



10 Common Mistakes People Make While Working on their Historic Building.

By Danielle Keperling & Chuck Groshong (Historic Restorations)

1. REPOINTING BRICKS WITH MODERN MORTAR

Masonry is one of the most durable historic building materials, however it is also very susceptible to damage as a result of improper maintenance or repair. Mortar is used to bond together masonry units. The interaction between mortar and brick or stone is complex and often misunderstood. Historic mortar (lime based) was generally soft and readily allowed water or vapor to pass. Modern mortar (Portland cement) is very hard and slow to transmit water or vapor.

Portland cement works well with modern brick or stone, but causes problems if used with older, hand-packed brick (which were fired at low temperatures and are fairly soft).

Repointing historic masonry with Portland cement mortar can create a bond that is stronger than the historic material, resulting in a differing coefficient in expansion and porosity, causing damage. This pairing can cause rapid deterioration and failure in hundreds of years old masonry.

When in doubt, use a soft mortar.

2. APPLYING VINYL OR OTHER SYNTHETIC MATERIALS

Structures are historic because the materials and craftsmanship reflected in their construction are tangible and irreplaceable evidence of our cultural heritage. Substitute materials subtract from the basic integrity, historically and architecturally, of buildings. Historic materials should be retained wherever possible. Since wood has always been present in abundance in America, there is a richness and diversity of wood sidings in America. Therefore the wood sidings become a recognizable part of the historic character of a building.

Often, during a restoration project, the replacement of wood siding is deemed necessary because it has deteriorated beyond repair. The concern with using vinyl or other synthetic materials to replace the original materials is a loss or severe diminishing of the unique aspects of the building. Applying synthetic material to a historic

building can damage or obscure historic material, and more importantly diminish the historic identity of the building.

Though installation of artificial siding is thought to be reversible, often there is irreversible damage to the historic materials during the installation process. Furring strips are used to create a flat surface, “accessories” are needed to fit the siding around architectural features, and the existing wall fabric is damaged from the nailing necessary to apply the siding.

In addition, aluminum and vinyl siding is often applied to buildings in need of maintenance and repair, thereby concealing problems which are an early warning sign of deterioration. Cosmetic treatment to hide difficulties such as peeling paint, stains or other indications of deterioration is not a sound preservation practice. In addition, artificial siding makes it impossible to monitor the condition of the building because it is hidden from view.

The questions of durability and relative costs of aluminum or vinyl siding compared to the maintenance cost of historic materials are complex. One consideration is repair cost. All siding materials are subject to damage and all can be repaired. However it is much easier to repair wood siding, and the repair, after painting, is generally imperceptible.

Because aluminum and vinyl can be produced with an insulating backing, they are sometimes marketed as improving the thermal envelope. In reality, the thickness of any insulating backing would be too small to add to the energy efficiency of a historic building and should not be a consideration when choosing synthetic siding.

Finally, artificial siding removes the unique details and distinctive qualities of your building and can reduce its value in the marketplace by making it look like every other house.

Historic Building materials, when properly maintained, are generally durable and serviceable materials. Their existence on tens of thousands of historic buildings is proof that they are the good selection.



3. REPLACING ORIGINAL WOOD WINDOWS

Technology and architectural styles have shaped the design of windows throughout history. The windows are one of the few parts of a building that serves as both an interior and exterior feature, and they usually make up 20-30% of the surface area of a historic building. It is for these reasons that windows are an important part of the character of a building, so removing or radically changing them has a drastic impact on the building's character.

Conduct an in-depth survey of the conditions of windows early in the process so that options to retain and preserve windows can be fully explored. Many make the mistake of replacing windows solely due to peeling paint, broken glass, stuck sash or high air infiltration. These are not indications that the window is beyond repair.

In fact, weatherizing and repairing doors and windows is often the most practical and economic maintenance plan. Also, repair window frames and sash by patching, splicing, consolidating or otherwise reinforcing. Repair may include replacement in-kind of parts that are missing or deteriorated. Do not obscure historic trim with metal or other material, strip windows of historic material, change the appearance of windows through inappropriate designs, change the number, location, size or glazing pattern of windows.

Windows that are too deteriorated to repair should be replaced in-kind using the same sash and pane configuration. If this is not technically or economically possible, then use a compatible substitute material. Use historical, pictorial and physical documentation to replace windows with an accurate restoration window.

Protect and maintain existing windows with cleaning, rust removal, limited paint removal and protective coatings on a regular basis to prevent deterioration.

4. HIRING CONTRACTORS WITHOUT THE NECESSARY SKILLS OR EXPERIENCE (INCLUDING DESIGN PROFESSIONALS)

Modern materials and techniques designed for modern buildings are often incompatible with old buildings, and some repairs suitable for modern buildings can do serious harm to historic building materials. Older buildings require a different approach to their upgrades. Restoration is an art and professionals working in restoration trades have spent years developing their skills. You want to hire tradespeople who have the experience to manage the unique characteristics of your home and who value the finer points of the restoration process. The need for an

experience restoration professional starts at the very earliest level, including design. There are two main considerations when hiring contractors: find someone with the right experience and skills, and find someone you are comfortable working with. The ability to communicate with the contractor is very important in building a relationship. Even small jobs can be fraught with complications and present many decisions, so you want to work with someone who can be entrusted to make the right decisions for your home.

Resources to find skill contractors include, local historical societies and recommendations from historic and preservation organizations.

A restoration contractor should be able to speak with technical expertise about different restoration methods. They should have a portfolio of proven past experience and references. Take the time to contact those references and ask if the project was on time and on budget and if the customer would hire them again. Remember, choose an insured professional running a legitimate business.

5. USING CHEAP PAINT

As with most products, with paint, you really get what you pay for. In fact, the components in paint that give it longevity and durability are costly. So it is in the best interest of your historic home to use high quality paint.

When working with a professional painter, remember that they usually receive trade discounts and for this reason, are often reluctant to use a different brand. However, the actual cost of paint is a small portion of the cost of hiring a professional painter.

It is important to do research and choose the best paint within your budget. If need be, find out how much paint your painter will need and purchase the paint yourself.

6. NOT MAINTAINING THE BUILDING

All buildings deteriorate over time. Sunlight, wind, seasonal weather, temperature changes, insects, rodents, birds, vegetation, and chemical pollutants are all factors in the long-term deterioration process of a building. Another factor, is neglect. With proper treatment, historic buildings can continue to survive for decades more – in many cases, lasting longer than modern buildings.

Periodic inspection followed by regular maintenance is the key to the survival of historic buildings. Waiting to perform maintenance only after something fails doesn't protect



the building and costs more in the long run. Design your own regular maintenance schedule developed specifically for your home. Inspect both the interior and exterior & use binoculars for out of reach areas; and consider that damage visible in one area may be caused by a problem in another area. The best time to perform inspection is during moderate rainfall, because you can check on the drainage system. In fact, the most powerful force of deterioration on a historic building is water. So, careful inspection is important in reducing moisture-related damage.

7. REPLACEMENT NOT IN-KIND

According to Preservation standards, historic character should be retained and distinctive materials that characterize a property will be preserved. While repair and restoration is always the preferred option in retaining historic character, it is not always a viable option, due to extensive deterioration or missing parts. The next step is limited “replacement in kind.” “In kind” means a replica of the old feature in all respects, except improved condition.

There are several considerations to be made when replacing in kind. Do not replace entire features when limited replacement of deteriorated or missing parts is an option. Materials should match the old, both physically and visually, in design, color and texture. The cost and life cycle of materials are important to consider when choosing replacements. Use historical, pictorial and physical documentation to accurately reproduce and re-establish a missing feature. Another option for replacing a missing feature is a new design that is compatible with the remaining character defining features of the building, but should be clearly differentiated so as not to create a false historical appearance. It is important to consider that these alterations do not radically change, obscure or destroy the character of the building. Finally, any new material should be identified and properly documented for future research.

8. BAD DESIGN – NON-WATER SHEDDING, ETC.

Without proper water-shedding design joints can open and allow water in, which can lead to fungal deterioration. Proper design can prevent many major expenditures and repairs.

Exterior surfaces must be able to shed rainwater. However, creating a design that allows rainwater to move from the house’s highest point to the ground without getting stuck, is difficult. Key to proper water-shedding is that all exterior surfaces are angled away from the building (window sills, porch floors, etc.).

9. NOT HAVING A PLAN OF ATTACK

A plan is necessary to maintain an order to the progress of a project. If a task is completed out of order, it can cost more money when you have to complete the same task more than once.

Work should progress in six basic steps:

1. Safety – An important first step is to ensure that the structure is safe for occupants.
2. Structural – The structural systems should be tested to verify that they can support the building’s usage.
3. Exterior Envelope – A next step is to assess the exterior envelope to keep the elements out.
4. Mechanicals – HVAC, electric, and plumbing should be assessed.
5. Interior Finish – Walls, trims, and floors.
6. Landscape

10. MIXING AND MATCHING PERIOD STYLES

Respect the original character of your building and maintain the period style with which it was originally designed. Avoid making changes that may try to make it appear older, newer or fancier than what it really is. Even small subtle changes that do not seem to have an impact will accumulate over time and begin to sacrifice the historic integrity of the building. Also, adding features that serve no functional purpose will rob the building of its personality and are not in keeping with the original design.