

SKOVSGAARD GODS

Constructed wetland to treat wastewater and produce water for irrigation

Type of pilot measure:

Intensified constructed wetland

Location:

Skovsgaard Gods, Langeland, Denmark

Site:

Skovsgaard Gods

Applied solution:

Intensified constructed wetland with aeration and effluent recirculation

Treatment capacity:

Up to 60 PE in summer / 1–2 PE in winter

Utilisation:

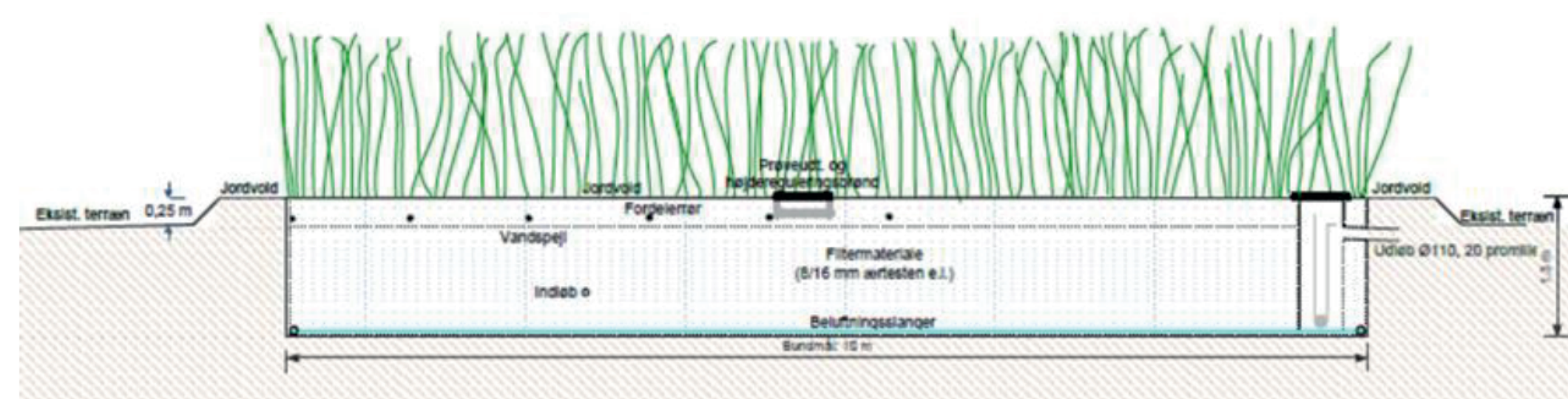
On-site wastewater treatment and potential reuse of treated wastewater for irrigation

Responsible: Danmarks Naturfond

Skovsgaard Gods is located on the Danish island of Langeland and receives most visitors between April and September. The amount and composition of wastewater vary considerably depending on visitor numbers and activities. Previously, raw wastewater was collected in a septic tank and transported to Rudkøbing WWTP, but increasing activities created a need for a local treatment solution.

An intensified constructed wetland was installed at the site, designed for up to 60 PE in summer and 1–2 PE in winter. The 60 m² system uses controlled aeration and recirculation of treated effluent. The pilot also investigated wastewater quality, irrigation requirements and methods for further phosphorus removal, including membrane filtration and adsorption.

Monitoring showed around 70% phosphorus removal, while COD concentrations in the treated wastewater remained around 25 mg/L, well below the national limit of 75 mg/L for municipal WWTPs. Reducing aeration from 12 to 6 hours per day halved compressor energy consumption without significantly affecting treatment quality. The effluent met Class C requirements for reclaimed water for irrigation, although its use for irrigation was not permitted in Denmark. For further phosphorus removal, adsorption using Polonite, Filtralite or LDH was identified as the most promising approach



Principle of the constructed wetland (@ Kilian Water)



Skovsgaard Gods with the location of the intensified constructed wetland and a zoom of the area

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