

Phytoparking

Local waste water treatment system
without 'footprint'



Dion van Oirschot

Director Rietland bvba
Tilburg (NL) / Minderhout (B)
www.rietland.com

Constructed Wetlands

Perfect marriage between nature and technology

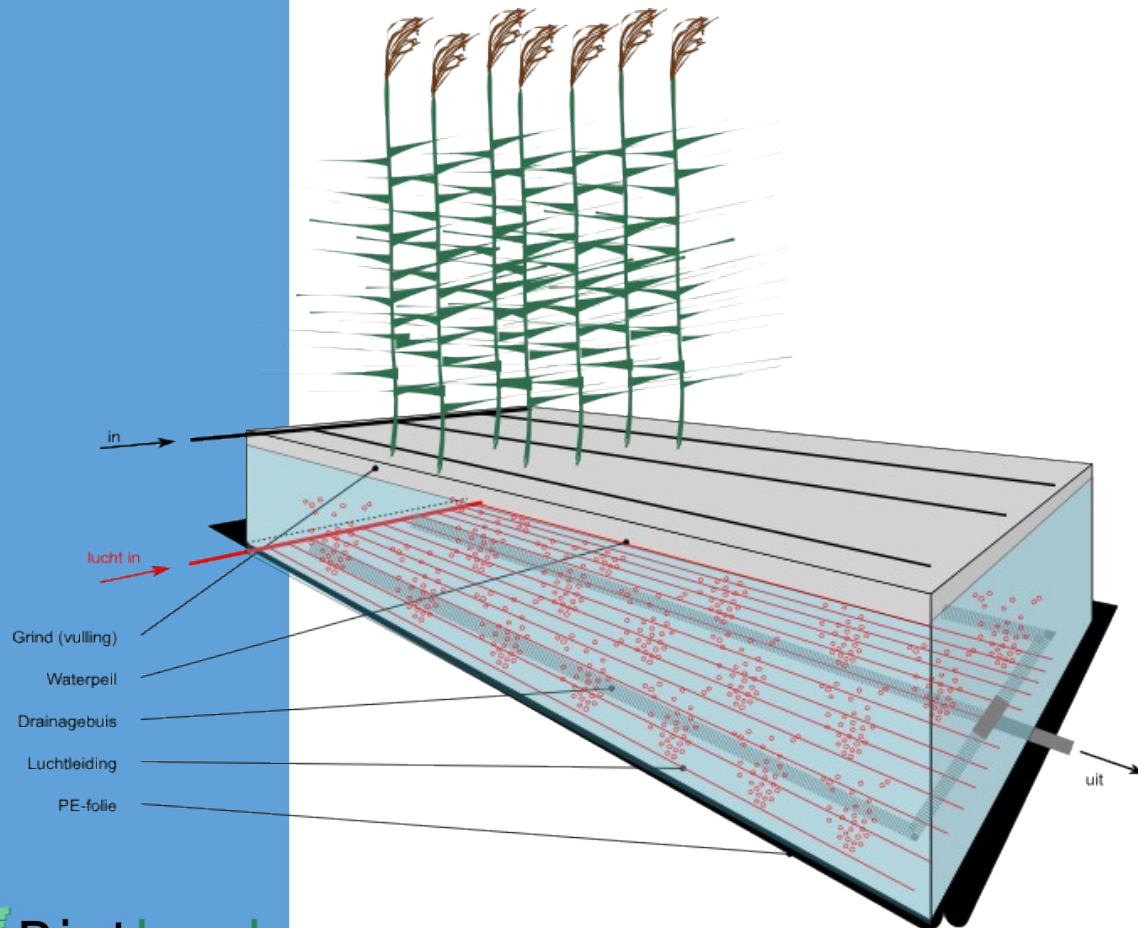


- Low Energy Usage
- Robust at varying loads
- Low maintenance
- Relatively large footprint (area)

aerated constructed wetland

Phytoair

Innovation NWC (USA) – licence Rietland



- Surface area 4 x smaller: 0,75 m² per PE
- Very high treatment efficiency
- Energy usage < 30% compared to technical installations of same capacity
- Flexibly adjustable for varying loads: – variable aeration
- Lower costs compared to classical constructed wetlands

Effluent results sanitary waste water

Phytoair

Loodglansstraat, Harbour company Antwerp
(sanitary waste water office building)



BOD	< 3 mg/l
COD	13 mg/l
Kj-N	1,7 mg/l
NH4-N	0,4 mg/l
TP	0,77 mg/l (Argex + tobermoriet)
SS	< 2 mg/l

Treatment results industrial

Phytoair

Frupeco Lendeledede: fruit peeling company

Aerated wetland 1.650 m²



mg/l	in	out	rem. %
BOD	4.440	14	~100%
COD	6.086	105	98%
TN	5,8	<2	66%
TP	4,0	0,17	96%
SS	152	12	92%
Flow	20 – 40 m ³ /day		

Treatment results pharmaceuticals

Phytoair

Huize Walden, Westmalle (healthcare home)

PhD research Hannele Auvinen (Univ. Ghent)



Medicine	in	out	rem. %
ng/l			
ATL	5.570	90	98%
BSP	5.670	10	~100%
CBZ	20.580	1280	94%
DZP	40	< 10	78%
DCF	5.040	50	99%
GBP	7.910	< 10	~100%
MFM	50.660	< 10	~100%
MTP	410	< 10	98%
STL	680	30	99%
TMD	42.180	< 10	~100%

Innovation Rietland:

Phytoparking



- Treatment system under parking with grass.
- Net footprint: 0 m²
- Dual purpose: parking and waste water treatment
- Integration with stormwater infiltration possible
- 1 parking place = 16 PE



Construction

Phytoparking



- Air and water passing pavement out of PE
- Distribution pipes service friendly in gutters
- Substrate: Argex®





Thank you for your attention!



Kruibeeksesteenweg 162
Zwijndrecht (Burcht)
tel. +32(0) 3 250 15 15

www.argex.eu

Netherlands
Rosmolenplein 34
Tilburg
+31 13 544 65 99

Belgium
Van Aertselaerstraat 70
Minderhout
+32 3 294 02 65

www.rietland.com

