

Case Study

Fortune 100 Headquarters
LEED Gold Building

Houston, Texas
Two 1,000-Ton Cooling Towers



Cooling Tower Program

- No Upfront Costs
- Cost Savings on Day 1
- Extended Equipment Life
- Real-time data monitoring

3.7 Million gallons conserved annually for Make-up and Blowdown

Key Success Factors

- ✓ Water and Energy reduction
- ✓ Prevent scale & biofouling
- ✓ Remove existing scale
- ✓ IoT meters & sensors with cloud-based dashboard and analytics
- ✓ Extend service life of equipment, fill and piping

Water Conservation as a Service

Delivers Cost Savings and Cooling System Efficiencies

A Fortune 100 LEED Gold certified headquarters in Houston, Texas contracted with HydroTech Solutions to initiate a Water Conservation as a Service program in April, 2016 that successfully continues on 2 buildings each having 1,000-ton cooling towers.

Objectives included:

- Water Conservation (sewer and water cost reduction)
- Energy Reduction
- Reduced Repairs and Maintenance

The Challenge

The 2 headquarters buildings each have a 1,000-ton cooling tower on the rooftop and chillers in the basements.

The Facility Manager sought to safely reduce water and energy consumption, along with scale and algae reduction that the chemical program wasn't controlling.



The Total Water Management Service Includes:

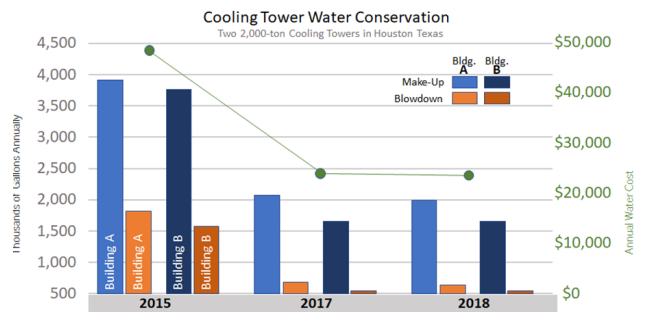
- HydroFLOW electronic water conditioning for providing scale, bacteria and corrosion control
- IoT (Internet of Things) sensors & meters continuously monitor flow rates, temperatures, and water quality
- Cloud based platform that securely analyzes and displays data
- Monthly site visits to inspect equipment, water quality and operations, with monthly reports

Monthly Cost Savings

Annual Water Savings

		2015	2017	2018
Q1	Make-Up	485	290	234
	Blowdown	233	24	11
Q2	Make-Up	1,301	537	554
	Blowdown	620	28	42
Q3	Make-Up	1,421	920	913
	Blowdown	574	35	37
Q4	Make-Up	734	356	319
	Blowdown	362	17	20
Annual Cost Savings		*	\$18,150	\$19,001

2016 was the program transition period



Estimated Annual Water and Energy Savings For both Buildings was \$56,172

A detailed cost savings report is available upon request

High Performance Water Management Results

The program continues to deliver water, chemical, and energy cost savings monthly. Due to scale removal and prevention, energy savings greater than 10% are realized annually.

Water and Energy cost savings more than pay for the monthly program.

The secure dashboard is accessible by the customer 24/7 with analytics tools that improve operations efficiencies and identified unrelated leaks at the facility.

Safely Increased Cycles of Concentration

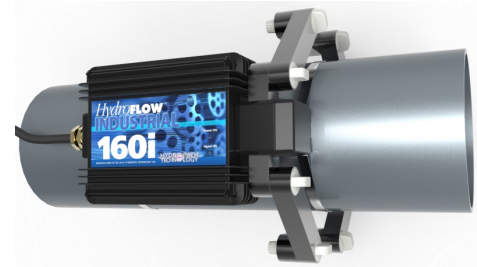
Comparing the scale and biological accumulation on equipment before and after the program implementation is conclusive; no scale or biological accumulation while operating at 8 Cycles of Concentration. (4,000 μ S)

- Real-time knowledge of water usage statistics and analytics for smarter and faster decisions
- Over 3.7 million gallons of water conserved annually
- Energy cost reduction >10% for cooling towers
- Leak detection with alerts
- Extra revenue through water and energy savings
- Reduced maintenance and repair costs: Extended Asset Life
- Beneficial for the community. Reduced chemical and municipal wastewater impacts

"HydroFLOW significantly improved the operation of our cooling system, in terms of cost and maintenance.

The technology pays for itself with the monthly savings it achieves."

*Fortune 100 Headquarters
Facilities Manager*



Water & energy cost savings more than pay for the monthly program

