

A vertical photograph on the left side of the page shows water falling from a dark pipe into a clear stream, set against a blue sky with light clouds. The water is in motion, creating a blurred effect.

# An introduction to EPAS

## Process-technical advice for your water and wastewater treatment plant

In response to the growing demand for professional environmental process and technological advice, EPAS (Eco Process Assistance) was founded in 1992 as a spin off from the Laboratory for Microbial Ecology of Ghent University.

## Our core business

EPAS specializes in the treatment of wastewater and provides process and technical advice to industries all over the world covering a wide range of technologies, including microbiological and physico-chemical treatments.

## Advice supported by in-house lab research

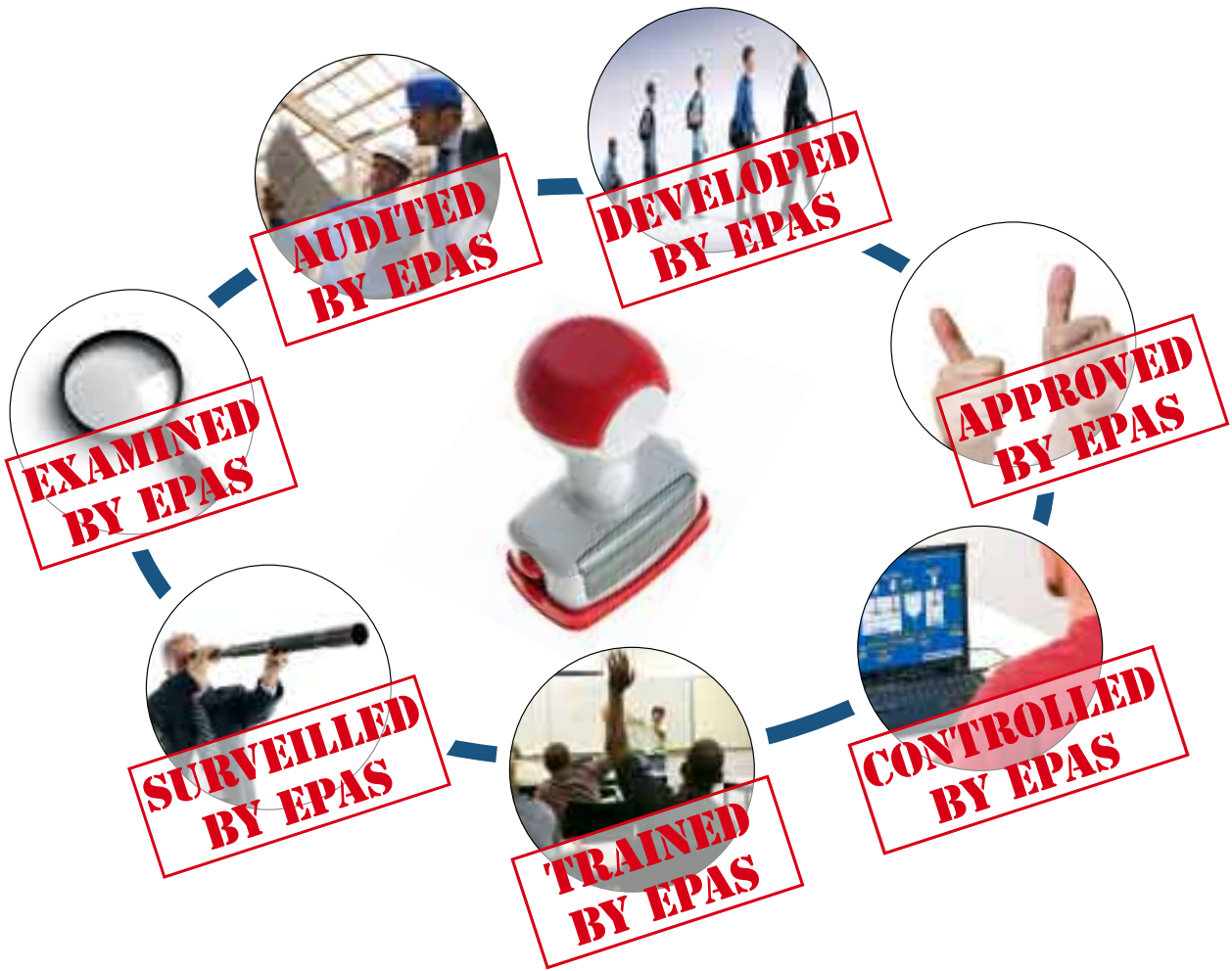
EPAS invests heavily in our own research facilities where we can test all common and advanced wastewater purification techniques. Modern microscopical equipment ensures that we can perform detailed analysis of the microbial community in biological wastewater treatment systems. Our in-house research enables our engineers to examine and propose the latest and innovative technologies for the optimisation of processes or the remediation of specific problems.

## EPAS in space

EPAS has been chosen by the European Space Agency to contribute to the development and realization of bio-regenerative life support systems. The closed-loop system for food and oxygen will be applied in the ISS (the International Space Station) and in permanently manned space stations like on the Moon and on Mars.

## Why work with EPAS?

1. Two decades of experience
2. High-qualified team of engineers
3. Professional and up-to-date services
4. Independent advice
5. High level of customer care



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# Optimize your process

Real advice for real solutions

**EPAS**  
ECO PROCESS ASSISTANCE



## Environmental impact assessment

Environmental Receptors are complex eco-systems with different trophic levels present. The effluent from wastewater treatment plants is usually characterised using physico-chemical parameters like COD, BOD, nutrients and other individual components. However, these parameters do not give us an indication of the total environmental impact or toxicity of the effluent on the receiving water. EPAS can determine this ecological impact using several ecological tests on different aquatic organisms.

## In-house lab and pilot scale research

Investing in a new waste water treatment plant? Upgrading or improving the existing system? You want to validate new technology? A new installation or a modification to an existing plant is not a decision that should be taken without proper evaluation. Proper testing in order to fully understand the impact of any modification is essential to the success of any project. Laboratory tests can give a lot of information and pilot scale tests can provide the final answer.

EPAS has a highly equipped laboratory together with the infrastructure for pilot-scale testing to fully examine the possibilities of technologies and their application.

## Microscopic characterization

The performance of most installations is monitored through the measurement of COD, BOD, N and other parameters. The essence of the process however, namely the health and quality of the activated sludge, is often overlooked. Cultivation of biomass is essential for the effective management of an active sludge installation. Microscopic characterization of activated sludge is one of EPAS' core activities and through analysis of the sludge properties we can offer several support packages and hands-on training courses to help maintain good health and performance of the facility.

## Training for the industry

Knowledge and understanding is the key to stable water and wastewater treatment. EPAS provides training tailored to the needs of those employees responsible for the daily operation of the water treatment plant. We offer them the back-up knowledge required to operate efficiently. Our unique combination of theory training and practical techniques, tailored to your own treatment plant, will provide a maximum knowledge within a minimum time span.

## Environmental protection

There is increased focus on socially and environmentally responsible planning and environmental protection forms an increasingly important part of business management objectives. EPAS can help companies to obtain, strengthen and improve environmental performance.



# Assistance to the industry in water treatment

## Supported by EPAS

A treatment plant requires continuous monitoring and adjustment according to the advice of experts and will never run on 'automatic pilot'. The quality of the wastewater and hence the operation of the installation may vary from day to day. EPAS will regularly advise you about the operation of your waste water treatment plant.

## Assisted by EPAS

Whatever the immediate **problem** (toxicity, nitrogen removal, washout of solids etc.), EPAS has the resource to act on it quickly. EPAS provides on-site assistance in order to resolve the problem and will find the fastest and most effective solution to bring the situation back to normal.

## Audited by EPAS

Environmental legislation steers industry to comply with stringent standards and to aim for a continuous improvement of discharge water quality. EPAS combines production and process **audits** with an **environmental impact assessment**. This enables EPAS to match the treatment regime with the ecological needs therefore allowing the successful negotiation of site-specific standards for treatment effluents with the authorities.

End-of-pipe solutions can work but **good housekeeping in production** is the best way of increasing and maintaining treatment efficiency. Quality management with the efficient **use and reuse of water** and raw materials will result in less pollution and higher savings.

Prevention is better than cure and EPAS can audit your existing production facilities providing unbiased advice for the optimization of both the operation and configuration of the treatment plant. With the emphasis on process changes rather than expansion of the plant, the maximal performance of the wastewater treatment plant will be obtained.

## Innovation

Through bold and imaginative research we are working to create the environmental management of the future; we always endeavor to improve our knowledge with the results of the latest research and technology. Our commitment to innovation and continuous improvement allows us to serve our customers and partners at the highest standards both now and in the future.



## Design: tailor made solutions

### Life Support by EPAS

Several space organisations (NASA and ESA) are preparing for more space journeys to celestial bodies like the Moon and Mars. The new generation of life supporting technologies required for deep space applications mirror the ecosystem on earth and the way in which resources (water, food, oxygen) are reused here. The development of "Life Support" technologies is more important than ever in the space programs and EPAS has taken an important pioneering position in the field.

### Lost in information?

Many organizations hold an extensive collection of facts and figures in different file formats and from several sources. Compiling management reports or making decisions based on such information can be highly ineffective and leads to lost time. EPAS developed the D-MISS® concept in order to stimulate the easy collection and interchange of information. The D-MISS® platform will collect, transform, interpret and present all your information from different platforms and sources in a convenient way.

### Controlled by EPAS

A wastewater treatment plant is a dynamic system. Changing influent flow rates and contamination loading can heavily disturb the performance of the system. The traditional way of solving this problem is to increase the size of the reactors.

EPAS does better. Advanced control can eliminate the influence of variations in wastewater production and load. Furthermore, the dosing of chemicals for pH correction, sedimentation and micro-nutrient addition can be automated therefore avoiding a substantial overdosing. We can assist you in the integration of controllers in new or existing PLC systems, and we will give you all the necessary advice required for efficient operation.

### The construction of a waste water treatment plant on the agenda?

EPAS does not design and build turn-key projects, however can provide independent guidance through the complete project. We can advise on the right concept and coordinate the completion of the plant and through evaluation of the different offers from constructors and engineering companies we can help to make sure that the right technology is bought at the right price.

## Independence

EPAS has no direct links with suppliers and constructors, and can therefore guarantee independent assistance based solely on scientific, technical and economical facts.