

# The Basics of Moisture Problems - What to Look for and How to Fix It

by William Crosby

If you own a historic building, chances are you have probably seen, smelled, or heard evidence of water problems. Uncontrolled moisture is the most common cause of deterioration in historic buildings. If untreated, it can lead to eroding, corroding, molding, rotting, and destruction of materials, finishes, and structural components. Moisture can be controlled. With careful maintenance, you can provide the amount necessary for comfort as well as the longevity of historic building materials.

Identifying the type of moisture damage is crucial to managing any moisture problem. Some common signs of moisture damage include standing water, mold, mildew, wet stains, flaking paint, peeling wallpaper, dank or musty smells, rust or corrosion, warped or cracked wood, cracked masonry, eroded mortar joints, faulty roofs and gutters, condensation on windows or walls, or ice dams in gutters. Once signs of uncontrolled moisture are found, the next step is to determine the source.



*Downspouts carry waters away from the building and prevent standing water from entering.*

Moisture often comes from a variety of external weather sources. But some of the most troublesome moisture damage in older buildings arises internally from leaking equipment and the use of the building. The five most common sources of unwanted moisture are: 1) exterior moisture entering the building through deteriorating materials, 2) ground moisture, often caused by rain run-off, entering the building, 3) leaking pipes or equipment, 4) interior moisture from household use and climate-control systems, and 5) water used in maintenance and construction materials.

To prevent the common causes of moisture damage, certain exterior and interior areas of the building should be maintained regularly. First, make sure your roofing and guttering are weather-tight and operational. Depending on the number of surrounding trees, gutters should be inspected at least twice a year, and the roof yearly. To prevent clogging, be sure to keep foliage and vines off of your building. Always replace missing and damaged shingles, slates, or tiles, cracked downspouts, and surface materials on walls.

To prevent standing water around the building, eliminate low spots around foundations, clean downspout boots twice a year, and add extensions to them to carry water away. When cleaning steps and walkways, reduce the amount of moisture used. For additional precaution perform a hose test to assess surface drains, check irrigation systems and hose bibs for leaks, and clear out air conditioning drain outlets.

Within the building, inspect the crawl space for animal infestation, termites, and high moisture content to prevent moisture problems. Check foundation grilles seasonally to determine if they provide adequate ventilation and close them when appropriate. Increasing ventilation is essential if household-produced moisture is a problem. Try venting clothes dryers outside and installing exhaust fans in bathrooms, showers, and kitchens.

Equipment checks are the final step in moisture prevention. Check dehumidifiers, vent fans, and water detection or alarm systems for proper maintenance. On piping and ductwork, look out for condensation and insulate and seal them as necessary. If plumbing or radiator pipes are in areas subject to freezing, add insulation along outside walls, in attics, or in unheated basements. On all your mechanical equipment, keep condensation pans and drain lines clear and seal joints in exposed metal ductwork to avoid drawing in moist air.

When dealing with moisture problems, it is best to try to eliminate one potential source at a time. Using more than one treatment can set up a new dynamic with its own set of moisture problems. Making changes in sequence allows for tracking the success of each treatment.

For properties with major or difficult-to-diagnose problems, a team approach is most effective. Working with preservation professionals, contractors, and consultants, the owner can monitor, select, and implement treatments that will manage moisture and protect the historic resource. As problematic as moisture can be to your building, following the right preventative steps and routinely checking for problems can make maintenance easy.