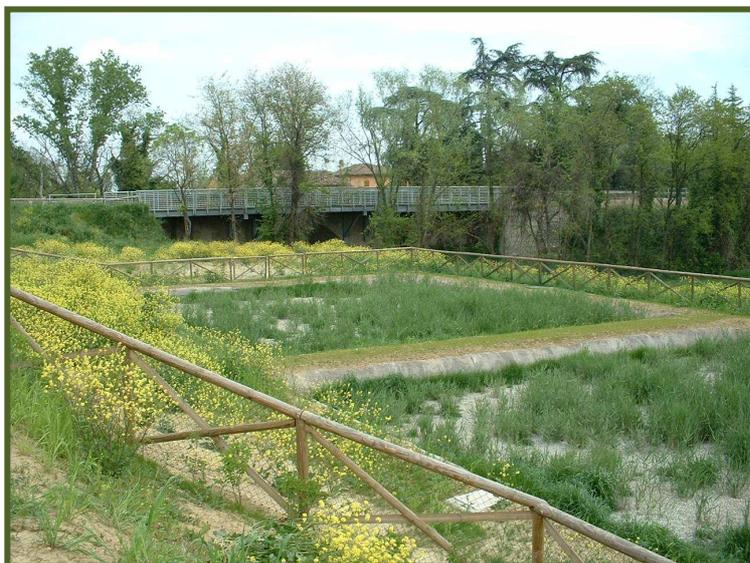


DOZZA CONSTRUCTED WETLAND TREATMENT PLANT



ORIGINAL NEED

The project “Sellustra Life – Planning and realization of integrated methods for restoration of the Sellustra hydrographic basin (Italy)” is included in the list of the 19 italian projects approved and financed for 2001 by European Commission in the Comunitary Programme “Life – Environment”.



Aim of the project is to design and guide public and private interventions finalized to reduce pollutants in the Sellustra River.

Aim of the project is to demonstrate the possibility to apply in an integrated way the use of constructed wetlands, the naturalistic engineering, and the vegetated buffer strips and to valuate the efficacy in improving the quality of waters by monitoring diffuse and concentrate pollution sources and in lessening soil erosion, and also in improving landscape. The proposed method consists in mixing productive activities (in which agriculture) with needs of preserving the environment and sustainable development.

LOCATION

Municipality of Dozza
Province of Bologna
Emilia Romagna
Italy

COMMITTANT

Municipality of Dozza

NUMBER OF PERSON EQUIVALENT

120

WASTEWATER TYPOLOGY

Urban

PLANT TYPOLOGY

SFS-h (2 basins in parallel)

AREA (M2)

360 (180 + 180)

COST

€ 58.000,00 (cost of the plant)
€ 1.800,00 l'anno (Management
and maintenance costs of the
plant)

YEAR OF REALIZATION

2002

DESCRIPTION

Constructed wetland plant included in this project treats a part of civil wastewater of the settlement of Toscanella, and it has a demonstrative aim of the efficacy of natural depuration systems in the treatment of civil wastewater (120 P.E.).

The plant has a very low environmental impact and can be used without dangers by visitors.



The scheme of the plant is the following:

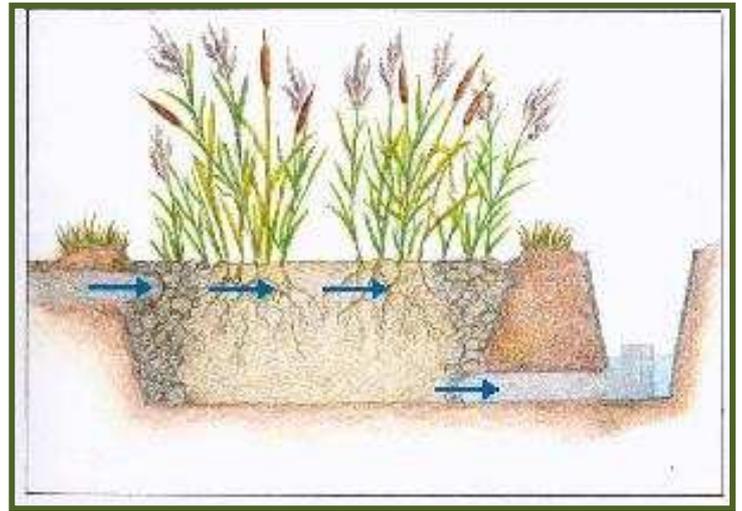
- inlet trap;
- Imhoff septic tank with a total useful volume of about 9 m³ ;
- constructed wetland with horizontal subsurface flow;
- regulations and analyzing traps;
- outlet in the Sellustra River .

The chosen secondary treatment (horizontal subsurface flow) is composed of 2 rectangular basins in parallel, with an useful total surface of 360 m²: this allows not to interrupt the flow into the plant in case of extraordinary maintenance.

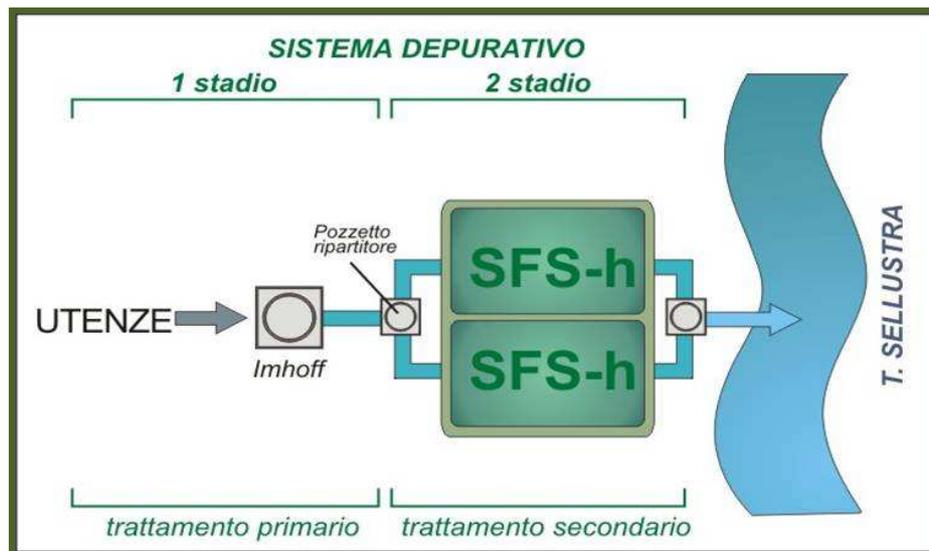
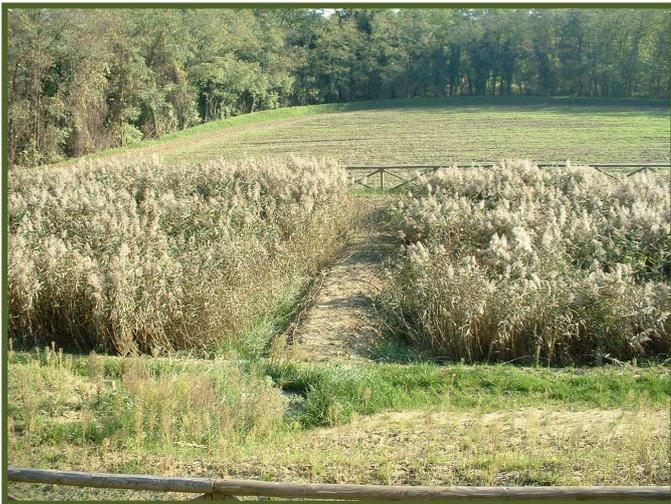
The treatment system is dimensioned with the aim of obtaining very good efficiencies in removing organic load, suspended solids and microbial load during all the year, and particularly in the summer when due to the low flows the river is more under pressure.



Basins are made by excavating the soil for a depth of about 1.2 m, are water-proofed by a geo-textile membrane in Pead, and are filled with design gravels.



A device at the end of the basins allows to maintain the wastewater constantly under the surface of the bed, avoiding aerosols, bad odours and insects development, being the plant near to houses. In the basins have been planted native vegetal species (*Phragmites Australis*).



Scheme of the plant