COOLING TOWER

Data Centre Cooling Tower Case Study Amsterdam, Netherlands

*Hydro*FLOW® treatment enabled operation without chemical dosing, reduced water use, and controlled scaling across six BAC cooling towers in a large data centre.

Client details have been anonymised at their request.

€7,850	20%	75%	↓
Annual Chemical Cost Savings	Water Saving vs Conditioned Tower	Water Saving vs Continuous Blowdown	Chemical Usage

⇄ BEFORE & AFTER

BEFORE

- ✗ Limescale on nozzles and pipework
- ✗ Vortex tech failed to control scale
- ✗ Clogged spray nozzles and fouling

AFTER

- ✓ Nozzle scaling reduced significantly
- ✓ No chemical dosing required
- ✓ System condition improved with reduced fouling

BEFORE

Heavy scale on cooling surfaces

AFTER

Reduced scale and cleaner surfaces

OVERVIEW

A large data centre in Amsterdam operates six BAC cooling towers supplied by an on-site water source treated via reverse osmosis. Over time, limescale formed on spray nozzles, cooling packs, and system pipework. Previous attempts using vortex technology did not resolve the issue. Hydropath treatment was trialled on two towers before full implementation across all six towers.

CHALLENGE

Persistent scaling and ineffective previous treatment created operational concerns and required a new solution.

- Limescale buildup on nozzles and cooling media
- Previous vortex system failed to perform
- Clogging reduced system efficiency
- Need to avoid chemical dosing

SOLUTION

*Hydro*FLOW® units were installed on return pipes from the basin to the spray system. A controlled trial on two towers demonstrated effectiveness before full rollout.

UNIT INSTALLED
12x *Hydro*FLOW® i-130

INSTALLATION POINT
Return pipes to spray system

INSTALL DATE
February 2022

TRIAL PERIOD
Nov 2020 to Summer 2021

INSTALLATION
On return pipe to spray

INSTALLATION
i-130 (2022)

SITE
Six cooling towers layout

RESULTS

No Chemical Use
Water treated without chemical dosing during operation

Cost Savings
Annual chemical costs of at least €7,850 eliminated

Water Reduction
Minimum 20% water saving compared to conditioned tower

Major Water Saving
Up to 75% saving compared to continuous blowdown operation

Reduced Fouling
Nozzle clogging reduced and internal scaling decreased

Eco Friendly Operation
Environmentally conscious cooling without chemical discharge

KEY TAKEAWAY

Summary

*Hydro*FLOW® treatment was successfully implemented across six cooling towers at an Amsterdam data centre following a controlled trial. The system controlled scaling, reduced nozzle fouling, and reduced the need for chemical dosing. Significant water savings were achieved compared to both conditioned and continuous blowdown systems, while maintaining operational performance. The solution provided a sustainable and cost-effective alternative to traditional water treatment methods.

€7,850	20%	75%
ANNUAL COST SAVINGS	WATER SAVING MINIMUM	MAX WATER SAVING

🖼️ ADDITIONAL PHOTO EVIDENCE

SITE

Bottom basin and internal pipework

SITE

Return pipe and valve assembly

BEFORE

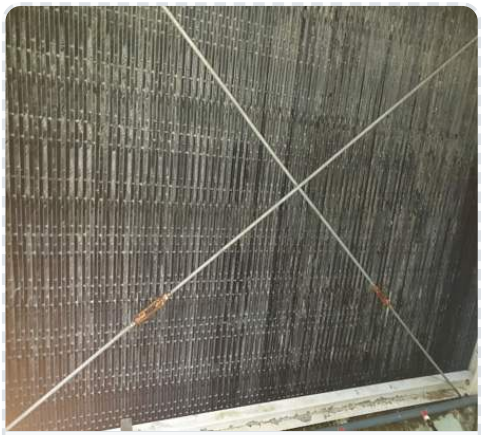
Scale on pipe and cooling mat

BEFORE

Scale buildup inside pipe

BEFORE

Deposits inside system pipes



BEFORE

Fouling on cooling pack surface