Google Bay View: Net Water Positive Campus

The Google Bay View Campus in Mountain View, California, was conceived as one of the world's most water-forward corporate developments, with the goal of becoming net water positive by producing more nonpotable water than the campus consumes. A central feature of the Bay View project is the on-site capture, treatment, and reuse of both stormwater and domestic wastewater to meet the majority of the campus's nonpotable water needs, including landscape irrigation, cooling tower makeup, and toilet flushing.

The campus incorporates an integrated system of above-ground retention ponds that collect rainfall and stormwater runoff year-round. Water from these ponds is combined with treated building wastewater and processed through a central on-site treatment system featuring multiple stages of filtration and disinfection prior to reuse. Through careful water balancing and resource management, the Bay View campus enhances drought resilience and contributes to local watershed health.

- **REDUCE**
- **REGENERATE**

- **MOUNTAINVIEW, CA, USA**
- **WASTEWATER**
- **STORMWATER**

wef | CASE STUDY

CHALLENGES FACED

The project team had to design integrated stormwater and wastewater treatment systems capable of meeting nonpotable reuse standards while protecting nearby San Francisco Bay marsh ecosystems through close coordination with environmental agencies. Sophisticated modeling, rigorous water quality monitoring, and cross-disciplinary collaboration ensured regulatory compliance, balanced seasonal supply and demand, and supported stakeholder understanding of this first-of-its-kind net water positive campus system.

TECHNOLOGIES & SOLUTIONS USED

Above-ground ponds provide year-round stormwater collection and storage, while domestic wastewater is treated onsite, at a capacity of approximately ~322,000 liters (~85,000 gallons) per day, using filtration, disinfection, and advanced treatment processes. Treated stormwater and wastewater are combined to supply nonpotable water for toilet flushing, irrigation, and cooling. Retention ponds, passive systems, and engineered wetlands support nutrient removal, habitat restoration, and ecological benefits.

IMPACT & INSIGHTS

- The Bay View campus achieves net water positive performance, producing more non-potable water than it consumes.
- Stormwater collection and retention ponds capture millions of gallons (millions of liters) of rainfall year-round for treatment and reuse.
- An onsite wastewater treatment system ~322,000 liters/day (~85,000 gallons/day capacity) treats domestic wastewater to stringent nonpotable reuse standards.
- A geothermal heating and cooling system eliminates approximately 90% of conventional cooling water demand, saving millions of gallons (millions of liters) per year.

LESSONS LEARNED

- Incorporate real-time monitoring and advanced control systems to enhance water quality management, transparency, and performance verification (e.g., Living Building Challenge, Leadership in Energy and Environmental Design).
- Conduct integrated modeling of water capture, treatment, and demand to optimize system sizing and resilience.
- Plan rainwater, stormwater, and wastewater as interconnected on-site resources.
- Foster cross-disciplinary collaboration to ensure ecological, operational, and economic feasibility.

> **The system's water positive approach fosters local awareness about sustainable water stewardship and encourages innovation in water management across other developments in Silicon Valley and beyond.**

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