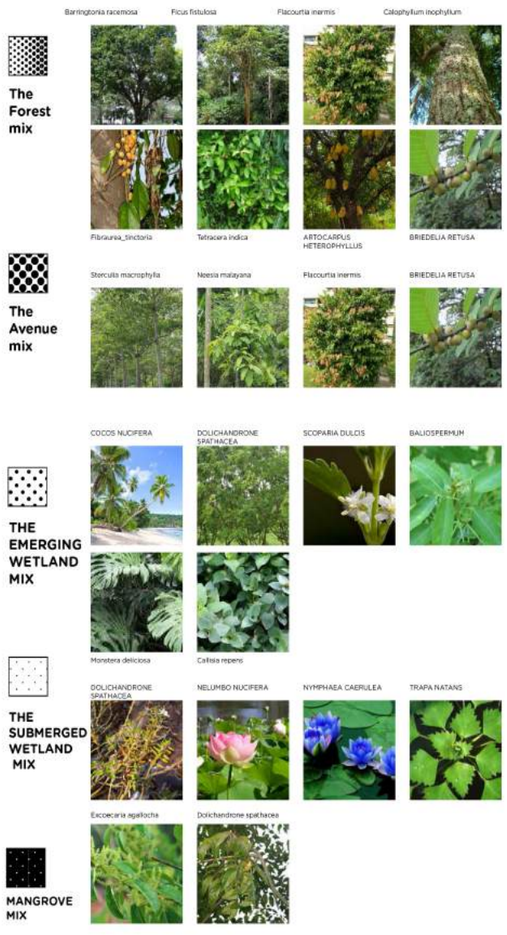
Consult the web page http://landscape.coac.net/



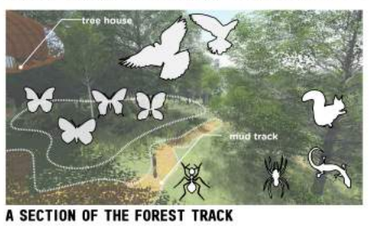


While designing the planting plan, emphasisis is given to identify the tree mixes that suits the birds and animals in and around the site as well as it provides good experience to the vistors.

The planting mixtures are created in a way that it provides choreographed movement and a dramatic contrast from dense vegetation of the terrestrial forest to the open-ness of the wetland ecosystem.

Eco-philic design is a balanced and integrated approach which enables harmonious co-existence of human and nature. It is guided by a series of overarching meta-principles providing unified themes explained as 1. Learning from the place (physical, cultural and human) 2. Designing with nature (ensuring the aesthetics and functioning of the ecosystem. 3. Integrated research and practice through design (animal aided design, public participation etc.)

THE ECO-PHILIC DESIGN PROGRAM ✓



A SECTION OF THE FOREST TRACK

✗

AND THE UGLY TRUTH

Do not involve neophytes and other invasive species in the planting design. Some examples of invasive species of plants like Salvinia molesta and Eichhornia crassipes have already infested the site area.Care should be taken to remove these species from the site and stun their future growth. This is one part that requires regular maintenance bu can be reduced if planned from the beginning.

CONSTRUCTED WETLAND

URBAN ACUPUNCTURE

Constructed wetlands are relatively inexpensive to build where land is affordable and can be easily operated and maintained even by the community.

Advantages of constructed wetland.

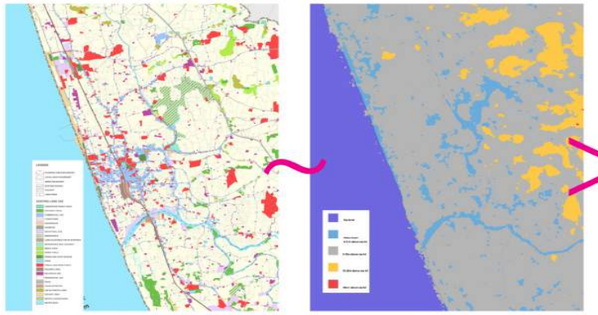
- utilization of natural processes,
- simple construction (can be constructed with local materials),
- simple operation and maintenance,
- cost eff ectiveness
- process stability.

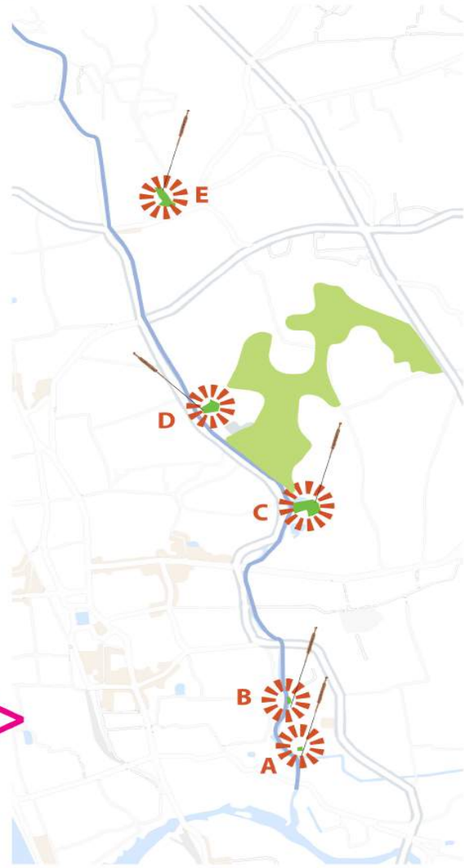
One of the most important feedback from the public after the public participation events are the concerns about the water quality. They are worried about the quality of water in the canal and the possibility of treating it in the wetland itself. Many suggested the water should be more approachable, touchable than that in the design. They want to feel the water. This lead to the challenge of treating water to a quality of type 1 or to type 2 at least.

I found the solution in decentralizing the load and treating the pollutants near to their source.
Land use maps topographical maps and hydrological data are all overlayed and analysed to find out optimum areas for natural water treatment. Five such areas are identified and converted into constructed wetlands. 2 sqm of constructed wetland is enough to treat the waste water from a single household.

A constructed wetland is a shallow basin fi lled with some sort of fi lter material (substrate), usually sand or gravel, and planted with vegetation tolerant of saturated conditions. Wastewater is introduced into the basin and fl ows over the surface or through the substrate, and is discharged out of the basin through a structure which controls the depth of the wastewater in the wetland.

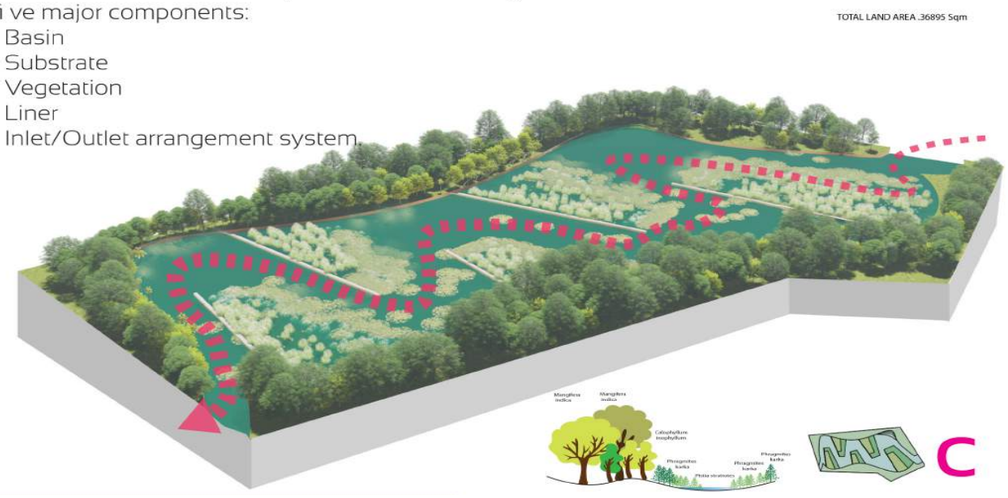
LAND USE DATA AND TOPOGRAPHY, HYDROLOGY DATA ARE COMPARED TO GET OPTIMIZED LOCATIONS

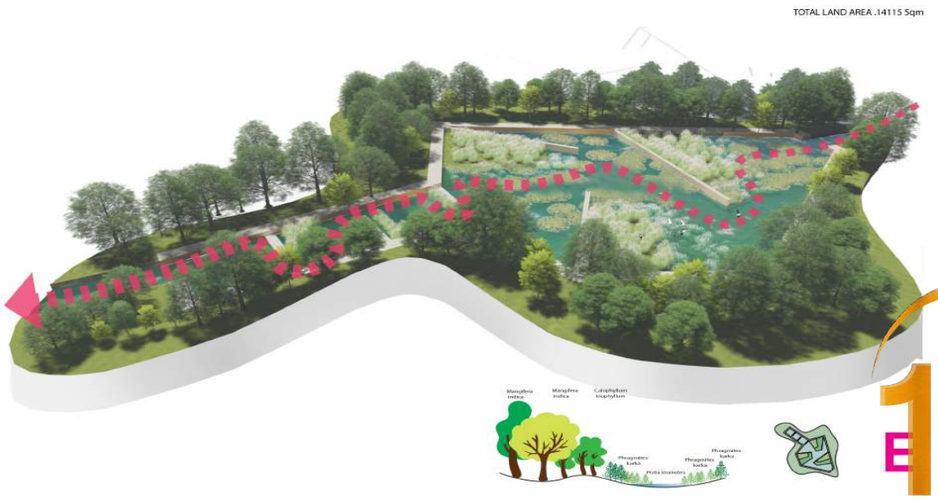


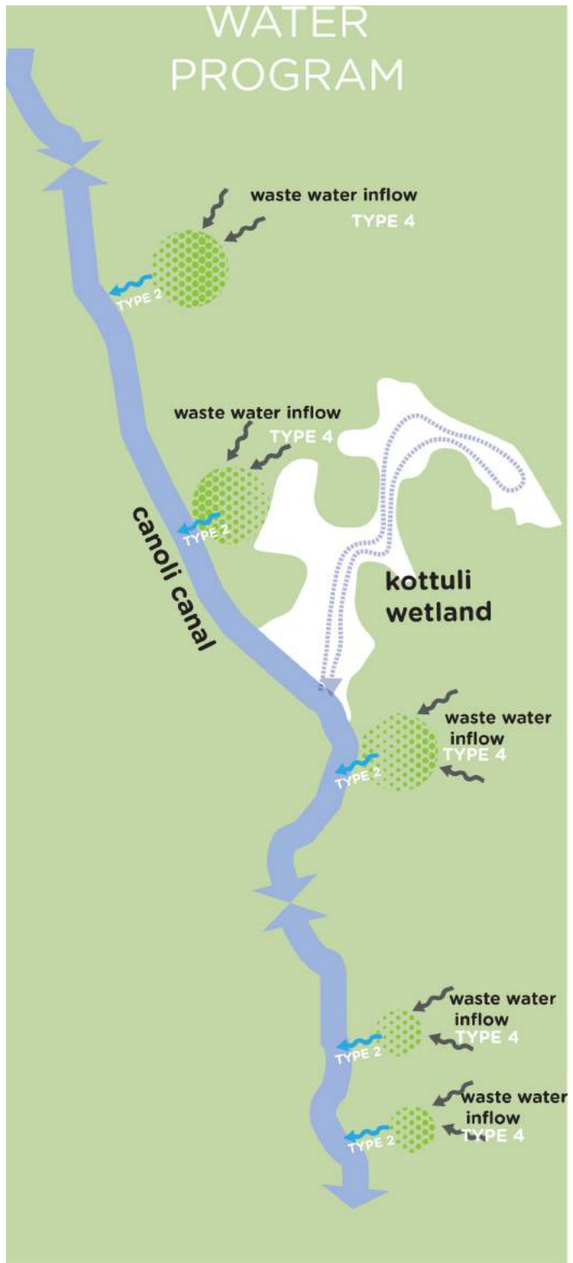


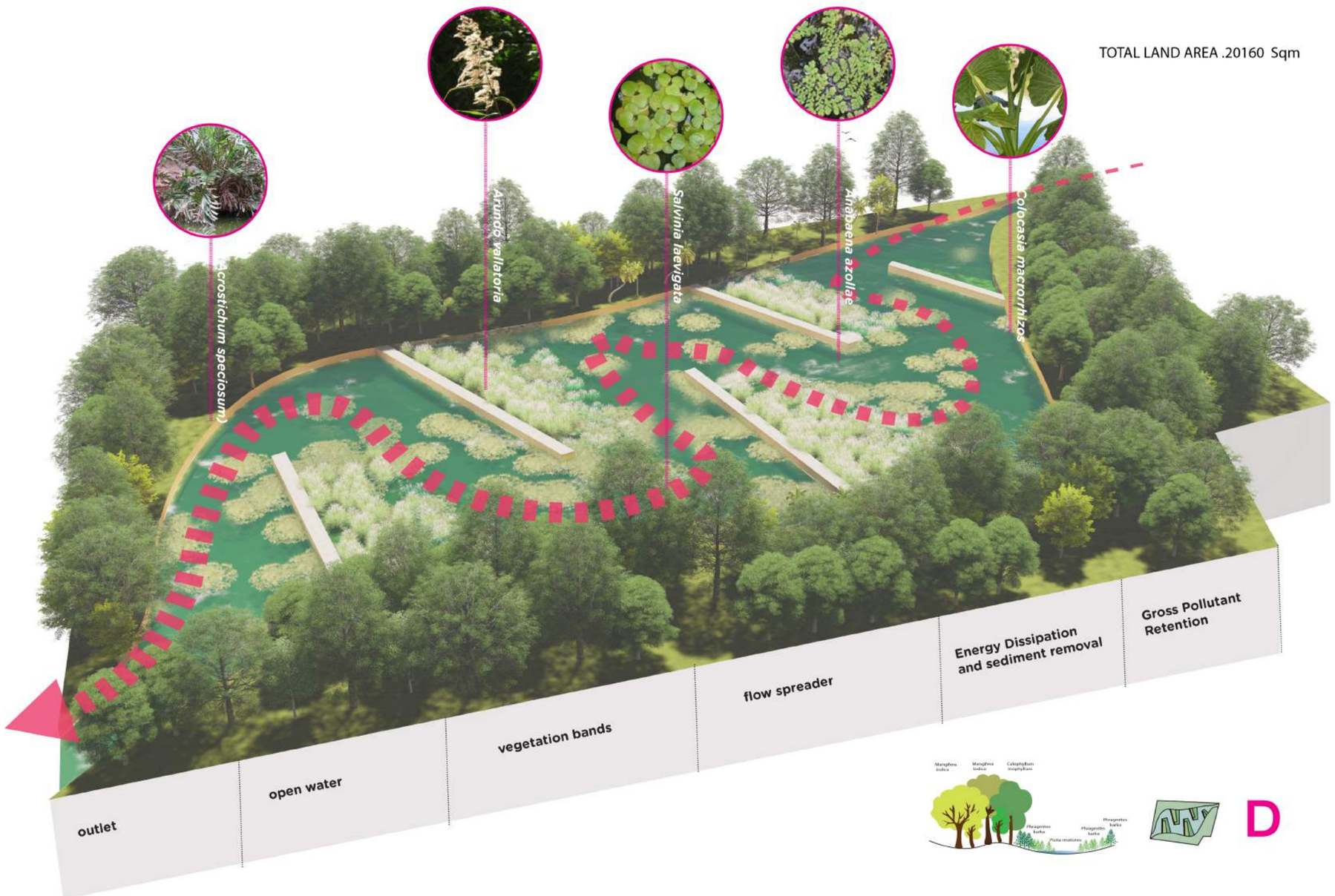
A constructed wetland comprises of the following fi ve major components:

- Basin
- Substrate
- Vegetation
- Liner
- Inlet/Outlet arrangement system.






WATER
PROGRAM
waste water inflow
TYPE 4
TYPE 2
waste water inflow
TYPE 4
TYPE 2
canoli canal
kottuli
wetland
waste water
inflow
TYPE 4
TYPE 2
waste water
inflow
TYPE 4
TYPE 2
waste water
inflow
TYPE 4
TYPE 2


TOTAL LAND AREA .20160 Sqm
Acrostichum speciosum)
Arundo vallatoria
Salvinia laevigata
Anabaena azollae
Colocasia macrorrhizos
outlet
open water
vegetation bands
flow spreader
Energy Dissipation
and sediment removal
Gross Pollutant
Retention
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