HISTORIC NEW ENGLAND
Defining the past. Shaping the future.

Property Care White Papers

Weatherization

Approach to Weatherization

Historic New England owns very few structures not considered a part of the historic house museum collection. Buildings and outbuildings alike are carefully preserved and space use ï whether museum, administration, apartment or storage ï is monitored for its affect on the structure and the integrity of the building materials. Weatherization, loosely defined here as the activities necessary to make a structure more energy efficient, needs to happen at many of these structures in order to cut energy consumption. The challenge for Historic New England is to fit any work required for weatherization within the context of its preservation philosophy.

Historic New England has developed a basic approach to weatherization that looks at many different factors.

- **Metrics:** The core metrics for our weatherization program are energy consumption and air leakage.
- **Energy Audits:** Working with an outside consultant on an energy audit can help define and analyze the metrics as well as recommend improvements or analyze staff recommendations. Be warned, auditors are not all sympathetic to preservation.
- **Preventing Air Leakage:** General recommendations from an energy audit usually include securing the heated spaces of the structure to minimize air leakage. A common estimate is that 25-33% of a buildingôs energy requirement is a result of air leakage. Our basic approach to preventing air leakage includes securing the basement, which in most cases is also beneficial for our control of relative humidity inside the structure; conserving existing windows and applying weather stripping; and the use of storm windows and doors while balancing aesthetic, interpretive, and functional requirements. Additionally, we are exploring reversible ways to seal gaps commonly found throughout a structure in order to avoid irreparably damage historic material.
- **Insulation:** There are many insulation opportunities available in a building. Historic New England is currently focusing on insulating piping and ductwork as appropriate and insulating the upper floors to prevent heat from escaping through the attic and roof. There are too many unknowns within the building structure and with moisture migration to consider blown-in wall insulation to be a safe option.
- **Heating and Cooling Plants:** Our goal is to have the most efficient heating and cooling systems in operation while also appropriately caring for the aesthetics of the historic setting and the building fabric. We are looking for simple solutions including smarter thermostats and outdoor resets on boiler systems to help mitigate energy use at the sites. However, we must balance the need to better control the environments within our museums for the benefit of the collections and the buildings with the desire to decrease energy use. Sometimes the two do not coexist nicely.
- **Lighting:** How can we decrease energy use through smarter use of technology with our lighting systems and their controls?
- **Water Conservation:** As each site undergoes system upgrades, low-flow toilets and other water conservation methods are employed. As we explore waste systems, we test the efficacy of grey water collection and other methods.