

# Fire Suppression & Cultural Property

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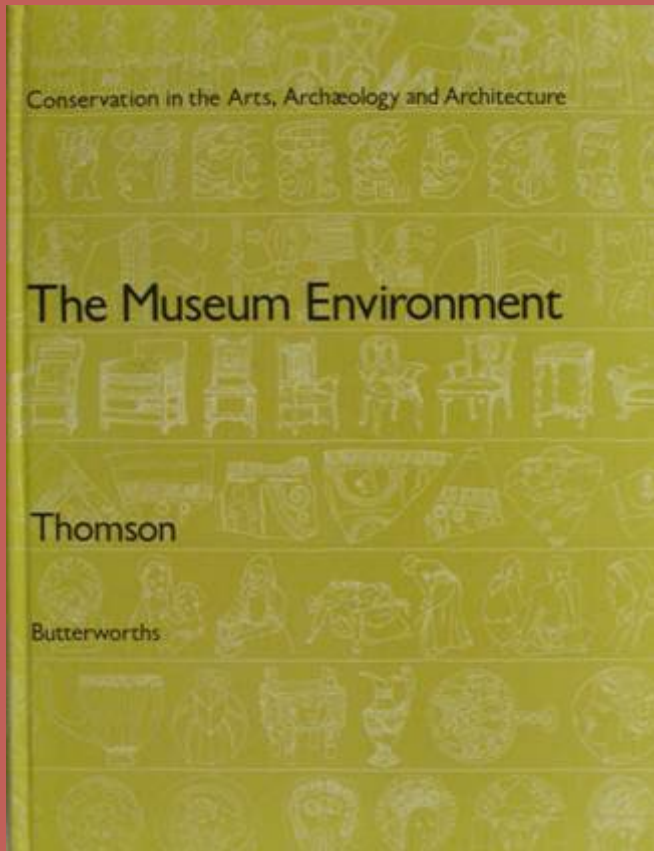


# Weighing Risk of Fire vs Water

- Fires seemed unlikely
- Fires seemed easy to extinguish
- Sprinkler leaks seemed more likely
- Leaks harming collections seemed more likely



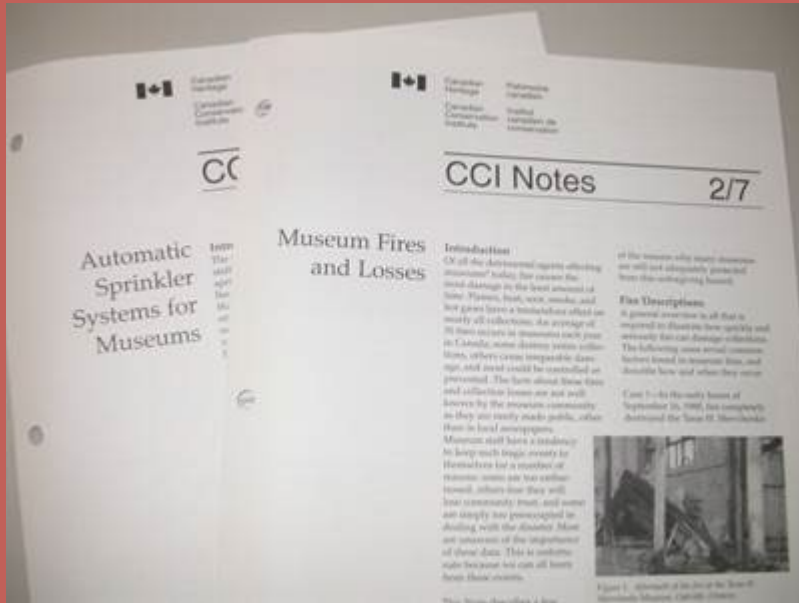
# Museum fire control ca. 1978



- No sprinklers in exhibits
- Halon® suppression in museum storage
- Concern for harmful gasses from Halon®
- Carbon dioxide in library/archives stacks

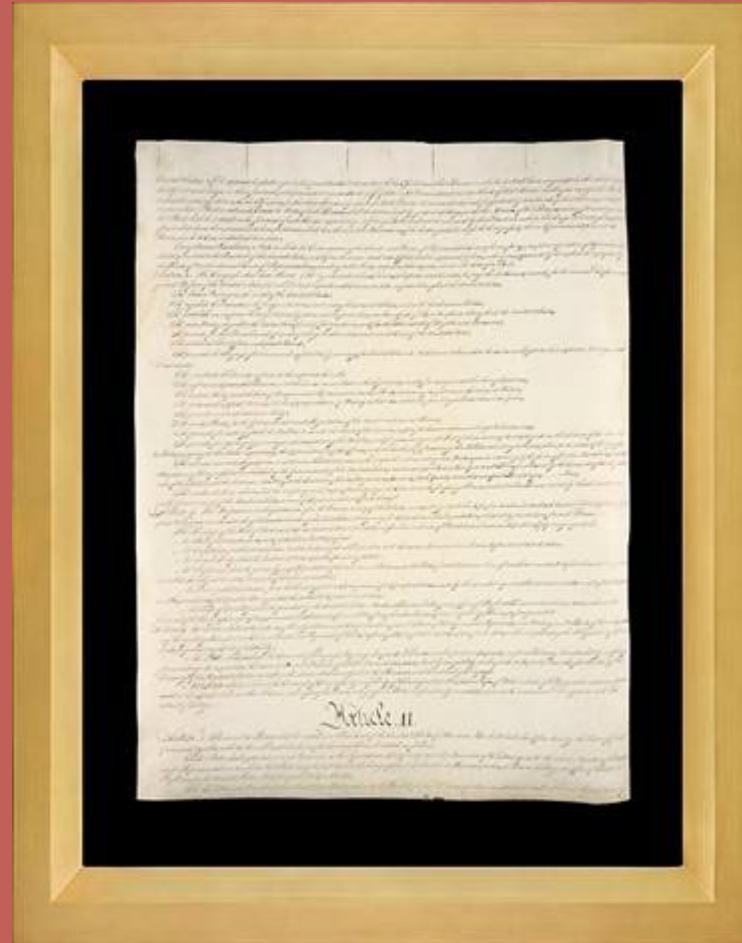


# Fire control ca. 1998



# Materials that must stay dry

- Parchment
- Parchment or tawed leather bindings
- Paintings
- Collodion negatives and prints
- Artifacts made of diverse materials
- Electronic records





# Handheld extinguishers



- Letters ABCDK code for different types of fires
- Powder and chemical residues can harm cultural property
- Clean agents = gas

# Sprinkler systems

- Wet pipe
- Dry pipe
- Pre-action

Discharge water may contain:

- Corrosion inhibitors
- Rust & sediment

Recalls



# Specifying sprinkler systems

- Sprinkler pipe specification
- Verify written specifications
- Verify what is ordered
- Verify what is installed





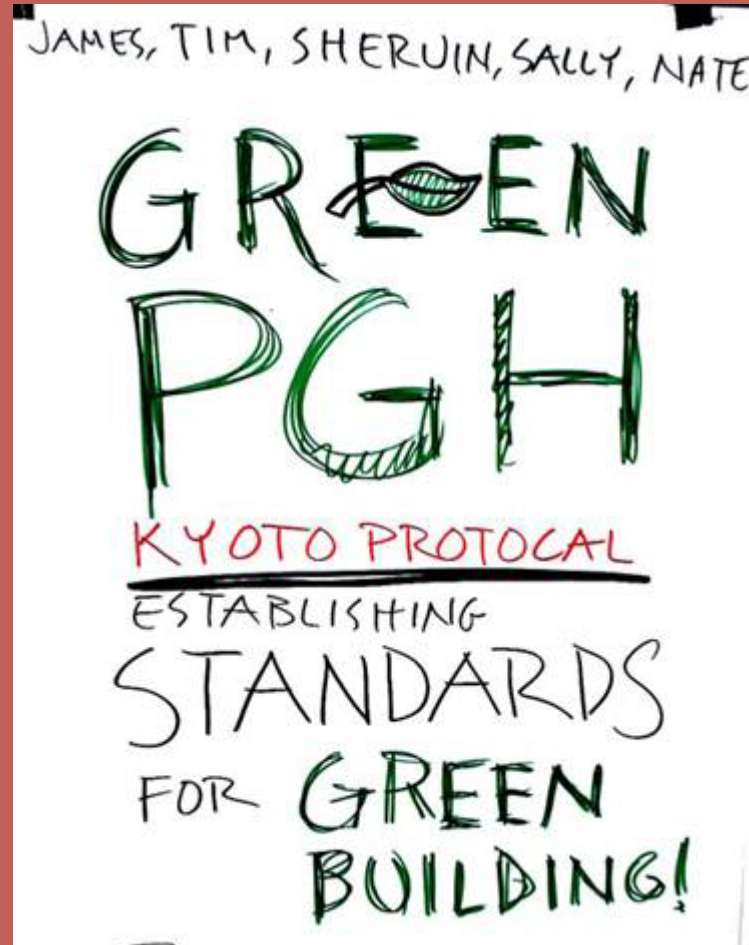
# Sprinklers and storage

- Get expert advice on capacity and placement
- Compact storage level floors don't drain well
- Compact storage overnight safety mode ensures sprinkler water access



# Environmental concerns

- Changing regulations
- Phase out of chemicals
- Increased cost
- Market responds with new options



# Newer fire suppression gasses

- Ansul® Inergen® (mix of natural, inert gasses N<sub>2</sub>, CO<sub>2</sub>, argon)
- DuPont™ FM-200® (halogenated)
- Ansul® Sapphire® uses 3M™ Novec™ 1230 (halogenated)



# Staff training with clean agents



# Water mist for fire suppression

- Suggested for use for cultural property
- Fire tested including at University of Maryland School of Engineering
- Reduced volume of water released





# Dual fire systems: Gas & Water

- National Archives Electronic records storage vault
  - Gas suppressant releases at 150 F
  - Back up sprinklers release at 285 F



# Making informed decisions

- Know new approaches
- Knowledgeable recommendations
- Additions, renovations, storage facilities
- Know vulnerable collections



# The World in a Drop of Water



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# Acknowledgements

- The dedicated staff of the National Archives
- Working together to accomplish great things
- Especially the conservation staff who have helped in so many ways

