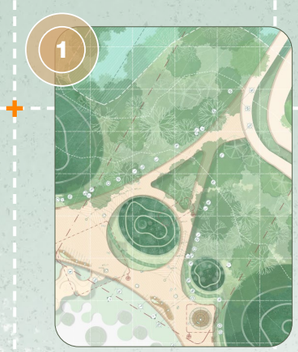
Latin america

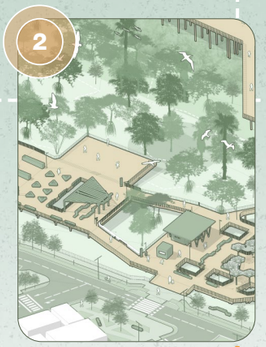
Colombia

Atlántico department
Bolívar department
Magdalena department

“ *Regenerative landscapes:* *How do water, landscape and the collective memory in the colombian Caribbean shape a resilient way of inhabiting the territories?* ”



At the edge of the swamp
Recovery & integration of the La Playa neighbourhood.
Barranquilla, Atlántico



Ecological corridor El Bioma
Restoring the swamp through ecological design.
Barranquilla, Atlántico



Rehabilitating the Riverbanks
Proposing new edges to restore the city-river connection.
Sabanalarga, Atlántico; Santa Marta, Magdalena



Water Memories
Ecosystem and environmental restoration.
Calamar, Bolívar



Please provide a 250-word text explaining the selection criteria used to choose the five projects representing the school in the Ribas Piera Prize. Detail the aspects evaluated, such as conceptual quality, innovation, thematic relevance, technical resolution, or any other criteria considered in the selection process with a single image, characteristic of the academic process, to accompany the text.

Our projects exemplify regenerative and ecological-responsive design in the Global South, assessed through active learning methodologies, sustainability competencies, and community engagement. Accordingly, In the Mallorquín Swamp, “*El Bioma”* reconnects community and nature, transforming a degraded territory into a resilient landscape where water, life, and urban memory intertwine. In this context, “*At the Edge of the Swamp”* reimagines the swamp as a Caribbean symbol, restoring nature and reconnecting community through memory and care. “*Water Memories”* aside, is a green lung that restores an untouched area with preexisting wetlands, where Calamar’s resilient community reconnects and protects its town from climate change. Finally, “*Rehabilitating the Riverbanks”* intervenes two bodies of water neglected by urban planning and the local communities, reimagined as socio-ecological axis that fosters nature-rich urban living.

AT THE EDGE OF THE SWAMP

RECOVERY AND INTEGRATION OF THE LA PLAYA COMMUNITY



Vegetation Atlas

RED MANGROVE */Rhizophora mangle/*

It is frequently found in mangrove swamps along the Pacific and Atlantic coasts; at an altitude of 0-10 meters above sea level. Key species in some stages of the life cycle of several organisms, especially important in soil conservation and erosion control.

BLACK MANGROVE */Laguncularia racemosa/*

It is frequently found in mangrove swamps along the Pacific and Atlantic coasts; at an altitude of 0-10 meters above sea level. Key species in some stages of the life cycle of several organisms, especially important in soil conservation and erosion control.

WHITE MANGROVE */Avicennia germinans/*

It plays a key role in the mangrove ecosystem as a barrier against the tides and as a shelter, breeding and protection of wildlife, growing in tropical and subtropical regions of the Americas, it is characterized by pneumatophores (like spikes coming out of the ground).

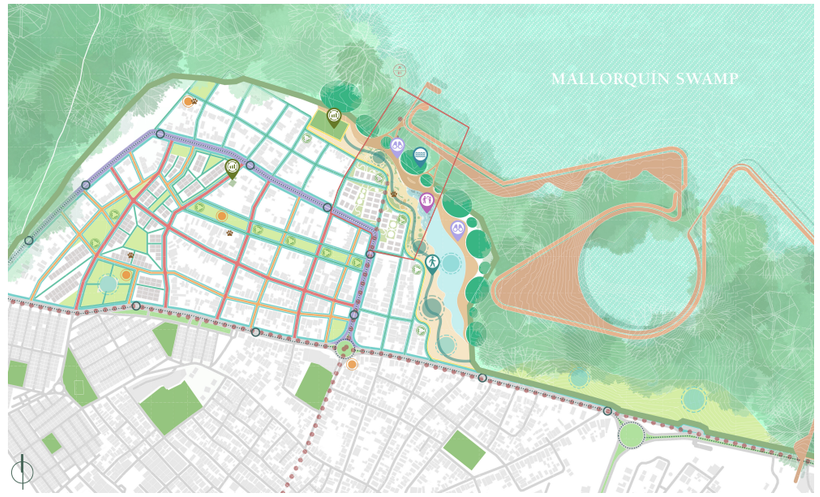
BUTTONWOOD */Conocarpus erectus/*

The mangrove buttonwood belongs to the Combretáceas family. They have a straight trunk with a rounded and dense crown, composed of thin and ascending branches.
It is evergreen, flowers and fruits most of the year.

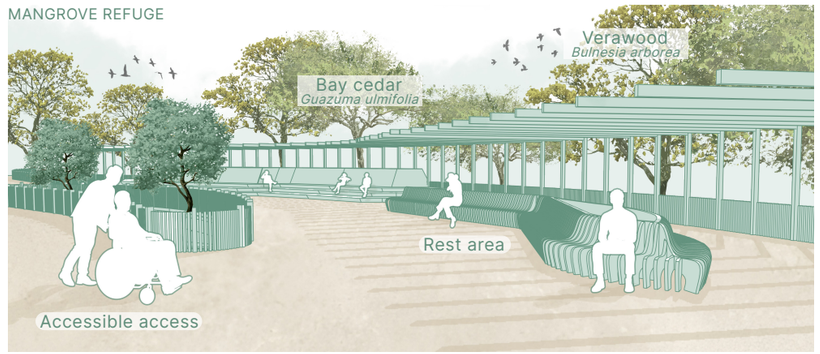
1.Access ramp 2.Elevated walkway 3.Resting bench 4.Viewpoint 5.Rain garden 6.Flood garden 7.Connecting platform 8.Ecopark Platform

MASTERPLAN

The master plan for the Eduardo Santos neighborhood aims to address the various social dynamics between the population and their environment, which have dehumanized the community over the years. The main objective of the master plan is to transform the neighborhood and its relationship with the swamp, creating a new urban structure that respects the environment and is prepared for future changes in the area.



MANGROVE REFUGE



SWAMP VIEWPOINT



Country/City	Colombia, Barranquilla
University / School	Universidad del Norte / Escuela de Arquitectura, Urbanismo y Diseño EAUD
Academic year	2023
Title of the project	At the edge of the swamp - Recovery and integration of the La Playa community
Authors	Diana Tinoco, Luis Mendéz y Jeison Brochero

TECHNICAL DOSSIER

Title of the project At the edge of the swamp - Recovery and integration of the La Playa community

Authors Diana Tinoco, Luis Mendéz y Jeison Brochero

Title of the course Taller Ciudad I: Espacio publico y Diseño urbano

Academic year 2023

Teaching Staff Arch. Carlos Bueno Rivero

Department / Section / Program of belonging Departamento de Arquitectura y Urbanismo

University / School Universidad del Norte / Escuela de Arquitectura, Urbanismo y Diseño EAUD

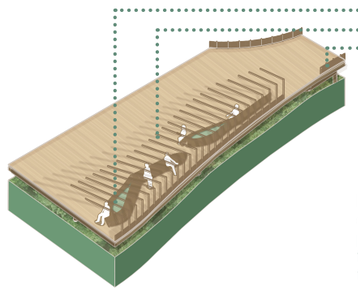
13

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

The Mallorquín Swamp is a RAMSAR coastal wetland located in Barranquilla, Colombia. This valuable ecosystem faces continuous degradation of its mangrove habitat. It is estimated that the marsh has lost 371 Ha since 1985. Consequently, the loss of vegetation has disrupted ecological balance, biodiversity, and worsened flooding, affecting the community and local urban dynamics. The project combines three strategies: ecological restoration, green infrastructure, and public space. Ecological restoration focuses on the reforestation of native red, black, white, and buttonwood mangroves: *Rhizophora mangle, Avicennia germinans, Laguncularia racemosa*, and *Conocarpus erectus*, respectively. These species stabilize soil, reduce flood impacts, and provide habitat for wildlife. Green infrastructure includes the integration of rain and flood gardens to manage stormwater runoff, mitigate the effects of climate change, and improve urban environmental quality. Finally, an elevated wooden boardwalk (a key element of the project) allows public access, connecting the wetland with the La Playa community providing spaces for contemplation, passive recreation, and social interaction. Beyond restoration, the project aims to reconnect the community with its territory by involving residents in a mangrove planting campaign, encouraging a reflective and educational relationship with the wetland while fostering a culture of environmental care and participation.

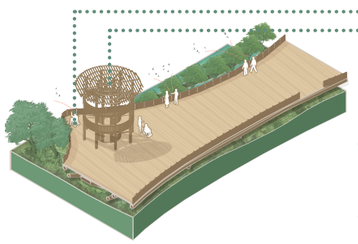
LANDSCAPE UNIT STRATEGIES

RESTFUL ENVIRONMENT



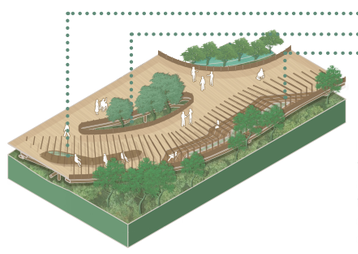
Environment designed to provide a space for the rest of the people who are transiting.

CONTEMPLATIVE ENVIRONMENT



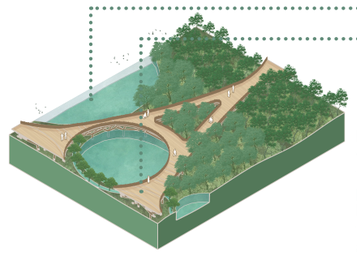
Environment that seeks to connect human and non-human inhabitants through the sense of sight.

MEETING ENVIRONMENT



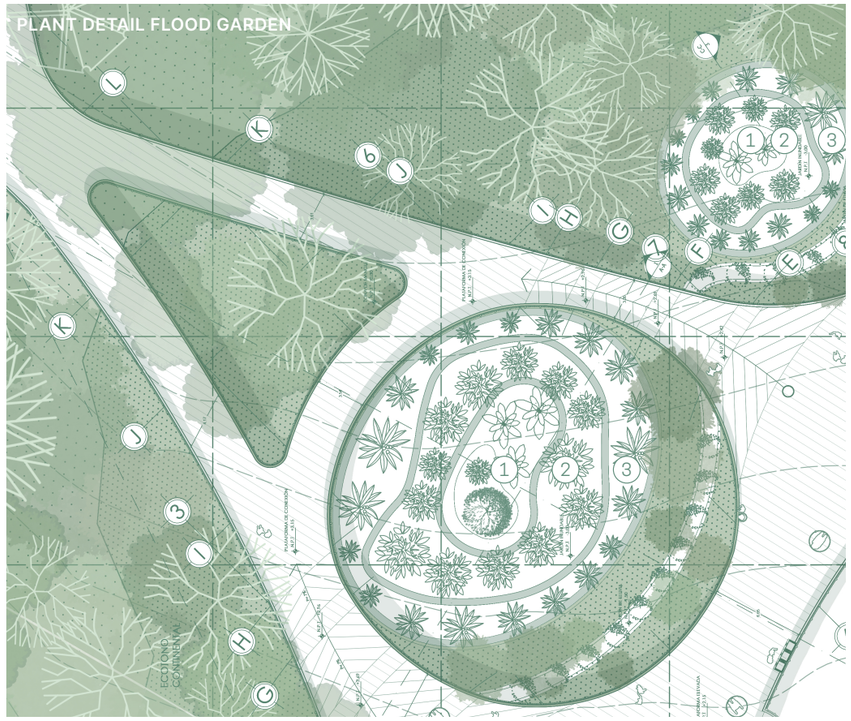
Environment that covers a wide area to allow the exchange of experiences among users.

CONNECTION ENVIRONMENT



Environment with which a transition of the project with the Ecopark and the swamp is achieved.

PLANT DETAIL FLOOD GARDEN



① Heliconias are pollinated by birds rather than insects. The vibrant hues of the bracts attract birds, which feed on the nectar produced by the flower.

This genus protects water resources.

They are crucial for reforestation processes.

② The cocoplum is often planted to stabilize beach edges and prevent erosion.

It is habitat for numerous species of insects, reptiles, birds and mammals, to which it provides shelter, food and protection.

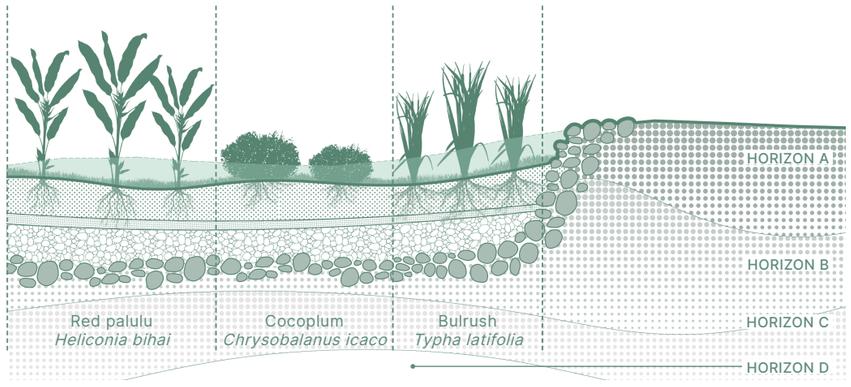
As an isolated shrub it provides cover for nesting birds.

③ Bulrush with their dense stem system provide excellent shelter for herons, tinguas and other wetland birds.

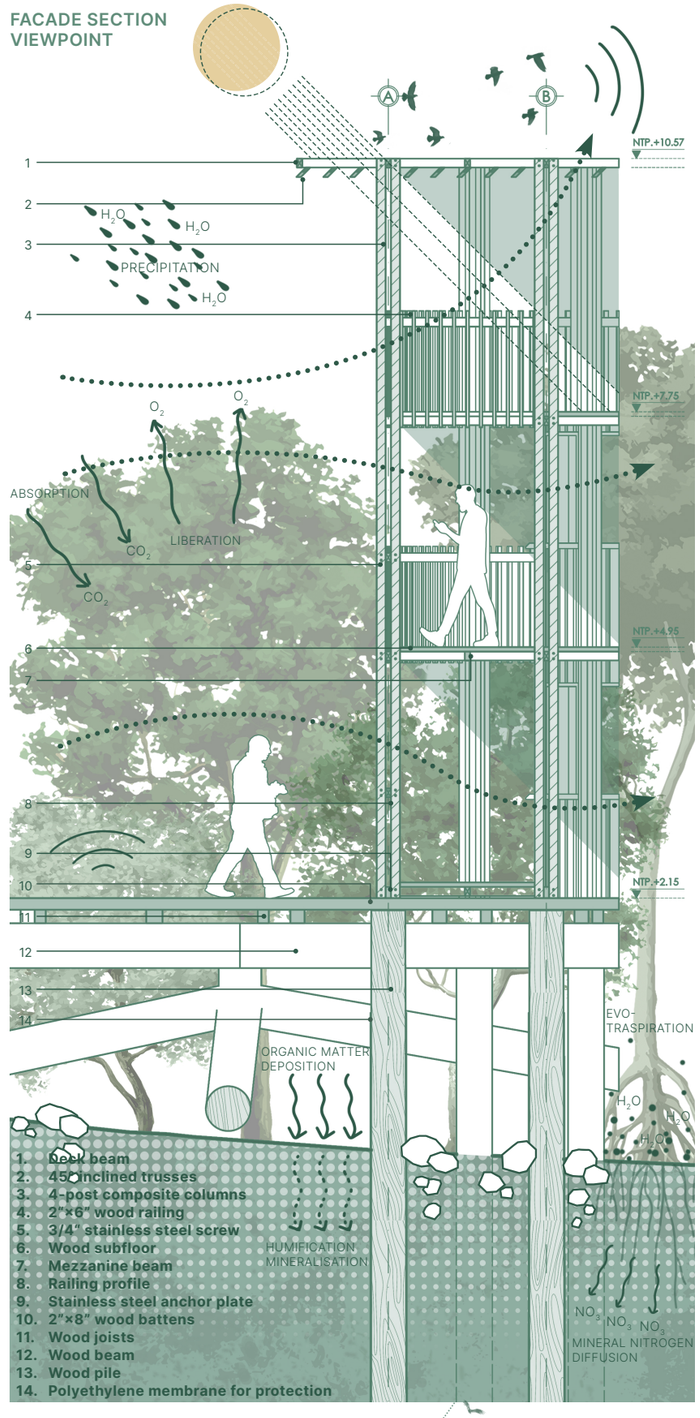
It is frequently used in environmental restoration and wastewater treatment.

It was sought that the flora implemented to populate the flood gardens would serve to control the flooding in a natural way and also provide an ecological benefit.
To encourage the arrival of local fauna, such as birds.

SECTION DETAIL FLOOD GARDEN

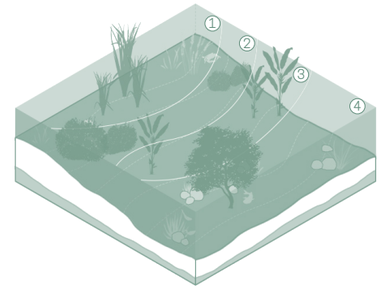


FACADE SECTION VIEWPOINT



FLOOD GARDENS

STRATEGY



① Enea ② Icaco ③ Heliconia ④ Mangle

FLOOD GARDEN LAYERS



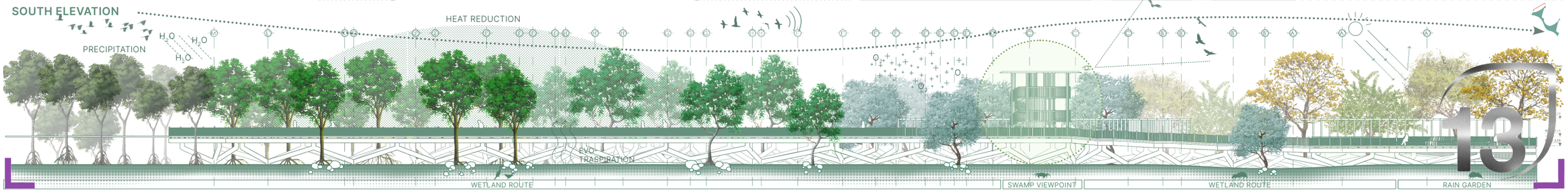
① Dry leaves layer ② Substrate ③ Sand and compost ④ Gravel ⑤ Rocks

They are an infiltration structure that serves to evacuate rainwater and also allows feeding the vegetation above it.

In other words, it is a rainwater drainage system that accumulates, infiltrates and absorbs. The main benefit of a rain garden is that it allows the recovery of an ecosystemic service, generating an environment that helps to store, regulate and generate water so that it can infiltrate. In other words, "it generates a mass of varied vegetation that feeds itself and that will be useful for many insects and birds, thus recovering the environmental conditions of the place where it lives".

WATER MANAGEMENT

SOUTH ELEVATION



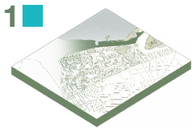
El Bioma

Restoring the swamp through ecological design

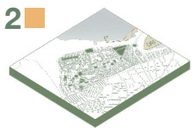


Country Colombia | **City** Barranquilla | **Town** La Playa

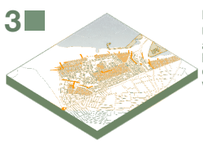
1 **Ecological restauration**
Coastal buffer established to restore ecosystem and prevent urban risks.



2 **Green infrastructure**
Public space areas to be recovered and rehabilitated were established.



3 **New urbanism**
Unified, modified, and proposed blocks. Non block consolidating roads were redesigned.

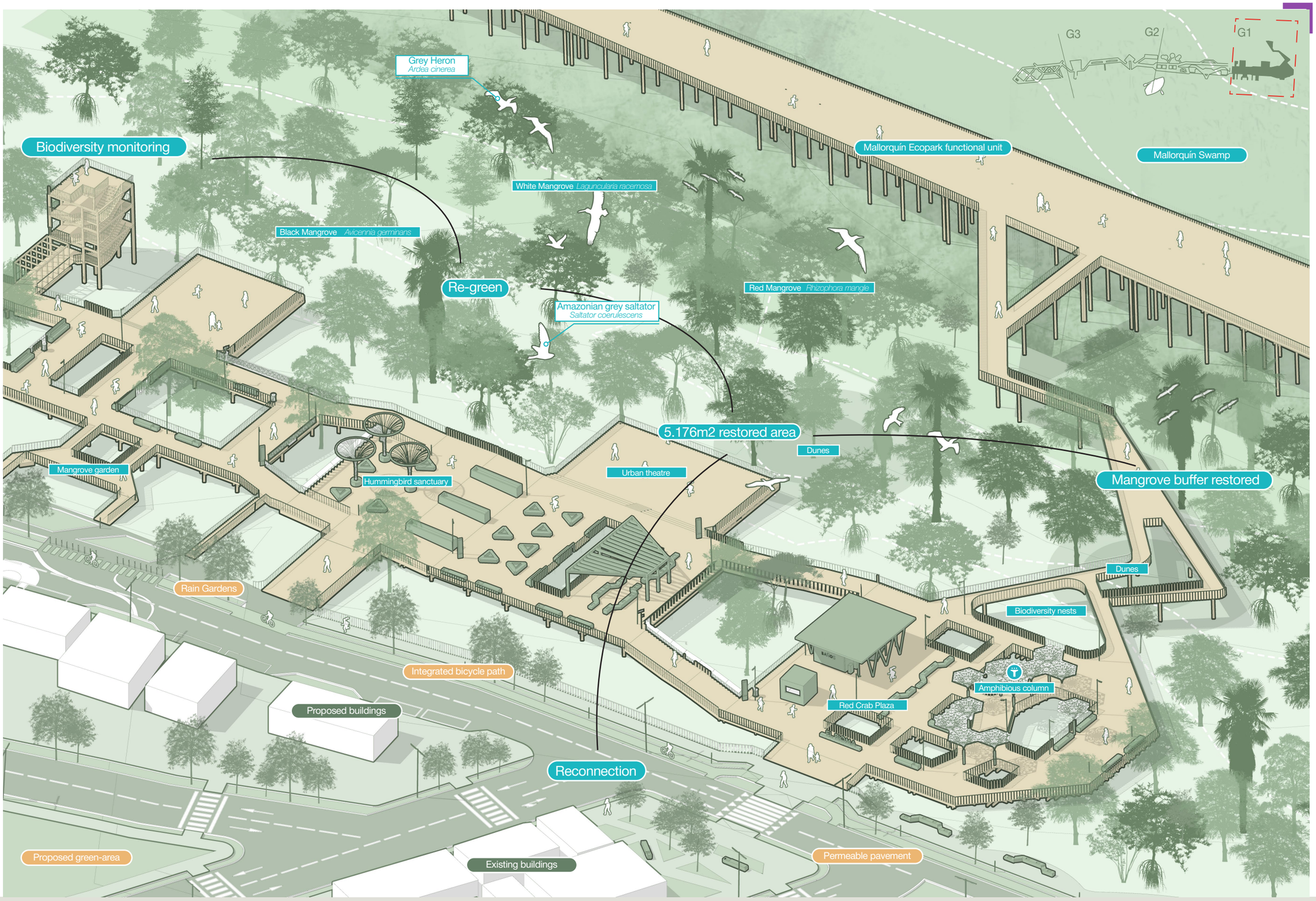




Master Plan La Playa

1. Health center
2. Interconnected green area
3. Palafitic housing
4. Rain gardens
5. Ecological corridor
6. Productive housing
7. Urban Plaza
8. Comercial corridor





Country/City	Colombia / Barranquilla
University / School	Universidad del Norte / Escuela de Arquitectura, Urbanismo y Diseño EAUD
Academic year	2023
Title of the project	Ecological corridor El Bioma: Restoring the swamp through ecological design
Authors	Arturo Andrés Morales Castillo

TECHNICAL DOSSIER

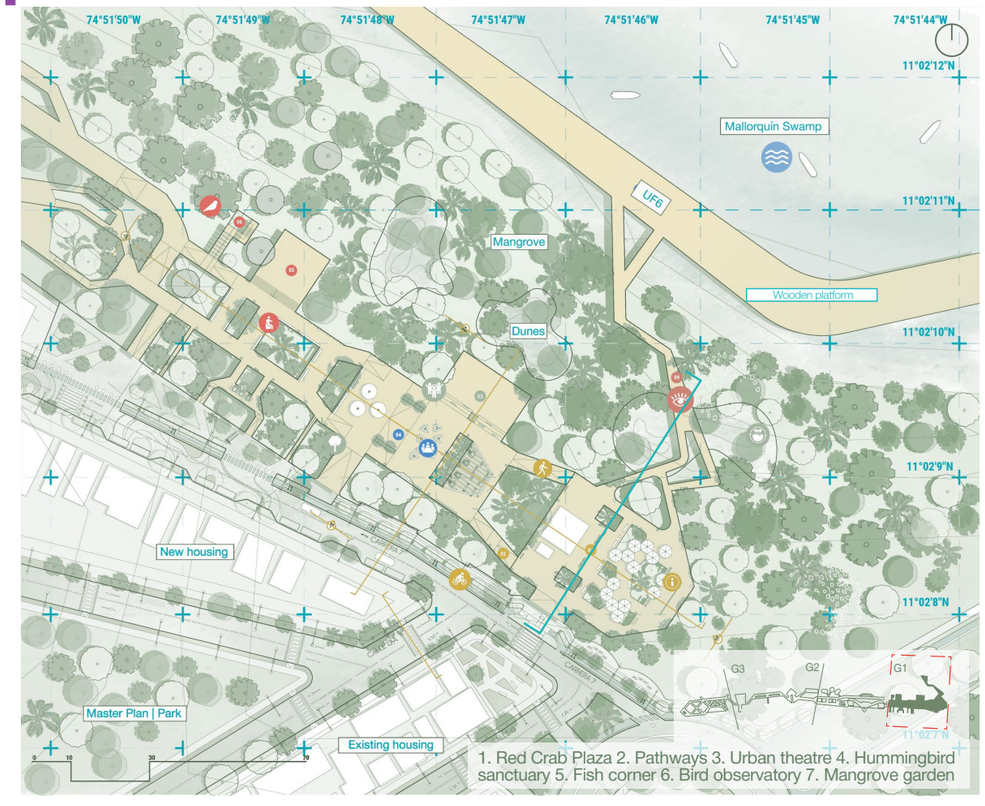
Title of the project	Ecological corridor El Bioma: Restoring the swamp through ecological design
Authors	Arturo Andrés Morales Castillo
Title of the course	Taller de Ciudad I: Espacio público y diseño urbano
Academic year	2023
Teaching Staff	Arq. Carlos Bueno
Department / Section / Program of belonging	Departamento de Arquitectura y Urbanismo
University / School	Universidad del Norte / Escuela de Arquitectura, Urbanismo y Diseño EAUD

13

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

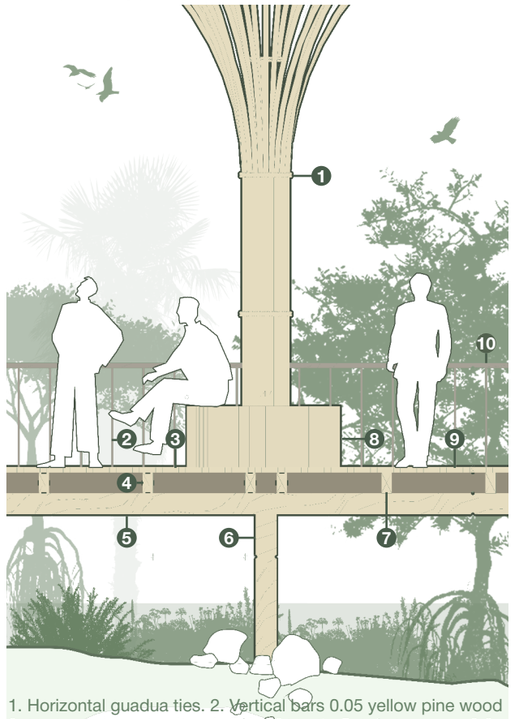
The Mallorquín Swamp, a Ramsar site located in Barranquilla Colombia, faces several ecological challenges. Between 1980 and 2010, this wetland lost over 43% of its area caused by self-built housing, mangrove deforestation and natural sedimentation due to a 2,300-meter-long breakwater built in the 1930s. These factors led to ecosystem degradation, coastal erosion, and recurrent flooding that still affects La Playa community. Despite the challenges, this wetland remains ecologically valuable and is now part of Barranquilla's official green structure. Building on this framework, the project "El Bioma" is envisioned as an ecological corridor formed by a 5.176m2 platform integrated with nature-based solutions, creating a resilient transition between urban fabric and natural ecosystems. The platform is designed as a wooden palafitic structure to reduce urban risk while enabling human–nonhuman interactions. It features community spaces such as urban theater, bike paths, and passive recreation areas, alongside public facilities for environmental education and monitoring. The proposed nature-based solutions seek to boost resilience and provide coastal protection through mangrove reforestation with native red, white, and black species, the integration of SuDS for rainwater management, and green swales. Fundamentally, the project addresses environmental degradation by restoring the ecosystem and integrating spaces that link community and landscape through education, public access, and ecological dynamics.

“El Bioma” Urban plan



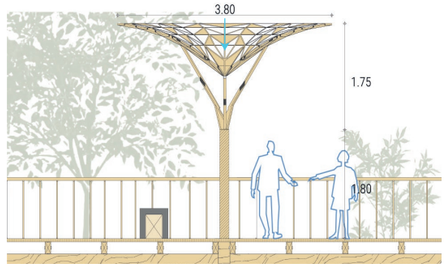
1. Red Crab Plaza 2. Pathways 3. Urban theatre 4. Hummingbird sanctuary 5. Fish corner 6. Bird observatory 7. Mangrove garden

Path prototype structure

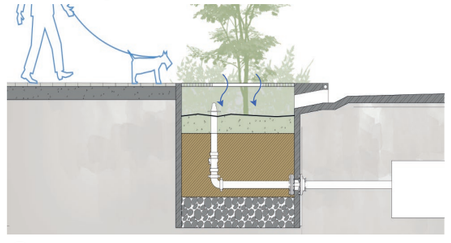


1. Horizontal guadua ties. 2. Vertical bars 0.05 yellow pine wood 3. Horizontal guadua ties 4. 3/4 x 8” bolts 5. Inferior beam 0.2 x 0.10 m 6. Structural pile 0.20 yellow pine wood 7. Joists in yellow pine woord 0.20 x 0.10 m 8. Urban furniture 0.5m 9. Laminated wood floor 0.05m 10. Handrail 0,05m

Amphibious column detail



Rain-garden detail (SuDS)



Retaining wall detail



Landscape units





Vegetation atlas



Red Mangrove */ Rhizophora mangle /*
Prop roots trap sediment and stabilize shorelines, crucial for protecting the edge of La Playa against coastal and tidal erosion.



White Mangrove */ Laguncularia racemosa /*
Suitable for higher, drier zones within El Bioma, particularly near community gathering areas and pathways.



Black Mangrove */ Avicennia germinans /*
Its aerial roots improve soil aeration and support microbial activity, boosting the bioremediation of contaminated or compacted soils.



Naranjuelo */ Cretavia tapa /*
Its dense foliage and nectar-rich flowers provide habitat and food for a wide range of pollinators and bird species, enhancing local biodiversity.

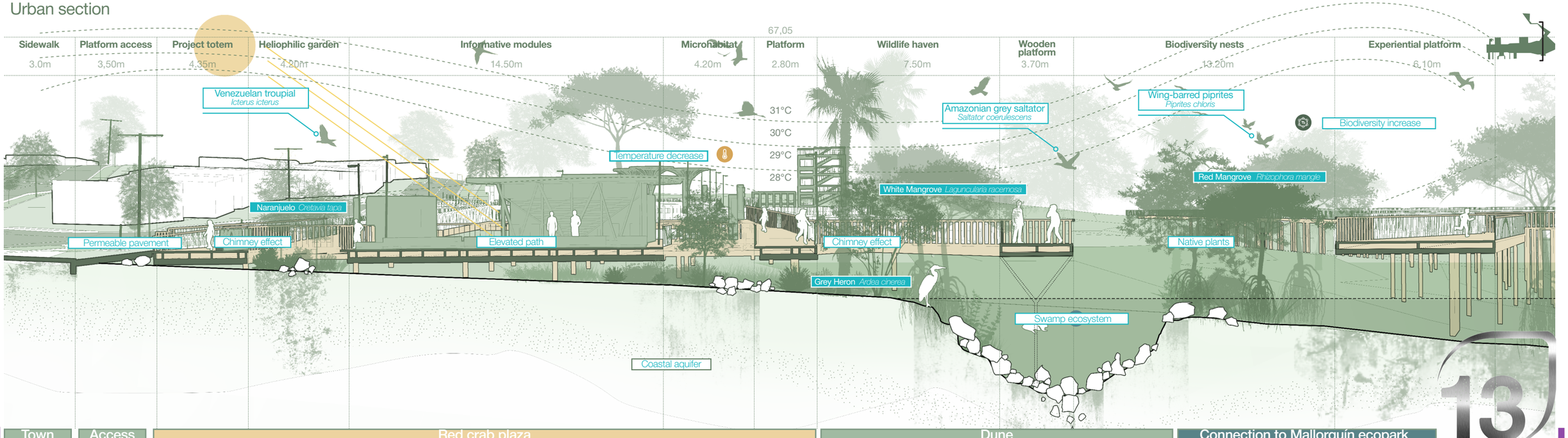


Guayuyo */ Muntingia calabura /*
Its fast-growing crown and year-round fruit production offer continuous shelter and nourishment for the local fauna.



Membrillo */ Gustavia superba /*
Helps regulate urban microclimates, reduces surface runoff, and stabilizes soils.

Urban section

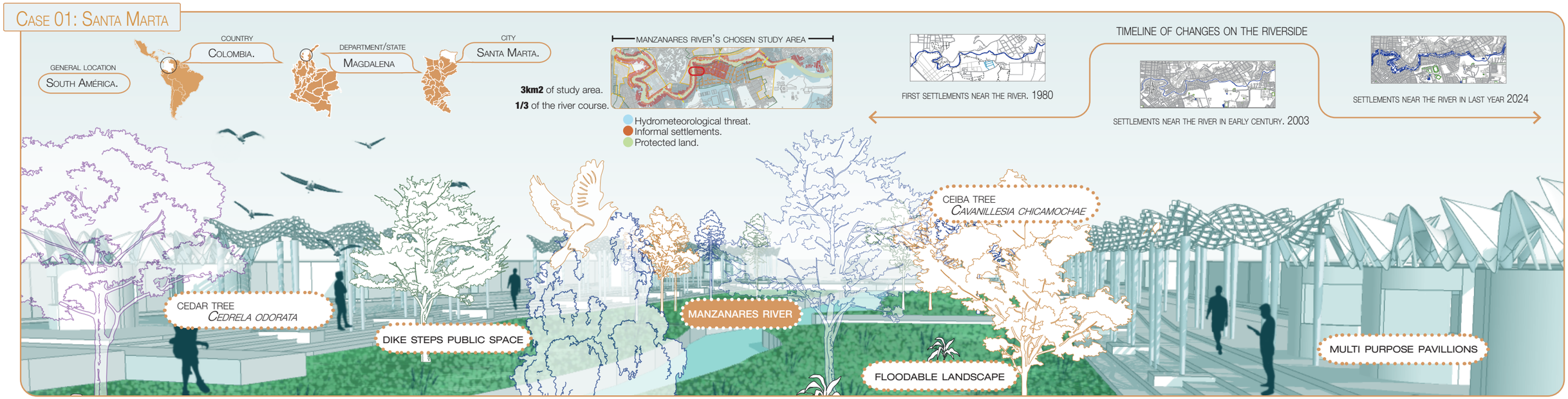


REHABILITATING THE RIVERBANKS

PROPOSING NEW EDGES TO RESTORE THE CITY-RIVER CONNECTION.

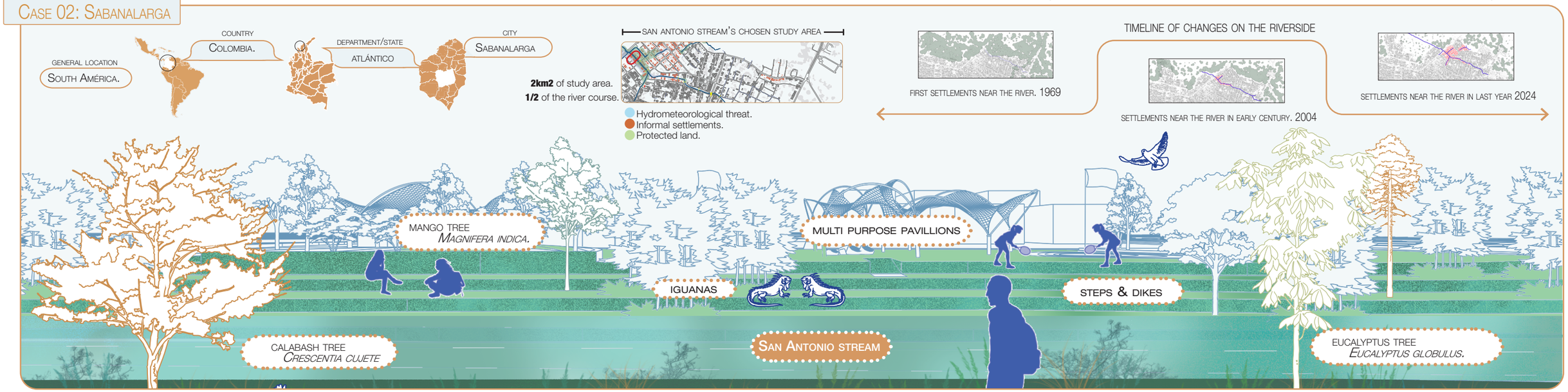
Throughout history, the development of humanity has been intrinsically linked to bodies of water; the first vestiges of civilization emerged around rivers, streams, lagoons, creeks and seas. Even now, the city we have built cannot separate itself from the water, and the rivers fight for the life of their banks that is not compatible with the concrete that is imposed on it. The caribbean region of Colombia has an extensive hydrographic network that allows an even more extense diversity of life. And as we still want to co-exist with it this is a study case sugesting some changes that need happen first.

CASE 01: SANTA MARTA



Conceptual visualization of the riverbank intervention. Visualization location in map.

CASE 02: SABANALARGA



Conceptual visualization of the riverbank intervention. Visualization location in map.

Country/City	Barranquilla, Atlantico, Colombia.
University / School	Universidad del Norte / Escuela de Arquitectura, Urbanismo y Diseño EAUD
Academic year	2025
Title of the project	Rehabilitating the Riverbanks: Proposing new edges to restore the city-river connection.
Authors	Ángela Freyle Sanjuanelo; Arianne Manotas Domenech.

TECHNICAL DOSSIER

Title of the project	Rehabilitating the Riverbanks: Proposing new edges to restore the city-river connection.
Authors	Ángela Freyle Sanjuanelo; Arianne Manotas Domenech.
Title of the course	Proyecto de grado I & II
Academic year	2025
Teaching Staff	PhD. Claudia Lucía Rojas Bernal.
Department / Section / Program of belonging	Departamento de Arquitectura y Urbanismo.
University / School	Universidad del Norte / Escuela de Arquitectura, Urbanismo y Diseño EAUD.

13

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

“Rehabilitating the Riverbanks” is a research-by-design project that addresses the conflictive relationship between human settlements and rivers in the Colombia’s Caribbean region, focusing on the San Antonio stream in Sabanalarga and the Manzanares River in Santa Marta. Despite their different scales— the former is ~2 kilometers long and the latter 18 kilometers—both face issues like unplanned urban growth, encroachment, biodiversity loss, and pollution, intensified by climate change. Communities along these rivers are vulnerable to flooding, lack of infrastructure, and disconnection from urban areas.

The research uses comparative analysis and mapping to understand socioeconomic and environmental vulnerabilities, integrating historical data, urban forms, landscape features, and community insights. The project proposes landscape strategies that blend nature-based solutions with urban acupuncture to restore and redefine the urban-river transition. It also includes new housing designs responsive to the landscape. Ultimately, the project aims to elevate water’s ecological, social, and cultural value through restoration, reconnection, and spatial transformation.

Case 01: Santa Marta

URBAN PROPOSED PLAN

urban fabric elements



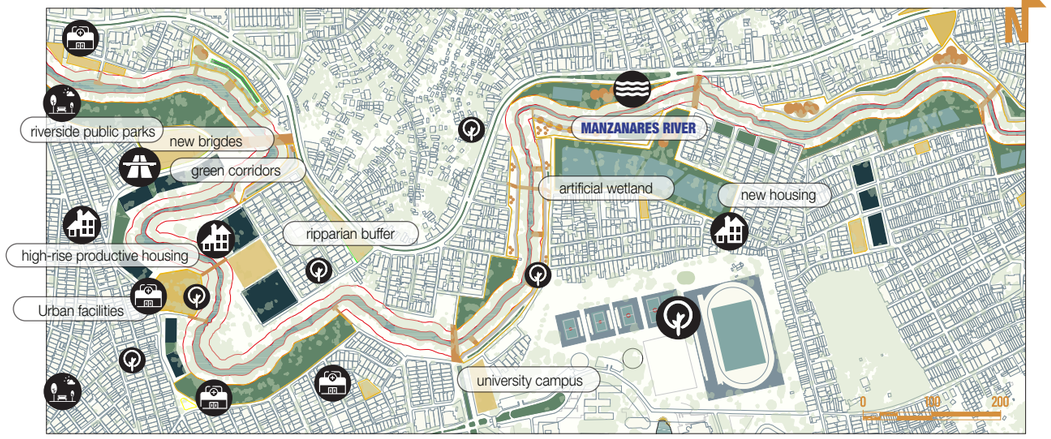
Urban block system



building system

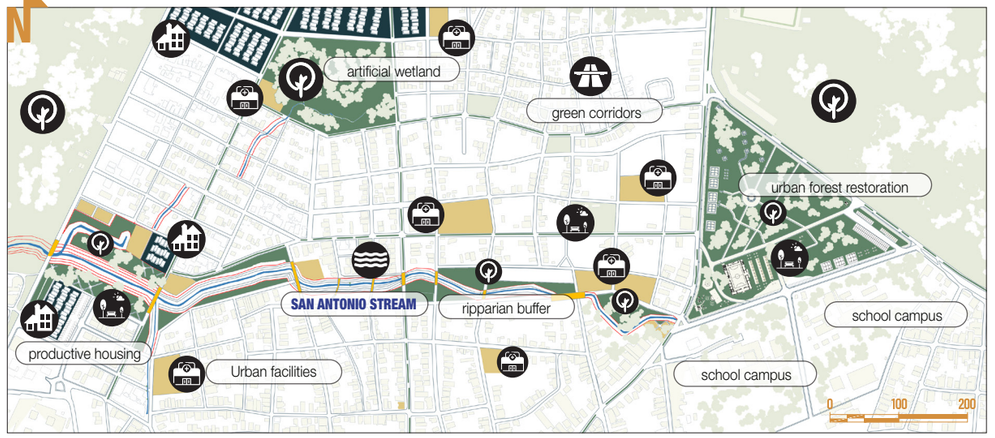


woodlands areas



Case 02: Sabanalarga

URBAN PROPOSED PLAN



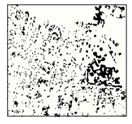
urban fabric elements



Urban block system



building system



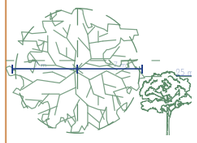
woodlands areas

Common Strategies for Urban Intervention

Santa Marta's Vegetation Atlas

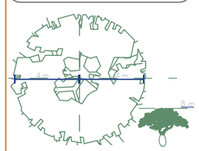
CEDRO TREE

Cedrela odorata



CEIBA TREE

Cavanillesia chicamochae

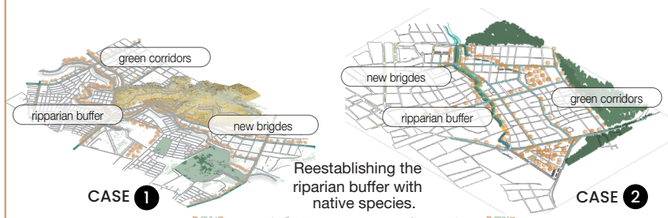


MANGO TREE

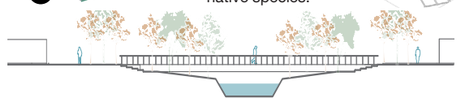
Magnifera indica



REHABILITATE

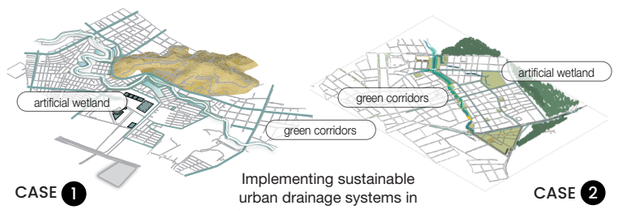


Reestablishing the riparian buffer with native species.

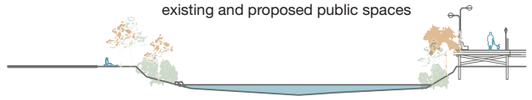


Extending it to the city through green corridors.

MITIGATE



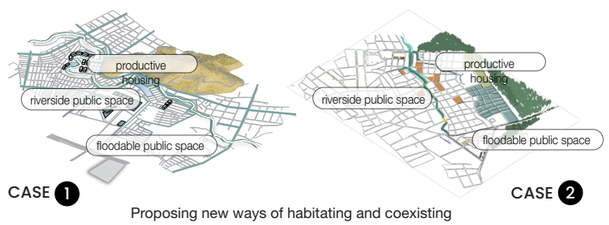
Implementing sustainable urban drainage systems in existing and proposed public spaces



to improve soil water retention

and reduce the risk of flooding.

ADAPT



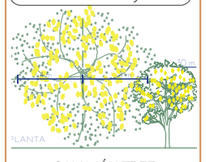
Proposing new ways of habitating and coexisting with the riverside while respecting the watershed.

According to each site's necessities, density and growth patterns.

Sabanalarga's Vegetation Atlas

CAÑAGUATE TREE

Roseodendron chryseum.



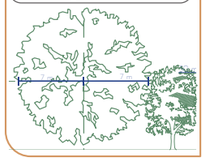
CAMAJÓN TREE

Sterculia apetala



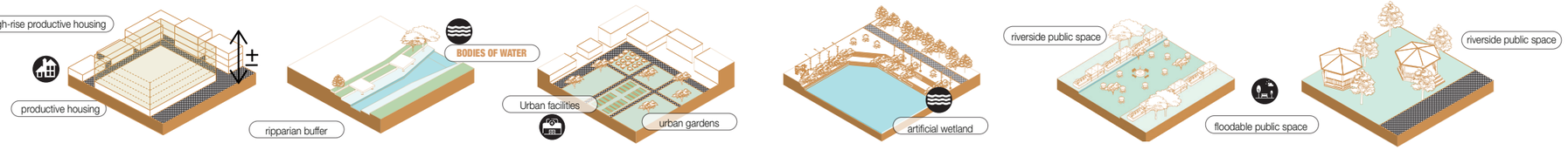
MANGO TREE

Magnifera indica



Common Strategies for Landscape Spaces

WAYS OF INHABIT THE RIVERSIDE



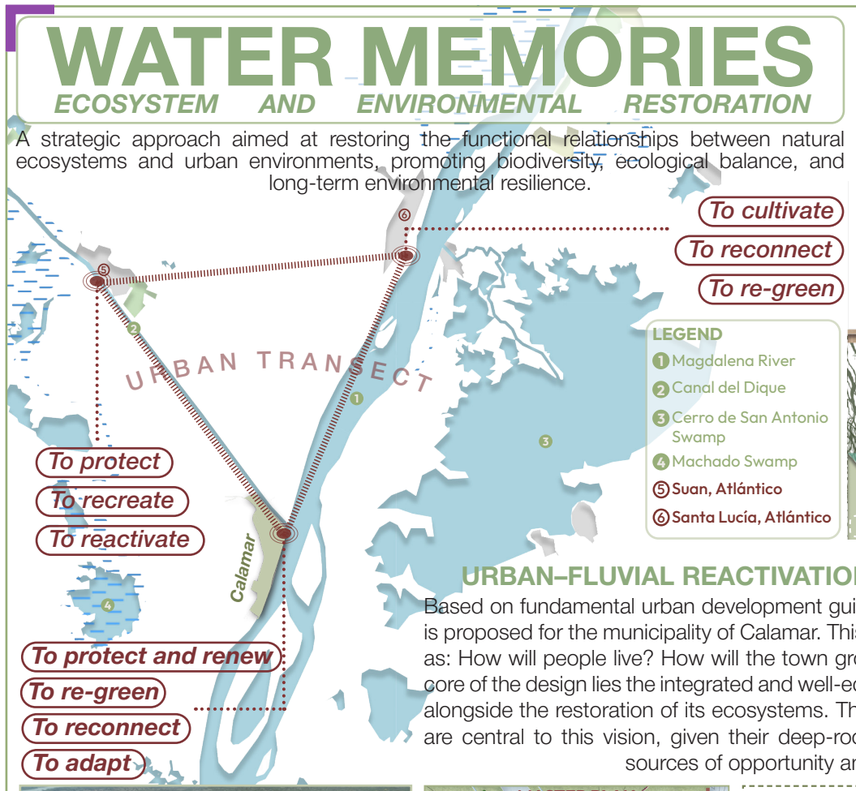
Section details green-blue infrastructure landscapes in case 01 (Santa Marta) river.

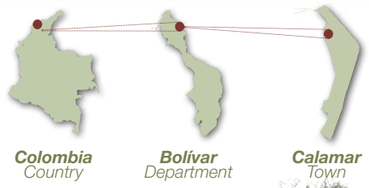
Section details green-blue infrastructure landscapes in case 02 (Sabanalarga) stream.

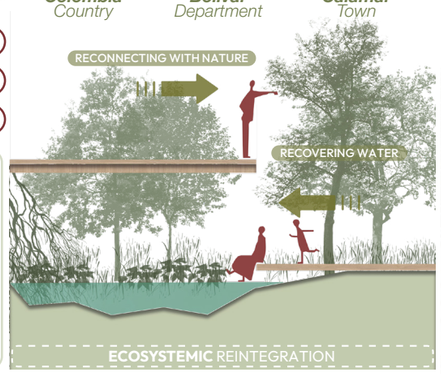
WATER MEMORIES

ECOSYSTEM AND ENVIRONMENTAL RESTORATION

A strategic approach aimed at restoring the functional relationships between natural ecosystems and urban environments, promoting biodiversity, ecological balance, and long-term environmental resilience.



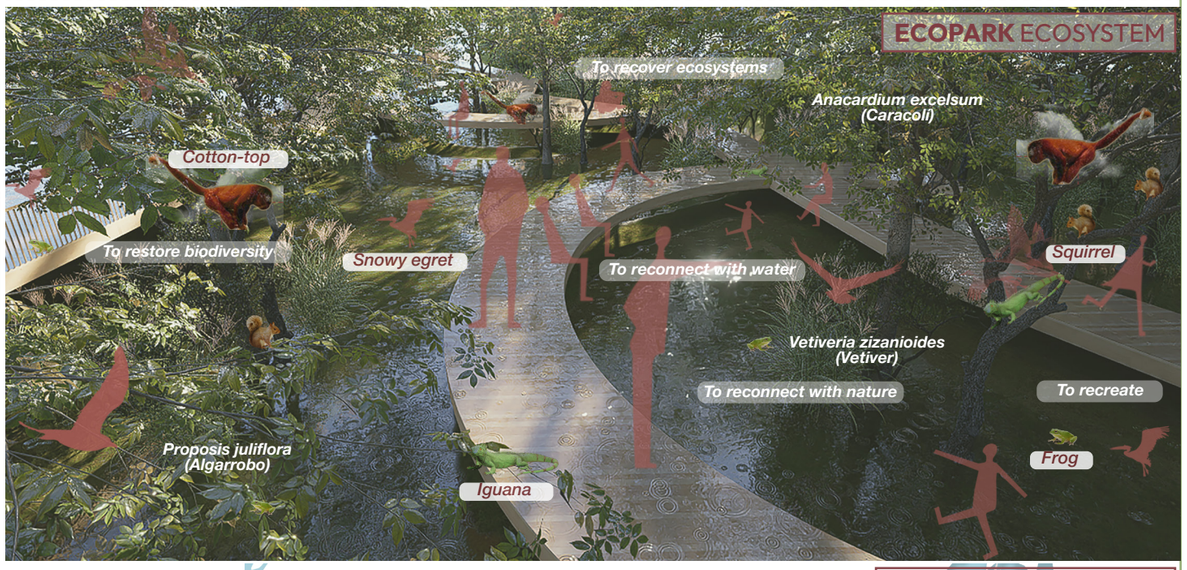






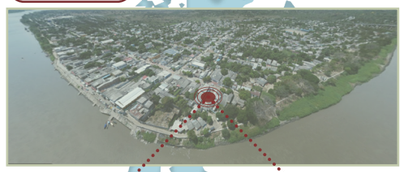






URBAN–FLUVIAL REACTIVATION | ECOSYSTEMIC RECOVERY

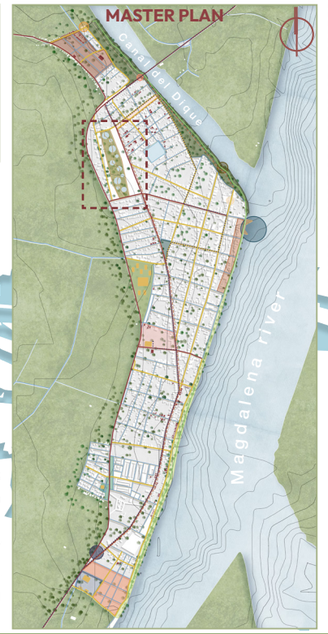
Based on fundamental urban development guidelines, a comprehensive development plan is proposed for the municipality of Calamar. This plan directly addresses key questions such as: How will people live? How will the town grow? And how will risks be mitigated? At the core of the design lies the integrated and well-equipped connection of the entire municipality, alongside the restoration of its ecosystems. The Canal del Dique and the Magdalena River are central to this vision, given their deep-rooted connection to the territory — both as sources of opportunity and as potential threats.

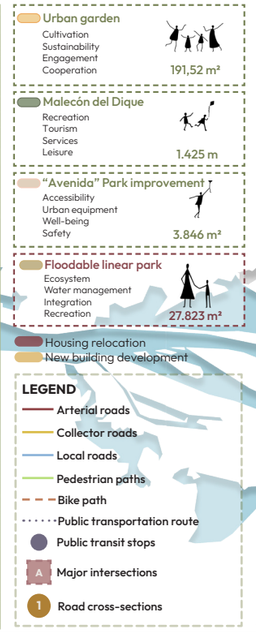


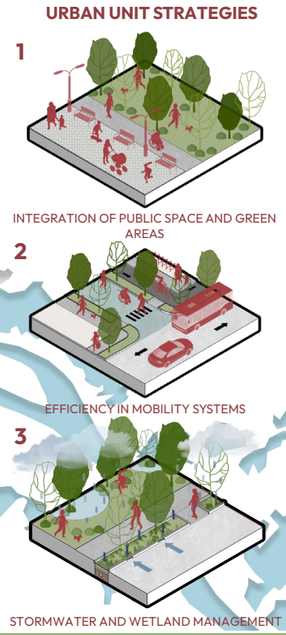


CONCLUSIONS

The urban transect faces similar challenges and has been affected by flooding due to its proximity to numerous bodies of water. Calamar was chosen as an opportunity to address these issues and reconnect a community that once turned its back on the river and the canal.







WATER MANAGEMENT

Proper water management to regulate the hydrological cycle, ensuring a balance between precipitation, runoff, and infiltration in order to prevent floods and droughts.

REFORESTATION

Planting trees and native vegetation to restore habitats and enhance biodiversity.

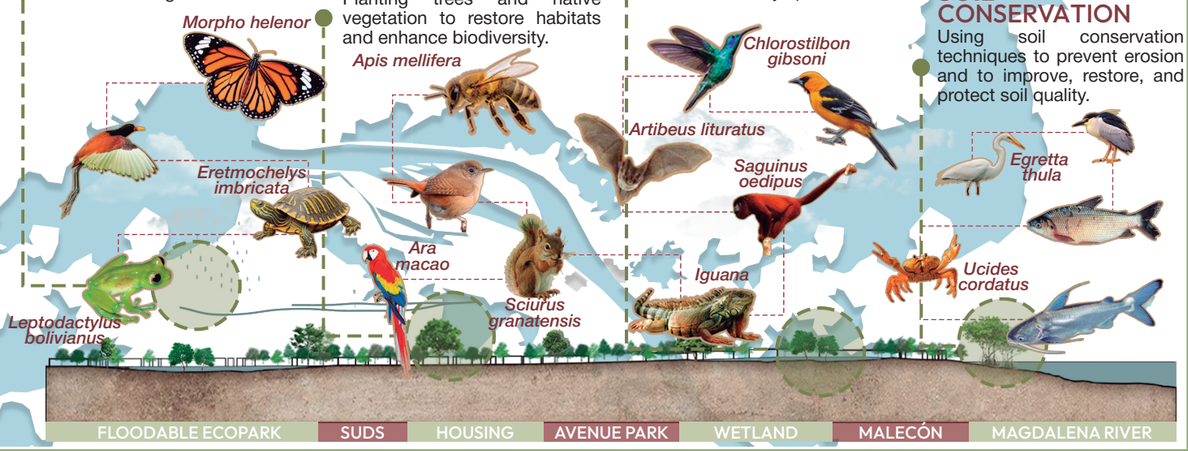
Associated species

WETLAND RESTORATION

Recovering and protecting wetlands to improve water quality and provide critical habitats for many species.

SOIL CONSERVATION

Using soil conservation techniques to prevent erosion and to improve, restore, and protect soil quality.



Country/City	Barranquilla, Atlántico, Colombia
University / School	Universidad del Norte / Escuela de Arquitectura, Urbanismo y Diseño EAUD
Academic year	2024
Title of the project	Water Memories - Ecosystem and environmental restoration in Calamar, Bolívar
Authors	Alejandro José Díaz Vence

TECHNICAL DOSSIER

Title of the project	Water Memories - Ecosystem and environmental restoration in Calamar, Bolívar
Authors	Alejandro José Díaz Vence
Title of the course	Taller de Ciudad I: Diseño Urbano y Espacio Público
Academic year	2024
Teaching Staff	Arch. Martha Castilla Riasco
Department / Section / Program of belonging	Departamento de Arquitectura y Urbanismo
University / School	Universidad del Norte / Escuela de Arquitectura, Urbanismo y Diseño EAUD

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

Suan, Santa Lucía, and Calamar are three towns located at the confluence of the Magdalena River and the Canal del Dique, in the Colombian Caribbean region. These three municipalities face common challenges related to flooding caused by rainfall, river overflows, and poor land use, among other factors. The original landscape in the area—a mosaic of wetlands and tropical forests—has been replaced by agro-industrial activities, monocultures, and barren land. In addition, there is a deficit of public/green spaces, economic opportunities, and social facilities in these municipalities. “Water Memories” is a public space designed to serve the community of Calamar as an Ecosystem Reintegrator, grounded in ecological trails and environmental culture. It proposes the creation of a Floodable Wetland Ecopark in an untouched green zone prone to flooding due to rainfall and pre-existing wetlands. The project seeks to restore ecosystems related to water resources, rehabilitate soil and water quality, provide green spaces to reconnect with nature and foster social interaction, and contribute to increasing the public/green space per inhabitant in the municipality. To achieve all of this, approximately 36,000 m² were designed for the intervention, through designated areas for wetland treatment, the planting of various phytoremediation species, SUDS like rain gardens (and others), and the definition of environmental development axes set to establish the activities that the community will be able to carry out.

1. South access platform. 2. West access. 3. Lower viewpoints. 4. Southern wetland. 5. River–Canal overlook. 6. Recreational forest. 7. Upper viewpoints. 8. West walkway. 9. East access platform. 10. Central plaza. 11. Contemplation steps. 12. Lower trails. 13. Dock. 14. Central wetland. 15. Bike path. 16. Cultural amphitheater. 17. Water pavilions. 18. Urban gardens. 19. Living museum. 20. Northern wetland. 21. North access platform. 22. East and west residential edges.


Tree masses and wetlands


Proposed access and routes


Edges of existing housing

To provide public/green spaces

Re-green

Environmental education

To reconnect with nature

To learn

Cultural expression

To recreate

To produce food

To restore biodiversity

To reconnect with water

To walk

To walk

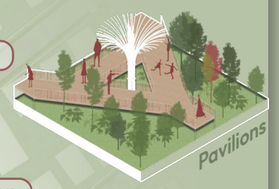
+36.000m² designed

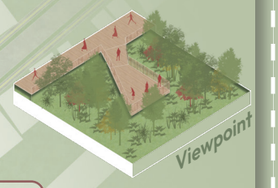
To restore soil quality

To contemplate

To recover water

Phytoremediation


Pavilions


Viewpoint


Elevated trail


Bike path

Green wall
Urban gardens
Low springs


Ecopark's in drought state

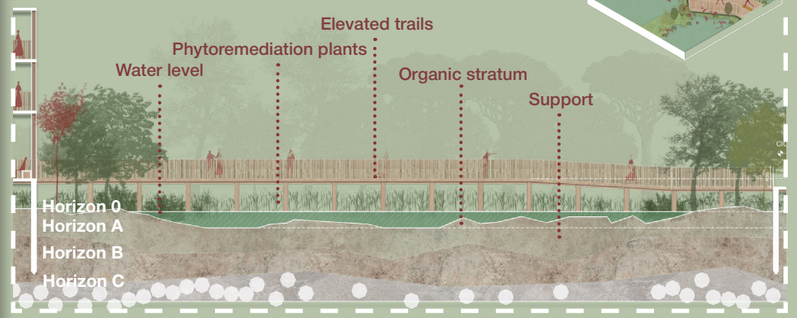
URBAN PLAN

This urban plan is proposed with the aim of increasing the amount of public/green space per resident in the municipality. The project emphasizes passive rather than active uses, in line with its environmental character, and is organized around several key components: 1. Contemplation and walking paths, 2. Commerce and social interaction, 3. Environmental education.

D1 | WETLAND TREATMENT

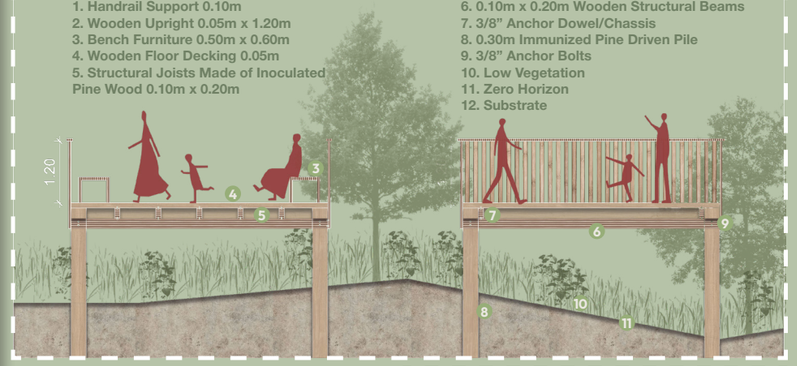
The cultivation of phytoremediating species is a process similar to that of constructed wetlands. Water is required to sustain the plants, while they filter and/or absorb contaminants through their roots, accumulate them, transport them through their stems, and eventually release them through their leaves.



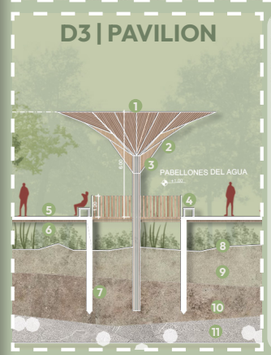


D1 | ELEVATED TRAILS

1. Handrail Support 0.10m
2. Wooden Upright 0.05m x 1.20m
3. Bench Furniture 0.50m x 0.60m
4. Wooden Floor Decking 0.05m
5. Structural Joists Made of Inoculated Pine Wood 0.10m x 0.20m
6. 0.10m x 0.20m Wooden Structural Beams
7. 3/8" Anchor Dowel/Chassis
8. 0.30m Immunized Pine Driven Pile
9. 3/8" Anchor Bolts
10. Low Vegetation
11. Zero Horizon
12. Substrate



D3 | PAVILION

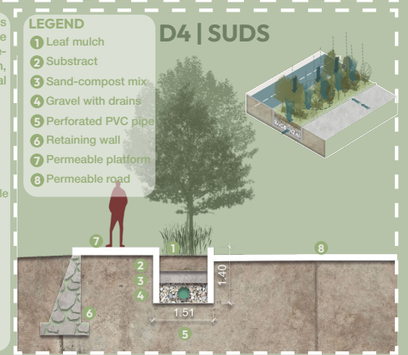


The pavilion serves as a space for shade and rest, it is a tree-shaped column, consisting of a central pillar.

LEGEND
1. Wooden cover
2. Supports
3. Central pile
4. Seat bench module
5. Wooden decking
6. Structural beam
7. Driven pile
8. Horizon 0
9. Horizon A
10. Horizon B
11. Horizon C

D4 | SUDS

LEGEND
1. Leaf mulch
2. Substract
3. Sand-compost mix
4. Gravel with drains
5. Perforated PVC pipe
6. Retaining wall
7. Permeable platform
8. Permeable road

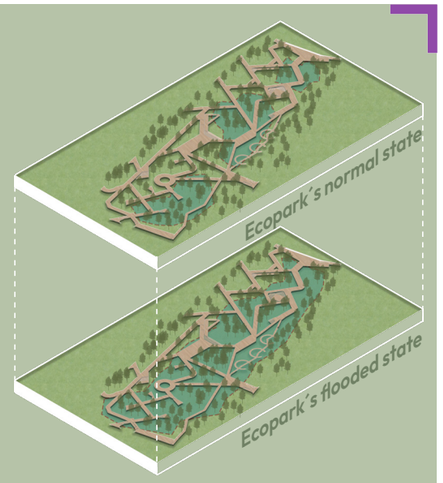



Lower viewpoint


Upper viewpoint

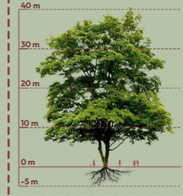

Amphitheater


Dock



VEGETATION ATLAS

CARACOLÍ
Anacardium excelsum
Native





Fauna
Birds
Insects
Reptiles

Uses and functions
Tolerates periodic flooding
Pollutant retention
Soil restoration
Windbreak

RED MANGROVE
Rhizophora mangle
Nativo



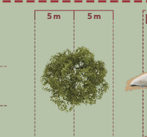


Fauna
Birds
Crustaceans

Uses and functions
Timber
Flood resistance
Windbreak
Ecological restoration

ORANGE TREE
Crateva tapia l.
Native

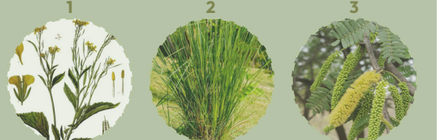




Fauna
Birds

Uses and functions
Ornamental - Fruit
Flood-drought resistant
Ecological restoration
Live fence

Shrubby plants



1. ***Brassica juncea:*** (Indian mustard) tolerant to moderate drought.
2. ***Vetiveria zizanioides:*** (vetiver) Highly resistant, good erosion control and absorption.
3. ***Prosopis juliflora:*** (algarrobo) Shrub highly resistant to drought.