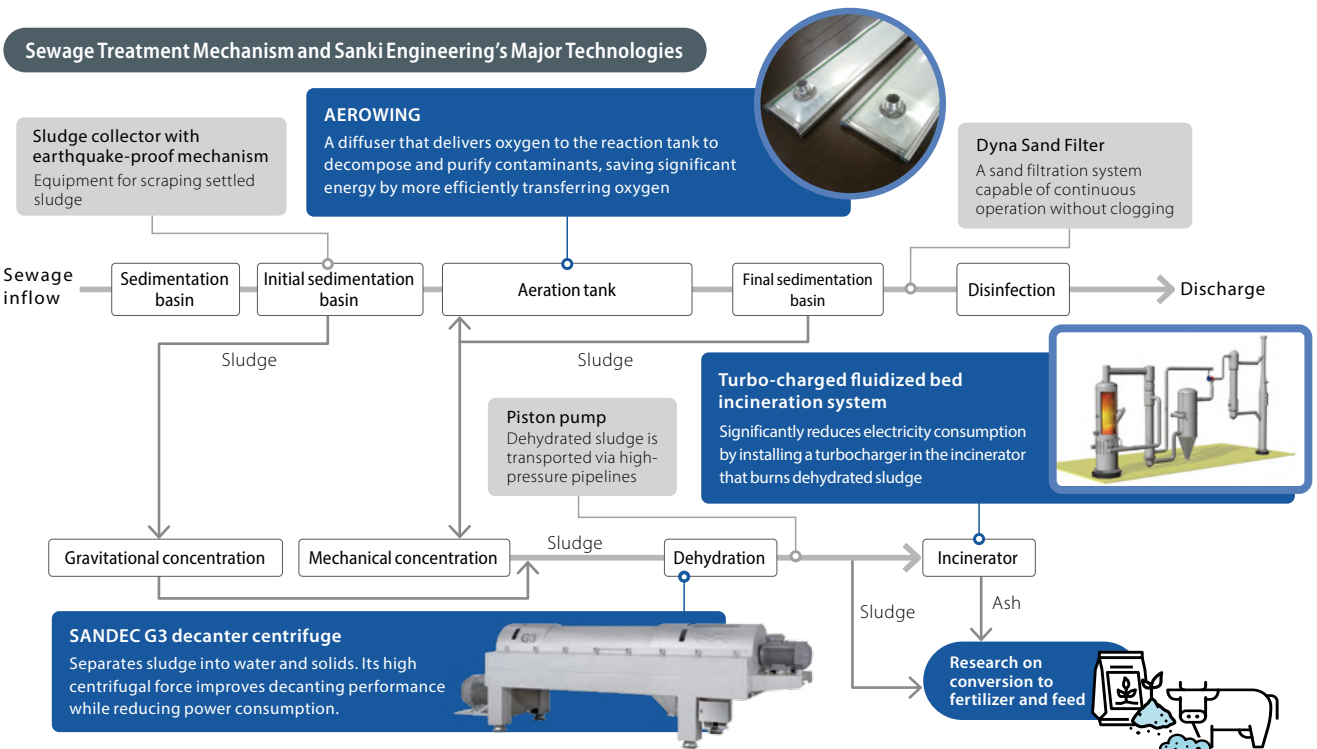


Feature 3 Our Technological Contribution to Sewage Treatment Facilities



Wastewater is an inevitable by-product of human society and industrial activity. The Sanki Engineering Group has helped enhance comfortable living environments by providing advanced water treatment systems that combine wastewater purification and reuse technologies. Sewage treatment facilities require enormous amounts of energy, and we recently observed strong demand for energy conservation toward creating a sustainable society. In addition, as Japan's population continues to fall, the declining volume of water flowing into sewage treatment plants has posed the major challenge of downsizing to reduce treatment costs and scale. Sanki Engineering is making a technological contribution to various stages of the sewage treatment process by fully leveraging the total engineering expertise we have cultivated over the years.



Case 1

Received an Order for Energy-Saving Diffusers for a Large Sewage Treatment Plant in Australia

In February 2023, AQUACONSULT, a Group company, received an order for 5,700 energy-saving air diffusers used in the aeration process* of sewage treatment at the Western Treatment Plant in Melbourne, Australia, and the plant is scheduled to start operations in the second half of 2024. It will treat 150,000 m³ of water per day, serving an equivalent of 750,000 people. The construction work involves upgrading the huge lagoon, which stores 485,000 m³ of water per day, by replacing it with reaction tanks equipped with energy-saving diffusers. Furthermore, the diffusers will be arranged at closer proximity to enable the removal of organic matter and nitrogen. The order was awarded based on the proven life cycle cost, stable performance, and energy efficiency of the 1,700 diffusers that have been in operation at the plant since 2019.



*Provides oxygen to microorganisms that process organic matter and nitrogen contained in the water

Case 2

Developed the Technology to Convert Sewage Sludge into Feed and Fertilizer

Sewage sludge is invariably generated in the process of treating sewage, and the conversion of sludge into feed and fertilizer has been attracting attention. In March 2023, a joint research project by Akita Prefecture, the Tokyo Metropolitan Government's Bureau of Sewerage, and Sanki Engineering on low-cost technology for converting sewage sludge incineration ash into fertilizer was adopted as a feasibility study for the Ministry of Land, Infrastructure, Transport and Tourism's Breakthrough by Dynamic Approach in Sewage High Technology (B-DASH) Project. The technology is expected to lower costs and save energy by using a simple method for converting the incinerated ash of sewage sludge into granular fertilizer. In addition, in April 2023 our research on the conversion of sewage sludge into feed and fertilizer using insects* was selected by the ministry for its FY2023 Applied Research on Sewage. This innovative technology is used for feeding sewage sludge to immature insects and converting the adult insects into feed and their feces into fertilizer.



Granular fertilizer made from incinerated ash

*Joint research by BioAlchemy Inc. and the Okinawa Institute of Science and Technology