

Constructed wetlands for waste water - zero liquid discharge, in the Poiana Florilor neighborhood of Piscu Romania

The overall goal is to implement nature-based solutions on a larger scale to increase resilience to climate change. The project was addressed to the community of residents from the neighborhood "Poiana Florilor", Piscu. The neighborhood is located 30 km from Bucharest, and is spread over a total area of about 2 ha, of which 0.5 ha are common spaces - access road, parking and green spaces. It comprises 25 plots, Ten of which have completed houses and an agro-tourism guesthouse, a craft workshop where specific activities are carried out with the aim of promoting and training a life in harmony with nature. The objectives were: the natural purification of waste water with constructed wetlands, equipped with a device to discharge the purified waste water from the constructed wetland only by forced evaporation, DAUZUC. The water treated through the constructed wetland is discharged into the atmosphere and not into the soil, onto the ground or watercourses, as in the case of sewage treatment plants and septic tanks, by using natural processes: capillarity, chimney effect and evapotranspiration, without: consumption of energy or chemicals and without periodic emptying.

Implementation in an ecological neighborhood of constructed wetlands with DAUZUC is a nature-based solution, enduranced to climate change.

Ten such systems have been installed, serving individual homes and an eco-friendly guesthouse.

The project is an example contributing to several Green Deal objectives such as: infrastructure planning to reduce costs, provide climate-resilient services and improve compliance with the requirements of the Water Framework Directive for better ecological status.

Centralized sewerage , septic tanks or micro-waste water treatment plants, are solutions that do not respect nature, are expensive, they affect nature, are subject to the negative effects of climate change and consume energy, chemicals. For centralized sewers and associated treatment plants, the increase in wastewater retention time due to drought and water economy will lead to changes in the composition of the influent wastewater. These lead to accelerated corrosion for the treatment plant, which can reduce the life and integrity of pipes, valves and other components.

In order to bring the aesthetics of nature into the spaces where we build the wetland, we have chosen native plant species that are the most suitable for the local environment. These native plants look healthy year-round, changing their appearance with the seasons and attracting local birds and insects to increase the area's biodiversity. It ensures not only a beautiful and natural area, but eliminates the need for maintenance resources (personnel, materials, water , for crop maintenance). The green infrastructure, with the wetland built by forced evaporation integrated, it fits harmoniously into the nature that surrounds it. Infrastructure is designed after the concept of biophilia : love for the nature and for other living beings. The design biophile imitate the nature in the spaces exteriors of the buildings we spend our time in, incorporating different elements of nature outdoors with the goal of improving people's health and well-being. The location of green infrastructure is chosen so that its construction in a strong and beautiful communal area delights citizens and helps to increase and protect local biodiversity. In order to bring the aesthetics of nature into the spaces where we build the wetland, we have chosen native plant species that are the most suitable for the local environment. These native plants look healthy year-round, changing their appearance with the seasons and attracting local birds and insects to increase the area's biodiversity. It ensures not only a beautiful and natural area, but eliminates the need for maintenance resources (personnel, materials, water , for crop maintenance). The green infrastructure, with the wetland built by forced evaporation integrated, it fits harmoniously into the nature that surrounds it.















