Helofytefilters: simple and efficient

The helofyte filter is currently the most efficient water refining system on a small scale. It consists of a reed-land and can be used for refining dirty water from the households, hotels, restaurants and pubs or dairy cattle companies. And even for some sorts of industrial garbage water !

After refining, the water can be used to water plants, to flush the lavatory, to wash, to clean machinery, etc.

For dirty household water, a reed-land of 4 m² pro person will be sufficient. Besides reed, we can also use other helofytes (swamp plants): reed-mace, yellow flag, rush sorts. Reed has the advantage of being very strong and in the future it will compete with the other helofytes.

A helofyte filter can be composed of a simple flow field (a canal with reed), a root zone system (where water flows underground through the soil), or a "percolation" reed-land (the water is pumped up from a well and so the reed-land will be irrigated twice a day). Several systems can be combined, f.i. a percolation reed-land can be followed by a flow field by way of post-refining.

How does a helofyte filter work ?

The working is based on the fact that helofytes have hollow stalks and roots. The tubes bring air and also oxygen under the water-level. In and on the hollow root-stocks live bacteria. They need –besides oxygen- also nitrogen. This nutricious matter, they get from dirty water that comes on the reed-land regularly.

The bacteria digest the dirt in an oxygen-rich surroundings. This guarantees an odourless transposition of water, carbon, nitrogen (gasifies) and some phosphates that are bound to iron. This process is in glaring contrast with the putrefaction that takes place in filthy, oxygen-free water courses without plants, where black, stinking dirt originates.

Presentation:

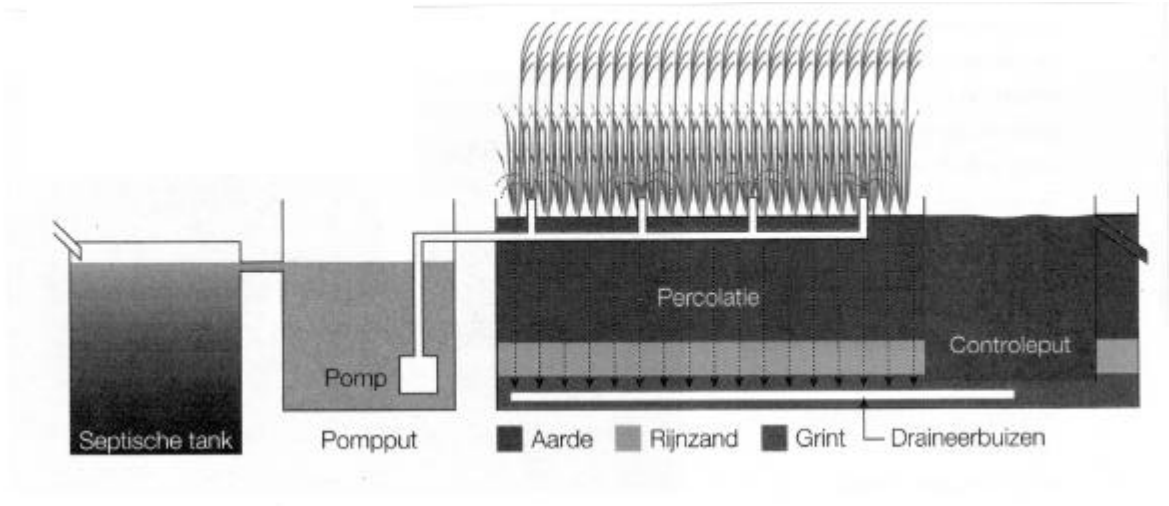
Capacity : 2 dwelling houses (10 persons)

Surface : 12 x 2 m

Depth: 1 m

Material costs : ± 1239,47 EUR

Energy comsumption: ± 17,35EUR/year



Translation:

septische tank = collectiontank
percolatie =percolate
rijnzand = sand
pomp = pump
controleput = control area
grint = gravel
pomput = pumptank
aarde = ground
draineerbuizen = drainpipe