

ENVIRONMENTAL TECHNOLOGY



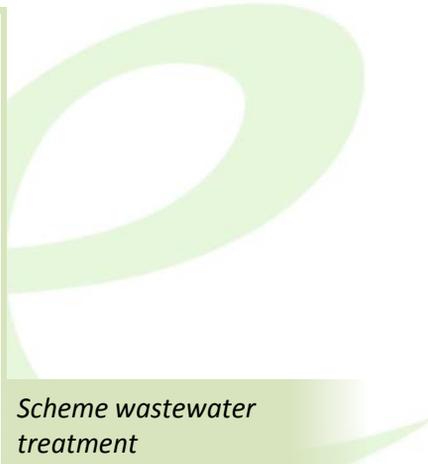
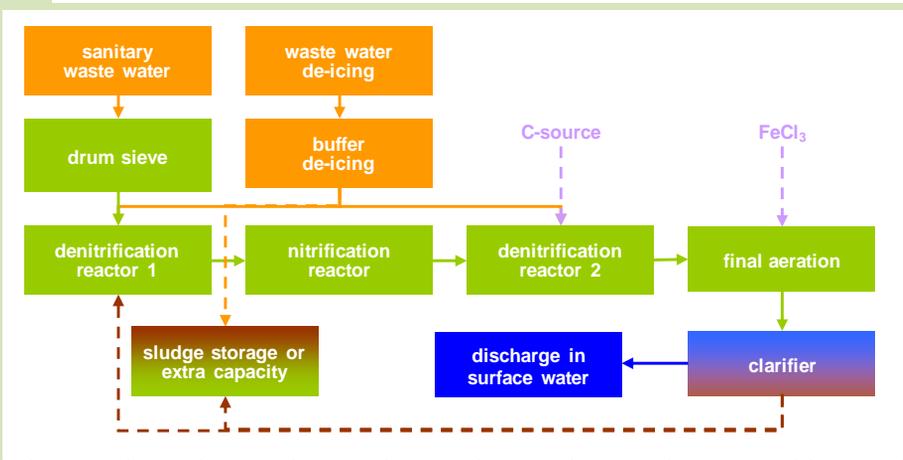
BRUSSELS AIRPORT - Zaventem (B)
 Biological treatment of wastewater

Brussels Airport takes care of the exploitation of the airport in Zaventem. All activities together comprise approximately 260 companies and 20 000 employees. Besides thousands of staff members also a daily average of 30 000 passengers are passing the terminal buildings.

The sanitary wastewaters from the terminal buildings of the airport itself and from more than 300 landing aircrafts per day, along with the wastewaters (polluted rain water) originated by the aircraft de-icing are treated in its own biological wastewater treatment plant.

TREVI was responsible for the design and construction of this plant and ensures the daily monitoring and maintenance.

The sewage water is first treated by a drum sieve. The biological treatment consists of an activated sludge system with the following 4 reactors: a first denitrification step, a nitrification step, a second denitrification step and a final aeration reactor.



Scheme wastewater treatment

The flexibility of the water purification is guaranteed by a multifunctional basin. This basin can be used either as sludge storage tank either as additional treatment capacity for the processing of the de-icing waste water depending upon circumstances.

In total up to 2400 m³/d waste water is treated, which represent a dirt load of 9800 kg COD and almost 420 kg N per day.

The capacity of the installation (based upon the COD-load) equals 73 000 inhabitant equivalents (IE).

The total volume of the biological basins amounts to approximately 5100 m³. For the treatment of the de-icing wastewater this volume can be extended temporarily with 3000 m³ by switching the function of the sludge storage into a purification basin.

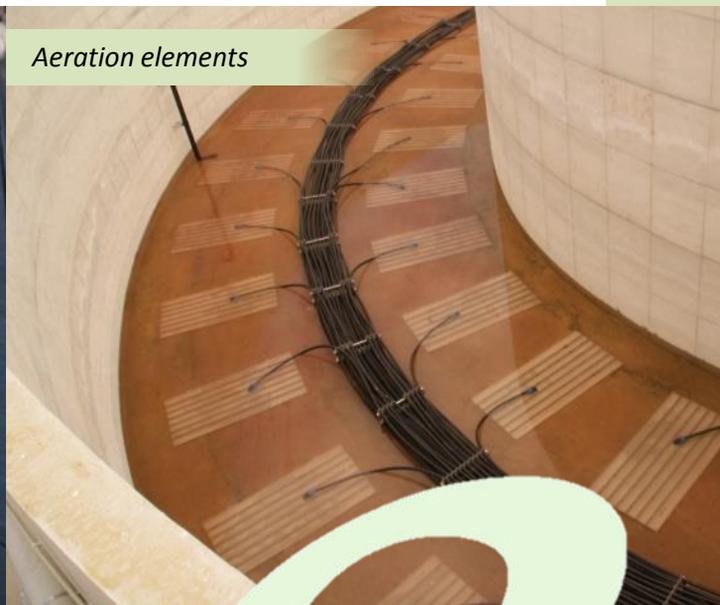
The biologically purified wastewater is separated

from the activated sludge in a clarifier of 1650 m³. The effluent passes a measuring flume and is discharged into the nearby surface water. The settled activated sludge is partly circulated to the first denitrification step and partly drained to the sludge storage tank.

The destination of the de-icing wastewaters is chosen in function of the composition which is continuously measured by means of a TOC-analyzer. When the pollution ratio is high the de-icing waste water can be stored in a temporary buffer basin of 1500 m³ and treated gradually. If no pollution is present, the water can be discharged without treatment. If the water is polluted, it will be treated in the first denitrification step together with the sanitary sewage or in the available expansion capacity. The de-icing waste water can also be used as a carbon source for the denitrification process in the second denitrification step.



Air pipes



Aeration elements



Trevi nv
Dulle-Grietlaan 17/1
9050 Gentbrugge
Belgium

T +32 9 220 05 77
F +32 9 222 88 89
E info@trevi-env.com
S www.trevi-env.com

ISO 14001
ISO 9001
VCA
BE 0447.717.158

Trevi is a Belgian company with a team of specialized professionals at its disposal: environmental consultants, process experts, programmers and installers. This diversity offers you as a client the advantage to solve all environmental problems with only one partner in all disciplines: water, air, soil and energy as well. Our consequent approach by research, pilot tests, design, realization, start-up, follow up and exploitation guarantees the provided quality.