

Roof Drainage System Overview

The roof drainage system plays an important role in New England structures of transporting water off a roof and away from the building. The age, styles and materials of these systems can vary tremendously but their primary goal is to transport water from the roof down to the ground and away from the structure. The primary components of a roof drainage system for historic buildings in New England are typically some form of gutter running along the eaves of the roof, whether built in to the structure or added on, and a downspout to carry water down the building. At the top of the downspout there is a connecting piece, called an outlet, to carry water from the gutter to the downspout and likewise, at the bottom of the downspout, there needs to be some way of carrying water away from the structure. New England also has a wide range of systems such as roof drains and scuppers and many structures do not have a system at all and rely solely on site drainage to carry the water from the roof away from the building.

Basic Guidelines for the Roof Drainage System

- Existing roof drainage systems, when sized properly and operating correctly, can effectively capture roof runoff and redirect it down the gutter and downspout and then away from the building.
- Maintenance of the system is a key component of any preservation plan. Gutters, outlets, downspouts should be cleaned out semi-annually of debris and then treated, if appropriate, to encourage material longevity.
- The roof drainage system guides the water towards the foundation of a building - water should be moved from the downspout away from the building whether through runouts, site grading, or an underground drainage system. All components of this system should be inspected regularly for operability.
- A structure that does not have a roof drainage system is not necessarily prone for damage as long as the roof is shedding water and the water transported away from the structure. This means that the emphasis on maintenance moves from the gutters and downspouts to the components of the site drainage system to ensure they are performing as expected.
- If the system is not functioning as designed or if deterioration is identified in the system there is a need for maintenance, repair or even replacement. A repair or replacement project would be appropriate if it is documented that water is not effectively being carried away from the building by the existing system and basic maintenance would not correct the issue.
- Prior to any major repair, replacement project or the addition of a new system, it is essential to understand and document all existing conditions and failure mechanisms. An understanding of the conditions which led to the deterioration of the existing material will help inform the selection and installation of new materials.
- Climate Change Note: The intensity of rainstorms has been steadily increasing for over 100 years with dramatic increases in the last 40 years. Historic New England has found that certain components of the roof drainage system, even if maintained properly, may not be sized properly to carry the amount of rain that the roof is shedding in particularly intense storms.

Please see the white papers on gutter maintenance, site drainage, gutter projects, and planning for climate change for more information.