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Sewage sludge treatment plants

Sewage sludge is a component of wastewaters, that has to be separated from the water. Most of the well known technologies use equipment for this separating. Sewage sludge treatment plants are using a natural process of separating: raw wastewaters are pumped onto the surface of a specified constructed wetland. The sewage sludge continues on the surface of the reed filter, while the water sinks to the ground of the sealed up basin.



A sewage sludge treatment plant in combination with a constructed wetland for 80 persons, built 2001, Altenrode, Germany. Photo taken in May 2009 by Clemens Dwornitzak, Germany

The water will be collected on the ground and derived from the basin into the following constructed wetland (reed bed sewage).

The sewage sludge on the surface dries without objectionable smell, because no decay processes can emerge in the aerobic milieu. The volume of the sewage

sludge will be reduced to 10 % and less of the originally volume during the drying.

Roots of the reed use parts of the water and aerate the specified sand-gravel filter / the growing up sediment. In a sewage sludge treatment plant the growing up of the sludge sediment will attain 1 – 2 cm in a year.



Photo taken in May 2009 by Clemens Dwornitzak, Germany

After 20 years the sludge sediment will be removed and the sewage sludge treatment plant can be used for the next period.

To accomplish the purpose, a sludge treatment plant needs only a surface of 2 m² per person, dimensioned on the bottom of the basin. Every sludge treatment plant consists of the minimum of two identic basins, wich will be charged in rotation. Every basin has one pipe to be filled. Greater plants (greater than 50 persons) have two pipes in every basin and in charge rotation, so that ´s enough time for drying the sediment.

The basins are sealed up with a film of 1 mm. It ´s the most used solution. It may be also possible to build them with concrete (waterresist and more expensive) or with clay (very expensive and must be done with an certified clay)

In combination with an constructed wetland a sewage sludge treatment plant is a very simple and tough solution for rural areas.