

Winterization of Museum Buildings

Winterization of Museum Properties

Many of the Historic New England house museums require special seasonal maintenance to prepare for winter. In most cases, these steps are intended to prevent the damage of the buildings during the off-season from the weather and even mechanical failure. The steps are then reversed in the springtime to prepare for the season.

This white paper focuses on the actions required to prepare the structure for winter but does not cover all aspects in detail. There is a separate white paper on preparing for winter weather in the landscape, and dealing with ice dams. Additionally this white paper does not cover the process of preparing the collections for winter.

Guidelines for Winterization

- Inspect the property and document any damage that has occurred over the open season.
- Clean gutters and ensure the water dispersion system is properly maintained.
- Secure doorways, windows and skylights with storm panels if appropriate and available.
- Secure outdoor art and objects
- Turn off and drain any water lines that are prone to freezing.
- Maintain active environmental systems or components before seasonal demands increase.
- Shut down computer and phone equipment and environmental systems or components not in operation over the winter.
- Prepare for snow removal before winter storms strike.

In spring, one can reverse many of these activities and inspect the property for damage from the winter.

Property Care White Papers

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Technical Information for the Winterization of Museum Buildings

Not all sites have the same winterization needs and a maintenance manual entry should detail the requirements for individual properties.

Inspect the property and document any damage that has occurred over the open season.

Regular inspection of any property is a must. The fall is a perfect time because it represents the end of the museum open season so any small damage to the structure can be noted.

Clean gutters and ensure the water dispersion system is properly maintained.

Regular maintenance of the gutters and the overall water dispersion system will help keep water away from the structure. The challenge is that gutters may need to be cleaned several times during the fall. More complete information on gutters and maintaining the drainage system can be found in the applicable white papers.

Secure outdoor art and objects

Loose objects in the landscape should be secured or stored indoors for the winter. This can include signs and furniture but also works of art. Outdoor art and collections objects in the landscape would ideally be taken in for the winter. Water can creep into cracks of a sculpture and frost heave can cause damage. Dirt within historic planting pots can absorb water and then freeze, expanding the dirt and possibly cracking the pot. At the very least the pot should be emptied and turned upside down. If the collections items can not be brought inside then different strategies can be employed such as placing a box around the object or wrapping the object.

Secure doorways, windows and skylights with storm panels if appropriate and available.

In instances where we are opting on a new approach to secure or otherwise protect doorways, windows and skylights with storm panels a review of the recommendations and the aesthetic impact on the structure should be undertaken by the *Proactive Preservation and Interpretation Planning Committee (PPIP)*.

Doorways

- Install wood storm doors or glass storm panels to year-round storm doors.

Windows

- Install any exterior storm windows (wood or aluminum)
- Install any interior windows or window guards
- Close interior shutters
- Close exterior wood shutters if possible and is part of the approved winter interpretation

Skylights

- Install box covers with wire/clip fasteners to protect skylights from weather damage.

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Turn off and drain any water lines that are prone to freezing.

This is especially important where water lines are in locations that are prone. This may range from outdoor faucets and bathrooms to draining entire water systems in houses that are unheated. Inaccessible lines may require the addition of glycol however glycol is also quite corrosive and requires regular maintenance. If glycol is added, it needs to be flushed out of the system at the end of the season.

Potential Water Services Locations:

- Seasonal water service from town/city/well
- Restrooms/Bathrooms
- Water lines to interior sinks/exterior hose bibs
- Lawn/garden irrigation systems

Methods:

- Shut-off water supply in street (Public utility)
- Shut off water supply to exterior spigots (Staff)
- Drain by gravity method/remove drain plugs/traps/faucets & valves (Plumber)
- Pressurize system with compressed air (Plumber)
- Install anti-freeze (glycol) to water lines with inaccessible piping (Plumber).
Glycol is a corrosive agent and needs to be at the end of the season
 - Drain the toilet tanks as best you can and install glycol in tank and bowl to protect the water trapped in inaccessible locations (Plumber)
 - With the system completely charged, hold down the flush handle. The water will drain out of the tank, and air will start coming through the pipes, which cleans out the ball cock. Hold the handle until all the water is out of the tank, and then let it go. Finally, shut off the valve.
 - Pour antifreeze into the tank -- not the bowl. Hold down the flush handle to flush the antifreeze out into the bowl and drain the system.
 - The water should be cleared from the water lines.
 - Go to each sink, get plumber's antifreeze and pour about a 1/2 cup down each drain to fill the trap.
 - Finally, check the water heater one last time for water, and then disconnect the compressor.
 - Don't forget the tubs and showers. Pour a small amount of plumber's antifreeze into the drains.
- Activate electric heat tapes for gutters, downspouts, water lines, drain lines and other water transport systems prone to freezing (Staff)

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Maintain active environmental systems or components before seasonal demands increase.

- Schedule annual tune-ups and cleanings before heating demands begin.
- Change filters
- Make sure oil or propane tanks are full and delivery is scheduled.
- Make sure the heating system is turned on.
- Replace batteries in thermostats.
- Verify thermostat settings.
- Replace batteries in fire alarms and carbon monoxide detectors

Shut down computer and phone equipment and environmental systems or components not in operation over the winter.

Air Duct Systems:

- Install exterior/interior covers over intake and exhaust vents (Staff)
- Close dampers in exterior supply air ducts (Staff)

Hydronic Systems

- Test glycol level for freeze protection in active systems that have glycol already in place (Plumber)
- Completely drain radiation and boiler and pressurize with air to deactivate system (Plumber)

Computer and Phone Systems

- Some sensitive computer and phone systems should be turned off and stored for the winter

Prepare for cold, snow and ice before winter storms strike.

- Refer to the white paper on snow removal.
- Staking for snow plow
- Snow fences, burlap around boxwoods and other sensitive plants
- Snow removal supplies
 - Sand, shovels, snow rakes (extendable)
- Update emergency kits
 - Update emergency contact list
- Open cabinets underneath sinks
- Temporary weather stripping where it snows inside
- Hogs and pigs in the fireplaces
- Generators relocated to accessible spot
- Heat tape turn on (remember to plug in)