CONSTRUCTED WETLANDS SYSTEM FOR WASTEWATER TREATMENT IN THE VILLAGE OF CASTELLUCCIO DI NORCIA

ORIGINAL NEED

The constructed wetlands system in Castelluccio di Norcia fits into the general plan for the redevelopment and enhancement of the rural center of Castelluccio di Norcia, implemented by the Region of Umbria. After the completion of the sewerage system of the village, a constructed wetlands system has been designed in replacement of an old activated sludge plant no longer adequate.

The choice of a constructed wetlands system was dictated not only by the necessity of inserting the treatment plant in a context of very high landscape value such as the Pian Grande di Castelluccio (one of the few uplands of Italy, nestled in the Sibillini Mountain National Park), especially from having to face a strong fluctuation of the inhabitants, from a few dozen in the winter, to 1000 p.e. during summer and weekends.

LOCATION
Castelluccio di Norcia
Municipality of Norcia (PG)
Region of Umbria
Italy

COMMITTANT
Region of Umbria

NUMBER OF PERSON EQUIVALENT
1000

WASTEWATER TYPOLOGY
Urban

PLANT TYPOLOGY
RBF + VF + FWS

AREA (M^2)
2014

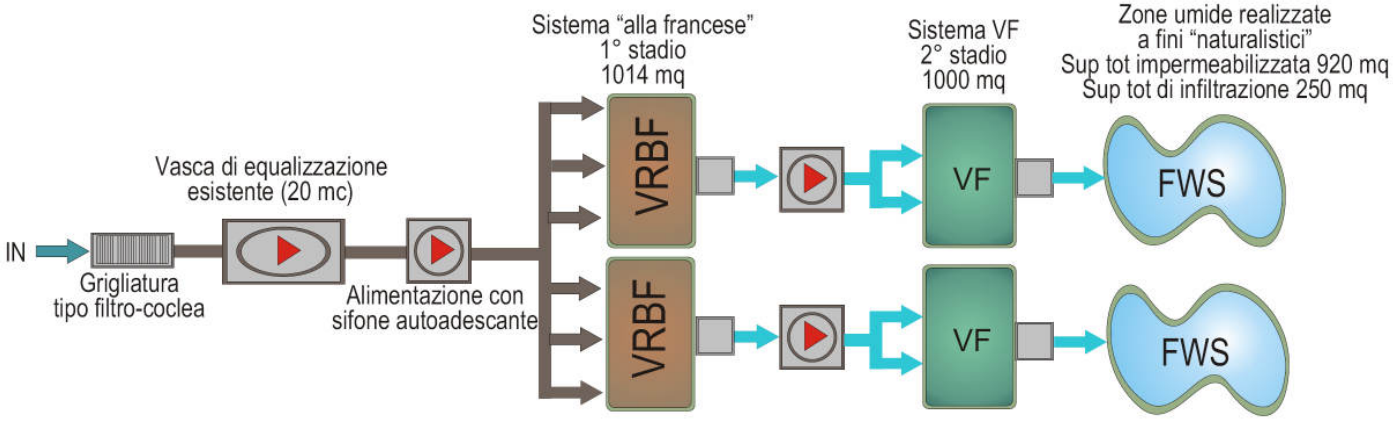
COST OF THE WORK
395.000,00 Euro

YEAR OF REALIZATION
2012

DESCRIPTION

The plant represents an innovation in the national scene as it uses a particular technique (French system) of purification, in which the primary treatment lacks the sedimentation phase and is composed by a grid and an equalization tank: in the first stage with "French " vertical flow reed bed filters (RBF) the solids accumulate on the surface and then it will be removed after 15-20 years and used as organic fertilizer in agriculture.

The second stage consists of two vertical subsurface flow basins (VF), confluent in two surface flow systems, which will provide the recreational aspects recreating wetlands with typical aquatic plants of the plateau and will promote the evapotranspiration processes. The effluent is finally reused for groundwater recharge, by an infiltration area connected to a subirrigation trench.



Block scheme of the plan

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