

Case Study

Major Botanical Garden – Sustainable Irrigation Water System



The Problem

In public spaces like botanical gardens, water isn't just a utility — it's essential to preserving biodiversity, plant health and visitor experience. Facing climate variability, rising water costs and increasing pressure to reduce reliance on municipal supplies, a major Australian botanical garden needed a sustainable, drought-resilient irrigation system. The existing setup lacked the capacity to recycle and treat water effectively, threatening long-term landscape health and operational efficiency.

Key Issues Identified

High Dependence on Municipal Water: Limited water reuse options increased reliance on external supply

Rising Operational Costs: Water scarcity and usage charges were driving up costs

Environmental Vulnerability: The existing system lacked flexibility to respond to changing weather patterns

Quality Concerns: Inconsistent water quality threatened plant health and long-term sustainability

To meet future demand and environmental goals, the garden required a smart, efficient system to recycle water, reduce costs and secure a resilient irrigation supply.

The Solution:

Waterform Technologies delivered a turnkey UltraFiltration (UF) and Reverse Osmosis (RO) water treatment system, designed to maximise the reuse of Class B wastewater for irrigation.

Key components of the solution included:

- **Ultrafiltration (UF) System:** Removes suspended solids and bacteria, ensuring high-quality pre-treatment of irrigation water.
- **Reverse Osmosis (RO) System:** Further refines water quality by removing dissolved salts and other contaminants, enabling safe and effective irrigation.
- **Automated Control System:** A SCADA-integrated PLC control system for real-time monitoring and optimisation.
- **Storage and Distribution Infrastructure:** New filtration tanks and reticulation system to enhance water delivery and efficiency.
- **Smart Water Management:** iSiteControl remote monitoring for proactive system management, minimising manual intervention.

The system was designed with redundancy and scalability, ensuring operational continuity and future expansion capabilities.

The Outcome:

The implementation of the recycled irrigation water system resulted in significant improvements:

- **Reduced Reliance on Municipal Water:** The Gardens now utilise treated wastewater, cutting potable water consumption significantly.
- **Lower Operational Costs:** Reduced water purchasing costs and improved efficiency in irrigation operations.
- **Sustainable Water Management:** Supports climate resilience and long-term sustainability goals.
- **Consistent Water Quality:** The UF/RO system ensures reliable water quality, enhancing plant health and growth.
- **Enhanced System Control:** Remote monitoring and automation optimise performance and reduce maintenance requirements.

This project demonstrates Waterform Technologies' expertise in delivering tailored water recycling solutions that drive sustainability and operational efficiency for critical infrastructure projects.



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