

Comprehensive refurbishment of the Natur Eskola school in Oñati using NBS

The Natur Eskola project arose from the need to fully refurbish the municipal school. The Oñati Town Council aimed to create a space connected to nature that is also aligned with its vocation for sustainable educational. In response, its proposal was to incorporate natural solutions both in the building itself and in the surrounding outdoor space.



View of the Natur Eskola from the outside after the intervention was completed.

Type of NBS implemented in the intervention



Extensive green roof

Surface area of 420 m² planted with species of the genus *sedum* (succulent plants). Total thickness of 11 cm, retaining approximately 30 l/m².



Green roof implementation process.



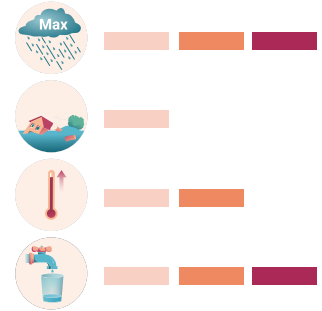
Natural façade

Façade design using an External Thermal Insulation Composite Systems (ETICS). The main façade uses straw as the insulating material and the ventilated façade is made using larch wood. The remaining façades have cellulose and wood fibre insulation and lime rendering.



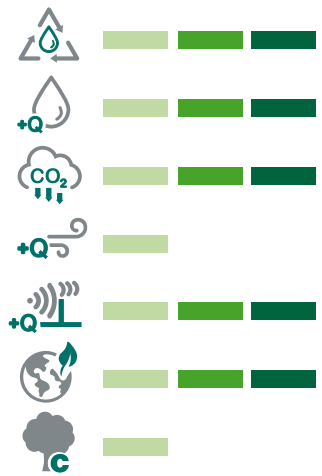
Outside of the Eskola and its natural façade

CLIMATE THREATS



CO-BENEFITS

Environmental



Social

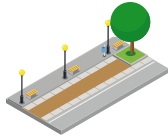


Economic



SDG



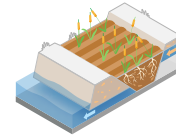


Permeable paving

The concrete paving slab in the outdoor courtyard and perimeter pavements was replaced with draining paving over an extension of **310 m²** with French drainage underneath it.



Drainage floor installed in the outdoor area.



Phyto-purification system

50 m² horizontal flow pond to treat grey water from the Eskola (there is no "black water" sewage as solids are separated in dry toilets) with a **treatment capacity of 20 equivalent inhabitants**.



General appearance of the artificial pond.



Dry toilets

The services were refurbished by installing **5 dry toilets and 2 dry urinals** to manage faecal waste and urine in an environmentally friendly way.



Dry toilets installed.



Solids management system.

“The commitment was to carry out a minor intervention, meaning many elements were preserved in their existing condition. Moreover, the refurbishment work was based on NBS, bio-construction, and reusing materials from the site itself, meaning that the budget was not very high. Any other approach would have been more expensive. In short, the objectives set have been fully achieved and Oñati will have a Natur Eskola for many years to come.”

Municipal Technical Manager of Oñati Town Council.



Agents involved

- Oñati Town Council
- URA - Basque Water Agency
- Natur Eskola's educational community



Economic data

Approximate cost of the intervention:
€1 M

Approximate cost of green roof:
€12,000

Approximate cost of façade:
€38,000

Approximate cost of dry toilets and phyto-purification system:
€30,800

Funding:

- **€35,000**
(Berringurumena Programme, 2018)
- **€532,000**
(TMA7178/2022, Ministry of Transport, Mobility and the Urban Agenda)



Barriers encountered

- Difficulty getting companies to tender. Traditional construction companies are reluctant to get involved in such projects.
- Complexity in coordinating the work to ensure all the companies involved complied with the project requirements.



Reduction of environmental impacts

Savings achieved with the 5 dry toilets, 2 dry urinals and the phyto-purification system:

- 73,000 litres/year reduction in drinking water consumption.
- 73,000 litres/year reduction in wastewater generated.
- 500 kg/year reduction in sludge generated.
- 200 kg/year of bio-compost generated.



Success factors

The project was conceived by the town council in a **comprehensive and sustainable way from the outset.**

The educational community was involved in the project: **the NBS implemented have been well received and integrated** into the educational programme.

Refurbishment using bio-construction and NBS criteria **has not proved to be more costly** than using conventional solutions.