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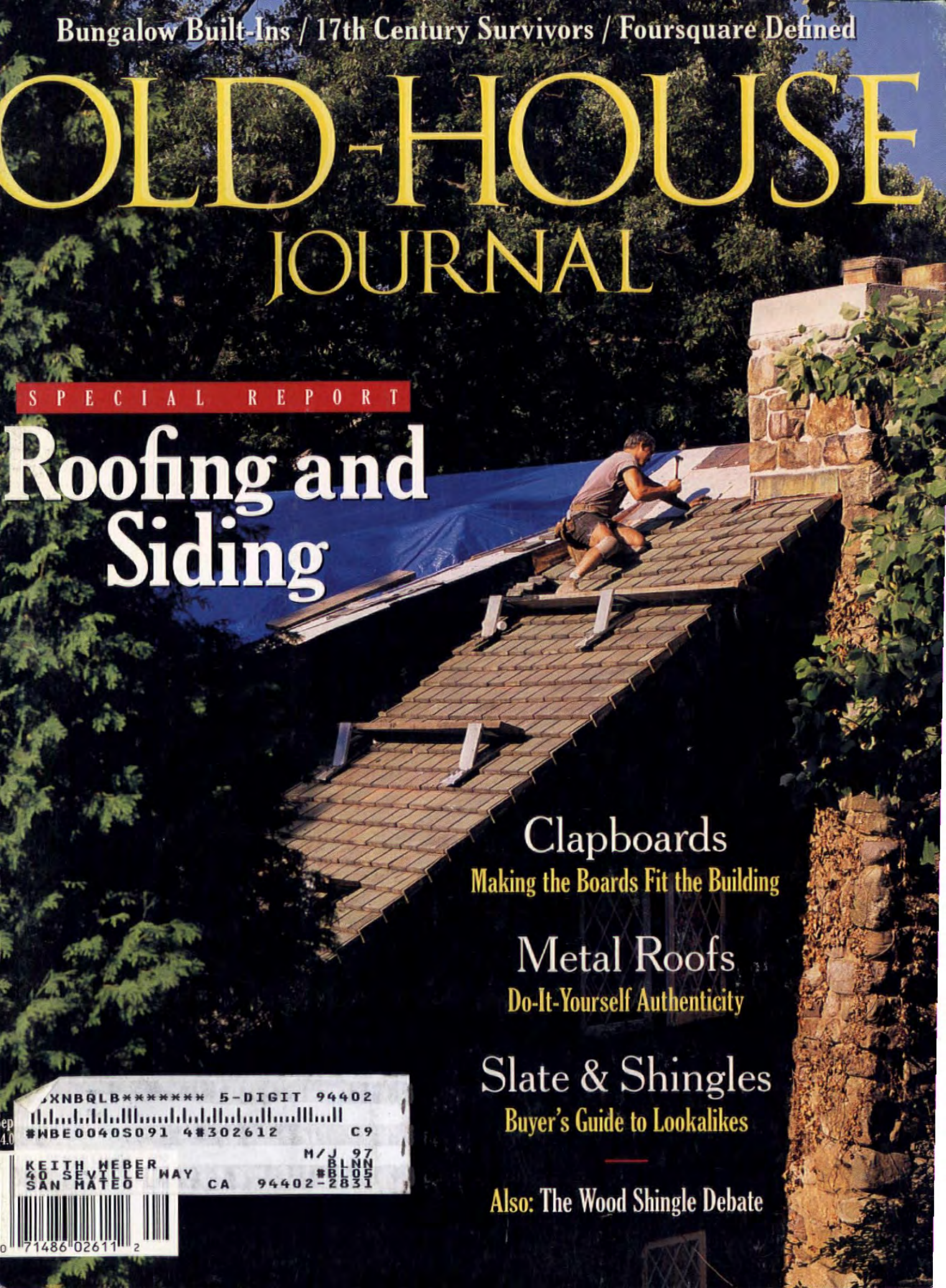
OLD-HOUSE JOURNAL

SPECIAL REPORT

Roofing and Siding



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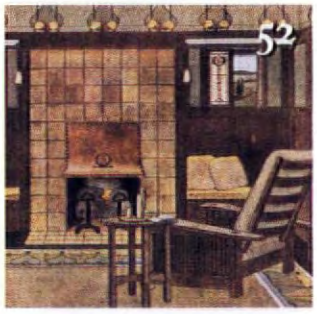
Volume XXII, Number 6



ROOFING & SIDING

ON THE COVER: *Craftsman Farms, Gustav Stickley's 1913 cabin in Parsippany, New Jersey, recently had its roof repaired. Roofer Mike Basile is shown installing the same type of wood-textured ceramic tiles that were used originally.* PHOTOGRAPH BY STEVE MARSEL

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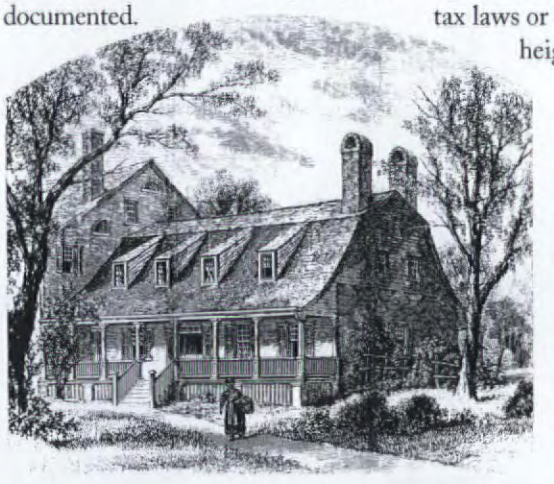
Four-Storey Stories

One of the many things I like to collect is apocryphal information about old houses. After you hear enough of these may-or-may-not-be-true accounts, they begin to fall into groups like ghost stories or dirty jokes. The same basic tales get retold over and over, except with a different time, in a different place, and for a different house.

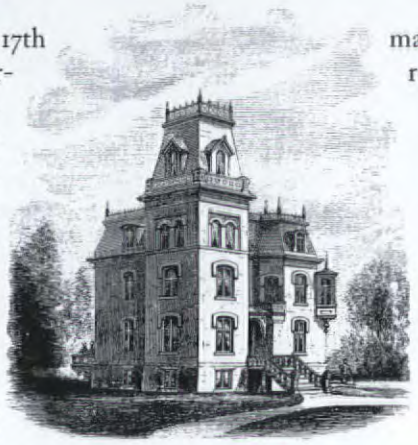
Conspicuous roof shapes, for instance, invariably seem to get explained away with: *it was built that way to avoid a tax.* Without a doubt, old-house roofs can be distinctive, from the chisel-like shed roof of a Virgina Flounder House to the complicated forms of high-style buildings, but their roots are usually practical, not political. Since this issue's focus is Roofing & Siding, I thought I'd share a note or two about mansards and gambrels that rain a little cold water on this roof fable.

In fact, the North American origins of the mansard roof are pretty well documented.



Dutch settlers exploited the gambrel first; since the 1890s it has been a classic roof for revival styles.

Named after the 17th century French architect Francois Mansart, the inimitable two-pitch roof had been employed to add usable space to the top floor of a building for centuries. It received new attention in the 1850s when Napoleon III began redesigning Paris; shortly thereafter, it caught on big in America. A mansard roof was different, striking, and *soigné* — so fashionable following the Civil War it was tagged "the General Grant Style." Adding a mansard was also a slick way to remodel a dowdy building, as it remains today for malls and fast food emporiums. In this light, there's little to suggest it dodged tax laws or building codes about the height of a house.

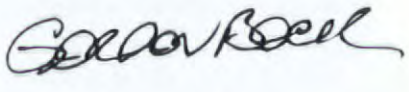


The mansard, in 1869, was a roof of "peculiar construction" but "extremely popular since it gives a greater amount of available room."

This romantic notion is the supposed genesis of the gambrel, too. "The legend goes," offered one 1929 guide to house styles, "that this low, sweeping roof, with its dormer windows, was the ingenious means by which the Dutch Colonists evaded a heavy tax on two storey houses." Much more likely, the broken roofline of the gambrel is yet another device to maximize the headroom in an attic. (British versions are even called mansards.) It is uncommon before 1750 and might be original to these shores. Flared eaves, though, are a fixture on many early houses in Quebec province. Chances are the builders of New Amsterdam adopted them to protect their masonry walls and foundations from rain splashback.

Where do these stories come from? Some probably begin with a grain of truth or half-truth, then get enlarged and polished as they are repeated. Others are seeded by popular literature like novels or advertising, then take on a life of their own.

Peter Gittleman, Manager of Interpretation for the Society for the Preservation of New England Antiquities, offers further insights. "After the 1876 Centennial people started noticing historic houses more and appreciating them as part of our heritage." This increased interest then created a fertile ground for old-house mythology. He adds, "Though there may not be a shread of evidence to support a story, at times the notoriety it lends to an old house even helps to preserve it."



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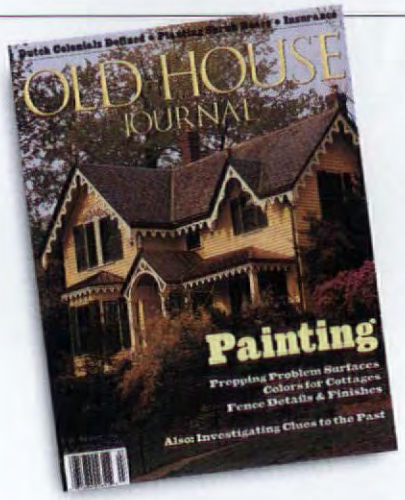

Spot Painting

Dear OHJ,

YOUR PAINTING ISSUE (JULY/AUGUST 1994) arrived just as my husband and I were preparing to begin scraping and painting our 1857 farmhouse. We are pretty familiar with the work, however we had never heard about any under-paint treatments. There are a lot of weathered clapboards and, thanks to your article, we're going to use a water-repellant preservative. That should condition the wood, and help prevent rot. Once again OHJ proves to be an invaluable resource.

I would also like to offer other restorers some advice. Rather than a major repainting every decade or so, we have found that periodic "spot" scraping, priming, and painting suffices. Our exterior paint routinely lifts off (especially on the south-facing walls). Addressing small problems as they arise means painting more often, but doing a much smaller job. It only takes a weekend or two, and it postpones the inevitable.

— ALICEN FUCHS
Macon, Ga.

Stained Glass Questions

IN YOUR ARTICLE, "A HOMEOWNER'S Guide to Stained Glass" (January/February 1994), you say not to use putties containing silicone, portland cement, excessive amounts of dryers, or more than 10 percent plaster of Paris. What do you mean by excessive amounts of dryers? Why shouldn't these materials be used? What is a good mixture for reputtying?

— BRIAN CARLSON
Plantsville, Conn.

We passed your letter to Arthur J. Femenella, of Femenella & Associates in Annandale, New Jersey, a specialist who supplied technical information for the article. Here is his response:

1) The primary purpose of puttying the lead cames of a stained glass window is for waterproofing. Adding dryers or excessive amounts of solvents accelerates the evaporation of oils from the putty. That leaves dried out putty, which is less elastic, and therefore less waterproof.

2) Portland cement, plaster of Paris and other similar additives result in a very hard setting putty with little elasticity, defeating the purpose of the putty. Portland cement can also corrode weak glass and paint.

3) An excellent mixture for a waterproofing compound is: whiting, boiled linseed oil, and lampblack. Proportions vary. Add the oil to the whiting until the putty is of a workable consistency.

Concrete House

I WAS ESPECIALLY INTRIGUED TO read "The Case for Concrete Houses" (May/June 1994). Here is a picture of a poured concrete home in Framingham, Massachusetts. The mansion was built in 1906 as a summer home. The Boston area was plagued by fire at the turn of the century and concrete was considered an innovative, trendy building material. There is life-sized Greek goddess statuary supporting the mantel in the ballroom, and poured-in-place lion's head benches on the observation decks.

—WANDA TEEL
Sudbury, Mass.

Another Shrub Rose

I READ WITH INTEREST THE ARTICLE "Summertime Shrub Roses" in the July/August (1994) issue. However, I feel compelled to mention one that was not on your list. Our favorite old shrub

[*Continued on page 12*]

Rumor has it that the wife of the man who had this mansion built tested the consistency of every batch of concrete.

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Letters

[*Continued from page 10*]
rose is "Madame Isaac Pereire" (1881). It is a Bourbon, and blooms profusely in deep pink, almost magenta. I highly recommend this rose.

— Roberta A. Reed
Santa Ana, Calif.

Triangular Closets

I truly enjoyed the March/April (1994) issue of OHJ on Carpentry in the Round. I grew up in an octagonal house built by Orson Squire Fowler in Yellow Springs, Ohio. I would like to comment on your statement that "leftover, odd-shaped corners and triangles result as traditional rectangular rooms are inserted into the octagonal plan." Our house had four rooms on each floor, two of which were rectangular. As you said, this resulted in triangular walk-in closets and bathrooms. However, the nooks and crannies made for exceptional storage areas (built-in cupboards), and triangular bathrooms are very efficient. There are plenty of windows and sufficient wall space for furniture. I would not call any of this a disadvantage.

— Renneé E. Richardson
Hopewell, N.J.

Restoration Conference

The Restoration '95 exhibition and conference will take place Sunday, February 26 through Tuesday, February 28, in Boston. We still are interested in receiving proposals to speak in the conference program. Speaker candidates can contact us directly either by phone (617-933-9055) or facsimile (617-933-8744). We will provide full details on the conference and how to submit proposals.

— Steven Schuyler
Show Director
RAI/EGI Exhibitions
Woburn, Mass.

Vernacular Vibrations

I was pleased to find the recent OHJ Vernacular Houses article about French vertical log houses (May/June 1994). I am gathering information relating to the preservation and restoration of two vertical (or picket-style) cedar log structures at the Fort Military Park in Oklahoma. Originally poteaux-en-terre, they are now some-

[*Continued on page 14*]

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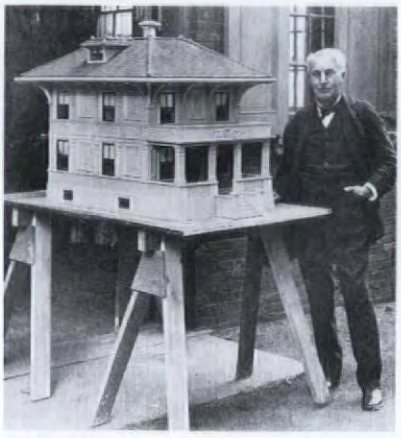
Letters

[*Continued from page 12*]
what poteaux-sur-sole, having had concrete floors and stem walls poured around the pickets. I would appreciate any information about this style from other readers.

— Bob Rea
Oklahoma Historical Society
Fort Supply, Okla.

Cement Kudos

I'd like to express my appreciation for the article in your May/June (1994) issue "The Case for Concrete Houses." I have sent you a photograph of Thomas Edison with a scale model of his concrete house. The Portland Cement Association is celebrating the 150th anniversary of the concrete home this year, so we were pleased to see an article that reconstructed the last 150 years of concrete homebuilding. The association is a Skokie, Illinois-based organization of cement companies in the U.S. and Canada.



Concrete house proponent Thomas Edison with a model.

— Martha McIntyre
Portland Cement Association
Skokie, Ill.

Building Brick Walks

I wish I'd had your article on herringbone brick paths ("Recreating a Brick Walk," May/June 1994) when I installed mine. In spite of several classes in garden construction techniques, I'd never heard of using stone dust as a base. I wish you had mentioned, however, using a brick saw for creating the corners. For some of us, the attempt to create a nice even corner with a brick set will result in breakage and frustration.

— Pria Graves
Palo Alto, Calif.

Photography courtesy of U.S. Dept. of Interior, National Park Service, Edison Historic Site.

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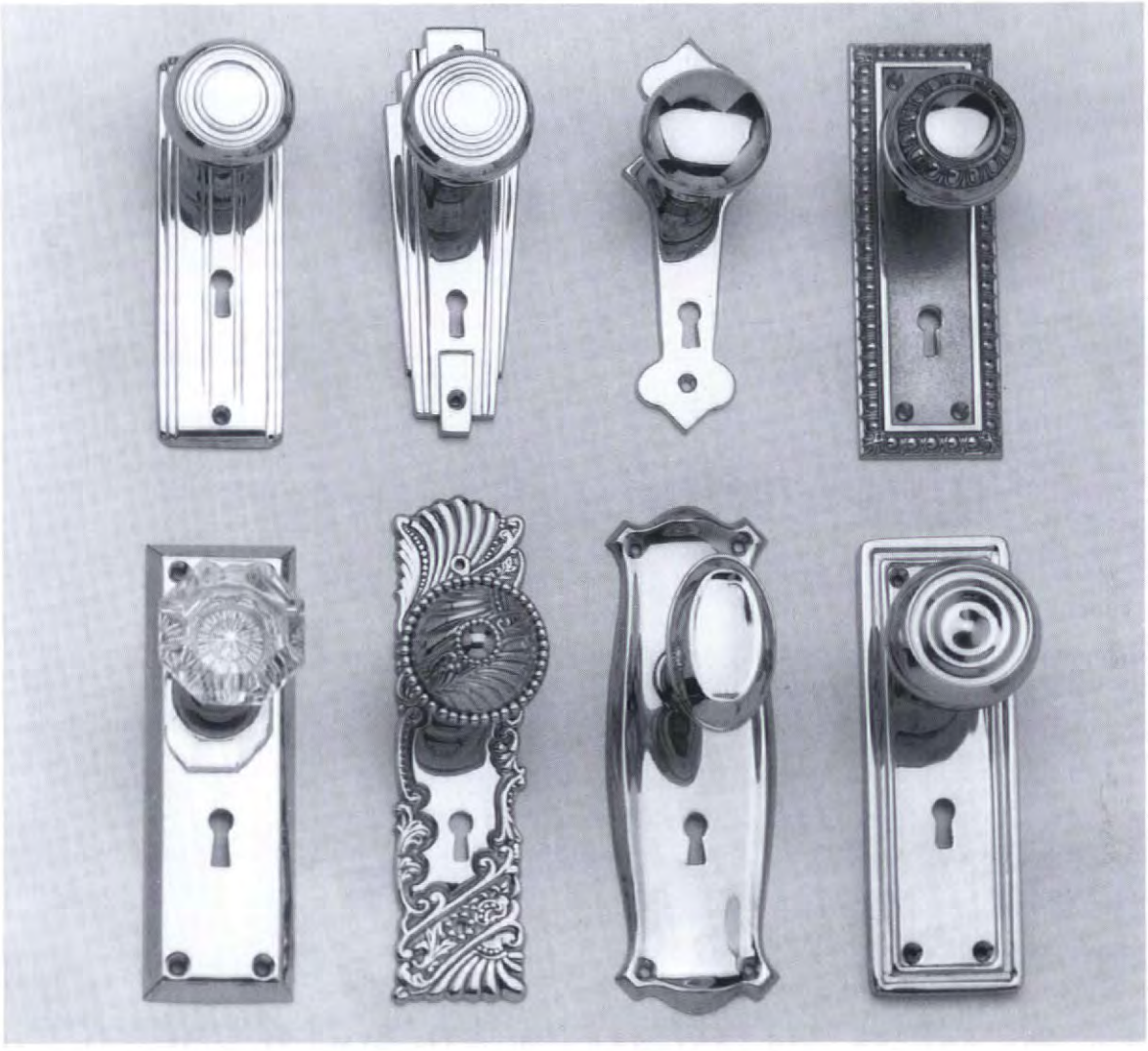

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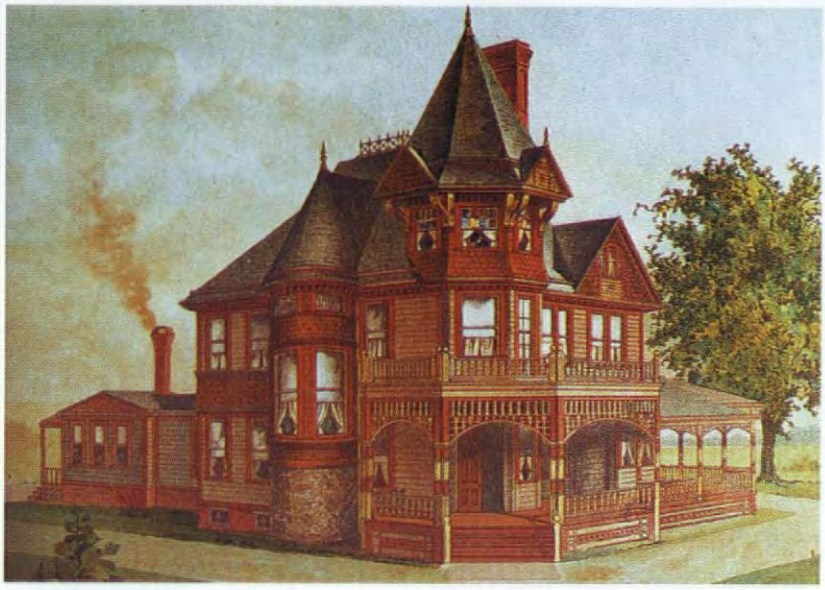

Many late 19th century homes were built with curved windows. Today, replacing broken panes requires finding a glass bending shop.

West Coast Ceramics

■ *After the January earthquake here in Los Angeles, I discovered a maker's mark on the back of my brown and green fireplace hearth tiles. It says "Batchelder, Los Angeles." Do you have any information about this company?*

— TERRY KING
Los Angeles, Calif.

IT'S ONLY A SLIGHT EXAGGERATION to say that almost every house built between 1910 and 1932 in Pasadena and Southern California has Batchelder tiles, generally in the fireplace. Earnest A. Batchelder moved from his native New Hampshire to California in 1902 to take a job as an instructor at what is now Cal. Tech. He eventually founded his own technical school in Pasadena, and started a tile company, which was very successful until the Great Depression. As teacher, art theory writer, and tile maker, Batchelder played an important role in California's Arts & Crafts movement. His tiles reflect a great interest in Japanese and Native American art. Over his career, he moved from Craftsman-style browns and blues to lighter colors and imaginative scenes. Later, Batchelder experimented with the Spanish Colonial and pre-Columbian revivals, and Art Deco.

Earnest A. Batchelder's crest.

Glassing Around

■ *A few of the curved windows in the turret on our Queen Anne are cracked and broken. I have seen some people replace their curved windows with flat or segmented sashes, but do you know of anyone who still makes curved glass?*

— RAYMOND J. RAMIREZ
Maroa, Ill.

MAKING CURVED GLASS — ALSO called bent or bowed glass — requires melting flat panes over a cylindrical form. This can be done with most types of glass, including insulated and low-e, and in any thickness. Not many glass companies are bending glass anymore. However, there are a couple we know of: California Glass Bending Corp., 320 East B. Street, Wilmington, CA 90744, (800) 2230-6594; and ACME Bent Glass, 10211 Armand Lavergne, Montreal North H1H 3N7, Canada, (514) 327-5064. Send them the dimensions and the radius of the glass, or a cardboard cutout of the curve profile.

The Dirt on Earths

■ *I first learned of diatomaceous earth from a 1970s issue of OHJ. I have a light pink kidskin furniture covering marred by what appears to be motor oil, and a fellow old-house devotee suggested it could lift the spots. I have aggressively pursued this mysterious substance to find that it was stocked locally in small amounts at one time but now can only be shipped in 33- to 700-pound lots for swimming pool filters. Is diatomaceous earth the same as* fuller's earth? *What is their actual cleaning capability, and what is a reasonable source of supply?*

— PATRICIA HAMMACK
Portand, Oreg.

DIATOMACEOUS EARTH IS MADE UP of the shells of diatoms — single-celled aquatic plants of the algae family. When diatoms die, their shells remain and as they collect over centuries they form diatomaceous earth.

Illustration from Scientific American — Architects and Builders Edition, *1888*

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Fuller's earth, however, is one of the best absorbents. A kind of sedimentary clay, crushed and dried fuller's earth was originally used to remove oil and grease from wool — the "fulling" process. It was once common for medicinal poultices but is now hard to find. It is still often used for materials conservation, though, particularly for cleaning historic wallpaper. For your leather problem, try applying fuller's earth alone to the stain (many solvents harm leather). Give it time to work, remove by brushing, then reapply if necessary. A good source for both earths in 1-lb packages is Bryant Laboratory Inc. (1101 Fifth Street, Berkeley, CA 94710; 415-526-3141).

Pantry Moths

■ *We have a severe case of moth infestation in our pantry. Do you know anything about these disgusting bugs or how to get rid of them?*

— Kareen Duverlie
Newton, Mass.

IT SOUNDS LIKE YOU HAVE INDIAN-meal or Mediterranean flour moths. These pests infest cupboards and shelves, where their larvae eat flour, pasta, grains, and dried fruit — a life cycle separate from clothes moths, which infest wool and other animal hair. Meal and flour moths have front wings of one color and back wings of another, while clothes moths are single colored.

Throw away open food packages and store dry goods in glass jars (clamp-down lids are better than screw tops). Then remove all dishware from the cabinet or pantry, clear away pet dishes, and set a pyrethrin bomb — one of the safest insecticides available. Pyrethrin is derived from the chrysanthemum, and breaks down after a few hours, leaving no harmful residues on your foodstuffs.

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Figuring Out the Foursquare

by James C. Massey and Shirley Maxwell

MY WIFE AND I RECENTLY *purchased an old house and intend to turn it into a small bed & breakfast. Aside from the Bouldin family, who built the house, we are the first owners. We found one picture in a book of a Georgian Revival-style house that resembles ours very closely. What do we have here?*

— LARRY AND ANN MILLER
Archdale, N. C.

MY OLD HOUSE WAS BUILT IN THE *early 1900s. Its simple square shape doesn't give me much information. What is its style?*

— RAMONA UHRIG
Wheatland, Wyom.

THE FOURSQUARE, BUILT IN MANY guises during the opening years of the 20th century, is certainly a distinctive American house type. The term Foursquare is often used as if it refers to an architectural style, but, strictly speaking, it means a particular house form — just as bungalows and cabins are forms, rather than styles.

The simple square shape of Ramona Uhrig's house is its defining feature.

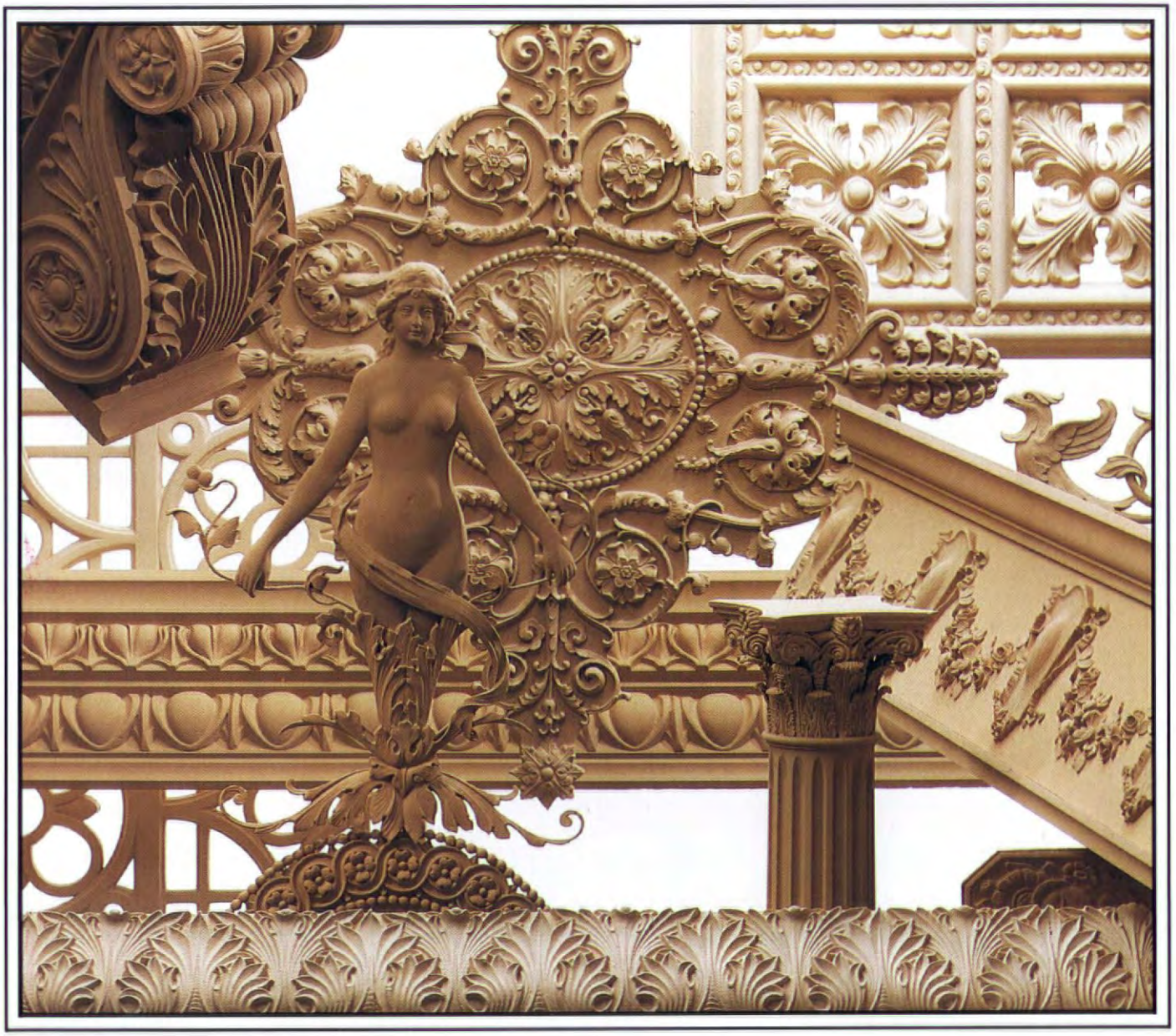
The large proportions and wraparound verandah of the Miller house suggests the Colonial Revival style. However, its cube shape and unadorned exterior are indications of its true type — the Foursquare.

The two-storey, four-room-per-floor house plan without a center hall is an old and much-used idea (witness the expanded hall-and-parlor plans of earlier centuries). So what sets the early-20th-century American Foursquare apart? Look for these characteristics: two full storeys, hipped or pyramidal roofs with pronounced eaves and dormers hiding an extra half storey, large front porches, and lack of fancy exterior ornament. The overall shape is a cube, and the front door is generally located off-center. Ornament on the outside of these houses is sparse or altogether absent and, when found, usually reflects Craftsman-style influences.

Larry and Ann Miller's 1913 Foursquare is a classic — an unusually fine and large example, in fact. It is not, however, a Colonial Revival. The basic, square-ish shape of the house is given special appeal by a tall hipped roof, large front dormer, and ample verandah on three sides. However, like most Foursquares, it is lacking in fancy columns, cornices, and small-paned windows of classical 18th-century design that a Colonial Revival house might show. Even the modest porch pediment is much closer to the American Foursquare than to Colonial Revival.

Ramona Uhrig's Wyoming house confirms the national range of the Foursquare. (Is there a community from that period that doesn't have a few?) It represents the basic version, strictly limited to four rooms down-

[*Continued on page 22*]



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Reading the Old House

[*Continued from page 20*]
stairs and four rooms upstairs. Typically, one of the first-floor rooms was the entrance hall and stair (or it included them).

This example has a two-window facade, a rather low-lipped roof, no dormer, and a porch only on the front. Its simplicity reminds us that Foursquares can range from plain to elaborate, according to the number of windows, the height of the roof, the presence or absence of dormers, and the size of the porch.

The remaining question is: Can a Foursquare have a center hall? Purists might say it cannot, but we think overall cubeness is the ruling factor. If it looks like a Foursquare, that's what we'd call it.

A photo of the Miller house taken in the early 1900s reveals how little the house has changed over the years.

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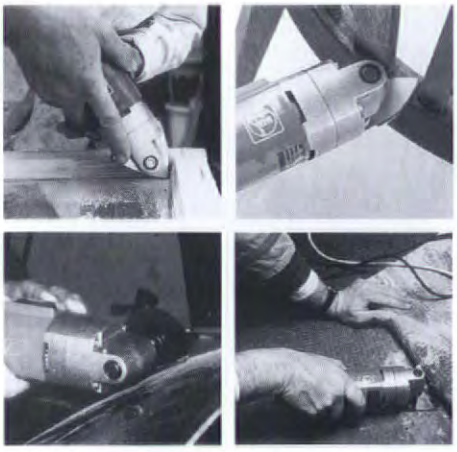

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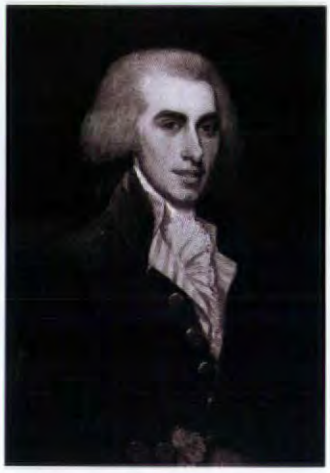
Charles Bulfinch

by Eleanor Bailey

Charles Bulfinch was truly the architect of his own fortune. Building on what he regarded as a "favorite pastime," he became America's first native-born professional architect.

Bulfinch was born into a wealthy Boston family on August 8, 1763. Although little is known of his childhood, drawings of classical columns inside his schoolbook attest to an early interest in architecture. He graduated from Harvard College in 1784, but with no architectural training — none was available in America during his youth. After college, he met Thomas Jefferson during a two-year grand tour of Europe, and the patriot introduced him to the classical buildings of England, France, and Italy.



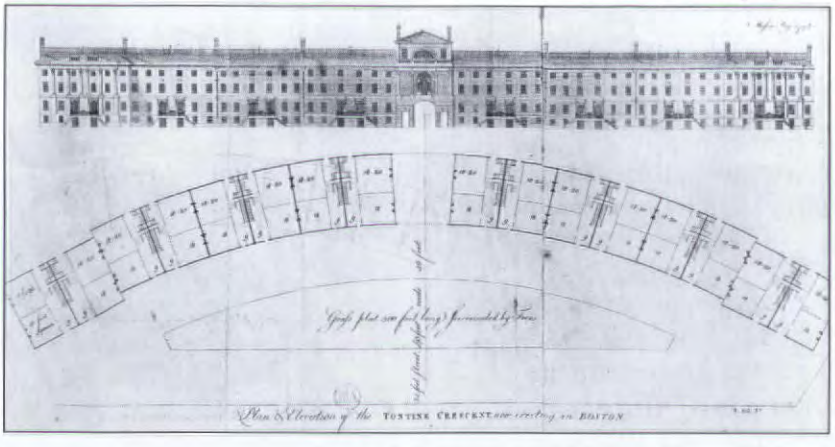
Charles Bulfinch (1763-1844), *painted by Mather Brown in 1786.*

Returning home with memories of European grandeur and a collection of architecture books, Bulfinch began a career in a Boston counting house involved in the China trade. Business was slow and Bulfinch spent a lot of time with his volumes. He tried his hand at architecture, designing projects for relatives and for his employer. Soon he was designing many houses and public buildings on the side, primarily pro bono. Word of his skill spread quickly among Boston's elite, and he eventually became the leading architect in New England, designing private residences for the wealthy and public buildings for the fast-growing towns. His popularity spread to the political arena and, at the age of 28, Bulfinch was elected to Boston's governing Board of Selectmen.

In 1793, Bulfinch designed and began building the Tontine Crescent, America's first important urban housing development, and his financial ruin. The times were difficult and when his investors backed out of the project, Bulfinch, by then the father of seven, went bankrupt. His political position saved him, however. The selectmen appointed him to a newly created position, superintendent of police, at an annual salary of $600. While not the fortune of his youth, this income enabled him to support a large family and continue designing buildings, for which he now charged a fee. Also, as chairman of the selectmen, he played a key role in the development of Boston.

Between 1790 and 1817, Bulfinch designs helped transform Boston from war-torn town to sophisticated city. He designed churches, town buildings, and other public structures, as well as numerous stately homes throughout the area. Extensively copied, his work influenced the development of Federal period construction in New England, and made him the leading architect of his day. He also designed state houses for Hartford, Boston, and Augusta, Maine, developing the U.S. legislative building style — round dome with columns in front. At the end of his career came his greatest honor: the completion of the U.S. Capitol building, which had been burned by the British in 1814. His diplomacy and political experience brought the prolonged construction

[*Continued on page 26*]



The Tontine Crescent included 16 English-style townhouses.

Top: Courtesy of the Harvard University Portrait Collection, Harvard University Art Museums. Bottom: Courtesy of Society for the Preservation of New England Antiquities.

Who They Were

The central pavilion of Bulfinch's Tontine Crescent, which served as a public library before being destroyed.

[*Continued from page 24*]
of the new Capitol building to satisfactory completion. The west wing is Bulfinch's design.

Bulfinch has been both criticized as unoriginal and conservative, and praised as reformer of style. He was each. Relying heavily on British pattern books, he emulated the classical revival styles of the preceding generation in England. Nonetheless, his designs introduced urban planning and presented ideas that were new to the infant country. Clearly, Bulfinch brought 18th-century urban British elegance to the country towns of the new nation. Particularly noteworthy is his introduction of the curve. Bulfinch's buildings incorporate round lines in their domes, oval rooms, and staircases. Walls are sometimes oval, projecting outward on the side of the building or bending gently in interior spaces. Built only for the very wealthy, Bulfinch's houses were copied in lesser scales across New England. Many of his residential buildings have been lost to time and change, but his style is imitated still.

Photo courtesy of Society for the Preservation of New England Antiquities.

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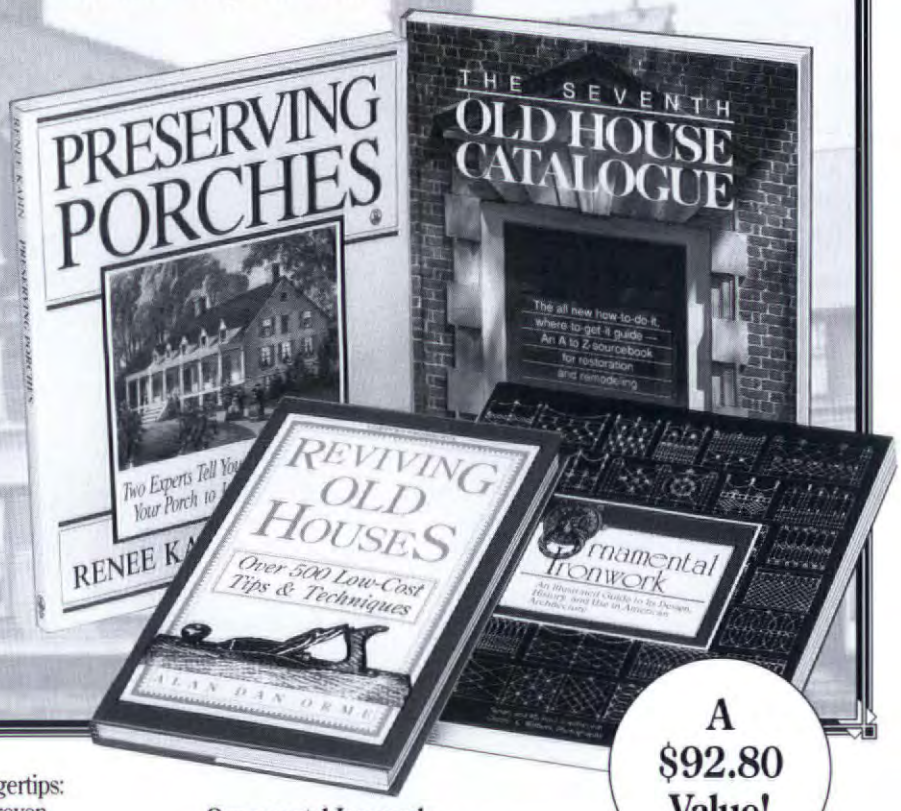

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Good Books

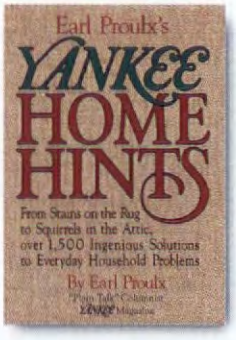
Yankee Home Hints

by Earl Proulx; Pub: Rodale Press, Inc., 33 E. Minor St., Emmaus, PA 18098; (800) 848-4735; 1993; 390 pages, b&w; $32.11 ppd., hardbound.

LEMONS AND SALT ARE SEASONings, yes, but together they remove tarnish from brass and copper. White vinegar and baking soda, it turns out, unclog the holes in a steam iron. Newspapers and kerosene, surprisingly, will keep window glass nice and clear.

What's also clear is that Earl Proulx knows his way around older buildings. After 30 years in the construction business he semi-retired as head of maintenance for the venerable *Yankee* magazine, and from there began fielding reader questions in the "Plain Talk" column. *Yankee Home Hints* is a collection of his down-to-earth advice and experience — a low-tech compendium on the care and feeding of houses organized with a dose of dry New England humor.

The book is written for a general audience, but it's strongest on just the kinds of domestic dilemmas old-house owners have faced for generations. Do roof avalanches take down your gutters every winter? Then hang them a few inches below the shingles and the snow's trajectory. Trying to keep pigeons off your cornice? Mount a mirror on a problem perch (landing birds are scared by their own reflections). There's also interesting lore about houses, inventions, and Earl himself, as well as the explanations of periodic "Whatsits" — those mysterious objects and tools that forever surface in the attics and basements of old houses.



Equal parts practical wisdom and enjoyable reading, *Hints* will teach you more about the myriad powers of vinegar than you ever wanted to know.

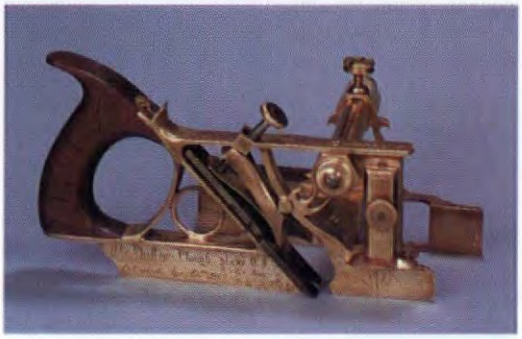
Patented Transitional & Metallic Planes in America —Vol. II

by Roger K. Smith; Pub: Roger K. Smith, P.O. Box 177, Athol, MA 01331; (508) 249-5990; 1992; 396 pages, b&w and color; $88 ppd., clothbound.

HAND PLANES — IF you're into them, there's no tool more varied or fascinating, and if you're not, the second volume of *Patented Transitional & Metallic Planes in America* may just make you a fan.

Planes, the "violins of woodworking," have been around since Roman times, but it wasn't until the Age of Invention arrived after 1830 that they truly proliferated. The new metal planes especially were produced for making almost anything — boxes, barrels, mouldings, windows, doors, cabinets, patterns, rabbets, beads, weatherstrips — and in an amazing symphony of designs. Collecting these ingenious tools is now a thriving hobby, both for working wood the old ways and merely fondling, and reference works are indespensible for knowing what they are and do.

Despite the unadorned title, this is an attractive book, with hundreds of clear black-and-white photographs, period catalog and patent illustrations, and several dozen sumptuous color plates. Like Smith's many reprint catalogs, the reproduction of old art is excellent. The saga of the Stanley Rule & Level Co., of course, fills many pages, but there's much to learn here about the lesser-known manufacturers and men (often absorbed by the giant from New Britain). For example, more information on Leonard Bailey, perhaps the most famous innovator, adds to the major chapter in *P-TAMPA—Vol. 1.* Or, how else would you find out there was once a Bunny Plane Company in Culver City, California?



The special edition Phillips Plough Plane (1867) is a pleasure to hold and behold.

Split this hefty volume with a fellow woodworker, or order one for your shop or research library. Chances are, there won't be another like it for a long time.

— G.B.

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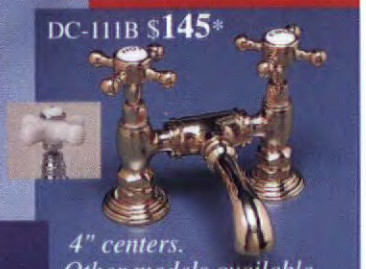

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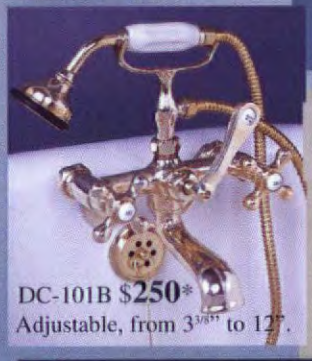

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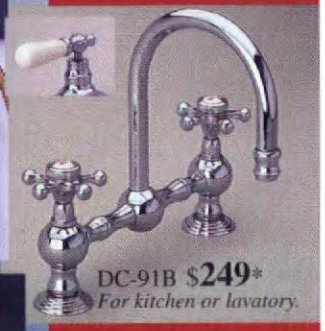

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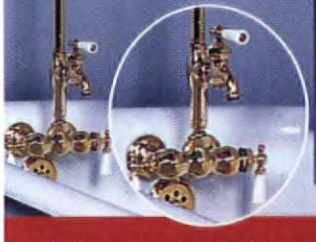

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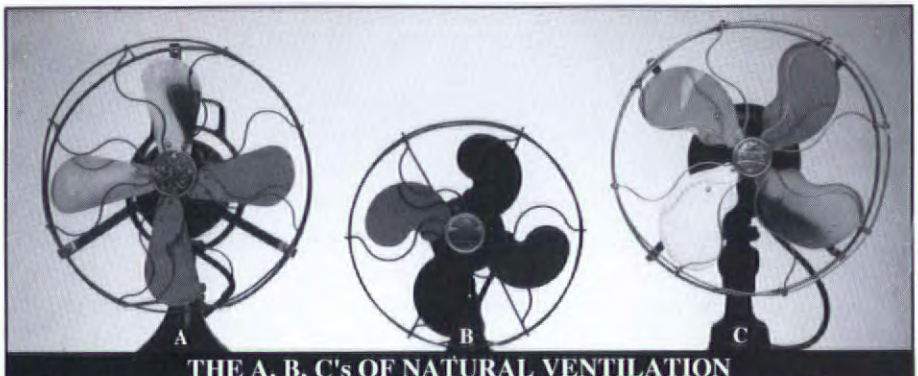

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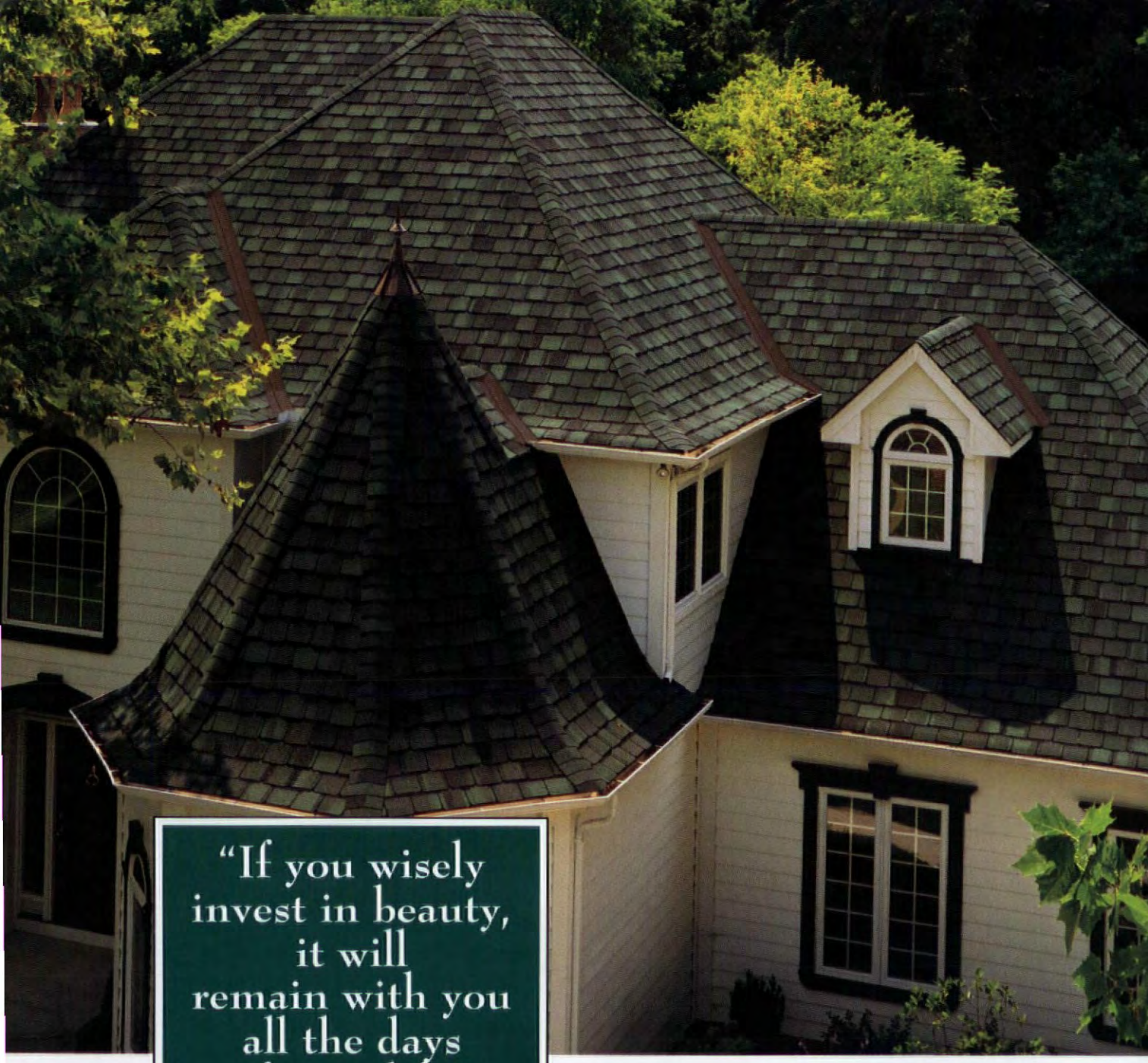

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SPECIAL REPORT

Roofing and Siding

ROOFING AND SIDING IS A TIME-HONORED PARTNERSHIP OF BUILDING MATERIALS THAT TOGETHER FORM THE EXTERIOR PROTECTIVE SKIN OF A HOUSE. MAINTAINING AND RESTORING ALL THIS SQUARE FOOTAGE CAN BE EXPENSIVE AND A LOT OF WORK. IN THE NEXT 20 PAGES, WE'VE COLLECTED SOME USEFUL AND OFTEN-ASKED-FOR ROOFING & SIDING ARTICLES UNDER ONE ROOF, SO TO SPEAK. SO, GET OUT THOSE LADDERS, AND DON'T FORGET YOUR BUZZARD AND SNEAKER! **(SEE PAGES 38-39.)**

Classic Clapbo

RECREATING HISTORIC SIDING WITH MODERN MATERIALS

by John Leeke

THERE ARE NO STRAIGHT LINES IN nature, they say, and the same is nearly as true of old houses. Years of frost heaves or settling ground put ripples in many a foundation that start a chain reaction right up the wall. Old-house windows tend to dip a little on one side, eaves often droop in the middle, and corners can be cocked slightly out of plumb. When features such as horizontal siding age along with antique buildings, they take on these subtle waves and irregularities — in fact, they become a part of its unique character and charm.

For these reasons, it takes more than just snapping a chalk line to get new clapboards to look good on an old house. No matter how you try to square up the building, the siding will clash with its seasoned lines or refuse to come out even. You have to make the boards fit the building. This kind of carpentry is as much art and judgement as it is craft, but there are techniques and a few tricks that make laying out the job much easier and more successful. We used many of them, as well as some up-to-date building methods, when we recreated this classic New England-style clapboard job last year.

A Case History

THE C. 1795 MELROSE HOUSE IS THOUGHT TO BE THE OLDEST home on Littlejohn Island, just off the coast of Yarmouth, Maine. The current owners, Chris and Becky Sentementes, are restoring the house to its 19th-century appearance and

Photography by John Leeke

Clapboards returned to the front of the 1790s Melrose House with a 20th century housewrap-type wind barrier and lapped siding joints made with power tools.

updating the mechanical systems. While removing all the exterior shingles and sheathing in order to check framing and install wiring, we discovered evidence that helped Chris and Becky decide on the type of new siding.

Underneath the top layer of 1970s red cedar shingles was a layer of late-19th-century clapboards. As we removed these clapboards we noticed nail holes from even earlier siding, long since removed. When we stuck colored tooth-

picks in the holes, they revealed a distinct pattern of rows every 4" up the wall with holes 12" to 14" apart along each row. Shingles would have left closer spacing; the original siding must have been clapboards as well.

It was common practice in the late 1700s to clapboard the front of a house but shingle the ends and back, so the early use of clapboards fit the picture. When this house was built it was also common to use "rived and skived" clapboards. *Rived* clapboards are worked by hand, splitting them right out of a short length of log with a maul and froe in a radial pattern. First the log is split in quarters, then eighths, sixteenths, and so on, until the split pieces are ⅜" to ½" thick. Then each surface is smoothed with a hand plane on a bench, or with a drawknife on a shaving horse. The top edge of the clapboard usually tapers to a thin feathered edge. These clapboards were laid up with *skived* joints that overlap at the ends.

Toothpicks rendered random nail holes into the course lines characteristic of early clapboards.

Chris and Becky asked carpenter Dan Crowley to reproduce the look of the earlier clapboards based on the evidence we found. Dan knew the cladding on this wall would have to resist the driving rain storms that sweep the island, so he planned on lapped scarf joints. The clapboards came from a mill that saws them radially, exposing vertical grain on the face very similar to riven clapboards. This cut limits warping and produces a surface that weathers evenly if left without paint or stain.

The Steps to Residing

AFTER THE WORK INSIDE THE WALLS WAS FINISHED, DAN began the process of recreating the clapboard siding. Though this project started with replacing the previously removed sheathing boards, the steps are the same for a house where sheathing is untouched.

I. Flash and Seal the Wall

1) Check the sheathing. It is important to make sure all sheathing is sound and relatively flat. Decayed sheathing or raised board ends can cause clapboards to split as they are nailed. When Dan reinstalled the sheathing, he used power-driven drywall screws instead of nails to attach the boards to the studs. Screws avoided hammer blows that could crack the interior plaster.

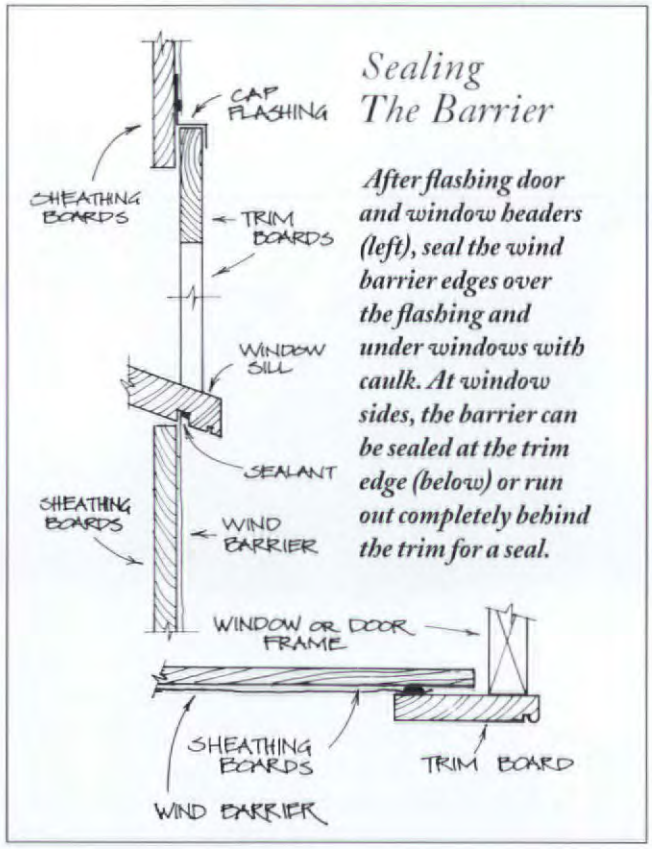
2) Install a wind barrier material. An effective wind barrier stops air and liquid water infiltration while letting water vapor pass through the wall. Rosin building paper is the traditional material and can still be used. You don't want to use asphalt-impregnated roofing felt (tarpaper) or poly sheeting on the outside face since these impermeable materials can trap moisture in the wall cavity. On this project we stapled a modern synthetic-fiber housewrap product over the sheathing. This prevents blasts of water-laden air from penetrating the wall during storms, yet still lets moisture migrate out of the house.

A wind barrier is most effective if you seal its edges to the trim with caulk or sealant. I lift the barrier and gun caulk into the joint. Then I work the barrier into the bead of caulk with a thin, right-angled scrap of wood. The result is a neat, square inside corner that seals barrier, sheathing, and trim all together. Don't let the caulk fill up the corner or the clapboards will not lay right.

3) Flash horizontal features. It is common knowledge here on the seacoast that ordinary aluminum flashing will not hold up to the salt-laden rain and fog, so trim boards over doors and windows were flashed with lead.

II. Lay Out the Courses

Laying out clapboards on an old house is simple if you are replacing existing clapboards with duplicates: just mark where the butt of each old clapboard meets the edge of the trim board. (I like to punch a small hole in the trim with an awl; pencil marks may be lost as caulk and old paint get cleaned off.) If you don't have any old clapboard traces to follow, lay-



Sealing The Barrier

After flashing door and window headers (left), seal the wind barrier edges over the flashing and under windows with caulk. At window sides, the barrier can be sealed at the trim edge (below) or run out completely behind the trim for a seal.

Illustrations by Robert Leanna

out becomes much more involved. Simply having each course perfectly parallel and level would make the bows and curves of the old wall look odd. The following techniques are often used to determine where clapboards should be placed. Siding is not an exact science, however, and these measurements are just points to start from as you blend the new clapboards with the changing shape of the old wall.

1) Decide on a reference line. A good reference line runs the full length of the wall. Usually it is the lower edge of the frieze board at the top, or a part of the water table board at the bottom. If the wall doesn't have a well-defined line, you may have to create one with a chalk line, guided by the tops of windows, for example.

2) Make a storey pole. Start with a wood furring strip about 1"x 2" and at least as long as the wall is tall. Hold the storey pole vertically against the wall and chuck the end against the reference line. Then position the pole aside of each window and door and mark the top and bottom of each on one face of the pole. This records the location of these openings in one place — the pole — so that it is easy to see how regular (or irregular) they are in size and elevation on the wall. Such vertical spacing information is important because, ideally, clapboard courses should line up with the tops and bottoms of the openings.

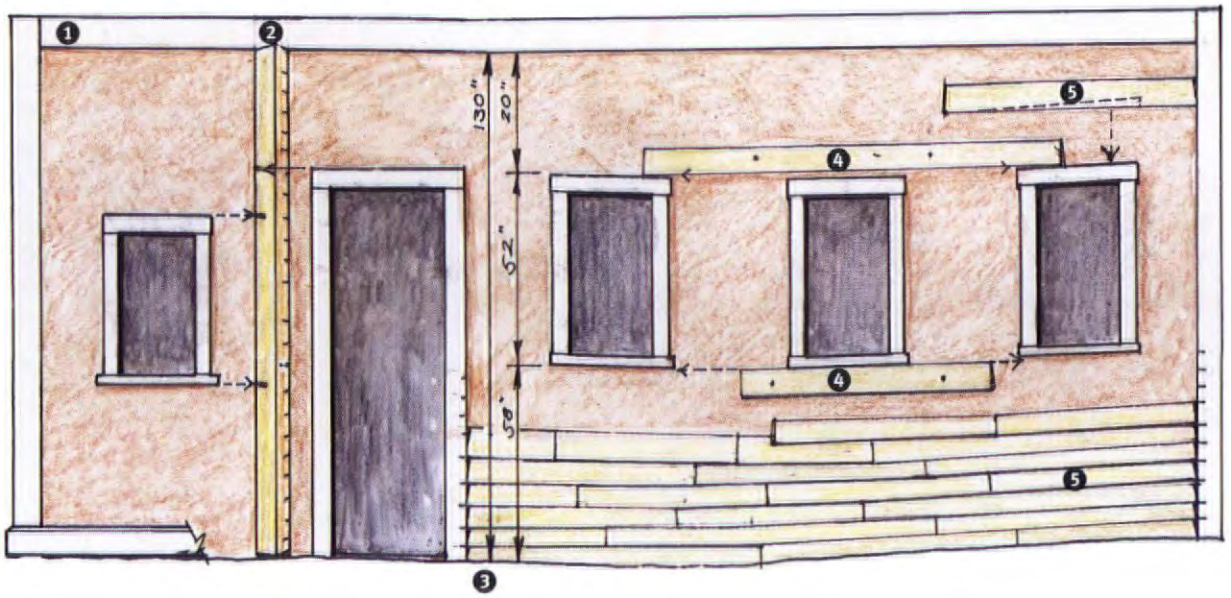
Lay the pole across a bench or pair of sawhorses. Study the marks until you can standardize the wall layout into three vertical sections: above the windows, within the windows, and below the windows. Undoubtedly there will be some variation in these heights, but try to find and set a standard division between the sections.

Removing later siding and original sheathing boards exposed the structural frame for inspection and wiring. Note the split-board lath and plaster.

On another face of the pole lay out out the section measurements. Then divide the sections into evenly spaced courses. On this wall we wanted the courses to be about 4" apart. You may need to "fudge" (adjust) the spacing of the

Laying Out Clapboards

❶ Establish Reference Line (use frieze board or water table). ❷ Mark Storey Pole (openings on one face, standard courses on next face). ❸ Check Pole and Transfer Marks. ❹ Align Window Courses (tack up clapboards and check). ❺ Fit and Lay Clapboards (scribe opening tops and bottoms, use short lengths for tight curves).



courses to meet the section divisions, or you may need to redefine the sections slightly to get the courses to come out even.

Once you have established the standard courses on the storey pole, use it to judge how much you will have to vary their layout. Place the pole against the wall at the side of each door and window, and check the top and bottom of windows and doors, as well as the total height of the wall, to see if they line up with the course marks on the pole. Then transfer the standard course spacing from the storey pole to the edges of the trim boards. A storey pole is worth the trouble to make because you can test the layout of an entire wall before any clapboards are cut or laid.

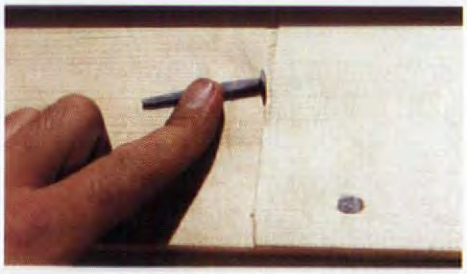
Clapboarding Tools: claw hammer (with slightly rounded face), tape measure, low-angle block plane (sharp), wood rasp, pry bar, chalk line, utility knife, square, cordless trim saw (or fine-toothed crosscut hand saw).

3) Set the exposure. The exposure of each clapboard can be adjusted up or down by as much as ⅛" on 2" to 3" exposures and up to ¼" on 4" exposures. This small adjustment will not be noticeable from one clapboard to the next. It will, however, make a big difference in the overall look of the siding. Finessing the spacing board-by-board takes a sensitive eye and an artistic touch. In a sense, you "paint" the clapboards onto the wall to match the visual effect of the originals and the character of the house.

Some walls are clapboarded with regular course spacing while others are random, with exposures that vary ¾" to 1" between courses. In fact, in New England it's common to find graduated clapboards where the exposure decreases near the bottom of the wall. If you have to match an adjacent section of irregularly spaced siding, you may have to build that same irregularity into your spacing to get the right look. As the clapboards go up, stand back frequently to see if the layout is fitting in with the character of the house. Be willing to remove a few clapboards if the work doesn't look right. However, also trust your judgment; sometimes adding one more board will make the previously laid work look fine. You can always cut, fit, and then just tack the clapboards in place. When you have several courses that look right, nail them down tight.

Scarfing and Scribing

A band saw and special jig cut the bevels for our scarf joints. Laps get trimmed with a block plane so they lay flush.



Each scarf joint is fastened with a single cut nail through the boards. All joints lap in the same direction.

Scribe the end of a clapboard by drawing the side of a pencil along the edge of the trim board. Then trim the waste down to the scribed line with a low-angle block plane.

III. Lay Up Clapboards

While some carpenters work from the top down, it's better to start old-house clapboards at the bottom of the wall.

1) Align Window Courses. When we look at a wall our eyes are drawn to the lines formed by the tops and bottoms of the windows. Extra attention is needed along these lines to get the alignment of the courses correct. Tack clapboards in position at the top and bottoms of windows. Stand back to see if they flow with the shape of the wall and adjust them if necessary. Then mark these section lines on the wall surface with a chalk line. With the position of these critical courses located early on, you can make final adjustments in the course spacing as you approach them.

2) Lay Clapboards. The first course is laid to match the base line of the wall. If the base line waves up and down slightly the clapboards should follow suit, using short lengths where waves are tight (see drawing page 35). It pays to snap a chalk line

Clapboards usually have to be fitted into the sill siding groove, often with some fudging of later course exposures.

from the cornerboards to establish a standard course that you can deviate from slightly.

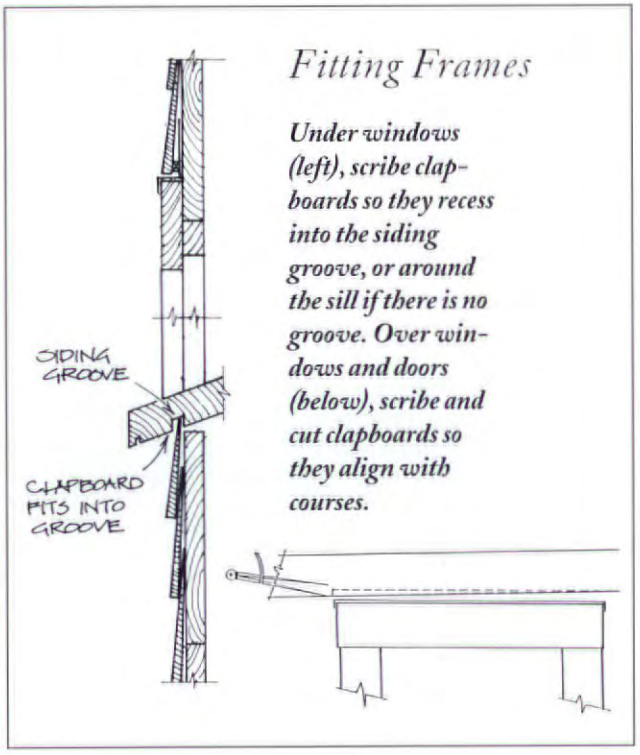
Position the first clapboard in a course, then scribe and cut it. Tack the board in place. Then lay the next clapboard in position, aligning the laps. If the end goes past a trim board, mark where it meets the trim and cut it off. (I like to cut boards long by about $\frac{1}{16}$" then scribe them to meet the edge of the trim exactly.) With scarf-joint clapboards it is a good practice to always lay from left to right, or right to left, but not both. Sticking to one lay standardizes all the movements it takes to cut, fit and install the clapboards, and makes the work more efficient.

Each scarf joint is fastened with a single nail, grabbing two boards. Dan used 6d galvanized cut shingle nails from Tremont Nail Company. Cut nails have blunt points that punch a hole in the wood and make splitting less likely — especially important with scarf joints. If you use wire nails, you can limit splitting by boring a pilot hole in the clapboard.

3) Fitting Openings. As you lay clapboards, pause within five or six courses of the top or bottom of an opening to decide if the course spacing needs to be fudged. Now is the time to start making up a difference in the standard course spacing or accommodating a loss due to scribing around the tops or bottoms of windows.

To fit a clapboard at the bottom of a window you will need to cut a notch in it. If there is a siding groove in the bottom of the sill, the accuracy of the fit is not critical. Simply lay the clapboard in position under the window sill and mark the length of the notch. Make the notch deep enough to allow the clapboard to nest up into the groove. Then cut out the notch with a fine saw and utility knife. If the sill does not have a siding groove, you have to carefully scribe the board to the bottom of the sill using the following procedure.

Where the tops of windows and doors do not align with course lines, the clapboards have to be scribed to fit around them (see drawing below). This fitting should take place well ahead of time because it will lower the clapboard, and the spacing of the clapboards that run up to it may need to be



fudged. First, lay the clapboard on top of the window or door cap. Next, align the butt edge of the clapboard parallel with the section chalk line on the wall. Then, use a pair of dividers to scribe a line on the clapboard that is parallel to the cap. Use a saw and utility knife to trim away the waste, and tack the clapboard in place. Afterwards, check the standard course marks to determine if any fudging is needed in the courses below.

Final Finishes

IF YOU PLAN TO PAINT OR STAIN YOUR CLAPBOARDS, PRIME the back as well as the front to help prevent warping and splitting, especially with flat-grain clapboards. Before the clapboards are nailed up, seal ends and scarf joints with primer if painted or a water-repellent preservative if left unpainted (flat-grain clapboards should be protected).

On this project the clapboards have been left to weather naturally for a few years. After they have gained some color and character Chris and Becky intend to apply a bleaching oil to give the clapboards some protection and even-up the appearance. The final effect should come close to the ash-grey wood and handmade shadowlines that were this cottage's original finish.

John Leeke is a preservation consultant who helps homeowners, contractors and architects understand and maintain their historic buildings (RR1 Box 2947, Sanford, Maine 04073; 207-324-9597).

Suppliers

WARD CLAPBOARD MILL
P.O. Box 1030, Dept. OHJ
Waitsfield, VT 05673
(802) 496-3581
Radial-sawn clapboards.

TREMONT NAIL CO.
8 Elm Street
PO Box 111
Dept. OHJ
Wareham, MA 02571
(800) 842-0560
Galvanized cut nails.

DONNELL'S CLAPBOARD MILL
RR1 Box 1560,
Dept. OHJ
Sedgwick, ME 04676
(207) 359-2036
Radial-sawn clapboards.

GRANVILLE MANUFACTURING CO. INC.
Rt. 100, P.O. Box 15,
Dept. OHJ
Granville, VT 05747
(802) 767-4747
Radial-sawn clapboards.

SKY LODGE FARM
46 Wendell Rd.,
Dept. OHJ
Shutesbury, MA 01072
(413) 259-1271
Radial-sawn clapboards.

MCFEELY'S
PO Box 3, Dept. OHJ
712 12th St.
(800) 443-7937
Coated-steel, bronze, and stainless steel screws, bits.

hook

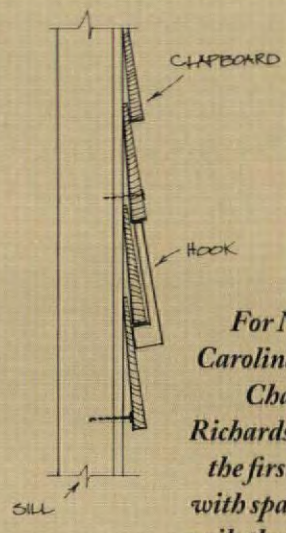
buzzard

Hoo
Another

BY DAVI

CARPENTRY MANUALS USUALLY begin a chapter on siding by listing the different patterns or showing how to prepare the wall. Yet there are many varieties of horizontal siding, and they are often installed differently, depending upon where you go and who does the work. One example might be a carpenter with fifty years of experience whose professional training has been all on-the-job.

Charlie Richardson is just such a man. In his 'teens he began working with his father, also a life-long North Carolina carpenter, and continued until he retired a few years ago. When recently asked to finish a wall with horizontal lapsiding, Charlie explained, "There are three things that you have to have if you are going to put up lapsiding: a 'hook',

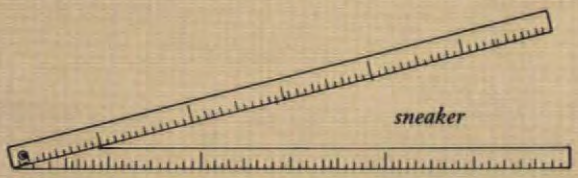


For North Carolina siding, Charlie Richardson starts the first course with spacers, and nails through only one board as each course goes on.

, Buzzard, & Sneaker

'ide of Installing Siding

D I L L O N



a 'buzzard,' and a 'sneaker.' " These are homemade wooden jigs used to install siding boards so they fit tight and have uniform vertical spacing.

The "hook" is a piece of wood up to 8" long with a short protruding lip. The lip fits under the lower edge of a siding board so the top of the hook will mark the board's exposure. The hook also locates the guide nails often used to position the next course.

The "buzzard" is a marking jig that straddles the siding board so the carpenter can scribe the end for cutting to the proper shape. (Shape is an appropriate word because few boards on older buildings will require a perfectly square cut.) The finger guide allows the installer to press the buzzard up to whatever cornerboards or trim the siding has to fit against. The mark is made along the finger on the outboard end of the siding. Without this jig it is very difficult to mark a board for a joint that will mate properly and not leave an opening somewhere along the cut.

The third jig, the "sneaker," works somewhat like a giant sliding T-bevel. Charlie's sneaker is made from two yardsticks that have been fastened with a stove bolt and wing nut at one end. It is used to make angular cuts to match the pitch of a roof, such as in gable ends.

Some of Charlie's methods also deviate from the standard procedures. Most books start the siding by nailing a small tapered wood strip to the bottom of the wall. Charlie's first step is to install cornerboards (typically 5/4 material) at each corner and mark the height of one lapboard up from the bottom of each cornerboard. Next, he snaps a chalkline between these marks and aligns the top of the first lapboard with this chalked line. However, before the first board is fitted into place, he starts a row of 6d spacer nails about 1" up from the bottom. These nails are spaced roughly 18" apart and partially driven so that they stick up 3/8". The nails start the angle for the rest of the siding, keep the bottom board from resting against the studs and sill, and permit ventilation.

Marking along the buzzard's finger produces more accurate cuts than measuring.

Once the spacer nails and bottom board are in place, the wall is ready for siding with hook and buzzard. Using the hook as a gauge, three 6d guide nails are driven roughly halfway into the board, one near the center and two more about 6" in from each end. The next board rests on these guide nails while it is nailed into place with either 6d or 8d, wire box or cut nails (galvanized spiral nails are also work well for this task). Afterwards, these guide nails are removed and the process repeated as the carpenter moves up the wall. A level is used to check every two or three boards and make slight up or down adjustments of the guide nails.

Should the installer have a helper, the guide nails can be omitted and both people (one person at each end of the board) simply use the hook to gauge the placement of the next board. Eliminating guide nails also eliminates the need to fill the holes they leave.

Some Tips:

- Charlie recommends cutting the hook to a length that positions the siding so that nails pass through just the last board — not the top of the prior course too. This makes it easy to later remove and replace damaged or warped boards.
- Keep joints to a minimum. However, if they are necessary, make them square-cut and butted together rather than lapped or mitered.
- Finish inside corners with two boards, each half the width of one corner board, so that the siding can butt up to them from both directions.

It was rewarding to watch this craftsman meticulously put up a wall of horizontal siding. Said Charlie, "The last time that I built a house like this must have been back in the 'forties."

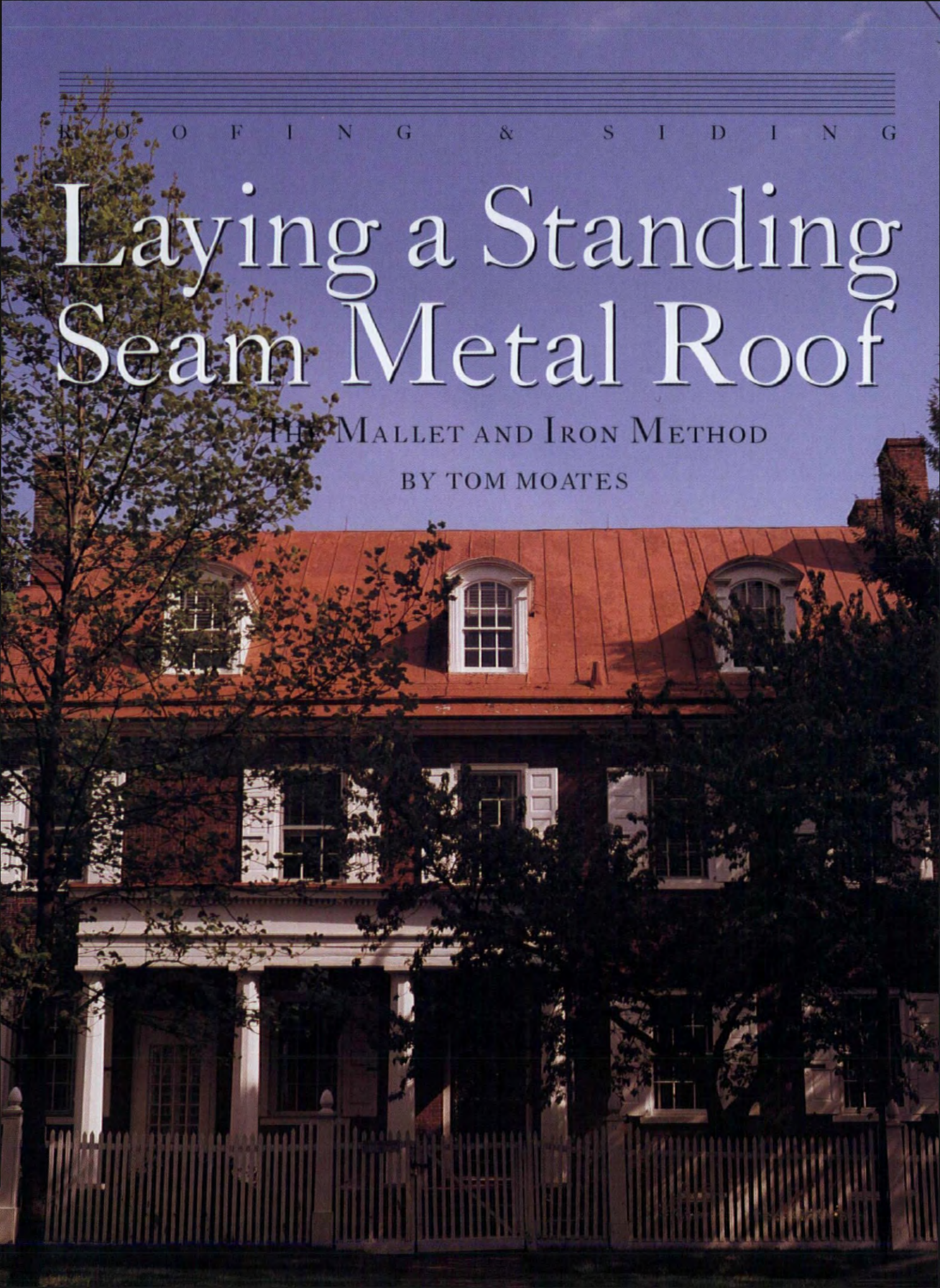
Photography by David Dillon

ROOFING & SIDING

Laying a Standing Seam Metal Roof

The Mallet and Iron Method

BY TOM MOATES



THE CLASSIC LOOK OF A STANDING SEAM METAL ROOF — LONG STRIPS OF SHEET metal with rib-like seams — appears on old houses across the country. This utilitarian roofing covers houses of virtually every style. Its popularity for simple homes began in the mid-1800s, and continued until the metal crunch of World War II. In theory these roofs should last forever, but in practice many old houses suffer neglect at one time or another. If you have a rusted-out standing seam roof that needs to be replaced, or if you are adding on to an existing roof and want to keep the new roof authentic to the original, you can do the work yourself.

The heart of a standing seam roof is the seam. Strips of sheet metal called pans are crimped together in seams that rise an inch or more above the roof surface and, therefore, rainwater that hits it. Standing seam metal roofs are excellent for pitched roofs, where standing water is not a problem, and in low-snowfall areas, where snow does not pile up into heavy loads.

Iron, Benders & Hickory Mallet

TODAY THERE ARE SEAMING MACHINES THAT WILL AUTOMATically crimp the metal together, but the technique I use involves only a forming iron (or hand seamer) and a hickory mallet. The mallet-and-iron method is surprisingly fast and saves the cost of machinery. It feels good to shape a seam and then crimp it sharp and tight. Plus, you will be confident that every inch of your roof is watertight.

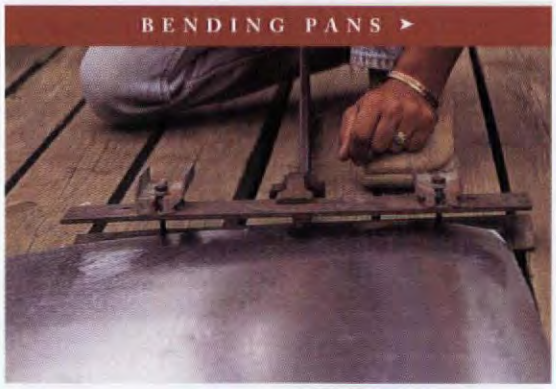
You will need two specialized tools for the mallet-and-iron method — the benders (also called roofing tongs) and the iron. Both can be purchased from roofing companies (see "Tool Suppliers," page 44). The benders cost about $135 apiece, and look like long-handled pliers with 2' wide, flat jaws. An iron costs about $65, but I have found it can be made cheaper by a local welder. The iron is simply a 2" x 3" piece of ½" steel connected to the same sized piece of 1" steel by a U-shaped piece of ¾" round rod. You'll also need a hickory mallet, enough locking pliers, such as Vise Grips, with flat jaws to clamp the sections of metal roofing together while you are working (at least one for every two feet of roof span), a claw hammer, and tin snips.

Metals to Use

HERE IN THE BLUE RIDGE MOUNTAINS I USE THREE METALS for standing seam roofs: copper, galvanized steel, and terne. Copper is the most expensive. It is soft, easily worked, and requires no painting or maintenance. Galvanized metal roofing is shiny grey and stiff, making it more difficult to work than copper. Yet it is less expensive and has a good resistance to corrosion. Galvanized roofs should be installed, allowed to weather for a year and a half (or until the shine

Right: A copper standing seam roof, like this one in Virginia, can last for more than 60 years. Opposite: Tin and galvanized roofs, such as this New Jersey example, need regular painting.

Photography by Carol Y. Moates except photo at left, by Christopher Hartlove



Slide the metal up against the bender stops.

Bend the edge about 45 degrees.

Make a tight

is gone), and then painted. Terne is the thinnest (and most affordable) roofing metal. It needs to be painted immediately upon installation, and is the most prone to corrosion.

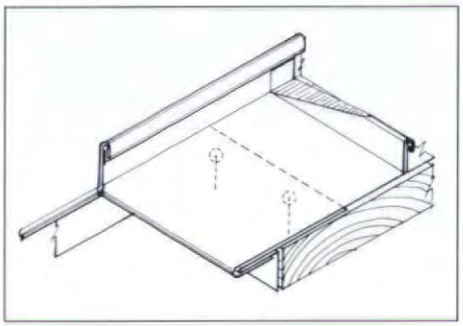
The finished seams use 2 ½" of the metal's width, so if you are repairing an existing roof, measure the distance between seams and add 2½" to determine the width for your material. If you are re-roofing your entire old house and are leaning towards the traditional look of thinner runs, take into account that there will be more seams, and therefore more labor, involved.

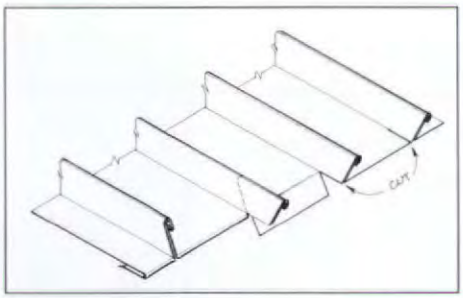
The only other materials you will need are the drip edge (for galvanized steel and terne) or locking strip (for copper) and 1" roofing nails. Use copper nails for copper roofs and galvanized nails for both galvanized steel and terne. Do not get galvanized roofing nails with rubber gaskets or lead heads; one of the pluses to a standing seam roof is that no nails are driven through the roofing material itself, so there is no chance for leakage at nail holes.

Getting Edgy

ALL OLD ROOFING AND NAILS MUST BE removed before installing pans. The best roof decking is skip sheathing (spaced decking), but I have found that closed decking or plywood is okay. Some roofers apply red rosin building paper between the roof decking and metal. I have never done this and believe that it is unnecessary. Black tar paper and gooey asphalt tar products should not be used under metal roofs because their acidity can cause metal to corrode.

The first step is to install edging along the perimeter of your roof. The edging supports the ½" to 1" of overhang and helps to prevent water from finding its way under the roof metal. Nail edging along the bottom of the roof where the water will run off, and at gable ends and edges where the metal will overhang. Use drip edge with galvanized steel and terne, or copper locking strip if you're installing a copper roof. Both have one side that sits against the edge of the roof and another side that extends several inches onto the decking. To apply, position a piece snugly against the edge of the roof decking and nail into the decking at 10" intervals.





Top: Crimp the edge pan over the drip edge for a watertight gable end. Above: At the eaves, cut along the seams to the drip edge, fold the excess flat metal under, and crimp. Cut the seams plumb.

Bending Pans

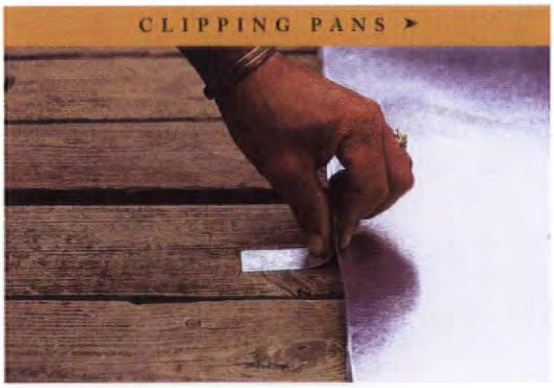
GOOD PLANNING MAKES FOR AN ATTRACTIVE and long-lasting standing seam roof. Sketch a scale drawing of your roof and pan layout. Design a symmetrical roof, avoiding a small excess that would require an unsightly narrow pan. Also, stagger the pans on either side of a gable roof so that as a seam comes up to a ridge, it meets the center of the pan on the other side (see "Ridges and Hips," page 44). This way you will avoid having too much material to bend into a nice, tight ridge seam.

The next step is to bend the rolled sheet metal (called "coils" at some supply houses) into pans. Measure from 4" above the roof's apex (which allows for a ridge seam to be made later) to 1" beyond the drip edge or locking strip at the bottom of the roof. Roll the metal out along a flat surface on the ground and cut that length off the roll. The standard roof pan will have one side bent up 1 ½" and the other side bent up 1". The first and last pan of the roof, the edge pans, will have one side bent downward 1", which will be crimped tightly around the drip edge or locking strip, and one edge bent upward.

Start with an edge pan. Set up the benders by placing

Illustrations by Robert Leanna

reased bend.



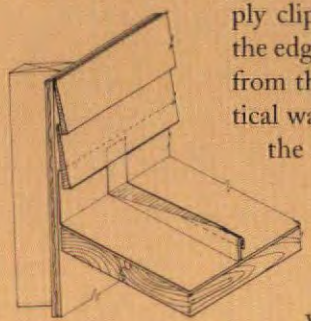
Form the clip over the edge.

Nail the clip to the decking.

two stops (usually small bolts) through holes in the flat jaws of the tool. Adjusting these bolts allows the edge of the metal to go different distances into the flat jaws, thus changing the length of the edge to be bent. Set the tong depth at 1" and open the jaws. Slide the edge of the sheet metal into the flat jaws until it rests against both stops, close the crimpers tightly, and bend the edge of the sheet upwards. It works best to bend an edge in two stages. First bend the complete length of a sheet about 45 degrees and then return down the length crimping the full 90 degrees. It's important to make a sharp crease when bending on the second pass; try standing on the back of the crimpers. When you have bent the first crimp of this pan, flip it over and bend the other edge in the opposite direction using the same method as above.

FLASHING A WALL

WHERE YOUR ROOF MEETS A WALL, WHETHER AT ITS apex or along its slope, no separate flashing is necessary. With a standing seam roof, the pans can be cut and bent to serve as flashing. When a roof meets a wall along its side, convert the first edge pan to a wall-flashing pan by changing the 1" down bend to a 6" up bend. That 6" piece will then be the "flashing" running under the siding that is parallel to the roof pans. If the roof meets a wall at its apex, leave 6" on top for flashing (see below). Where only a portion of the roof comes to a wall, as with many porch roofs, simply clip out a small section of the edge where the pan changes from the roof angle to the vertical wall. Seam the pans along the roof as usual and then seam the section along the wall and flatten that seam. Solder any hole in the seam where the clip was made.



Then bend standard pans for the majority of the roof: a 1" up bend on one side and a 1 ½" up bend on the other side.

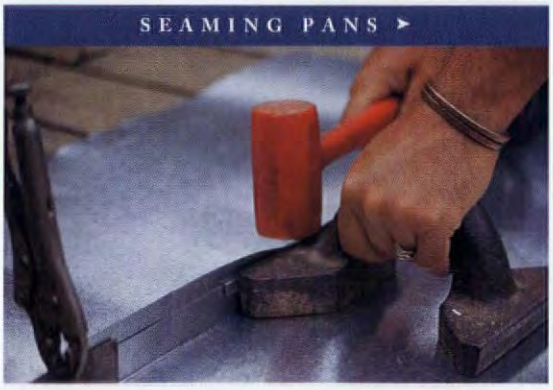
Save scrap metal and cut it into a bunch of 1" x 2 ½" pieces. These will be the clips (or cleats) that fasten the pans to the roof decking. They will be placed over the edges of the pans, nailed to the decking, and crimped into the seams. Fold over about ¼" of metal at the end of each clip, leaving enough space to catch the pans' edges in the crimp.

Laying the Roof

IT'S TIME TO BEGIN PLACING PANS ON THE ROOF. TAKE the edge piece you have made that has both a 1" up bend and a 1" down bend and position it so that the down edge is pulled snugly against the drip edge or locking strip along the gable end. (On some old-houses, it makes sense to begin laying pans mid roof and to work out in each direction to make sure that the pans lie square.) Secure the piece with clips every 10" or so by hooking the clips over the edge of the pan. Then bend the clips so that they fit snugly against the roof decking, and nail. They will be folded and crimped into a seam shortly.

Once this first pan is secured, it needs to be bent around the drip edge or locking strip along the edge of the roof. Crimp the down bend tightly over the edging with locking pliers. To bend the pan around the drip edge at the bottom (which must be done for each pan), cut upwards from the bottom edge, along the 90 degree bends, up to the drip edge or locking strip. Then the flat metal can be folded under and tightly crimped around the drip edge or locking strip, leaving the seam intact. The pan placed beside this one will be seamed to within a few inches of the edge before it is cut and crimped around the drip edge or locking strip in the same way. Then the seam is completed 1" past the edge of the roof and is snipped off, perpendicular to the ground, right at the edge of the roof.

Next, bring up a standard pan and lay it with its 1 ½" edge next to the 1" edge of the pan just installed. Line up the pan top and bottom with the first one and clamp them together with the locking pliers. Make sure the new pan is



The author demonstrates the first fold of the seam.

Work as far along as possible between locking pliers.

Crimp the cli

snug against the decking when clamping; space the pliers about 2' apart down the pan lengths.

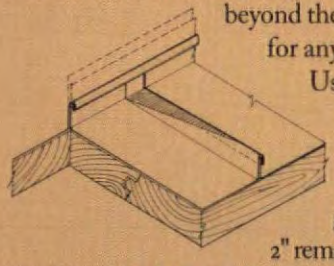
Seaming Pans

BEGIN MAKING THE SEAM BETWEEN THE FIRST TWO LOCKing pliers at the top of the roof. Hold the large end of the iron against the shorter of the two upturned lips. With the hickory mallet, form the longer edge over the shorter onto the iron. Slide the iron along as you pound, working the first part of the seam. Move the iron away and bang down on the longer edge closing it even more over the shorter edge. Next move the iron over to the other side of the seam, place the large end against the seam, and hammer the partially bent section of seam closed so that it is crimped tightly. This is the first bend (a completed seam will be bent twice in this manner). Make sure that the longer seam has covered the shorter seam completely and that all the clips also have been covered and crimped nicely into the first bend. Bend as much length of seam as you can without removing the first two locking pliers.

Start the second bend of the seam in the middle of the section you just completed between the locking pliers. The process for bending the second seam is the same as the first; simply flip the iron around and use the shorter side. Complete the seam as much as possible between the locking plier clamps and then move to the next section. Once the seam is completed on either side of the locking pliers, it is safe to remove them and complete the seam. If the top of your roof will have a ridge, fold over and flatten the finished seam near the apex of the roof with the mallet (see "Flashing a Wall," page 43). This allows for the ridge seam to be

RIDGES & HIPS

RIDGES ARE SEAMED THE SAME WAY AS PANS (ALTHOUGH there is more material to bend). The 4" excess you left beyond the top of the roof allows for any variation in the roof. Using the iron and mallet, crease the bases of this seam on either side, and trim the galvanized steel so that 2" remain on one side and 1½" remain on the other and seam it as you would two pans together (see above).



For more complex roofs with dormers or hips, follow the same technique. When doing pre-installation layout at a hip or secondary ridge, adjust one side so that the pan seams arrive at the hip ridge staggered as at a top ridge (see below). Flatten the pan seams, crimp, trim, and seam along the hip the same way you would a ridge.

TOOL SUPPLIERS

JOHN STORTZ & SON, INC.
210 Vine Street, Dept. OHJ
Philadelphia, PA 19106
(215) 627-3855
Benders, irons, and other metal roofing tools.

*****

ROOFING TOOLS & EQUIPMENT CO. INC.
3710 Weaver Road, P.O. Box 126, Dept. OHJ
Wilson, N.C. 27893
(800) 682-6906
Benders, mallets, irons, and flat-jawed locking pliers.

to the seam.

After the first seam is tight, begin the second.

Flatten the double seam against the mallet.

bent when both sides of the roof are completed.

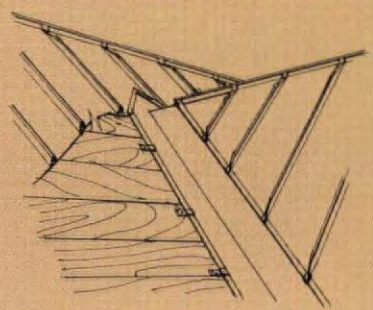
Continue working your seam by making the first bend between pliers and then flipping the iron and catching up the second bend. When you get down to the drip edge or locking strip, cut the edges, crimp the end, finish the seam, and clip the finished seam as described above. Continue clipping and seaming the pans across the roof.

Once you have mastered clipping and seaming the pans, you are ready for the intricacies of your project. Your roof may have other features, such as ridges, hips, dormers, or an adjoining wall, but they should not be difficult to figure out if you stick to the methods described and apply your own ingenuity. The metal roofing instincts you have acquired from working pans will guide you through your roof's difficult spots. Also, it is perfectly acceptable to use solder to close holes you find you cannot crimp shut (check with your roofing supplier for compatibility). By putting a new standing seam metal roof over your head, you have continued a historic building technology that has never been outdone and will last for many decades.

Special thanks to the Sheet Metal and Air Conditioning Contractors' National Association (P.O. Box 221230, Chantilly, VA 22022; 703-803-2980) for technical assistance.

INTO THE VALLEYS

VALLEYS ARE THE MOST DIFFICULT ELEMENT OF A STANDING SEAM metal roof. Lay a pan along the valley and seam it into the standard pans running down the roof from each side (see right). To make a valley pan, measure from 4" beyond the top of the valley down to 2" beyond where the edges intersect the drip edge or locking strip. Bend both edges up 1", and arrange the standard pans on either side with a 1 ½" edge so that when the standard pans are seamed into the valley pan and flattened, the water coming down the roof will flow over the seam into the valley instead of into the seam. The real trick is to bend the valley pan to the shape of the valley. I do it by hand, with the pan up on the roof.



The best way to calculate the diagonal cuts across the ends of the standard pans as they enter the valley is to prepare the valley pan, position it, mark where it runs, and then calculate the standard pan lengths from the ridge down (see left). Cut the standard pans so that they extend 1 ½" over the valley pan mark. As you seam the standard pans, flatten the last 3" of seam. When you complete the entire run up the valley, use the tongs to bend a 1 ½" edge up along the diagonally cut bottom. Do this to both sides, then position the valley pan, and seam it.

The bottom of the valley pan is bent around the drip edge or locking strip in the same way as a standard pan — the only difference is that you will have to cut more creatively with the tin snips. The same is also true of how the top of the valley pan ties into the ridges.

Slate & Shingle Lookalikes

Manmade Substitutes for Natural Roofing

by Gordon Bock

Smooth and strong, dark and imposing, slate is the ancient aristocrat of roofing. Simple and common, but ever organic and charming is slate's opposite, wood shingles. Manmade materials have long tried to deliver slate's endurance and wood's rustic good looks in a form that was lighter, cheaper, more regular, or more fireproof. Most never came close — that is, until this century.

Under the moss, it could be 1920s asbestos-cement or concrete that masquerades as wood shingles on this Virginia English Cottage.

Photography by Gordon Bock

Dense and durable, fiber-cement is well-adapted to imitating slate (as well as wood), and has a decades-long track record.

By 1910, new materials and machinery enabled roofing manufacturers to entice the buying public with a wealth of ersatz shingles and slates. For example, the Mohawk Asbestos Slate Company devised cement Rustic Colonial shingles in 1929 for the restoration of Colonial Williamsburg and went on to carry them as a regular line. The intent was never to hoodwink the passerby but merely to marry a mass-produced product with the visual appeal of a natural, traditional roof.

Luckily for old-house owners, the simulated natural roofing industry continues today and seems to be growing. Slate and wood stand-ins can be a practical and fireproof option to the real thing. Furthermore, convincing slate imitations get favorable marks from most preservationists and authorities. In fact, many mock slates and shingles are now historic materials in their own right.

Since today's lookalike roofs are often high-end materials and labor-intensive to install — like the slate and wood they emulate — it pays to shop carefully. For those restorers considering a simulated roof for their old house, we've put together this buyer's guide to help sort one slate from another.

FIBER-CEMENT

FIBER-CEMENT ROOFING MAKES UP PROBABLY THE LARGEST and oldest breed of slate and shingle lookalikes. The basic process — combining portland cement with a fibrous binder, then forming the mix under pressure into hard, dense tiles — dates to the first years of this century. Today's formulations have abandoned the asbestos used in the 1920s and '30s for a non-toxic fiber, usually some form of cellulose, fiberglass, or even high-tech synthetic. Other likely constituents are silica, sand, perlite and a helping of proprietary ingredients. The result is basically a flat tile that is textured for a natural look, lighter than slate and more fireproof than wood. Besides domestic producers, companies in Belgium and Denmark have been importing fiber-cement roofing to these shores for decades.

Cement sounds ideal for durable roofing, but it has its Achilles heel. If water finds its way to the binding fibers, freezes, then expands, the tiles can delaminate. (Natural slate may "blow apart" too.) Wide temperature swings can also stress the cement/binder matrix. Each manufacturer has their own process (there are no ASTM standards for the industry), so the upshot is some products are suitable for all climates, while others are designed only for "sunbelt" locales.

Other conditions manufacturers must contend with are wind lifting (solved with storm anchors or additional tile thickness) and curling with age. Good underlayment — 30-lb roofing felt at a minimum — is also important. Like natural slate and traditional roof tile, fiber-cement roofing cannot resist driving rain and snow. Some fiber-cement roofing can be cut, punched, and nailed just like traditional slate; other products are predrilled and require special cutting tools or fasteners.

BUYER'S NOTES: ☛ ***Compare Dimensions and Coverage*** — Tile sizes and installation methods vary widely with fiber-cement roofing and are a major factor in the exposure, coverage, weight, fire rating, and cost of the finished roof. ☛ ***Consider the Coloring*** — Most manufacturers offer a palette of three or more colors, but some products are sur-

Concrete tile takes well to shaping and is often used to create the relief effects of wood shingles.

Photo (top) courtesy of Supradur
Photo (bottom) courtesy of Monier

face-pigmented (which may wear) while others have color thoughout the tile.

CONCRETE

CONCRETE TILES HAVE BEEN AT WORK FOR DECADES TOO. Here, binding fibers are left out — and with them their potential for freeze/thaw — in favor of a cement/aggregate mixture that is extruded through dies at high pressure or hand-molded. Concrete tile is a close cousin to traditional clay tile: thick, with strong contours and shadow lines. The process provides good opportunities for texture (some products are random brushed to mimic the individual characteristics of wood shingles), taper, and naturalistic butt edges.

Concrete also goes up much like clay tile, often using the same lugs or lips at the tile end to suspend them from battens (such as pressure-treated 1 x 2 material) nailed across the roof. Even tiles without lugs use the time-honored batten system because it creates a ventilating/insulating space between tile and deck. Moreover, battens cover a multitude of sins on an old roof by softening — and even improving — the dips and waves of age. Most concrete roof tiles install like clay tile, using preformed holes and cement saws or tile nippers.

Clay tile stands in for slate by using molded surfaces and baked-on colors.

BUYER'S NOTES:

☛ ***Consider the Coloring*** — Early concrete roofs were painted. Today's products offer a broad color range by either mixing pigments in the concrete, or impregnating the color as the tiles come off the production line. Each process has its own points for permanence.

☛ ***Watch the Weight*** — The tradeoff for all concrete's advantages is weight. Often approaching 1000 lbs per square, concrete is one of the heaviest materials and roof framing has to meet the building codes for this structural load.

CLAY

CLAY TILES ARE AN ANCIENT MATERIAL AND HAVE BEEN MADE to ape natural roofing often in the past. In a recent update of this idea, one producer has turned to clay for imitating slate. Changes in the traditional clay tile design have helped with the conceit. Incorporating structural ribs on the underside of the tile reduce weight below that typical of clay and some slate; a flat, rather than lugged, tile shape permits installation right on the roof deck, like slate, or on battens, if preferred. Tile color is fired-on (though not glazed) and is produced in slate tones for a uniform or blended roof.

Laminated asphalt shingles build up five or more shaped layers at random to simulate the textures and shadows of natural materials.

BUYER'S NOTES:

☛ ***Account for Installation*** — Though clay slate is predrilled and cuts with a standard diamond tile-workers' wetsaw, the product is new and installers may not have broad experience.

☛ ***Adhere to Underlayment Recommendations*** — Like most tile roofing, good underlayment — single or double thickness, depending upon pitch — is important.

ASPHALT

A REVOLUTION IN ASPHALT ROOFING BEGAN IN THE LATE 1970s when manufacturers, in an effort to increase the textural quality and shadow lines of a roof, developed the laminated shingle — roof material built-up in stepped layers and staggered tabs to produce a dimensional effect. Throughout the last decade and a half such products have been marketed in many designs and colors, frequently with woodlike tones. In the 1990s this technology has been turned to improving the resemblance to slate by employing new die-cutting, contouring, and shadow enhancing methods. Laminated asphalt shingles install much the same as standard three-tab shingles and, though they weigh more, pose no load concerns for average roofs. Most products come in at least two colors.

BUYER'S NOTES:

☛ ***Understand the product*** — Laminated shingles contain more material than standard shingles, but it is still the base layers — not the relief-producing tabs —that ultimately protect the roof.

☛ ***Account for Installation*** — Generally, asphalt slate look-alikes have a random tab placement that permits "racked" installation of whole courses at a time — easier to lay than watching the tab lineup with standard shingles.

Photo (top) courtesy of Elk
Photo (bottom) courtesy of Celadon

Roofing

A BUYER'S GUIDE FOR SLATE AND WOOD LOOKALIKES

Company	Phone Number	Product	Material	Simulates	Climate
ETERNIT INC. Excelsior Industrial Park P.O. Box 679, Dept. OHJ Blandon, PA 19510-0679	(800) 233-3155	Eternit Slates	fiber-cement	slate	all
RE-CON BUILDING PRODUCTS Box 1094, Dept. OHJ Sumas, WA 98295	(800) 347-3373	Quarry Slate Classic Shingle Rustic Shake	fiber-cement	slate wood wood	all
ROOF TILE MANAGMT, INC. 170 Ambassador Drive Unit 1, Dept. OHJ Mississauga, Ont. L5t 2H9	(905) 564-2969	Nature Slates Silcem Slates Jutland Slates	fiber-cement	slate slate slate	all (Canada Only)
SUPRADUR 411 Theodore Fremd Ave., Dept. OHJ Rye, NY 10580	(800) 223-1948	Supra-Slate II Heritage Slate Western Shake	fiber-cement	slate slate wood	all
JAMES HARDIE BUILDING PROD. 10901 Elm Ave., Dept. OHJ Fontana, CA 92335	(800) 942-7343	Hardislate Hardishake	fiber-cement	slate wood	Sunbelt Only
RICHMOND PRECAST CONCRETE P.O. Box 37099, Dept. OHJ Richmond, VA 23234	(800) 275-8262	Hendricks Tile	concrete	slate wood stone	all
MONIER 750 The City Drive South Suite 200, Dept. OHJ Orange, CA 92668	(714) 750 5366	Normandy Slate Split Shake	concrete	slate wood	all
VANDE HEY-RALEIGH 1665 Bohm Dr., Dept. OHJ Little Chute, WI 54140	(800) 236-8453	Modern Slate English Shingle Rough Shake Custom Brushed	concrete	slate slate wood wood	all
CELADON CERAMIC SLATE P.O. Box 309, Dept. OHJ New Lexington, OH 43764-0309	(800) CEL-SLATE	Celadon Ceramic Slate	clay	slate	all
CERTAINTEED CORP. Attn: RPG, Dept. OHJ P.O. Box 860 Valley Forge, PA 19482-0102	(800) 782-8777	Grand Manor Shangle	asphalt	slate	all
ELK CORP. 14643 Dallas P'kway Suite 1000, Dept. OHJ Dallas, TX 75240	(214) 851-0400	Capstone	asphalt	slate	all

WOOD SHINGLE REPORT

HISTORICALLY, THE NATURAL EXTRACTIVES IN CEDAR — chemicals that fight rot and repel bugs — meant untreated wood shingles could survive 60 years on a roof or sidewall. Today, however, roofers tell their clients to expect only 12 to 20 years, depending on the clime, from wood shingles. BY JOSH GARSKOF

PROFESSIONAL RESTORERS FROM coast to coast report cases of failure, sometimes in just five to seven years. Called to houses where roofs have sprung a leak, they find buckling, cracking shingles, and decay. (In a few cases we heard about, mushrooms were growing between shingles.) Often, the roof is ruined.

There are a number of reasons why shingles may not be holding up. Tightly sealed, highly insulated attics reduce the wood's ability to breathe. Pollution may also be taking its toll. Yet, there is another explanation. Many wood experts believe that second-growth trees, which succeeded virgin forests, simply do not yield the same quality wood as the old-growth timber we have all but used up. When installed on roofs, the most trying use for wood, the problems become critical.

Others argue that the failures are being caused by improper installation. The debate has wide implications for the future of the wood shingle (some call wood roofs a thing of the past), for the timber industry (which points the finger at logging restrictions), and for the notion of the renewable resource.

"Second growth timber is not as good, that's a fact," says Brian Buchanan, a Texas consultant who tests shingles and shingle treatments, primarily for industry. "We're seeing it in northern white cedar, western red cedar, cypress, and redwood. They have less extractives."

Scientifically speaking, new, field-grown timber may have a number of shortcomings. Second-growth trees often grow faster in open fields than old-growth trees did in dense forests. This can mean lighter wood as well as larger growth rings, with more springwood (the light-colored bands are less durable). Also, in wide-open environments, trees may be more likely to grow at awkward angles. Their product, called compression wood, is likely to warp.

Yet, the biggest problem, according to specialists, is that the trees are being felled far younger than their predecessors. "Maybe the tree is 50 years old instead of 200. That means it is smaller and has converted less of its diameter into heartwood," explains Professor William Smith, a wood products specialist at the State University of New York in Syracuse. Over time, trees convert rot-prone sapwood into extractive-rich heartwood. Often the new trees do not even have enough heartwood for the width of a shingle, he says.

Second-growth problems are compounded, roofers say, by poor manufacturing and grading standards for shingles. "The quality of the wood has dropped. The quality of the workmanship has dropped and, in some cases, the standards of inspection have dropped," says Nancy Carey, an Oregon restoration shingle manufacturer.

"If you purchase a bundle of No. 1 shingles and look through them, 65 percent probably won't meet grade. You'll find flat grain, exposed defects, and compression wood," says Buchanan.

Most shingle manufacturers have a different explanation for the rash of early failures. They stand by their shingles, second- or virgin-growth. At the same grade, today's shingles are as durable as ever, they say. "Yes, it's harder to get good quality logs, but we sort them out and

keep our standards high. Our shingles are as good as they used to be," says John Dufour, a New Brunswick, Canada, white cedar shingle cutter who exports most of his product to the States. "My grading standards are the same as my father's and my grandfather's," he adds.

"There is a lot of misinformation about cedar not lasting as long as it used to," says Don Meucci, a spokesman for the Cedar Shake and Shingle Bureau, a manufacturers' association based in Washington state. Meucci points to improper installation as the primary cause of early failures. "Roofers are trying to offer a better price," combatting high wood costs by purchasing lower grade materials, or installing shingles at too high of an exposure (the amount of the shingle that is not covered by the next course), he says.

Restoration roofers — the ones trying to identify the cause of early failures to frantic homeowners — acknowledge that poor craftsmanship may be as much to blame for failures as poor wood quality.

"There has been an architectural departure from ventilated installation," says Bob Fulmer, a Maine roofer. "A lot of guys are putting shingles down on solid sheathing. When water gets behind the shingle, it cannot dry out and it rots from the underside." (Shingle roofs need air circulation underneath. On roofs with closed decking, horizontal boards, called battens or strapping, should be laid under each course.) "Some guys are even stapling them down," he adds.

Experts say that today's homeowner is less likely to get up on the roof to clean it. "People wax their cars, they need to maintain their roofs as well," says Carey. Wood shingle roofs must be kept clean and free of fungus.

So what does the owner of a Shingle Style house do when the roof needs replacing? Everyone OHJ spoke to agreed that, for a price, you can find quality shingles and a knowledgeable installer. Western red cedar is generally regarded as the best shingle material. It has more extractives and longer durability. However, it can get pricey, especially if you're far from the Pacific coast. Northern white cedar is more accessible in the Northeast and northern Midwest. Cypress is available in the South. These species have a lower extractive content, and their second-growth timber may be more risky up on the roof.

Although some restorers are worried about the durability of today's wood shingle roofs, others, like the owners of this Cape, are sticking with tradition.

The future of the wood shingle rests in the hands of researchers who are frantically trying to develop effective treatments that will make roofs last longer. Rod De Groot, a wood scientist at the U.S. Forest Service's Forest Products Laboratory in Wisconsin, is testing alternative woods and chemical treatments. "We are looking into the treatability of species including western hemlock, pine, red elder, and pacific silver fir," he says. Scientists hope to find fast-growing, easily renewable woods and non-leaching, effective preservatives.

In 1990, pressure-treated red cedar shingles — impregnated with chromated copper arsenate, like the green lumber used for porches — were introduced. The shingles are widely available, and come with a 30-year warranty. They are especially recommended for hot and humid regions of the Southeast.

However, because the pressure-treated shingles are so new, there has not been enough time to test their durability, says Fulmer, who is concerned that the chemicals may leach out, leaving the wood exposed. "Honestly, the pressure-treated roofs I have seen do not look any better after a few years than the untreated roofs," he says. He asserts that regular maintenance and treating with a water-repellant preservative every five years or so is the only way to prolong a wood roof's life.

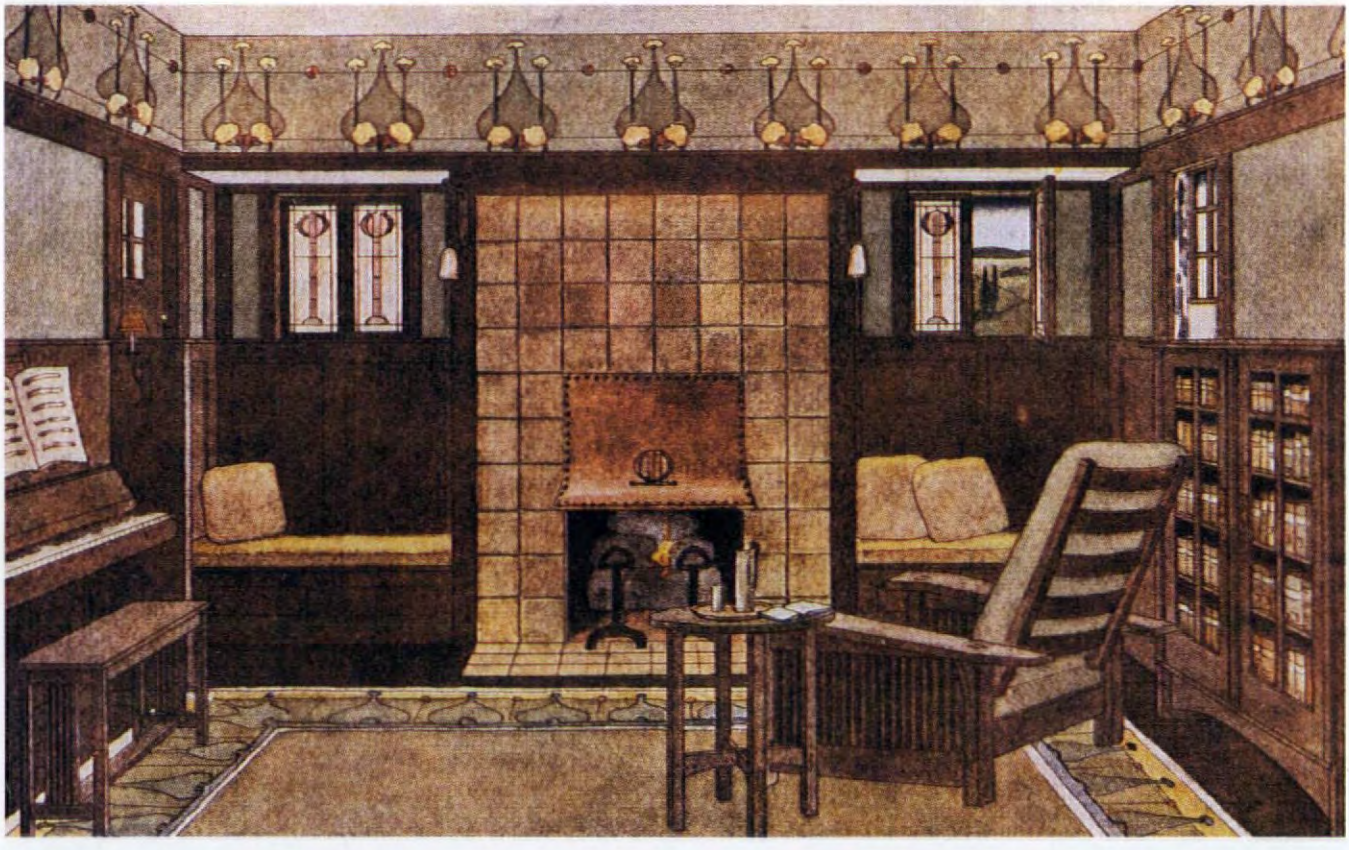
It appears that the shingle industry has reached a turning point. We'll be watching.

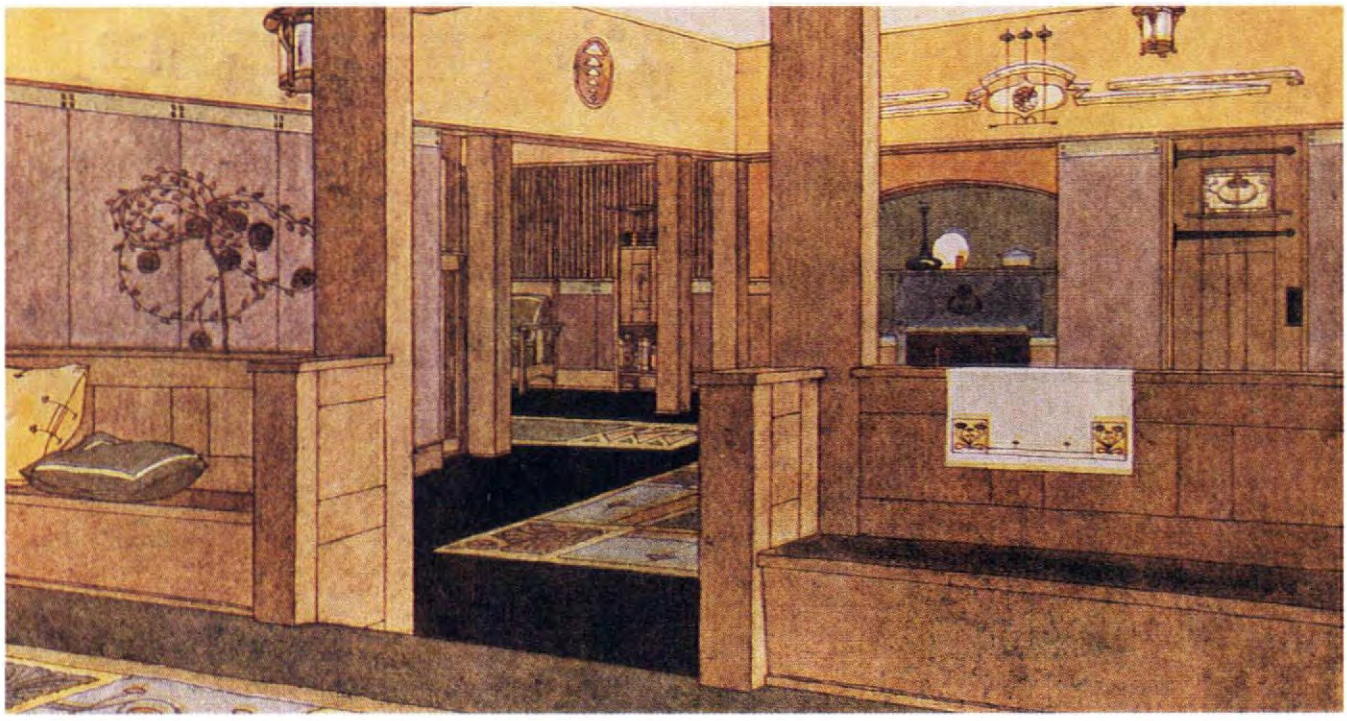
Photography by Josh Garskof

BUNGALOW BUILT-INS

By Lynn Elliott

THERE'S HARDLY A BUNGALOW — OR FOURSQUARE OR COLONIAL REVIVAL, FOR THAT MATTER — that doesn't boast a built-in. A built-in is what it looks like: non-detachable furniture or cabinetry fitted specifically for a home. It is an integral part of a room, not an afterthought, and is usually allowed for in architectural plans, much like doors and windows. A quick glance at the floor plans in any early-20th-century planbook, such as Radford's *Artistic Bungalows* or Stickley's *Craftsman Homes*, shows just how prevalent these permanently affixed, "labor-saving" features were. Seats, bookcases, cabinets, and even beds are tucked away in every spare corner. ¶ The built-in craze peaked between 1910 and





1930. Initially custom-made, catalogs, such as the *Universal Design Book No. 25*, were soon published with pages full of stock versions. The stylistic choices ranged from Colonial Revival to Craftsman and Mission. No room was left untouched. Whether you needed a wardrobe for your bedroom or just a spice rack for the kitchen, there was a built-in ready to be installed.

Like kitchen and bath developments at that time, built-ins were caught up in the "sanitary" movement. Since dust couldn't collect underneath them, built-ins were thought to be the utmost in cleanliness. Even folding beds were considered more sanitary because, when closed, the sheets hung upside down to air.

Floor Plan Reform

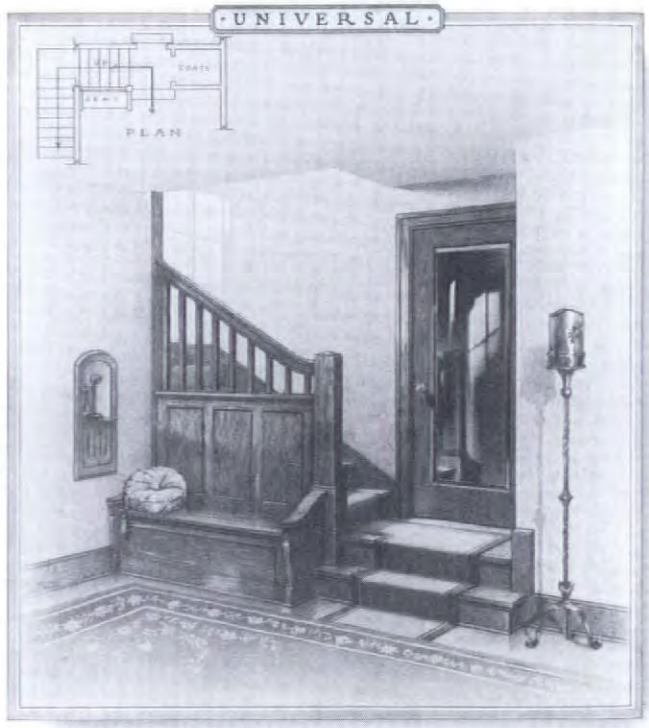
THESE USEFUL INTERIOR ADDITIONS REFLECTED A NEW philosophy in architecture toward floor plans. New homes needed to be, as Stickley put it, "live-in-able" — that is, made so convenient that a homeowner could (supposedly) move in with few pieces of furniture. Also, the rooms needed to be more efficient for housewives with few or no servants.

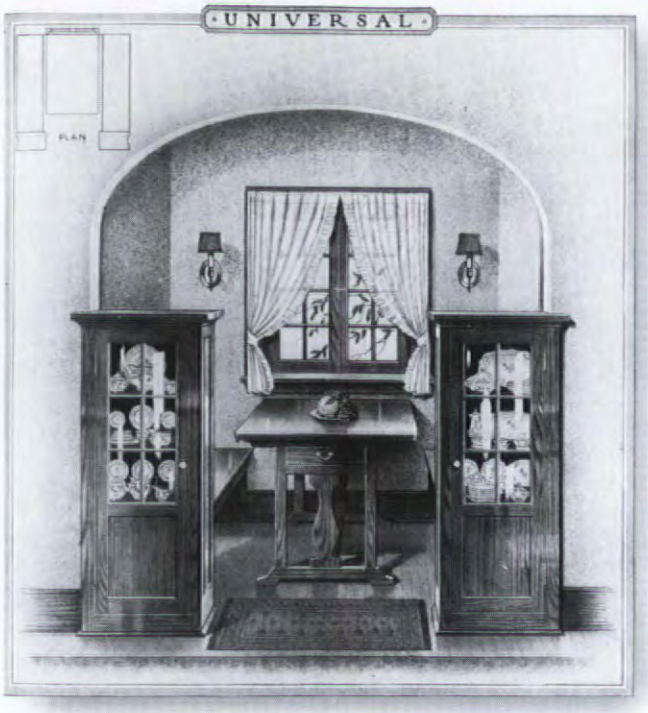
Architects responded by rethinking the flow of floor plans. Living and dining rooms saw the most noticeable changes. Instead of two separate rooms enclosed by walls and door, a "great room" — a central living room linked by an arch to the dining room — was formed. Kitchens were also reworked: Pantries were rejected in favor of cabinets; alcoves were carved out for informal dining.

It was apparent, however, that the furnishings, — and, indeed, the occupants — could become lost in these gallery-like family rooms. Left untreated, the room size

From **The Craftsman**, *October 1905 (left). Note how the built-in seats bring the whole room into direct relation with the fireplace. Foyers (right) were a favorite spot for built-ins. Here a stock stairway comes with a liftable seat conveniently located next to the phone niche.*

"This is a rather pronounced example of the craftsman idea of rooms divided only by posts and partitions, which serve as a basis for seats, bookcases, or plain paneling," comments* The Craftsman *in October 1905.





As if breakfast nooks weren't compact enough, woodworking companies attached china closets to the benches to increase their usefulness. However, this addition created a disconcerting "bookend" effect.

went against the Craftsman ideal of a comfortable, cozy space. Built-ins counteracted the effect of long, low-ceiling rooms by adding visual interest without impeding the open floor plan. Decoratively, they were also the unifying feature that tied separate rooms, such as living and dining rooms, together.

Built-In To Place

BUILT-INS WERE NOT MEANT TO APPEAR AS FURNITURE, BUT as part of a room. Their permanent, architectural nature required that the design be simple rather than trendy. They were not placed indiscriminately; built-ins needed to be well-designed, well-constructed, and located logically in order to be effective. As one decorator advised, a built-in "will not stand being prettified — give it no lace or ribbons. Its restraint and formality must be preserved. The ideal built-in furniture represents great simplicity and perfect craftsmanship."

As the fervor for built-ins caught on, decorators also began to warn against having too many. "Built-in furniture is like cheese. A little of it goes a great way. Too much of it cloys and breeds a distaste." A room filled with a number of built-ins is inflexible and impersonal. Built-ins are meant to support movable furniture, not be substitutes for it.

Built-ins were usually constructed of mahogany, walnut, or oak, and conformed closely in color and finish with the woodwork of the room. When painted, the scheme was light Colonial Revival colors, such as white and grey. The metalwork was not overly decorative. For instance, hinges were either plain brass or wrought-iron strap versions.

In Every Nook and Corner

WHAT BUILT-INS CAN YOU EXPECT TO FIND? WELL, SETTLES and benches with hinged seats for extra storage space are everywhere — under windows, tucked into alcoves, and by stairways. Another favorite was the bookcase, simply made with open shelves. Enclosing bookcases with glass doors was not recommended because it discouraged reading. In the living room, fireplaces were invariably flanked by benches or shelves of bookcases to create a cozy atmosphere. The inglenook, a recess with two opposing seats around a fireplace off of the main room, was a more effective treatment.

Colonnades were often used as a partition between the living and dining rooms because, unlike doors, they didn't create a barrier. Most were Doric-like columns on plain, wood

Typical for the period, the c.1920 china cupboards with center sideboard extend the full width of the room in this Portland, Oregon, bungalow.

Bottom photo by Third Mile Studio/Thomas Nutt

The great room was meant to be an inviting gathering place for the family. Here an inglenook, set back from the main room, creates a cozy corner around the fireplace.

bases. For practicality's sake, more elaborate designs substituted cabinets with leaded glass doors or fold-out writing desks for the bases. Built-in sideboards and china cabinets continued the woodwork theme into the dining room. These massive pieces can take up an entire wall, and have ample storage space for linens, silver, and china.

The ingenuity of built-ins was at its best in the kitchen. Today's kitchen, with its rationalization of space, owes a debt to the post-Victorian one. Since pantries for storing large quantities of food were no longer needed, the kitchen cabinet became the storage place of choice. (A call to the grocer on the newly invented telephone brought daily supplies.) Originally, the cabinets were placed across one wall near the sink, but not around it. In time, however, the cabinetry encircled the work area.

All spare space was utilized: Ironing boards folded away into the wall, telephones were placed in niches, potatoes hid in tilting bins, and ice was delivered through special doors. The breakfast nook — two seats and a table in an alcove — found its way into one of the corners. All of these changes were part of an effort to save time in the kitchen.

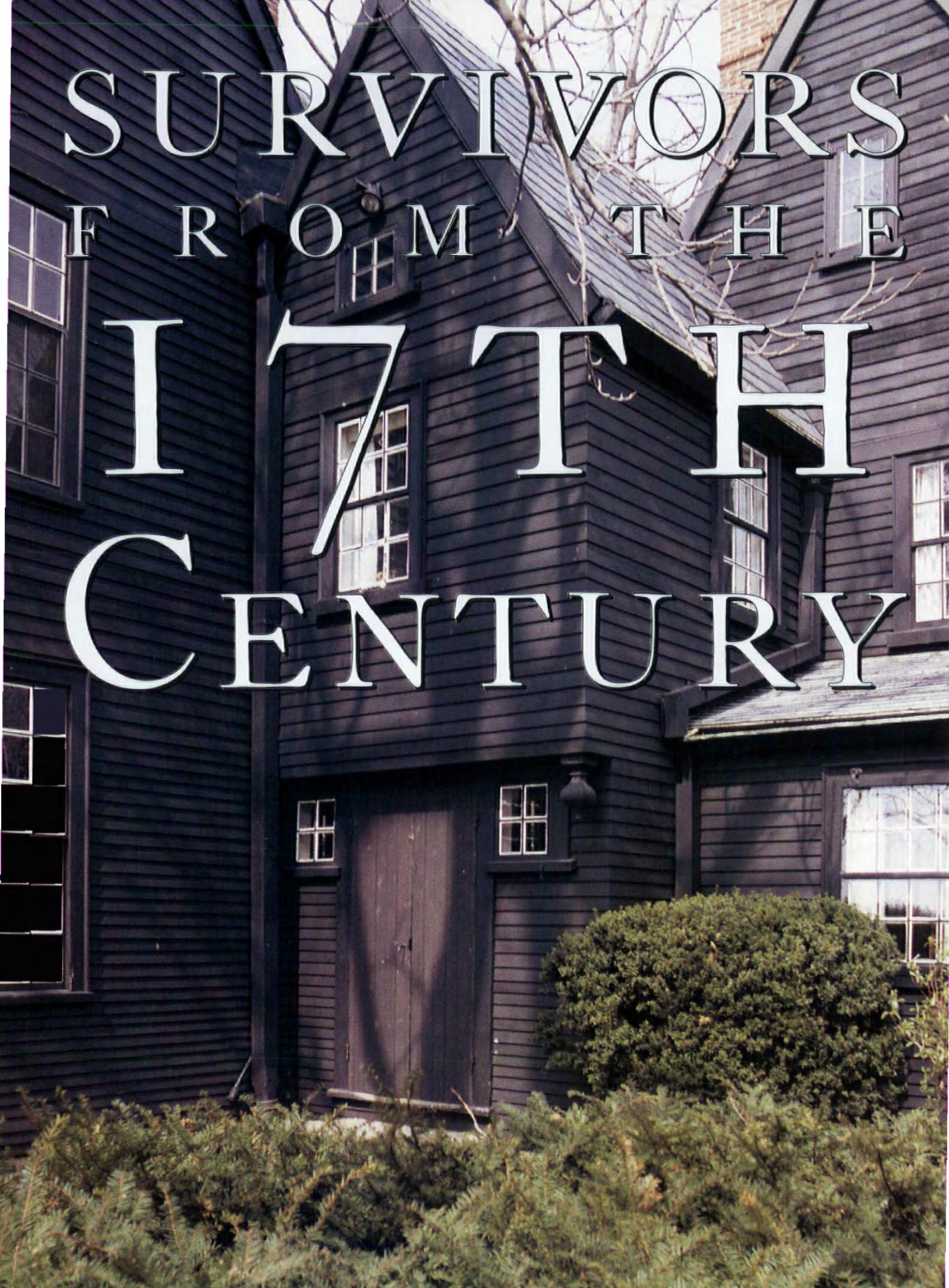
Upstairs, bedrooms bid adieu to armoires and said hello to recessed wardrobes with dressing tables. There were shallow, long closets for small rooms, designs for around windows, and — for the lady with everything — closets just for hats. Linen closets lined the hallways, and medicine cabinets and cupboards for toiletries hovered around sinks in the bathroom.

Beds, too, were not immune to being built-in. Comedians have made much of the folding or Murphy bed, a favorite of apartment dwellers. Other built-in beds slid into walls under the raised floor of the next room. One novel type rolled the bed out of the house onto a sleeping porch, taking the desire for fresh air to an extreme.

A noted feature in bungalows, the built-in adapted well to the idea of the "comfortable house." Its craftsmanly construction suited the solid woodwork of bungalow interiors. Its ingenuity lightened housework burdens in a developing modern society. But the built-in was more than a practical addition, as anyone who has curled up on a settle next to a fire will tell, it was also an aesthetic one.

Built-in closets don't get much attention nowadays, but the* Universal Design Book No. 25 *devoted a whole section and numerous designs to these space savers.

Top photo by Jane Powell


SURVIVORS
FROM THE
17TH
CENTURY

Above: The 1683 Parson Capen House in Topsfield, Massachusetts, has carved pendants and heavy brackets at gable overhangs and the front door, unusual design elements indicating a prosperous family. Opposite: The Turner House — Nathaniel Hawthorne's "House of Seven Gables" — constructed beginning in 1670 in Salem, Massachusetts, had eight gables at one time.

Ah time, ah mystery. To many old-house lovers, the most intriguing chapter in American architectural history is the very first, the one that has left behind the least physical evidence. American buildings surviving from the 17th-century English settlement period are scarce, but there are enough of them still around to bring tantalizing glimpses of how the first European settlers made a lasting place for themselves in the New World. ¶ From 1607 in Virginia and 1620 in Massachusetts, adequate, permanent shelter was an urgent and ongoing concern of the newly arrived colonists. Their first homes were temporary: thatched-over dug-out pits and Indian-style wigwams of wooden palings with rounded roofs made of arched saplings and thatch. Within a few years these were abandoned for "proper" English houses of brick or wood. Why, though, did these English colonists cling to outmoded medieval building traditions when most of continental Europe had been building in the classical Renaissance mode for decades by the time Jamestown and Plymouth were begun?

A Look at Houses of Colonial America

BY JAMES C. MASSEY AND SHIRLEY MAXWELL

Photography by James C. Massey

The wood frame portion on the right of the Gilpin House, in Chadd's Ford, Pennsylvania, is from 1698. The larger stone section was added in 1745.

The answer lies partly in the settlers' conservative backgrounds. Compared to the continent, England in that era was not merely an island, but a cultural backwater. The ideas that had reshaped architecture in Italy, France, Germany, Holland, and Sweden moved slowly across the cold waters of the English Channel, and affected only a small number of wealthy landholders when they got to the other side. The earliest houses in New England and the mid-Atlantic states are reminders not just of our own colonial architecture, but of the medieval villages the colonists left behind when they struck out on their journey across a daunting ocean.

Medieval Forms

THE DISTINGUISHING CHARACTERISTICS of the medieval house in both Europe and the United States are a very steep roof, massive chimneys, small casement windows with square or diamond-shaped glass panes, heavy wall construction, and almost no ornamentation except what could be incorporated into the structural elements of the building. Despite the weight and size of their framing systems, these are small buildings, never more than two storeys with garret and basement, and generally with small rooms and low ceilings.

The William Rittenhouse House, 1690, in Philadelphia, retains its original casement windows.

In both New England and the southern colonies, the standard 17th-century roof line was a steep gable (about a 54-degree slope). It was only late in the century that the gambrel roof, with two slopes on each side of the ridge, came into use. In freestanding American houses, the gables were at the ends of the house. However, some early houses are thought to have had shared side party walls and faced the gables to the street, both as a matter of habit held over from the homeland and to conserve land and energy. While thatched roofs were tried on the earliest houses, they were eventually outlawed. Slate or wood shingles were less fire prone and more permanent.

Wattle-and-daub (stick-and-clay) or wooden chimneys were temporary — and flammable — concessions to the lack of time and skills needed for masonry chimneys. They were soon supplanted by durable chimney stacks of brick or stone. In order to accommodate several flues, these tall, prominent chimneys were often clustered in a T-shape or in groups of two or three set at angles to form a diamond pattern. As a further precaution against fire, the tops of the chimneys were often set back from the body of the house by several inches or more; in some cases, they were nearly free standing. An inglenook, or *pent* projection, was frequently inserted beside a chimney or between two chimneys; sometimes there were as many as three little pents.

New World Materials

ALTHOUGH THE VERNACULAR BUILDING METHODS AND skills the English colonists brought with them were influential, they did not necessarily rule in America. New England settlers who came from villages of stone cottages, for instance, might have been tempted to put the ubiquitous boulders of their new country to use. However, the scarcity of the high-quality lime needed for masonry, coupled with an abundance of comparatively light and easy-to-work timber, quickly tipped the scales in favor of wood construction.

In Virginia, most of the 17th-century houses still standing are brick — but not because brick was the most common building material. Wood houses were built much more often in this heavily forested region, but have since decayed and fallen victim to the voracious termites that flourish in the Virginia climate. In New England, by contrast, surviving buildings of wood are the rule and always have been, partly because the cold climate helps preserve wood structures and partly because these colonists from southeastern England were most familiar with wood building methods.

A typical plank door and stone stoop.

Wood construction during this early period meant timber frame, using massive posts and beams hewed by hand with axes and adzes and secured with wooden pegs. The interstices, or spaces between the wooden members, were filled with brick, wattle-and-daub, or even sea grass. A weatherproof finishing coat of hard plaster, or an exterior covering of clapboard or weatherboard, usually protected the filling. In half-timbered buildings the framing was visible on the exterior of the building, while clay or lime plaster covered the infill. Because the bricks were not usually exposed to the weather, they were often the soft, unburned variety.

Small casement windows with square or diamond-shaped leaded panes admitted light and some air — probably not much — to the interiors of the buildings. Virtually none of the casement windows seen in today's 17th-century houses are original, since casements were rapidly and almost universally replaced when double-hung sash became available early in the 18th century.

Casements contain a single movable section.

Seventeenth-century houses rarely had grand front entrances, although porch extensions added a touch of formality to some cross-plan homes in the southern colonies. Exterior doors were not very tall and were built of wide boards, sometimes two layers thick. In New England, and in smaller southern houses, the front door might open directly into the hall or a small foyer.

Although entire houses were sometimes built all at once, at least by the most prosperous homeowners, it was probably more common to start with just one or two rooms. Often a hall was built first, or the hall and parlor, or perhaps the hall and a second-storey chamber above it. To the 17th-century homeowner, a *hall* was neither a vestibule nor a corridor, but the main living room of the house. If there was no lean-to addition at the rear of the house to hold a separate kitchen, meals were prepared in the hall and cooked in the main fireplace. The *parlor*, then as now, was a more formal room, often referred to as a *best room*, in which important visitors were received. A *porch* was a projecting enclosed and roofed entrance area — essentially a vestibule or foyer — at the front of the house. A *chamber* was a room used primarily for sleeping. A *porch chamber* was a small bedroom located above the entrance vestibule. Additions were made as circumstances dictated. Yet no matter how many rooms were added, the houses seem to have remained rather densely populated, given the tendency toward large and extended families and the addition of more servants as the colonists became more affluent.

This classic saltbox, with its extended rear roof and center chimney, was built in 1686 on the island of Nantucket, Massachusetts.

The finest surviving 17th century southern house, Bacon's Castle (1655), in Surrey County, Virginia, shows the cross plan design popular in the region.

New England Nuances

THE FORMS OF 17TH-CENTURY BUILDINGS VARIED FROM one section of the colonies to another. In New England, the most common house type evolved from a one-room, gable-roofed cottage (a one- or one-and-one-half-storey structure) with the ridge of the roof running parallel to the front of the house. An enormous fireplace was placed in one end wall of the single room. Since the huge chimney could easily accommodate flues for a second or even a third fireplace, a second room was generally built on the other side of the chimney wall, creating a central-chimney house. The two rooms, both served by the same chimney, created the well-known hall-and-parlor configuration. Later, a kitchen might be inserted in a lean-to, a steeply sloped one-story section added at the rear of the house.

The precipitously slanted roof line of the lean-to resulted in the New England house type called a saltbox. The kitchen fireplace was added onto the backside of the central chimney, and a bake oven might be inserted at one side of the back wall of the fireplace. A pantry for food storage was often placed on the colder side of kitchen, while a downstairs sleeping room occupied the warm side.

The distinguishing mark of the 17th-century New England house (and of its English prototype) is the overhanging second floor, or *jetty*, that runs across the front of house and sometimes around the ends — but, inexplicably, not across the back of the house. The original purpose of the overhang is lost to history. It may have been designed to provide some protection for the lower walls or perhaps to shelter the entrance. An additional overhang between the second and third floors at the gable end was also common, with the main crosswise *girts* (heavy beams) of the second floor projecting beyond the walls of the house. These beams were often carved into decorative drooping *pendants*, or *pendills*.

Southern Colony Specimens

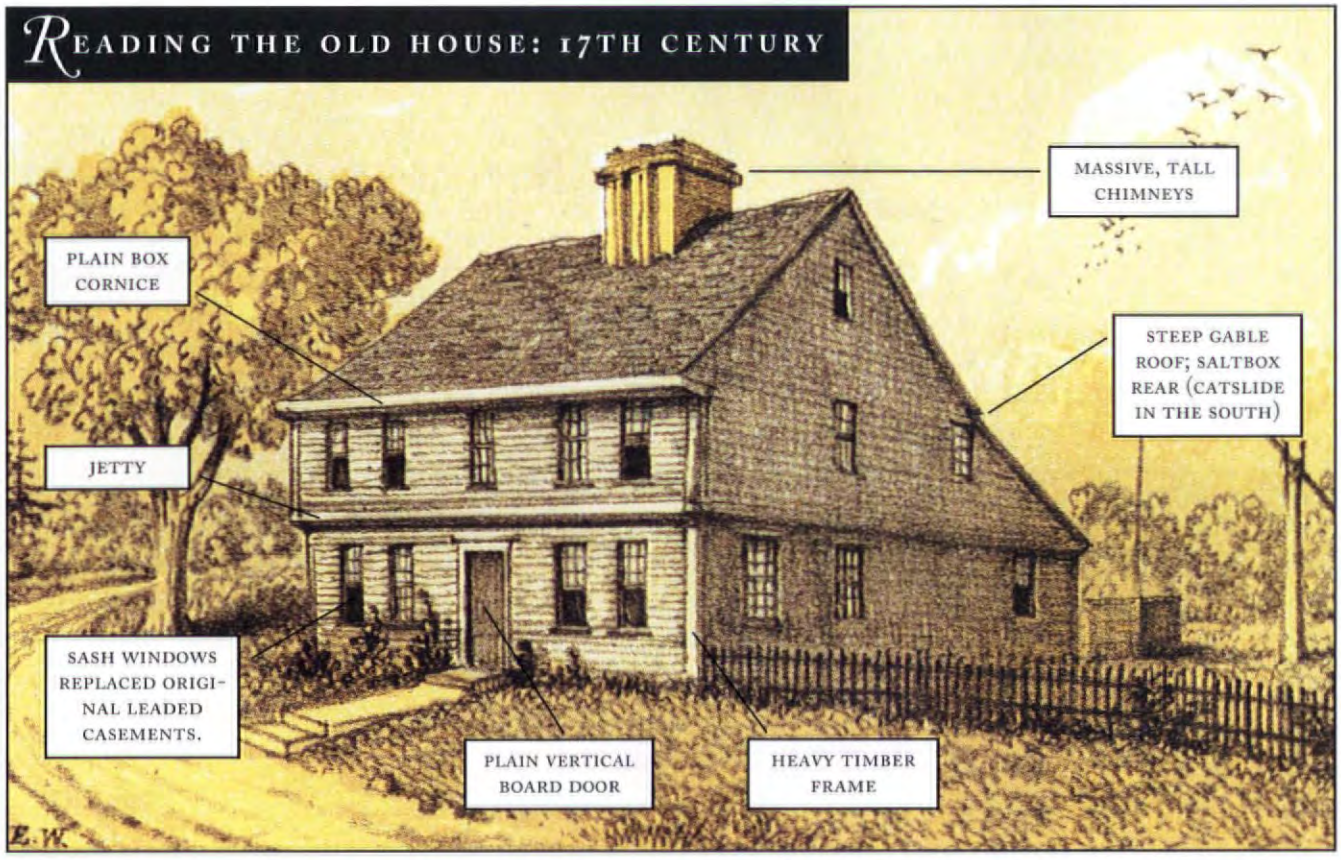
HOUSES OF THE SOUTHERN COLONIES SHARE MANY CHARacteristics with those in New England, including the steep gable roof. In the south, however, the sharply angled lean-to roof is known as a catslide. Southern houses did not have projecting jetties, but might display a series of molded brick string courses between storeys and above the basement level.

The most distinctively southern form of the 17th-century house is the cross-plan house, in which a projecting one- or two-storey enclosed porch at the front of a two-storey hall-and-parlor house was balanced by a stair tower at the rear center of the house. The combination provided the cross ventilation needed in warm climates and also made room outside of the living area for steep winders or straight stairs to the second floor. The cross-plan house was the largest and most formal 17th-century house type.

Brick was laid in a number of different bonds (patterns), some of them highly decorative. Labor-intensive ornamental efforts were confined to areas where they would have maximum impact — the front wall of the building, along the top edges of the gable walls, or on the tall chimneys. Glazed, dark-hued bricks, treated to a longer or hotter firing than regular brick received, might outline chevron- or diamond-shaped patterns on the walls. *Mousetoothing*, a form of decorative sawtooth brickwork, might march along the gable eaves, and occasionally a corbeled brick corner under the eaves had an effect somewhat similar to that of the carved wooden pendants on New England houses.

The Adam Thoroughgood House, in Virginia Beach, Virgina, was built c. 1640. Note its two massive chimneys: one inside the walls of the house and another, originally for cooking, on the outside.

Few as they are, these architectural relics from America's earliest European settlements are more than enough to send our imaginations spinning into a past that is as hauntingly familiar as our sixth-grade history books — and a lot more substantial.



Source: Edwin Whitefield, The Homes of Our Forefathers, *1879*

DEMONS

OLD-HOUSE LIVING

A Buried Gas Tank Causes an Old-House Living Dilemma

BY SUSAN WARNER SMITH

"SO TELL ME," MY NEW NEIGHBOR asked as we strolled across my property, "did the folks you bought the house from ever get that gas tank out?"

After a couple of seconds, when my heart had resumed beating, I asked as calmly as I could, "Where would that be?"

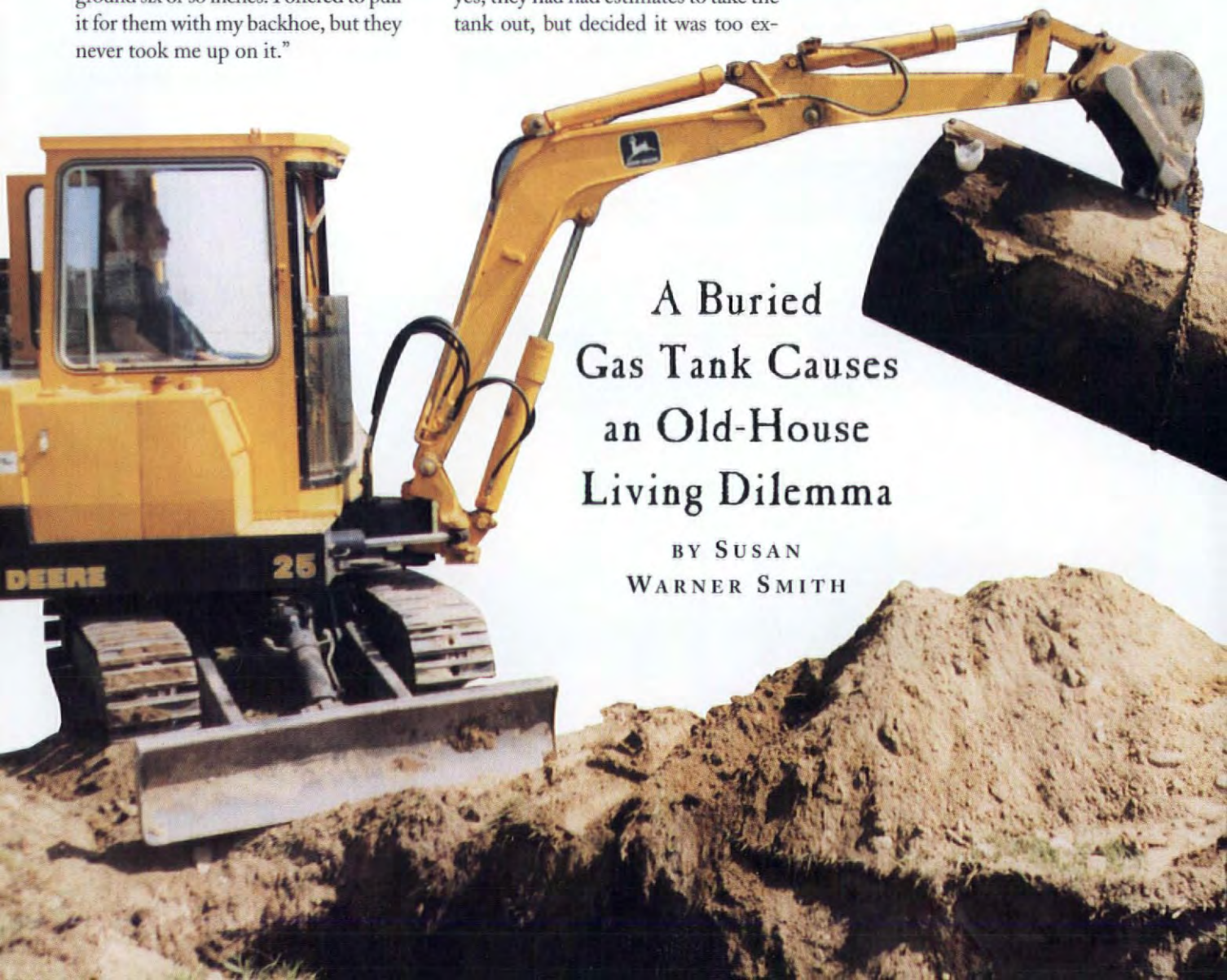
He walked over to the middle of the perennial garden, spread out his arms, and pirouetted around a few times (pretty gracefully for an old farmer in his winter gear).

"Right about here, I think. Used to have a pipe that stuck up above ground six or so inches. I offered to pull it for them with my backhoe, but they never took me up on it."

When I had exhausted his tolerance for conversation, my neighbor wandered back to his side of the property line, and I went in to deliver this latest bombshell to my husband, Dave. It didn't take more than the mention of "gas tank" and "front yard" before we slipped into that gentle melancholy known by all old-house owners from time to time. Duped...suckered...naive — call it what you will.

Dave bravely picked up the phone and called those nice people who had sold us our old house and farm only seven months earlier. It turned out, yes, they had had estimates to take the tank out, but decided it was too expensive. Instead, they cut off the pipe and tried to grow a lawn over it.

Armed with our new knowledge, Dave and I tried to get a handle on the situation. Exhuming the tank wasn't exactly an inexpensive or risk-free proposition. However, ignoring it would leave us vulnerable to a number of big problems down the road, such as lawsuits from neighbors or our town if the tank contaminated their wells (not to mention the safety of our well). We also live within spitting distance of a reservoir that serves five towns. If left unchecked, our tank could wreak havoc on thousands. While some home-



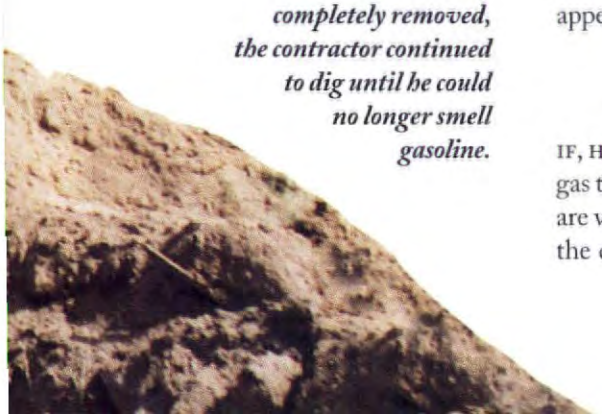
owners would have immediately called in a flock of lawyers, we considered that move a last resort.

Warning Signs and Smoke Signals

THE MOST IMPORTANT ADVICE FOR dealing with buried gas tanks is also the simplest: be endlessly suspicious. Long before you fall in love with the house, look for signs that hazardous waste might be lurking on your property. For instance, my husband and I had found an antique gas pump under some dead weeds by the silo, but considered it one more oddity among the many scattered around the farm. (The farm once belonged to some inveterate pack rats.)

When it comes to gas tanks, Jeff Shaw of the Environmental Engineering Lab at the University of New Hampshire recommends looking for pipes sticking up out of the ground or a cement cover like the ones at gas stations. If you check with your state, Shaw says, they will undoubtedly have a record of any registered tanks and their locations. Unfortunately, not all tanks are registered or come so neatly marked — especially if you're buying an old house on a hundred acres. If a visual inspection, your house inspector, and the state turn up no signs of hazardous waste, then do what we didn't. Have a lawyer look over the purchase and sales agreement, and put in a clause for notification of possible hazardous waste on the property. With old houses, infatuation is an implacable force. Try to resist it and arm yourself with a good hazardous waste clause. Even if the seller won't 'fess up about the Chernobyl in his backyard, you'll be warning him that a scourge of legal scorpions may appear on his next doorstep.

Once the tank was completely removed, the contractor continued to dig until he could no longer smell gasoline.



Love at first sight: It took only two hours for Dave and I (left) to decide to buy the c. 1750 Colonial house (above).

The Morning After

IF, HOWEVER, YOU DISCOVER A BURIED gas tank in the yard, take heart. There are ways to exorcize that demon from the deep. First, I recommend calling your state water board or local Environmental Protection Agency (EPA) office. They're bound to have all kinds of statutes, regulations, and recommendations to heap on your withered soul. Hang on the line long enough and they'll even explain what all those sections and codes mean. Call the water folks first because they can tell you about funds set up for remediation of fuel tanks — that is, to help pay if you have a real mess in your yard. Also, unlike contractors, the government officials have a personal stake in your being well informed. They don't want contaminated groundwater either. They might also supply you with a list of possible contractors.

In 1984, Congress added Subtitle I to the Resource Conservation and Recovery Act, developing regulations to protect human health and the environment from leaking underground storage tanks. According to Larisa Williams, a hydrologist with the New York City branch of the

EPA, "current federal guidelines on underground tanks state that by December 1998 all underground storage tanks must meet federal guidelines for corrosion protection and spill prevention." As these are extremely difficult to meet without tank removal, Williams's advice is "yank 'em."

Williams also notes, "in many states, regulations may be more stringent" than the federal guidelines. In New Hampshire, all steel systems without corrosion protection must be permanently closed by age 25 or, if the age is unknown, by October 1, 1995 (Env-Ws 411). Check your state requirements to see if they are as rigid. If you have a spill or are found to be out of compliance after the due date, both your state and the EPA can become nasty and fine you.

The Cost of a Clean Hole

ONCE ARMED WITH YOUR state's regulations, you'll need to find a good tank removal contractor (not your neighbor and his backhoe). You want someone experienced, reliable, and only moderately compulsive. Some contractors say they "will dig until it's clean." This means if you have a leak, and you're paying $300 a barrel to have contaminated dirt treated, they'll dig to China before they're convinced they've dug clean. Of course, if you have a really bad spill, they may have to dig that far anyway. Part of hiring the contractor is comparing bids for such things as cost-per-gallon to treat any liquid in the tank; cost-per-barrel for treating any dirt beneath the tank that's contaminated; how much to clean out the actual tank; and how much to dig it up and haul it away. You'll also want to compare their charges for a field test, which can roughly gauge how much contamination you may have in parts per million (ppm), and the more sophisticated lab tests that are analyzed at an independent, state-approved lab.

The other part of hiring the contractor is instinct. One contractor sent his bid in a four-color package complete with résumés of everyone in the entire company; that much overkill made me nervous. He also tried to convince me that our tank was too small to be covered by state regulations, which proved untrue after a quick call to the state. (The federal guidelines clearly declare that any tank holding more than 110 gallons of gasoline or 1,100 gallons of home heating fuel must be under compliance.) That was enough doubt for me.

With a borrowed bobcat earth-mover, Dave fills in the now-clean tank site.

The Operation Begins

ONCE YOU'VE SETTLED ON A CONTRACtor and a price, you must notify your state regulatory authority at least 30 days before removing (known as closing out) your tank. You may also want to arrange the big dig for a time when you can personally show the contractor the location of the tank and any power lines or pipes. A "Dig Safe" approval from the local utilities is a must before ground is broken. After the top of the tank is revealed, the contractor will probably eyeball it for any apparent leaks, openings, or cracks. He will also make an informal analysis of any liquid that appears. Then the tank will be opened and any liquid inside pumped out into special barrels for the transport of hazardous waste. The contractor will continue digging until the tank can be lifted free from the ground and placed where a state inspector can easily check it for leaks or holes. Once the tank is out of the ground, the contractor will make a field inspection of the hole, take soil samples, and fill it in after the state inspector gives the approval.

Because there were a lot of unknowns with our tank, Dave and I both decided to stick around and basically bite our nails. Our tank turned out to be, as the contractor put it, "a weirdo" — a 550-gallon gas tank and not the 1,000-gallon size most commonly used. It was also buried in a maze of iron fence posts, or as one guy with a detector told me, "Lady, your yard is full of metal." The tank had an unmistakable hole where the outlet pipe had been and liquid seeping around its edges that smelled faintly of gasoline. After three hours, the contractor pumped more than 500 gallons of water mixed with gas from the tank. Because the soil immediately under the tank had been exposed to the overflowing liquid, he dug until he could no longer smell gas. Using his field analyzer, he found 10 ppm at one end of the hole and 30 ppm at the other. Only a ballpark figure, he said, that could mean nothing when the soil was actually tested. He then took two small soil samples to send to an independent lab. Together we waited for the state inspector. The official noted no obvious leaks or holes in the tank and detected only the faintest trace of gasoline smell in the excavated soil, which he attributed to any number of compounds. Since no "obvious contamination" was present, the hole was filled.

If it had been present, they would have continued to dig until the ground was clean. The same is true of the test

Left: With the state inspector's approval, the tank is carted away. Below: Removing the tank brought us peace of mind. Now Kentucky bluegrass and wildflowers commemorate the spot.

results: If they came back with so much as 1 ppm, any contaminated soil would have to be excavated and treated. Occasionally, gas contamination can seep into the groundwater, which can lie either a few feet or hundreds of feet below ground. This kind of contamination can be expensive and difficult to treat. After our contractor checked the ground below our tank, he quipped, "I hope you folks have yourselves a good lawyer" — words you never want to hear. Most tank removals, though, will be straightforward and relatively easy. If you have a dry tank and clean soil, it can cost under $2,000 to remove or less if you excavate and close the site yourself. Liquid disposal can cost upwards of a dollar per gallon to treat; soil is $300 or more per 55-gallon barrel. A lot will depend on the region where you live and the competition among contractors for your job.

The Bureaucratic Maze

ONCE THE TANK IS GONE, YOU enter the forms and reports phase. Depending on where the contractors sent the liquid or soil from your site, you'll become a known "generator of hazardous waste" in a number of states. You'll also receive a closure report form from your contractor that tells all to the state.

The trying part of the whole ordeal is waiting for the soil test results. Two months later, we received an elaborate set of lab results. We could decipher only one important detail — a string of zeroes that indicated no detectable traces of gasoline or other hazardous material in the soil samples. Almost a year after the tank was removed came an official notice from the state closing our tank — "until further notice." (Keep records of the results for at least three years.)

Dave and I whooped it up a bit and planted Kentucky bluegrass where the gas tank once lived. As with many old-house owners, we had braved the question of "should I or shouldn't I" in the matter of our fuel tank. The decision to face the expense was worthwhile. We can walk lightly upon the ground again, knowing no demons leaking gasoline lurk below.

WHERE TO GO FOR MORE INFORMATION

Below is a brief sampling of texts and videotapes on underground storage tanks. For additional information, check with your state.

TECHNICAL REQUIREMENTS

"Musts for USTs" — a summary of the regulations for underground storage tank systems. Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402; (202)-783-3238. Brochure, $2.50; STOCK NO. 055-000-00294-1.

CLOSURE

"Tank Closure Without Tears: An Inspector's Safety Guide." To buy a copy, contact New England Interstate Water Pollution Control Commission, Attn: VIDEOS, 85 Merrimac Street, Boston, MA 02114. Video, $20 ppd.; companion booklet, $5 ppd. To borrow, contact New England Regional Wastewater Institute, 2 Fort Road, South Portland, ME 04106. Video and booklet, $5 ppd.

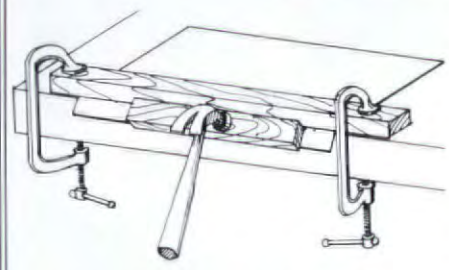
"What Do We Have Here?: A Guide to Site Assessment at Closure." New England Interstate Water Pollution Control Commission (see address above). Video $40 ppd.; companion booklet $5 ppd.

Restorer's NOTEBOOK

Quick Flashing

RECENTLY, I HAD TO REPLACE THE step flashing around my chimney. That meant making 90 degree bends in sheet metal. I do not own a bending brake or any professional metal bending tools, but a roofer friend suggested a simple method. I set up the metal with the bend line along the edge of my shop table (any sturdy surface with a sharp corner will do) and I held it fast with a piece of 2x4 and two C-clamps. Then I hammered the overhanging edge down using a 2x4 block. It gave me accurate bends.

— STACEY ROBINSON
Fargo, N. Dak.



The edge of an old door makes a good spot for bending flashing.

Stain-less Textiles

IF YOUR FABRIC-COVERED FURNITURE, carpets, tablecloths, or other textiles suffer from coffee or tea stains, try soaking them with a solution of distilled water and sodium perborate (be sure it's Na BO_2 H_2O_2 $3H_2O$). Use two teaspoons of the powder for two cups of distilled water. There should be residue on the bottom of the mixing dish; this way you know you have a saturated solution. Use only a glass or ceramic bowl. Apply the solution with clean cotton swabs and wear rubber gloves. Don't breath the powder or solution! After soaking the affected area, expose it to direct sunlight. Repeat a few times if necessary. Dispose of the remaining solution in the toilet.

You can buy sodium perborate from City Chemicals (800-248-2436), Spectrum Chemicals (800-772-8786), or Fluka (800-358-5287). You'll have to buy at least a pound, so consider it a lifetime supply, or give ounces to friends with these instructions.

—SHELLEY FORZLEY
New York, N.Y.

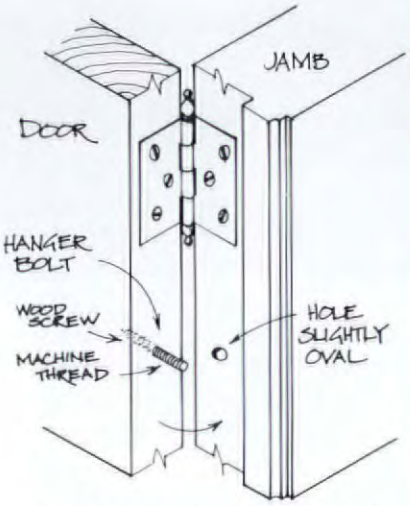
First Impressions

FINDING NEW HARDWARE TO FIT old light fixtures, cabinetry, or plumbing is always a hassle. Few hardware store owners are psychic. Trying to remember and describe the exact shape and size you are looking for can be exasperating. It is always best to take the original item to the store. The next best thing is to make an impression of an existing piece, or of the fitting where it will attach. Press the object into wax, clay, or even soap. Bringing a record of your detail to your architectural salvage store or reproduction company will save you a lot of time.

— HARRY & DENISE BRODERICK
Sparta, N.J

Homemade Hinge Security

AFTER A RECENT BREAK-IN AT MY old house, I was prompted to improve the security of several doors. In one case the door swings so that the hinge pins are on the outside and pulling them would have been an easy way to get around the lock. You can buy security hinges that have locking tabs to prevent the leaves from sliding apart; you can also buy screw-in tabs that add this feature to existing hinges. It's even simpler, though, to make your own. Take two hanger bolts (¼" x 2 ¼" or thereabouts) and screw them into the door edge near the top and bottom hinges. Leave about ¾" exposed. Next, locate the same position on the door jamb and bore holes for the bolts. Last, test the door and adjust the bolt depths so the bolts will swing into the holes neatly as the doors close. (You may have to ovalize the holes slightly.) This trick takes away one of the simplest entrance points for a burglar.



The bolt slides into the door and prevents opening it by pulling the pins.

— M. HERNANDEZ
Albuquerque, N. Mex.

SHARE YOUR SOLUTIONS!

We'll pay $25 for any hints or shortcuts that might help other old-house owners. Send them to Notebook Editor, The Old-House Journal, Two Main Street, Gloucester, MA 01930.

Illustrations by Robert Leanna

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RESTORATION

Nice Light

LONG AN ARCHITECTURAL salvage source, Omega Too has developed a line of reproduction lighting fixtures inspired by turn-of-the-century electric lights. Because restorers often want multiple fixtures, they have begun making authentic copies. They are handcrafted in solid brass and can be purchased with 10 different chemical patinas and 18 lamp shade choices. The sconce assembly shown costs $145. Omega Too, 2204 San Pablo Avenue, Dept. OHJ, Berkeley, CA 94702; (510) 843-3636.

This wall sconce, by Omega Too, is based loosely on an 1885 original.

The Northern Refrigerator Company's ice box can be ordered with or without a freezer.

Ice Box

NO NEED FOR ICE DELIVERY with this reproduction ice box — it's really a frostless refrigerator. If you're aiming for an authentic early American kitchen, this might be the answer. The solid oak cabinet has brass hardware and a stainless steel interior. The unit costs $4,025. Northern Refrigerator Company, Inc., P.O. Box 204, Dept. OHJ, Paris, MI 49338; (616) 796-8007.

Hand-Hewn Timber

LOOKING FOR AUTHENTIC hand-hewn accent woodwork for your Tudor Revival or Spanish Colonial house? Palmer Creek's hand-hewn beams and decorative pieces are authentically finished using the axe, adze, drawknife, chisel and hand saw. Larry W. McCanse produces both finish work, like mantels and railings, and structural elements, such as beams, collar ties, and roof trusses. Palmer Creek Hand-Hewn Wood Products, P.O. Box 3313, Dept. OHJ, Santa Rosa, CA 95402; (707) 578-0870.

Iron Hinge

GRANTCO IS OFFERING a new reproduction hinge that is just right for many wood outer doors. Made of cast iron, the hinges come in only one style — a very authentic look for a 19th-century screen door. The hinges are spring-loaded to make the door self-closing, yet include a hold-open feature. A pair costs $35. Grantco, Box 893, Dept. OHJ, New Hamburg, Ontario, Canada, NoB 2Go; (519) 662-3892.

The reproduction screen door hinge is flush mounted.

Colored Caulk

WHITE KITCHEN AND bathroom caulk can look odd when used with old grout or around colorful tiles and fixtures. Classic Colors by Polyseamseal is available in 20 colors,

Photography by Michael Chiusano (hinge and caulk)

PRODUCTS

by Josh Garskof

Palmer Creek offers custom hand-hewn trusses, beams, and trimwork.

from green and red to off-white and tan. The acrylic caulk contains a mildewcide and is water resistant. Each 6-oz. tube costs $5.18. Available at home centers nationwide or contact Darworth Company, P.O. Box 639, Dept. OHJ, Simsbury, CT 06070; (800) 624-7767 for a local distributor.

Wainscot Kit

KNOCK-DOWN WAINscotting became a common way to finish a room by the mid-19th century. SelecTrim is a new modular panelling system that is a snap to install and comes in traditional-looking patterns. Simply cut the horizontal pieces to size, screw them in, and slide the vertical pieces in place. Decorative moulding covers the screw heads. The cost for the red oak system shown for a 15' x 20' room is about $2,360. The James Wood Company, P.O. Box 3547, Dept. OHJ, Williamsport, PA 17701; (717) 326-3662.

Above: SelecTrim wainscotting is available in maple, red oak, or primed fiberboard. Below: Match the colored tiles in your 1920s bathroom with colored caulk.

Hoosier Hardware

IS THERE A LATCH OR hinge missing from your Hoosier kitchen cabinet? Finding matching replacement pieces can be difficult because through its 40 plus years in operation, the company made many different styles of cabinet and hardware. Paxton Hardware has reproduced some of the most popular designs. Shown here are the Hoosier "H" latch ($8.58), the bin pull ($3.78), and a hinge ($6.37 per pair). To order the hardware shown or receive more information, contact Paxton Hardware, P.O. Box 256, Dept. OHJ, Upper Falls, MD 21156; (410) 592-8505.

Reproduction Hoosier cabinet hardware is available in a number of styles.

Summer Louvers

PROPER VENTILATION is key for long-lasting roofing and siding. The Midget Louver Company offers the original snap-in louver. Just drill a hole and push a louver in. Tiny "swedge fasteners" grip the sides and keep the unit firmly anchored. The aluminum louvers have screens in them to keep bugs out and come in plain aluminum, anodized, chrome covered, and white finishes in 1" to 6" diameters. They cost from $6.50 to $58 per dozen. Midget Louver Company, 800 Main Avenue, Dept. OHJ, Norwalk, CT 06851; (203) 866-2342.

Above: Midget Louvers are stamped out of sheet metal. Below: This hammer has a built-in shock absorber.

Copper Topper

WHEN THE NEW SLATE roof on your Gothic Revival is complete, add the perfect finishing touch, a copper finial. Fischer Artworks offers numerous styles and will build to the specifications of your roof. Some are reproductions, others are new designs inspired by the originals. The finial shown is 48" from the top of the skirt to the tip. Their finials are all copper, except for the cast-bronze top. The design shown costs $395. Fischer Artworks, 6530 S. Windermere Street, Dept. OHJ, Littleton, CO 80120; (303) 798-4841.

Handmade skirt, globes, and scrollwork are assembled on this finial.

Gentle Hammer

BY THE END OF A DAY of nailing clapboard siding, your hands and arms can really ache. This innovative new hammer incorporates the strength and durability of a steel shank, with a hickory and rubber "shock block," a new invention that actually absorbs some of the stress of each blow. Look for the Vaughn Steel Eagle at your hardware store or call (800) 435-6000 for a local supplier.

Shingle Shield

EVER NOTICE THAT shingle roofs tend to look better around the flashing? That's because copper and galvanized steel leach onto the shingles, protecting them from fungal growth. With Chicago Metallic Corp.'s Shingle Shield, when it rains, microscopic amounts of zinc oxidize automatically bathe your roof with fungicidal effect. The strips cost less than $1 per foot. Call (800) 638-5192 for a dealer near you.

Install the Shingle Shield under a course of shingles on each side of the ridge.

Photography by Michael Chiusano (louver and hammer)

HOW TO ORDER OUR PLANS

Mail-order plans have a long history in shaping the residential architecture of the country. Of the thousands of house plans available today, few exhibit good design and a grasp of historical proportion and detail. So, in response to requests from OHJ readers, the editors have "done the homework": We've hand-picked plans. In each issue, we offer the most attractive, authentic, and buildable of the historical designs, from all periods of American architectural history. Let us know what plans you're looking for.

You can order actual blueprints for all the houses featured. These plans are designed to conform to national building-code standards. However, the requirements of your site and local building codes mean you'll probably need the assistance of a professional designer (your builder may qualify) or an architect.

For the houses shown in this issue, blueprints include:

- Foundation plan for basement or crawl space. (Crawl space plans can easily be adapted for full basements by your builder.)
- Detailed floor plans showing dimensions for framing. Some may also have detailed layouts and show the location of electrical and plumbing components.
- Interior elevations are included in some plans, showing interior views of kitchen, bath, fireplace, built-ins, and cabinet designs.
- Building cross sections: cornice, fireplace, and cabinet sections when needed to help your builder understand major interior details.
- Framing diagrams that show layouts of framing pieces and their locations for roof, first, and second floors.
- Energy-saving specs, where noteworthy, are included, such as vapor barriers, insulated sheathing, caulking and foam-sealant areas, batt insulation, and attic exhaust ventilators.

Why order multiple sets? If you're serious about building, you'll need a set each for the general contractor, mortgage lender, electrician, plumber, heating/ventilating contractor, building permit department, other township use or interior designer, and one for yourself. Ordering the 8-set plan saves money and additional shipping charges.

Other notes: (1) Plans are copyrighted, and they are printed for you when you order. Therefore, they are not refundable. If you would like information on ordering more than 8 sets of the same plan, please call our Customer Service Department at (508) 281-8803. (2) Mirror-reverse plans are useful when the house would fit the site better "flopped." For this you need one set of mirror-reverse plans for the contractor; but because the reverse plans have backwards lettering and dimensions, all other sets should be ordered right-reading. (3) Heating and air-conditioning layouts are not included. You need a local mechanical contractor to size and locate the proper unit for your specific conditions of climate and site.

MAIL TO: OHJ House Plan Service, 2 Main Street, Gloucester, MA 01930

Or call **(508) 281-8803** to charge your order.

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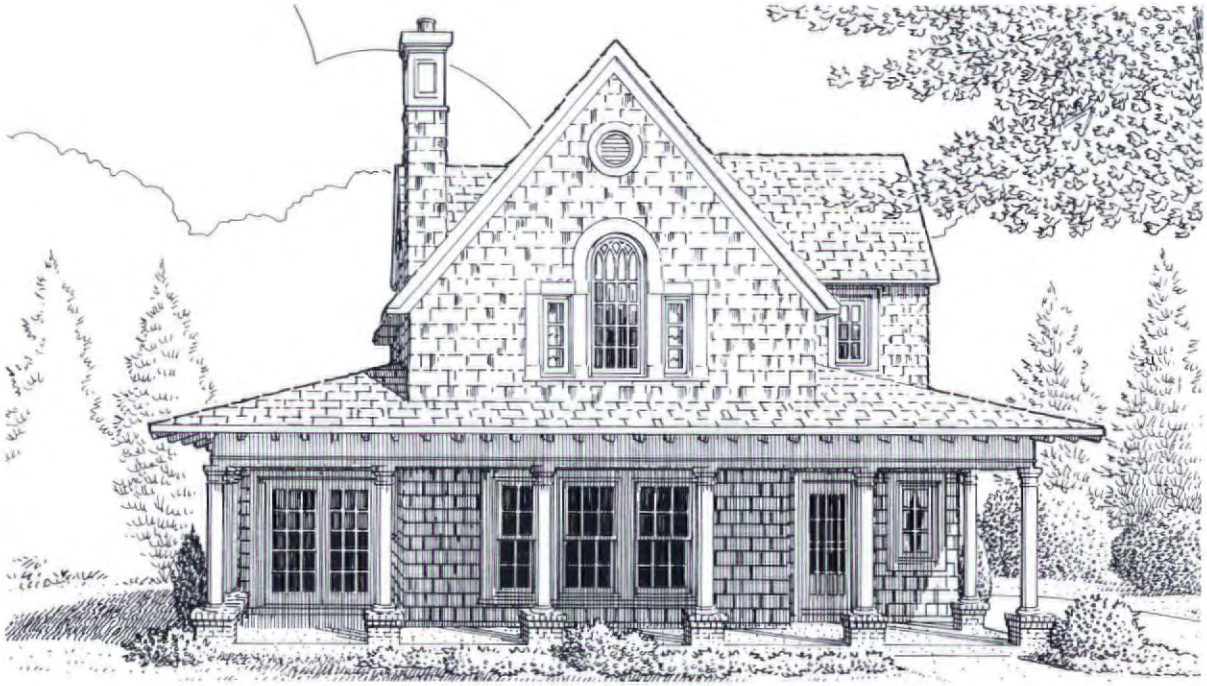
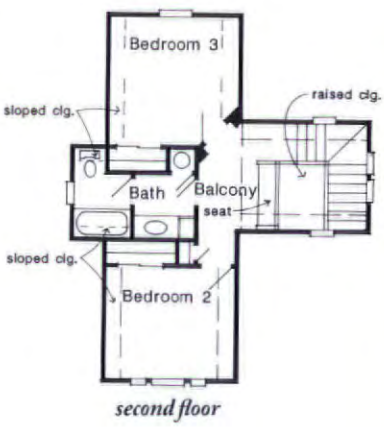
CENTURY'S END COTTAGE



LIKE MANY HOMES AT THE TURN OF THE CENtury, the architecture of this Century's End Cottage draws on a number of influences. Its cross-gabled form with a wraparound verandah is pure Queen Anne. However, the Palladian window, classic porch columns, and shingle siding are Colonial Revival and Shingle Style accents. Inside, a dramatic two-storey foyer and staircase opens into a generously sized living room with a wood-burning stove. Sliding French doors in the dining room offer access to the screened back porch and verandah. This compact floor plan also includes three bedrooms and two full baths.

first floor

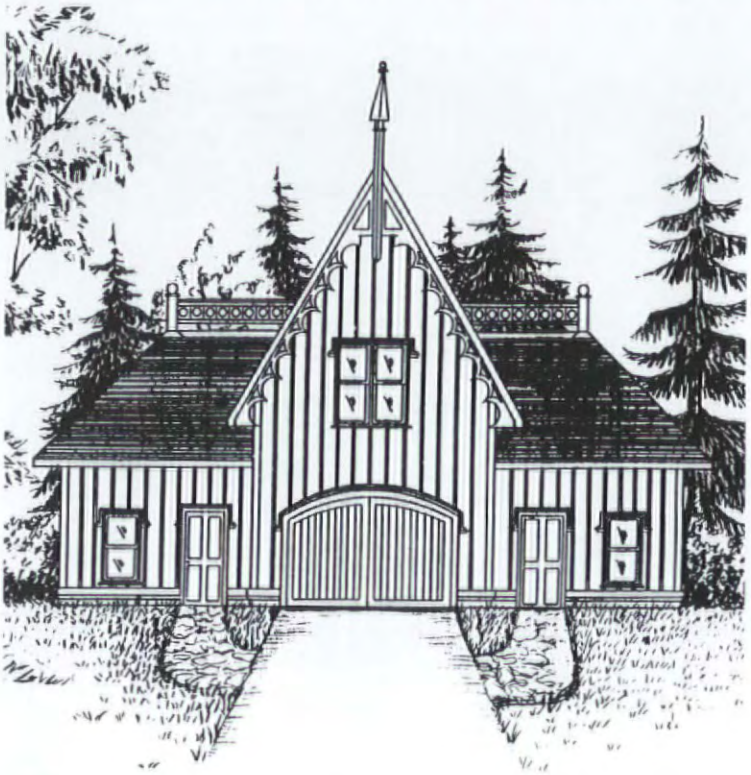


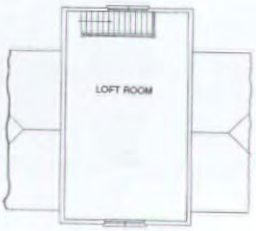
second floor

Plan LG-11-VI

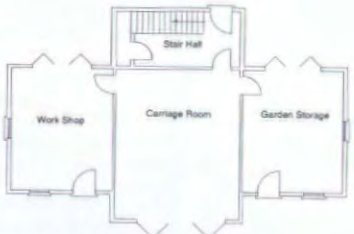
Cost	**$170**
Set of 5	$230
Set of 8	$270
Bedrooms	3
Bathrooms	2
Square Footage	1,442'
First Floor	978'
Second Floor	464'
Ceiling Height	
First Floor	9'
Second Floor	10'
Overall Dimensions	
Width	35'4"
Depth	44'8"

GOTHIC CARRIAGE HOUSE





second floor



first floor

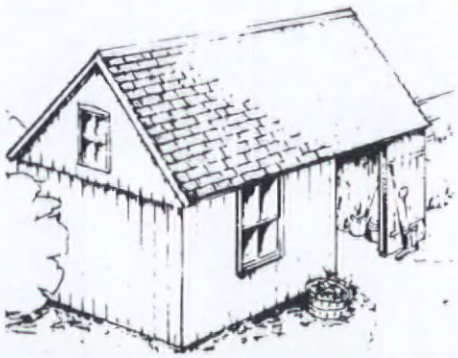
BETWEEN 1830 AND 1870, THE PUBLIC SNAPPED UP VOLUMES of detailed plans for Gothic-style houses. Board-and-batten siding, decorative bargeboards, and gable pendants — hallmarks of the style — are featured on this Gothic Carriage House. On the first floor, double doors open into a spacious carriage room, flanked by a workshop and gardening storage. The rear stairway leads to a second-storey loft that is roomy enough to be an office or guest house.

Plan SP-01-GA

Cost	$75
Square Footage	1,431'
First Floor	938'
Second Floor	493'
Ceiling Height	
First Floor	10'
Second Floor	10'
Overall Dimensions	
Width	46'
Depth	30'

CLASSIC FARM SHED

FOR THE SERIOUS gardener, this farm shed offers storage space for sprayers, fertilizers, and other landscaping tools and equipment. There's also work space for potting and maintaining equipment.



Plan CD-19-GA

Cost	$25
Square Footage	162'
Height (to ridge)	12'8"
Overall Dimensions	
Width	18'
Depth	9'

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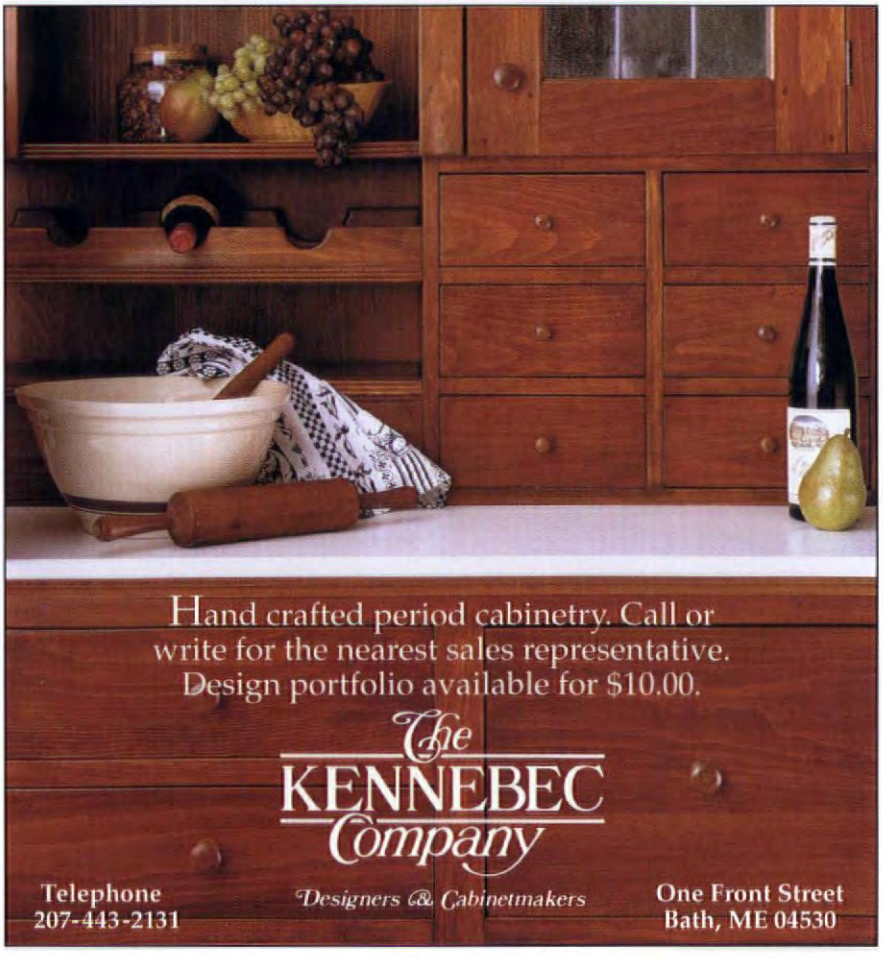

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Real Estate

SAN FRANCISCO, CA — 1926 French country home in the exclusive St. John's Woods section. Designed by the SF Architects Masten & Hurd in the Beaux Art fashion. 8 rooms, 4 bdrms, beautiful gardens. New tile roof. Views of ocean. $915,000. Contact Meinhard Marek at Anchor Realty (415) 621-2700.

TORRINGTON, CT — Small 100+-year-old clapboard cottage. 4 rooms plus pantry and one bath. On Naugatuck River in Historic District. Wood floors. Partially restored. 30 minutes from Hartford. $89,000. Call (401) 348-9082.

NOBLESVILLE, IN — 1893 brick Queen Anne on National Register. Slate roof, 13 stained glass windows, oak woodwork, 5 fireplaces. Total restoration with all new systems. Presently office building with 4054 sq. ft., could be residence with 4887 sq. ft. Great B&B potential. Winner of 1989 best Tax Act Commercial Rehab Award. Call Kurt Meyer at Snelling Real Estate (317) 773-2880.

OCALA, FL — Victorian c. 1886. National historic district. Beautiful condition, one storey, heart pine contstruction. Bright spacious rooms, 11-ft. ceilings, two brick fireplaces. 2,100 sq. ft. total. Quiet neighborhood. Excellent schools, conveniences. Near Gainsville, Orlando. $145,000. Call (904) 629-8190.

TERRA CEIA ISLAND, FL — Frame 1-½ storey house, 2000 sq. ft. Original (24 x 34) 1875; 1920s plaster walls, pine floors, stone fireplace; 1945+ additions. Great location. 1275 access. Manatee County. $150,000. With 1/4 acre waterfront lot. House must stay on island. (813) 7322-5402.

BAINBRIDGE, GA — Four acres w/attractive 2-storey farmhouse built in early 1900s. Optional pecan orchard and large barn of native oak. Under $100,000. Make an offer. (912) 567-2785.

BUSSEY, IA — Two-storey house built in 1898, in very good condition. Original woodwork and floors in yellow pine. 4 rooms down, 4 up, middle stairway. Original windows. Lived in for last 25 yrs. Must be moved or torn down. $10,000. (515) 944-5484.

DUBUQUE, IA — Victorian mansion of 20 rooms at 21 Madison St. Elaborate woodwork, 2 ornate fireplaces, stained glass windows, and special features. 4-storey barn and terraced hillside. $139,000. Call (319) 583-1361.

DEKALB, IL — 1883 Converted Church. Midwestern university town. Open floor plan. Energy efficient, modern bathroom, kitchen and utility room. Magnificent 20-ft. ceiling and original hardwood floor. Antique pews may be included. Call Joanne Adrian, Prudential Country Heritage (800) 289-0320 code # 1308.

CAPE COD, MA — Oldest house in Provincetown. Pre-1750 full cape. 9 rooms, massive central chimney, 3 fireplaces, beehive oven. Restorer's dream. Located in prime residential area across from scenic harbor. Excellent rental and business income poss. $375,000. (508) 487-0549 or (207) 863-2213.

HUDSON, MA — Lovely, unspoiled 1600s post & beam farmhouse–4 bdrms, 2 baths, 2 fireplaces, 2-storey post & beam barn on two acres of lawns and vegetable gardens. Country setting ideal for the gentleman farmer. $299,900. Call (508) 562-6705.

NORTH ADAMS, MA — The Berkshires. 9+ rooms, 10-1/2 acres, converted barn, home, or B&B. Post & beam slate roof, porches, patio, expandable. Rte. 8 South, 2 miles from town. Call (413) 663-9313 or (413) 664-4949. $275,000.

WESTMINSTER, MA — On historic common with 6 acres overlooking Meetinghouse Pond, with spectacular views of Mt. Wachusett. This late Georgian c.1813 features 10 sunfilled rooms with original detail plus large barn used as studio or guest quarters. Call owners at (508) 874-1298. One hour to Boston. $400's.

BANGOR, ME — 1895 Mansion. Real bargain. Authentically restored. 11 large family rooms, most w/fireplaces, efficiency kitchens and bathrooms. One big 4-room office. All exceptionally good for B&B. 3-storey open oak stairwell, much stained glass. Rentals all full. (207) 546-7315.

EAST COAST MAINE — Rare historic house for the unusual person. 1820 ship chandler's National Greek Revival, 12-room house. Period furnishings. Museum quality. Original family. Barn with carriage and sleigh. 3 photos: $1.25. $275,000. (207) 733-2576.

In This Section

EASTPORT, ME — C.1895 former general store (1850 sq. ft.). Victorian features remain intact: storefront, counters, shelves, pendant light fixtures, beaded pine walls & ceiling. Excellent light from large south-facing windows. Second-floor apartment. Some harbor views. Historic downeast seaport. $39,000. (207) 282-6252 or 284-0477 (7-9 pm).

MONTICELLO, ME — A tree-lined drive w/a split-rail fence leads up to this New England farmhouse. Boasts all modern amenities plus "antique" charm. Two 44' x 60' barns and a 2-bay garage, all situated on 5 acres of lawns and pastures. More land is available. Call (207) 538-9643.

SAULT STE. MARIE, MI — 1902 Victorian. B&B potential, 11 bedrooms, 2-1/2 baths, 2 fireplaces, oak woodwork, leaded bevelled glass windows, pocket doors, turret, and wraparound porch. Many extras too numerous to mention. Famous Soo Locks and Michigan's largest casino. $180,000. (906) 632-7244.

HORTON BAY, MI — "Horton Bay General Store." In business for 118 years. Living quarters in back, 5 bdrms up. Listed in the National Register. Internationally known as boyhood haunt of Ernest Hemingway. Located in the heart of Northern Michigan vacation region. Contact Gloria Wyn (616) 582-7827.

GRAFTON, NH — C.1895 Victorian w/lovely setting on town green. Recently painted 3-color ext. w/porch. 1.5+ acres w/lilacs & mature plantings. Interior mostly restored. 3 bdrms, 2 full baths, fireplace, pantry, garage & basement. 35 mins. to Hanover, 50 mins. to Concord. $119,000. Call (215) 540-9394.

PORTSMOUTH, NH — Captain Daniel Fernald House in Historic District, 1 hr. Boston/Portland. 14 rooms, fully restored gambrel, 9 fireplaces. Paneling, double summer beams, custom kitchen w/walk-in pantry. 2 full and 2 half baths. Secluded perennial garden & 3-car parking. $390,000. Call (603) 436-8987.

BRIDGETON, NJ — A truly exceptional Cotswald Cottage of New Jersey sandstone. Spacious living areas, solid construction and graceful details characterize this outstanding home. 4 bdrms and 3 full bathrooms. Huge master bdrm has 2 closets plus a walk-in cedar closet. Hardwood floors throughout. 2 bathrooms in ceramic tile and one in marble. Outdoors, the half acre lot is professionally landscaped with perennial gardens while the terrace and backyard make this a perfect home for a growing family. $169,000. (609) 453-1099.

JERSEY CITY, NJ — Restored 1853 Manse, 14 oversized rooms, 5 new baths, new wiring, 2-family/single/profesional/poss. B&B. 3 mi. to NYC, walk to shopping, bus, train. Top duplex has $1,100 income. Gardens & private parking. Priced to sell. $299,500. (201) 798-9196.

MATAWAN, NJ — 19th-century vernacular farmhouse, one acre, LR, DR, kitchen, 4-bdrms, bath, wraparound porch. All city utilities, near schools, excellent commuting to NYC. Executor anxious to settle estate. $100,000. (908) 566-1193.

SHREWSBURY, NJ — 1789 Quaker-built 9-room (incl. grand foyer), 2-bath Colonial. Full attic, fireplaces, much original glass windowpanes, carriage house w/rented apt. Located amidst historic churches in state designated historic district. $275,000. Darrah Associates (908) 741-3338.

BROOKLYN, NY — Country living in Brooklyn. Exquisitely restored 1873 Italianate Brownstone. Most elegant home in Prospect Heights. 7 marble mantels. 4 types of parquet floors. Pier mirrors, ornate plaster ceilings, mahogany woodwork. Home: 4,200 sq. ft. Lot: 162' w/veg. garden. Family block. Park Slope schools. $460,000. Call (718) 622-3949.

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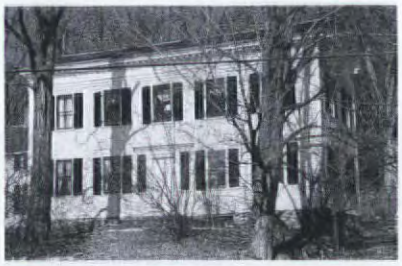

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493. Wood Roofs — Distinctive western red cedar heavy butt roof shingles; excellent for restoration or new construction. Hip/ridge cap and fancy butts. Custom orders a specialty. Free literature. Liberty Cedar.

517. Flooring — Antique pine and American hardwood flooring. Stair parts, cabinetry, paneling, antique beams. Many species of woods available. Brochure, $1.25. Albany Woodworks.

527. Antique Flooring — Antique wide pine flooring. Antique oak and chestnut are also available. Lengths up to 18', widths up to 14". Free brochure. North Fields.

580. Reproduction Hardwood Flooring — Authentic parquet borders, strips and full floor patterns. Free brochure. Historic Floors of Oshkosh.

603. Building Plans — A collection of complete building plans for Colonial & Victorian style garages, barns, sheds, garage apartments, studio cottages and other accessory buildings. Catalog includes illustrated descriptions of available blueprint designs, $6.25. Country Designs.

631. Heart Pine Flooring — Antique heart pine flooring, doors, mantels, moldings, stair parts, cabinets and lumber. Standard run or custom milled. Premier products manufactured from 200-yr.-old antique heart pine timbers. Literature and samples, $15.25. J.L. Powell & Co. Inc.

653. Slate Roofing — Providing slate & metal craftsmanship of unsurpassed quality. Nearly 200,000 pieces of salvaged slate offered to match slate roofs. Free literature. Durable Slate Co.

654. Elevators — Organized in February 1923 to manufacture residence elevators, stair lifts, & dumbwaiters. Free brochure. Inclinator Company of America.

663. English Coal Fire — Now you can experience an authentic English gas coal fire. Most fire openings can be satisfied. Free literature. Grate Fires Inc.

675. Wall Restoration — Repair cracked plaster walls and ceilings. Costs less than drywall over plaster, gutting, or skim coating. Installs easier than wallpaper; no need to remove woodwork. Stops air infiltration and creates a vapor barrier. Free video. Specification Chemicals Inc.

677. Antique Heart Pine Flooring — Recycled turn-of-the-century southern longleaf pine and cypress. Plus stair parts, millwork, and lumber. Color brochure w/ samples, $3.75. River City Woodworks.

681. Roofing Products — Offered in styles which depict the luxury of slate, the beauty of wood-grained shake and the classic look of old-style, traditional dutch lap, twin lap, and hexagonal shingles. Free literature. Supradur Manufacturing.

684. Fiberglass Columns — Choose from a variety of sizes for structural support or decoration. Columns are ready to prime and paint, lightweight, fire and impact resistant and impervious to insects. Job site delivery. Free flier. Chadworth Columns.

703. Authentic Architectural Columns Catalog — Interior & exterior column design applications, complete construction details and specification/selection guide in colorful 12-page catalog. Covers full range of columns in the classic orders of architecture. Free literature. Hartmann-Sanders Co.

729. Historic Shutters — Handcrafted interior & exterior shutters. High quality manufacturing & restoration. They have participated in hundreds of historic & new buildings from CA to the Bahamas. Free brochure. Historic Shutter & Restoration.

730. Roof Restoration — Historic roof restoration and consultation. Work done with copper, slate, tile, and some sheet metal work. Free literature. Vulcan Supply Corp.

732. The One Stop Roof Tile Shop — Northern Roof Tile Sales offers you the most comprehensive range of quality clay roofing tiles, slates and accessories. Plus

ornamental ridge tiles, decorative finials and hand crafted chimney pots. Free literature. Northern Roof Tile Sales Co.

733. Gutter Products — 6" seamless copper and heavy aluminum half-round gutter with all accessories. 6" bay window strip miters - copper and aluminum. Copper-colored aluminum coils and products. Free Literature. Commercial Gutter Systems.

737. Roofing Slate — Large inventory of new and salvaged roofing slate, slating tools and supplies. Old fashioned quality and service at today's competitive prices. Free brochure. New England Slate Company.

738. Roofing Products — Grand Manor Shangle is an extra thick asphalt shingle with two full-size base shingles and random laminated tabs for slate-like look. Free brochure. Certainteed.

739. Sentry Snow Guards — Stop snow and ice from falling off roofs without adhesives or penetration. Revolutionary locking system and designs to match any material or style. Free information kit. Snow Management Systems.

741. Roofing and Masonry Hand Tools — Repair slate roofs with our full line of slate tools. Sheet metal brick painting and cement finishing hand tools are also featured. Free brochure. John Stortz & Sons.

743. Specialty Roofing Contractor — An international roofing firm with expertise in copper roofs, cornices, ornamental sheet metal work including custom made sheet metal stamping pieces, slate, historical tile, steam-bent wood shingles, and water reed thatching. Free literature. C&H Roofing.

745. Slate & Tile Roofing — Specialists in repair and restoration of slate and tile roofing. Offering a large inventory of clay tile & slate, both old & new. Full service sheet metal shop. Servicing the West. Free literature. South Side Roofing Co., Inc.

746. Capstone™ Shingles — Asphalt shingles with slate-like looks and dimensionality. Offered in two colors, Capstone creates an impression of deep shadows, particularly on steep roofs. Free brochure. Elk Corp.

Decorative Materials

20. Tin Ceilings — 22 original Victorian and Art Deco tin ceiling patterns. Several patterns available by special order in brass and/or copper. Cornices, pre-cut miters, and center medallions are available. Brochure, $1.25. AA Abbingdon Affiliates.

22. Nottingham Lace Curtains — Real Victorian lace, woven on 19th-century machinery, using original designs. Panels are 60" wide, 95% cotton, 5% polyester. White and ecru available. Catalog, $2.25. J.R. Burrows.

26. Push-Button Switches — Quality reproductions of push-button light switches. Switch plates in plain brass or ornamented. Brochure, $1.25. Classic Accents.

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47. Tin Ceilings — 22 patterns ideal for Victorian homes and commercial interiors. Patterns from Victorian to Art Deco. 2'x4' sheets available. Cornices available in 4' lengths. Brochure, $1.25. Chelsea Decorative Metal.

128. Tin Ceilings — Ornamented metal ceilings in turn-of-the-century patterns using original dies. Center plates, borders, corner plates, cornice, and filler plates included. Catalog, $3.25. W.F. Norman Corp.

245. Plaster Ornaments — Hundreds of plaster ornaments from late 19th- and early 20th-century periods made using original moulds. Ceiling medallions, brackets, grilles, cornices, etc. Illustrated catalog, $3.25. Decorator's Supply.

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617. Wooden Flag Poles — Hand-made, white beauties featuring classic designs. Ready to install with all accessories including custom engraved owner's plaque. 20' and 25' lengths. Free color brochure. Hennessy House.

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728. Heritage Village Colors — Authentic reproductions of 18th- & 19th-century architecture. Suitable for most exterior and interior surfaces, walls, woodwork, trim, furniture and decorative painting. Literature, $3.25. Primrose Distributing.

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744. Power Tools — 44-page color catalog covers the Bosch line of power tools, including drills, saws, drivers, hammer drills, woodworking tools and accessories. Free literature. S-B Power Tool.

Furnishings

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353. Radiator Enclosures — The durability of steel with baked enamel finish in decorator colors. More efficient than paint, and keeps drapes, walls, and ceilings clean. Free estimates. Free catalog. ARSCO Manufacturing.

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55. Custom-Made Plaques — Historic markers for indoor or outdoor use. Standard bronze cast plaques, 7" x 10", are $90 plus shipping. Other dimensions and styles available. Free brochure. Erie Landmark.

122. Ornamental Iron Fencing — Ornamental iron fences and gates are custom made. Matching of old fences is available using authentic Victorian patterns and castings. Catalog, $3.25. Stewart Iron Works.

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571. Traditional Wrought Ironwork — Specialists in Colonial period lighting. Museum-quality reproductions. Custom designs. 38-page, full-line catalog, $4.25. Iron Apple Forge.

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101. Shutters & Blinds — Colonial wooden blinds, movable louver, and raised-panel shutters. All custom-made to specifications. Pine or cedar, painted or stained to match any color. Free brochure. Devenco Louver Products.

294. Plaster Ornament — Ornaments of fiber-reinforced plaster. Restoration work and reproduce existing pieces if a good example is supplied. Complete catalog of 1500 items, $10.25. Fischer & Jirouch.

518. Custom Turnings — Newel posts, porch posts, column bases, fluting, spiral rope twist, etc. Custom orders. Catalog, $5.75. Custom Wood Turnings.

651. Custom Millwork — A prime source serving architects, designers, builders, & homeowners nationwide. Custom specialties include spiral stairs, doors, bookcases & panel work. Catalog, $5.25. American Custom Millwork, Inc.

652. Architectural Millwork — Millwork ranges from doors to columns. Specialist in materials & architectural components. Expert manufacturers of heart pine, chestnut & wide plank flooring. Free literature. Architectural Timber & Millwork.

694. Custom Turnings — A custom turning service of porch posts, newells, balusters & stair parts from samples or drawings. Prompt, quality service with capacity to 12 feet. Free quotes. CinderWhit & Co.

704. Glue-on Ornamental Porch Brackets — New product designed specifically to add personality and charm quickly and inexpensively. 2' tall, 2" thick reproductions only $16.00-$19.00 each. Brochure, $1.25. American Porch Brackets.

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645. Metal Item Restoration — Stripping, plating, polishing & protecting all metal items in the home including registers, hinges, door knobs, brass beds, cold air returns, lamps, windows & door hardware, chandeliers and plumbing fixtures. Free literature. Strassen Plating.

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731. Building Preservation Associate Degree — Belmont Technical College offers an Associates degree in building preservation and restoration technology. Free literature. Belmont Technical College.

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740. Gargoyles and More — Reproduction of historical sculpture and architectural artifacts. Gargoyles, wall friezes, columns, table bases, busts and more. Exterior and interior finishes. New this year, marble columns and imported tapestries. Free color catalog. Design Toscano.

Literature Request Form

Circle the numbers of the items you want, and enclose $3 for processing. We'll forward your request to the appropriate companies. They will mail the literature directly to you ... which should arrive 30 to 60 days from receipt of your request. Price of literature, if any, follows the number. ***Your check, including the $3 processing fee should be made out to*** **Old-House Journal.**

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18.	$5.25	219.	$2.25	518.	$5.75	657.	$1.25	731.	Free
20.	$1.25	221.	$2.25	527.	Free	659.	$1.25	732.	Free
22.	$2.25	242.	$3.25	538.	Free	663.	Free	733.	Free
23.	Free	245.	$3.25	539.	Free	672.	$2.25	734.	Free
26.	$1.25	269.	Free	545.	Free	675.	Free	735.	$2.75
27.	$10.25	294.	$10.25	558.	Free	677.	$3.75	736.	Free
30.	Free	302.	$5.50	560.	$2.25	680.	Free	737.	Free
31.	Free	303.	$5.00	565.	Free	681.	Free	738.	Free
35.	$4.75	307.	$2.25	569.	Free	684.	Free	739.	Free
38.	Free	312.	Free	571.	$4.25	694.	Free	740.	Free
42.	Free	330.	Free	576.	$3.25	698.	$1.25	741.	Free
44.	$4.75	334.	$3.75	580.	Free	701.	Free	743.	Free
47.	$1.25	353.	Free	582.	Free	702.	Free	744.	Free
49.	$3.25	365.	Free	585.	Free	703.	Free	745.	Free
53.	$3.25	387.	Free	589.	Free	704.	$1.25	746.	Free
55.	Free	389.	Free	595.	Free	705.	Free		
73.	Free	397.	$6.75	603.	$6.25	709.	Free		
98.	Free	401.	$3.25	611.	Free	714.	$5.25		
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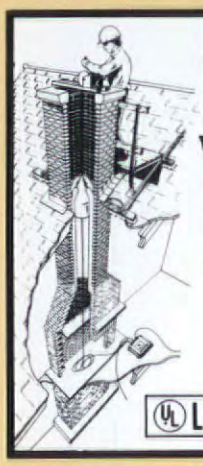
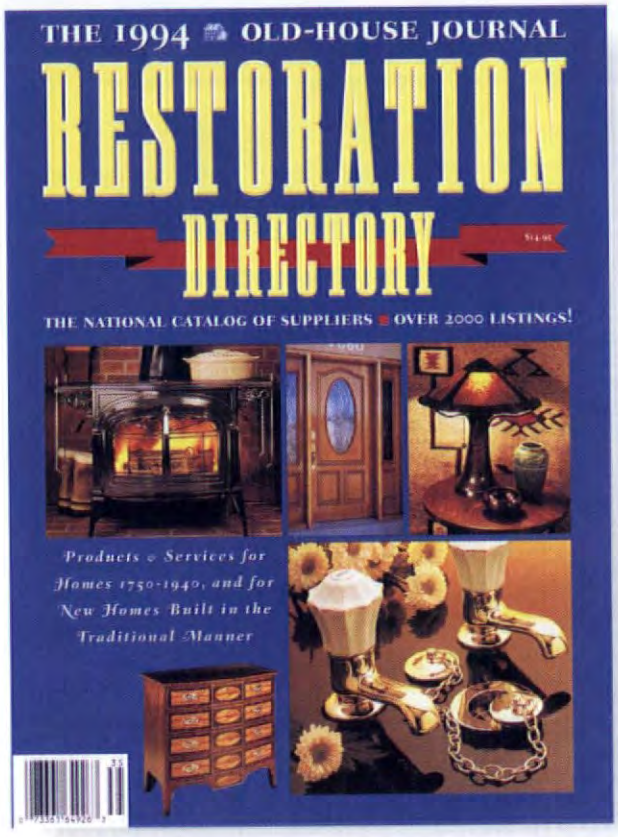


Don't believe it when you hear, "Sorry, they don't make that anymore." It's in the OHJ Directory.



OLD-HOUSE FOLKS used to waste valuable time tracking down the right sink or terra-cotta tile — time better spent actually remodeling or repairing the leaky roof! But the days of fruitless phone calls and settling for the mundane are over: The OHJ Restoration Directory gives you access to over 2,000 companies who offer the very best products and services for renovation.

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• Gorgeous lighting fixtures (1700 through the 1930s) • Furniture of all periods, from master craftsmen and venerable companies • Rugs: Axminster to Wilton • The best kitchen cabinetwork taking cues from the past • Plaster ceiling medallions • High-tank toilets, clawfoot tubs, and extra-long shower curtains • Hand-hammered weathervanes • Yellow-pine flooring • Marble mantels and fireplace surrounds • Porch columns • Stencils.

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In this Directory you'll discover finial-tipped carpet rods, antique stoves, replica telephones, and handmade window glass.

As easy to use as the Yellow Pages — but national, listing 10,000 products and over 2,000 companies.

And you'll get the phone numbers of the most sought-after restoration artisans.

Looking for the stuff "nobody makes anymore"? The original version, or the top of the line? It's in the Restoration Directory.

We could go on ...

listing cast plaster ornament, rolling library ladders, and more — but let's just say the Restoration Directory gives you 10,000 product listings and the addresses of over 2,000 companies. Almost all sell nationwide through mail order, interior designers, and regional distributors.

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Advertising Sales Offices

MAIN OFFICE

2 Main Street, Gloucester, MA 01930
(800) 356-9313
Becky Bernie, National Sales Manager

MIDWEST SALES OFFICE

Robert R. Henn & Assoc.
20500 Hellenic Drive,
Olympia Fields, IL 60461 (708) 748-1446
Robert Henn, Nancy Bonney

Some Assembly Required

WHAT A RIP OFF! THIS QUEEN ANNE CAME with missing parts; porch not included. A remuddling — not by misguided addition, but by the subtraction of almost all ornament — has cheated the house of its integrity and charm. This is definitely a case of buyer beware.

Built in Chatfield, Minnesota, this 1891 house originally included a large porch with a porte cochere and an open tower, all adorned with fancy balustrades, spindlework, and arched fretwork. Vergeboards decorated its gables, metal cresting capped the cedar shingle roof, and walls wore a combination of clapboard and fish-scale shingles. Alas, without the details, the structure has been reduced to an undistinguished gabled-ell box.

Mark Edward Nass, who sent us this remuddling, and his family purchased the house in 1992. They plan to reassemble the porch and uncover hidden original details. (So far, they've found enclosed pocket doors, stained glass windows, inlaid wood floors, and tin ceilings.) It won't be as easy as putting tab A into slot B, but we wish them luck.

The Nass family will use an old photo (bottom) as their instruction manual for reversing the remuddling (above).

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The Antique Hardware Store
9730 Easton Road, Route 611, Kintnersville, PA 18930

VICTORIA KITCHEN OR LAVATORY FAUCET
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8" centers (custom Variable centers available), 10" ht. Swivel spout 9" length (washerless). ITEM PF03

PILLBOX TOILET
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Fanstastic replica of old model. Solid brass parts for easy installation. Includes seat & porcelain bolt caps. A great addition to your home! ITEM PTO1

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Fluted base (8" centers)
ITEM 4C

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(shades "C" extra)
ITEM LP2
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Sale Price $99

ITEM IC5
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Our Price $179
HOT/COLD Porcelain cross handles. ITEM 3B

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HOT/COLD porcelain handles. ITEM 2L

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ITEM PFO7

HIGH TANK ONLY $779
ITEM PHTB
▼

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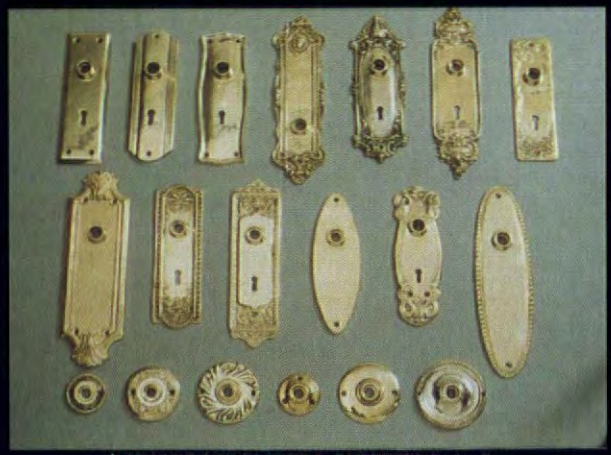

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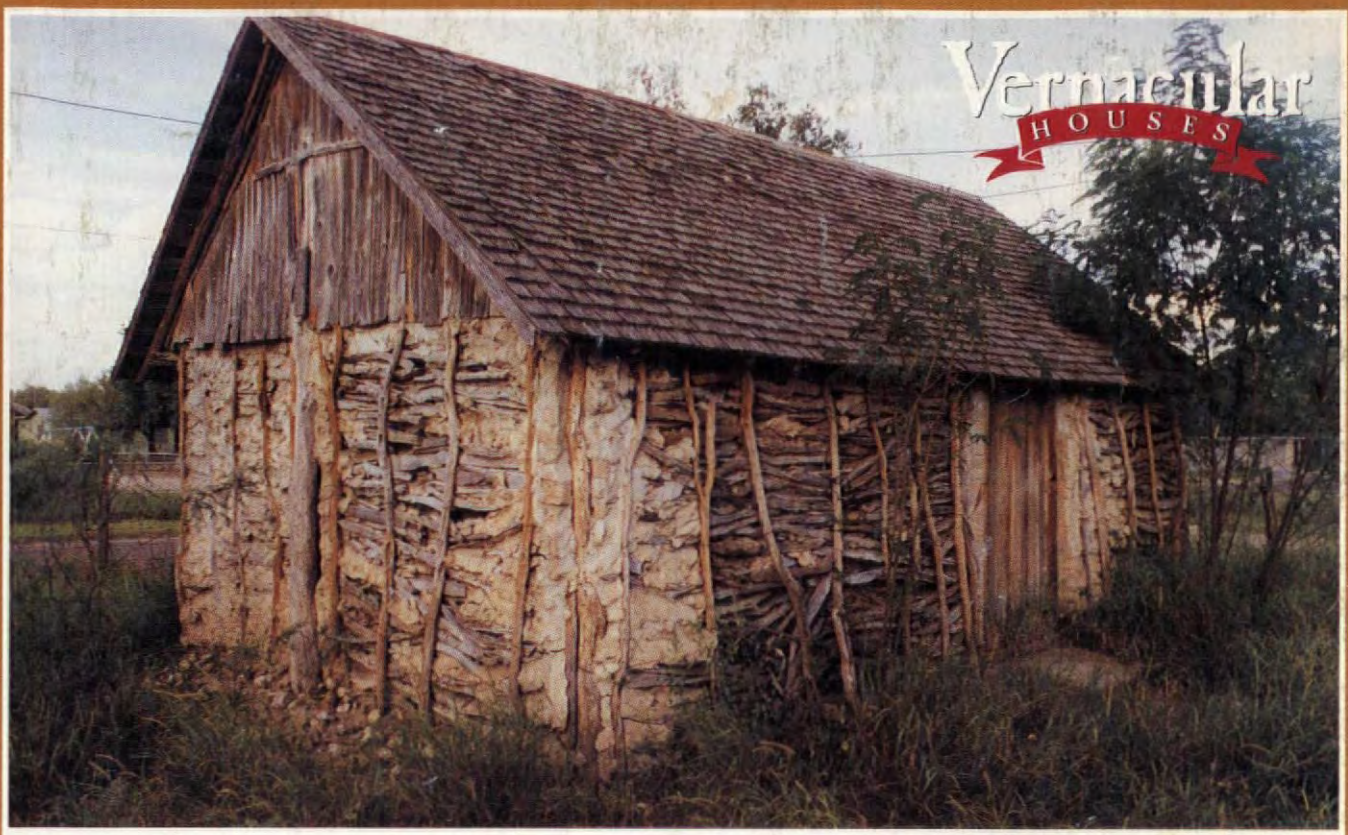
Old Fashioned Home Stuff
Dishes, Rocking Horses,
Advertising Stuff, & More...

◄ **JUKE BOX**
Large $6995 Small $149 Please Call! ITEM CR11



Texas Frontera Jacales

In the mid-1700s, when early Spanish settlers moved into what is now northern Mexico and South Texas, they brought the methods for making jacales, truly buildings of the land. The name *jacal* (say ha-CAHL) comes from the Aztec *Xacalli*: *Xa* meaning straw or reed, and *calli* meaning house. Jacales became the first residential buildings of the region.

The traditional jacal is a one-storey rectangular building with a steeply pitched roof, usually gabled. Forked posts are the primary structural support, set about 18" in the ground at the four corners, gable ends, and on either side of the single doorway. Horizontal building members — the ridge pole and log plates — rest in the forks. Walls consist of split sections of mesquite, small branches, or, occasionally, stone rubble piled between double posts, one outside and one inside. Lashed together with wire, the load-bearing wattling is left exposed or is plastered with a lime-sand mix or with mud. Round rafters hold a roof of split-mesquite lath, lashed with twine made from the agave plant, and bundles of grass or reeds are sewn on in overlapping layers. One or two windows might be found on the north or east facades.

A jacal (top) survives in Los Saenz, Texas, under a new wood shingle roof. A natural fork in the end post supports the ridge pole of a typical 12' by 18' jacal (above).

Jacales were always intended to be temporary shelters. Landowning Spanish settlers lived in the modest buildings while erecting substantial stone *casas mayores*. Ranch hands and their families also made homes in the jacales. There were typically 20 encircling the main house.

Associated with poverty, the jacal lost its place to wood frame buildings around the turn of the century. An estimated 100,000 jacales once dotted the region, but fewer than 30 survive in South Texas; perhaps 200 more stand in northern Mexico. These simple buildings still provide shelter from the burning sun, while their inhabitants strive to build something better.

— FRANK BRISCOE
Richmond, Texas