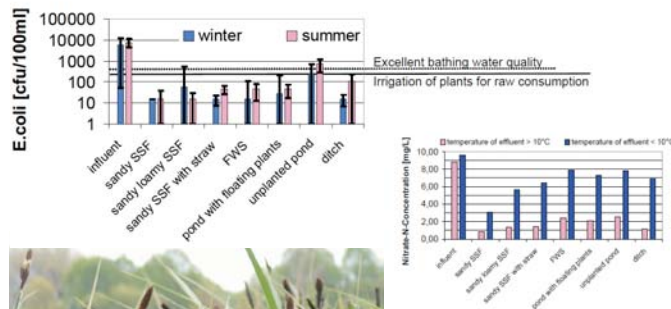
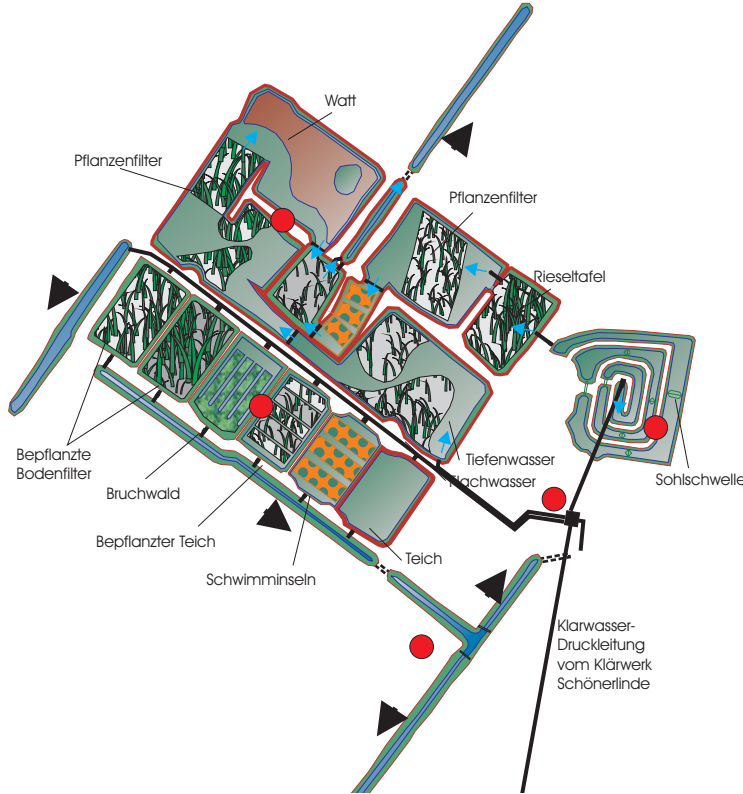


Constructed Wetlands for Multipurpose Treatment and Use



EXPERIMENTAL FIELDS AT HOBRECHTSFELDE

A cost and energy efficient solution for wastewater reclamation and re-use



Tertiary treatment by Constructed Wetlands is the most efficient way of removing pathogens from wastewater either for subsequent re-use in agriculture or for improving water bodies according to EU Waterframework Directive.

Hygienisation

The reduction of *E. coli* in 7 wetland cells was factor 14 for unplanted cells up to 459 for sandy subsurface flow wetland. The effluent concentration was less than 63 cfu for all of the planted cells (Ruehmland *et. al.*, 2008)*.

Denitrification

The performance of Nitrate reduction was more than 70% for all wetland cells at temperatures > 10°C

Biomass Production

The annual growth of *Phragmites a.* could be estimated to be 20 Mg/ha dry matter. That means an energy crop of at least 400 GJ/ha/year.

Costs

Estimated investment costs are 30 EUR/m². That means 1,53 EUR/m²/year.** Operation costs may be less than 0,1 EUR/m²/ year. With an annual hydraulic load of 36,5 m/year total costs reach 4,5 Cent/m³.

* Ruehmland, S.; Barjenbruch, M.; Rustige, H.; Heinzmann, B.; Duennbier, U. (2008): Comparison of seven Cws and Ponds for Advanced Wastewater Treatment, IWA, 11th International Conference on Wetland Systems for Water Pollution Control, Institute of Environment Management and Plant Sciences, Vikram University, Ujjain, INDIA
 **(n=30, i=3%)

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