

# Global Water Technology Presents BOMA Water Concerns For COVID-19 Spring 2020

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# About Global Water Technology, Inc. (GWT) and Your Speakers

Global Water Technology, Inc was established in 1990, to support the Chicagoland area. Since inception, GWT has grown from a small local business to a regional company in a diverse field of water treatment issues. GWT is a partner with the Association of Water Technologies (AWT) and has a growing number of Certified Water Technologists on site to service Chicagoland, the Midwest, and the World.

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# About the Association of Water Technologies

- The Association of Water Technologies (AWT) is the international water treatment association representing over 500 companies
- AWT supports members and provides them with [training](#), [certification](#), networking, regulatory, and public awareness programs.
- A Certified Water Technologist means a person can be airdropped anywhere in the world to treat water



# Today's Topics

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Terminology of Water Systems (3)

What's Changed in 2020 with COVID-19

Best Considerations for Each System

Process Systems & Domestic Systems

# Systems Today – Terminology

## HVAC Systems:

### Cooling Towers

### Closed Loops

### Steam Boilers



# Systems Today – Terminology- Domestic and Water Features

## Domestic:

Hot Water

(Recirculating and Instantaneous)

Cold Water (Once-Through)



## Water Features

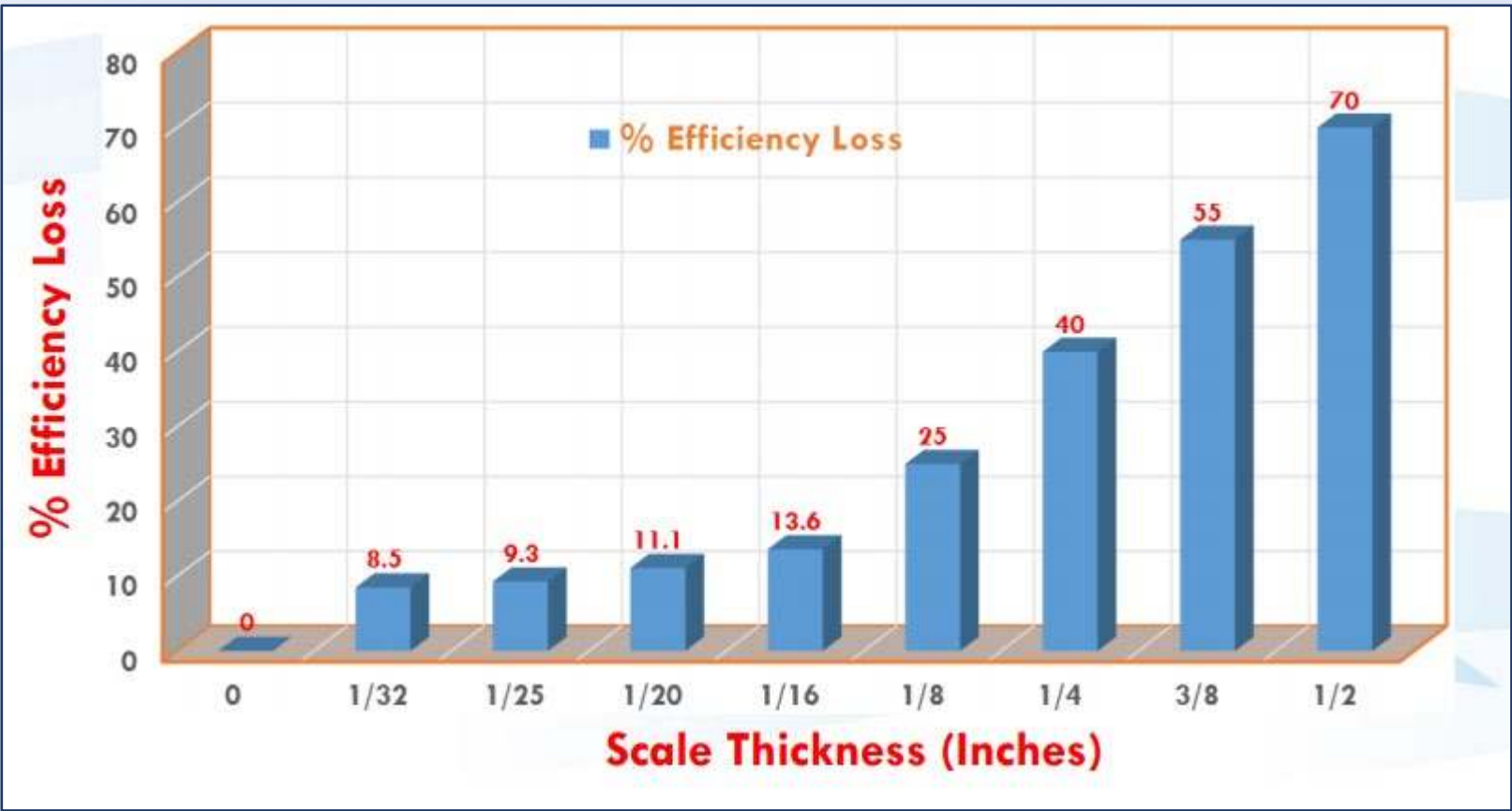
Fountains



# Water Treatment Prevents Corrosion

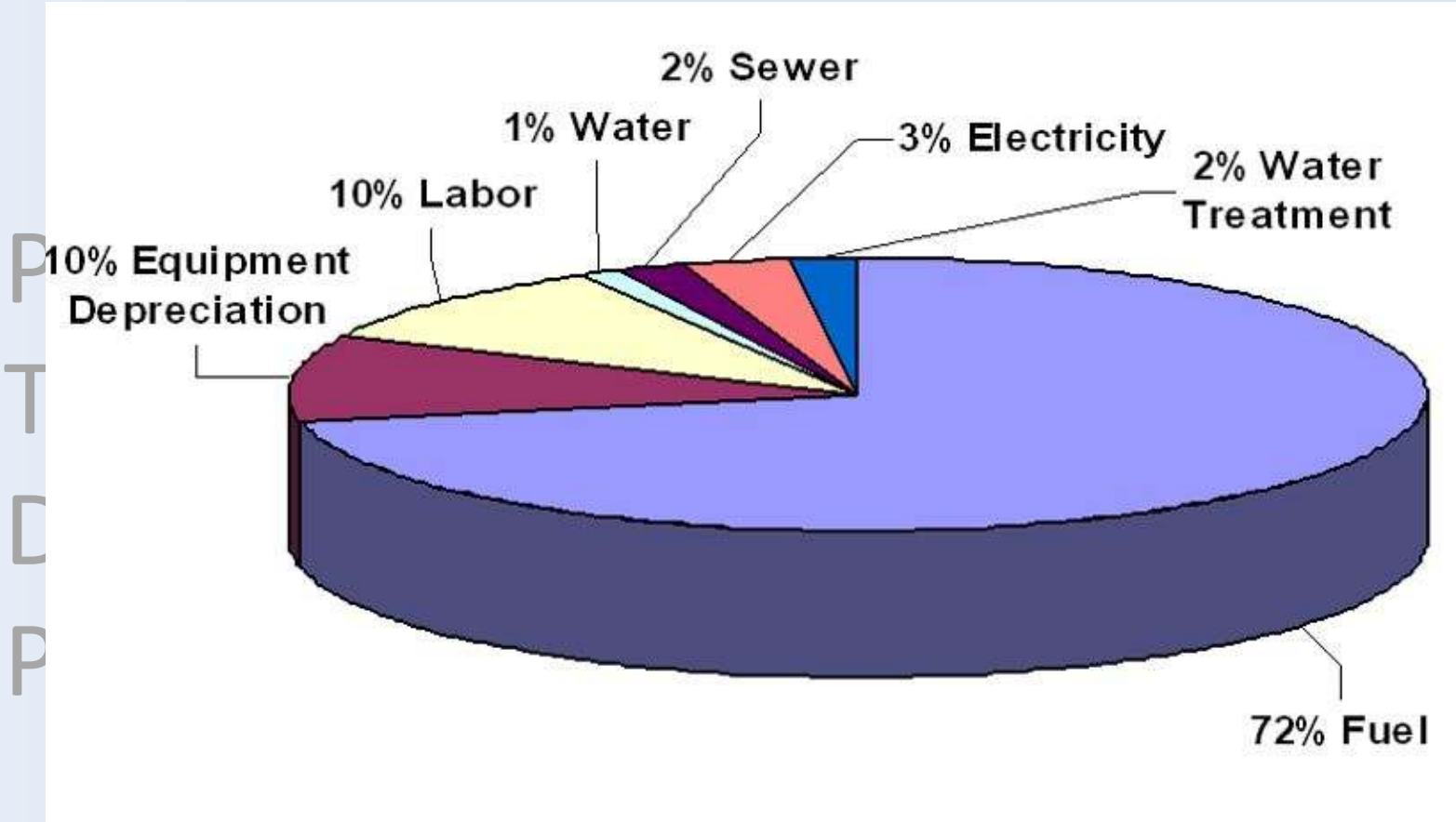


# Steam Boiler Scale Inefficiency





# Water Treatment Prevents Efficiency Losses



# Department Of Energy Findings

- **40% of energy costs for the average commercial building are spent on HVAC (DOE)**

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- **Totals 7.5% Total Building Costs**

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- **31 cents (annually) for natural gas per SqFt (2003 U.S. Energy Information Administration survey of commercial buildings)**

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# COVID-19 Means More Work From Home

How I expected my apocalypse outfit to look



How it actually looks



How I expected my apocolypse outfit to look...



What it is



# HVAC Considerations: Steam Boilers

- Steam boilers may have summer use for kitchens, pools, or cooling (absorption cooling)
- Identify if this is part of “Critical Equipment”
- ASHRAE recommends any steam boiler over 7 days without use be put into “layup procedures”
- Take labor shortages into consideration
  - Typical offseason checklists may be pushed back



# HVAC Considerations: Cooling Towers

- Comfort cooling may be scaled back, but this does not mean oversight should or else corrosion can happen
- Contractors for oversight may have issues with service
- Cooling Towers can breed legionella, the disease responsible for Legionnaire's Disease.
- Considerations to prevent "stagnation" or low disinfectant
  - Communicate with water treater when pumps are on
  - Pump Rotation Schedule
  - Drain and valve-off non-critical equipment
  - **Do not discontinue water treatment if equipment is on low use**



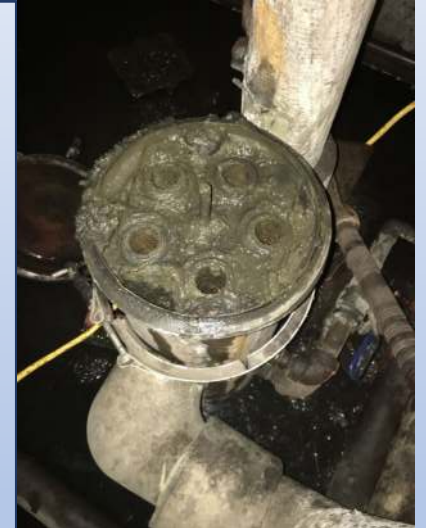
# HVAC Considerations: Cooling Tower Tools

- Labor Shortages & Budget Cutbacks
  - On-line 365 biocide monitoring through ORP probes
  - Algae monitoring options
- New Checklists for Engineers- Visual Inspection Increase
- Advanced Monitoring
  - Installation of New Meters
- Valve Concerns



# HVAC Considerations: Closed Loops

- Pump Staging and dead legs can create bacterial concerns
- Delay winter-summer switch as long as possible if labor shortages continue
- Filters still require changing
- Make sure to kick on pumps to circulate chemical
- Install water meters to detect leaks



# Switching Over: Domestic Systems

## Critical Difference:

In commercial real estate, hot and cold water are separated into two systems.

The cold water system enters and exits

The hot water system typically recirculates

Both water systems can be at risk for amplifying legionella or having high metals (lead) contaminates.

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# Recent News

Water Management For Construction and Relationships with Legionella & COVID-19 Healthcare Operations



**ECHO NEWS** CORONAVIRUS

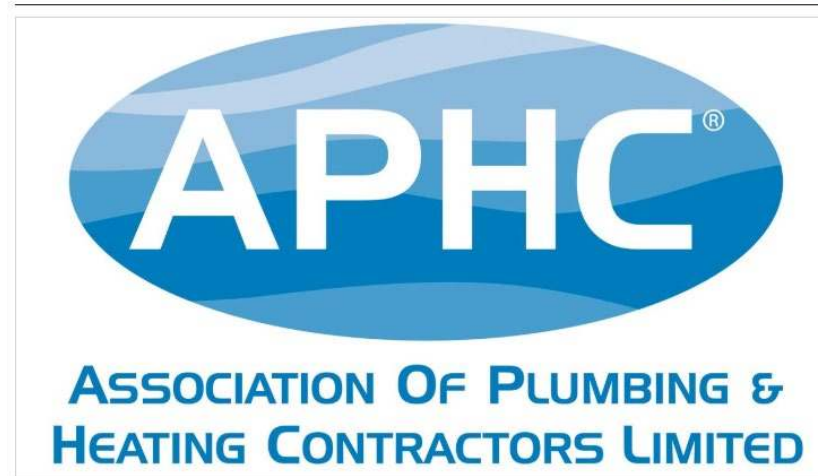
- First coronavirus death reported at Alder Hey Children's Hospital
- Thug who Jones murdered released from prison

## NEWS

### APHC WARNS OF POTENTIAL LEGIONELLA OUTBREAK IN COMMERCIAL BUILDINGS

11:37, 15 April, 2020

SHARE    



### Water quality could change in buildings closed down during COVID-19 pandemic, engineers say



#### Research News

- Purdue renews, expands Sandia National Laboratories partnership
- Analysis: Wind energy expansion would have \$27 billion economic impact
- Device turns shells of sea creatures into biofuels

News ▶ Liverpool News ▶ Liverpool

## Buildings ordered to close due to coronavirus could have increase risk of potentially fatal Legionella

The bacteria can lead to Legionnaires' disease which can cause a severe pneumonia

# Cold Water System Lead and Legionella Concerns

## Legionella:

- Not typically a concern for most systems as legionella does not start to amplify below 68 degrees (incoming water temp stays well below)

## Lead

- Greater concern if using galvanized piping prior to 1986
- Older fixtures also have greater concern
- Solution: Flushing Protocols

# Hot Water System Lead and Legionella Concerns

## Legionella:

- Much greater concern as recirculating loop will have “dead legs” in unused rooms and outlets
- Unused rooms have ambient temperature around 70 degrees
- Identify how many zones and to what areas are fed
- Always follow temperature recommendations of 140 setpoint in heaters, and make sure water is recirculating
- If hot water heaters are turned off, document plan for turning back on

## Lead

- Lower concern as hot water piping is not supposed to be used for drinking

## Flushing Protocols

# Ice Machines and Other Devices

- Disconnect water supply to unused ice machines, coffee makers, water filters, and any other devices which may be connected to domestic water
- Fully clean and disinfect then install new filters prior to start up.



# Fountains and Noncritical Infrastructure

- Drain if Not Being Used
- Do not run without biocide
  - Recent Legionnaire's Disease from display hot tubs

[Home](#) > [News](#)

## More Than 100 People Got Legionnaires' at a State Fair. Hot Tubs May Be to Blame.

By [Rachael Rettner](#) - Senior Writer October 04, 2019

Those who got sick reported walking by hot tubs, which were on display at the fair's event center.

# Additional Considerations

- Ask water treater to add incoming water testing to monthly service visits to make sure source water is consistent with proper water quality
- Have engineering test disinfectant in incoming water
- Flush any unused outlet or floor at least weekly
- Ask water treater about adding on a domestic water plan to existing water treatment contract
- Water treatment has been identified as “critical” during shelter-in-place

# Additional Reading and References

- Considerations for Large Building Water Quality after Extended Stagnation- V5, 60 Pages

## Considerations for Large Building Water Quality after Extended Stagnation



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### SUPPLEMENTAL MATERIALS

[osf.io/wr4mp/](https://osf.io/wr4mp/)

- CDC: Guidance for Building Water Systems

### 8 Steps to take before your business or building reopens

1. Develop a comprehensive water management program (WMP) for your water system and all devices that use water.

Guidance to help with this process is available from CDC and others.

- a. Water Management Program Toolkit:

This toolkit is designed to help people understand which buildings and devices need a *Legionella* water management program to reduce the risk of Legionnaires' disease, what makes a good program, and how to develop it.

<https://www.cdc.gov/legionella/wmp/toolkit/index.html>

# Q&A

“In Wine, there is Wisdom

In Beer, there is Freedom

In Water, there is Bacteria”

-Unknown, But Regularly Attributed to Benjamin Franklin

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