

A photograph of a modern building with a facade made of light-colored rectangular panels. The Microsoft logo is visible on the building. A large, stylized white 'W' logo is overlaid on the left side of the image.

Blueprint for a Circular Campus

The Microsoft Campus Water Reuse System in Silicon Valley, California, was designed, built, and implemented to support Microsoft's vision of creating one of the smartest and most environmentally sustainable office campuses in the world. In partnership with Natural Systems Utilities, Microsoft developed an integrated water management system that treats combined wastewater, rainwater, and stormwater to produce high-quality non-potable water for reuse across the 15-acre (~6.07 hectares) campus.

Designed to treat up to 50,000 gallons per day, the system serves more than 2,000 employees in 643,000 square feet of office space. Water from showers, sinks, and kitchens is treated on site and reused for irrigation, toilet flushing, and other non-potable needs. Rainwater harvesting, stormwater retention features, and a living roof further enhance water capture and reuse. The project demonstrates how advanced water reuse can be integrated into sustainable campus design to advance corporate water stewardship.



REDUCE



REGENERATE



SILICON VALLEY, CA, USA



WASTEWATER



STORMWATER



CHALLENGES FACED

Microsoft sought to achieve net-zero nonpotable water use, requiring an integrated system capable of capturing, treating, and reusing wastewater, rainwater, and stormwater on site. Designing and coordinating this multi-source system across engineering teams was complex, particularly when balancing variable flows while maintaining reliable treatment performance. The project required rigorous testing and monitoring to meet regulatory standards for water quality. The reuse infrastructure had to be aligned with campus construction timelines.

TECHNOLOGIES & SOLUTIONS USED

The Microsoft Campus water reuse solution integrates a hybrid treatment system, combining membrane bioreactor technology with natural wetland and green infrastructure elements to treat wastewater and rainwater on site. Wastewater from kitchens, bathrooms, and other facilities is treated to high-quality, nonpotable standards, while harvested rainwater is filtered and stored for irrigation and related uses. The system connects directly to the campus distribution network.

IMPACT & INSIGHTS



- The system treats up to 20,000 gallons of wastewater per day for on-site reuse.
- It serves a 15-acre (~6.07 hectares) campus with more than 643,000 square feet of office space.
- The campus supports over 2,000 employees.
- The design goal is to meet 100% of nonpotable water demand with on-site treated water.
- The system conserves millions of gallons of potable water annually.
- Rainwater and stormwater are captured and reused on site to further reduce municipal water demand.

LESSONS LEARNED



- Use advanced flow and demand modeling to optimize storage, treatment, and distribution sizing.
- Design systems with modular or phased expansion capacity to accommodate future growth or shifting campus needs.
- Approach the project with a holistic perspective that considers water supply treatment demand and reuse within the broader context of campus design and sustainability goals
- Assess regulatory pathways and stakeholder expectations early and clearly communicate environmental and operational benefits to build trust, maintain momentum, and support long-term adoption.

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The inclusion of rainwater harvesting living roofs and green infrastructure contributes to campus landscaping health biodiversity and improved stormwater management, adding aesthetic and ecological value to the workplace environment.

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