



THE **DETECTION** GROUP
Wireless Water Leak Detection

Leak Detection – Reducing the Risks of Water Damage Throughout Your Property



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Topics that will be covered

- Information on water leaks
- The risks of not being protected
- Breakdown of claims related to water damage
- Types of buildings at risk for leaks and damage
- Common sources of water leaks
- Types of leak detection systems, benefits, and limitations
- Wireless System: Our Trident System
- ROI for a wireless leak detection system
- Deployment examples
- Significance of an approved system
- Use cases

Why Worry About Leaks?

#1 cause of property loss claims

Frequency of events and claim cost

Larger than fire and theft combined

Average commercial claim is \$90,000

Mold can add 10x the to the claim

Leaks happen 24/7

Gravity is not your friend

Almost EVERY building will have leaks



Responding to a Leak: Doing rounds is not enough

- The longer it takes to discover a leak, the higher the cost
- Bigger cleanup
- Disruption in the workplace
- Increased health risks to tenants
- Waiting until the leak is discovered is not sustainable solution



Do Nothing Examples- Out of Sight, Out of Mind Does Not Work



Corroded pipe leak
resulted in \$600K loss



Abandoned water line break
caused \$500K in damages

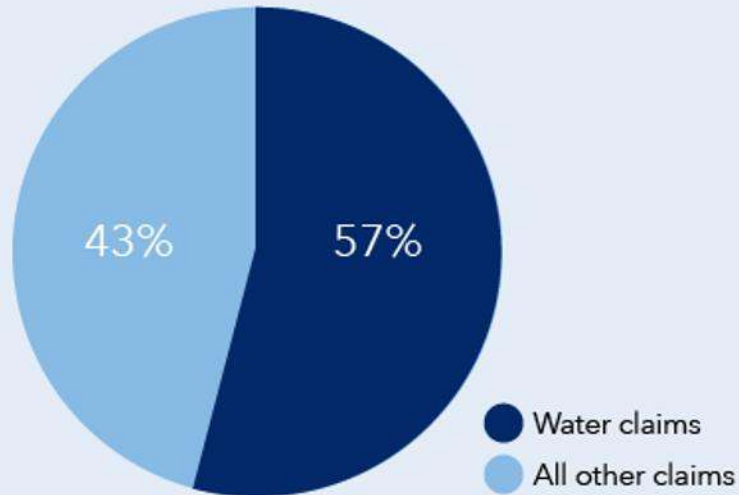


Open window led to frozen
pipe that burst \$100K loss

Water Damage is Costly

Real Estate claims by number

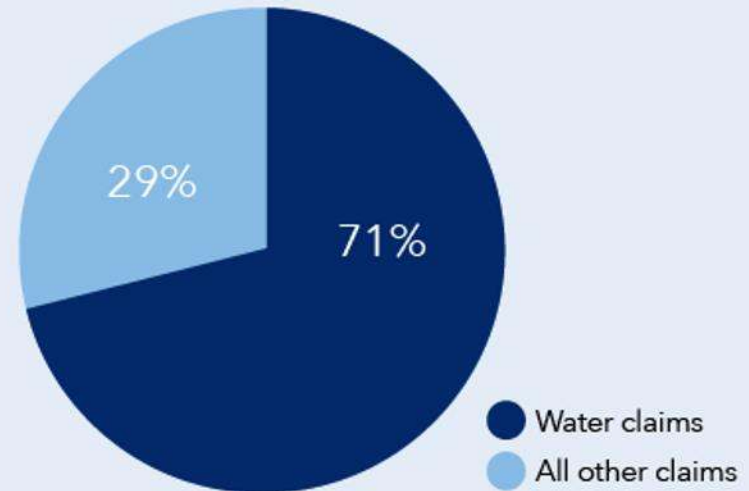
Water damage claim frequency



Data provided by Zurich

Real Estate claims by loss dollars

Water damage claim dollars



Data provided by Zurich

Buildings with Increased Risk for Leaks

20+ yrs old

New construction

Raised floors

Seasonal extremes

Medical

Multi-tenant residential



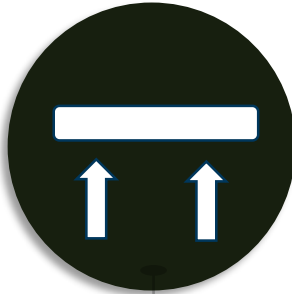
Aging equipment is prone to damage.

Maintenance
Might be neglected
or deferred.



Shakedown period.

Systems installed
improperly.



Not just data
centers.
LEED platinum
certification.
Hidden leaks.



Exposure to weather
extremes.
Risk of frozen pipes.



Pharma, hospitals,
medical facilities have
expensive equipment and
irreplaceable samples.



Who is above or
below you?
The source of the
leak doesn't
always get the
damage. It is
usually the floors
below.

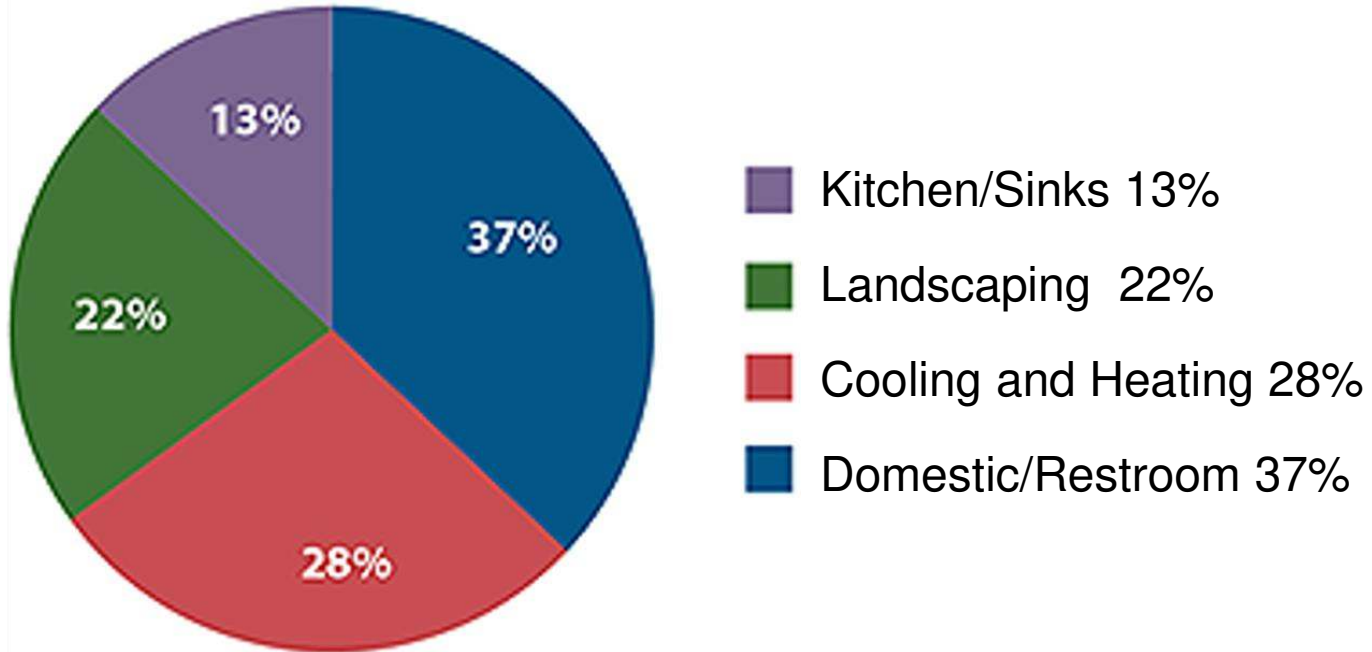
Common Water Sources in Commercial Buildings

- ◆ Hot Water Heaters
- ◆ Heat Pumps
- ◆ Elevator Pits
- ◆ Chiller Room
- ◆ Pump Room (Domestic, HVAC, Fire, Sump)
- ◆ Air Handlers
- ◆ Vertical Air Shaft
- ◆ Plumbing & Drain Chase
- ◆ Electrical MCC Room
- ◆ Mechanical Core
- ◆ Reheat Circulation Pump
- ◆ Sump Pit Overflow
- ◆ Tank High Limit Contact
- ◆ Server Room
- ◆ Sink Cabinet
- ◆ Ice Maker
- ◆ Coffeemaker



- ◆ Floor Drains
- ◆ Water Cooler
- ◆ Dishwasher
- ◆ Toilets/Urinals
- ◆ Restroom Sinks
- ◆ Drinking Fountains
- ◆ Deep Sinks
- ◆ Janitor's Closets
- ◆ Individual Recurring Water Intrusion Area
- ◆ Fire Pre-Action Room
- ◆ Shower
- ◆ Eye Wash Station
- ◆ Fish Tank
- ◆ Soda Machine
- ◆ Mechanical Clean Out
- ◆ Storm Pump
- ◆ Fire Sprinkler
- ◆ Boiler Room

Breakdown : End Uses of Water in Office Buildings



Traditional Solutions – Not all Sensors are designed for Commercial Properties

Screamers – Sensors bought on Amazon

- Inexpensive – not commercial grade
- Residential – good for your home
- Not connected – no data or alert system
- Must be within range to hear



Traditional Solutions – Wired Systems

Wired System

- Connects to existing BAS
- Expensive to scale and add additional sensors
- Requires an electrician and a controls contractor for wiring and connection
- Hard to reach difficult spots
- Outdated Technology

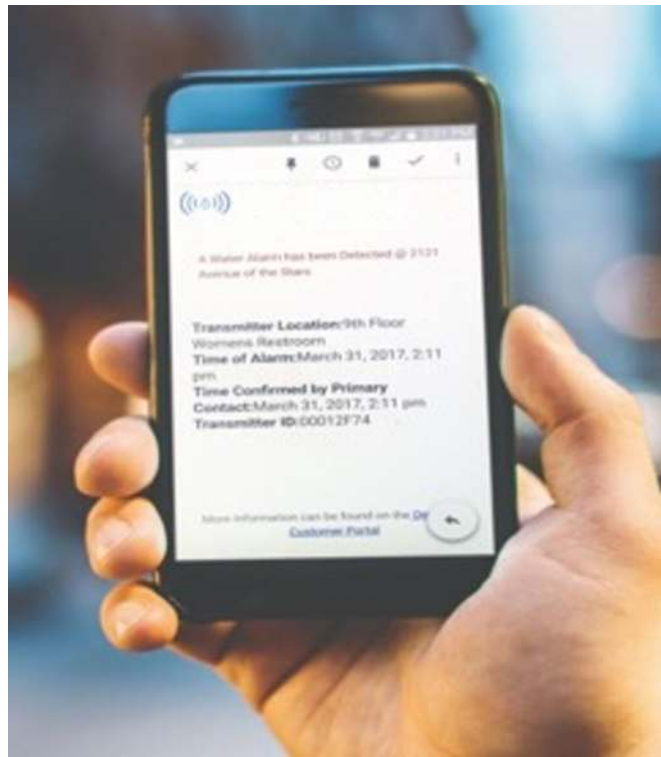
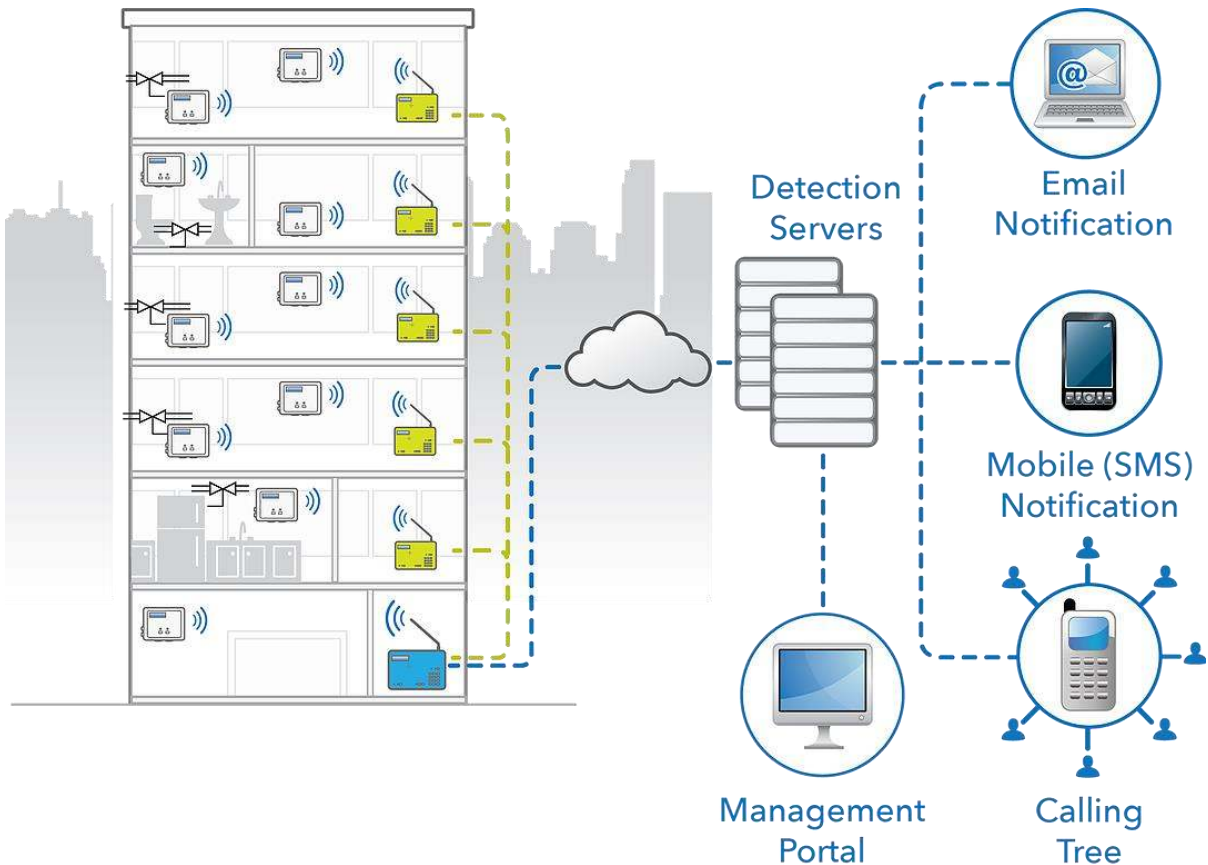


Advanced Solution - Wireless Leak Detection

- IoT Cloud- Based Technology
- Scalable
- Advanced notification systems
- Remote support and monitoring
- Data analytics



The Detection Groups Trident System - How a Wireless System Works



ROI - Reduces Premiums and Deductibles

- Owners save money on deductibles and lost tenant income.
- Insurance companies damage losses will be reduced leading to lower premiums and deductibles.
- Reduces the risk of making claims and protects deductible reserves
- No claims lead to a continuation of normal rates



ROI – Breakeven after 1 Leak

Average Leak Costs ~ \$25,000 per floor

Wireless system cost per floor ~ \$2,500


- Sensors
- Backbone
- Analytics
- Alert System

10-story building

- Costs for complete system = ~ \$25,000
- ROI = System pays for itself when it prevents a serious leak



ROI Example

- 
- *Leak detected 3 weeks after installation*
 - *Toilet overflowing at 5:30 pm on a Friday*
 - *Restroom not equipped with a floor drain*
 - *Engineer was notified immediately*
 - *Left undetected, it would have reached the lobby and elevators*

Deployment Example – Mechanical Rooms

- *All Mechanical spaces are considered Critical Areas for leaks*

Application:

- *Sensors*
- *Sensor Cables*



Deployment Example – Mechanical Rooms

- *All Mechanical spaces are considered Critical Areas for leaks*

Application:

- *Sensors near the drain*



Deployment Example – Tenant Space Under Sink

- *Not Critical, but common source of leaks*

Application:

- *Sensors*
- *Valve controllers*
- *Valve shutoffs*



Deployment Example – Ice Machine

- *Not Critical, but common source of leaks*

Application:

- *Sensors*
- *Sensing Cable*



Deployment Example – Near the door

- *Not Critical, but common source of leaks*

Application:

- *Sensors*
- *Restrooms, Utility Closets*
- *We want to prevent water from getting into common areas*



Deployment Example – Fire Pumps and Risers

- *Considered a Critical area for leaks*

Application:

- *Sensors*
- *Sensor Cables*



Use an approved system



“Higher certification standards and product testing mean you’ll prevent more losses.” – Brian Callori, FM Global Senior VP, Engineering and Research



Approval Standard for Liquid Leak Detectors

Class Number 7745

July 2019

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USE CASE

- 57 story, 1.3M Square Foot Class A Commercial Property
- 3 Zones that cuts the building into thirds
- ~ 200 sensors deployed in building core areas and ~ 30 valve controllers in tenant spaces
- The property owner has leak detection as a building standard and mandates in lease language
- New Year's Eve ice machine leak detected at 11pm with skeleton crew was able to catch the leak and avoid damage



USE CASE

- 100% raised floor
- Leak detection above and selectively under raised floor
- Automatic shut off valves in all tenant kitchens
- Sensors in break rooms, restrooms, all mechanical.



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Example – Building Standard Language

WATER SENSORS

Tenant shall install web-enabled wireless water leak sensor devices designed to alert the Tenant on a twenty-four (24) hour seven (7) day per week basis if a water leak is occurring in the Premises. The Water Sensors shall be installed in any areas in the Premises where water is utilized (such as sinks, pipes, faucets, water heaters, coffee machines, ice machines, water dispensers and water fountains), at low points below raised floor, and in locations that may be designated from time to time by Landlord.

REFER TO ARC'S COMMENTS.

Thank You!

www.thedetectiongroup.com

We can open up to any questions