

PLANT GROWTH PURIFICATION STATION

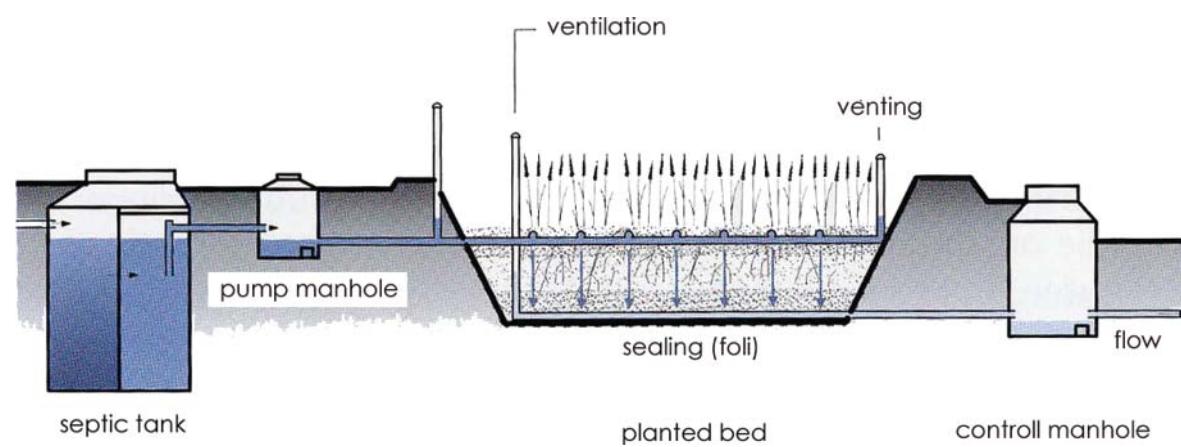
1) Septic tank for pretreatment of domestic black water:

Septic tanks keep the swimming substances as well as the disposable substances. Due to its sized Dimensioning of 1500 l per inhabitant (entire capacity min. 6 m³) is the flow period about 10 days. This allows the microorganisms containing in the sludge to clean the water not only mechanically but also partly biologically. The accruing sludge has to be removed from the septic tank every five to eight years.

2) Plant bed:

is basically a soil filter, which is overgrown with marsh plants (reed). It is being charged vertically. A bad smell is very possible, so that it is better for the plant to be located outside of the settlement. It is also recommended to connect the flow to a controll shaft, which allows purification level checking. The purified water is supposed to be led into the Cabeceira river, which closes the local water cycle.

The investment costs are relative low and the plant integrates excellent by its vegetation in the landscape.



We plan to situate the membrane -filter plants generally to the northeast of the settlement area (on the right of the water divide) because the putting up of plant growth purification stations is not really possible on this side. Firstly, because of the industrial area SCIA on the southeast, which constantly expands, occupies the free terrain and do not allow draining of purified water. Secondly, because of the old landfill area to the north east, whose soil pollution level is so high, that the purified water draining is not possible again. We use the membrane-filter plants also by medical facilities and by all facilities, where chemicals in the waste water

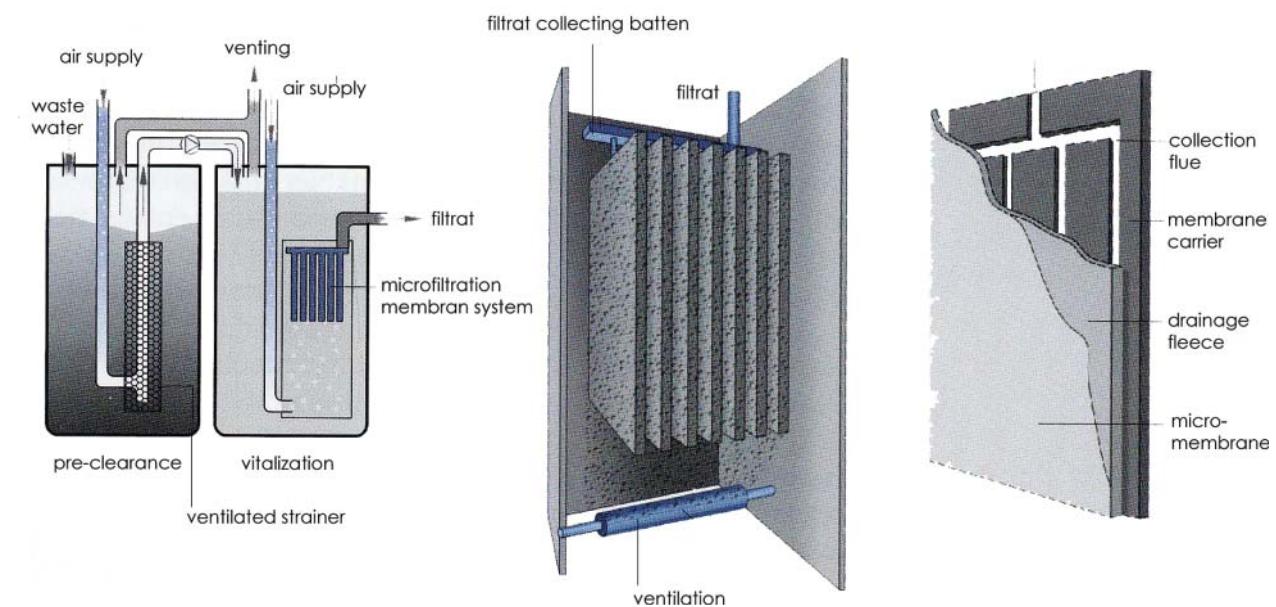
MEMBRANE-FILTER PLANT

The membrane filtering is a new technique of waste water treatment, which allows beside the usual carbon and nutrient elimination complete filtration of all fungi and bacteria, but not in any case that of viruses. After the mechanical pretreatment comes the degradation of the organic components in the vitalization basin by means of microorganisms and oxygen supply.

Finally the water is flowing through a microfilter with a pore size of 0,1 - 0,4 micrometer and this is the level of physical treatment.

the plant needs a little space to be set up, but it depends on electrical power. The micro filter method is suitable for treatment of any kind of waste water but preferentially it has to be applied where service water is needed (for toilet flushing or garden watering). The excessive water flows over into the trough along the street.

The membrane-filter plants exceed the capacity of conventional waste water purificaton plants and the cost per inhabitant is comparable.



could be found, for example by the chemist, haircutter, pharmacy, car repair shop etc. The plant growth purification stations will be situated mainly on the south / southwest of the settlement (on the left of the water divide), along the Cabeceira do Valo river and the highway.

This exemplary division of the two systems - on the left/ on the right of the water divire do not have to be taken over absolutely in the dewatering planning. It should be determined for every single quartier and every single house, which of the both methods is more useful.