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Materials and Building Methods that Preserve Your Home's History

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Preserving, restoring or renovating an old building poses many challenges and usually requires a high commitment of time, energy and money. Whether you're doing minor repairs, major renovations, or a certified historic rehabilitation, you'll need to give serious consideration to the materials used and their methods of installation. Using the right materials and methods is key to the project's success and will affect costs and durability of the finished product. Generally, the architect will specify (choose) the products, while the contractor is responsible for the means and methods of construction.

Modern technology, new material types, and tradesmen skill levels have changed the way buildings are constructed today. New technology, however, is not always compatible with historic buildings. Modern brick and mortar, for example, are harder and more water resistant than their historic counterparts, but using them in combination with old hand-made brick and lime putty mortar on an exterior wall can be a recipe for disaster. Modern Portland cement mortar cures much too hard and will often cause serious damage to the much softer historic brick. Unfortunately, many of the materials originally used on historic buildings are not widely available today. Old-growth forests that yielded tight, straight grain wood are all but depleted, and original materials that are now salvaged from demolition projects to be re-used on historic buildings often carry an expensive price tag.

There are superior manufactured building products today, but many of these new products are inappropriate for use in historic buildings. No doubt vinyl siding, fiber-cement board (Hardie board) and even plastic composites require less maintenance than the traditional wood siding and trim. But their use on historic buildings would generally be inappropriate and generally not acceptable to an historic review

commission. Incorporating new windows into an historic building also presents a challenge. Replacement windows are available in everything from traditional wood to aluminum and vinyl-clad wood and 100 percent vinyl and fiberglass products.

Again, except for wood, these products, with few exceptions, might not be appropriate for historic restoration projects or acceptable to historic commissions. Fiberglass and stamped metal panel doors found at most home centers might also be inappropriate.

In many ways, though, modern materials and technology can make restoration easier and offer better performance over conventional materials. Polyurethane floor finishes, for example, are superior to the old-time varnishes and give the luster of authentic oils. Latex (100 percent acrylic) paint is much better suited and will generally last longer on exterior wood trim and siding than older oil-based paints. And latex paint is a better choice for plaster walls and ceilings than oil. However, alkyd oil paint for interior trim is still preferred for its authentic look, smooth luster and durability over latex. New roofing materials are perhaps the major departure from traditional materials that are nevertheless often considered appropriate and acceptable to historic commissions' review. Modern roofing products such as laminated asphalt shingles (architectural or dimensional) and plastic and fiberglass composites, which mimic the look of slate and wood shake shingles, are finding wide acceptance in historic projects, partly because of the relatively inexpensive cost compared to authentic slate, wood shake or stamped and standing seam metal roofing. Plaster walls have all but gone away in favor of gypsum wall board (often referred to as drywall or Sheetrock) because of ease of installation, value, and the problem of finding skilled plaster masons. Drywall might not be appropriate in a certified historic rehabilitation project, however.

But before considering specific materials, you and your professional team must make a decision about your commitment to historic restoration or rehabilitation. Too often renovation projects that aren't sensitive to materials and methods actu-

ally destroy historic properties. Many owners, architects and contractors today feel the **only** approach to a dirty outdated building is to gut the interior to bare studs and build anew. For today's homeowners, making an old house attractive, comfortable and energy efficient is the goal of most rehabilitation. While most older homes do require major upgrades to bring them into the 21st century, total gutting of a house can often be a huge, unnecessary and very expensive mistake. Unfortunately, this method seems to be preferred because design and construction is much easier than working around existing elements. Certainly, this approach makes it "easy" for architects and tradesmen because it allows for unrestricted space planning as well as a way to correct any structural defects since they can expose all structural members. Plumbing, heating and air conditioning and electrical upgrades are easy, and exterior walls can be readily brought up to current energy standards.

This gutting and rebuilding is the most costly approach to renovation, however, and is definitely NOT preservation; indeed, it can hardly be called restoration. While the exterior walls may remain intact and the street face may remain largely unchanged, the gutting approach should be called "taxidermy preservation." Only the outside "skin" remains. It looks like preservation or restoration on the outside, but the original life of the house is gone (and much of the character as well).

In almost every case, installing new electrical, plumbing and HVAC systems **does not** require gutting. And, in almost every case, gutting will initiate the full enforcement of current building codes and standards. For example, consider a home that has a period Victorian staircase with a 30-inch high balustrade that needs repair. If the builder simply repairs the balustrade, the balustrade is likely to remain. But if the balustrade is removed to relocate the staircase, the builder may have to meet the current code-required height of 42 inches, thus destroying the historic Victorian element. Generally, any part of an existing building that is not directly affected by the renovation may be grandfathered and remain in use. This can also apply to any

mechanical, plumbing or electrical element.

Many builders will recommend replacing plaster walls with "Sheetrock" so that piping, wiring or insulation can be easily installed. Plaster walls, however, do not have to be ripped out to get piping, wiring or insulation in the wall. Even portions of beaded board on walls and ceiling can be removed and easily replaced. There are many effective techniques renovators can use to upgrade systems in an old house without compromising its historic integrity.

Plumbing can often be upgraded with only small portions of a plaster wall removed for access.

New electrical and communication cables can be snaked between studs and joists to upgrade existing wiring or to add new devices without destroying the walls and ceilings.

New mechanical systems exist that require only 2-inch ducts that can easily be fitted between floors, walls and ceilings.

Windows can be upgraded with new insulated sashes and balances without the expense of both interior and exterior repair work needed for wholesale window replacement. The existing jambs and interior and exterior trim remain in place, saving time, costs, and most important, often the original trim. Space-age polymer wood fillers are available today to re-consolidate rotten, damaged wood without wholesale replacement.

Insulation can be "blown" into wall cavities by boring 2- 3-inch holes between each stud or joist. While providing the customary insulating qualities, blown-in insulation can also provide an effective air barrier because it's so tightly packed. In fact, blown-in cellulose offers the additional benefit of being vermin repellant.

Sagging floors and walls can be jacked up slowly—over a period of a few weeks —without doing serious damage to plaster and structure.

PLASTER WALLS AND CEILINGS can then be patched and repaired for a seamless appearance. Polymer modified "paints" along with a fabric scrim can be applied to plaster to bridge and cover cracks without having to remove and replace with drywall. An added benefit of keeping plaster walls and ceiling is the capacity of the cement to act as a "thermal mass" helping to moderate temperature swings, and thus providing a more comfortable home.

A "VAPOR BARRIER" can be achieved by applying a "perm-rated" primer on the interior walls and ceilings.

REMOVING INTERIOR DOORS OR PORTIONS OF WALLS to enhance circulation between adjoining spaces can give an old home an open, airy feel without destroying the charm and character of the original floor plan.

These are but a few techniques that will allow TOTAL systems upgrade while retaining most of the original interior elements. Instead of gutting, consider leaving as much of the original interior walls as possible. Can making an old house look like a new house inside really do justice to its heritage?