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for et renere miljø!

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Pilot project to build a system for treatment of sanitary wastewater chalet P.D. Ćusine, Jajce, Bosnia and Herzegovina



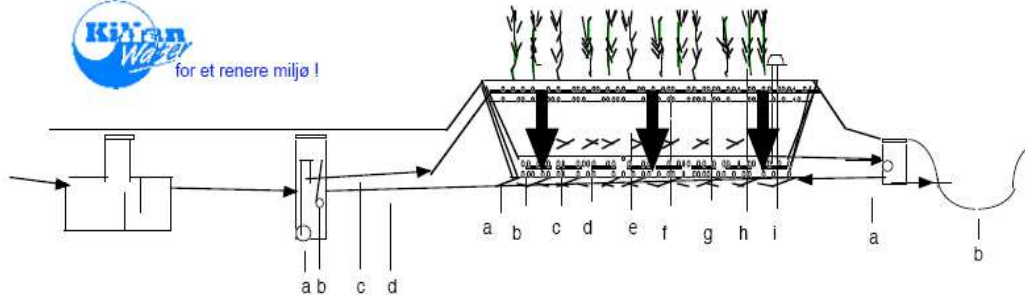
Planted filter - a modern kind of reedbed system with vertical waterflow

General sponsor of the project
The Municipality of Jajce

P.D. Ćusine in cooperation with UJ "Vodopad"

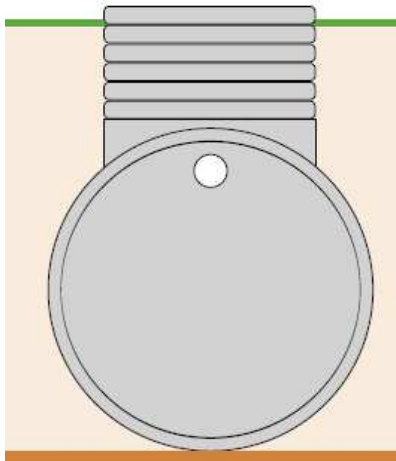
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When we are talking about the problem of sanitary waste water, planted filter has proven to be one of the best facilities, with the lowest percentage of technology and the highest proportion of nature and ecology.



The planted filter with recycling system.

The principle of this system resembles very much a natural system of wetlands, and can therefore be considered as a natural system, where a person has only given the system its shape and form. The first step is of course the sedimentation/septic tank from which the waste water goes into the pumping station, where it in small portions (60 l) under pressure is pumped into the filter. Vertical pressure of water is passing through the root zone and then in the end the water leaves the filter through the output drain. Treated water can now flow into the receiver from the exhaust-recirculation tank. Half the water returns back into the sedimentation tank or pump station, which provides better treatment of nitrogen.

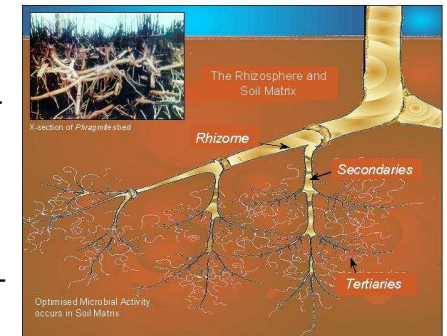


The planted filter itself is of course the most important part of the system where the treatment takes place. It can be installed in different levels in relation to the field. This is determined on the spot, and primarily depends of the terrain and soil type.

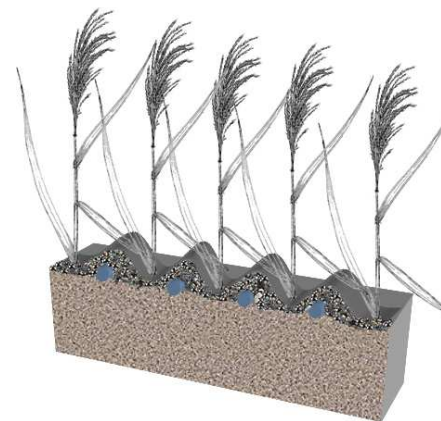
Number of persons	Number of households	Filter area
1-5	1	16 m ²
6-10	2	32 m ²
11-15	3-4	48 m ²
16-20	5-6	64 m ²
21-25	7-8	80 m ²
26-30	9-10	96 m ²

Filter size, as well as other filters, depends directly of how burdened the waste water is and of course of the number of users (PE - the equivalent of a personal: 60 gr. BOD₅, 13 gr. N/day and 2.5 grams. P/day, with an average water consumption of 150 liters per person). The table shows the surface the filter must have to satisfy SOP class treatment.

Planting reed makes this cleaner natural and very effective, if we know that Reed has a very large role in the treatment process, aeration and filter excess water evaporation. System is the root of this plant is so well developed that in fact only this segment was sufficient to perform the function of purification. Tim transported through the plant need oxygen to all parts of the filter and is therefore covered by the aerobic phase of treatment. In



addition the root system of reed gives the "skeleton" filter, thus preventing clogging of fine particle sludge in a sandy part of the filter.



On 1m² you have to plant 4 plants and they have to be apart of the pipe for the distribution of waste water, about 40 cm. For each household we need 64 seedlings of reeds.