



Domino Sugar District Wastewater Reuse

The Domino Sugar Redevelopment Wastewater Reuse Facility is a district-scale, decentralized water reuse system integrated into the redevelopment of the historic Domino Sugar Factory site in Brooklyn, New York. Designed and implemented by Natural Systems Utilities, the system treats up to 410,000 gallons per day (GPD) of wastewater generated from five mixed-use buildings within the redevelopment. The facility produces high-quality nonpotable reuse water for applications including toilet flushing, cooling tower makeup, irrigation, and site maintenance, with approximately 200,000 GPD reused on-site. Excess treated water is safely discharged to the East River, helping reduce combined sewer overflow impacts and relieving stress on New York City's combined sewer infrastructure.

Designed to fit within a compact, below-grade footprint of approximately 18,000 square feet, the project demonstrates how advanced water reuse infrastructure can be successfully integrated into dense urban environments.

 **REDUCE**

 **REGENERATE**

 **NEW YORK, NY, USA**

 **WASTEWATER**



CHALLENGES FACED

- Fit a full-scale treatment facility into a tight, below-grade footprint without compromising performance or capacity.
- Coordinate wastewater collection and reuse across multiple buildings with different uses, requiring close collaboration among teams.
- Meet requirements across multiple agencies (New York City Department of Environmental Protection, New York State Department of Environmental Conservation, Department of Buildings, Department of Health) for both reuse and discharge.

TECHNOLOGIES & SOLUTIONS USED

- District-scale decentralized wastewater treatment system
- Advanced treatment processes producing high-quality nonpotable reuse water
- Integrated nonpotable distribution systems for multiple end uses
- Continuous monitoring and regulatory compliance management

IMPACT & INSIGHTS



The Domino Sugar Redevelopment wastewater reuse system is designed to treat up to 410,000 GPD of wastewater from five buildings. Approximately 200,000 GPD of treated water is reused onsite for nonpotable applications, significantly reducing potable water demand across the redevelopment. Operationally, building owners benefit from reduced potable water costs and long-term cost stability. The project serves as a replicable model for decentralized water reuse in dense cities, helping normalize advanced reuse technologies and demonstrating their feasibility at scale.

LESSONS LEARNED



- Future projects would benefit from early and more continuous regulatory engagement to streamline approvals and reduce design iterations.
- Incorporating enhanced digital monitoring and automation could further improve operational efficiency and data transparency.
- Clearly communicating the safety, benefits, and environmental value of reuse systems can build public trust and support.
- Designing systems with flexibility and scalability in mind ensures they can adapt to future changes in demand or site conditions.

“ The project delivers significant qualitative benefits beyond measurable water savings. It enhances water resilience and independence by reducing reliance on centralized potable water supplies and providing a locally controlled reuse source. ”