

Retaining Plaster Finishes Can Be Cost Effective and Environmentally Sustainable

THIS ARTICLE EXPLORES benefits of retaining traditional plaster and lath construction in older properties, including *additional cost and energy savings* that can be realized in rehabilitation projects that also benefit the environment.

Three types of lath and plaster assemblies have traditionally been used in North America:

A. Wooden lath was used between the mid-17th century into the 1940s. It required three coats of lime-based plaster;

B. Wire or metal lath, first patented in England in 1797, became popular in the 1920s. It was introduced with the use of gypsum, a harder plaster material which also dried more quickly;

C. Rock lath (or gypsum lath), the immediate predecessor of sheetrock, eliminated wooden laths and is comprised of rectangular, 3/8 inch thick panels. This required only two finish coats of plaster.

Early in the 20th century, plaster and lath began to be replaced in new construction by gypsum board or *drywall*, which was first introduced in 1917 by the US Gypsum Company, under the product name "Sheetrock." Today, it remains the most ubiquitous material in new construction for interior finishes, principally because of its economical cost (\$.80 to \$1.39 per square foot, including labor and material but excluding paint).

The prevailing thinking supporting demolition of existing plaster during rehabilitation centers primarily around labor costs and contingency costs. It is easier to install new wiring, plumbing and ductwork, or wall insulation, without having to work around the original lath and plaster. This approach discounts both the sunk cost and *embodied energy* of manufacture, transportation and installation already invested in existing lath and plaster walls. The economics of extending the future service life of these assemblies, if properly repaired, is ignored.

Costs for demolition, removal and disposal of lath and plaster materials vary widely depending upon labor region but, one source (Homewyse.com) estimates \$2.84 - \$6.43 per square foot (psf) before fees and permits,



Retaining decorative plaster, moldings, and details saves original materials, embodied energy, and costs. Often the craftsmanship represented by finishing details is costly, if not impossible, to replicate.

which may not include the cost of removal and disposal of baseboards, door and window casings, and ceiling moldings.

Advantages of Plaster Repair

With further analysis, the actual costs of retention and repair of plaster walls and ceilings vs. replacement with drywall can be quite comparable. Installation of new lath and plaster can cost \$5-\$20 per square foot, as much or more than the cost of demolition and removal; while repair by a skilled artisan may start as low as \$2-\$3 per

square foot. When adding the cost of new drywall installation to the cost of demolition, yielding \$3.64 - \$7.82 psf, the economics of retaining or repairing existing plaster appears quite competitive. This economic argument further improves if the cost of replacing baseboards, crown molding and door and window casings (at \$3 - \$6 per lineal foot un-installed) is added to the overall cost. Often the craftsmanship represented by these finishing details is costly, if not impossible, to replicate.

In conclusion, there are compelling arguments supporting the retention and repair of existing plaster walls:

- Most (98%) of the *embodied energy*, labor, quality of materials, and skill is retained.
- Hazardous dust, the cost of demolition, and waste disposal is eliminated.
- Cost of replacing still-serviceable baseboards, window casings and ceiling moldings is saved and original materials are retained.
- Improved insulation value is achieved (1" plaster wall has a higher R-Value than 1/2" sheetrock).
- The lateral resistance strength of walls is reinforced and superior sound attenuation is achieved.
- Higher inherent fire resistance ratings are retained, which can be supplemented with use of intumescent paints.

Less destructive methods than complete demolition can be used to install new wiring, ductwork, and flexible piping, including "fishing" or removing baseboards. Insulation can be blown into wall stud cavities.

Overall, retaining and repairing your plaster walls may be financially comparable to new construction, with the added benefit of retaining original architectural features while being more environmentally sustainable. ■



Christopher Closs

Landmarks' Preservation Services Advisor
(207) 809-9103
ccloss@portlandlandmarks.org
Providing historic preservation technical assistance and tax credit pre-assessments.

Historic Preservation is good business. Greater Portland Landmarks is honored to recognize our Business Partners.

OLD HOUSE TRADE SHOW SPONSOR

- Norway Savings Bank
- The Heritage Company Coppersmiths
- Benchmark Realty
- Cornerstone Construction
- Marvin Design Gallery by Eldredge Lumber
- Taggart Construction
- Distinctive Tile & Design
- Hancock Lumber Co.
- Bangor Daily News
- Your Kitchen Imagined
- Innerglass Window

HISTORIC HOUSE GALA SPONSOR

- The Heritage Company Coppersmiths
- 118 on Munjoy Hill
- Bangor Savings Bank
- CBRE The Boules Company
- CIEE
- The Hatcher Group of Keller Williams Realty
- KeyBank
- Maine Home & Design
- M.R. Brewer

50TH ANNIVERSARY SPONSOR

- Dead River Company
- Danforth Group of Wells Fargo Advisors
- J.B. Brown & Sons

SPECIAL PROGRAM SUPPORT

- Norway Savings Bank Education Programs Sponsor
- Wright-Ryan Construction, Inc. Preservation Awards Sponsor
- Consigni Construction: Observatory Season Sponsor
- Ocean Gate Realty: Observatory Season Sponsor Lecture Series Sponsor

SLATE

- Bernstein Shur Sawyer & Nelson Portland, ME
- Parallax Partners, Inc. Lewiston, ME

GRANITE

- Attardo Pondelis Architecture Portland, ME
- Benchmark Residential & Investment Real Estate Portland, ME
- Building Envelope Specialists South Portland, ME

■ CGB, Inc.

- Westbrook, ME
- Cornerstone Building and Restoration Portland, ME
- East Brown Cow Management Company Portland, ME
- Gorham Savings Bank Portland, ME
- The Guimond Group South Freeport, ME
- The Heritage Company Coppersmiths LLC East Waterboro, ME
- Ocean Gate Realty Portland ME
- Random Orbit Portland, ME
- Skillin's Greenhouses Falmouth, ME
- Wright Ryan Construction Portland, ME

BRICK

- Archetype Architects Portland, ME
- Brady Enterprises, Inc. Portland, ME
- Court Square Properties, LLC Cape Elizabeth, ME
- Canningham Security Systems Yarmouth, ME
- David Marsden, Realtor® Portland, ME

■ Developers Collaborative LLC

- Portland, ME
- Fine Lines Construction, Inc. Freeport, ME
- Hancock Lumber Company Casco, ME
- Jacobs Glass Winslow, ME
- Resurgence Engineering & Preservation, Inc. Portland, ME
- Sheepsfoot River Joinery Newcastle, ME
- SMRT, Inc. Portland, ME
- Taggart Construction Company Freeport, ME
- Verrill/Dana LLP Portland, ME

SHINGLE

- Bagala Window Works West Falmouth, ME
- Breakwater Technology Inc. Portland, ME
- Castle Kitchens Scarborough, ME
- Clark Insurance Portland, ME
- Committee to Restore the Abyssinian Portland, ME
- Complete Home Evaluation Services Brunswick, ME

■ CWS Architects

- Portland, ME
- Dr. Kerry Drach, Psy.D. Portland, ME
- GEI Consultants, Inc. Portland, ME
- Grandview Window Cleaning Portland, ME
- Great Falls Construction Gorham, ME
- GreenEnergyMaine Portland, ME
- GrowSmart Maine Portland, ME
- Highlands Woodturning Castine, ME
- Home Remedies Portland, ME
- Kolbert Building Portland, ME
- Lee Auto Malls Auburn, ME
- Lilianna's Laundromat & Donatelli's Tailor Shop Portland, ME
- Maine Irish Heritage Center Portland, ME
- Mast Construction Corporation Scarborough, ME
- Mid-Maine Restoration, Inc Boothbay, ME
- Mills-Whitaker Architects, LLC Bridgton, ME
- Neal Dow Memorial Portland, ME

■ The Paint Pot

- Portland, ME
- Portland's Choice Realty - Rachel Cooney Portland, ME
- Oak Point Associates Biddeford, ME
- Portland Stage Portland, ME
- Pownall Scenic & Historical Society Pownall, ME
- Reed & Co. Architecture Portland, ME
- Seacoast Scaffold & Equipment Company Portland, ME
- Sheldon Slate Products, Inc. Monson, ME
- Spring Point Ledge Light Trust South Portland, ME
- Stone*Henge Restorations South Portland, ME
- Thor Construction Harpswell, ME
- Triangle Lodge Portland, ME
- tt-architects llc Portland, ME
- United Insurance Portland, ME
- Upright Frameworks Portland, ME
- Yarmouth Historical Society Yarmouth, ME

Please join other businesses in advancing historic preservation by becoming a Landmarks Business Partner today. You will be recognized for your community support with a listing in every issue of the quarterly *Landmarks Observer* and receive discounts on advertising and many other great benefits. Please call 774-5561 for more information.