



# WINT HVAC Solutions

## *Chilled Water Leak Prevention*

**Background** HVAC systems usually work reliably in the background to ensure that buildings are comfortable. But the cooling system is also a ticking time bomb: its massive network of pipes usually remains unchecked for many years, hidden behind walls and hard to access. When a pipe eventually breaks, massive amounts of water escape, wreaking havoc throughout the facility.

How bad could a burst pipe really be? HVAC systems spin water at up to 10,000 gallons per hour in chilled water pipes that extend thousands of feet at large diameters. When a pipe breaks pumps continue to push water into the building at high rates. Shutting off supplies to mitigate a leak is useless, because the water already in the system will continue to pour

through the broken pipe and cause massive damage. The result: millions of dollars' worth of losses to equipment, furnishings, and the building infrastructure. And repairs may take weeks or months, disrupting operations and business.

In some cases pipes break, and a large leak starts almost instantly; in others, a leak may start slowly from a little hole and, over time, water pressure gradually degrades the pipe until it gives out... and a small, undetected drip turns into a building-destroying flow of water.

What if you could identify a leak when it is small and easy to fix, before it becomes a burst pipe disaster? And what if you could isolate a suddenly burst pipe so that only a minimal amount of water escapes?

**For more information about the WINT Solution contact us at:**

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## Leak Prevention for Chilled Water Pipes

WINT delivers a revolutionary solution to protect buildings from leaks in chilled water pipes. The advanced IoT solution combines on-site water intelligence edge devices with powerful cloud computing and a convenient mobile app, providing detection and mitigation of water leak events with automatic and remote control shut-off capabilities and granular reporting for retrospective analytics.

Here's how it works: WINT's edge devices are installed in key locations throughout the chilled water network. Each of these is comprised of a high accuracy flow meter, a processor that analyzes water flows in real-time, a communication device, and an optional automatic shut-off valve.

WINT learns and adapts to normal flow patterns using cutting-edge machine learning and pattern matching technologies. It identifies anomalous conditions and small leaks as they happen, so problems are detected way before they can cause significant damage.

When an anomaly is detected, WINT alerts staff in real-time via a mobile app, text message, or email. Alerts can also be integrated into building management systems. Based on pre-set action policies, WINT will automatically isolate the impacted area and shut water off to prevent water already in the system from turning the leak into a damage incident. Meanwhile, the healthy areas of the system continue normal operation. Administrators can override the system's automated decision by easily controlling valves from their mobile phones.



### CUSTOMER CASE STUDY: MasterCard

**Facility type:** 15-story corporate offices

**Event overview:** A WINT unit monitoring the chiller system identified a significant leak at over 3,000 liters (800 gallons) per hour. Facility maintenance staff inspected the HVAC system on all floors but couldn't detect a leak. The WINT system continued to alert over the next few hours and WINT's Situation Room team escalated the issue. An expert HVAC technician was sent onsite to inspect the system.

**Conclusion:** The HVAC technician found a hole in the chiller's expansion tank, which was located in a concealed location on the building's roof. The tank was repaired, and operations resumed. Luckily, water flowed through the roof's drainage system and the facility didn't suffer any damage. However, at local water rates, water fees alone would have reached over \$7,000 per month, or approximately \$90,000 per year.

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To ensure operation in any location, WINT devices communicate over the cellular network and can operate off battery or AC power. Moreover, the devices are fully autonomous so when a critical event happens, the device can shut water off even if communication has temporarily failed.

The WINT cloud delivers reports, collects analytics, and computes various KPIs. Where applicable, WINT integrates with existing building and site management systems for unified control.

## Solution Tiers

WINT provides a broad range of deployment options for chilled water systems, enabling various levels of granularity and control that meet different sites' needs and preferences.

Equally valuable, WINT's Situation Room is manned with water experts who monitor customer systems and react in real-time to events. These individuals are experts at analyzing water flow data and provide 24/7 support to help customers understand the source of any problem and ensure it is resolved as quickly as possible.



### CUSTOMER CASE STUDY: Luxury Office Building

**Facility type:** 35-story Highrise

**Event overview:** A WINT unit detected a drip-level leak of 20 liters per hour (5 GPH) in the chiller system. Staff couldn't initially locate its source. Over the coming days WINT identified a gradually increasing flow indicating pipe deterioration. A leaky fan-coil on the 7th floor was eventually identified and fixed with no damage to the building.

**Conclusion:** Damage to chilled water pipes often starts with small gaps that grow over time. A massive leak would have likely damaged all seven lower floors of this premium facility. WINT's early detection ensured that the issue was easily resolved, and damages prevented.

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