

Nereda: The **green revolution** in wastewater treatment

Nereda® is a revolution in the making. A natural solution to wastewater treatment, it is sweeping aside technology used for the past 100 years, bringing health and environmental benefits in its wake.

You don't have to be a water engineer to appreciate the significance of Nereda for the wastewater industry. Here are the facts. This revolutionary technology is entirely based on natural ingredients. It requires a quarter of the space of traditional installations, uses less energy in operation and provides higher quality purification.

But actually, its significance goes beyond wastewater. The development of Nereda is a triumph for those who assert that science, engineering and industry, working in partnership really can develop new technologies and practices to address major global challenges.

PARADIGM SHIFT IN WASTEWATER TREATMENT

The story of how Nereda has inspired a paradigm shift in wastewater treatment started more than 20 years ago in a laboratory at Delft University of Technology in the Netherlands. It was here that researchers discovered a unique group of bacteria that removed unwanted pollutants from used water. From this breakthrough it was surmised that an advanced biological wastewater treatment technology was possible which would harness the unique features of aerobic granular biomass.

INNOVATIVE PARTNERSHIP

An innovative partnership was constituted to develop the process into a commercially viable technology. It included Royal HaskoningDHV, the Delft University of Technology, the Dutch Foundation for Applied Water Research (STOWA) and six Dutch Water Boards.

“It has been a co-production requiring stamina and endurance so we were lucky to have very good partners,” said René Noppeney, Global Director for Water Products and Innovation at Royal HaskoningDHV. “The invention moved from the laboratory to real-life application to pilot installations and culminated in the

opening of the world's first operational municipal plant in the Dutch town of Epe.”

NEW WORLD STANDARD IN WASTEWATER TREATMENT

It was the opening of the first Nereda plant at Epe in the Netherlands two years ago that ignited international interest. Now the exponential rise in Nereda plants across the world has begun.

“Aerobic granule treatment is the next technology and is here to stay,” says René. “The great benefit of Nereda is that it is proven in practice in a full scale installation. Its features and benefits provide solutions to the problems that many of our clients are facing so there is intense interest. Every week new delegations visit the Epe plant to see it in operation. This will be the new world standard replacing activated sludge processing which has been with us for 100 years.”

Effective wastewater treatment is vital for public health and to avoid pollution of water sources and the wider environment. In developing countries, UN figures indicate that 80% of sewage is discharged untreated into water bodies. In developed countries, population growth and urbanisation is putting pressure on



existing wastewater infrastructure. The creation of this cost effective, sustainable and simple solution for sanitation will bring significant social and environmental benefits in its wake.

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NEREDA IN A NUTSHELL

- For 100 years activated sludge has been the standard processing treatment for wastewater.
- The Nereda revolution will benefit millions of people who either do not have access to wastewater treatment or whose existing plants are under pressure from rising urban populations.
- Nereda is sustainable and cost effective, purifying water using the unique features of aerobic granular biomass.
- Nereda plants require a quarter of the area of traditional installations, the process consumes much less energy, and it is entirely based on natural ingredients.
- Proven in practice in a full scale installation in the Netherlands, Nereda plants are in prospect across Europe, Australia, South America and South Africa. Agreements have been signed which will see the construction of up to eight Nereda installations in the UK and at least 10 in Brazil.
- In what is, by necessity, a conservative industry, the dramatic levels of interest and speed of adoption reinforce the revolutionary nature of Nereda technology which heralds a new, more sustainable approach to sanitation.
- To find out more about Nereda, please visit royalhaskoningdhv.com/nereda

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Photo courtesy of Benno Wonink