

Renaturalisation of the Orduña municipal public school playground

Orduña Town Council, as an activating agent of municipal policies for climate action, sustainability, and energy transition, has been able to transform their Infant and Primary School playground into a naturalised, healthy and resilient public space in the face of climate change and in response to the impact of heat waves and associated rainfall flooding. The project also has a clear purpose of integrating the educational community through which it aims to promote an innovative educational model that is closely linked to nature.

The project had a transformative objective to improve the adaptive capacity of the municipality, so the new space was designed so that it can be used by all citizens outside school hours, as an additional municipal green environment.



General view of the naturalised area of the school playground.

Type of NBS implemented in the intervention



Greening of school playground

The outdoor school space has a surface area of 3,314 m², 25% of which was occupied by green areas and 75% by impermeable paved surface prior to the intervention. Following the work carried out, which included the creation of **176 m² of new shaded areas**, the naturalised space has **increased to 1,736 m²** (52% of the total surface area), while the **impermeable surface area is reduced to 1,578 m²** (48% of the playground).



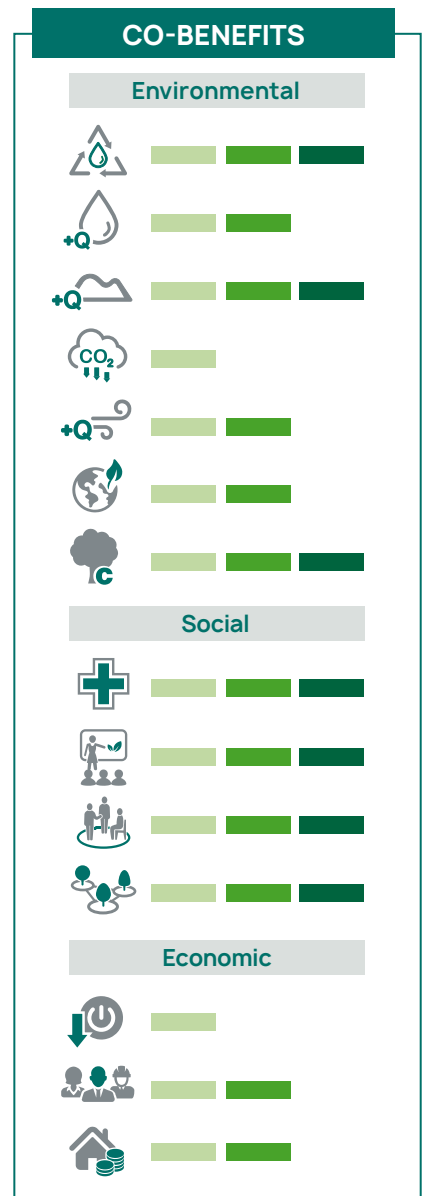
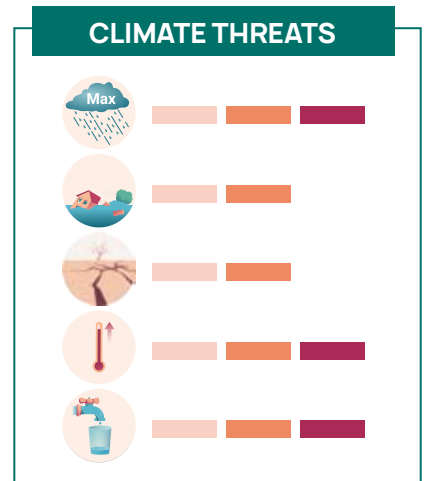
Topsoil in depaved areas.

Over **900 m² of reinforced concrete slabs** were removed as part of the works, which consisted of:

- Creating a **75 m linear windbreak hedge** around the perimeter of the playground with **120 low-growing trees**.
- Creating an edible garden-forest using permaculture and a vegetable garden featuring perennial plants, vegetables, flowers and undergrowth with **6 large trees and 14 low-growing trees and shrubs**. Mature compost and shredded clippings were used as substrate.
- Conditioning and modification of the existing green space, defining new levels and textures, using **350 m³ of topsoil**, green manure (oats, vetch and mustard), planting **350 plants of 25 aromatic species**, and a final top layer of shredded tree bark.



Edible forest and vegetable garden.



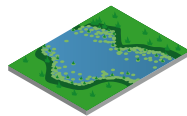


Rainwater harvesting

Connection of the school roof to an underground tank with a **capacity to store 10,000 litres** of rainwater to be used in an automatic drip irrigation system for some of the vegetated areas.



Drip irrigation connected to the rainwater harvesting system.

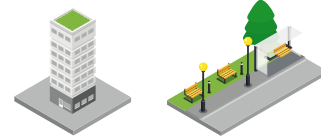


Pond

A **15 m²** wetland was created which is connected to the rainwater harvesting system. The wetland also receives water that overflows from the drinking water fountain next to it.



Pond and system to collect excess water from the drinking water fountain in the playground.



Green urban furniture

Construction of a **40 m²** roofed classroom with a wooden structure and green roof; an agora and stage with natural elements (wood and soil); and a play and workshop area with acacia and larch wood elements to ensure durability.



Agora, stage and roofed classroom in the background.



Play area with acacia and larch wood.

“ The project implementation process has brought about social learning. The participatory process carried out among all stakeholders to agree on the strategic objectives of the project has led to the new playground being recognised as an attractive place to gather and socialise both inside and outside school hours. ”

Municipal Technical Manager of Orduña Town Council.



Agents involved

- **Orduña Town Council:**
 - Mayor’s office
 - Urban Planning Department
 - Department of Agricultural Development, Administration and Municipal Brigade
- **Basque Government Department of Education**
- **Basque Government Natural Heritage and Climate Change Department**
- **URA - Basque Water Agency**
- **Educational community**
- **Municipal Community Service Group**
- **Cultural Association of Architects**



Economic data

Approximate cost of the intervention:
€ 235,000

Funding:
€ 162,000
(Local Climate Eco-Innovation Grant Programme, 2021; Inclusive Playground Grant Programme, 2022)



Lessons learnt

- The new space generated requires specific technical maintenance and an understanding of permaculture, a perspective from which the vegetated areas have been designed.
- It is important to ensure training and support for teachers to guarantee the educational use of the space in done in a way that looks after it correctly.



Success factors

A preliminary **diagnosis and analysis** phase was carried out to introduce the initial design proposal, **adapting it to the local context and to the needs of the educational community.**

All agents were involved from the outset through a participatory and collaborative process.

A Works Committee was created to coordinate and supervise the works, in which all the agents involved are represented.

Students were involved in conservation work for the various interventions, always from a pedagogical point of view based on education in nature and sustainability.

Entities with experience in initiatives of the same nature formed part of the project.