

**Tallinn Zoo**

A Mellifiq reference project

A polar bear is shown swimming underwater. The bear is white and has a blue collar around its neck. The water is clear and blue. The bear's head is in the foreground, looking towards the right. Its front paws are visible, and it appears to be holding something. The background shows the water's surface and some light reflections.

# Tallinn Zoo cleared the water

**Better view for the polar  
bears Aron, Friida and  
the visitors**

**MELLIFIQ**

## Tallinn Zoo, Tallinn, Estonia

Tallinn Zoo was founded on August 25, 1939. The first exhibited animal was a cute lynx cub. It was named Illu and later became the zoo's emblem animal.

Tallinn Zoo holds one of the best collections of mountain goats and sheep in the world. The zoo also holds a great number of eagles and vultures and a fine collection of owl and crane species.

Today, the Tallinn Zoo exhibits one of the most fascinating zoo collections in Northern Europe and has been successful in the reproduction of their nurselings.

### Facts

Name:	Tallinn Zoo polar bear park
Location:	Tallinn, Estonia
Industry:	Zoo
Purpose:	Protein removal and water sanitation

### Solution:

#### Ozonetech RENA Pro C6

Dimensions (HxWxD):	1,600 x 800 x 800 mm
Input power:	2.5 kW
Noise level:	49 db



The ozone system was integrated into the new facilities from the start (to the left). The RENA Pro C6 system with integrated cooling system installed at Tallinn Zoo (to the right).

## The problem

Tallinn Zoo has undergone substantial renovation. The zoo was in dire need of upgrading the facilities to make sure best possible conditions for the animals and to attract more visitors. One of the main attractions, the polar bears, were in particular need of a robust water treatment system. The reason is the heavy load of proteins and other organic material which accumulate in their water. If the proteins continuously could be removed it would not only lead to better conditions for the polar bears. It would also give the visitors a better view through the underwater display glass the zoo installed as a part of the renovation.



*Treating the water gave a better view for both the polar bears Aron, Friida as well as the visitors.*

## The solution

In order to clarify the water from particulate protein residues, skimmers were installed in the water treatment system. In addition, the zoo selected Mellifiq to design a solution which enhances the protein removal process by particle coalescence. Protein particles can then be removed mechanically with ease. We delivered and commissioned the Ozonetech RENA Pro C6 system. By request of the Tallinn Zoo engineering team, we tailored the systems controls to ensure stable dissolved ozone concentrations even at highly variable treatment flow

rates. The solution comprises a cascaded flow-oxidation potential controls with a Human-Machine- Interface with touch panel, integrated into the advanced control system. The high concentration ozone gas is continuously injected into the skimmer gas-liquid injectors. Control signals from downstream flow-meters and ORP sensors are continuously measuring the load and performance of the treatment system. The delivery from us also included ambient ozone detectors and a network of sound and light alarm stations in case of any skimmer ozone leaks.

## Evaluation

Tallinn Zoo has since its grand opening in September 2017 successfully treated the polar bear swimming and drinking water with the unique engineering and controls custom-made for the facility. Friida and Aron, the majestic polar bears, can now rely on clean water. The Ozonetech RENA Pro system has been stable providing very precise dissolved ozone concentrations.

*“Mellifiq was the only party involved that could deliver the customized controls.”*

Klaus Spitzer, Design Consultant

# About Mellifiq

Mellifiq is a multi-awarded environmental service company group, that has since the early nineties evolved into a world leading system and solution provider with multiple groundbreaking applications for industrial, municipal, and real estate clients. We supply cutting-edge technologies to manage the most sophisticated air, water, and energy challenges.

Mellifiq offers a complete range of air and water treatment technologies and solutions across multiple industries such as processing industry, energy sector, food and beverage, pharmaceutical, wastewater treatment and commercial real estate.

Mellifiq offers strong and renowned brands, such as Ozonotech, Nodora and Water Maid, and world-class engineering services combined an excellent track record of more than 40 years of innovation. We help our clients achieve the most efficient and sustainable solutions while creating the maximum value for their businesses.

With several business units across Europe, Mellifiq is headquartered in Stockholm where research and development, production, QA and certification all take place. Our unique technology and our extensive expertise have made us the Center of Excellence for the world's most complex projects, and a global player with installations on all six continents.

Everyday millions of people rely on our solutions for ventilation, disinfection, sanitation, and odor control. We are committed to raising the bar for the concept of clean and the industry standard for engineering, technical services and general contracting.

For additional information, visit our website at [www.mellifiq.com](http://www.mellifiq.com)

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