

Protecting Nature  
Preserving health

Transmitting constructive culture

Recognizing immaterial values

Reducing pollution and waste

Installing buildings properly/  
respecting environment

Promoting local activities

*Extending the life of buildings*

Protecting cultural landscape

Saving resources



Country /City Spain, Barcelona

University / School Fundació de la Universitat Politècnica de Catalunya

Academic year 2022-2023

Title of the project Formentera, the underlying island. A new rurality for a different kind of tourism

Authors Maria Sabato, Marta Casas

**Title of the project** Formentera, the underlying island. A new rurality for a different kind of tourism

**Authors** Maria Sabato, Marta Casas

**Title of the course** Fragile territories and tourism: the Balearic Islands

**Academic year** 2022-2023

**Teaching Staff** Ricard Pie, Purificación Díaz, Enrico Porfido

**Department / Section / Program of belonging** Master de arquitectura del paisaje de Barcelona

**University / School** Fundació de la Universitat Politècnica de Catalunya



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

The smallest of the Balearic Islands, known for its turquoise beaches, bases its economy on coastal tourism. Although the impact of tourism is contained without the proliferation of resorts on the coast, the impact has been transferred to the inland territory: abandonment of traditional agricultural activities, reploting of land, extensive construction of second homes, causing a degradation of the landscape and loss of heritage values.

The proposal aims to reverse these problems by recovering the inhabitants' identity and connection to the place, through the revitalisation of agricultural activity complemented by a new eco-tourism.

Through a matrix of actions that affect the paths, plots, and houses, it tries to make visible the landscape and the traditional structure that underlies the island, supported by the fact that more and more people are committed to a sustainable and self-sufficient life.

The proposal lays on the table the question of the authorship of the landscape, proposing to recover the citizens themselves as active agents in the creation of the landscape, based on establishing criteria that combine tradition and ecology.

For further information

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**SCHOOL PRIZE**

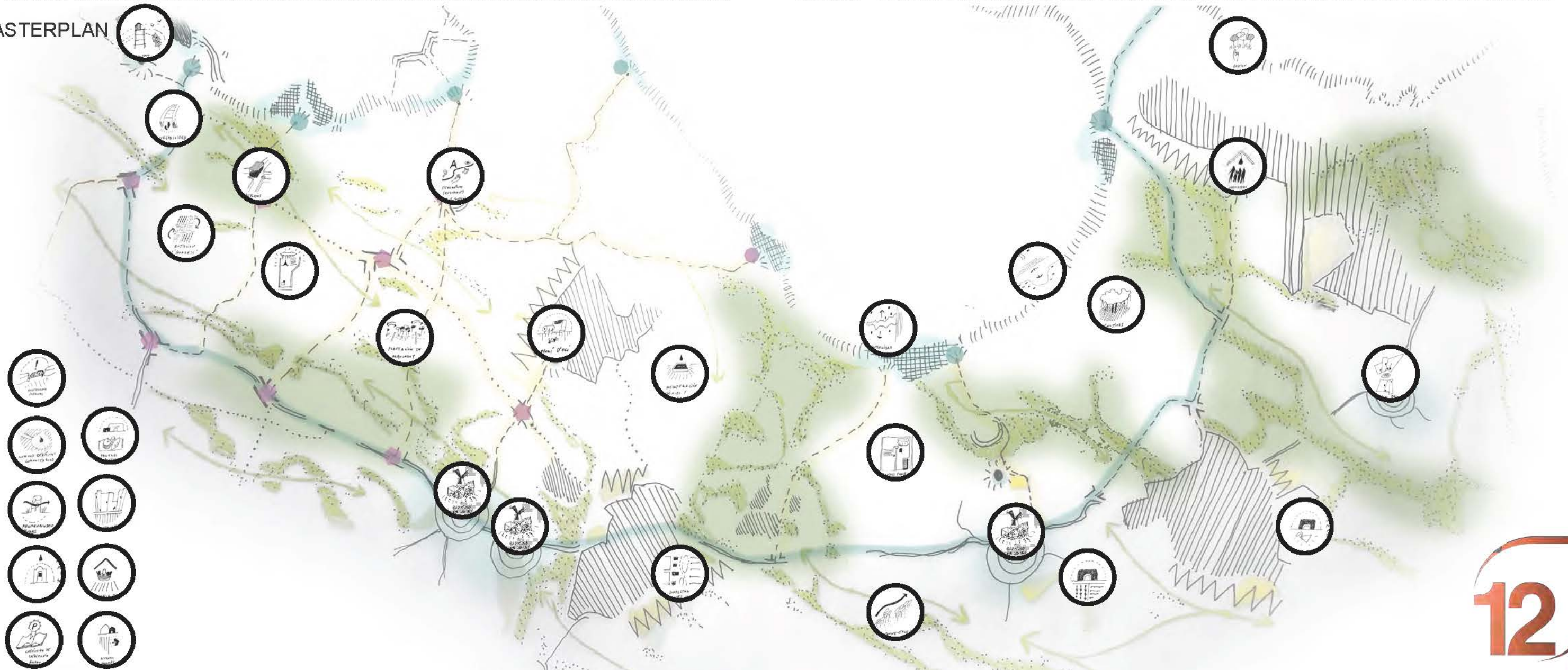
MATRIX

	Community and belonging	Daily life	Heritage	Tourism	Biodiversity	Resilience
Paths	Accessibility		Sensory itinerary Art & Sustainability		Climate shelter	
Parcels and "Casament"	Craft workshops	Rural heritage catalogue	Non-Conventional accommodation	Tree planting	Gardens for self-consumption	
Elements	New community storage	Markets inside mills	Restoring impacts	Walls Permeability	Recovery of wells	
Knots/ Crossings	Water community	Square in rural areas	Innovation centre, trainings on materials and traditional techniques		Centre for the rural community	

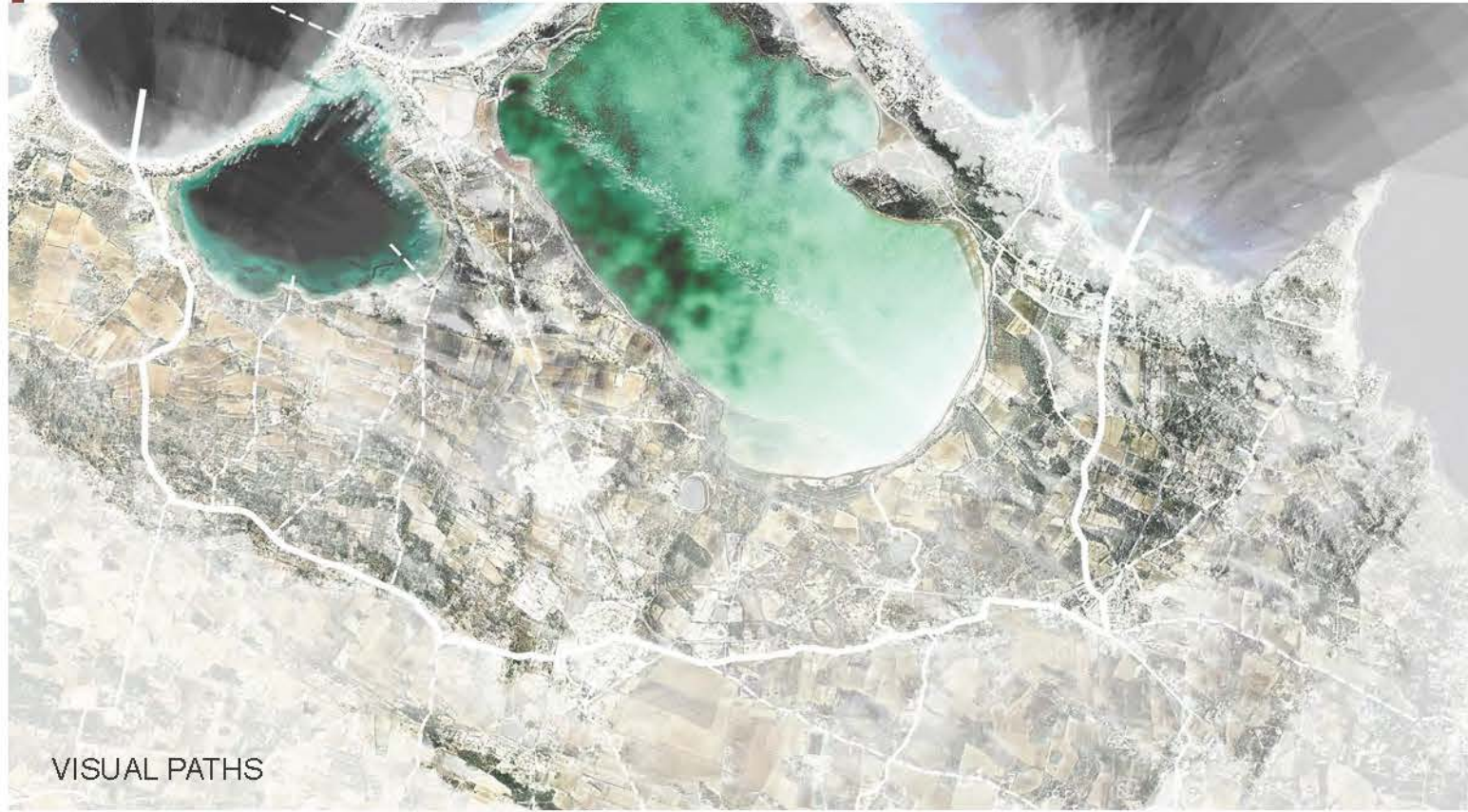
MATRIX

	Community and belonging	Daily life	Heritage	Tourism	Biodiversity	Resilience
Agricultural territory	Traditional cultivations	Oil mills	Recovery of wells and washtubs	New forms of Ecotourism	Rotation and "Guarets"	Big multifuncional parcels
Forest territory				Forest Connections	Diversified forest management	
Coast territory			Coastal Eco-tourism	Natural areas salt pans coastal protection	Longitudinal Connectivity	Transversal Connectivity
Rural-urban territory	Completing urban bordes Eco-neighbourhood	Protection of parcels				

MASTERPLAN

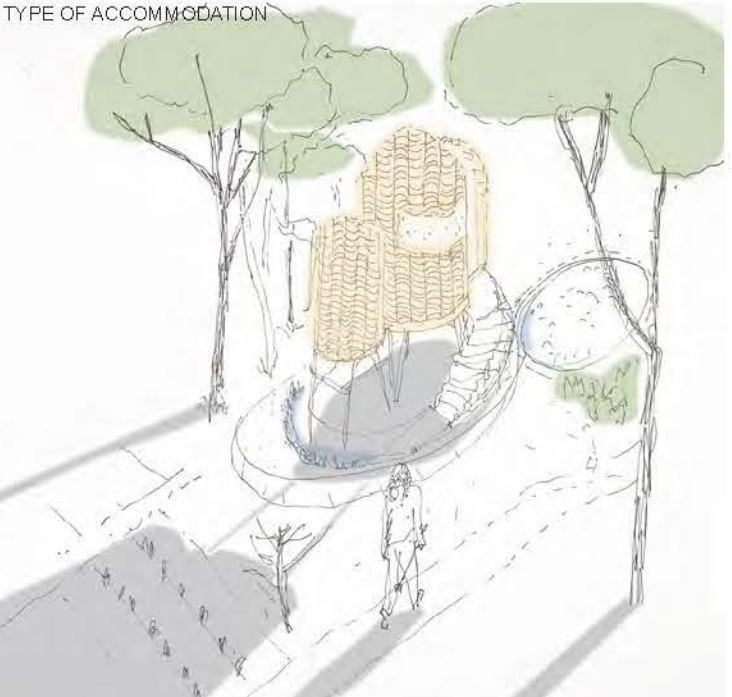
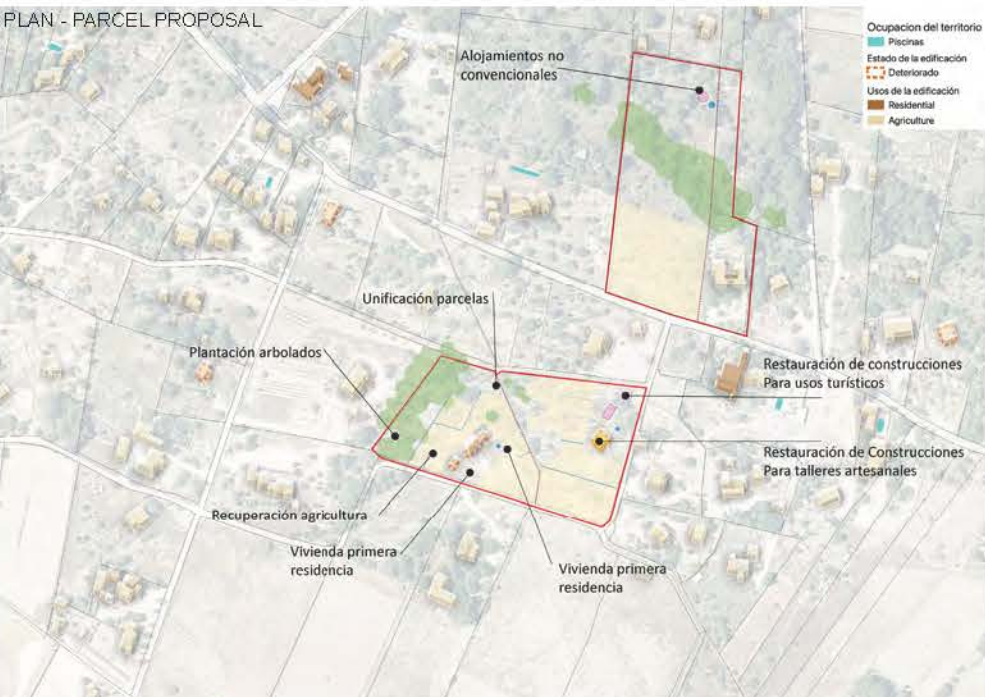
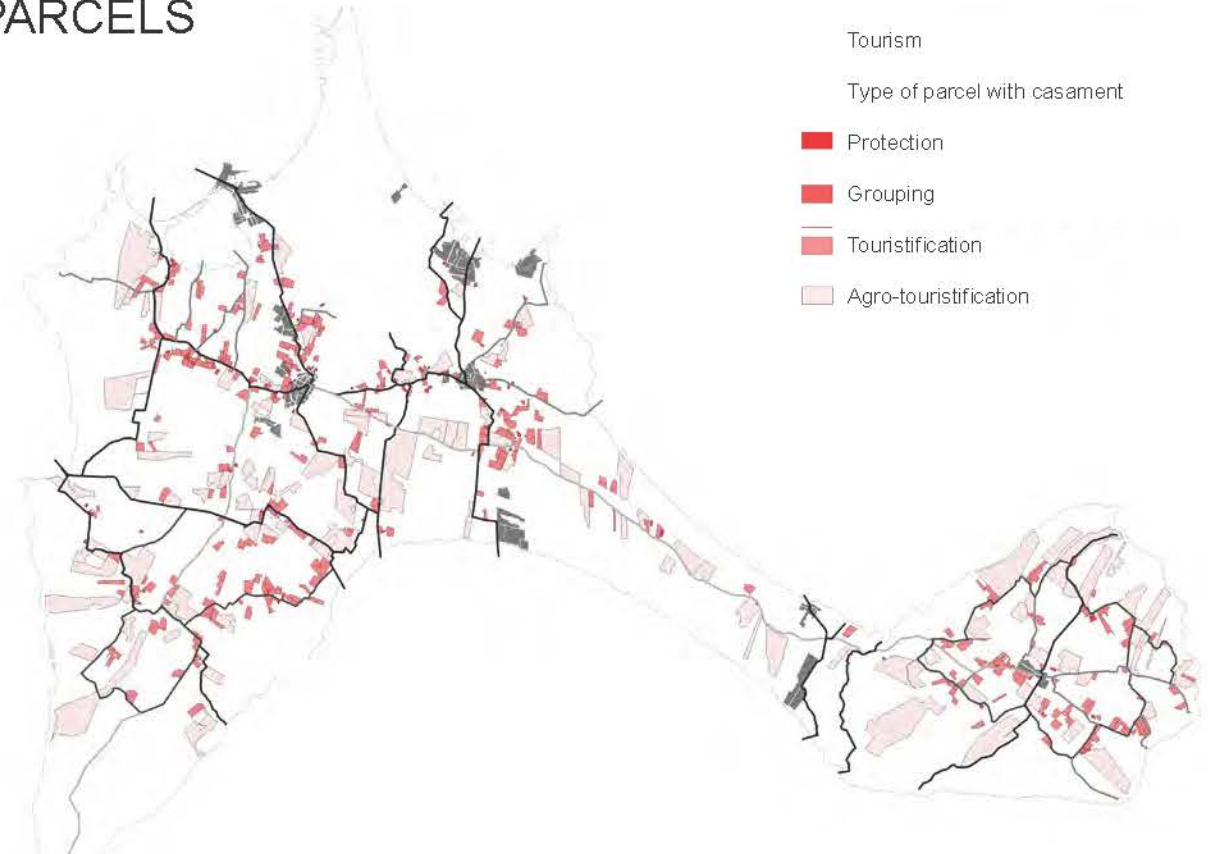


# SECOND LINE PATH



PLAN OF SECOND LINE PATH

# PARCELS



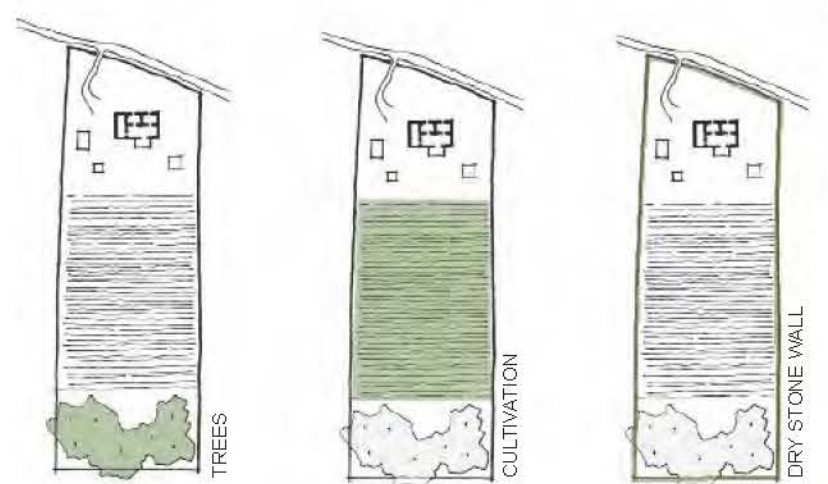
## CATALOGUE OF PROTECTED ELEMENTS

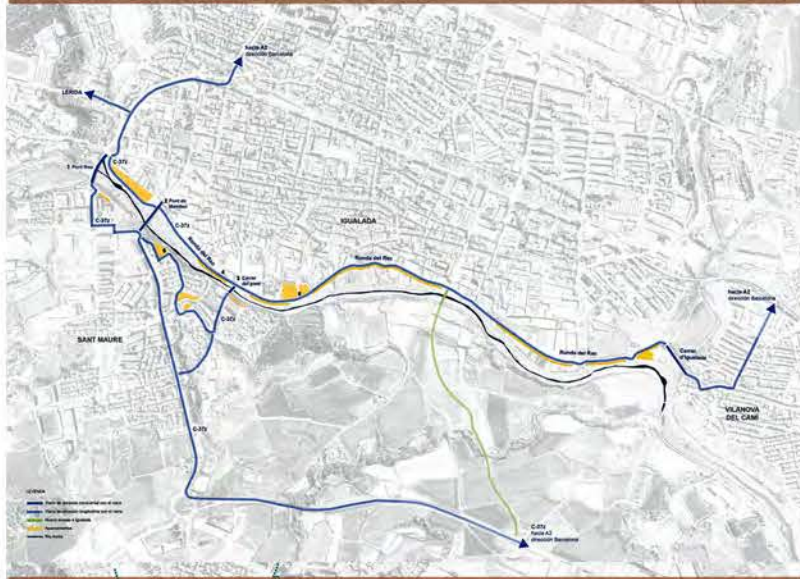
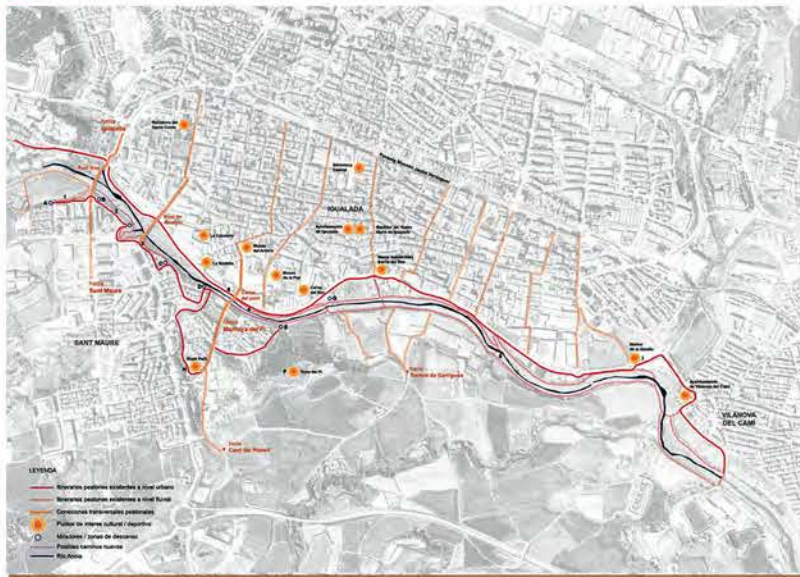
- Texturas paredes**
- 01. Stone
  - 02. Lime-coated stone
  - 03. White washed
  - 04. Painting
- Carpentry Textures**
- 05. Natural wood
  - 06. Wood painted in blue
  - 07. Wood painted in green
- Texturas filtro solar fachada**
- 08. Porch shade
  - 09. Vegetal shade
  - 10. Bougainvillea
  - 11. Juniper
  - 12. Pine



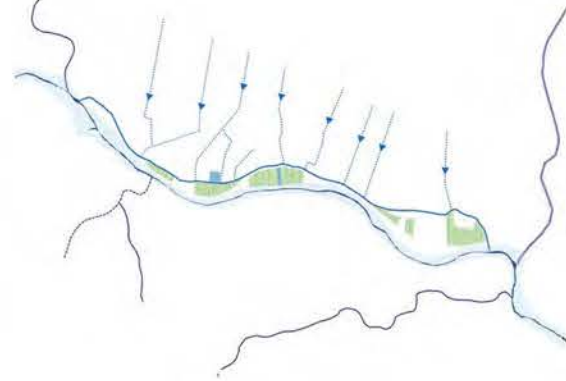
## NEW BIOLOGICAL CONNECTIONS IN FORMENTARA HINTERLAND

## TYPE OF BIOLOGICAL CONNECTIONS WITHIN PARCELS

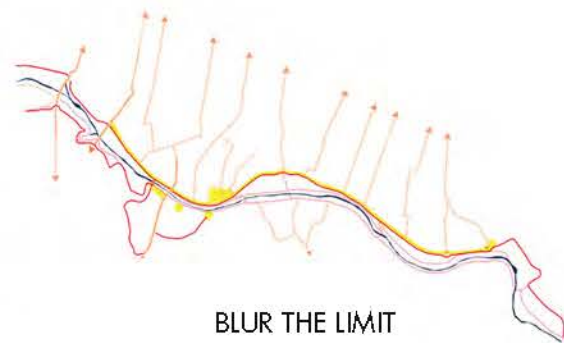




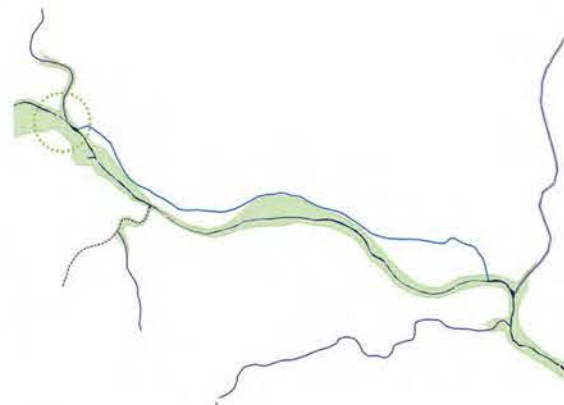
OBJECTIVES AND STRATEGY



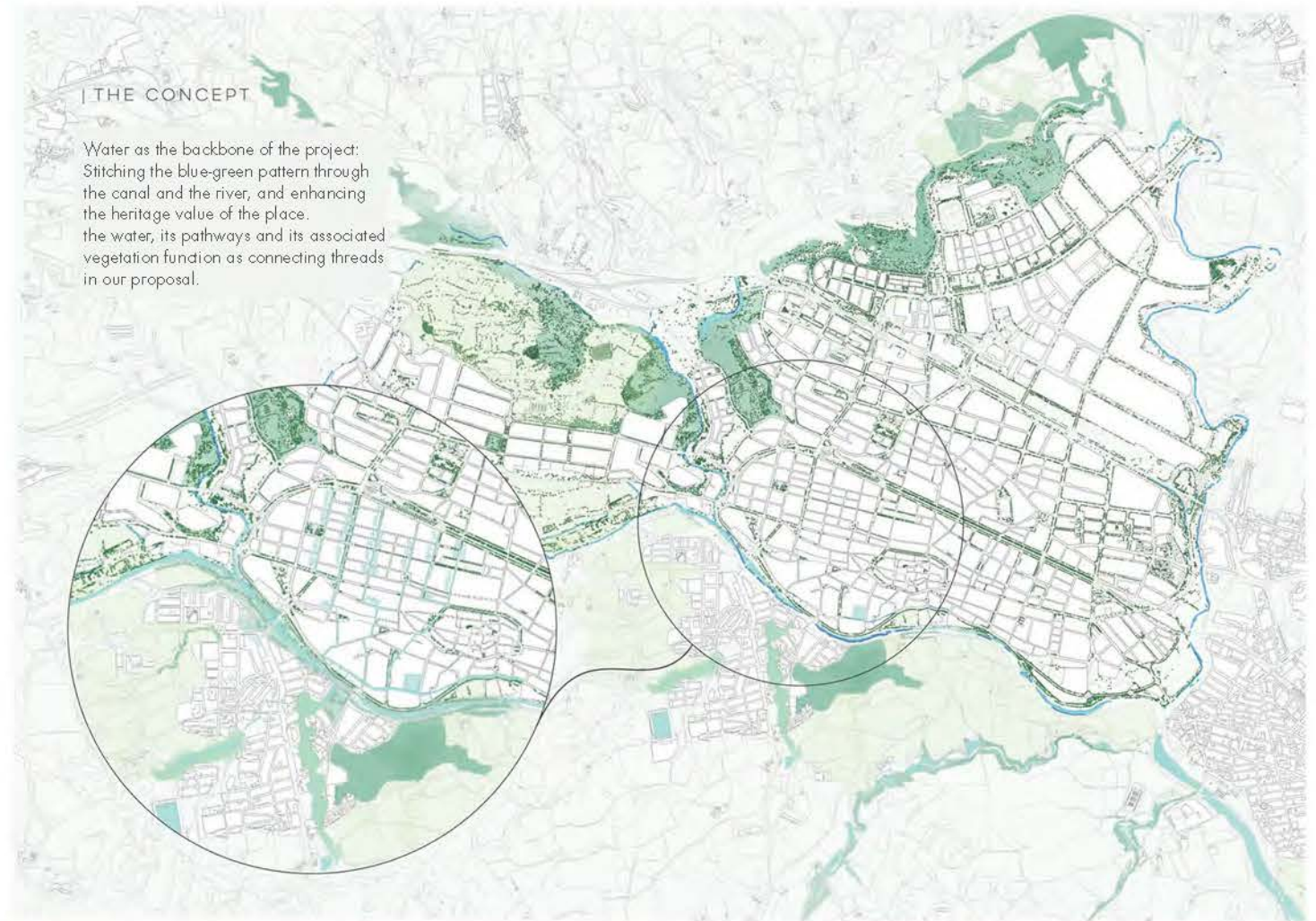
RECOVERY OF CANAL DEL REC



BLUR THE LIMIT



IMPROVE RIVER SPACE



THE CONCEPT

Water as the backbone of the project: Stitching the blue-green pattern through the canal and the river, and enhancing the heritage value of the place. the water, its pathways and its associated vegetation function as connecting threads in our proposal.

## TECHNICAL DOSSIER

<b>Title of the project</b>	THE GREEN - BLUE VIAS AND THEIR RELATION WITH THE URBAN ENVIRONMENT   WATER SYSTEM: RIO L'ANOIA
<b>Authors</b>	ANA BLASCO ROMERO   ELENA DÍAZ-ALEJO CAMPOS   LUCY GEZEKELIAN
<b>Title of the course</b>	WATER SYSTEM
<b>Academic year</b>	2022-2024
<b>Teaching Staff</b>	CONCHITA DE LA VILLA   VÍCTOR TÉNEZ   JOSÉ ALONSO   CARLOTA SOCÍAS
<b>Department / Section / Program of belonging</b>	UPC   MASTER IN LANDSCAPE ARCHITECTURE
<b>University / School</b>	UPC UNIVERSITAT POLITÈCNICA DE CATALUNYA



The project is developed in the Anoia river and its surroundings between the municipalities of Igualada and Santa Margarida de Montbui until reaching Vilanova del Camí. Today, these municipalities have very specific connections, and a lack of activity around them. Therefore, it is proposed to enhance the relationships between these urban areas through water. The intervention will range from the drainage of the passages of Igualada to the fluvial environment. Before, the river was presented as a barrier between the municipalities, but the proposal will seek to break that limit. The concrete fluvial facades will be naturalized using bioconstruction and, in general, the fluvial environment will improve through revegetation, giving it space and creating new routes and connections.

Different types of interventions will be carried out around the fluvial space. In the first section, access to the inhabitants will be further restricted to enhance the biodiversity of the area and give greater freedom to the river; In the second section, most of the leisure activities will be concentrated and the connections will be strengthened by means of a pedestrian bridge; and finally, in the third section the agricultural park will be located, right in the area where the city's orchards used to be.

With these actions it would be a clear improvement of the biodiversity and the ecological values of the fluvial environment, and also a better connection between the cities and the fluvial area.

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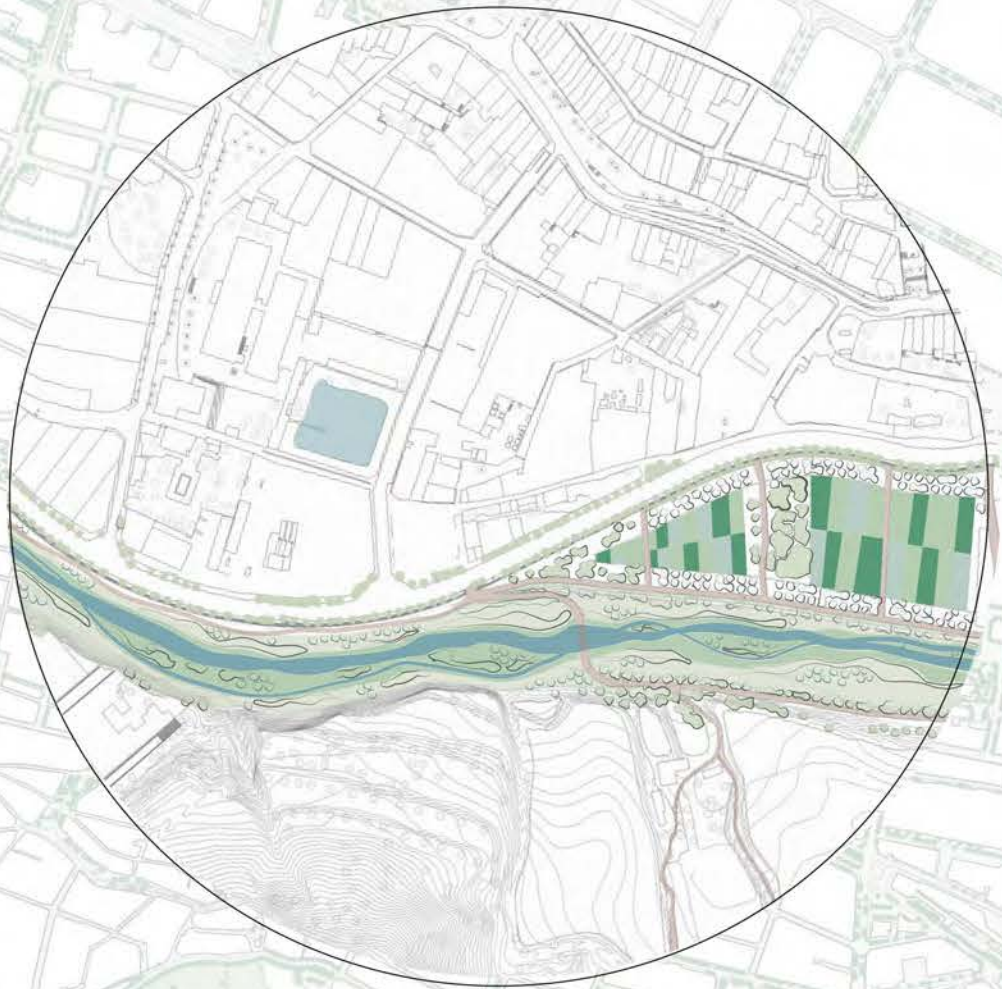
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MASTERPLAN

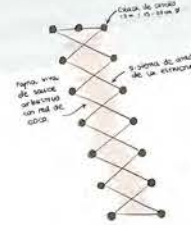




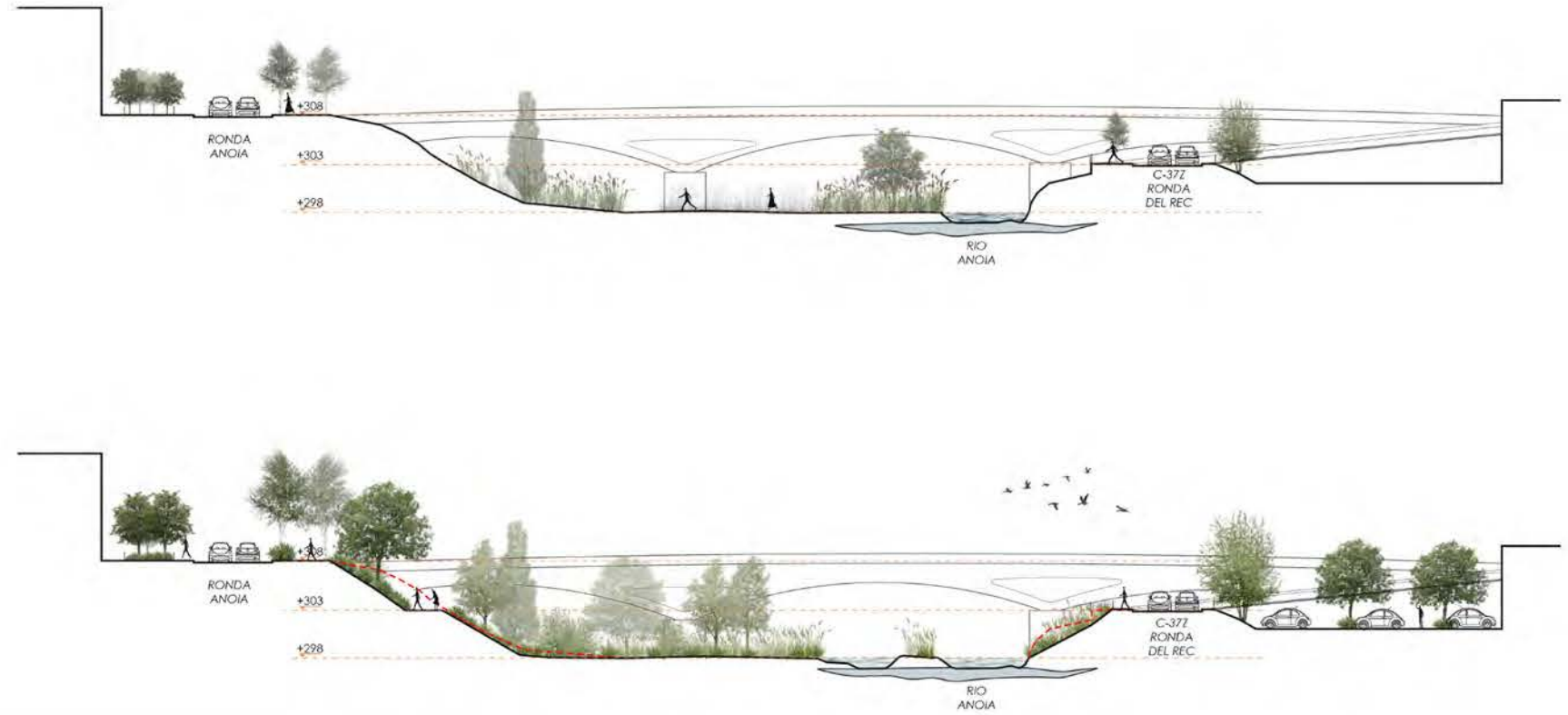
|SECTOR 1 : RESERVE OF THE RIVER



|SECTOR 1 : without access , free transit zone

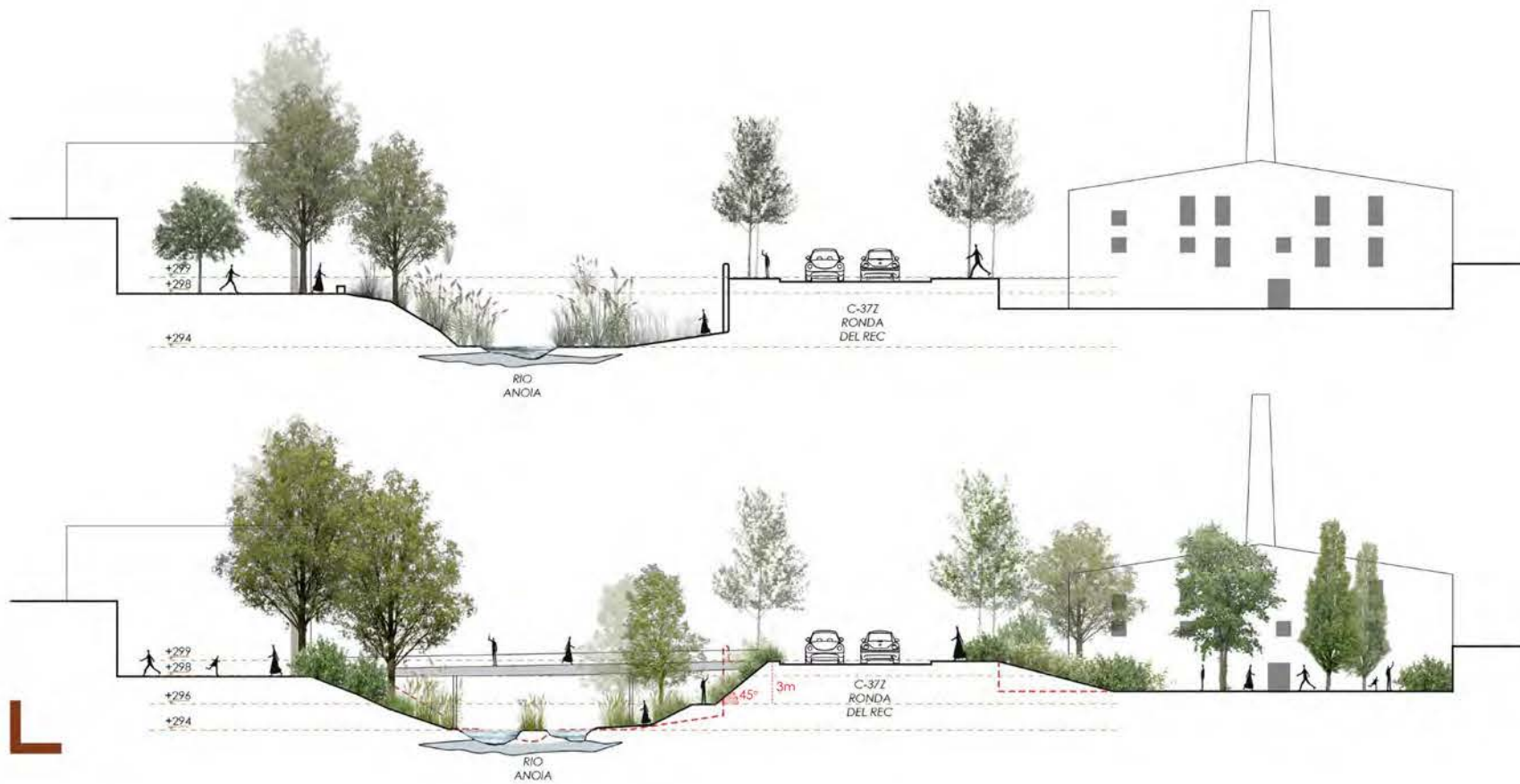


|SECTION AA

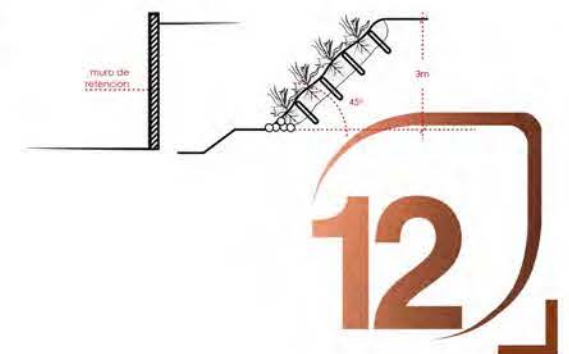


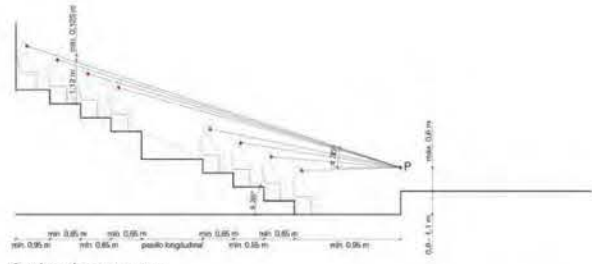
|SECTOR 2 : RIVER PARK

|SECTION BB



|SECTOR 2 : crossroads at different level that connect the 2 sides of the river





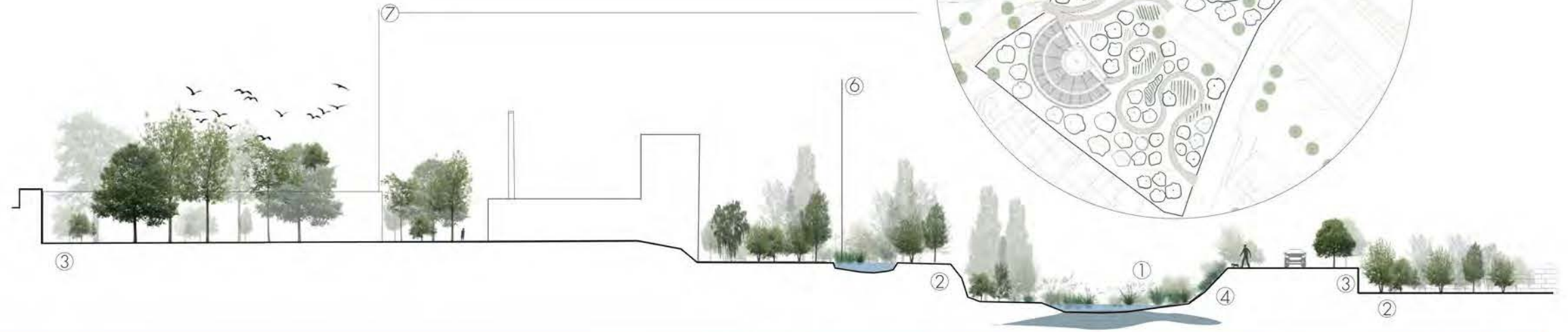
Outdoor theater section

- ① Herbaceous with submerged roots: rushes and reeds
- ② Trees and shrubs: willows and poplars
- ③ Land border: ash and elm trees
- ④ Bioengineering elements: smooth and vegetate borders
- ⑤ River park
- ⑥ Infiltration tank (SUDS)
- ⑦ Outdoor theater

SECTION CC  
I IMPROVEMENT PROPOSAL: TRANSVERSAL PARK

Image 3. Plan of proposed transversal park

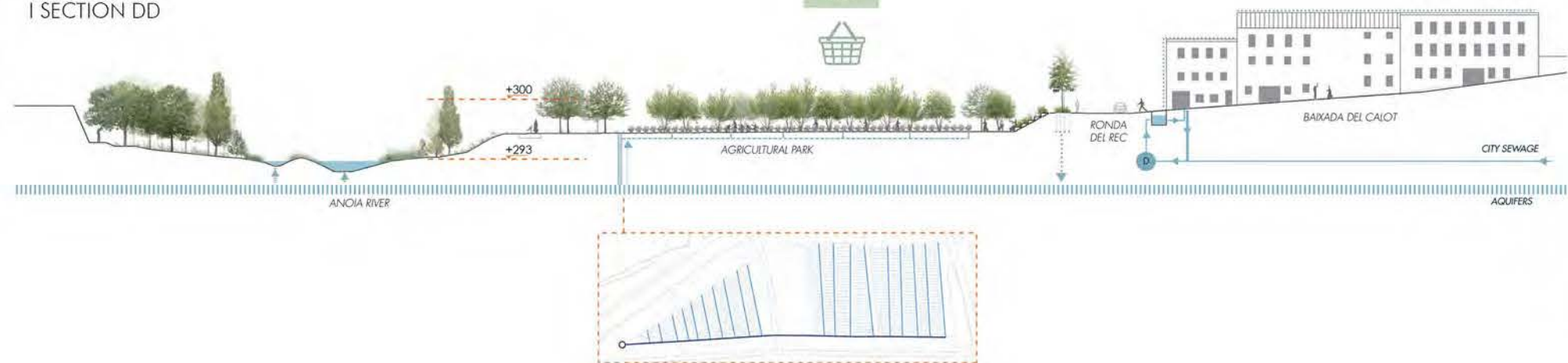
Transversal park that is connected with the river  
 Formed by 3 terraces  
 Open-air theater  
 Infiltration tank  
 Fluvial, transition and terrestrial ecosystem: ecological connector



I SECTOR 3 : AGRICULTURAL PARK



I SECTION DD





“URBAN-COASTAL CONNECTIVITY: ENHACING GREEN INFRAESTRUCTURE AT THE COASTLINE”  
**LES TRES XEMENEIES**

Country / City BARCELONA  
University / School UNIVERSITAT POLITÈCNICA DE CATALUNYA  
Academic year 2022 - 2024  
Title of the project URBAN-COASTAL CONNECTIVITY: ENHACING GREEN INFRAESTRUCTURE AT THE COASTLINE. LES TRES XEMENEIES  
Authors IDALIA ESTRADA / YARIELIS NORIEGA

## TECHNICAL DOSSIER

Title of the project	URBAN-COASTAL CONNECTIVITY: ENHACING GREEN INFRAESTRUCTURE AT THE COASTLINE. LES TRES XEMENEIES
Authors	IDALIA ESTRADA / YARIELIS NORIEGA
Title of the course	Módulo B2 - Los Sistemas del Verde: Del Verde Urbano a los Espacios Naturales
Academic year	2022 - 2024
Teaching Staff	MANUEL RUISÁNCHEZ, ANNA BONET, MARCEL CUMPLIDO
Department / Section / Program of belonging	Máster d'Arquitectura del Paisatge - UPC
University / School	Universitat Politècnica de Catalunya



### DESCRIPTION OF THE PROJECT

The project is developed in the area known as "Tres Xemeneies," located in the municipality of Sant Adrià del Besòs, next to the northern coastal line of the Besòs delta covering an area of 125 hectares. This is a significant space within Barcelona's coastal landscape, well-connected to the urban structure. Surrounded by residential areas, industries, and energy production plants, which have left a clear anthropic footprint around the site and adjacent areas. With the closure of industries, there is an opportunity to transform this space as part of the framework for improving Barcelona's coastal front and reconnecting it with the existing seaside walkway. The area of the project was divided into four intervention zones, where we focused on a strategic connection point between the urban structure and the coastal area.

The objective is to develop a green infrastructure with native vegetation using ecotones to mitigate the human footprint and contamination while reconnecting the urban area with the coastline that was previously fragmented by industry.

The specific goals include:

- **Ecosystem Restoration:** Rehabilitating and restoring the natural ecosystems in the area, including coastal dunes, wetlands, and vegetation, to enhance biodiversity and ecological resilience.
- **Green Connectivity:** Creating green corridors and pathways that connect the urban structure with the coastal zone, allowing for the movement of both people and wildlife.
- **Enhancing Aesthetics and Livability:** Incorporating native plant species and green spaces to improve the visual appeal and livability of the area, providing a healthier and more enjoyable environment for residents and visitors.

For further information

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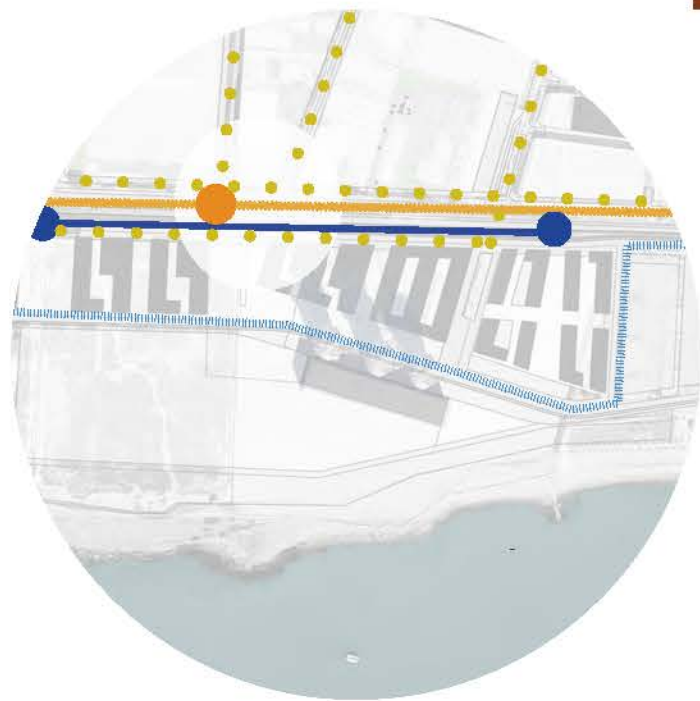
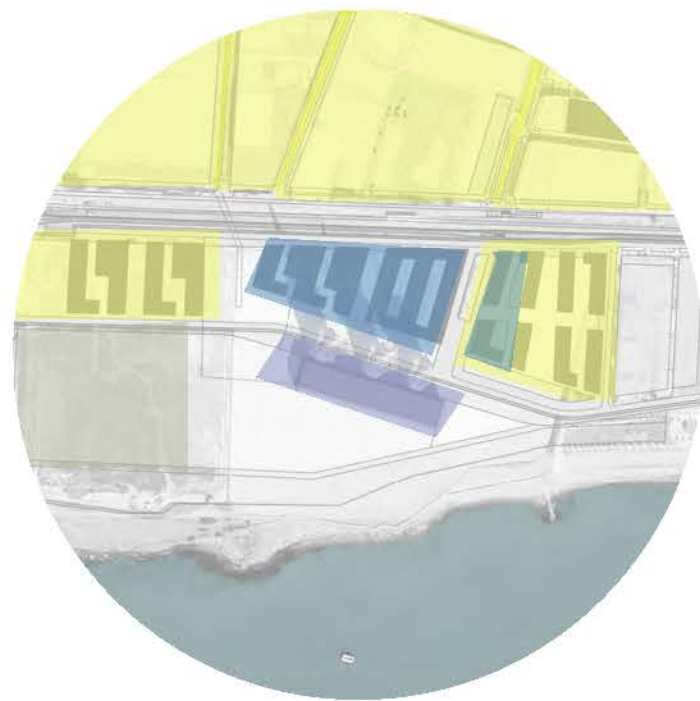
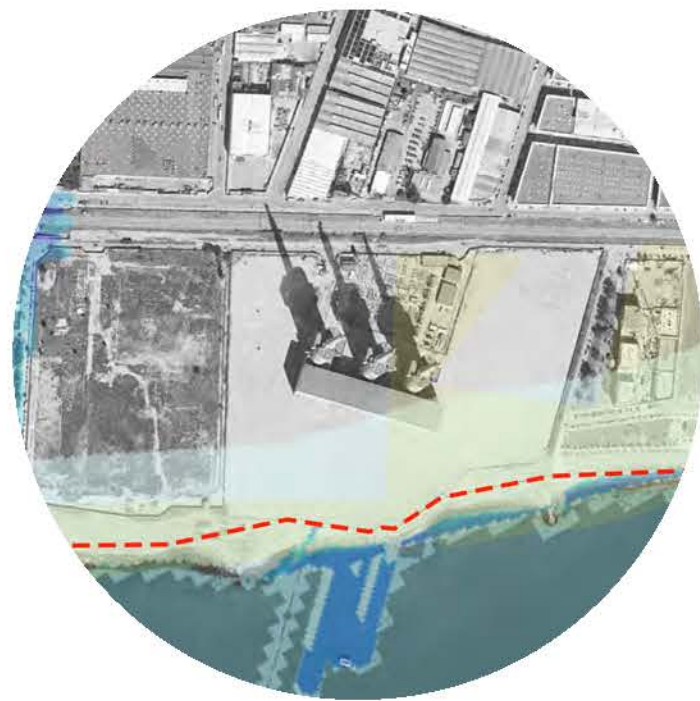
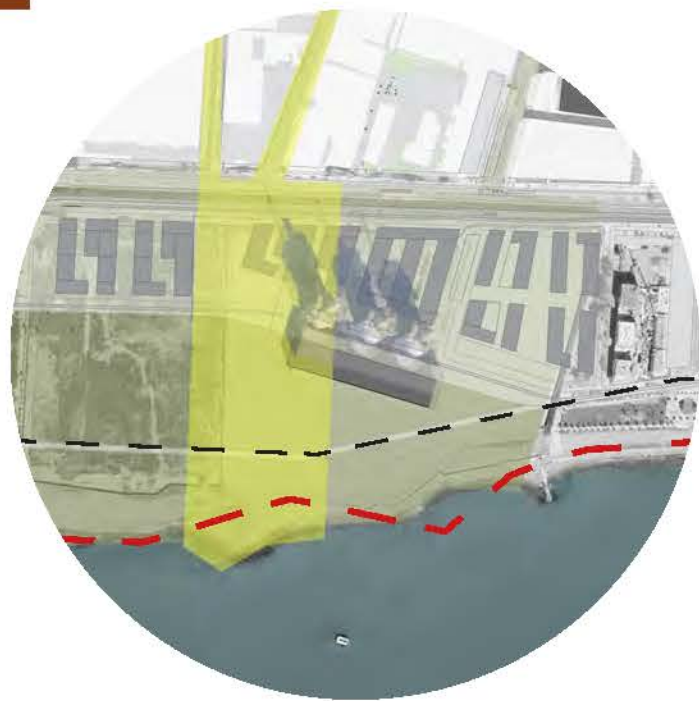
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Barcelona November 2023

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SITE PROJECT

- SECTION 3
- GENERAL PROJECT
- NEW SEWAGE COLLECTOR
- OLD SEWAGE

COASTLINE FLOOD

- 
- BREAK WATER

LAND USES

- RECREATIONAL
- COMMERCIAL
- RESIDENTIAL
- COMMUNITY INFRASTRUCTURE

TRANSPORTATION

- TRAIN LINE
- TRAM LINE
- INTERIOR STREET
- TRAIN STATION
- TRAM STATION
- PEDESTRIAN ACCESS



1 Barrier between neighborhood and coastal park



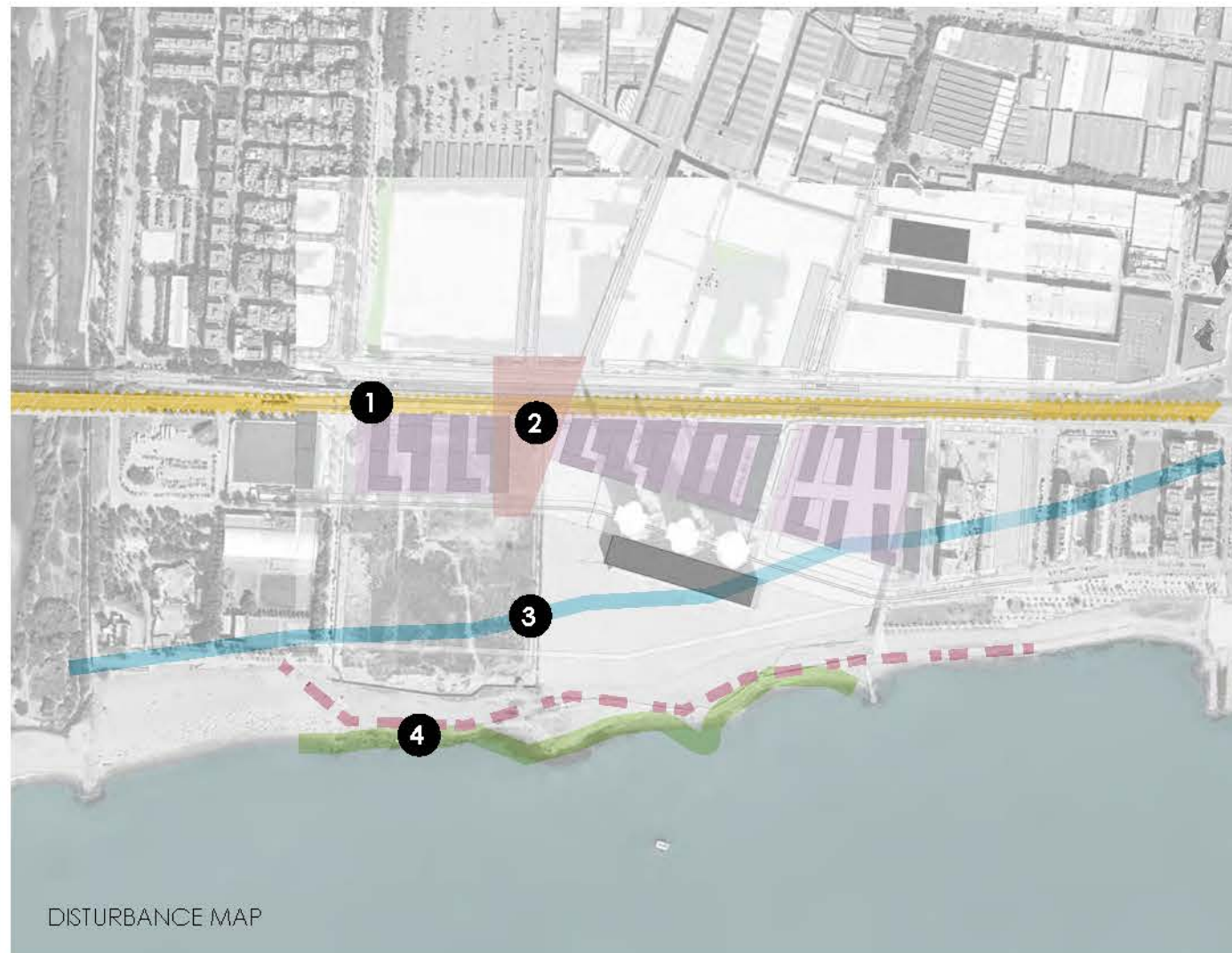
2 Meeting point with de urban area



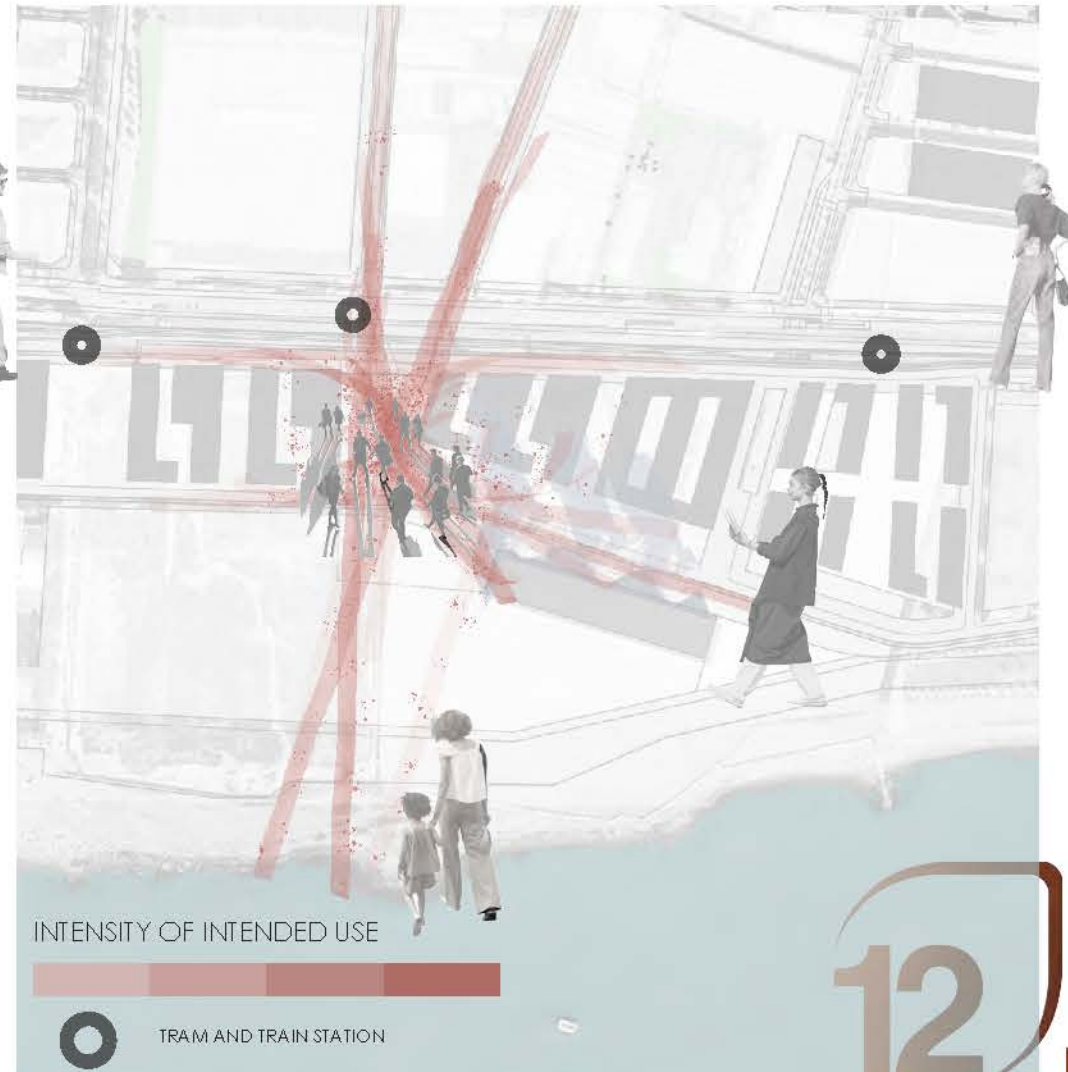
3 Coastal flood



4 Presence of breakwater and sewage collector on the coastline



DISTURBANCE MAP



INTENSITY OF INTENDED USE

TRAM AND TRAIN STATION



ECOTONES GRADIENT

MASTER PLAN



*Pittosporum tobira*



*Platanus x acerifolia*



*Tipuana tipu*



*Styphnolobium japonicum*

CONNECTION WITH THE URBAN ZONE



*Platanus x acerifolia*



*Jacarandae*



*Tipuana tipu*



*Styphnolobium japonicum*

URBAN PLAZA



*Jacarandae*



*Tipuana tipu*



*Styphnolobium japonicum*

URBAN FOREST



*Pinus pinea*



*Pistacia lentiscus (lletiscle)*



*P Tamarix gallica*

PINE FOREST



*Potamogeton spp. (espigues d'aigua)*



*Juncus spp. (joncs)*



*Riccia fluitans*



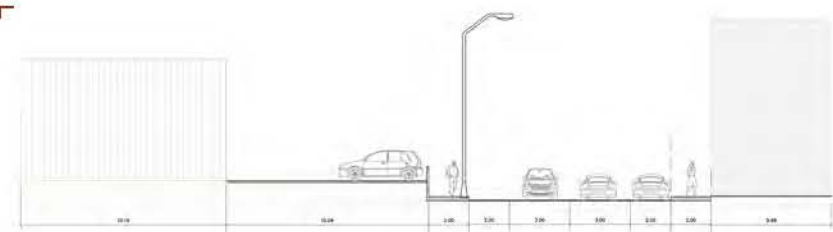
*Pistacia lentiscus (lletiscle)*



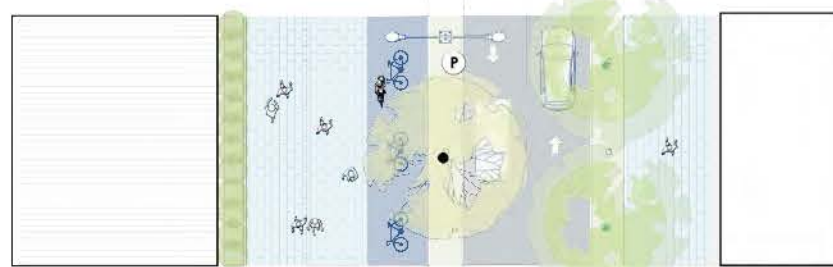
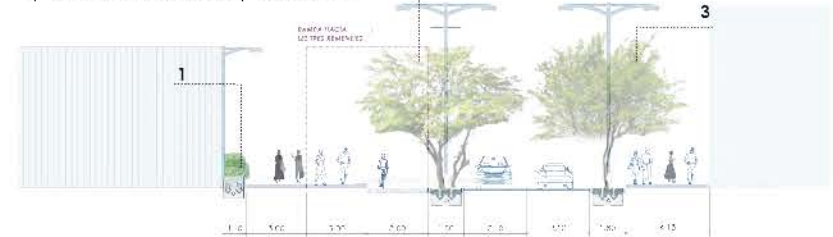
*P Tamarix gallica*

DUNAR SYSTEM

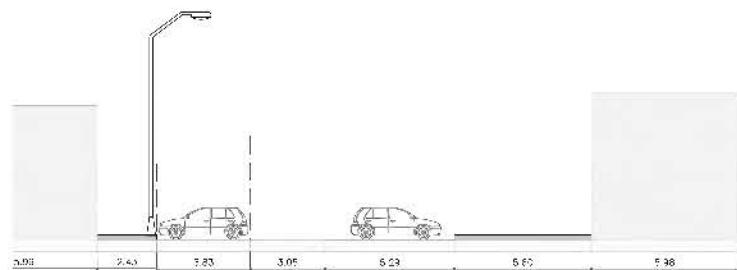
VIEWPOINT AND PROMENADE



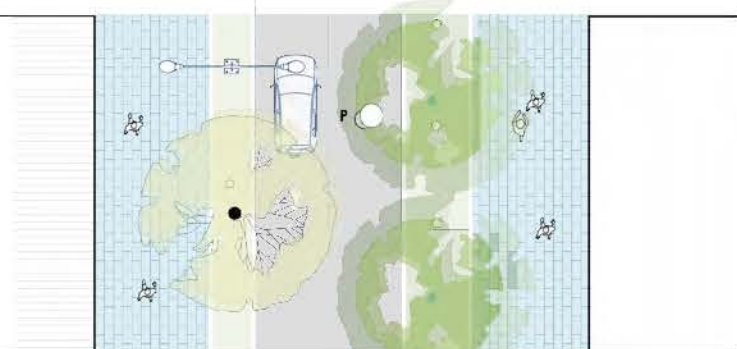
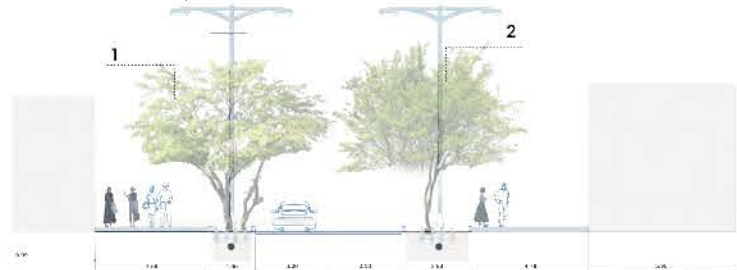
1 | STREET SECTION | CURRENT



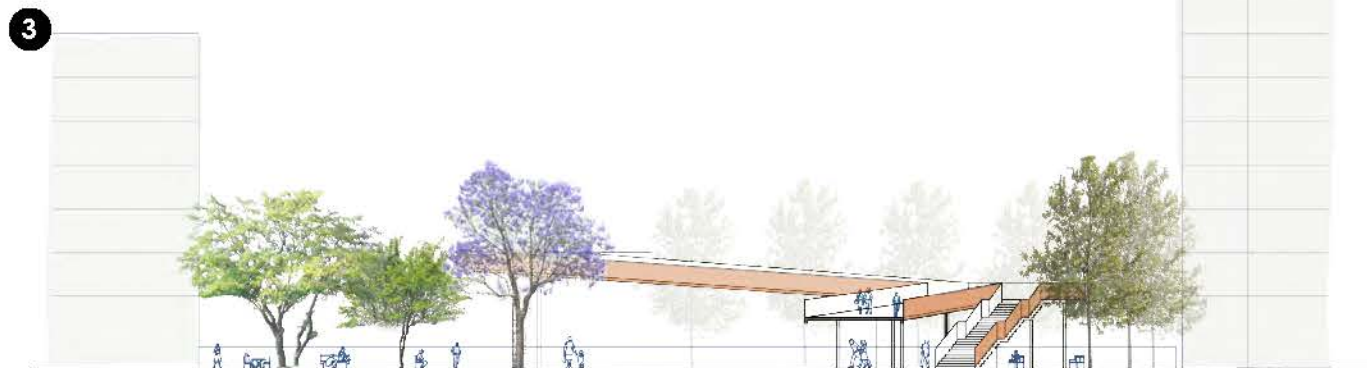
1 | STREET SECTION | PROPOSAL



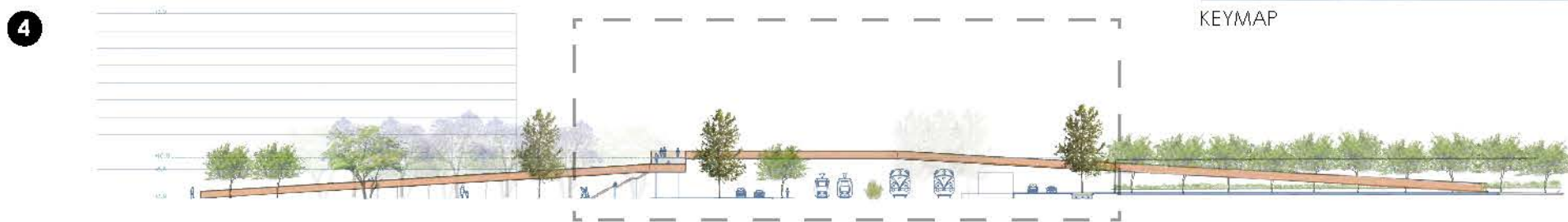
2 | STREET SECTION | CURRENT



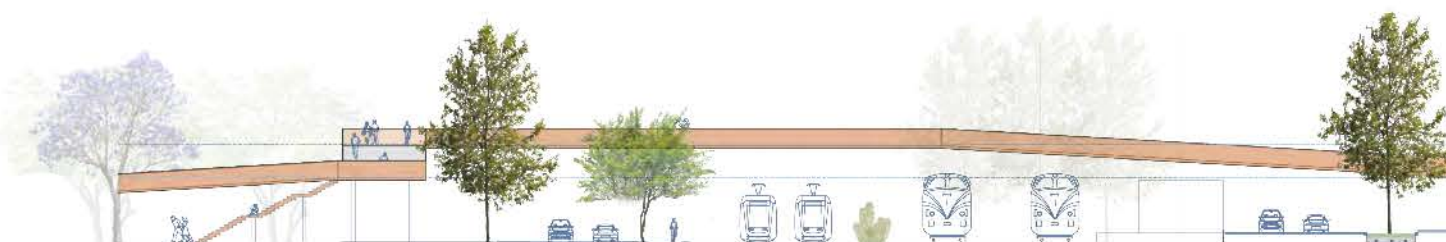
2 | STREET SECTION | PROPOSAL



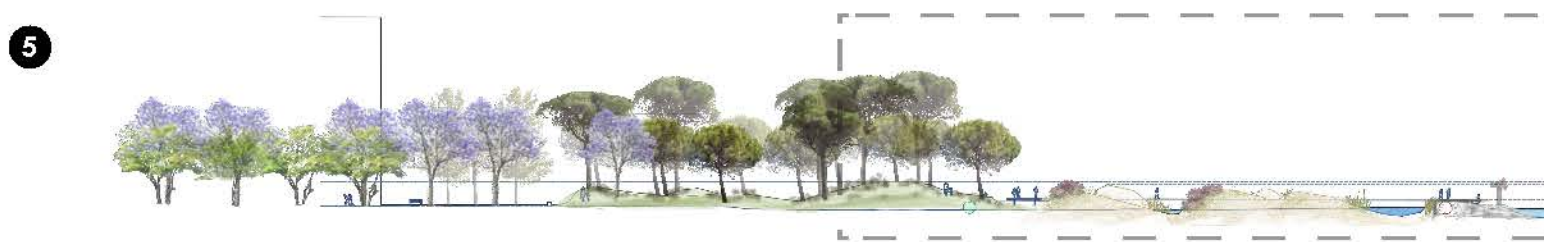
3 | SECTION OF THE URBAN PLAZA



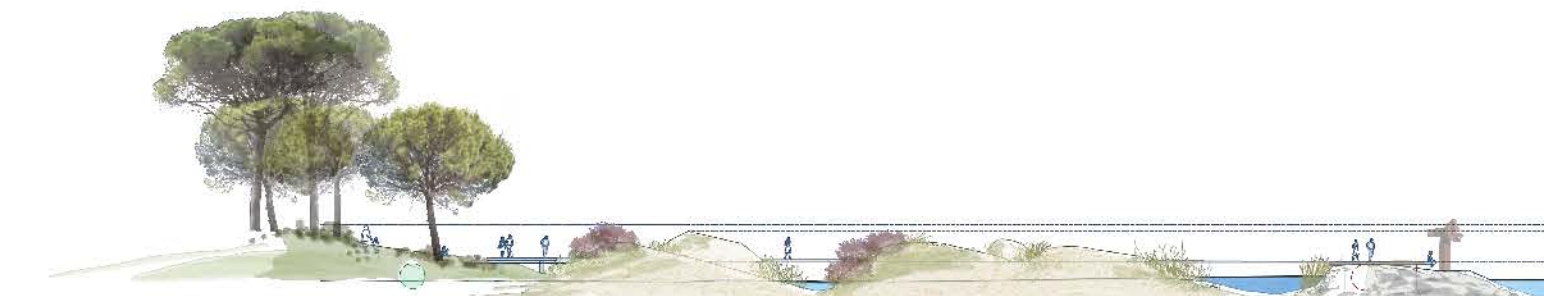
4 | SECTION URBAN COASTAL CONNECTIVITY



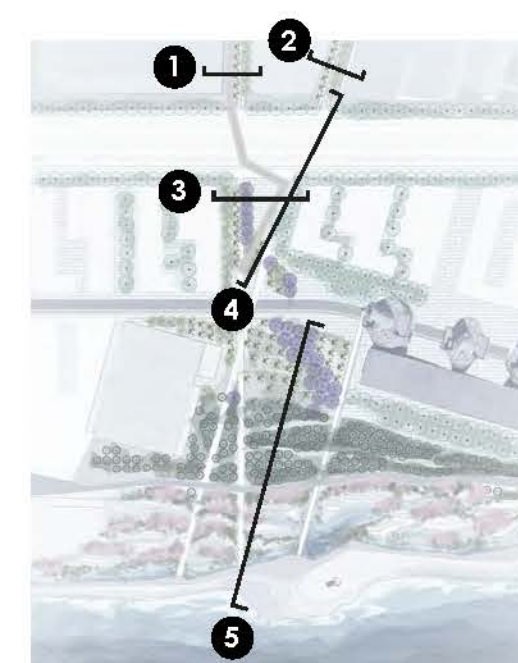
4 | SECTION URBAN COASTAL CONNECTIVITY | CLOSE UP



5 | SECTION HABITATS OF PINE FOREST, WETLAND AND DUNES SYSTEM



5 | SECTION HABITATS OF PINE FOREST, WETLAND AND DUNES SYSTEM | CLOSE UP



KEYMAP



# INFRAESTRUCTURA VERDE PARA UN PARQUE FOTOVOLTAICO EN CASTELLFOLLIT DEL BOIX-CATALUÑA



UNIVERSITAT POLITÈCNICA  
DE CATALUNYA  
BARCELONATECH

Liliana Salaverry - Carolina Arias  
Marzo 2023

Country /City ..... Barcelona -España  
University / School ..... Universidad Politècnica de Catalunya (UPC)  
Academic year ..... 2022-2023  
Title of the project ..... PROYECTO DE INFRAESTRUCTURA VERDE PARA UN PARQUE FOTOVOLTAICO EN CASTELLFOLLIT DEL BOIX-CATALUÑA  
Authors ..... Liliana SALAVERRY LEON – Carolina ARIAS



## TECHNICAL DOSSIER

**Title of the project** PROYECTO DE INFRAESTRUCTURA VERDE PARA UN PARQUE FOTOVOLTAICO EN CASTELLFOLLIT DEL BOIX-CATALUÑA

**Authors** ..Liliana SALAVERY LEON – Carolina ARIAS RUIZ

**Title of the course** Infraestructuras verdes

**Academic year** 2022-2023

**Teaching Staff** Xavier Mayor Farguell – Agata Buscemi

**Department / Section / Program of belonging** Master en Arquitectura del Paisaje

**University / School** ..Universidad Politécnica de Cataluña (UPC)



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

Este proyecto se lleva a cabo en el marco del curso 'Infraestructuras verdes' del Máster en Arquitectura del paisaje de la Universidad Politécnica de Cataluña (UPC) y se estructura dentro del actual marco normativo y objetivos en materia de mitigación del cambio climático y transición energética de Cataluña.

La propuesta se desarrolla en el contexto de implantación de una planta de energía fotovoltaica en Castellfollit del Boix, que, si bien persigue el objetivo de reconversión energética a corto plazo, implica una transformación y ocupación del suelo muy relevantes. Deben contemplarse valores ambientales, sociales, ecológicos, arqueológicos y productivos que también forman parte del paisaje del lugar y por lo tanto la infraestructura verde aquí se plantea como una herramienta clave para el abordaje estratégico territorial.

En un primer momento, fueron analizados 6 ámbitos de intervención desde la perspectiva de los 4 tipos de servicios ecosistémicos (apoyo, regulación, abastecimiento y cultural). Para tal análisis fue planteada una innovadora matriz de análisis a través de indicadores y se elaboró un Máster Plan con objetivos y acciones concretas.

En un segundo momento, se establecieron actuaciones concretas sobre el ámbito 3 que fue el que presentó mayor número de dimensiones territoriales involucradas y nos sugirió una mayor riqueza para el planteamiento de propuestas.

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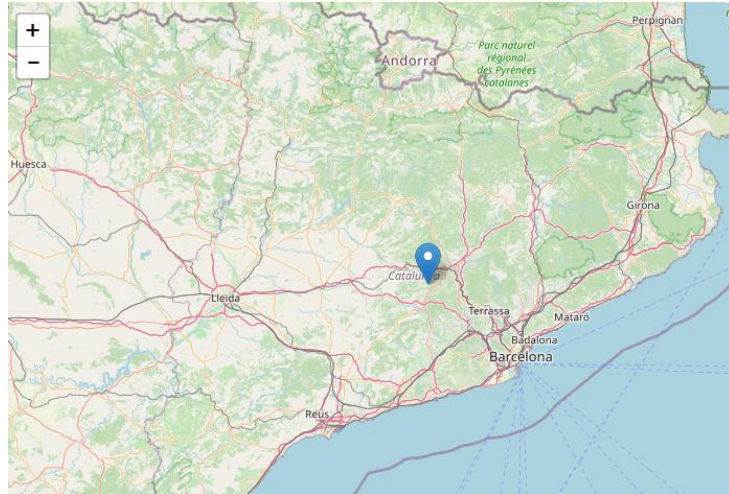
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**Barcelona November 2023**

**SCHOOL PRIZE**

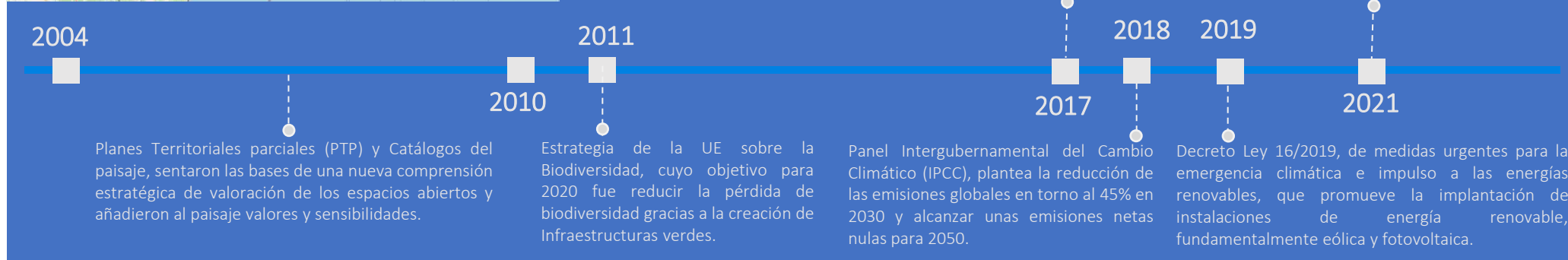
## CASTELLFOLLIT DEL BOIX-CATALUÑA



- Ubicación: Comarca de Bages, provincia de Barcelona, comunidad autónoma de Cataluña.
  - Superficie: 58,9 km<sup>2</sup>
  - Elevación: 700 m
  - Población: 426 habitantes
- Densidad de población: 7,23 hab/km<sup>2</sup>
- Climatología: mediterránea continental subhúmeda
- Precipitaciones medias anuales: de 600 mm (primavera y otoño)
  - Principal actividad económica: agricultura (secano, trigo, cebada, viña, olivos, almendro) y ganadería (vacuno, ovino, porcino).
- Especies de flora predominantes: pinos, robles, encinas.
- Patrimonio histórico-artístico: ermitas románicas y edificios medievales, yacimientos arqueológicos y paleontológicos notables.

Este proyecto se lleva a cabo en el marco del curso 'Infraestructuras verdes' del Master en Arquitectura del paisaje de la UPC y se estructura dentro del actual marco normativos y objetivos en materia de mitigación del cambio climático y transición energética de Cataluña.

La propuesta se desarrolla en el contexto de implantación de una planta de energía fotovoltaica en Castellfollit del Boix, que, si bien persigue el objetivo de reconversión energética a corto plazo, implica una transformación y ocupación del suelo muy relevantes. Deben contemplarse valores ambientales, sociales, ecológicos, arqueológicos y productivos que también forman parte del paisaje del lugar y por lo tanto la infraestructura verde se plantea como una herramienta clave para el abordaje estratégico territorial.



## RESULTADOS ESPERADOS

- Biodiversidad (especies y ecosistemas) mejorados.
- Diversidad y complejidad de hábitats favorecidos.
- Condiciones ambientales del lugar mejoradas
- Disponibilidad de recursos que permitan el desarrollo de mayor número de especies (flora, fauna, hongos, etc) incrementada.
- Recursos históricos culturales, puestos en valor.

## OBJETIVO

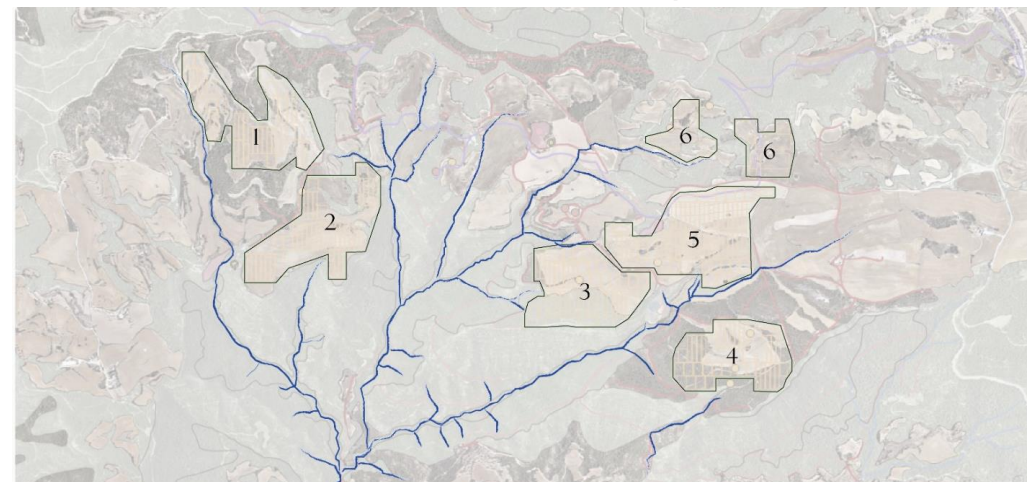
Desarrollar una actuación bajo el concepto de Infraestructura verde, para prestar una extensa gama de servicios ecosistémicos de manera interconectada, integrando la planta solar fotovoltaica con el paisaje y con ello renovar el valor y dotar de significado al territorio de Castellfollit del Boix.

## OBSERVACION DEL PAISAJE DESDE LA PERSPECTIVA ECOLOGICA PARA TRANSFORMAR EL TERRITORIO CON UNA VISION INTEGRAL...

Esta dimensión ecológica cobra importancia en el contexto de crisis climática actual, donde la infraestructura verde además de proveernos de servicios ecosistémicos ayuda a mantener la biodiversidad y conectividad ecológica, incorporando otras dimensiones culturales, ambientales, ecológicas y productivos del paisaje.



## ÁMBITOS DE IMPLANTACIÓN DEL PARQUE FOTOVOLTAICO



En un primer momento, fueron analizados 6 ámbitos de intervención, desde la perspectiva de los 4 tipos de servicios ecosistémicos (apoyo, regulación, abastecimiento y cultural), para ello fue planteada una innovadora matriz de análisis a través de indicadores y se elaboró un Máster Plan con objetivos y acciones concretas (Ver Lamina 2).

En un segundo momento, se establecieron actuaciones sobre el ámbito 3 que fue el que presentó mayor número de dimensiones territoriales involucradas y por lo tanto mayor riqueza para el planteamiento de propuestas (Ver Lamina 3).



