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## DESIGN PROPOSAL FOR SANTA GILLA

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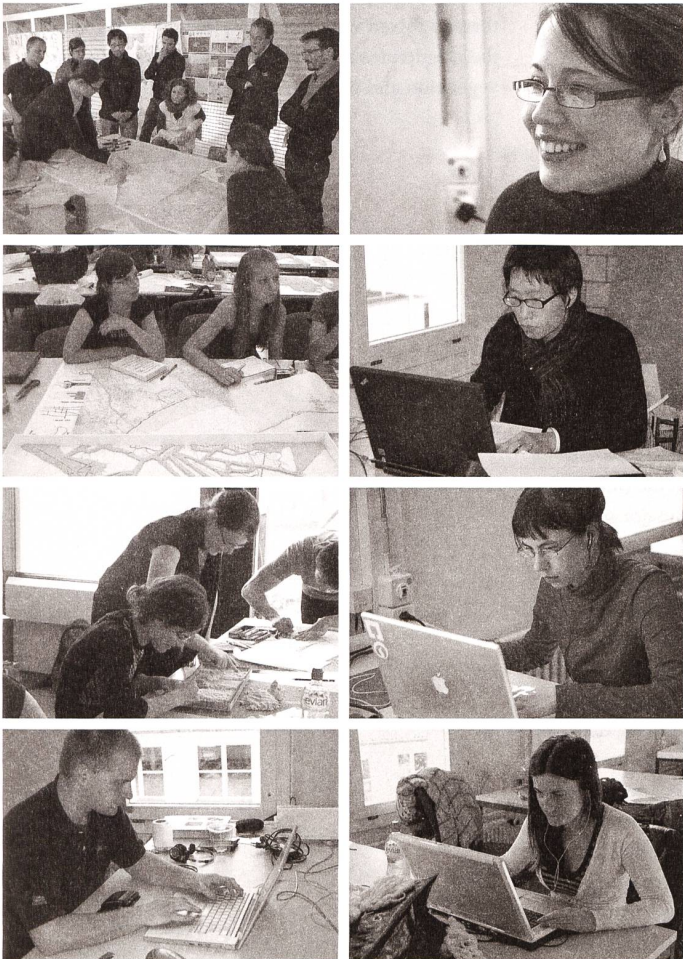
### January 2009

Prof. Christophe Girot, Isabelle Duner,  
Alexandre Kapellos, Frédéric Rossano.

### 7 students:

Bianca Brici, Jung Min Choi, Anne Femmer,  
Kirstyn Lindsay, Olivia Martin,  
Marc Pancera, Jasna Struckelj.

The transition into the third and last stage of the design studio gave an overview of the results from the preceding phase. Back in Zurich a review was conducted of the work done on site. This provided a conclusion to the work already conducted as well as a starting point for the final phase. In the last workshop, 7 highly dedicated and motivated students developed one common design proposal and a complete documentation of the design argumentation and proposal itself.



## DESIGN STRATEGY

Having experienced the vast horizontal landscape in Santa Gilla Bay, we were excited by the potential of its abundant qualities. The landscape is home to a wide range of wildlife, suited to the diverse types of water and the natural conditions. The diversity of the waters is, however, not used to its full potential in the bay, as the water types are separated and channeled directly into the sea, preventing them from mixing in the lagoon due to the problem of pollution. Industrial plants built on reclaimed land from the lagoon have made the landscape inaccessible to the public, so that it is unfamiliar to the people of Cagliari. This vast inaccessible space is also full of litter, which does not create an attractive image of the area and influences the way it is perceived by the people of Cagliari. The port at the Porto Canale also occupies a vast area on the reclaimed island, making it inaccessible to the public. The view from Cagliari is therefore one of a vast wasteland. The invasive and unplanned road network cutting across the bay and along the shoreline further divides the landscape and allows for through flow traffic, with no opportunities to stop and stay and enjoy the vast horizontal landscape. The contrast between negative and positive elements offers great potential for enhancing the experience of Santa Gilla Bay; these elements only need to be refined and reconnected.

We identified three main problem zones, which are also potential initiation points for development in this area. These are *Lungo il Mare* (along the sea), *Lungo il Fiume* (along the river), and *La Laguna* (the pools). Our design strategy aims to enhance and connect the given qualities through small interventions that can generate further development potential.

*Lungo il Mare:* The road along the sea links Cagliari with Capoterra by cutting across La Laguna and therefore preventing access to the lagoon. There is potential here to create subtle interventions, which would encourage people to stop and stay. The beach at Lungo il Mare is additionally polluted because the long pier that comes from Porto Canale keeps the sea water from circulating. Once again, minor interventions and basic maintenance of the beach could make it as attractive and usable as it used to be. These intervention points also give a starting point for a network connecting the Lungo il Mare with La Laguna.

*La Laguna:* In our opinion, the main problem of the lagoon is the invasive infrastructure cutting through the landscape, which provides efficient through traffic access but no real access to the landscape itself. By diverting through traffic around the bay, La Laguna could become a nature reserve open to the public. The salt industry in the lagoon, which is a major source of income for Cagliari, has allowed for the development of a unique ecosystem through the natural processes associated with the salt industry. We see this as a positive quality, which should be preserved and enhanced as the salt industry for this becomes smaller.

*Lungo il Fiume:* Current infrastructure along the river, consisting of a system of channels, aims to prevent pollution in the lagoon by diverting polluted water from agriculture directly to the sea. This system is currently not working as the dams have broken. In consequence, the lagoon with its brackish waters is not functioning properly as it should in a natural state; it is pure saltwater. We propose inserting gaps

in the network of channels to allow the river to flow through a new system, which would take over the shallow overflow pools and clean the water in a natural water purification system. This system could then be mixed with the pools, thereby increasing the palette of water types and allowing new types of vegetation and natural phenomena to flourish here.



Design Strategy

Urban Intervention

Water Intervention

Intervention Axis





## MASTER PLAN

Our main intervention in Santa Gilla Bay is to increase the existing water palette and in doing so, to create a fusion of waters and urban situations. We propose cleaning the river water in a natural purification system that collects the water from all of the rivers in one basin and then forms a wider river slowly meandering towards the sea. This system also provides a new nature park with walkways and small promenades, while the final basin in this process allows for leisure activities in the clean river water. Here the clean water enters the lagoon enabling it to return to its original natural status, a mix of freshwater and saltwater. The water from the final basin is also allowed to enter the pools once used for the salt water industry. Here we intend to expand the existing nature park, which also widens our water palette. The clean water is introduced into the salt water pools, which vary in concentration and depth; this then creates a lush variety of vegetation and water types in the nature reserve. The core of the nature reserve becomes a leisure island, where facilities are provided for camping and outdoor concerts; it is also the center of our recreational network of walking and bicycle paths. We intend to preserve a small part of the salt industry, as it plays a major role in the history of Cagliari. The city's inhabitants have been looking at the salt mountains for many years without being able to go there. The new nature park will therefore have the additional attraction of providing a network that allows people to visit the area.

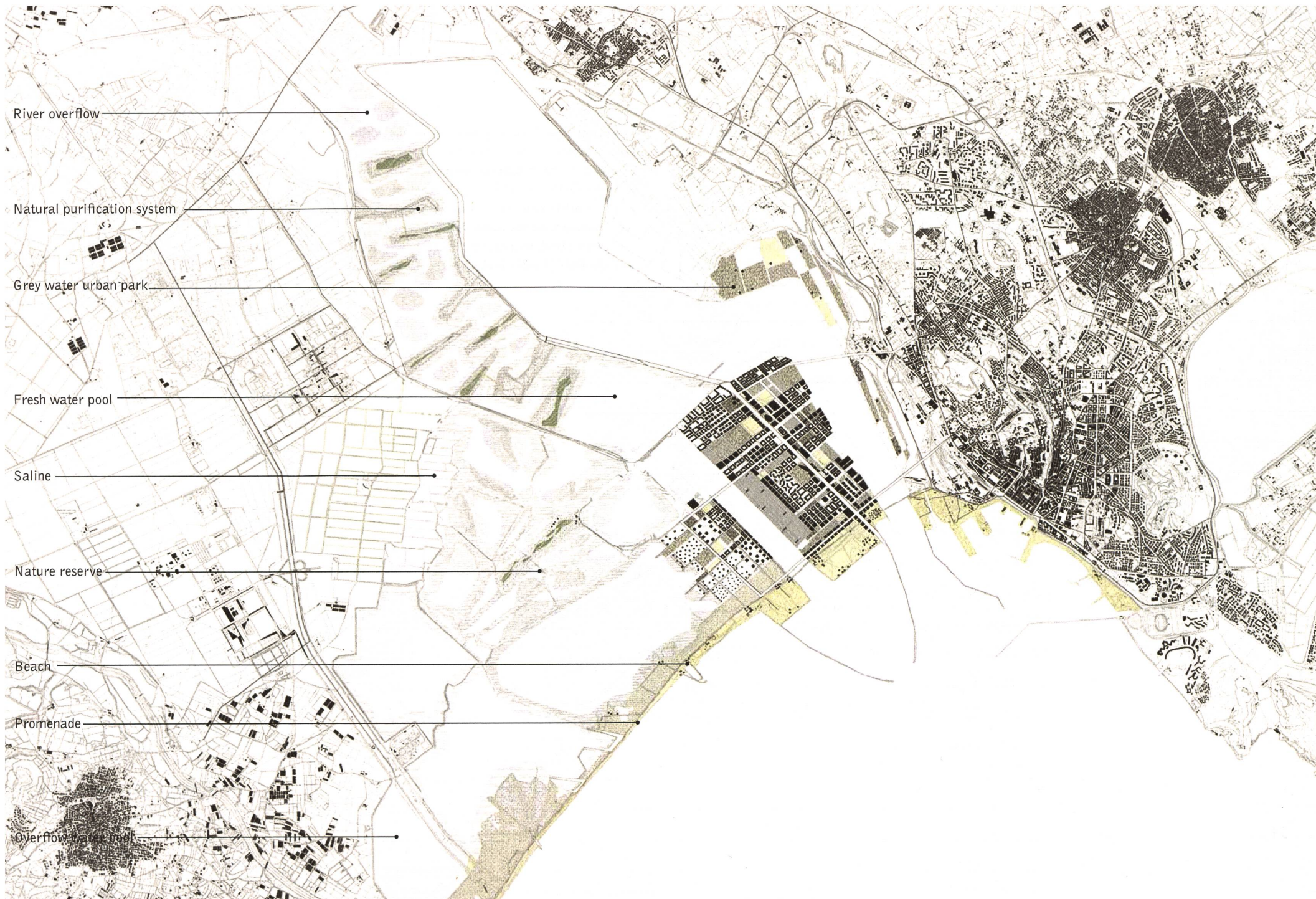
The natural edge of the nature reserve now fuses with the urban environment towards the west of the Porto Canale. Here we have various single family housing typologies, which become denser as we progress towards the Porto Canale. The vegetation and water of

the nature reserve filters into the urban environment, transforming it to create an urban park situation. Canals connect through to the core of the Porto Canale where the barges turn, and here we introduce a small harbor for private boats. The port at the Porto Canale remains intact and the surrounding land is built up with mixed-use structures providing residential, commercial, and cultural activities. We introduce a height limitation to keep building heights beneath that of the cranes, thereby preserving the skyline of Santa Gilla Bay and the importance of the industrial harbor. This area has a strong relationship to the port and its raw industrial character. The urban park filters through the urban environment, creating various urban park situations. Water is channeled through the urban environment and connects the water of the Porto Canale to the lagoon. The various housing typologies and relationship to urban park or water give each district a special character. The pathway on the dam of the natural water cleaning process runs through the urban environment and connects up with the jetty of Porto Canale to the south. The marginal area between the new urban island and the city of Cagliari also provides for various urban activities.

Directly across from the lagoon (*Lungo il Fiume*), we propose a new overflow water system for Cagliari so that water can be collected in times of heavy rainfall to feed the city's fountains and water the plants. This overflow system will be used as an urban park area, and we also propose an extension to the existing commercial industrial area of Cagliari. From Cagliari we propose a new connection to the urban island to link the shoreline of Santa Gilla to the city and further to Capoterra. This second east-west axis starts

in the city and meets the urban environment at the point of intersection with the dam pathway, our first main north-south axis. Here we have a further connection to our new beach area with cafes and restaurants to attract people to the area. This axis strip connects through the urban environment to the new beach area along the shoreline and further along to Capoterra and our new nature reserve.





River overflow

Natural purification system

Grey water urban park

Fresh water pool

Saline

Nature reserve

Beach

Promenade

Overflow water pool



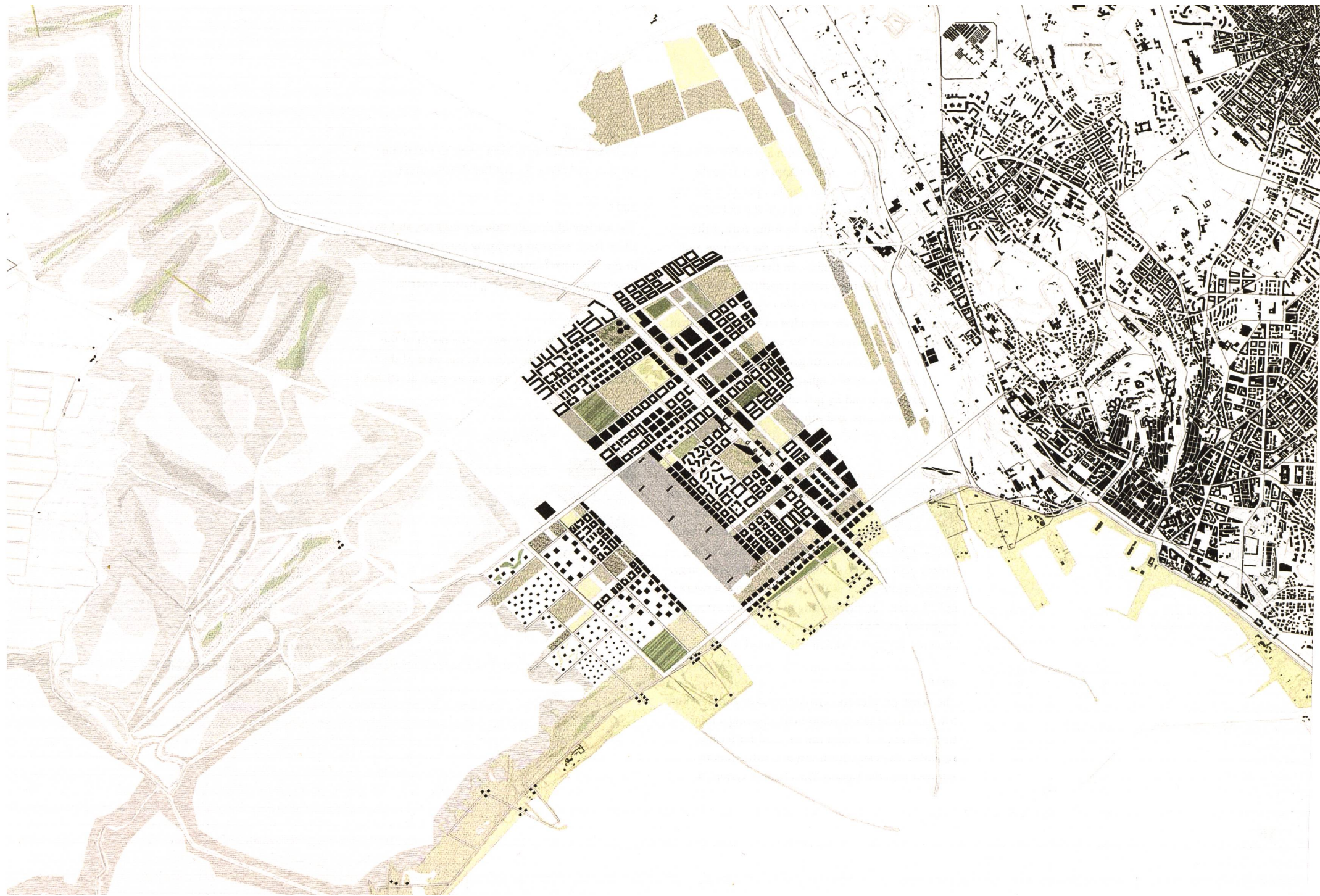
## URBAN STRUCTURE

Two axes intersect on the island, creating an urban center where commercial and cultural buildings are located. The east-west axis connects Cagliari to the shoreline, while the north-south axis prolongs the river dam and is the main artery of the new urban entity, accommodating public, retail and residential buildings. The canal system brings water to the city from the lagoon and provides access for boats to the Porto Canale and further to the nature reserve. The open voids allow the urban environment to be infiltrated by its environment, lending each district a different character through its relationship to water and the urban park. We aim to enhance the raw character of

the port in the surrounding area, and on the northern coast we plan to create a city directly at the waterfront. We propose a direct relationship between the new urban development and the edge of Cagliari, in which the dense urban structure is contrasted with the urban park situation used to manage overflow waters. On the eastern island, we propose a much lower density of single-family houses leading to the nature reserve.

Detail of the urban structure 1:25 000 ►







## PHASING

### 2010

We reactivate Santa Gilla Bay with a number of smaller interventions in which we attempt to change the way in which the people of Cagliari perceive the bay. Our first intervention occurs beside the industrial port where one of the cranes forming part of the Santa Gilla skyline will be lit up in the evening and made accessible to the public. In the same area, we propose to use the existing conditions and set up a market to encourage people to go to the area. These interventions are intended to encourage urban development on this island. We will also reactivate the shoreline by constructing a new promenade connecting the city of Cagliari to Capoterra through our urban island and by providing facilities such as cafes, restaurants, and other amenities.

### 2015

In this phase we commence restructuring the landscape for the planned natural water purification system, which will also be initiated at the same time. Urban development starts to grow from the intersection line towards the dam system. Having already activated the shoreline in the previous stage, we also create a new walking and cycling network in La Laguna, supplementing existing infrastructure by providing information about the area and allowing people to walk freely around the dams.

### 2020

The water purification system expands and develops towards the urban development, creating a final fresh water pool which can be used for leisure activities. The clean fresh water is subsequently released into the lagoon. The channel system is

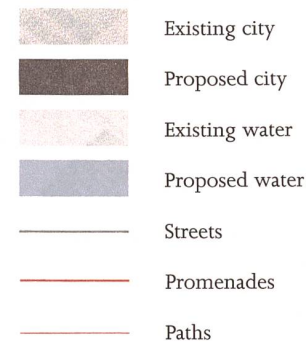
built into the urban environment to reactivate the area and allow for further development.

### 2025

The activity of the salt industry declines and we allow fresh water to gradually enter and mix in the salt pools, creating a new nature park that expands on the existing nature reserve.

### 2030

Urban development grows to the north of the urban island, and the island to the west of the Porto Canale develops. The nature park flourishes.



**2010**  
Reactivation interventions



**2015**  
Water purification system commences.  
Small urban district is established.



**2020**  
Water purification system and urban growth develop.



**2025**  
Water system expands to former saline industry.  
Urban growth continues to develop.



**2030**  
Nature park is established.  
Urban growth continues to develop.



SECTIONS – LUNGO IL FIUME

The sections give an overview of the natural water cleaning process and highlight a new relationship between landscape and water that benefits from the clean fresh water.

*Detail A* shows the new nature park. The different water pools at varying degrees of salinity and depth produce a variety of flora and fauna. People will discover the new landscape through an organized network of pathways.

*Section B* emphasizes the potential of outdoor activities taking place in close interaction with the diverse vegetation lining shallow saltwater banks.

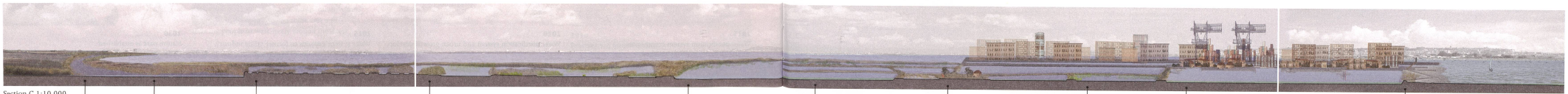
In *section C* the collected river water enters a pool with dense, robust vegetation to continue the meandering cleaning process. It enters a freshwater pool and finally mixes with saltwater in the nature park.



Detail A 1:200



Section B 1:500



Section C 1:10 000

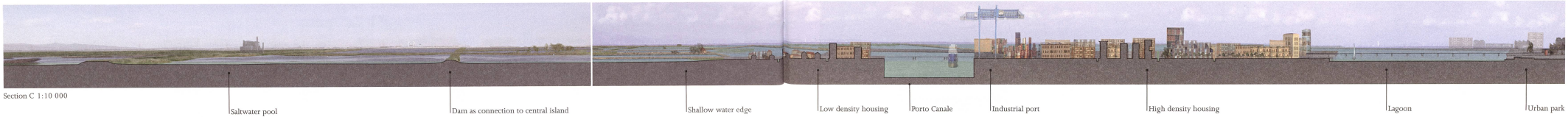
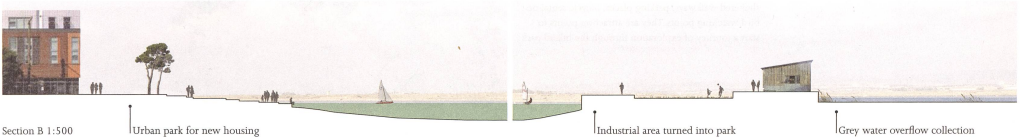
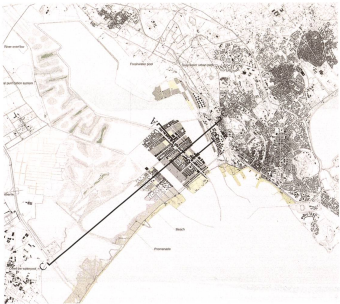
SECTIONS – ATTRAVERSO IL STAGNO

The sections visualize the cross-linking between the nature park, the urban extension and adjacent waters.

In *section A*, water-based living at the lagoon is suggested, profiting from the advantages of owning boats in a leisure harbor and other water activities.

*Section B* shows a public park for the new urban development facing the old city of Cagliari, which moves closer to the lagoon with the converting of the industrial area into public, open spaces for temporary events, spaces which can also be flooded in case of heavy rains.

In *Section C*, a network of paths spans the pools and links the landscape to the island. The urban development of the island increases toward the old city of Cagliari, facing it with a dense skyline. Open spaces and parks cut through housing blocks, allowing the environment to penetrate the island.



## SECTIONS – LUNGO IL MARE

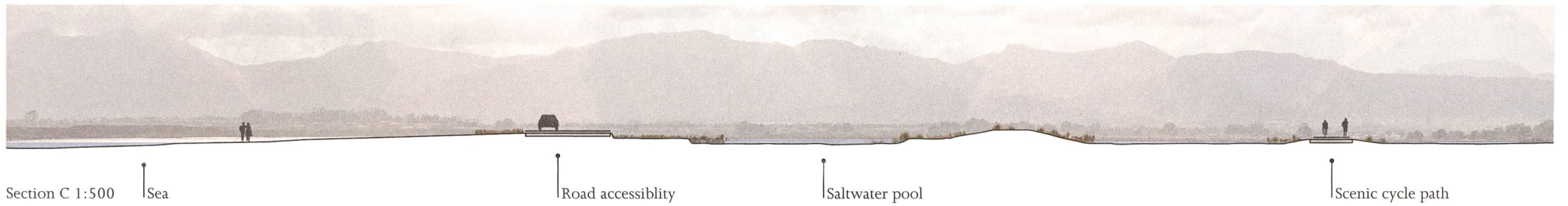
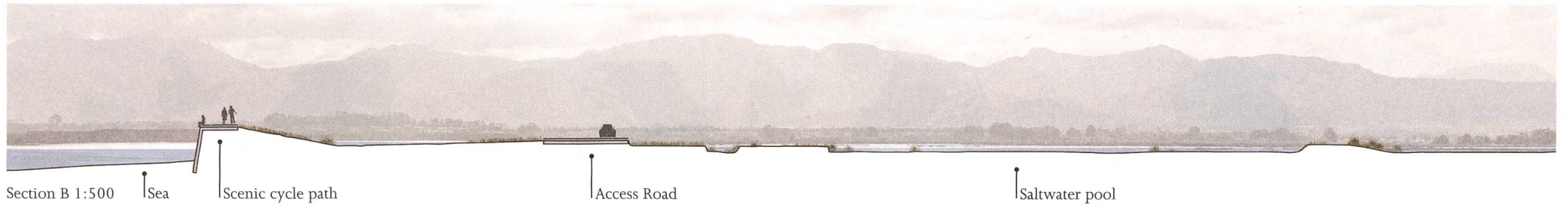
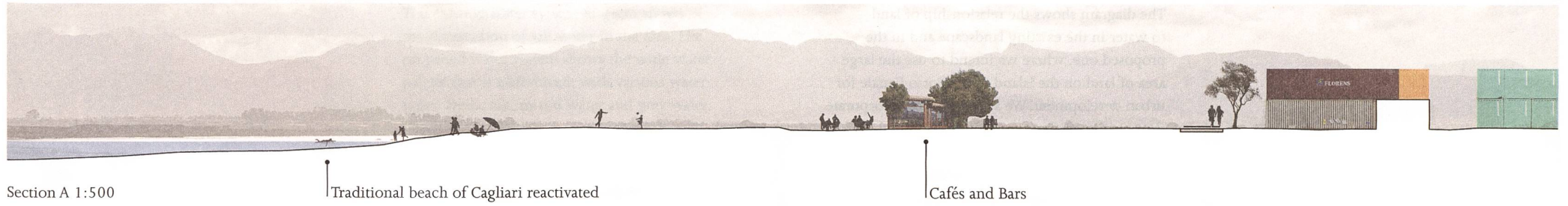
Cutting through the promenade along the sea, the sections show how this connection, from the city of Cagliari to the new urban development, finally reaches the nature park and serves to revive the traditional, now neglected beach.

In *section A* the pathway provides a base for all evolving activities, providing access to cafés and bars along the beach of the new urban extension.

As shown in *sections B* and *C* the promenade reaching the nature park will host intervention points with sheltered walkways, parking places, bicycle rental or bird watching points. They are attraction points to start a journey of exploration through the inland park.







LAND AND WATER

The diagram shows the relationship of land to water in the existing landscape and in the proposed one, where we intend to use the large area of land on the island of the Porto Canale for urban development. We also intend to incorporate the existing dam structure in our proposal.



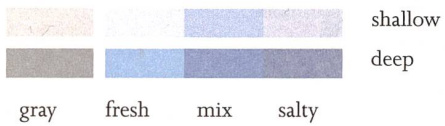
Existing land and water



Proposed land and water

## WATER SYSTEM

The existing water system diagram shows the domination of salt water in the area. The proposed water system shows the wide water palette that is introduced, with various water types: fresh, salt, mixed water and grey water.



Existing water system



Proposed water system





PROGRAM

In the existing program, industry clearly dominates the monofunctional uses in the bay. The situation will change through the expansion of the nature park and urban extension, which will initiate mixed uses.



Existing program



Proposed program

CIRCULATION

In the current situation, the bay is divided by a motorway mainly for through traffic. We propose diverting this traffic and restricting the bay to local access.







## IMPRESSIONS



Traditional beach of Cagliari reactivated





Natural water cleaning process





Urban park at the lagoon shore for new housing





Nature park with saltwater and freshwater pools