

# CHURCH FACILITY SYSTEMS AND COVID-19

- Introduction
- ASHRAE – leading technical society
- “Guidance” – general commercial
- Guidance and PPT uploaded to ED site
- [www.ashrae.org/covid19](http://www.ashrae.org/covid19)



# CHURCH FACILITY SYSTEMS AND COVID-19

*“Information on these pages is provided as a service to the public. While every effort is made to provide accurate and reliable information, this is advisory, is provided for informational purposes only. These are not intended and should not be relied upon as official statements of ASHRAE.” ... goes for my input as well!*



# CHURCH FACILITY SYSTEMS AND COVID-19

- Preparation then Operation
- HVAC, Plumbing, Electrical and Special Systems



# CHURCH FACILITY SYSTEMS

- “Mothball” and Shut-Down Operation
- “Reoccupy” and Return Systems to Normal Operation
- Hybrid





# “MOTHBALL” - General

- Put these recommendations together with an overall “living” plan
- Notify with exact shut-down dates and times – partial or complete
- Backup all data and systems
- Check important remote and off-site access systems



## “MOTHBALL” – General (cont.)

- Any required visits – water the plants (etc.)!



# “MOTHBALL” - HVAC

- *Not* necessarily a complete shut-down
- “Unoccupied” mode – explain
- OA dampers minimum
- EF off
- “Occupied” mode over-ride



## “MOTHBALL” – HVAC (cont.)

- Check operation
- Monitor building regularly for unexpected consequences – dampness, mold, etc.





## “MOTHBALL” – HVAC (cont.)

- Boilers/heating hot water or steam
- Chillers/chilled water



# “MOTHBALL” – Plumbing

- Check if you have a Water Risk Management Plan – *legionella and other cooties – ADA “sweet spot”*
- Run water at ALL fixtures – once per week
- Check ALL traps!



## “MOTHBALL” – Plumbing (cont.)

- Water features shut down and drained
- Keep domestic hot water circulating, if possible and above 120°F – *140°F preferable* – *SAFETY*



# “MOTHBALL” – Electrical

- UNPLUG non-essential appliances
- Work with IT to determine exactly what has to stay on for remote access





# “MOTHBALL” – Special Systems

- Check fire alarm, security and other systems with battery backup
- Test generator periodically



# “RE-OCCUPY” – General

- Put these recommendations together with an overall “living” plan
- Create measures to make occupant feel safer
- Establish communication protocol with stake-holders
- Training???



## “RE-OCCUPY” – General

- Notify with exact re-opening dates and times – partial or complete
- Follow all local, state and federal...
- CDC advice for PPE
- Proper cleaning methods – CDC/EPA
- Disinfect high-touch areas



# “RE-OCCUPY” – General

- Disinfect all refrigerators
- Open all windows for two hours prior to reoccupation – Temp/RH
- OA dampers and EF programs
- “Flushing” two hours before and after
- “Dilution is the Solution to Pollution”





# “RE-OCCUPY” – HVAC

- Maintenance updates
- PPE when maintaining
- Filters and CCC – source
- Occupied/Unoccupied modes back to normal – check!



## “RE-OCCUPY” – HVAC (cont.)

- Check fans and dampers
- Replace filters – pleated; PPE
- Increase filtration level for one or two cycles??? – PD!
- Short-term portable filtration in high traffic areas



## “RE-OCCUPY” – HVAC (cont.)

- Cooling coil surfaces, pans, pipes – PPE
- Refrigerant pressure/charge
- Coil LAT – *dehumidification*



## “RE-OCCUPY” – HVAC (cont.)

- Boiler systems check
- Flues and make-up air paths open
- If shut-down, **FOLLOW INSTRUCTIONS!!!**





# “RE-OCCUPY” – Plumbing

- Water Risk Management Plan
- Run water at ALL fixtures
- Check ALL traps!



## “RE-OCCUPY” – Plumbing (cont.)

- Set domestic hot water to 140°F and circulate two hours every two weeks

**AND/OR**

- Do a 140°F system flush
- **Set water temperature back, but above 120°F – ADA safety**



# “RE-OCCUPY” – Electrical

- Plug everything back in



# “RE-OCCUPY” – Special Systems

- Check/test fire alarm, sprinkler, emergency lighting, battery back-up and generator systems





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Questions/Comments/Rebuttals?

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