
**Organica Wastewater "garden" technology joins BlueTech Forum**

**Localized treatment specialist reimagines wastewater to optimize economic efficiency**

Localized wastewater treatment specialist Organica Water will join the Innovation Showcase at BlueTech Forum in San Francisco on 1 June. Organica has taken a highly imaginative approach to the problem of wastewater treatment in urban and suburban areas with high densities of population. Driven by the fact that ~90% of total treatment costs lie in the sewer network and that land value destruction is typical of the traditional approach, an Organica-powered facility is more than just a wastewater treatment plant. It is also a water reclamation garden, educational facility, and symbol of sustainability in the community that enables cost-efficient water reuse and allows for maximized development opportunities - particularly in populated areas where footprint and odor are significant concerns.

Attila Bodnár, executive vice president of Organica Water says, "Traditionally, wastewater treatment has been achieved with large, odorous plants with strong negative impact on the community, thus forcing them to be located far away from people. At the same time, all over the world rivers are running dry making treated wastewater an inevitable alternative source of water. However when the plants are located so far from population centers it requires massive infrastructure to pump it back, making reuse uneconomic. Organica's holistic approach directly addresses the issue by focusing on efficiency both inside and outside the facility."

**Integration of Disciplines**

Drawing on a decade of design-build experience in wastewater treatment infrastructure, and integrating it with Bodnár's expertise in architectural design, in 2008 Organica decided on a new venture – enabling project delivery companies all over the world to build small-footprint wastewater 'gardens' in populated areas.

"Unlike most companies in our industry, Organica is not just a process technology company. While we do offer a patented, efficient, process inside the four walls of the facility," says Mr Bodnár, "our real focus is on directly addressing the total cost of treatment by developing localized solutions that integrate into any population center. To achieve this goal we focus on the integration of all engineering disciplines – process, mechanical, civil, electrical, controls, and architecture – in order to minimize capital costs,


maximize operating efficiency, and create iconic structures, such as the Water Resource Centre in Sechelt, a suburb of Vancouver, Canada."

**Efficient treatment**

Bodnár says, "In the past we have used both traditional suspended growth and a patented SBR technology, but today our main offering is a fixed film system called Organica FCR, the Food Chain Reactor. The system leverages plant root structures as prime real estate for the micro-organisms that break down the contaminants in the wastewater to populate and thrive. We put both natural plants and engineered root systems (Biomodules) on top of the reactors to provide a maximum area for biofilm growth."

In an Organica FCR facility, the root structures reach into the reactors where a diverse community of bacteria attaches to each root, creating a staged biofilm system that consumes the contaminants at a faster rate than traditional activated sludge. Different ecologies form at each stage of the process – creating a sort of "food chain" effect – that ultimately helps drive down energy costs and sludge production.

**Innovation Case Studies**

Organica will be sharing two projects with delegates at BlueTech Forum. The first is the retrofitting of the 30,000 $m^3$/day Heyuan wastewater treatment plant (WWTP) north of Hong Kong. The installation of an Organica-powered wastewater garden there has significantly increased the quality of water discharging to the Dongjiang River, which supplies drinking water to the city.

The second project is a new-build WWTP at a large industrial park in Jakarta, Indonesia. The need for additional throughput led to the construction of a 45,000 $m^3$/day plant, which has doubled capacity and halved the physical footprint of the legacy installation – freeing up land for sale which repaid the CAPEX of the facility in <3 years.

The case studies will outline the key value proposition that caused the clients to select Organica, lessons learned during the implementation, and implications for future similar projects.


**Cost reductions**
Speaking of the Jakarta project, Attila says, "Comparatively, the capital investment cost for a traditional WWTP plant and one incorporating an Organica-powered WWTP are similar. However, the Organica facility uses much less energy – between 30-40% less – which makes operational costs much lower. You can then add in the lower sewer network costs and land value – tenders in Asia often include land value –and further gains are made."

Glen Daigger, O2 Environmental Technology Assessment Group member and a proponent of a decentralized approach to wastewater treatment, says, "Tremendous urbanization is taking place and water and land are becoming increasingly scarce, especially in Asia. By making local wastewater treatment more efficient and aesthetically attractive, Organica is helping to close the loop on water reuse - keeping the resource close to where it's needed, minimising land-take and reducing energy consumption."

**Transformative**
Paul O'Callaghan, chief executive of BlueTech Research says, "Organica has a transformative vision for the future of wastewater treatment. The company's wastewater solutions bring the natural world into towns and cities, creating new spaces and enhancing quality of life for residents. "The company is not only enhancing sanitation and process engineering, it is changing the relationship of communities to the environment, waste and resources. I am delighted that they will be joining us at BlueTech Forum on 1st June."

We believe that a shift to more "local" treatment and re-use represents one of the shifts that we will see in the decades ahead, hence we selected Organica for the Innovation Showcase, as it ties to the overall theme for BlueTech Forum this year, 20:20 Vision – Insights to Future Proof your water strategy'. Organica represents the next generation evolution of this concept marrying fixed film and IFAS processes with natural plant based systems that can be located virtually anywhere.

The Innovation Showcase provides a unique opportunity for BlueTech Forum delegates to hear case studies from innovative companies, each representing a different thematic area linked to where BlueTech predicts the water sector is heading. Senior company representatives will introduce delegates to the technology concept, its value proposition, the influencers on the choice of technology and what this means for future rollout.

**BlueTech Forum is taking place on 1st June in San Francisco.**

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