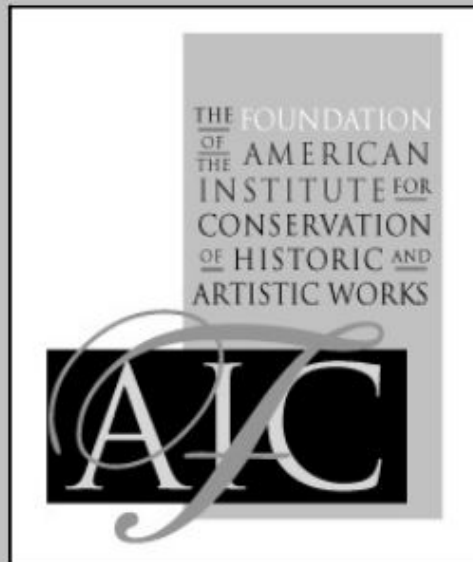
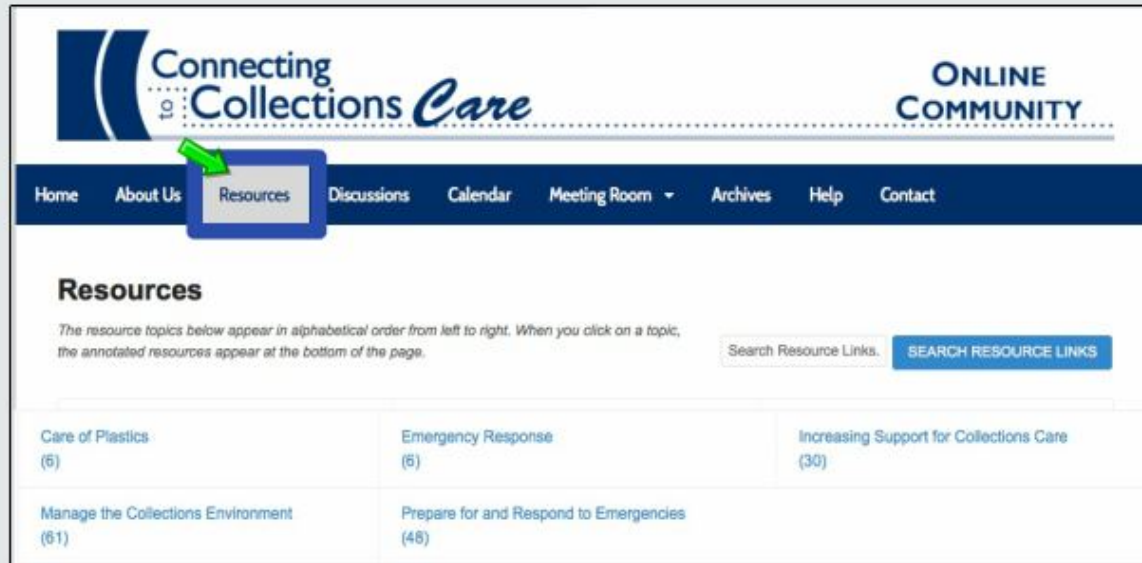


After Disasters Salvage and Recovery Small to Mid-Sized Museums and Libraries



Susan Duhl
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Before A Disaster



American Institute for Conservation Collections Emergency Response Team

AIC CERT Free 24-Hour Assistance
202-661-8068

Every Event is Different



Ringwood Manor
Furnace Malfunction

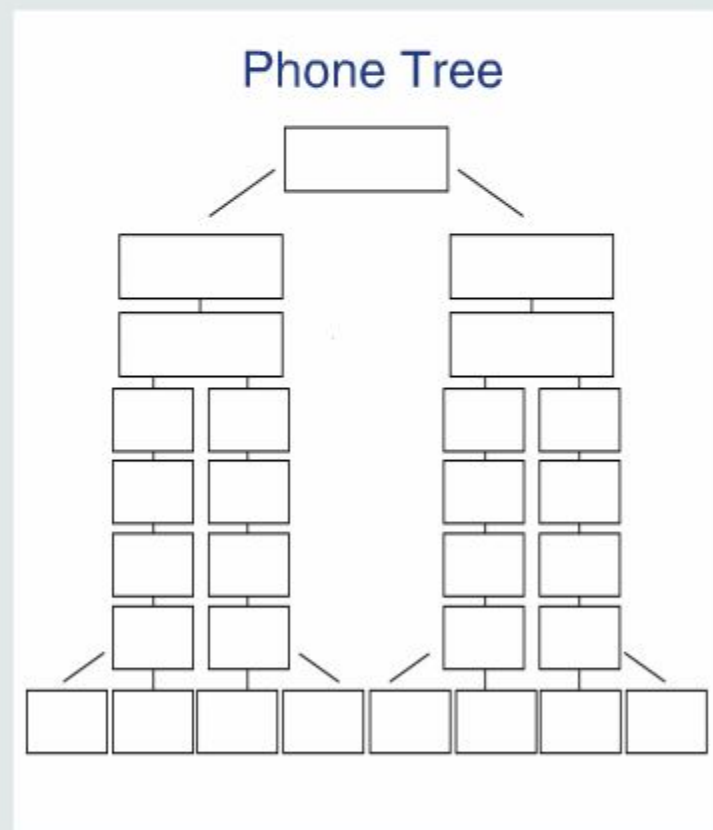


WestBeth Art Studios
Hurricane Sandy

Steps After a Disaster

- Call Emergency Services
- Abate the Disaster if Safe
- Identify Disaster Conditions and Needs
- Set-Up Incident Command System and Action Plan
- Assemble the Team, Supplies, and Resources
- Undertake Salvage, Stabilization and Recovery





Assemble, Inform and Equip the Team

The Team

First Responders
Staff and Volunteers
AIC-CERT Conservators
Construction Contractors
Mechanical Contractors
Local Companies
Insurance Adjusters

Supplies

Local and Big Box Stores
Moving Companies
Local Businesses
Thrift Stores
Contractors
Galleries, Art Supplies
Other Museums and Libraries



Personal Protective Equipment

- Protective Clothing
- Reflective Clothing
- Steel-toed Boots
- Rubber Boots
- Hard Hat
- Safety Glasses
- Respirator
- N-95 Dust Mask
- Gloves
- Flashlight
- Whistle



Incidence Action Plan

Recovery Goals

Recovery Strategy

Tactics and Logistics

Schedule

Revised as the incident evolves



Follow the Chain of Command

Be prepared, flexible and inventive

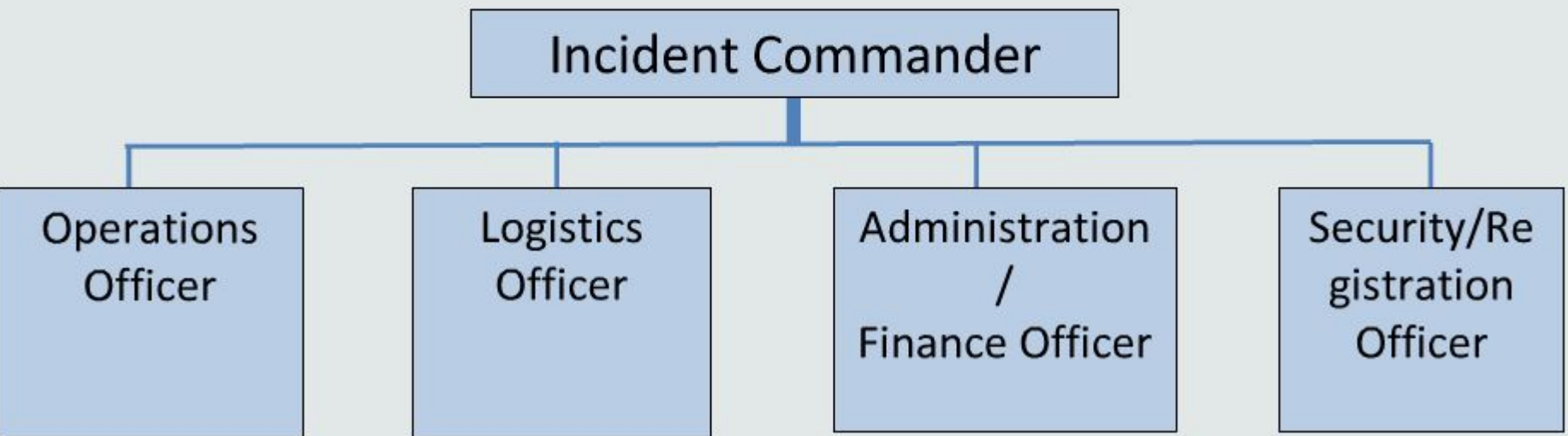
Be cooperative and supportive of colleagues

Be aware of psychological responses

Do not make decisions that might result in additional damages

Incident Command System

Small Cultural Institution



Commander: develops and directs objectives, strategies, and priorities

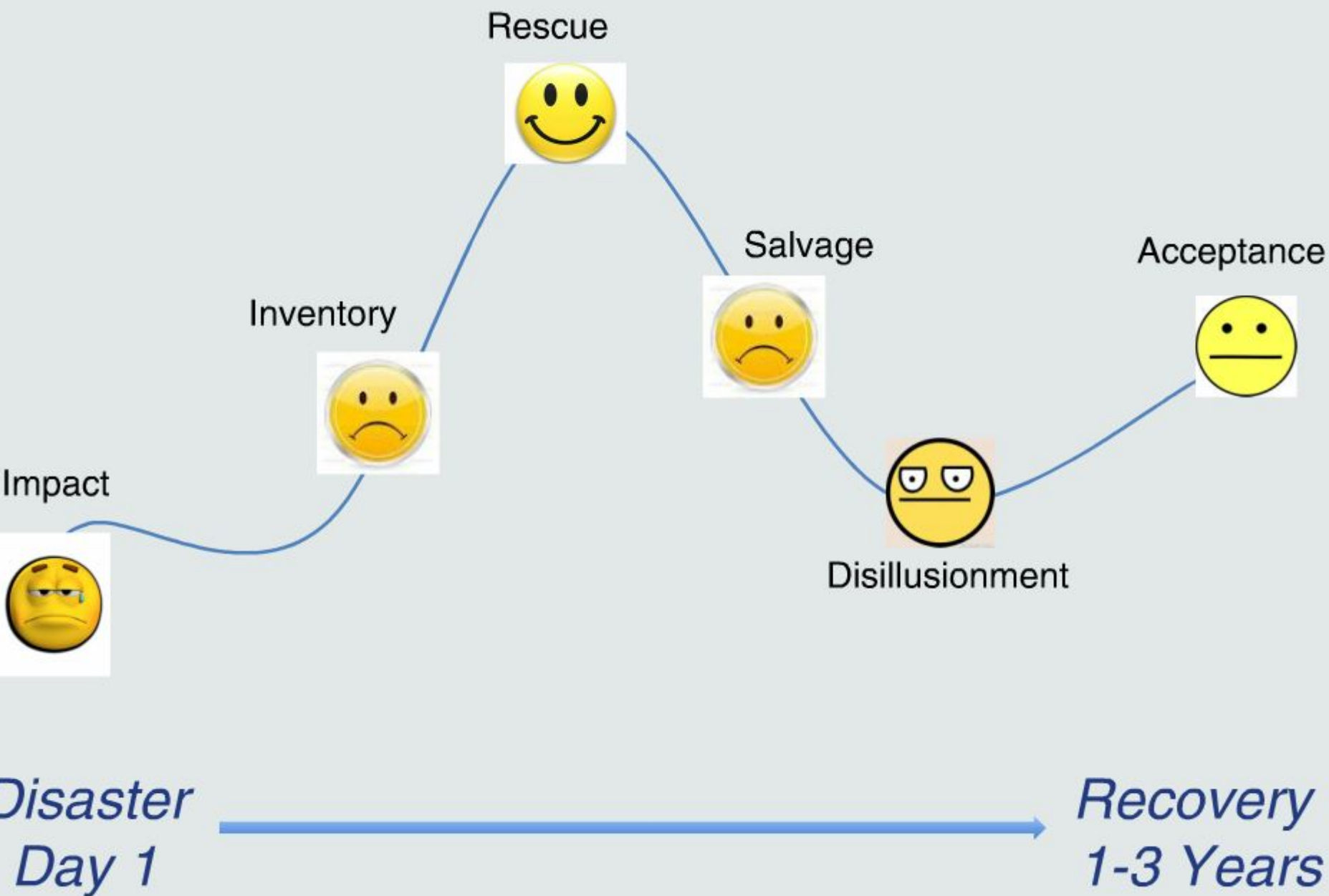
Operations: tactical implementation of objectives and resources

Logistics: support, resources, and services to meet objectives

Admin/Finance: accounting, procurement, time recording, cost analysis

Security/Registration: monitors site, people, and collections

Mental Health



Safety is the First Priority

Follow First Responders: Police, Fire, Medical

Team Work

Communication Systems

Personal Protective Equipment

Personal Care

Good Hygiene

Rest

Nutrition

Stress Management



Pascagoula, Mississippi
Hurricane Katrina 2005

Site Re-Entry Potential Dangers

- Structural Building Damage
- Electrical
- Gas/Explosion
- Soot, Ash, Other Particulates
- Mold
- Carbon Monoxide
- Volatile Organic Compounds
- Sewage, Petroleum
- Corrosives (Bleach, Acids)
- Asbestos
- Lead
- Poisons, Pesticides
- Intruders



Municipal Archives Mold Outbreak 200



Structural Damages, Petroleum, Mold - Hurricane Sandy 20

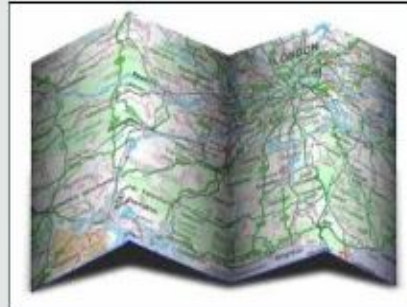
Way Finding and Communications



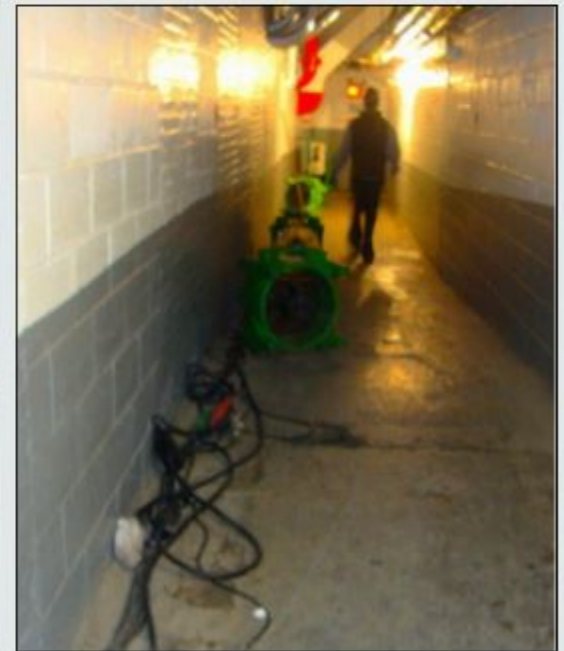
Lynn Meadow Discovery Center
Hurricane Katrina, Gulfport MS 2005



House Fire
Philadelphia PA 2014



Secure and Dry the Building



Salvage

...Rescue a wrecked or disabled ship or cargo from loss at sea



WestBeth Art Studios
New York City
Hurricane Sandy 2012

- Sign In/Out logs for people and collections
- Use documentation to maintain order during recovery

[illegible]

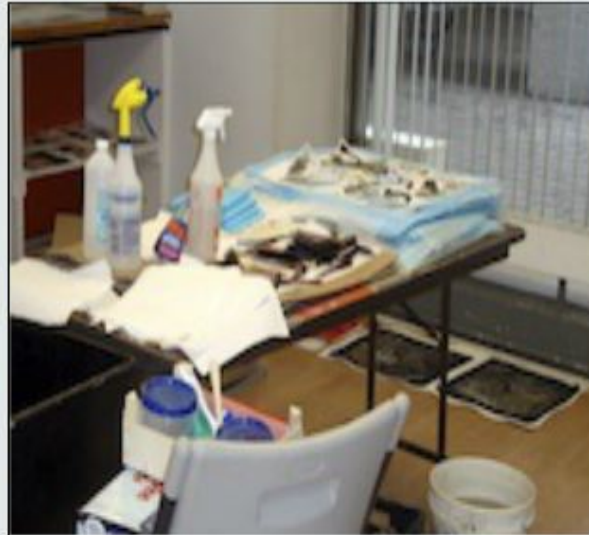
Documentation

- Take photographs of the event and collections
- Record stages of incident and collection recovery
- Update locations during progressive stages of recovery
- Label everything



Work and Storage Space

- Set up and equip areas
- Inventory and organize collections
- Undertake salvage and recovery steps
- Provide personal care facilities



Art Studios
New York City
Hurricane Sandy 2012

Work and Storage Space

- Secure and accessible site
- Cool or cold and dry storage
- Isolate contaminated materials
- Monitor conditions over time



Triage

...Assign degrees of urgency to the wounded or ill



Keansburg Historical Society
Keansburg NJ
Hurricane Sandy 2012

Triage

Items that may be considered as a higher priority

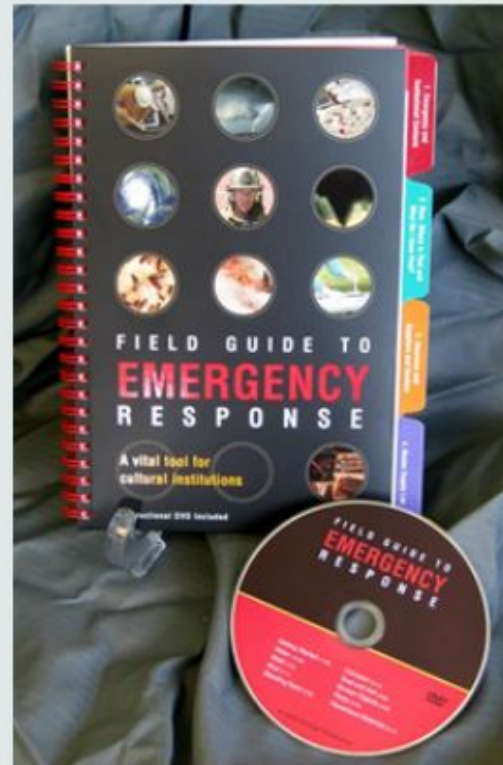
- Valuable Materials
- Fragile Materials
- Unique Items
- Borrowed Items
- Institutional Records
- Organic Materials: Paper, Photos, Textiles, Feathers, Pliable Leathers
- Unaffected Collections 

Items that may be as a lower priority

- Duplicate or Replaceable Items
- Inorganic Materials: Glass, Metal, Stone, Ceramics
- Unaffected Collections 

Triage

Heritage Preservation Field Guide to Emergency Response Emergency Response Salvage Wheel and Phone App



Prevent Secondary Problems

- Accidents

 - Collections and People

- Compounded Condition Problems

 - Freeze/Thaw Cycles

 - Dissolved Glues

 - Poor Handling

 - Discarding Collections or Documentation

- Cross-Contamination and Staining

 - Mold, Soot, Rust, Salts, Pests

- Health Problems

 - Volatile Organic Compounds

 - Mold

 - Soot, Ash

 - Heavy Metals, Poisons



Mold

- Health hazard to people and collections
- Easily broadcast and contagious
- Never completely eliminated
- (Re) Grows in warm, humid, stagnant conditions

Prevent Mold

- Control drying of wet materials
- Store below 68°F and 55% RH
- Isolate and monitor affected materials



Sources of Disasters

- Weather
- Seismic Events
- Fires
- Water
- Structural Issues
- Mechanical Issues
- Accidents
- Construction
- Civil Unrest
- Explosions
- Vandalism
- Poisons and Biologic Pathogens



University of Texas
Stack Collapse, 2015

Fire

- Arson
- Accident
- Wild Fires
- Weather
- Volcanic
- Lightning
- Electrical
- Construction
- Equipment
- Appliances
- Spontaneous Combustion



Cuming Museum
Roofing Construction Accident
London 2013

Fire

Flames - Heat - Smoke - Gases - Ash - Soot - Water - Steam

Low Oxygen Fires

- . Smoldering flames
- . Wet and smoky residue
- . More difficult to remove soot



High Oxygen Fires

- . Full flames
- . Dry and ashy residue
- . Easier to remove ash



Fire

- Paints and Surface Coats - Blanch, Blister, Flake, Contract
- Paper, Textiles, and Wood - Scorch, Char, Shrink, Burn
- Polymers and Plastics - Melt, Shrink, Warp
- Skins, Hair, Feathers - Burn, Shrink, Distort
- Glass, Stone, Ceramics - Crack, Flake, Shatter
- Metals - Oxidize, Melt, Warp



Putting Out Fires

Water and Steam

- Opens pores causing rapid expansion, physical stress, and odor absorption

Fire Extinguisher Residues

- Dry chemical extinguishers discharge as a fine powder
- Powdery particles embed in textured surfaces
- With moisture creates a coating

Difficult to remove and can cause corrosion



Soot

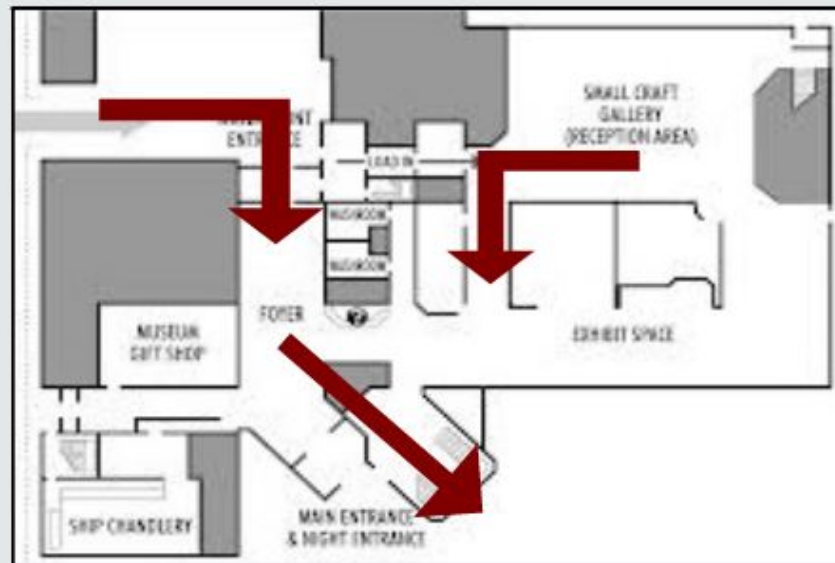
- Creates physical and chemical problems
- Easily broadcast and embeds in surfaces
- Acidic, corrosive, and abrasive
- Handling (compression) drives soot into porous surfaces
- More difficult to remove over time
- Odor



After the Fire

Reduce Tracking Soot

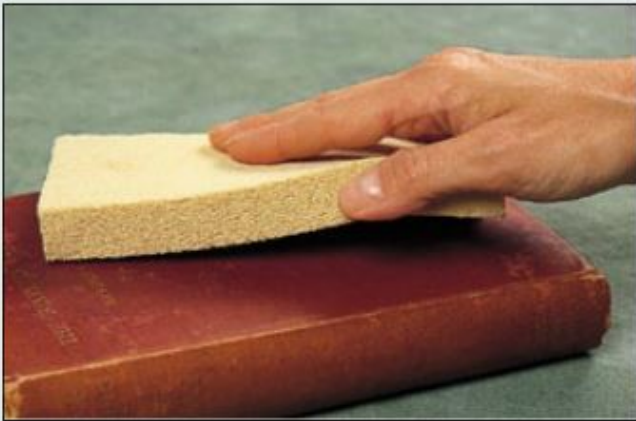
- Define walking paths
- Clean systematically from upstairs to downstairs
- Clean systematically from inside to outside
- Clean from the ceiling and work down



Use Safety Precautions: Fires release hazardous materials

After the Fire

- Support objects when moving
- Touch minimally
- Vacuum with HEPA-filtered vacuum cleaner
- Blot with a vulcanized rubber sponge
- Ventilate for odor reduction



Consult conservators for treatment guidelines

Odor Removal

- Seal small objects in a plastic bag or box with baking soda, clay cat litter, activated charcoal, or zeolite
- Flush rooms with large volumes of clean air
- Avoid thermal deodorization and ozone treatments
 - Deteriorates organic materials and Irritates lungs, eyes and skin



Water Damage

- Water Tables/Geography
- Weather
- Exterior Drainage
- Irrigation
- Roof Leaks
- Plumbing
- Spills
- Firefighting
- Accident



Photo by Perry Walton/P&N Air

Iowa Public Library Flood
Cedar Rapids, Iowa 2008

Water Damage

- Swells organic materials
- Compromises structures
- Loosens and detaches components
- Stains and discolors
- Weakens mends, hinges, and mounts
- Alters media - bleeding, blisters, flakes, loss, discoloration
- Deposits mold, rust, salts, sewage, petroleum, and others



Handling and Drying Wet Materials



Freezing

Advantages

- Stabilizes most collections
- Starts drying process
- Increases available time for treatment

Disadvantages

- Locating freezers
- Electricity or generators needed
- Wrap objects individually
- Poor accessibility
- Slow drying (up to 18 months)



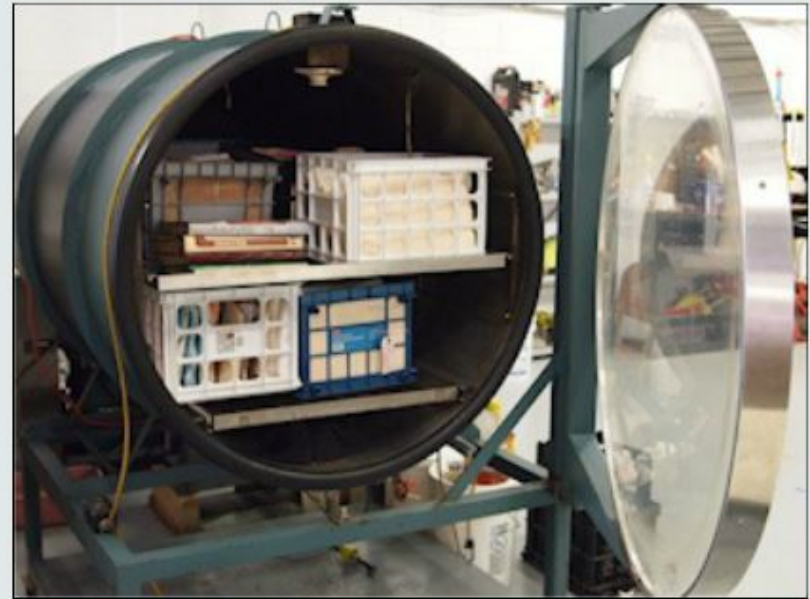
Freeze Drying

Advantages

- Effective for many types of materials
- Less distortion than other drying techniques

Disadvantages

- Requires vendor services
- Vendor expense
- Takes time
- Treatment required after freeze drying
- Not recommended some materials



Air Drying

Advantages

- Low cost - existing space, simple equipment
- All collections types
- Easy to access
- Collections remain at site
- Gentle/No risk of over-drying

Disadvantages

- Labor and supply intensive
- Requires large spaces and security
- Some materials require special attention
- Items may require flattening after air drying
- Variable drying times and risk of mold



Drying Specific Materials

www.conservation-us.org

AMERICAN
INSTITUTE FOR
CONSERVATION
OF HISTORIC AND
ARTISTIC WORKS

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Publications & Resources

Disaster Response and Recovery

Emergency! If You're First...

The following suggestions may help you respond to an emergency affecting cultural property. While an effort has been made to list them in the order in which they can be addressed, you'll need to adapt them to your circumstances. Read the entire document and take the time to plan. It's tempting to "get right to work," but initial organization will save you work and perhaps additional loss. Contact local, regional, or institutional conservation facility, local conservator, or Find a Conservator ([link to Find a Conservator](#)). Above all, remember that safety comes first; don't endanger yourself or your staff on behalf of objects.

1. Initial Coordination:

Paintings

- Move a painting by holding the frame or stretcher bars
- Air-dry vertically or flat, face-up with spacers underneath
- Do not touch or put pressure on painted surface
- Spray with 70:30 solution of Alcohol : Water (with care)



Consult Conservators for Treatment Guidelines

Objects

Inorganic Materials - Glass, Metal, Stone, Ceramics

- . Rinse
- . Dry as soon as possible

Organic Materials - Skins, Bone, Ivory, Wood, Baskets

- . Rinse
- . Control drying
- . Pad to shape
- . Clamp to constrain expansion, contraction, warping



Consult Conservators for Treatment Guidelines

Electronic Media

- Consult professionals as soon as possible
- Do not turn on electronics
- Keep labels and box information with media

Compact Discs, CD-ROMs, Phonograph Discs

- Wash and dry

Computer Magnetic Media, Sound and Video Recordings

- Keep wet; Pack inside plastic bags; Immerse to prevent mold; Do not freeze.



Consult Conservators for Treatment Guidelines

Photos

- Remove from enclosures
- Carry well-supported
- Do not touch sensitive surfaces
- Minimize immersion time
- Wrap and freeze or Air-dry face-up or hanging



Consult Conservators for Treatment Guidelines

Books

- Rinse closed
- Air dry fanned open
- Air dry closed with interleaving
- Freeze-dry
- Monitor for mold



Consult Conservators for Treatment Guidelines

Paper and Textiles

- Remove from frames and enclosures
- Carry well-supported
- Separate textiles by whites and colors
- Do not stack sensitive media
- Dry flat paper between blotters and under weight
- Dry 3-D textiles with padding, changed regularly



Consult Conservators for Treatment Guidelines

After Salvage



Keansburg Historical Society
Keansburg NJ
Hurricane Sandy 2013



AIC Cultural Recovery Center
Brooklyn New York
Hurricane Sandy 2013

Recovery

Building, Site and Collections Management
Repair, Rebuild, De-Accession, Replacement



Recovery is a Long-Term Process

- Assessment and Re-Assessment
- Strategic Planning

Continuity of Operations

Increased work load and need for additional staffing

Increased need for work and storage spaces

Increased need for funding



2012 Disaster



Salvage



2014 Recovery

Professional Conservation



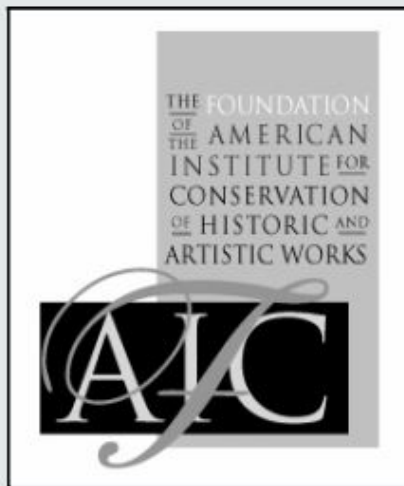
AIC CERT Cultural Recovery Center
Brooklyn, NY
Hurricane Sandy 2013

May Day is a time when cultural heritage professionals take responsibility for doing something simple - something that can be accomplished in a day but that can have a significant impact on an individual's or a repository's ability to respond.

Society of American Archivists



Document recovery, emergency planning services, property damage restoration, and temporary humidity control across the globe



Free 24-Hour Nation-Wide Assistance
Collections Emergency Response Team
www.conservation-us.org/disaster

202-661-8068



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