

## Inspection Checklist for Historic Buildings

Anyone who lives in or owns an old house, especially one that they love and treasure, always wants to know more about how to identify and correct problems before they become costly repairs. Often simple, timely repairs can prevent thousands of dollars in damage. Recognizing problems before they become critical will help you plan and budget for work on the building when you need it. Likewise, this checklist is designed to help homeowners assess, evaluate, and plan a good maintenance program to protect their property.

Because all buildings are different, this checklist is general in nature and can be adapted to fit specific cases. It can be used for conducting annual/cyclical building inspections or inspecting a property prior to acquisition. This checklist is not intended to take the place of an evaluation by a professional building inspector, architect, engineer, or contractor, and if building faults are identified through use of this checklist, such person experts should be consulted for professional assistance.

Do not be alarmed or discouraged if you identify a few faults. This checklist will help you recognize potential problems, set priorities, schedule work, and control the costs of maintaining your building.

### Roof

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The roof is typically the first line of defense against water infiltration and its maintenance is critical. Water, cause by rain or snow or ice dams, can often travel great distances down the interior of walls and along construction surfaces and cause damage far away from the original source. A leaking roof, if left unchecked, can cause corrosion, rot, and destroy historic materials, finishes, and eventually the structural components of a building.

All roofs require periodic inspection and maintenance to perform as designed and to provide a long and effective service life. Roofs should be inspected at least once a year, preferably spring, to repair damage. All building owners should establish a periodic roof inspection program.

However, be careful. Walking on roofs can be dangerous and only those who are familiar with safe roofing practices or a roof installer should undertake inspection and maintenance. Inspecting the roof with binoculars can usually determine if an up-close inspection is necessary.

#### **Roof Materials:**

Several types of roofing materials can be found on historic buildings in Vermont. They are generally listed in order of durability, but poor installation, a lack of ongoing maintenance, ice dams, and other factors can significantly shorten the life of any roof material.

## Common Vermont Roof Materials

1. Slate (75-150 years)
2. Standing Seam Copper (75-100 years)
3. Standing Seam Galvalum/Galvanized Steel (50-75 years)
4. Corrugated Metal – (20-25 years) mostly used on barns
5. Asphalt Shingles (15-30 years depending on shingle quality and installation)
6. Wood Shingles/Shakes (10 – 25 years depending on shingle quality and installation)
7. Tar & Gravel (15-20 years) or EPDM (50 years)—flat roof
8. Asphalt Roll Roofing (10-15 years)

### **Pitched Roof:** commonly shingles or standing seam

- Slate – are there any missing, broken, or fallen slates? Are the metal roof valleys rusty?
- Standing Seam Metal – is the roof material rusting?
- Corrugated Metal – are there holes or loose or missing fasteners? Are nails “popped-up,” loose or sticking above the sheet metal?
- Wood shakes or shingles – are shingles missing, curling, or cupping on the edges?
- Asphalt Shingles – are shingles missing, curling on the edges, or losing mineral coating (granules)?

**Flat Roof:** commonly tar & gravel or asphalt roll roofing but can also be covered with an EPDM membrane. EPDM is a rubbery roof coating mostly seen on commercial buildings and is significantly more expensive than tar and gravel.

- Are there bubbles, blisters, or cracks in the membrane? The roofing should be tight to the deck and not move or feel soft under foot. Pay particular attention to areas around roof penetrations (vents, skylights, pipes, etc.), ponding areas, and cracks in parapet (a parapet is the low wall that hides roofline and are frequently seen in historic commercial buildings)?
- Is the connection between the roof and parapet walls sound?
- Is the coping, metal flashing covering the parapet, in good condition?
- Are the roof drains and scuppers, drain holes in the parapet wall, clear of debris?

**Gutters:** can become victim to snow and ice damage but help protect lower building walls from moisture damage.

- Are there loose, rotted, or missing gutters or downspouts?
- Do the gutters slope uniformly, without low areas, to downspouts?
- Are gutters clean and free flowing?

### **Cornice (eaves):**

- Is paint peeling or blistering, especially on the underside?
- Check the edge of the roof overhang for evidence of ice dams and observe the eaves and soffit for evidence of deterioration and water damage.

### **General**

- Too many layers of shingles? More than 2 can create problems. Consult with local roof installer if uncertain.
- Is there water staining on the walls? This is a good general indication of water penetration. A good way to pinpoint smaller leaks is to look in the attic space, if open and accessible, during or after a steady rain.

### **Metal Flashing:**

\_\_\_ Is there loose, missing, or rusted sheet metal flashing at chimneys, valleys, ridges, parapet walls, roof penetrations or other roof terminations?

**Structure:**

\_\_\_ Does the ridge of a pitched roof or any portion of a flat roof sag? Some permanent deflection is normal, but excessive deflection should be checked by a contractor or structural engineer.  
\_\_\_ Are bricks, stone or mortar cracked or missing at chimneys or parapets?

**Exterior Walls**

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**General: for all walls including clapboard, shingle, and masonry**

\_\_\_ Is the paint peeling, blistering, or cracking (alligatoring)?  
\_\_\_ Is the wall out of plumb, unlevel or are there bulges?  
\_\_\_ Is wood trim sound, firmly attached and painted?  
\_\_\_ Are there open joints around door and window frames or woodwork?  
\_\_\_ Are the walls water stained?  
\_\_\_ Is there any mold or mildew on the wall surface?

**Masonry Walls:**

\_\_\_ Are there any major cracks in the masonry? Hairline and horizontal cracks usually do not represent a problem. Vertical cracks through masonry units and mortar joints or diagonal cracks signal problems and should be checked by a mason or a structural engineer.  
\_\_\_ Are any masonry units missing, loose or deteriorating?  
\_\_\_ Is the mortar soft and crumbling?  
\_\_\_ Are any bricks spalling or crumbling?

**Foundations:**

\_\_\_ Is there vertical or diagonal cracking in the concrete or masonry?  
\_\_\_ Is the concrete or masonry spalling, crumbling, or deteriorating?  
\_\_\_ Is the mortar in the masonry loose or crumbling?  
\_\_\_ Is there any wood, especially structural members, within 6 inches of the ground? Also look for areas where rain splash back hits the wood.

**Windows:**

\_\_\_ Are all wood window components, exterior and interior, sound and painted?  
\_\_\_ Is any wood at the exterior sill, frames, or sash decaying? Sills are particularly vulnerable.  
\_\_\_ Is there evidence of excessive moisture penetration around the sash or at the sills on the interior?  
\_\_\_ Is the putty around the panes of glass firm and painted?  
\_\_\_ Do the sashes operate smoothly?  
\_\_\_ Are sashes loose in the frames?  
\_\_\_ Are sash cords broken or missing?  
\_\_\_ Does condensation build on interior or exterior storm sash during the winter months? (Some condensation is normal, but high amounts of condensation can deteriorate wood quickly.)

**Attic:**

- Is there evidence of water leaks? Leakage is very common at chimneys and eaves. It is best to look during or soon after a good rain.
- Are there signs of vermin infiltration (usually pigeons and bats)?
- Is there insulation in the ceiling or roof rafters?
- Is the attic vented?

**Decks, Porches and Balconies**

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Decks, porches, and balconies are exposed to the elements to a greater extent than most other parts of a building and are therefore more susceptible to deterioration.

- Are there loose or deteriorated structural or decorative components?
- Are masonry or concrete piers plumb and sound? Make sure that structural connections to the building are secure and protected against corrosion or decay.
- Are the exterior stairs and railings in good condition? Check wooden steps and railings for proper support and strength and for rot. Inspect steel stairs and railings for rust, strength, and attachment. Deteriorated stairs or railings should be repaired or replaced.
- Are there signs of excessive deflection and deterioration on the porch floor?
- Is there a positive pitch of the porch floor or deck away from the exterior wall?

**Interior Spaces**

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- Is the plaster on the walls or ceiling damp, loose or cracked? Water damaged plaster below windows and diagonal stress cracks originating at the tops of window openings are very common.
- Is there any evidence of water infiltration (stains) on the ceiling, around windows or on the lower walls?
- Are walls bulging or out of plumb?
- Does any portion of the floor sag? Some permanent deflection is acceptable, but excessive or progressive deflection may indicate structural failure and should be checked by a contractor or structural engineer.
- Do floors deflect (sag or bounce) when walked on or loaded? Excessive “live load” deflection can indicate undersized structural members and should be checked by a contractor or structural engineer.
- Do doors open and swing freely on hinges? Binding may indicate uneven settling in walls or floors.
- Are stairs sound and stable with an appropriate handrail?

**Cellars and Crawlspace:**

- Do the walls and floors show signs of excessive moisture?
- Is there evidence of standing water or periodic flooding?
- Are there signs of vermin infiltration or insect damage?
- Any wood, especially structural members, within 6 inches of the ground?
- Are unheated basements and crawlspaces vented?
- Are floors above unheated basements and crawlspaces insulated?
- If a dirt floor, is there a vapor barrier (plastic sheeting) covering it?
- Does the area smell of mold or mildew?

**Plumbing:**

- \_\_\_ Is there any evidence of leakage underneath the sinks or toilets?
- \_\_\_ What is the water supply pipe material? Brass and copper are the best. PVC pipe has not been around as long as copper or brass but performs well. Galvanized steel or iron pipe will not last as long as any of the above. Lead poses a potential health risk.
- \_\_\_ Is there good water pressure? Test by flushing the toilet and running all faucets at the same time.

## **Heating and Ventilating**

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### **Steam Heat:**

- \_\_\_ Is the boiler tank leaking?
- \_\_\_ Is there evidence of leaking pipes? Look for stains and rot on floor around pipes. Rusted pipes, broken traps or valves and pipes clogged with mineral scale build-up generally cause leaking. The boiler's water level should be monitored periodically. In addition, the low-water cutoff should be flushed once a month to prevent buildup of mineral scale.
- \_\_\_ Obstructions? Remove any drapes, furniture or other objects blocking radiators. These obstructions interrupt airflow and decrease your system's efficiency.
- \_\_\_ Are the steam pipes insulated with asbestos? If the asbestos is damaged, call an abatement contractor as damaged asbestos can release fibers that can become a health hazard.

### **Forced Hot Water Heat:**

- \_\_\_ Is the boiler tank leaking?
- \_\_\_ Is there evidence of leaking pipes? Look for stains and rot on floor around pipes. Rusted pipes, broken traps and pipes or pressure relief valves clogged with mineral scale build-up, generally cause leaking. Check the temperature pressure relief valve by lifting the valve lever and allowing a small amount of water to flow into a bucket. Replace if no water flows from the valve.
- \_\_\_ Obstructions. Remove any drapes, furniture or other objects blocking radiators or baseboard units. These obstructions interrupt airflow and decrease your system's efficiency.
- \_\_\_ Are hot water pipes insulated with asbestos? If the asbestos is damaged, call an abatement contractor as damaged asbestos can release fibers that can become a health hazard.

### **Forced Hot Air Heat:**

- \_\_\_ What is the date of the most recent furnace inspection or service? Yearly inspection is recommended.
- \_\_\_ Are all belts tight and in good condition?
- \_\_\_ Do filters need to be replaced?
- \_\_\_ Does the motor and fan need to be oiled?
- \_\_\_ Are any registers blocked by furniture or inadvertently closed?

### **General:**

- \_\_\_ Is heat distributed evenly?
- \_\_\_ Do thermostats work correctly to control room temperature?
- \_\_\_ Do you have electric baseboard heat? Although cheaper to install than gas or oil heat, in Vermont, this option can be substantially more expensive to operate.

## Electrical

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Unsafe wiring can be deadly. It can cause shocks, fires, and other electrical hazards. However, a visual inspection of wire insulation on accessible circuits will usually determine whether an electrician should perform additional tests.

- Is the main electrical service to the building adequate? 100 amps is minimum by modern standards.
- Does the house have circuit breakers or fuses?
- Are the breakers or fuses the correct size? Recommend 20 amps for new wiring. For older wiring, no more than 15 amps is recommended.
- Is the insulation frayed on existing wires or are bare wires exposed in an unsafe location?
- Is there any sub-standard aluminum wire, surface mounted lamp cord or extension cord or “knob and tube” wiring in active use?
- Are there GFI (ground fault interruption) type receptacles or circuit breakers installed in laundries, kitchens, and bathrooms? If so, test their operation. These types of receptacles were not required before 1990 but are easily installed as replacements.
- Do all light switches and lights attached to walls work properly? Turn on all light switches and lights that are permanently attached to walls.

## Building Grounds:

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- Do all downspouts have splash blocks to divert rainwater away from the base of the building?
- Do lawn sprinklers spray on the building?
- Is there any vegetation contacting the walls or the foundation of the building? Vegetation can hold moisture in wood and masonry walls and foundations.
- Does the grade around the building divert water away from the foundation? The grade should be reversed so the water flows away from the foundation.
- Are all hose faucets working properly?
- Are all drains, including floor drains, working properly?

## Fire Safety

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- Does the building have functioning smoke detectors? Ideally, detectors should be wired to a power source, and should contain a battery.
- Are there fire extinguishers on the premises? Are they fully charged?

## Lead Paint

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For older buildings—broadly defined as being at least 50 years old—lead-based paint may be an issue. In its deteriorated form, it produces paint chips and lead-laden dust particles that are a known health hazard to people and animals. Children are particularly at risk when they ingest lead paint dust through direct hand-to-mouth contact and from toys or pacifiers. They are also at risk when they chew lead-painted surfaces in inaccessible locations. In addition to its presence in houses, lead paint chips and dust can contaminate soil in outdoor play areas.

Vermont’s guidelines call for removing lead hazards, which does not always mean removing the lead. If painted trim is in good condition, i.e., not peeling or flaking, it can remain without posing a hazard. Lead safety is generally achieved through treatment of deteriorating paint, friction

surfaces like window jams and sashes, surfaces accessible to young children, and lead in soil. Lead-based paint that is not causing a hazard is thus permitted to remain, and, in consequence, the amount of historic finishes features and trim work removed from a property is minimized. Homeowners should consult the guidance issued by the Vermont Department of Health.

Never power sand old lead painted surfaces because it causes lead dust that can cause lead poisoning if ingested.

Please refer to preservation brief, “**Appropriate Methods for Reducing Lead-Paint Hazards in Historic Housing**” for more information on the treatment of lead in a historic building.

Copies this preservation brief and many others are available online at

**<http://www2.cr.nps.gov/tps/briefs/presbhom.htm>**