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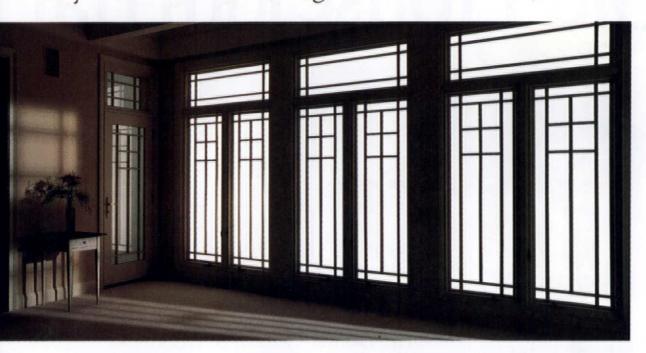
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old-House Journal Vol. XIX No. 2 March/April 1991









——————————————————————————————————————	
Wood-Destroying Insects by Frank Briscoe	34
The facts about houses, pests, and frass	
Drying-In and Drying-Out by Ward Bucher	40
Insights on water damage after a flood or storm	
Bond-Beam Construction by Al Evans and Steve Santaguida	44
A novel technique for an earthquake-stricken foundation	
Features ***-	
The Formal Revivals by James C. Massey and Shirley Maxwell	49
In the early-20th century, Colonial- and Georgian-Revival is symbols of stability in a changing world	bouses were
Decorative Tile	54

Urban Plight 59 by Jay Gibbs

A lone homesteader in St. Louis gets his "Masters" in old-house living

by James C. Massey and Shirley Maxwell Art for Victorian and Arts & Crafts bouses

continued on page 4

Cover: This South Carolina Victorian sustained severe damage from wind and wind-blown debris during Hurricane Hugo. Photo courtesy of Jim Caufield, The Pennsylvania Historical & Museum Commission, Harrisburg, Pa.

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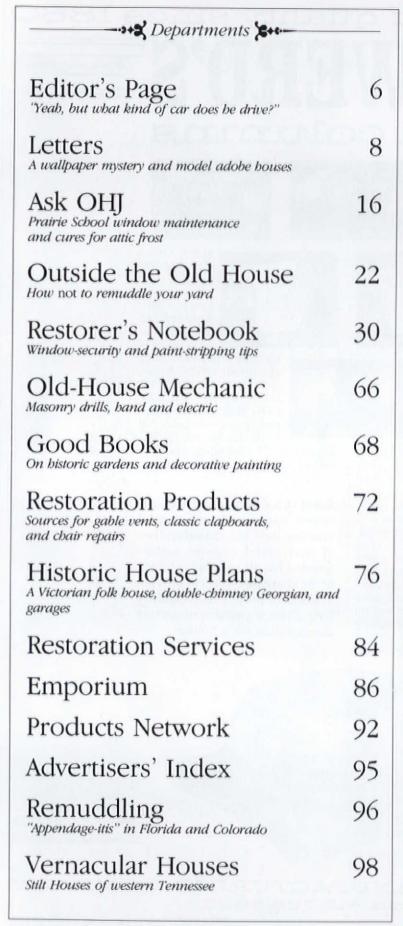
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EDITOR'S PAGE

In need of a senior editor back in 1986, we placed a classified ad in the New York Times. Resumes came flooding in, none of them quite fitting the bill. A couple of weeks into our search. the phone rang, and then-managing editor Bill O'Donnell answered.

It was Gordon Bock, a longtime subscriber who'd written several articles for OHI. They were good, accurate, first-person, and had OHI's perspective. In his real life. Gordon was a marine

electronics technician with his own company. It's just that he was also into arcane subjects such as whitewash recipes and woodwork rescue.

"You guys looking for a full-time editor? I just caught sight of your ad in an old paper.'

"Yeah, why, you know someone?" Bill asked.

"How 'bout me?" was Gordon's reply.

What? Gordon Bock wants to work here? (Why'd we spend all that money for an ad in the first place?) Gordon never mentioned wanting to be an editor.

Turns out Gordon was getting just a little sick of moving all over the eastern seaboard (not to mention sick of yacht-cruising clients who didn't pay their electrician). Our ad got him considering an impulsive change of career.

Bill and I talked about the situation. Some of the other applicants knew more about magazines, or had a better handle on proofreaders' marks. But most of them had never worked on an old house. Gordon had. He was a carpenter, he'd done foundation work, shingled roofs, replaced plaster. But more than that, he had a thing about old buildings. It

"Yeah, but what kind of car does he drive?"

was subtle — he didn't write poetry about them or anything. But there was that family farm in rural Pennsylvania. Nobody lived there anymore, but he felt he had to keep it up. Even the outbuildings. He went out there alone a lot, especially after the winter. He patched

and puttered. The whitewash article came from his work on the barn.

"What kind of car do you drive?" I asked him, noting the corduroy jacket. (I guessed he didn't own a pinstripe suit.) "A Toyota pickup," he answered, wondering what I was up to, "but it's pretty beat...."

"This is a how-to magazine," I said to Bill later. "We need an editor around here who drives a pickup. We don't need a comma polisher. I vote for Gordon."

Bill, it turned out, had al- Gordon Bock behind the wheel. ready hired him.

A lot has happened in the time that's passed since then. Gordon wrote more good articles and put the OHJ spin on those by staff and contributors. He even learned to polish commas. Bill left the editing to Gordon, fled New York, and opened our business office in Gloucester. I spent my spare time starting another magazine - GARBAGE: the Practical Journal for the Environment — and having a

The new masthead in this issue reflects changes that have been years in coming. Gordon Bock is now Editor of the Old-House Journal, responsible for the issues' content. Bill O'Donnell is the magazine's Publisher. (I, victim of several restorations over the years and now a happy inhabitant of

my almost-livable old house, am the magazine's most loval reader.)

Finally, this changing of the guard wouldn't have been possible without Suzanne La Rosa. A "refugee" senior editor from McCall's magazine, she arrived just as we launched GAR-BAGE and immediately took on most

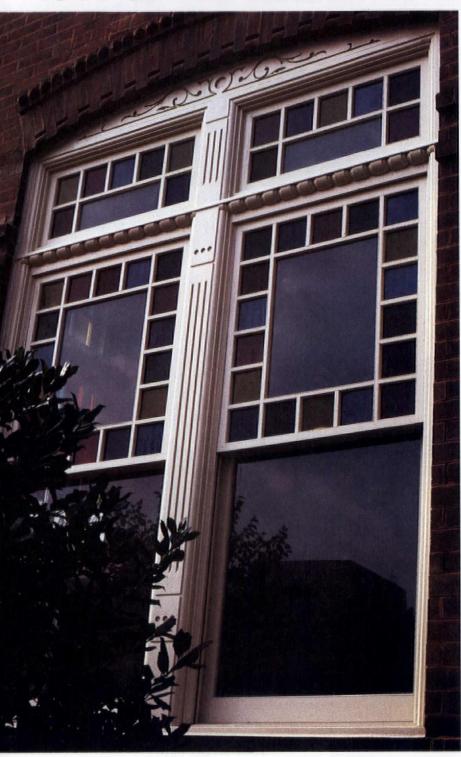
of my executive editorial duties. And hers was the hand that guided the notable improvement in OHJ's appearance and consistent quality. She continues as Editorial Director, still intimately involved with each issue of the magazine and planning this company's future.



I love this magazine, and I know they do, too. My very best wishes to OHJ readers and staff.

President

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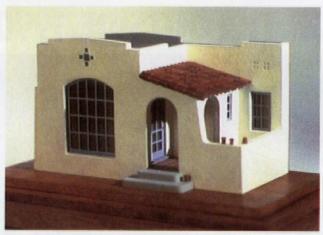
Model Ready-Cuts

Dear OHJ,

Your article on ready-cut homes (Nov/Dec 1990) was of special interest to me because of its references to and illustrations from the Pacific Ready-Cut Homes company of Los Angeles.

When I lived in L.A. some years ago, I knew a lady who had somehow acquired the original hardcover blueprint books of Pacific Ready-Cut Homes, Inc. Tragically, she destroyed them by cutting out the floor plans and elevations and selling them as sets suitable for framing. I was able to rescue about 20 sets at the time and, from the few that she still had a year later, another four or five. They were all in the stucco and tile Spanish Colonial Revival style, my great interest!

I researched the company through the L.A. City Directory for the years



You can't move into this Spanish Colonial Revival.

1920-31, where I discovered that the name first appeared in the 1921 edition. By 1930, the company had moved and then apparently folded, no doubt a victim of the Depression, for there is no entry for them in the 1931 *Directory*.

You might find the enclosed slides

of some interest. They picture sculptures (yes, models are sculptures) based on two Pacific designs. As a woodcarver with an ardent interest in architecture, it was only natural for me to create fine models of architecture as works of art. For the last five or six years, I have concentrated on creating works based solely on the New

Mexico Pueblo Revival adobe, as well as other carvings for the collector of Southwest art.

Always look forward to reading Old-House Journal!

Ray Wol
 Sacramento, Calif

Under the Wire

Dear OHJ,

With respect to the article "House Moving" in the Jan/Feb 1991 issue, it should be noted that, in Massachusetts - and perhaps in other jurisdictions — electric companies must lower their wires, without charge, when a house is moved, provided notice is given. The theory is that public ways are supposed to be avail able to any conveyance for their full width and (theoretically indefinite) height, and so the encumbrance of local electric-company lines must be removed upon request. But the electric company, in my experience, will try to levy a charge unless reminded of the statute.

> — John L. Worden II President Arlington Preservation Fund Boston, Mass

The Tower Story

Dear OHJ,

We finally finished the exterior continued on page 10

Voice from the Past

Dear OHJ,

The most exciting event happened to our family, thanks to *OHI*.

Your Sept/Oct 1990 "Ask OHJ" featured my letter along with a photograph of our home in West Chester. This morning, the granddaughter of the original owners telephoned me from Wilkes Barre, Pa., to say she had seen the photograph in a copy of your magazine. What a small world! We talked at great length and have made arrangements to meet.

I also found out that this house was built by a physician in the late-19th century. In 1930, a West Chester baker purchased it as a summer residence for his wife and eight daughters. This is amazing because our home, which is considered part of the historic village of Marshallton, is

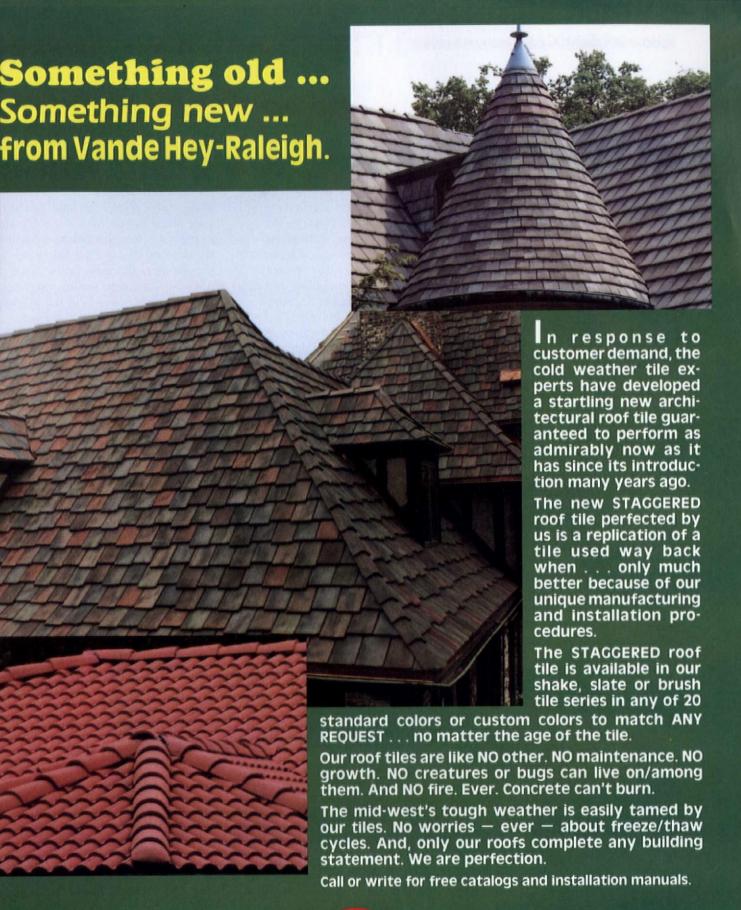
only four miles outside of West Chester, where the family lived most of the year. I could go on but I'll stop myself. Thank you

Thank you for all your "help."

— Debbie Ferry West Chester, Pa.



Here's Ms. Ferry's 1880s farmbouse in living color.





LETTERS

continued from page 8



Exterior restoration of this 1887 Queen Anne bas at last been completed, tower and all.

restoration of our 1887 Queen Anne, and we thought *OHJ* readers would be interested in comparing the results with the house as it was originally built (July/August 1990, p. 8) and as it looked prior to restoration (May/June 1990, p. 22). The restoration of the tower was by far the most

difficult part of the project. As OHI readers may recall, the tower was clad in black asphalt shingles and appeared to be missing a cornice. After discovering an old photograph of the house, we learned that there never was a cornice: the tower, like the entire roof of the house, was originally clad in unpainted wooden shingles. Our problem was that we were not going to reshingle the black-asphalt roof with cedar shingles, but leaving the new tower shingles unpainted would, we feared,

make the tower stick out.

With the help of contractors Dodge, Adams & Roy of Portsmouth, N.H., we reached a compromise solution. We decided to add two courses of fish-scale shingles around the tower at the top of its windows. Fishscale shingles were present on other

parts of the house, and their use at this point on the tower would suggest a cornice while maintaining the original tower shape. Taking this liberty allowed us to stain the portion of the tower above the band of fishscale shingles (the "tower roof") and to paint the shingles below the band We decided to paint the fish-scaleshingle band the same color as the trim. Our intention was to integrate the tower into the rest of the house. treating it essentially as a dormer. This is a change from the original house design which treated the tower as part of the roof. Although purists may gasp, we are quite pleased with the result, particularly in view of the many alternatives we considered.

Richard L. Alfred
 Newton, Mass

"Picture" Imperfect

Dear OHJ.

The article "Picture Perfect" in the continued on page 12

Wallpaper Mystery

Dear OHJ,

We need assistance from your readers in documenting the origin of a wallpaper design said to be by Louis C. Tiffany, although this has not been verified. We understand that Tiffany's wallpaper designs were purchased and manufactured by Warren, Fuller & Company of New York. Unfortunately, the selvage where the manufacturer would have been printed was removed before the paper was hung, and no extra rolls have been found in the house. The wallpaper was hung sometime between 1898 and 1910 - perhaps during a major renovation of 1902-06 - in the library of a Carnegie family mansion, Plum Orchard, on Cumberland Island off the coast of Georgia. Plum Orchard was built in 1898-99 by George L. Carnegie, brother of Andrew Carnegie, and some of its



furnishings and fixtures were designed by Tiffany.

We would like to be contacted by anyone who has Tiffany wallpaper designs identical or similar to the Plum Orchard wallpaper. In addition,



Does anyone recognize this wallpaper pattern?

we are interested in knowing the whereabouts of any catalogs or brochures of Warren, Fuller & Company, which might illustrate Tiffany designs like this one.

Your readers should contact H. Dale Durham, Regional Curator, National Park Ser-

vice, 75 Spring Street S.W., Atlanta, GA 30303; (404) 730-2201.

— Paul B. Hartwig Deputy Associate Regional Director U.S. Dept. of the Interior Atlanta, Ga.

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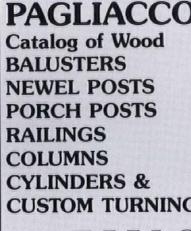
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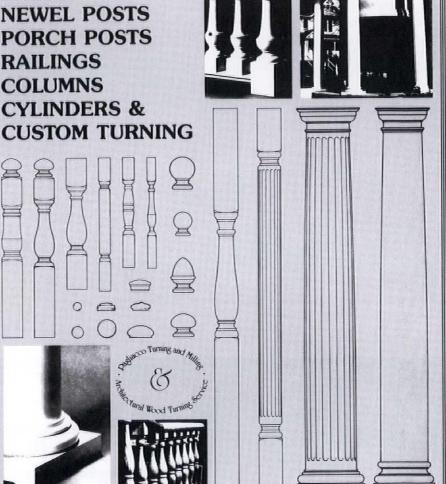
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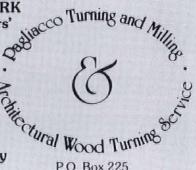
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LETTERS

continued from page 10

January/February 1991 issue was very interesting and informative, but I'd like to point out an error in the photo caption on page 44: Lyndhurst was designed by Alexander Jackson Davis, not Andrew Jackson Downing. Davis is also credited with designing Lyndhurst's interiors.

> Susan E. Smead Annandale, Va.

The "Romance" Factor

Dear OHJ,

I've been enjoying your wonderfu magazine for some time, as one whe explores old buildings for her job a

well as one who lives i and loves an old house

I was touched in particular by the article "Lilacs, Lace, & Old Houses," written by Linda Whitehead [Jan/Feb 1991]. Linda expressed so many of my own thoughts about old houses in her piece. And she's right on targe when she talks about the "romance" factor.

Old houses do inspir us in this way. This fall, continued on page 1



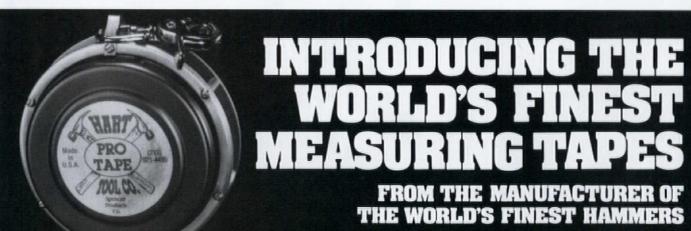
Dear OHJ,

The house shown on the cover of the Jan/Feb 1991 issue belonged originally to my wife's grandparents, Mr. and Mrs. John Magee. In fact, it was he who moved it up to the Montauk highway in Water Mill because his wife wanted to be where "the lights were bright." I last stayed in it the night before our wedding in 1948.

Clayton Collier
 Setauket, N.Y.



The house in 1910, ten years after its first move.



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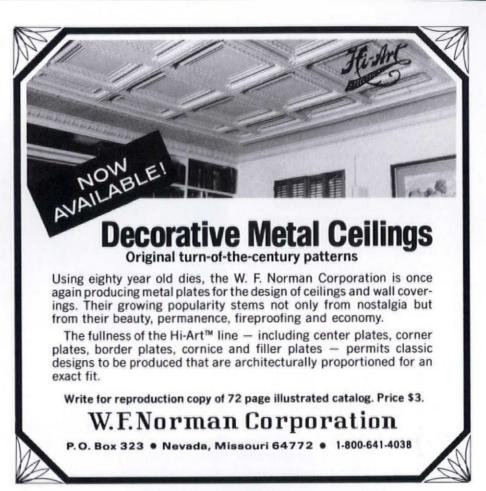
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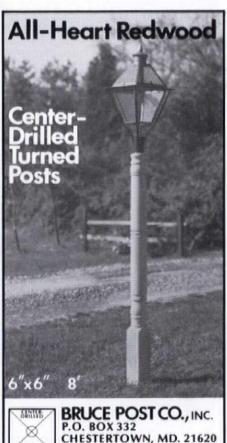


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LETTERS

continued from page 12

in fact, my husband and I bought the 1926 Tudor-style home of our dreams. It was built for a doctor whose family loved to entertain: The rooms beg for company, fine china, and all those things Linda wrote about in her article. A friend who recently visited our new old house proclaimed that we should have a dinner party and use all of my grandma's good china. (We rarely ever do this, being casual folks.) Apparently the house "spoke" to my friend, as it has to me ever since I moved in. So we'll bring out the good china and ring in a good oldfashioned New Year this year!

Thanks again for your fine publication. And best wishes for your continued success in 1991!

> Cynthia La Ferle Editor, *Innsider* Ferndale, Mich.

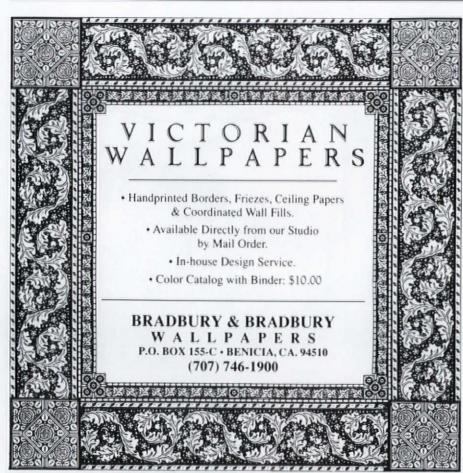


Everything about this Pre-Cut bouse in Tennessee says "Aladdin" — right down to the door knobs.

The Magic of Aladdin
Dear OHI,

My husband and I were thrilled to see your article "Pre-Cut Houses" in the Nov/Dec issue. We recently purchased an Aladdin home of 1913 vintage in Franklin, Tennessee, to house our business. (Along with the house next door, it was written up in a 1982 article in the *Tennessean*, the Nashville newspaper.) The brass door knobs throughout the house are decorative and include the name "Aladdin."

Ann Baisder
 Franklin, Tenn



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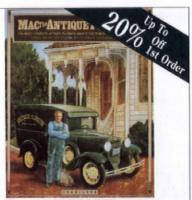
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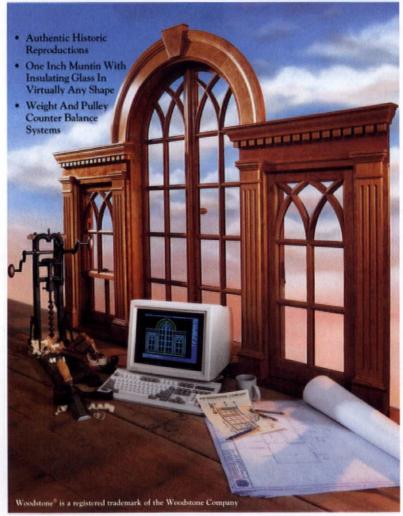
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Vertical windows are a ballmark of the Prairie style.

Prairie-School Windows

Q I was delighted to see an article in Old-House Issue Prairie School houses [July/August 1990]. I believe that's what mine is. The exterior bears some similarity to this style, much more so than to other styles I've seen. Our 1915 house has the wide eaves and roof style mentioned in the article.

We have to decide soon what to do about the windows. We're split on whether to restore or replace with something similar but mass-produced and reasonably priced. Whatever we do, we'll try to preserve the look we fell in love with.

> Marsha Ackerman Rockford, Ill.

We too would call your home a A Prairie School house. It has the low pyramidal roof, wide eaves, and horizontal lines in the facade details, which are the unmistakable hallmarks of this style. The massive square porch supports are also a dead giveaway, as are the windows — don't touch them!

The design of Prairie School and Craftsman-style windows varies, but most have a strong vertical emphasis in the glazing, which stands out

when they are placed in horizontal rows, as yours are. Often casement, these windows fell out of fashion along with the Prairie style after about 1920 and would be very hard to duplicate today. Replacement hardware, however, still should be available. Try

Merit Metal Products Corp., 242 Valley Road, Dept. OHJ, Warrington, PA 18976; (215) 343-2500.

For more on restoring casement windows, see "Historic Metal Windows," November 1986 OHJ.

A Frosty Attic

We noticed what appeared to be roof leaks in the upstairs bedrooms of our 1868 Gothic Revival bouse. We had in several roofers who inspected the roof and attic where they found frost on the beams and nails. They concluded we had a moisture problem. (We also bad a lot of paint peeling.)

Nine years ago when we bought

the bouse, we put on a new roof with "midget" vents all along the eaves. Now we've been told that we need to install four larger vents for the gabled ends. Could you recom-

Moist air that enters a bouse should be vented back out into the world again.

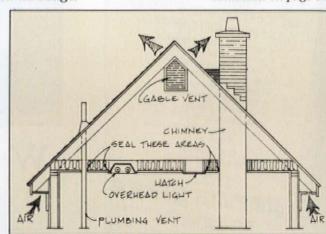
mend any companies that make gable vents for period bouses?

> - Harriet H.R. Paine Shelburne Falls, Mass.

Frosty attics are one of the many ways interior moisture can show itself in old houses and cause problems. In cold weather, moist air tends to travel upward towards the roof. If there are many paths for air leakage between the attic and the living space below, moist air produced by day-to-day living will migrate into the attic and condense and freeze on cold surfaces - most often the underside of an uninsulated roof. Generally, controlling frosty attics demands a two-sided approach to reducing the moisture level: 1) sealing leakage paths to keep moist air out of the attic; 2) venting the attic to provide air movement through the space.

In an old wood-frame house, the air-leakage paths can be many. Most are penetrations through the ceiling below the attic floor, such as chimneys, plumbing vent stacks, or recessed lights. Attic hatches and stairways are at the top of the list. Sealing them is not always easy, but it is the most effective route to limiting moisture. In houses that have had the living space significantly "tightened" with weatherstripping and vapor barriers, keeping tabs on

continued on page 18



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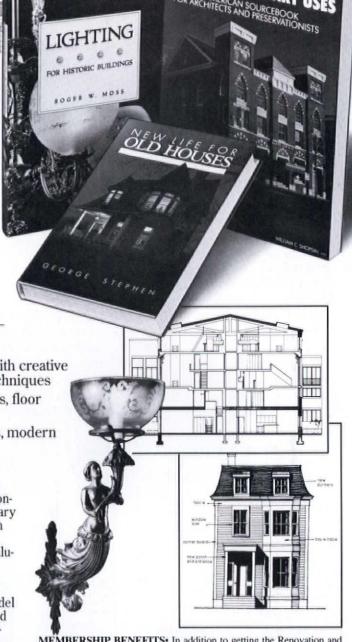
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Old House Journal 3/91

ASK OHI

continued from page 16 the moisture-generating habits of the occupants also helps.

Attic vents are incorporated in pitched roofs with unheated attics primarily to minimize icing at the eaves. While not a substitute for controlling moist-air leakage, the moving air makes it less likely that moisture will condense. Simple gable roofs often use gable vents at either end of the roof for inlets and outlets. In a house such as yours, where the eave vents become the inlet, the gable vent functions only as an outlet and is usually sized at one square foot of open-vent area for every 900 square feet of attic-floor area. A good source for stock and custom gable vents is Sammamish Woodworks, 2450 W. Lake Sammamish Rd. NE, Dept. OHJ, Redmond, WA 98052; (206) 883-0558 (see "Restoration Products," p. 72).

Adhesive Woes

The fireplace in our 1917 Foursquare bas decorative brick with a deep combed texture. The remuddlers who lived in the house prior to us covered it with painted plywood, adhered with beads of black adhesive. We've removed the plywood but are left with the adhesive. Chipping it off chips the brick, and strong solvents just force the adbesive further into the pores of the brick. Can you belp us find a way to remove it?

> — Annika Phillips St. Charles, Ill.

Mastic floor tile or wall paneling adhesives are always tough to remove effectively, and complete success is not always possible. First, experiment with different solvents

and other techniques in an inconspicuous corner of the fireplace, then tackle the whole mantel with the process that gives the best results. When testing solvents, start with the most innocuous - warm water sometimes works - and increase the strength in steps. Here are two ideas you should consider:

1) Use dry ice or an aerosol freezing agent (such as "Freez-It," available at electronics-supply stores) to chill the mastic and break its bond with the brick, much like removing chewing gum from a shoe.

2) Apply the most promising solvent mixed in a poultice of talc or Fuller's earth. The poultice will draw the solvent and dissolved mastic back out of the brick and into itself and can be

brushed away once the solvent has

evaporated.



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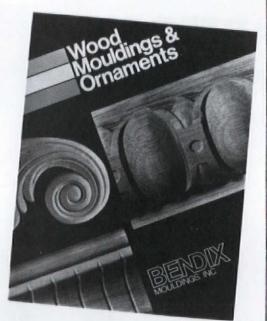


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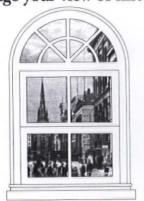
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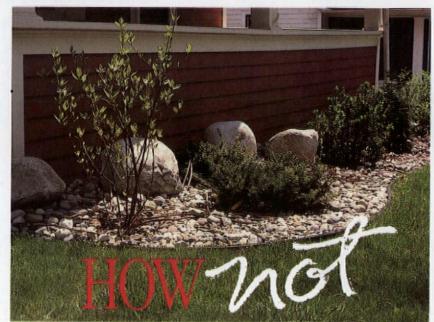
by Scott G. Kunst

omeowner, spare that shrub! And that rusty wire fence and tumble-down arbor. All are historic artifacts that make your "ordinary" yard a valuable antique landscape.

Unfortunately, most of us are blind to the rich history of our own yards. Though we lovingly preserve antique wallpaper and gingerbread, we rip out equally historic

plantings without a second thought. The resulting loss of both history and ambience is often irreparable.

But it can be avoided. Here's how.



Stone mulch and randomly placed boulders undermine the historic character of this old bouse.

plant diseases, and so on.

Reversible changes are also fine. Plant small beds of bulbs or annuals, twine annual vines like morning-glory up strings, and set flower-filled pots almost anywhere. All will assuage your need to DO SOME-THING, without

permanently altering your landscape.

Respect what you have.

Colonial Williamsburg's landscapes are beautiful, instructive, and — unfortunately — seductive

Too many visitors have come away determined to recreate Williamsburg's image in their own yard. While it's fine to learn from great historic landscapes, to imitate them is to deny the history of your own yard Leave reproduction landscapes to those who live in reproduction houses. Real old-house owners have something far more valuable: genuine old landscapes. Respect yours as you would any antique.

Some people have trouble with this because their landscapes are so plain. The fact is, most home landscapes in the past *were* plain. But plain need not be homely (consider Shaker furniture), and lack of ornamentation (say, the absence of foundation planting) can mark a landscape as antique.

Others worry that their landscape doesn't match the age of their house. A wonderful 1760s house, for example, may be graced by an equally

continued on page 24

Take your time.

You know the feeling. When my wife and I moved into our 1889 Queen Anne, we fell heir to a decrepit grape arbor of rusty iron pipe. Inelegant to begin with, it was awkwardly sited, overgrown, and collapsing. I wanted it *gone*.

Instead, I forced myself to wait. I pruned the vines, patched in some new pipe, and discovered the arbor had once screened the back work-



An obscured brick border and a few surviving bulbs mark the site of an old flower bed.

yard from the ornamental front yard — exactly as recommended by Victorian tastemakers from Andrew Jackson Downing on.

Now, in the summer my family often eats lunch under the arbor — it provides the only useable shade in our yard — and in the fall we are wealthy with grapes.

The point is: Haste often makes waste. Gardeners recommend that you live with a yard a full 12 months before making major changes, to see what you really have. Bulbs, for example, are dormant for most of the year, and shade may mean nothing to you until it's 90 degrees in July. With old yards and their confusing jumble of elements from different eras, waiting — as you puzzle things out — is even more important.

"Take your time," however, does not mean "Never change anything." It simply means hold off on permanent alterations until you know what you are doing. In the meantime, stabilization and gentle maintenance are always in order. Edge the walks, prune dead wood from trees and shrubs, scrape and paint fences, treat





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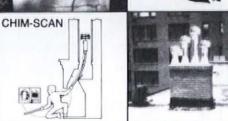
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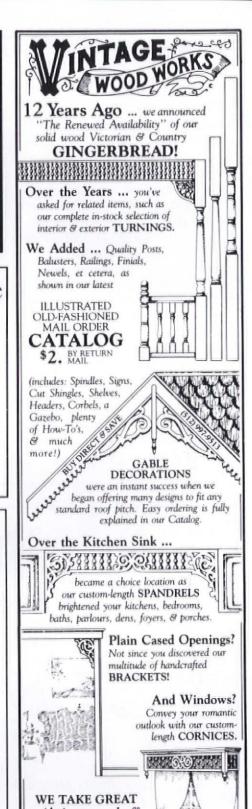




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OUTSIDE THE OLD HOUSE

continued from page 22

wonderful 1920s garden. If so, there's no need to remake one to fit the other. Each is historic and valuable in its own right; together, they speak of the passage of time.

Still other people can't see beyond the overgrowth. People have called me and said, "We just cleared out all the old, overgrown junk. Will you come design an historic garden for us now?" What a misunderstanding! Mature plantings imbue a landscape with a sense of time and history, and even in decline should be given utmost consideration. Sensitive pruning and some tender, loving care will work wonders.

Even weeds deserve respect, at least at first. In old yards, weeds are often escaped garden plants waiting to be rediscovered. Don't uproot anything before checking it out. Educate yourself. Explore. Most people know little about land-scape history, and often what we



A site analysis may reveal surprises such as dame's rocket, an old garden plant that often escapes into untended areas.

think we know — colonial walks were usually brick — is more myth than fact. Unfortunately, what you don't know *can* hurt your historic landscape, so educate yourself.

Start with a "site investigation" of your yard. Establish a baseline: the long side of a house, or a property line. Measuring from this line, map everything else on site. Include utilitarian, ornamental, and natural features, both old and new, and examine surface irregularities as clues to vanished features. Transfer everything to graph paper and your "as found" plan is complete.

To better understand what you have found, turn to books, periodicals, organizations, and nearby historic sites. Even a sampling of these resources is beyond the scope of this column. In the meantime, check out local libraries and bookstores. (Though out of print, Rudy and Joy Favretti's Landscape and Gardens for Historic Buildings is worth a special

continued on page 26







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continued from page 24

search.) Walk older neighborhoods near you, and visit museum sites (but recognize that inaccuracies are rampant). For exemplary sites, see Diane Kostial Mc-Guire's Gardens of America:



Concrete pavers are attractive but not bistorical.

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Consider period solutions.

If everyone else has it — be it impatiens, wood-chip mulch, or a deck —

beware! Historic landscapes should look historic, and that usually means distinctly different from most of today's landscapes. Celebrate that difference; don't blur it with modern features in the name of style or convenience.

But what about contemporary needs? Before changing your yard, try changing your mind-set by "thinking in period." Before building a deck so you can eat outside, think about how an earlier resident might have solved the problem instead. Consider a stone terrace, gravel court, vine-draped pergola, porch, sun room, gazebo, lawn swing, or just a couple of chairs on the grass under a tree.

Whatever your solution, choose historic materials over modern substitutes — real brick, for example, rather than concrete pavers. Reconsi-

der modern "necessities" and use them judiciously. Mulch *is* helpful, but try a "dirt mulch" (regularly cultivated soil) or something unobtrusive, such as cocoa-bean hulls.

Leave a record for future gardeners.

Would you like a photograph of the fence that once ringed your yard, or a list of plants growing there 80 years ago? Someday someone will be pulling weeds in what was once your garden and wondering what it had been like way back in 1991. Give them a treat and leave a record of your garden. Take a few photographs, add your as-found plan, and write a letter to the future: "Dear Fellow Gardener." Label it, and put it somewhere safe. Then go out and rest in the cool of that grape arbor you once wanted to destroy.



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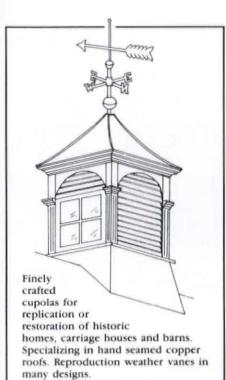
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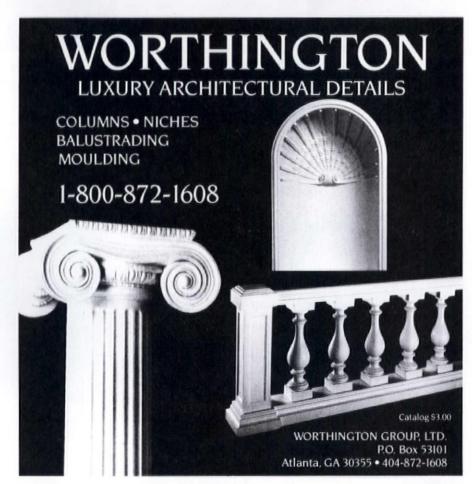
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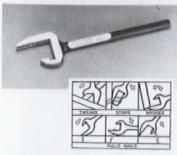


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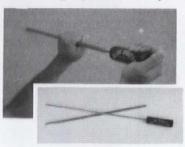


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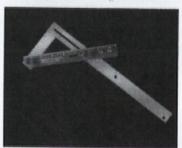
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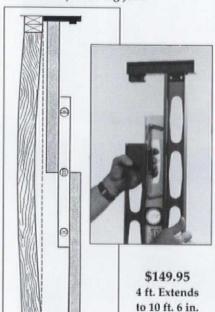


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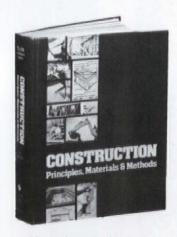
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CONSTRUCTION PRINCIPLES, MATERIALS & METHODS



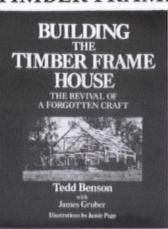
If you have only one construction reference on your bookshelf, this should be it By Harold Olin, John Schmidt and Walter Lewis, 1,300 pp., hardcover, 8 ½ x 11, \$59.95

This is the ideal working reference for the professional builder, remodeler and designer. The massive Fifth Edition, new in 1990, answers almost any question that can arise on the job. Clearly written with hundreds of photos, diagrams, tables and charts, it has up-to-date information on nearly every aspect of home construction.

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Foundation Systems • Wood-Framed Floors • Plumbing • Ceramic Tile • Barrier-Free Design • Concrete • Gypsumboard • Sound Control • Electrical Wiring • Masonry • Moisture Control • Paints & Protective Coatings • Resilient Flooring • Roof/Ceiling Systems • Stucco • Septic Systems • Wood Sidings • Roofing Systems • Building Codes • Iron & Steel • Pole Construction • Land Surveying

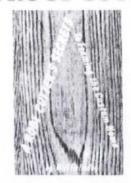
BUILDING THE TIMBER FRAME HOUSE



By Tedd Benson, 211 pp., softcover, 8 x 10 1/2, \$19.95

The most thorough manual available on the techniques of timber framing. Written by a leading figure among today's timber framers, the book provides a fully illustrated discussion of joinery details and cuts, layout and assembly of timbers, and the raising of the frame. Also covered are present-day design and materials, typical house plans, insulation, and tying into foundations — as well as a brief history of the timber framer's art. Appendices provide easy-to-use formulas and tables for calculating beam sizes.

A ROOF CUTTER'S SECRETS



This advanced roof framing guide is written for the experienced craftsman. Here you'll find the fastest and easiest ways to handle many of the complicated problems encountered while framing the custom home.

By Will Holladay, 180 pp., softcover, 5 1/2 x 8 1/2 \$19.95

Includes sections on:

- Figuring rake walls, and ridge beam heights using rise ratios.
- Plumb and line tips.
- Determining rafter lengths using the line length ratio.
- · Gang cutting rafters.
- Special roof situations: towers, polygons, unequal pitch, gambrels, dutch hips snub nose hips, dormers, etc.
- Stair construction, including circular stairs.

With an understanding of the principles explained in this book you'll be able to build whatever an architect can dream up. Definitely a book you'll want to keep in your toolbox as a reference.

BASIC STAIRBUILDING

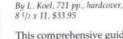




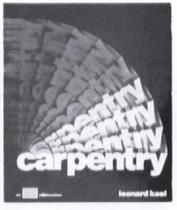
By Scott Schuttner, 1289 pp., softcover, 8 x 10, \$19.95

Finally, a practical, step-by-step book on how to build a professional quality stair. Starting with basic stair layout and design, the author, an experienced stairbuilder, walks you through a straight-run, L-shaped with landing, and open-riser stair. He shows how to cut housed stringers as well as mitered skirts and risers. In addition you'll learn the layout and assembly of newels, rails, and balusters and other finishing touches. Loaded with clear photos and illustrations and a wealth of practical tips.

CARPENTRY



This comprehensive guide established the new standard for carpentry texts. It uses over 2000 detailed illustrations and systematic descriptions to make even the most difficult techniques easy to follow. The author, an experienced carpenter and teacher gives a practical approach with many trade tips acquired over years on the job. Sixteen well-organized sections cover light construction from top to bottom, including tools and materials, blueprint reading, transits and site layout, foundations and formwork, wall and roof framing, interior and exterior trim, flooring, stair building, and post-and-beam construction.



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RESTORER'S NOTEBOOK

A Brite Idea

After many years of patching plaster, I have come to dread sanding the joint compound to get a finished surface, because the dust generated during the sanding process is annoying and difficult to clean up. This problem is particularly vexing when making small- to moderate-sized patches in a room that otherwise is not under construction. I have on a number of occasions used a moist sponge, but it tends to dissolve the compound at the feathered edges and fails to give a surface as good as that obtained with sandpaper. If the sponge is too wet, it dissolves and smears the compound; if it's too dry, it is ineffective in removing the compound.

The solution I have found to this

problem is a Scotch Brite pad. Intended for use as a pot scrubber (and pretty good on bathtubs too), the pad comes slightly dampened — just moist enough to moderately soften the compound at the surface of the patch. And the pad is sufficiently abrasive for efficient removal of the joint compound: Using it, the patch is "sanded" just as if I'd used sandpaper. And there's no dust! The compound accumulates on the pad, which is turned or rinsed frequently.

Gary Landreth
 Shaker Heights, Ohio

Dodging Drafts

My circa-1900 home still has doublehung windows with sash weights. Although I have storm windows and use rubber-tubing weather stripping, the worst draft is from the rope channels and pulley openings. So I cut pieces of 1"-×-2" upholstery foam and wedge them into the openings. They're inexpensive and work wonders — and they pop out easily in the Spring.

Elaine Czora
 Ontario, N.Y

Stripping Tip

The last time I stripped paint from oak turnings, I was left with bits of paint stuck in the pores of the wood. But my friend showed me a technique that lifted the paint out easily and thoroughly. She mixed shellac half and half with alcohol, applied it to the stripped surface, and let it dry. Then she reapplied the paint remover, and because the paint trapped in the wood had bonded to the shellac, it lifted right out along with the shellac. We only had to do this twice to get beautifully clean results.

— Jane Culp Bethesda, Md.

"Exploratory Surgery"

A little "exploratory surgery" can help when replacing a missing porch.

Minor digging revealed the original limestone piers of our 1880 Stickstyle house. They had broken off at ground level when the wrap-around porch was removed many years ago, but the bases remained, covered by a few inches of soil. These long-lost pier bases gave us the exact dimensions and configuration of the original porch. They also told us the number and locations of the porch pillars because the piers typically are directly below the pillars.

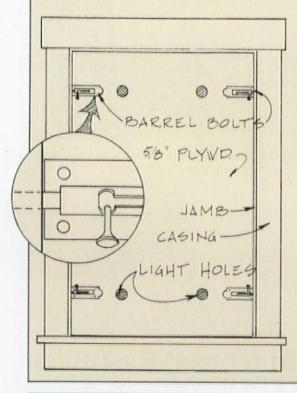
The old limestone bases, by the way, were perfectly useable. They formed the bottoms for the rebuilt piers, saving us a lot of unnecessary excavation and concrete work.

 Kevin Cullen Danville, Ill.

continued on page 32

Window Security Panel

Winterizing our summer old house also means boarding up the firststorey sash windows from the inside for security. After several sea-



sons, we've simplified this chore by building reusable panels that lock into place quickly and tightly with barrel bolts. We use 5%" or 3/4"

plywood for the panels, cut to fit as snugly as possible in the window opening. Barrel-bolt dimensions are not critical, but units made for cabinet work (with bolts about 5/16" in diameter) are plenty strong enough and keep the holes in the pulley stile relatively small and inconspicuous. The finishing touch is a few holes or a cutout at the top of the panel, which lets in a little warm sunlight that helps minimize dampness when the house is unoccupied.

Pauline Kennedy
 Moore Haven, Fla.

Bolts slide into the pulley stiles (inset) to secure the panel.



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RESTORER'S NOTEBOOK

Residue Relief

I recently made the horrendous mistake of securing a temporary plastic floor covering with masking tape. When I removed the tape, the sticky residue remained. Fortunately, I discovered that waterless hand cleanser (the type used by auto mechanics) removes the residue. I spread it on generously, let it "work" for a while, and then scraped it off. (An ice scraper works fine.) No scratches or harsh chemicals at all!

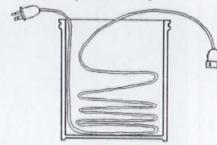
> - Denise R. Larson E. Falmouth, Mass.

Cord-in-a-Pail

The extension-cord problem has an easy solution that I discovered when working with an "old-timer."

Get one of those five-gallon plastic pails that drywall comes in. Start at the male end, leaving about three or

four feet of the male end out of the pail, and begin coiling the cord neatly on top of itself from the bottom of the pail to the top. Now,



when you walk away with the female end, it will always uncoil perfectly. And if you need only 10 feet of your 100-foot cord, you will have to recoil only the 10 feet you used.

The extra room in the pail is great for holding tools as you move around!

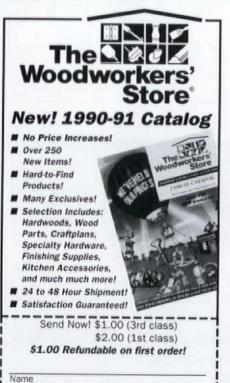
> Brian Black Ada, Mich.

Debris Defense

When removing lath and plaster from walls, it's a good idea to cover electrical sockets and phone jacks so they don't get ruined by being buried under all the debris. If the sockets are hanging out of the wall and resting on the floor, an inexpensive and easy way to protect them is to place a coffee can over them. Cut a notch in the can for the wire and secure the can to the floor using duct tape.

> John Arment Iselin, N.I.

TIPS TO SHARE? Do you have any hints or short cuts that might help other old-house owners? We'll pay \$25 for any how-to items used in this "Restorer's Notebook" column. Write to Notebook Editor, The Old-House Journal, 435 Ninth Street, Brooklyn, NY 11215.



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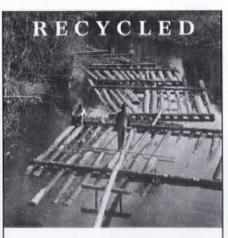
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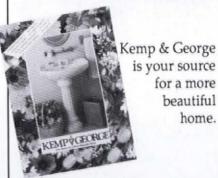
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INTO THE PRESENT

by Frank Briscoe

n my work as an architectural conservator, I spend a lot of time looking for defects and deterioration in historic buildings. During an inspection two years ago,

I traced the cause of extensive paint and plaster failure to a defect in the drainage system, which regularly poured a lot of water into the basement. Suspecting that some of the water vapor must have been escaping to the outside along the top of the basement walls, I found the small flight holes of furniture beetles in joists nearbasement the est perimeter. What struck me about the location of the flight holes was how exactly they appeared to match the path of water vapor as it left the basement. I knew these beetles had a preference for wood near its fiber-saturation point (about 30 percent moisture content), but the pattern of the exit holes was positively scientific.

As pest-control consultant and writer Harry Katz says, "If you have the conditions suitable for insect attack, it's abnormal not to have insects." Put another way, if the conditions for insect attack are present around your home, one of two things is true: Either your house is being attacked by wood-destroying insects, or your house will be attacked by wood-destroying insects. According to the National Pest Control Association, termites alone cause more

Countering the bugs that attack buildings

than \$750 million in property damage each year. This is more than hurricanes, tornadoes, and other windstorms combined.

Additionally, the treatments used to control wood-boring insects in these situations often involve introducing toxic chemicals in and around the home. Applied carelessly or without due caution, many of these pose significant, longlasting health and environmental risks. What gives the subject such urgency is that both the building damage and the exposure to health risks are largely preventable.

Fortunately, the most important steps in discouraging insect attack are relatively simple ones, and there are much safer treatments available for dealing with them than there have been. By familiarizing ourselves with the most common wood-destroying in-

sects, their life cycles and their requirements, we can see how to exclude them from our homes. "What you have is a situation in which these pests are looking for a habitat similar to one they've inhabited over evolutionary time," said John Rawlins, Curator of Invertebrate Zoology at the Carnegie Museum of Natural History in Pittsburg. "We need to look at the modern world through the eyes of a Neanderthal bug.'

Termites

Among the wood-destroying insects, termites are by far the greatest building pests. There are 13 termite species of interest found in the U.S., and they are generally divided into three

Clean, smooth-surfaced galleries chewed out of softwood sheathing — the nesting place of carpenter ants.

categories: subterranean, dampwood, and drywood. Individual termites exist in one of three forms, called *castes*: reproductives, soldiers, and workers. Primary reproduc-

tives (sometimes called "swarmers") are light brown to black, have four equal-sized wings, three pairs of legs and two dark eyes. The reproductives are the only mature individuals. The development of the soldiers and workers is arrested at the stage these castes are needed. Otherwise, they too would become reproductives. Both of these are white to tan, wingless and blind. They can be distinguished from ants by their lack of a constriction or joint at mid-body.

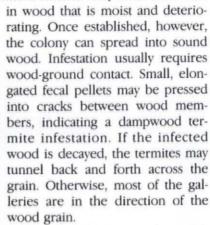
Subterranean termites are the major pest of this family, and are found throughout the continental U.S. except for the northern Midwest states and northern New England. A colony of subterranean termites might include 60,000 individuals. They typically build their nests 6 to 8 feet below the surface of the ground. If they can find a reliable source of moisture in your home, they can nest there. Otherwise, they must return to their underground home every day or two to replenish their body fluids and take nutrients to the nest. Unlike ants, termites do not store food or water.

When a colony reaches a certain size, they will often throw off swarms of individuals in the early spring. For these swarmers to form a new colony and survive, they require accessible food material. This is where keeping the ground around your home free of wood debris pays off. It is possible, however, for a mature colony to spread to your home if they are established nearby.

The most visible signs of infestation by subterranean termites are the earthen shelter tubes they build to cross materials they cannot eat their way through. Occasionally after swarming season, one may see a large number of discarded wings on a window sill or threshold. Only rarely will one see the swarmers themselves. Subterraneans prefer to

eat the softer spring and summerwood of wooden members. They gnaw their way along the grain, leaving a concentric pattern of the more dense latewood (generally the darker of the annual rings).

Dampwood termites are found on the West coast, in the Southwest, and in southern Florida. They make their nests



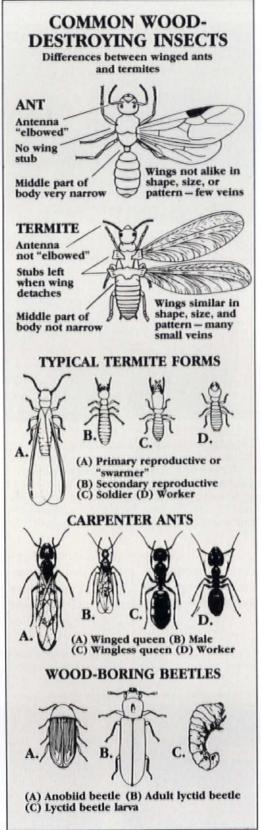
Drywood termites are a threat primarily along the Gulf Coast and in southern parts of Nevada, New Mexico, and California. They live in wood that is completely dry, requiring no source of moisture. Individual colonies are relatively small, consisting of a few thousand individuals or so. Therefore, it takes longer for them to do serious structural damage than it takes subterraneans. However, drywood termites are capable of in-house swarming, creating several colonies in one building.

The most conspicuous evidence of an infestation by drywood termites is the presence of hard, elongated fecal pellets about ½5 inch long. These often get caught in spider webs or on surfaces near their "kick holes" (where they clear their galleries of debris). They tend to hollow out larger pockets than the subterraneans, with much more work across the grain of the wood.

Carpenter Ants

In the Northeast and the Pacific Northwest, many consider the carpenter ant to be a more common pest than termites. They are among the largest species of ants in the U.S. Adults are reddish brown to black and divided into several castes: queens (winged and unwinged), winged males, and several types of unwinged workers. They attack wood not for food, but to make their nests in it. Their preference is for

moist, decaying wood. They are almost always found in connection with a defect in the roof (especially flat roofs) or plumbing system. The only evidence you might see of



an infestation could be the ants themselves, sipping at your sink during the night. Or you might see scattered piles of *frass*, wood fragments mixed with fecal material, beneath an opening they have made in their galleries for cleaning

purposes. The damage that they do is generally minor and localized.

Wood-Boring Beetles

here are a number of beetles which damage wood buildings, but the two most commonly encountered beetle families in the U.S. are the anobiids, which include the furniture beetle and the deathwatch beetle, and the lyctids, which include the powderpost beetle.

Of the anobiids, the furniture beetle is probably the greatest pest, but the damage it does is relatively minor compared to the termites. Adult furniture beetles are reddish brown to nearly black and from 1/8" to 1/4" in length. They are elongated and have a hood-like covering which protects most of the head. Since the advent of central heating, furniture beetles have been most often found in softwood framing members of basements and damper auxiliary spaces of the

building, rather than in furniture. Small mounds of tiny frass pellets on the surface below infected members are often the first sign of an infestation. The frass is pushed out through the exit holes, which may be between ½6 and ½8 inch in diameter.

Left: Frass sifting from holes marks an active infestation of lyctid beetles in this oak floor joist. **Middle:** Anobiid-beetle exit hole and frass (moved to expose bole).

Lyctids, the true powderpost beetles, are found throughout the United States. They are reddish brown to black and range from $\frac{1}{8}$ to $\frac{1}{4}$ inch in length. Hardwood lumber is their only food source. The most common way they enter

buildings these days is in cabinets or other hardwood products brought into the home. An infestation can take many years to do serious damage. Very fine, flour-like frass near circular exits holes about ½2 to ½6 inch in diameter is a sign of infestation.

Prevention

Prevention is really the key in avoiding insect damage to your home. Remove all wooden debris from the ground surface in the vicinity of the building. One frequent source of insect problems with poured-concrete construction are the form boards that are often left in place after curing. Firewood stacked near the house is also a common point of entry. Lattice beneath porches or installed as a skirt around the house can be an easy target for termites. Wood less than 8 inches above the ground surface should be pressuretreated.

Cut off sources of water which might be lending lifesustaining moisture to insects. Carefully check for leaks in the

roof and plumbing system, and repair any defects. Consider how slow-draining areas around the house could be improved. Also check enclosed areas which might not be sufficiently ventilated, such as attics and the space above porch ceilings. If adding passive vents to these areas is not

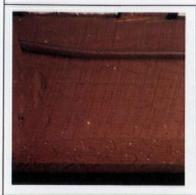
Right: Attics are not immune to wood-destroying insects, especially where leaks provide moisture. Here, probing uncovered possible evidence of carpenter ants.





covering which protects most of the head. Since the advent of central heating, furniture beetles have been most often found in softwood framing members of basements and softward for the head. Since the advent are evidence of an old subterranean termite infestation.

Above: Characteristic subterranean-termite damage: extensive tunneling with the grain, which leaves much of the harder winterwood intact. Ordinarily, these insects would never have penetrated the wood surface, but this damage, high on a first-floor wall, was originally protected by wallpaper.







practical, you might consider providing a ventilating fan. New construction should not create conditions which

encourage insect attack. Design to keep untreated wood at least 8 inches off the ground. Avoid the temptation to

build flat or low-pitched roofs, and always provide adequate ventilation. Sheet-metal barriers are sometimes inserted at the top of wooden piers in pier-and-beam construction and at the top of concrete footings. These discourage the termites, and at least force them to build shelter tubes around the obstacle. The sand barrier, developed by distinguished entomologist Walter Ebeling in the chemically liberal 1950s, is only recently coming into popular use under houses of pier-and-beam construction. With this method, carefully selected grains between 1/16 and 3/32 inches across are blown along the foundation skirt. (The smaller grains are too large for the termites to push aside, and the larger ones are too big for them to successfully tunnel around.) Despite the relative simplicity of sand barriers, consult with professionals when considering one.

Pre-treating lumber with a termiticide and soaking the periphery of the house with pesticides were common practices in the past. These preventative methods are sometimes still suggested by lenders when they make home loans, in order to secure their collateral. However, this approach seems to be losing currency in favor of a monitoring program.

Inspection and Monitoring

asic inspections are simple enough for homeowners to conduct themselves. Most infestations can be discovered by regular (preferably annual) visual inspection of accessible structural members and sounding these members. You'll need a good flashlight, a hammer, and a knife or awl.

Look carefully for termite shelter tubes on the surface of the foundation wall. Often they are partially con-

cealed in vertical cracks. With your awl, lightly probe wood close to ground level for signs of attack. Tap on the lower wooden members around the building. Sound wood rings when struck with a hammer, while damaged wood pro-

duces a hollow noise. Stucco-covered wood features such as pilasters are common entry points. Also check for loose stucco around the foundation, which can give termites a protected entrance.

protected entrance. Inside, concentrate on perimeter walls and areas over known joints or cracks in the slab. Rap gently with your hammer or its handle on fea-FIREWOOD tures like door trim and baseboards. NEAR HOUSE Insert a slender tool like a hacksaw blade into crevices behind trim to pull out any unseen soil, the signs of shelter tubes. Carefully inspect plumbing access both for shelter tubes and for leaking pipes, which may be creating ERMITE TUBES a favorable insect habitat. In unfin-OVER SURFACE ished areas like the attic, look along AND THROUGH the edge of the floor for the charac-VOID6 teristic fecal pellets of drywood termites and the frass and exit holes of wood-boring beetles. The basement or crawl space be-WOOD neath the house is one of the most DEBR.19 IN SOIL important areas to look for subterranean termites. All perimeter foundation walls and interior bearing walls should be sounded or probed. Look carefully at the joists near the perimeter for shelter tubes or beetle exit holes. Inspect chimney bases and pipes making contact between soil and wood for signs of shelter tubes. Pay particular attention to areas beneath bathrooms and the kitchen, and under any water-connected appli-TERMITE ances like water heaters. SHIELD

structural members and sounding these members. You'll need a good flashlight, a hammer, and a vl.

Top: Insect entry into a building is often aided by wood construction debris left under the bouse, firewood stacked near the bouse, and wood building parts less than 8" above the ground surface. Bottom: Simple practices—such as clearance between bouse parts and ground, sheet-metal barriers, and good ventilation—discourage insect migration.

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VENTILATE

CRAWL SPACE

The instruments used by professional pest-control operators (PCOs) for detecting and assessing the scope of insect activity are becoming ever more reliable and discerning. Fiberoptic equipment such as the boroscope allows the inspector to view wall cavities and concealed structural members for evidence of insect activity. Very sensitive listening devices can distinguish the characteristic sounds of termite activity. A California company even trains and sells termite-detecting Beagles. The great benefit of these tools is that they enable the homeowner or PCO to know the extent of the infestation with considerable precision — very important when evaluating treatment strategies.

Treatment

But say an inspection of your home has turned up evidence of an active infestation. Don't panic. Instead, identify the

insect pest, and take time to acquaint yourself with its habits and the methods of removing it. Don't overlook the possibility that mechanical removal — the surest and safest method — might also be the simplest. If the location of the drywood-termite or carpenter-ant colony is accessible, it may be worthwhile to dismantle some of the building fabric to physically remove the nest. Likewise, accessible wooden elements infested with lyctid or anobiid beetles might be removed and replaced, but not at the expense of the building's historic character.

In addition, correcting a moisture problem that made your home conducive to an infestation by carpenter ants, dampwood termites, or furniture beetles may be the only

Many conditions conducive to fungal decay also invite attack from insects. This moisture-prone sill beam (below) is damaged by both woodboring beetles and subterranean termites. The wet rot in this porch railing step in preventing a (bottom) has also attracted damp- reinfestation. wood termites.

action necessary. Restricting moisture also makes any treatment application more effective, and is a necessary

If treatment is necessary, your basic decision is whether to go with a conventional chemical application, or to try one of several alternative pest control treatments which are gaining currency. Whichever you decide, choose with care. Pestcontrol companies have not been spared by the rising number of lawsuits common in business these days, and they tend to document their work fairly thoroughly. Ask to see pictures of some recent treatments they've done, and ask about the circumstances of the infestation.

Until it was taken off of the market in 1988, conventional pest control often included applications of chlordane, especially when treating for termites. "The thing about chlordane was that it had an extraordinary ability to bind to materials and remain toxic," said Jim Roelofs, Section Head with the Office of Pesticide Programs at the

Environmental Protection Agency. Chlordane remains toxic for 20 to 30 years in the ground.

Perhaps the most popularly used insecticide for building pests these days is chlorpyrifos, sold under a variety of brand names including Dursban. According to Roelofs, "The chlorpyrifos data is pretty clean. It doesn't look like a cancer-causer." Another popular chemical insecticide is pyrethrum, which also appears under several brand names, such as Demon. Like all insecticides registered with the EPA, chlorpyrifos and pyrethrum have been rigorously tested. Still, they are both potent neurotoxins. Chlorpyrifos remains toxic for up to 10 years, while pyrethrum breaks down faster.

A good place for information about alternative pest control is the Bio Integral Resource Center. The group which collects and disseminates information about least- (above). toxic pest-control tech-





BIRC is a scientific Approaches to insect control include using preventive metal termite shields atop foundation walls (top) and localized treatment with dry chemicals

nology. They publish Integrated Pest Management Practitioner, geared toward the pest-control industry, farmers, and entomologists, and Common Sense Pest Control, written for the homeowner. (Send \$1 for their catalog "Least Toxic Pest Management Publications" to P.O. Box 7414. Berkeley, CA 94707.)

Both conventional and integrated pest control might be broken down into three types of treatments: treating a localized area of infestation; treating the whole house; and treating the soil around and beneath the house. Treating a localized area might be done in cases of limited infestation by carpenter ants, drywood or dampwood termites. or beetles. The entire house is sometimes treated for these same insects, with the exception of the carpenter ants, which seldom cause such extensive damage. Soil treating is only done for subterranean termites.

The most effective method for treating subterranean ter-





mites is to prevent the worker and soldier castes from traveling back and forth between the wood material and the nest. (In rare cases when subterraneans find conditions wet enough to nest inside the home, the treatment is similar to that for drywood termites.) The conventional method is to inject a termiticide through holes in the slab and/or into the ground around the home. A shallow trench is often dug around the perimeter of the building to contain the chemical that seeps up. The conventional treatment is usually effective, but, because of variations in soil types and various conditions, reapplication is sometimes necessary. Much of the efficacy and safety of the treatment depends on the PCO. As Roelofs of the EPA said, "Termiticides are applied in much higher volumes than other

pesticides. This puts a premium on following the directions. Generally the directions are very good, but they must be followed exactly. It is misapplication and failure to follow the directions that cause the disasters."

The primary alternative to chemical treatment of subterraneans is the application of nematodes, tiny parasitic worms which are deadly to termites. The nematodes are mixed with water and introduced with conventional equipment as the chemicals would be. They may also be poured into the shelter tubes. Steven Schwimmer of Fumex Termite Service says he is satisfied with the nematodes as a "first, broad-based treatment of subterraneans." His Long Island, N.Y., company mainly uses alternative treatments, and has been using nematodes since 1983. Schwimmer said the price of applying nematodes is about the same as a chemical application, but a lot of the price of a chemical treatment is in the cost of meeting New York safety standards.

> wider variety of methods have proven effective in

combatting the other wood-destroying pests. Many PCOs will claim that the only effective option is "tenting." Here, large tarps are laid over the house and the seams clipped to provide a relatively airtight tent. Chemicals such as vicane or methyl bromide are pumped in under pressure. This treatment is generally effective, but it can be very expensive and leave toxic residue. Moreover, it is seldom necessary.

Some of the inspection tools mentioned earlier make it possible to know the scope of the infestation quite pre-

cisely. When this is the case, several recently developed techniques can be effective. For example, Tallon Termite and Pest Control of Long Beach, California, developed a method of injecting liquid nitrogen into infested wooden members. The harmless liquid is cooled to 20 degrees below zero Fahrenheit, freezing the insects. The system has proven effective for termites and wood-boring beetles, and works in tight places such as wall cavities. Where an infestation is limited to exposed beams or other accessible features, Tallon sometimes applies metal heating strips to the surfaces. The temperature of the strips is raised to about 130 degrees Fahrenheit, a temperature which is lethal to all of the building pests considered here.

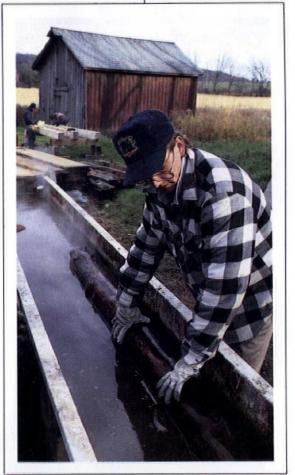
Drywood termites often make their nests in attics, par-

ticularly in buildings where wood shingles have been overroofed with composition shingles. One effective treatment used by both conventional and alternative PCOs is the application of a desiccant, such as silica aerogel in a spray or dust form. When the insects come near it, they begin to lose their bodily fluids and soon die. Boric acid is also used on occasion against drywood termites.

Treatment of carpenter ants is aimed at killing the queen. Emil Pappas of V.P. Exterminators in Houston, Texas, uses bait that his company produces. Pappas first locates the carpenter-ant colony by setting out untreated candy suckers. When the general location of the colony is ascertained, red suckers treated with a growth regulator are set out nearby. When the queen ingests the treated material, she soon stops laying eggs and the colony dies.

So remember, the best defense against wood-eating insects is to regularly inspect your home. One of the simplest monitoring methods was suggested by Harry Katz: Insert wooden stakes in contact with the foundation every two or

three feet around the structure, then pull them up once a year to see if termites have found them. And if you find an infestation in your home, don't panic. Little additional damage will occur while you study the problem. Educate yourself about the available options. Most importantly, take a tour of your house every now and then, seeing it as it might be seen by a Neanderthal bug — a *bungry* Neanderthal bug.



Treating historic wooden timber against decay and insect damage with experimental borate-based preservatives at Rokeby Museum in Ferrisburgh, Vermont.

Frank Briscoe is an architectural conservator with the North Atlantic Regional Office of the National Parks Service.

DRYING-IN AN DRYING-OUY

roofing, smashed windows, and flooding. Many trees were knocked down, hitting houses and power lines. Relatively few buildings were irreversibly damaged. On Sullivans Island, though, all that remains of a third of the homesites are pilings or a pile of rubble. Almost every build-

Flood-damage lessons from Hurricane Hugo

hen killer Hurricane Hugo hit the U.S. mainland in September 1989, its fierce winds directed their primary attack at the roofs of the buildings on South Carolina's historic Charleston peninsula. Flying roof slates became hatchets, smashing windows and shut-

ters and lodging in wood clapboards. Tin roofs flapped, banged, and rolled up in huge balls of scrap metal. Major holes were torn in church and warehouse roofs.

The eve of the storm passed directly over the heart of the city at the confluence of the Ashlev and Cooper Rivers. Forty-five minutes later the winds returned from the opposite direction, tearing at the houses. Oldhouse owner Amalie Stone Walker and her son leaned for hours against the second-floor door in their house on the South Battery to keep the wind from blowing out the huge stained glass skylight above the stairhall. Out

on the barrier islands north of Charleston, things were much worse. Seventeen- to twenty-foot water levels lifted many houses off their foundations and floated them away. Some of these houses landed completely intact blocks from their sites. Others have never been seen again.

After the worst of Hugo was over, homeowners returned in the pouring rain to assess the damage. One couple found a porpoise in their living room; they were able to keep it wet and return it to the harbour. Another woman found a glass swan that had been resting on her dining room table embedded by its wings in the ceiling.

On the peninsula, most of the damage was due to missing

ing received some structural damage. Many, many people returned to water leaking through plaster ceilings, mudcoated floorboards, fallen roofing and trees littering the streets. As Sarah King, a local preservationist, said, "It's like we've moved to another house before it was restored."

In the wake of the disaster, the Historic Charleston Foundation and the Preservation Society of Charleston quickly organized to provide assistance for historic homes on the peninsula and to hold seminars to field numerous questions about proper materials and procedures. The insights described in this article were the product of a specific natural disaster, Hurricane Hugo, but they are precautions

> that can be applied to almost any type of inundation that threatens old houses - from flooding rivers to water damage after a fire.



Drying-In

The folks who inhabit the low country of the Carolinas talk about dryingin after a hurricane. Drying-in or weathering-in refers to temporary measures taken to keep water out of a building

after a storm has blown out windows and eaten part of the roof. While the measures are, technically, simple, after a disaster they are likely to be complicated by a shortage of materials such as tarps, ply-

wood, roofing felt, and electric generators. (Also, inevitably, in short supply are contractors willing to work for a reasonable price.)

Above: The chief example of Hugo's destruction was widespread loss of standing-seam terne roofs and the water damage that resulted. Flooding ranked a close second. At right: a Hugo casualty, the 1895 home of Charles Chase, under restoration at the time of the storm.

Opposite page: At top, large tarpaulins are used to quickly dry-in the damaged roof of this Charleston home. Below, the next stage: a temporary felt roof held down with furring strips.

Roofs

It's hard not to panic when rain is dripping through your plaster ceiling. However, it is a waste of time to secure a damaged roof with polyethylene plastic — it will last only

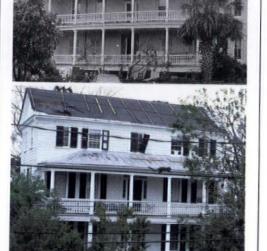
a few days before being destroyed by wind and sun. Equally wasteful is paying a contractor to do a quick repair that eventually will have to be done over. The first goal for drying-in a roof is to make a temporary repair that will last six months or longer. This allows the old-house owner time to carefully figure out exactly what work needs to be done, and to avoid paying for labor and materials at premium, emergency prices.

An instant, weathertight roof "patch" can be made by draping large tarps over the roof ridge. Tarps must be securely fastened at the edges because they will quickly pull loose if allowed to flap in the wind. Agricultural-supply houses tend to stock the large tarps that work best. Large holes or missing sections of the roof will need to be bridged with lumber. Try to run the

temporary structure vertically so that water doesn't build up in pockets on the tarp.

If roof sheathing is missing, it can be repaired with exterior-grade plywood of the same thickness. If rafters have been damaged or there are other signs of structural damage, consult with an architect experienced in dealing with old buildings. Where roofing is missing but the sheathing is sound, install 30- to 90-pound asphalt-impregnated roofing felt. Nail it every six inches along the seams with felting nails (made with a square washer at the head). The 90-pound

felt is durable enough to last as long as two years without a finished roof on top of it. If the only 90pound felt available is roll roofing with colored mineral on one side, install it with the mineral face against the sheathing so it can be roofed over. This heavy felt is a good base for permanent wood and asphalt shingle and slate roofs. It would need to be removed, however, before installing a metal roof. Lighter-weight felts will not last as long; using 15-pound felt is a total waste of money because it will quickly deteriorate.



Other Exterior Ideas

- If you have a slate roof, try to avoid walking on it. Slates are easily cracked and the storm may have loosened slates still in place.
- Where possible, wire or tie up loose or damaged gutters and downspouts to help carry water

away from the house. Broken door and window openings can be covered with tarp pieces or lightweight plywood. Exterior-grade, 3/8" plywood is sufficient for most openings.

 Trees that have fallen against the house will need



to be removed before repairs can begin. Before resorting to axe and saw, consider the possibility of saving the tree by straightening it. If you haven't used a chainsaw before, don't run out and buy one. Avoid maiming yourself (or worse) by enlisting an experienced neighbor or professional to help out. Then, cut up the fallen tree or limbs into lengths small enough to be used for firewood or hauled away easily.

 Assume all power lines are live. Even though the main-utility electric service may be dead, an emergency or portable generator wired into another building can still feed power to your lines.

Hold Onto What You've Got

The second goal in drying-in is to "keep what you've got." Save those fallen slates, decorative plaster pieces, broken shutters, and flood debris. Even if the architectural fragments aren't from your house, they may prove invaluable to another owner.

For example, during Hugo the roof of Charleston City Hall became a giant frisbee and smashed into the church across the street. The pieces of rafters, sheathing, and trim recovered minutes before the clean-up crews swept through allowed the volunteer architects to reconstruct the roof on paper. This kind of work is a bit like doing archaeology — without the dirt.

Out on Sullivans Island, a storm-damaged house built in 1830 was condemned and close to being bulldozed. Instead, the owners decided to work with an architect on dismantling and reassembling the timber-frame house. Almost anything can be restored, so keep the pieces until you can decide whether rebuilding is worth the cost. The storm may also do its own "archaeology" by uncovering original wood shingles or other construction details. Whenever possible, keep this evidence of the early history of the house in place.

Drying-Out

fter the storm is over and your house is weathered-in, there comes the job of *drying-out*. As Douglas Hicks of the National Park Service says, "Don't be in too big a hurry." Although the

rain and flood waters may have given the building a bath very quickly, it helps to dry out slowly. In general, natural ventilation and evaporation are better for the building than forced-heating or air-conditioning systems.

There are companies that specialize in rapid drying-out of structures. They bring in giant air conditioners which blow hot, dry air into a room to suck out the

water vapor. These machines work great in power plants and mothballed battleships, but their use is a disaster in old buildings. In Charleston, for instance, a power drying system was installed in a historic church. After the system had warped the wainscotting and trim, the contractor ripped out the woodwork and threw it away. In situations such as these, remember: It is the owner who should be making important restoration decisions

— not the contractor.

Attack the Attic

Starting at the top, check the house for water damage. If the attic insulation is wet, remove it as soon as possible. Wet insulation holds water against the wood structure and encourages dry rot. If the attic is full of wet belongings, move them to a dry location. The extra weight of the water-soaked boxes and furniture can cause plaster ceilings in the floors below to crack. Open any windows or ventilators to allow fresh air to circulate.

The structure of the house will tend to direct rainwater entering through the roof to certain areas. The water may flow through old ceiling cracks or run down the chandeliers. The nasty-smelling, dark-brown liquid that comes out of the ceiling is typically the result of a big leak. It is simply water that has picked up all of the unseen gunk inside the walls and floors. Poking a few holes in conspicuously wet areas will allow the water to escape into buckets on the floor and save much repair work.

Plaster Problems

A puffy white residue that appears at the edge of plaster cracks indicates that the water has dissolved the gypsum in the plaster and redeposited it. The cracks will have to be cut out and replastered (see March/April '88 OHJ).

Check for loose plaster in ceilings. Having a section of soaked plaster fall on your head is like being hit with a piece of flagstone. Either resecure the loose plaster in place with screws and plaster washers or remove it.

Large, loose ceiling areas can be held temporarily in place with sheets of plywood propped up by $2 \times 4s$ — similar to installing drywall on a ceiling. To do this, screw a T-shaped end on a 2×4 slightly

longer than the ceiling height and shove the "T" against the plywood.

Decorative plaster mouldings may begin to fall down because they were attached with water-soluble plaster of paris. Remove loose pieces by hand, then mark and save them for later reinstallation. Alternatively, areas such as ceiling medallions can be held in place with a pillowcase "diaper" fastened to the ceiling. After it is dry, the loose





Top: newly peeling paint, a telltale sign of wet plaster. **Above:** Water-soaked wall insulation can be located and removed by carefully prying off baseboards.

decoration can be reattached by injecting an acrylic glue. **Wet Walls and Rooms**

he voids in frame walls should be checked for wet insulation by removing the baseboards. If insulation is damp or soaked, take it out and leave the baseboard off until the interior of the wall is thoroughly dry. Mold and mildew can be cleaned off walls by scrubbing with a weak solution of Clorox bleach and water.

Newly peeling paint is a sure sign of water trying to escape. Scrape away the bubbled paint — especially if it's gloss or semi-gloss — and help the process along. Wait a few months before repainting to be sure that all the water has evaporated. If peeling wallpaper hasn't been water-stained, it may be practical to reattach it. Re-

member to let the wall behind dry out first.

Open the windows in all rooms, even those which don't appear to be wet. If the windows are swollen shut, remove the inside stop bead to free them up. A window or attic fan can help draw fresh air through the house. As soon as possible, get wet carpets and furniture outside the building to dry so water won't evaporate inside the house and add to its high moisture level.

Check the crawl space under the house for flood-soaked insulation between the floor joists. After removing it, provide adequate ventilation. If air-conditioning ducts run under the house, they may be full of water. This will breed mildew and fungus and will quickly corrode the blower motor. Remove a section of ducting or drill a hole in a low

spot to drain out the water. A small drain hole can be patched with a piece of sheet metal and duct tape or a large sheetmetal screw. Also check electrical outlets and panel boxes. If these have been flooded, the receptacles and breakers will need to be replaced.

Flooded Floors

If wood floors are coated with mud, wash them down with fresh water. Next, apply paper towels to absorb any salt water. Do not use newspaper — the ink may stain the floor.

Floorboards may begin to warp as the wood dries out, but further drying may bring the



A giant drying machine was used to rapidly remove moisture from Charleston's First Presbyterian Church — with disastrous results.

boards back to their original shape. Remove sheet vinyl or linoleum from flooded floors to allow maximum evaporation. Wet wood is soft, so keep high-heel wearers off flooring until it's thoroughly dry. Cover the floor to protect the raised edges of cupped boards from foot traffic (which can break off the raw edges).

Do not to use heating, air conditioning, or other forced drying of wood floors. If the top dries out faster than the bottom, the difference in shrinkage will cause cupping of the floorboards. Be patient: Floorboards may take several months of drying before they are ready for refinishing. Consider buying a moisture meter to check the moisture content before oiling or using other treatments that will trap water inside the floorboards. Many finishes, such as varnish, will discolor and fail if applied to damp wood.

Ward Bucher is an architect based in Washington, D.C.

Before the Storm

Suppose you've heard from the news that a hurricane or flood is headed your way. What should you do to prepare for it?

- 1. First and foremost, get out way out. This sounds obvious, but a lot of people get killed by staying in their homes during a disaster. It feels so safe at home, it's hard to imagine the power of a storm that's coming.
- 2.If your house is on a beach or near water, open up the ground floor. Any object or house part that presents a barrier to the flow of flood-surge waters creates an opportunity for the water to damage the house or, in combined form, to move it. Open doors and windows and remove non-structural elements such as decorative lathing, which can impede water flow. Move furniture to the second floor or attic to protect it and clear the floor.
- 3. Tie the house securely to its foundation. Many houses on the islands surrounding Charleston were lost because they were only toenailed to the pilings that acted as foundations. Houses such as these should have thick, plate-steel straps designed and bolted to the piles and frames of the house. More conventional foundations may require anchor bolts or other systems.
- 4. Board up windows and doors. A \$20 sheet of plywood is a lot cheaper than new windows and interior finishes. A screw gun and power-driven screws make it easy to quickly attach the plywood and remove it later.
- 5. Take irreplaceables with you. There may be, literally, nothing left when you return, so carry out the photographs, business records, and other personal possessions that can't be replaced at any price.
- 6. Shut off utilities. In Charleston, broken water lines ran for days in some buildings, and many water-logged heat pumps were fried when the electric power came back on. The danger of a gas explosion is also great if pipes or appliances are damaged and start to leak after the storm.

Shut off the water and gas at the main valves, typically found where the lines enter the house. Throw the main disconnect for the electric service, the first such device after the meter. This may be a fuse box with a handle, a block of fuses that is pulled out, or a main circuit-breaker switch. If you're not sure you've got it, remove all fuses or turn all circuit breakers to the off position.

7. Take pictures. If your house is badly damaged, it may be difficult to convince the insurance adjuster what was lost without evidence. Also, photographs can be an invaluable guide when reconstructing missing features.

BOND-B.EAM CONSTRUCTION



Reinforced masonry for seismic damage

fter cleaning up from the October 1989 San Francisco earthquake, the initial structural assessment of our 1887, three-flat Victorian (the red and beige building in the photo above) indicated low-grade structural damage but nothing immediately alarming. Some floors seemed out of level, some walls seemed out of plumb. Framing that supports interior load-bearing walls showed random splits. Portions of the plaster in the middle-level flat had fallen off the wall and in other areas had separated from the lath. Most walls were criss-crossed with multiple

cracks. Despite the unsightly plaster damage, all of us could

plaster moulding and repaired cracks still displayed the effects of that past "big one."

As the roof and sewer system failed over the following months and data was gathered from many inspections by

remain living in the building. After all, it had survived the

big 1906 quake and several subsequent tremors. Displaced

As the roof and sewer system failed over the following months and data was gathered from many inspections by emergency agencies, insurers, and engineers, it became apparent that the house was in for a major rehabilitation and seismic upgrade. "A house built upon a rock..." — well, this one isn't exactly. Instead, the house sits on an unreinforced brick masonry foundation which examina-

tion revealed to be seriously compromised by the earth-

by Al Evans and Steve Santaguida

quake. The mortar, rumored to be composed of beach sand, just managed to adhere to the soft brick in places. Sub-surface areas of the foundation were cracked and sections had sunk into damp, sandy soil. Belowgrade sills suffered from dry rot and selected studs indicated the presence of wood-boring beetles.

Being an avid preservationist and do-it-yourselfer, it was difficult for me to face the fact that this job needed a contractor and was going to be a big project. First, the co-owners and I patched together a financial package from the Federal Emergency Manpower Agency, the Small Business Administration, insurance proceeds, and a home loan. Then, I teamed up with contractor Steve Santaguida to begin the long-term restoration process. We have put together this article after completing a critical early phase of the project.



Weakened masonry and framing typical of the ailing substructure we found in areas around the building.

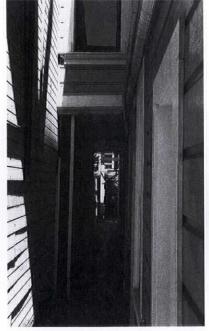
e decided to concentrate our initial reconstruction efforts on the breezeway wall, a structural support wall on the north side of the building. Inside, it defines part of the 3'-×-18' walkway alongside the ground-floor flat; outside, it sits on the lot line, often inches from the neighboring building. Though the foundation would have to be replaced in other areas of building,

inspection indicated that this straight, load-bearing section, untied to other foundation sections and uncomplicated by floor joists, was sufficiently intact to serve as candidate for restoration. Several factors needed to be addressed before

work on the wall began. What would it take to restore it; what would it take to make it safe; and what would it cost? We decided that bond-beam construction techniques would best meet the competing demands of preservation, safety, and economy.

Bond-Beam Construction

Bond-beam construction is a type of reinforced masonry where horizontal steel rods are grouted into cavities in Ushaped concrete



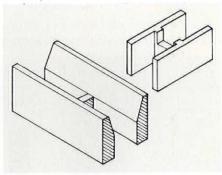
The breezeway showing the north wall (left) and floors overhead.

blocks to form a continuous beam. The system is regularly employed in concrete-block construction to build lintels for carrying the weight of a wall over a window or door. It is also one of several reinforced-masonry techniques for seismic-resistant building in use since the Long Beach, California, earthquake of 1933.

In our application, the completed system provides a rigid concrete-and-steel beam between the original foundation and the building sills, a continuous member that adds integrity to the otherwise unreinforced foundation. We also incorporated threaded fasteners to tie the house to the foundation and improve its earth-quake resistance. While the bond beam added 10½" of modern masonry to the height of the foundation, the need to meet earthquake standards, raise the sills above grade, and work within a limited budget made

some non-historic structural modifications mandatory. The process is applicable to poured-concrete foundations as

well as brick masonry. However, it is not recommended for a broken, jumbled, brick foundation that has suffered significant shifting and settling, or one that is stepped or terraced. In any event, an archi-



Two varieties of beam block.

tect or structural engineer should be consulted to determine the method's suitability for each project.

Tools and Materials

Our project required the following:

Concrete Beam Block We used 8"-×-8"-×-16" block, the same dimensions as standard block. Beam block is also available in 4" heights and with different web designs. It is sold by most large concrete-block suppliers.

Lightweight-Mortar Mix This mortar contains lightweight perlite as the aggregate and was easier to work with under the conditions of this project. We used Basalite brand premix (available at building- and masonry-supply houses). Concrete Mix Also a premix, it was used to grout the channel formed by the beam block.

Reinforcement Bar and Tie Wire Half-inch-diameter steel reinforcement bar (rebar) was needed to provide structural reinforcement through the bond beam. Our length estimates had to include an overlap of 20 inches (40 bar diameters) at splices. Tie wire was used to lap the rebar

and tie it to the threaded rod.

Hilti Injection System The Hilti brand HIT-C 50 fastening products are the high-tech subsystem we used in our bond-beam project. They provided the adhesive and hardware to stabilize the original masonry and securely connect it to the bond beam and sill. The system is available from local building-supply companies and is comprised of:

Threaded fasteners — We chose 3/4"-diameter, 30"-long, externally threaded rod used for masonry.

Sleeves — semi-rigid wire baskets that serve as porous containers for the adhesive mortar.

Epoxy adhesive mortar — adhesive

and hardener in dual tubes dispensed from a hand-operated gun. The epoxy cements the fasteners into the existing foundation and consolidates any porous areas of the masonry around the hole.

Construction Equipment A rotary hammer drill, air compressor and 10-ton bell-bottom screw jacks were essential on this job.

Procedure

The construction plan for our bond-beam project consisted of the following basic steps: 1) excavate and carefully de-

molish to expose

the top of the

foundation and

bottom of the frame wall: 2)

raise the wall 1/2"

off the foundation and temporarily

support it; 3) re-

move the wood

sill plate and stud

bottoms; 4) drill

holes into the ex-

isting foundation

and epoxy in

threaded rod an-

chors; 5) lay beam

block; 6) lay re-

inforcement bar

into block chan-

nel and grout

with concrete; 7)

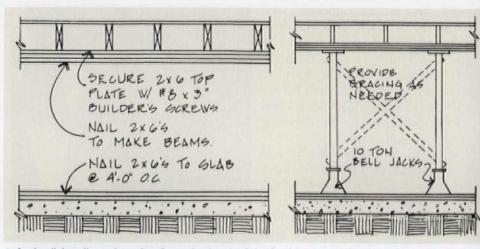
insert new sill and



The completed shoring wall, viewed from the next lot. The foundation runs down the middle of the photo.

bolt to foundation; 8) lower building, secure studs to new sill, and fill in siding.

To begin, we carefully removed the bottom 12" of the wall siding to expose the sill and the stud bases. We also removed 16" of the finish on the breezeway ceiling to provide direct access to the overhanging floor joists for lifting the building. The next step, jacking and building a



Left, the "plates" used to distribute the load of the building were built up from $2 \times 6s$. At right, the placement of jacks and jacking posts cut from 4×4 lumber.

temporary shoring wall, consumed the bulk of the project time and lumber. First, we built a top plate for the shoring wall by attaching three $2 \times 6s$ across the joists, forming a laminated beam to distribute the load. We used power-driven phillips-head building screws to draw the lumber snug against the joists and simplify later removal.

After this, we dropped a plumbline from the top plate to lay out the temporary sill plate of more $2 \times$ lumber. The bottom plate must be large enough and the ground below it firm enough to support the building. Otherwise, the jacks will drive the plate into the ground rather than raise the building. (Had the breezeway floor been soft or sandy soil and not concrete, we would have used 2×10 s or better.) Both plates were located roughly 10'' in from the wall — as close as possible but leaving enough room to get a saw behind the shoring wall.

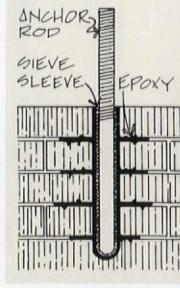
Building the Shoring Wall

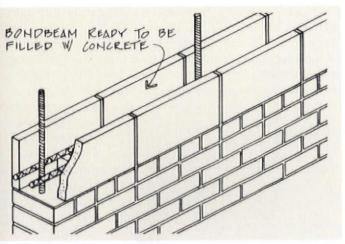
nce the temporary plates were in place, we

started jacking the building. We set screw jacks and top grade 4×4 jacking posts approximately every three feet along the temporary plates, making sure to keep jacks and posts dead plumb. After extending the jacks a 1/4 to 1/2 turn past contact with the top plate, we secured the jacking posts to the plate with stock angle connectors and crossbraced the posts where necessary to keep them from shifting.

Gradually, we raised the wall the required ½", turning the jacks slowly and

The HIT system anchors the rod with a wire sleeve and epoxy.





The assembled beam with rebar and vertical threaded-rod anchors ready for tying and grouting with concrete.

evenly. Our aim was to raise the entire wall section as one unit, thereby minimizing the stress put on interior plaster or working house parts such as windows and doors. During the jacking process we constantly monitored the jacks and posts for slipping or buckling and investigated the source of any sharp cracks or loud noises as soon as they occured. Structural failure is the other potential danger on a jacking job, and we kept close tabs on the overhead joists and their attachment. We worked cautiously and carefully, wearing hard hats and never leaving the jacks unattended. Past *OHJ* articles were a great reference at this point. (See "Heavy-Duty Jacks," July/August 1990 and "Techniques for Foundation Shoring and House Jacking," Jan/Feb 1983.)

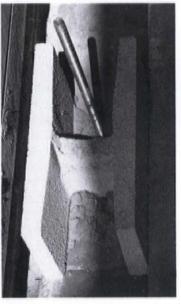
After having raised the building a bit and performed a little required leveling, we measured for 2×6 studs to build the temporary shoring wall. The temporary studs were placed plumb under the plate at the location of each floor joist and toenailed in place with building screws. Then the jacks were slowly lowered so that weight of wall

The relationship of beam blocks, wall studs, and threaded rods was crucial in planning the new work.

and load of the building was carried by the temporary shoring wall. (As the jacks were released, the angle connectors performed their second function by keeping the posts from falling unpredictably.)

t had been our plan to retain as much as possible of the original frame wall by removing only the bottom

101/4" of studs and siding to make room for the new beam. This dimension is based on the required clearance needed for mortar, beam block, and new sill lumber with 1/4" added for error. Using a chalk line, we marked the studs for cutting. Then, working from behind the shoring wall, the studs were first partially cut by running a circular saw (Skillsaw) along the chalked line and then finish cut through the remaining depth with a reciprocating saw (demolition saw or Sawzall) using a short



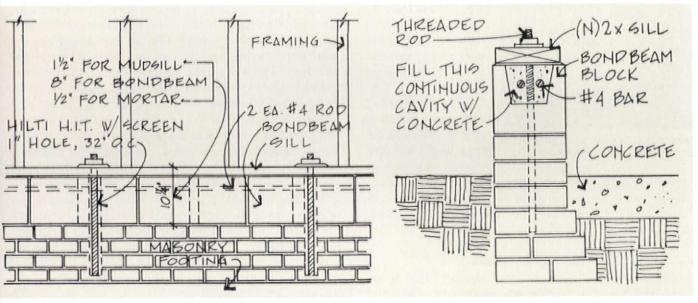
The beam block design we chose, straddling a threaded rod.

blade. This technique worked well to keep the stud ends as square as possible. However, our intention to use the shortened original wall was eventually stymied by the discovery of oddly configured and badly deteriorated framing, and we ended up replacing the studs on this project.

Preparing the Original Foundation

Installing anchors to tie the frame wall and bond beam to the existing foundation was a central part of the seismic

Cross-section of the completed beam and sill, showing threaded rod and rebar reinforcements.



upgrade. Holes for sieve sleeves were drilled into the foundation at 32" intervals so that they did not fall where the cross webs of the beam blocks would occur. In addition, the rods could not protrude under or close to where the wall studs would set on the sill. We judged this spacing by laying out a couple of beam blocks to get a sense of where the holes should fall, bearing in mind the restrictions placed by the block webs and eventual stud placement on the sill. As we had chosen 22-mm-diameter, 32-cm-length sleeves, we used a 1" diameter bit (i.e., a bit slightly longer and bigger around than the sleeve which the hole is to accommodate). Holes of sufficient depth were then drilled to accommodate the entire sleeve (engineers generally recommend rod penetration of 14"). Next, debris was blown out of the holes and they were cleaned thoroughly with compressed air aided by the use of an appropriately sized "bottle brush." Forcing air into a 14" hole filled with drilling residue can cause quite an eruption, and a dust mask and eye protection (as well as standing back) were a must.

The sleeves were gently guided into the holes by using a piece of threaded rod (the spot weld that closes the bottom of the sleeve doesn't tolerate much force). The epoxy mortar components were then interlocked and inserted into the dispenser to fill the sleeves with mortar. The epoxy mortar is stiff to work if the temperature is



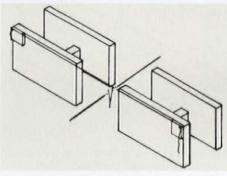
The completed beam with sill attached, still showing the end form.

below 70 degrees, so in cool weather we would leave the components in the sun or a warm room for an hour or so before assembling and using. The amount of mortar that needs to be inserted into a foundation hole depends upon the porosity of the masonry. By experimenting a little, we found that 14 "squeezes" applied the ideal amount. For our project, one combined tube of epoxy filled three holes. Last, the threaded rods were inserted into sleeved foundation holes, forcing mortar into the area

surrounding the sleeve, and helping consolidate the foundation. Immediately after a rod was inserted, it had to be plumbed and squared with the foundation as the mortar sets up fast.

Laying the Beam

Laying bond-beam blocks was just like any other blockmasonry project. The course was planned by positioning the blocks dry on the foundation, leaving a roughly halfinch joint between blocks. In our case, the layout of the block was not so accommodating as to start at the beginning of the foundation without rod-clearance problems. The solution was to shift the course and leave the gap at the end to be formed up later with concrete when we grouted



Mason's line stretched between blocks.

the assembled beam channel.

After planning, the actual masonry work began. First, the mortar was mixed to a workability that would hold its shape yet still be malleable—about the same

consistency as a slushy snowball. Then we laid a bed of mortar, set a block at each end of the course, and stretched a line between them as a guide for the course height. A piece of lath or shingle inserted under the line at each end kept it out of the work. Next, we laid the rest of the block, buttering the ends first and then plumbing and leveling each block in place. Afterwards, joints were struck with a jointer to dress them and the mortar was allowed to set.

To fill in the beam, two runs of ½" rebar the length of the course were laid in the block channel, one on each side of the vertical threaded rod. The rebar was also extended into the areas to be formed up to completely fill out the wall. All bars were tied with wire at splices and to the threaded rod. The concrete grout was mixed using enough water to give it a fluid consistency without "breaking up," so that it would flow readily into the beam voids. Then it was poured into the beam assembly channel, tamped, and leveled with the top of the block.

After the beam concrete had cured, it was a straightforward procedure to measure and bore holes in the new sill corresponding to the threaded rod, insert the sill, and attach nuts and washers. In areas where there were gaps between sill and bond beam, a little fresh mortar was added before bolting down the sill. The last step was to add the new studs, toenail the studs to the new sill, lower the building, and fill in the siding. Once the job was completed, only 3" of beam block was visible above grade, and this will be parged over in the future.

Later exploration of our project indicated that some other areas of the original unreinforced foundation were too damaged and deteriorated for bond-beam construction. As we continue the rest of the major restoration and seismic retrofitting, though, we plan to use bond-beam techniques on approximately 50% of the foundation. Bond-beam construction certainly takes effort, but in our case it has been worthwhile, providing economy over building a new foundation, while adding seismic reinforcement and retaining much of the building fabric. We think the method can be useful for a variety applications to treasured old houses and buildings.

hink been its clock Revival, than

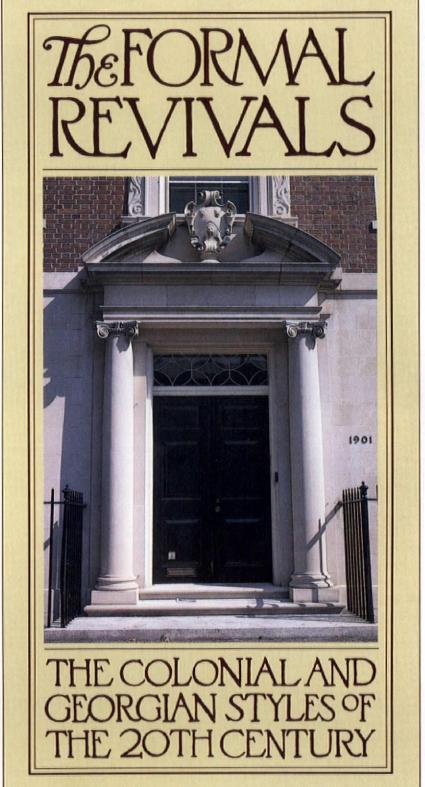
hink about it: More American homes have been built in the Colonial Revival style and its close relative, the more formal Georgian would look very much like the straightforward rectangular buildings that had inspired them.

By the time of World War One, however, houses were

in all the previous styles combined. Not since the Greek Revival has a single architectural idea so preoccupied the American public, or lingered so long on the architectural scene. For over a century, it has been first in the hearts of the American people.

There were really two phases of the Colonial Revival building boom: the one that flourished from the 1880s until World War One (see "Early Colonial Revival" in March/April 1990 OHI), and the one that took over the real estate market in the vears between the two world wars (circa 1920 to '40). Before World War One, the spirit of most American Colonial Revival houses was as much late Victorian as it was colonial. Few architects of that era wanted to design outright reproductions of formal Georgian buildings or colonial farmhouses, although enough research had been done to make line-for-line replicas possible. Instead, the emphasis was on creative and far-reaching interpretations of early building styles. Ornament was elab-

orate and overscaled, and building outlines were usually irregular and even eccentric. It would be years before houses based on Georgian- and Federal-period examples

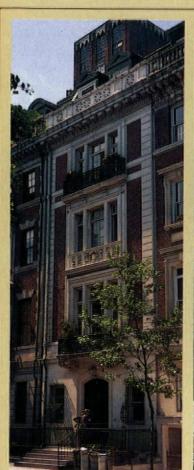


beginning to reflect more accurately on the outside at least America's early building heritage. The resemblance to clapboarded 18thcentury homes in New England, brick and stone mid-Atlantic farmhouses, and porticoed Southern mansions was growing clear. At any rate, it certainly seemed clear enough to millions of new homeowners as they headed, by automobile and trolley car, from the dark city rowhouses they'd been renting to their very own little colonial replicas on the new frontier: the suburbs.

NEW TRADITIONALS

As with the Builder Style, this was not an architect-driven period. There were, however, a fair number of large Georgian and Federal mansions designed by noted practitioners, including Waddy Butler Wood of Washington, D.C., Aymar Embury of New York, R. Brognard Oakie of Philadelphia, and William Lawrence Bottomley of Richmond. New England architect Royal Barry Wills also prominent toward the end of the period and into the

1940s. The study and documentation of 18th-century precedents was widely published to provide prototypes and inspiration for architects and builders alike. There were







Top, right: In a 1920s Washington, D.C., suburb, a replica of Virginia's 1806 Woodlawn Plantation house shows the thoroughness that can mark the re-creation of period houses. Bottom, right: Architect R. Brognard Oakie's own house in Devon, Penn-

endless publications by professional architects of designs for the new small house, along with advice to the home-builder, and a remarkable attempt by the American Institute of Architects-sponsored Small Homes Bureau to provide good architect-designed houses for the middle class. The earlier tradition of architecture by mail continued and expanded. Stock plans were widely available, a practice that

continues to this very day.

This was an era of considerable restraint in building. The approach to design had few surprises — what with war, depression, and galloping technology, the world provided enough of these — but offered instead a comforting sense of stability. Ostentation didn't play as well as it had in the exuberant years before the century turned, and a rich person's house was apt to look pretty much like that of his or her middle-class neighbor, only bigger. Although palatial Georgian mansions were built before the Depression, stylish Georgian facades continued later in smaller-scaled suburban houses. Even very large houses were now more likely to be based on old farmhouses, and they remained true to this source in proportion, material, detail, and style — in everything, that is, but overall size. An appearance of simple domestic comfort became the guid-

sylvania, is a masterful interpretation of an 18th-century Pennsylvania farmbouse. **Left:** The busyness of this city Georgian, with quoins and pilasters accented in ashlar, is reminiscent of the highly articulated architecture of Sir Christopher Wren.

ing rule for almost all houses.

In the case of small houses, the designs were similar because the builders shared similar motivations. By the 1920s, a lot of people needed homes quickly and cheaply, but they wanted their houses, no matter how small, to be comfortable and to appear substantial and dignified. What could be more dignified than houses like the ones yeoman farmers had occupied in the glory days of the new republic? Thus, the simplified colonial house replaced the Bungalow and Foursquare. Craftsman and Prairie School creativity was quickly forgotten as the "new" style spread.

VARIED INSPIRATIONS

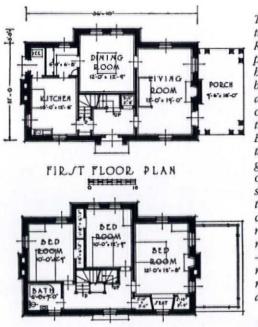


here were several strains of Colonial Revival architecture at work in the first third of the 20th century: There was the formal Georgian, based on English and American precedents, but brought down to a more modest scale to fit a world with few ser-

vants. There were the farm and village buildings of New England and the Germanic farm buildings of Pennsylvania, so far removed from their foreign precedents that they could only be seen as American. There was the Dutch Colonial house from the mid-Atlantic states, which even in its purest state was not exactly Dutch and got less so when it reappeared in the early-20th century. (One wag referred to the less-successful examples as "Such" Colonial.) Some Federal Revival houses reproduced more delicate features of the 1790-to-1810 period. Finally, there was the Southern Colonial, inspired by Mount Vernon on the one hand and columned antebellum plantation houses on the other. (If George Washington could dignify his house with a monumental two-storey portico, so could we all.)

These houses are distinguished from Colonial and Georgian Revival buildings of the late-19th century by more faithful interpretations of colonial features and details. The 18th-century farmhouse became increasingly important as a precedent. A minor variation was the "English cottage," which stretched both terms a bit, as it was not drawn directly from England (like Tudor or half-timber) but derived from the American farmhouse. The simple, distinctive, one-storey, frame Cape Cod cottage also received considerable attention at this point, and copies were soon built from coast to coast.

In shape, the buildings were generally simple rectangles and squares with wings customarily added at the sides rather than the front or back. Flat wall surfaces were occasionally broken by a one-storey bay or oriel, discreetly placed and always clearly functional. They were most often one-and-one-half or two storeys high, but side projections, such as porches and garages, might be only one storey, or

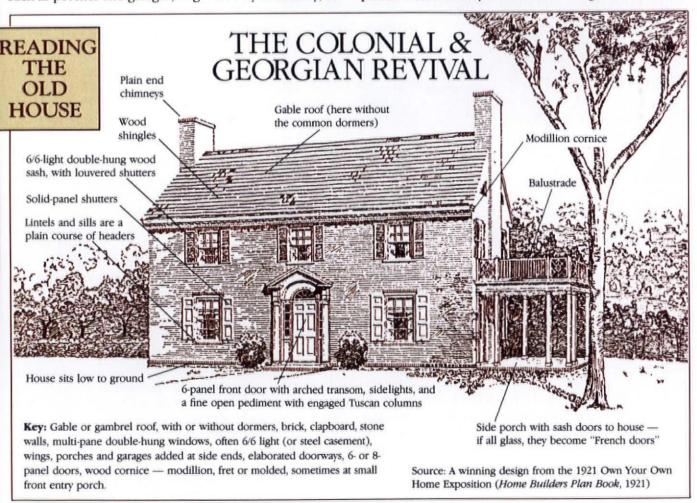


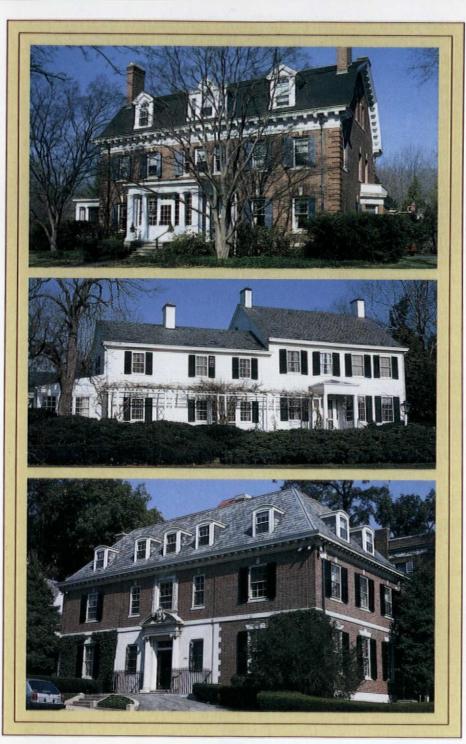
These 20th-century Georgian Revival floor plans (for the bouse shown below) are updated versions of an 18th-century layout. Breaking with the balanced geometry of the original, room sizes and locations are now carefully rearranged to fit modern living - especially the newly prominent kitchen and bath.

JECOND FLOOR PLAN

if two, lower in height and set back from the main block of the building.

Rooflines of colonial houses were traditional gables (in most cases peaked less sharply than the originals) or gambrels, usually running parallel to the street. Dormers were placed wherever they were needed to light the bedrooms





on the second floor. The roofs of Georgian houses might be hipped or flat. Slate was a nice roofing material for those who could afford it, and was frequently used. Wood shingles, also standard, were eventually edged out by asphalt shingles. Chimneys were prominent but plain.

DETAIL DIFFERENCES

There was not much ornament in these revival houses, but what's there is likely to have been more accurately recreated than that found in earlier interpretations. Just as with the originals, the major emphasis was on the doorway. Even on very large houses, the only elaborate feature was likely

Top: While not based on any particular building, this brick bouse in Morristown, New Jersey, clearly evokes the Georgian style with such details as the beavily accented doorway. Middle: This fine example of a period farmbouse was rebabbed, expanded, and updated in the Colonial Revival style by Aymar Embury in 1935. Bottom: Almost the real thing, this large, formal Georgian Revival bouse has an ashlar limestone entrance and a massive pediment above the front door (see photo, page 49).

to be a well-designed frontispiece. Whatever the size of the house, there was almost always some little fanfare at the front door - a hooded entrance or maybe a pediment (which generally got simpler and more stylized as the price of the house decreased). Frequently, there were columns, but rarely anything fancier than the plainest Doric (perhaps assisted by fluted or reeded pilasters). On most houses, the columns were actually square posts. Sidelights and a transom, or in the more pretentious models, even a semicircular or demilune fanlight with tracery. are found. In a Georgian house, the doorway was elaborated, perhaps with smooth ashlar stonework on the wall or with a palladian window upstairs.

The windows were larger and more plentiful than in real colonials, but smaller than they had been in the late-Victorian version. Small-paned, six-oversix-light, double-hung sash was ubiquitous. Casement windows were used less frequently, but when they were, they were usually in multi-paned steel sash, a modern touch widely used in this period. Windows were often in pairs, occasionally in triples, and they usually had shutters that were properly scaled to the window size, whether they were functional or not. Depending on the elaboration of the design, there also might be a string course between floors or a projecting-base water table in molded brick or stone.

Even when porches were not particularly authentic, they were too useful and pleasant to give up entirely, so they were worked into the scheme whenever possible. They were still, of course, much smaller and less forthcoming than their Victorian and Edwardian predecessors had been. Usually, they were placed at one end (sometimes both ends) of the house and enclosed just enough to give them an air of being a proper wing. French doors opening onto side porches, common in architect-designed houses, were a pleasant amenity that peaked in popularity in the 1930s and waned in the '40s. True Southern colonial houses did, of course, often have porches spread across the front of

Top: This Dutch Colonial in Madison, Indiana, has a fine side porch sporting a roof decorated at the rafter ends for a pergola effect. Middle: Colonial Revival houses need not be massive, as this typical one-storey English cottage in Strasburg, Virginia, shows. Bottom: This simple Dutch Colonial is really a two-storey, gable-roofed house with applied Dutch gambrel on the ends. Note the pent eave between the first and second storeys and the coved hood over the front door.

the house, but in the revival era, two-storey porches were held aloft by columns as thin as storks' legs. Most front porches were nothing more than small entrance porches.

UP-TO-DATE INTERIORS

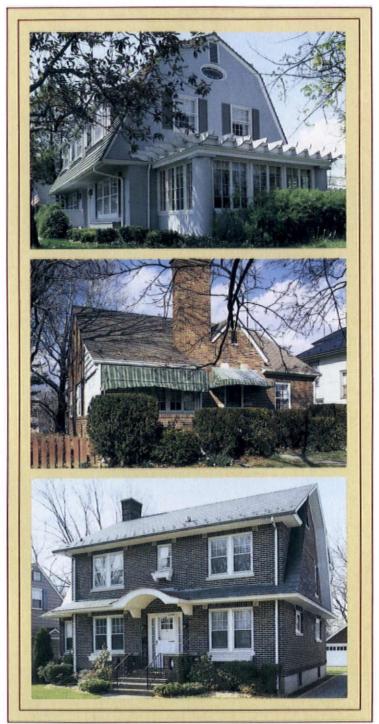


loor plans were simplified (gone was the cherished inglenook of previous decades), but they managed to retain much of the easy spirit that had begun to develop in the late-19th century. Although the exterior of the house might be rigidly

symmetrical, the interior was arranged for economy and the convenience of the occupants. Traditional center and side hall plans were frequent, but so too were front doors that opened directly into the living room, saving space and construction costs. For similar reasons (and to foster a cozy, old-time feeling), ceilings were lower than they had been for years. Most folks wanted a fireplace, even if the logs it burned were fueled by natural gas.

Corner cupboards built into dining rooms and bookcases in living rooms made the most of smaller interior spaces. There were clothes closets deep enough to receive a wire clotheshanger in every bedroom and linen closets near the bathroom. (And there were more bathrooms, better located, to boot.) Now that cooks and maids were mostly only memories and electrical appliances promised independence for the housewife, the kitchen emerged from the rear to become an integral part of the house and family living. Often it included a snug little breakfast nook to encourage togetherness. For the first time, basements were finished off to provide modern laundry and recreation rooms, as well as furnace rooms. These were updated with automatically stoked coal or oil furnaces that fed hot-water radiators in each room, replacing the old centrally-located monster furnace with octopus hot-air gravity ducts.

The preferred primary building material was red brick, or at least red-brick facing over frame construction, but there were many clapboard- or shingle-covered buildings. Used brick sometimes lent color and texture to walls, and once in a while "clinker" brick with deeply raked joints exaggerated the textured effect. When stone was used (especially in mid-Atlantic farmhouses), it was usually rubble or dressed rubble, often called fieldstone. In imitation of buildings that had evolved over many years, brick main blocks were frequently combined with clapboard wings to give contrast and interest to sedate exteriors. Newer building materials, such as hollow tile and concrete block with



stucco or brick facing, were used freely. Some houses even had cement floors instead of the traditional wood.

This was also a time of much re-building of simple period houses into comfortable modern "historic" homes. Many modest, colonial-era farmhouses were expanded to several times their original size, but the historical character of the building was often exquisitely controlled.

The Colonial Revival survived the building hiatus of World War Two virtually unscathed, if slowed and somewhat compromised by the post-War development of the split-level and the ranch house. Still with us today, it promises to stretch into the 21st century and beyond.

PICORATIVE LINE OF THE PROPERTY OF THE PROPERT

It's hard to ignore the ceramic splendor of an elaborately tiled vestibule or fireplace surround. Never mind a crack here, a chip there, a misguided coat of paint or two, old tilework is like a polychromatic telegraph from the building's past. Whatever the language — Victorian, Art Nouveau, Arts and Crafts, or Art Deco — the message is clear: "Save me!" Until recently, this was easier said than done.

Time was, you had to rely on antique architectural salvage shops for replacement tiles if you hoped to restore a tile disaster. Now, scores of ceramists and tile manufacturers are geared up to help rescue damaged floors, walls, and fireplaces anywhere in America, and tilework can almost always be revived, repaired, or replaced. Need a few square feet of encaustic floor tile?

Missing a couple of pieces of bullnose molding? Chances are, you can find a replacement in stock or as a custom reproduction.

North Americans have used ceramic tiles in prosperous homes since the 18th century. Fireplace facings of handmade Delft, for example, were imported from Holland or England by those who could afford them. In the mid-19th century, however, decorated ceramic tiles were sought — nay, demanded! — for use anywhere and everywhere in the house. A kind of tile mania began in the 1850s, which flourished unchecked from the 1870s through the early-20th century. The fashion remained strong until the 1920s and '30s, when tiles were relegated to inconspicuous and mostly utilitarian roles in bathrooms and kitchens.

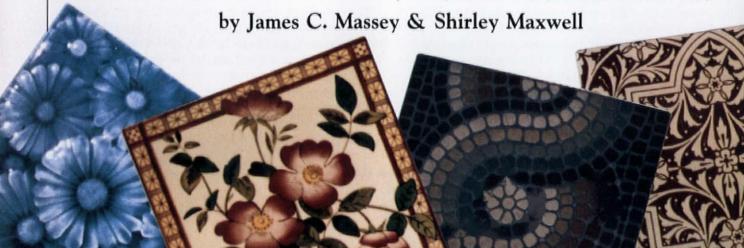
Left to right: typical circa-1880s embossed enamel-colored majolica tile; reproduction floral Victorian tile; mosaic-effect encaustic floor tile; reproduction Gothic Revival tile in traditional encaustic colors; early Art Nouveau-type English tile dating to 1875; reproduction Art Deco tile.

Art for the Victorian and Arts & Crafts Home

Why all the excitement about ceramic floor and wallcoverings? For starters, tiles were beautiful, durable, sanitary, and easy to clean and care for. Individual tiles could be (and often were) set out as ornaments like vases or pottery. En masse, tiles were suitable for floors or wainscots in high-visibility, hard-wear areas such as entryways, as well as for grimy spots like fireplace surrounds and hearths. They could be used on furniture, protecting and beautifying tables, sideboards, and dressing tables. They were good in wet, germ-y places like bathrooms and kitchens. They were cheap enough for use in modest homes and artistic enough to suit more expensive tastes. In short, they suited Victorian goals of beauty, utility, sanitation, and decoration.

Tile Renaissance

The tile revival began in the 1850s, when reborn interest in Gothic church architecture spurred English efforts by neo-Gothic leaders like A.W.N. Pugin and his pottery-owner friend, Herbert Minton, to re-learn the lost art of manufacturing encaustic tiles used on medieval cathedral floors. Soon public buildings in England and the United States were full of spectacular tiles, and homeowners wanted their own versions. The tile craze spread to the United States in the wake of the Arts and Crafts movement, popularized by ceramic exhibits at Philadelphia's Centennial Exposition of 1876. In tile making, as in all the decorative arts and architecture, Arts and Crafts principles stressed individual craftsmanship. To tile manufacturers, however, the big question was not artistry but speed: how to make enough tiles to meet popular demand? Mass production was the only answer, and the tile industry was quick to adopt the necessary technology (see sidebar, page 56). Even so, there was more than enough work by the 1880s to keep hundreds of English and American tile companies





busy. While English firms dominated the industry for the first three decades, the United States seized its own share of the market late in the 19th century, with patterns and glazes aimed at American buyers.

In such an active market, tile makers came and went, but among the most important and enduring names in England were Sadler & Green, Minton's China Works and the Art Pottery Studio, Minton Hollins and Co., H & R Johnson, Pilkington's Tile & Pottery Co. (still around as Pilkington's & Carter), Maw & Co., and Wedgwood.

American competitors included such firms as Star Encaustic Co., Pittsburgh (which in 1867 became the first American company to make encaustic tiles); Providential Tile Works and Trent Tile Co., both of Trenton, New Jersey; Low's Patent Cut Tiles, Chelsea, Massachusetts; Cambridge Art Tile Works, Covington, Kentucky; Rookwood Faience & Pottery, Cincinnati, Ohio; Grueby Faience Company, Boston, Massachusetts, est. 1891; Alhambra Tiles, Newport, Kentucky; American Encaustic Tiling Co., Zanesville, Ohio; Pewabic Pottery, Detroit, Michigan (in practice today); Hartford Faience, Hartford, Connecticut; Hyzer & Llewellyn, Philadelphia (one of few in practice before 1870); and the Moravian Tileworks, Doylestown, Pennsylvania (in production again today).

Tile Technology

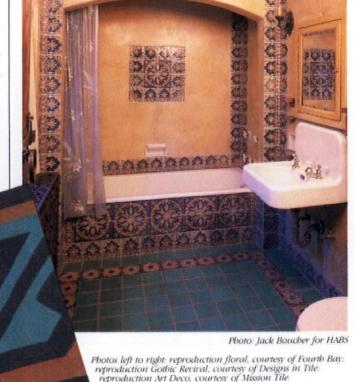
Of the many types of tiles, these are the ones most commonly found in Victorian and post-Victorian houses (all available as reproductions today):

Encaustic (or inlaid) tiles were created by filling a shallow indentation in an unfired tile with semi-liquid clay of a different color. Intended mostly for floors, they were usu-

Top right: superb fireplace surround in Philadelphia's c. 1875 Potts House. Middle: iridescent blue Craftsman tiles in the Stickley House in Morristown, N.J. Bottom: 1920s American tiles achieve a Moorish effect in the bathroom of Death Valley's Scotty's Castle.







The Art of Making Art Tile



The first modern ceramic tiles — encaustics — were wet clay that required a lengthy drying period before firing and decorating. A "dust-press" technique (patented in 1840 and refined in 1863) speeded the process by

using slightly dampened, compressed clay dust. At least two kiln firings (often three or four) were needed to produce a finished decorated tile: the first to make the biscuit, a relatively soft, porous, plain tile; a second after the tile was decorated; a possible third after the glaze (if any) was applied. A second decoration might be added over the glaze and the tile fired one last time. Some tile companies made but did not decorate tiles. Some decorated tiles they bought from other companies. Some did both jobs.

Glazes were often supplied by specialty companies, but some tile manufacturers developed their own distinctive lines of colors and finishes. At the Moravian Tile Works, Henry Mercer's experiments in the early 1900s resulted in 24 glaze colors based on his study of Roman, English, German, French, Spanish, and Italian pottery practices, as well as Pennsylvania's early Moravian potteries. Pewabic Pottery was known for the iridescent glazes developed by one of its founders, Mary Chase Perry. Lustre finishes, using metal oxides, added glamour to some lines. Uneven, pebbled finishes made footing safer on floor tiles. In addition, color was often added to the clay itself.

Handpainted tiles varied enormously in quality and style, from fully band-rendered to stencil to paint-by-number. Early transfer-printed tiles mimicked encaustic tile patterns and colors. Incised decorations cut into the surface of the tile might also be handpainted within the lines. Sgraffito tile designs were scratched through one or more layers of colored slip to reveal the base color, and tube-lined designs were formed by outlining the design on the tile with a sort of clay "icing," then filling in between the raised lines with colored glazes. Figural tiles (depicting people, gods, animals) might be embossed, hand painted, or transfer-printed. Although "Persian" tiles attributed by the sellers to William Morris (giant of the English Arts and Crafts movement) were sold in the United States well into the 20th century, the few tiles Morris himself designed were mostly medieval-style, two-color encaustics. It was his followers, particularly the artist-craftsman William De Morgan, who most influenced tile decoration.

In the 1870s, flat tiles with pictorial designs were popular. In the 1870s and '80s, transfer-printed designs often featured sunflowers (trademark of the prevailing Aesthetic mode), lilies, birds, and bamboo. Asymmetrical Japanesque designs on flat tiles were popular. Realistic birds and flowers were also favorite motifs of the period. Turn-of-thecentury designers liked stylized floral designs with flowing Art Nouveau lines on to 1915, and these were produced mostly in solid or mottled colors with interesting matte glazes. The Art Deco designs of the 1920s and 1930s were often spectacular, but there wasn't much tile production going on by that time.

ally not glazed. Early encaustics had a reddish-brown or cream-colored body with a black insert; later ones had up to five colors. Plain or "geometric" tiles (no inserts) were similar to encaustics. Often used for floors, they were



Monocrome-glazed embossed majolica tiles are used for the wainscot in this bandsome Haddonfield, New Jersey, vestibule. The floors are of encaustic tiles.

sometimes laid in pre-formed mosaic-like patterns. Most common from circa 1830 to 1860.

Majolica tiles (named for a fine, highly glazed pottery made in Maiorca) came in two basic types. Enamel tiles were designs painted in opaque colors on flat or low-relief tiles before glazing. Embossed tiles were coated with high-gloss translucent glaze in a single color. Art Nouveau tiles, often with "tubelined"decoration, were generally in low relief. Majolica

tiles were common from about 1850 until 1915.

Transfer-print (and later lithographic or photographic) tiles, the most numerous, were decorated with line drawings that were sometimes handpainted within the lines. Transfer-print tiles are found in every period of tile use, even back to the 18th century.

20th-century tiles from art potteries featured remarkable glazes — glowing colors that might be solid or mottled, and interesting finishes ranging from a hard glossiness to a soft, suede-like surface. These were an important part of the American Arts and Crafts movement and were common from about 1890 until the 1920s.

The four types are somewhat sequential, but there is a lot of overlap, particularly among the majolica and transferprint tiles.



What to do if you have tilework in need of rescue? A lot depends on how conspicuous and how historically significant the feature you want to repair or restore is. Simple repairs, like repointing a limited amount of

deteriorated grout or resetting a few loose tiles, can be do-it-yourself projects. Extensive repairs, such as replacing or resetting many tiles or repointing large sections of tilework, should be done by experienced tile setters.

Maybe it's only dirty. To clean glazed tiles, first try the gentlest approach, such as an all-purpose cleaner on a damp sponge. If that doesn't do it, move up to a non-abrasive cleaner like Bon Ami or Ajax Liquid. For many

years of ground-in dirt, you may need to use a poultice to keep the cleaner in place for an extended period: 1) Spread on a coat of undiluted neutral soap, such as Fels Naptha or an animal-fat soap, and let it stand for several hours. 2) Wet the tile with more soap, this time mixed with warm water. 3) While it's still wet, scrub with a stiff brush (not a wire brush) and scouring powder. 4) Sponge this off with lots of water, then towel-dry the surface. Most glazes can withstand this kind of treatment, but do a small test patch in an inconspicuous area before starting a large job. You can use these methods on unglazed tiles too. Or, spread on a paste of scouring powder and water, let it sit for five minutes, then scrub with a brush, rinse, and dry.

Chlorine bleach and hot water will remove many stains and brighten tiles. Let it stand a few minutes, then rinse and dry. For mildew, mix one quart bleach, three quarts water, and three ounces trisodium phosphate

(available at hardware stores as TSP). Scrub it in, scour with scouring powder, rinse, and dry. To clean plaster off loose tiles, soak the back of the tile in plain water, but don't submerge the tile. (You don't want too much water to accumulate directly behind the glaze.) Most glazes can withstand this kind of gentle cleaning, but it's better to ignore resistant cement than to risk chipping the face of the tile. Paint can usually be scrubbed off of hard glazes without using a paint remover. (Use TSP here if necessary.) Repointing is a little trickier, but not much. Historically,

An early encaustic floor tile at the Willows in Morristown, N.J.





Early-20th-century American art-pottery tiles: notable for their splendid colors and glazes.

mortar was portland cement mixed with sand. This is still a good combination, easy to come by pre-mixed at tile supply stores. (Check with your dealer to see whether sanded epoxy, furan grouts, or special additives are appropriate for your particular job.)

Don't make repointing any harder than it has to be. Leave sound grout alone, but do remove any loose grout before you start repointing. This is important! Crumbly old grout will weaken the new stuff and make it look lumpy. Polish any grout residue off the tile with a dry cloth, but don't use detergent on the tile until the grout is really dry usually 30 days or so after repointing. (For a good introduction to basic regrouting, see "Renewing Old Bathroom Tile" in the March 1984 OHJ.)

Want to reset a few loose tiles? You can probably handle that job too. The trick is to match the joint size exactly, because small differences will show. When you're replacing old tiles with new ones, the bedding may need to be built up a bit to compensate for variations in tile thickness. Modern tiles are thinner, but stronger, than old ones.

Mortar color can be a bear to match. Not all grout was bright white to begin with, and time and grime have unpredictable effects. It's best to live with slight color differences until you see what ordinary household dirt will do for them. If the mortar was originally colored, experiment with pigmented cement or limefast color additives. In any case, avoid the dead gray of portland cement.

Some flaws you can fix and some you can't. Clean breaks can be repaired with epoxy. In a pinch, any chips that you can't ignore can be touched up with epoxy and colormatched enamel — often preferable to replacement, because removing one tile risks damage to adjacent tiles. Crazing (a network of tiny cracks in the glaze) is a harmless result of firing or aging. Learn to love it. The same is true of small flaws in the glaze, such as runs or holidays (missed spots), or specks and color variations caused by impurities in the clay or variations in firing temperatures.

Looking for Replacements



If you think reproduction tiles sound expensive, take a look at what today's collecting craze has done to the prices of old ones! The usual standbys — antique shops and architectural salvage dealers — are still good

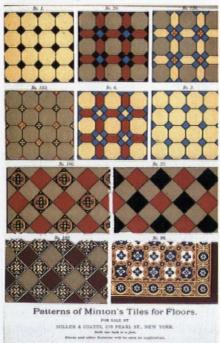
sources, but not cheap anymore. Among the reproducers, not all modern tile companies do small custom jobs, but you should be able to find almost anything you need. Some 57 new tiles are line-for-line replicas of antiques, others are modern adaptations of antique designs, still others are completely new designs or colorways. While only line-for-line reproductions are appropriate for historically accurate restorations, there are many attractive adaptations of period designs, which would fit less historically sensitive old-house projects. It's hard to gauge quality from a catalog, so invest in a sample tile or two to determine its suitability before going ahead with your project.



Good reproduction tiles will exactly match the originals — at least in size and shape. They will be very close in color, surface, and texture of the glaze used on the old tile (matte finished, glossy, pebbled, or smooth,

for example). Glaze matching is the hardest part of the tilemaker's task, so don't expect total perfection. The decoration (high or low relief, incised, or flat) will be carefully duplicated.

But face it, new tiles — no matter how well done — will never be identical to the old ones. Brenda Bertin, a Port Washington, New York, tile designer who specializes in reproducing and restoring tile features, suggests that the best way to blend old and new work is to have a good tile installer remove the old tiles and place them together in the most conspicuous place. Then, as far away as possible from the old tiles (preferably around a corner), put all the new tiles together. This little subterfuge should ease the



A variety of Minton floor tiles were featured in this mid-19th-century book plate.

eye past any minor differences. (If you're really determined, really careful, really lucky, and not too particular about exact matches, you can even try making replacement embossed tiles yourself. It should convince you the professionals are earning their prices.)

Collecting individual antique tiles is fun too, and quickly leads to a feel for authenticity. You can display your finds in a variety

of traditional and non-traditional ways. Part of our collection of majolica and transfer-print tiles makes a colorful border for a wall-to-wall towel bar in the master bathroom; a narrow strip of small encaustic floor tiles enlivens a kitchen wall. Projects based on mostly modern, plain white or colored tiles — in bathrooms, kitchens, or fireplace surrounds, for example — often benefit from the addition



"Harder than marble and very durable," claimed the Grueby Faience Company of its red clay tiles.

to pay from \$10 to \$25 each (\$40 to \$100 per square foot, if you can find matched ones in quantity). Tiles from the best or best-known manufacturers (Wedgwood and Rookwood,

of just a few an-

tique tiles. For

ordinary 6"-x-

6" antique tiles,

you can expect

for instance) cost more, and good figurals or scenics command premium prices.

A wonderful source of information on all aspects of tiles is the Tile Heritage Foundation, a non-profit corporation for research and preservation, which publishes a quarterly bulletin and also sells books and reprints (P.O. Box 1850, Healdsburg, CA 95448; (707) 431-8453).

Suppliers

Bertin Studio Tiles, 10 St. John Pl., Dept. OHJ, Port Washington, NY 11050; (516) 944-6964. Specializes in reproduction pressmolded tiles for use in new projects and restorations with 20 glaze colors of varying depth and brilliance.

Deer Creek Pottery, 305 Richardson St., Dept. OHJ, Grass Valley, CA 95945; (916) 272-3373. Accidental heir to tile molds used by California architect Julia Morgan (San Simeon, the Hearst castle). Designs in Tile, P.O. Box 358, Dept. OHJ, Mt. Shasta, CA 96067; (916) 926-2629. Mostly custom work; specializes in reproductions.

Wide range of art-tile periods and styles.

DeWittshire Studio, 104 Paddock, Dept. OHJ, DeWitt, NY 13214; (315) 446-6011. *Handpainted designs overglazed on modern 6"*-×-6" tiles; custom work.

FerGene Studio, 9986 Happy Acres West, Dept. OHJ, Bozeman, MT 59715; (406) 587-3651. *Reproduction Victorian and turn-of-the-century fireplace tiles; some custom work.*

Fourth Bay, 10500 Industrial Dr., Dept. OHJ, Garrettsville, OH 44231; (216) 527-4343. Reproduction Victorian tiles from England sold through U.S. dealers. Specializes in fireplace sets.

Fulper Pottery, P.O. Box 373, Dept. OHJ, Yardley, PA 19067; (215) 736-8512. Produced mostly pottery, but has begun making tiles using 65 turn-of-the-century glaze recipes.

H & R Johnson-Richards Tiles, Ltd., 190 Highway 18, East Brunswick, NJ 08816; (212) 245-2295. Formed in 1968, an amalgam of many English tilemakers — H & R Johnson, Richards Campbell, Maw, Minton Hollins, Campbell, Malkin Edge, Sherwin & Cotton, and T & R Boote.

Materials Marketing Corporation, 922 Ison Rd., Dept. OHJ, San Antonio, TX 78216; (512) 524-3800. Reproduces Mission tiles as well as Victorian and Art Deco patterns.

Moravian Pottery and Tileworks, Swamp Rd., Dept. OHJ, Doylestown, PA 18901; (215) 345-6722. Henry Chapman Mercer's firm, now reopened as a living historical museum.

Pewabic Pottery, Inc., 10125 E. Jefferson Ave., Dept. OHJ, Detroit, MI 48214; (313) 822-0954. Custom tile design from a bistoric name in Arts and Crafts tiles.

URBAN-PLIGHT

ometimes the most memorable experiences in life are those which include the highest highs and the lowest lows. Taken together, happy and sad memories make the goals reached in the process seem all the more rich. Such was my old-house living experience.

In July 1983, I first spied my future home, in the Soulard Historic District of St. Louis. This urban neighborhood of 19th-century red brick row houses and townhouses was improving, but the immediate area around "my" house was still pretty desolate: mostly empty, burned-

was still pretty desolate: mostly empty, burnedout structures interspersed with weedy vacant

lots. Despite these slum conditions, developers using historic-house tax credits were busily purchasing buildings nearby. It looked like a promising location.

My house was one of the few still-occupied buildings, and its relatively ornate facade caught my eye. The house originally was constructed circa 1850 as a Federal-style flounder house. About 1890 it gained an elegant front addition and a mansarded third storey, which doubled its size. The resident/owner was an unhappy seller threatened by foreclosure. To anyone who would listen, he convincingly swore, "Somebody better buy this place, 'cause I'll burn it to the ground before the bank gets it!" What a sales pitch! My savior impulse set in.

After the big purchase, I giddily set about drawing plans and setting budgets with all the innocence of an amateur. How little I knew. The

first real task was to finish digging out



Left: an early shot of my house on its not-so-inviting streetscape.

Below: a page from the 1875 Compton & Dry pictorial survey of St. Louis. My house is highlighted.

the pumped-dry basement and to pour a concrete floor. Sadly, no one had explained to me the importance of details like 'drainage tile' and 'sump pump.' As with nearly everything else about renovating an old house, I would learn the facts the hard way.

aiting for approval of my plans meant a frustrating four-month tangle with the City of St.

Louis regulatory octopus. But I got that hard-won slip of paper: my building permit. In the summer of 1984 I qualified for a construction loan, and finally it was time to turn my drawings into reality. But by then, the adventures already had begun.

In May 1984 I gutted a good portion of the whole 11-room house. Let me pause here to address *OHJ* readers who cringe at this kind of rehab. Careful restoration of historic interiors is wonderful when there is something to preserve. But there's a big difference between a

neglected but intact historic interior and a ravaged and vandalized one. Here the subject was a 130-year-old, inner-city, working-class townhouse with few notable original features. In addition, the former owner had cannibalized much of the interior for fire-wood the previous winter, and had cut several big square holes in the floors in his version of "solar heating." Frankly, there was not much left inside to restore.

In my case, the mission became to save the lovely exterior and to recreate a charming, historic interior, using any original material I could save. This included much of the woodwork, a couple of mantels, one antique light fixture, a clawfoot bathtub, all the old doors and transoms, some century-old floorboards.

and the original windows from the front facade. The rest had to be tossed.

A vague sense of foreboding accompanied this process: As the house was cleaned to its bones, I saw how unsound some of those bones were. Termites had invaded the rickety back porch; weathered bricks in the rear wall crumbled into loose red dirt when touched; and when disturbed, one entire chimney came roaring down in an instantaneous imploding collapse. But armed with my bank loan and the full-speed-ahead, ignorant bliss of the novice, I sent four different crews into battle late that summer. In this mad renovation choreography, the brick crew dismantled the rear wall while electricians installed a permanent electrical service while the HVAC man installed a new furnace in the *again*-pumped-dry basement. Soon the plumber joined in, soldering new

When I look back on that time now, it seems a wonder that I didn't quit. But I felt a palpable sense of responsibility to this mess of a house. I had reduced it to its rubbled state. If I didn't pick up the pieces, who else would or could? copper rough-in plumbing. For a while, actual progress occurred: Wall framing gave definition to proto-rooms and several electrical circuits replaced the one temporary plug-in.

Then my carpenter and my brick mason together pulled me aside: Things were

not good in the back of the house. The razing of the rear wall revealed serious termite damage all the way up to and including the second-storey roof. In addition, the HVAC man had inadvertently undermined an adjacent interior brick fire wall in creating holes for his duct work. Now that wall had to be removed as well.

My confidence as combination general contractor/design consultant/executive floorsweeper was unravelling fast. In looking for termite evidence we found further brick rot. Removal of more crumbling brick revealed more wood damage, and so on in a descending spiral that all old-house restorers and *OHJ* readers know as the "mushroom factor" or "domino effect."

The bad news kept coming. I needed a new water service if I wanted sufficient pressure for the third-floor bath: \$2,000. My stupid pump quit and the basement flooded AGAIN, this time threatening my new furnace. The old

sewer clogged and I needed a new one lateral to the alley: \$1,500. And some heel was helping himself to my stacks of cleaned bricks!

When I look back on that time now, it seems a wonder that I didn't give up and quit. But I felt a palpable sense of responsibility to this mess of a house. I had reduced it to

A view of my master bedroom as warebouse/workroom: Note the as-yetunrestored old tub and mantel (also shown bottom right, next page). its rubbled state, and if I didn't pick up the pieces, who else would or could? Most important, the emotional pull of my imagination kept reminding me of the charm of the eventual finished product. It demanded that I render reality

to match my mental ful they were!

nation kept me going junk and all. and somehow the house was put back together that fall. The restored exterior walls now were framed. sheathed, and covered by brick veneer. The floors and roof structure were rebuilt, and new flat roofs soon sealed out the rain. Windows - some replacement, some restored were installed, and every one of them fit! As winter's first hard freeze arrived, I finally could sweep the soggy leaves from my floors.

At that point the loan money was gone, and so went my contractors. I was nearly broke, paying my new monthly mortgage on a still-not-livable old house. "Budget overrun" had a personal new meaning. Ouch!

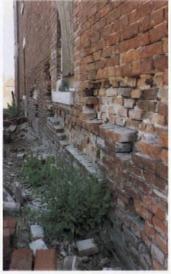
I was determined to live in my house, so I installed some insulation and improvised a primitive but working third-floor bathroom. I moved into my homesweet-wreck on March 17, 1985.

Living in my thirdfloor home was fun at first — an adventure, like camping out. My bed, lamp, and table sat in the middle of a "room" with bare stud walls, a fiberglass ceiling, and dusty plywood floor. I literally could step through the wall

into my "bath," which featured the same see-through character. With the addition of a microwave oven and my college refrigerator, the bath doubled as a "kitchen." At 56 degrees, these unlivable living quarters were the warmest

pictures. And wonder- Clockwise from top left: my kitchen-to-be; brick repair work in progress; the rear wall at its lowest; my makeshift "see-through" bath during the live-in-the-wreck years; my post-restoration quarter-sawn oak This potent combi-mantel; the first-floor sitting room with salvaged pocket doors; the same sitting area as I inherited it -















rooms in the house. And in my sixth week of old-house living, I enjoyed the luxury of hot water. What fun!

After the first month or two, however, the novelty wore off as my renovation work trudged along in slow gear. During the following summer I sweated miserably in my humid third-floor hotbox, the window fan overwhelmed by the Midwestern sun blasting on the roof just overhead.

y sense of humor, up until then my best partner, seemed destined to be alternately frozen and fried. But despite it all, I finished restoring these two rooms by January, 1986. To celebrate having finally accomplished something that other people could appreciate, I hosted a "room-warming" party.

The five years between that event and now are somewhat blurred, like the ups and downs of a roller-coaster ride. There are memories of framing new closets, rehanging old doors, running more wiring, and so on. Rooms gradually became well defined and less cluttered as I used up the loose building materials I'd previously saved and stored. Suddenly in place, for instance, was the original old woodwork lovingly gathered from my house as well as what I'd scored at two local architectural-salvage firms. Still, the old stuff only covered about half, so I had to buy similar, new fir trim from a lumberyard specializing in historic-style woodwork. I gained new insight into the hundreds of feet of trim

consumed by an old house!

During these "livein-the-wreck" years, my house sucked the lifeblood out of my bank account like a greedy vampire. My social life virtually died. And due to my lack of kitchen facilities, my diet degenerated into junk food.

Happily, Mom's home cooking and a perverse desire to persevere - kept me going. I rebuilt the rotted dining-room floor using old tongue-and-groove pine floorboards saved during the initial phase of work. I trashed my makeshift bath and designed a new one that could have been original to this kind of house had they had a thirdfloor bathroom. I dismantled, rewired, reassembled, and hung five antique brass light fixtures, including one original to the house. In these small ways, reality advanced to meet my charming mental pictures.

Even with these victories, of course, coming home after a hard day at my job was sometimes disheartening. My resolve would waver: What was I *doing* with my life? What



Two glimpses of the irreplaceable exterior trim on my second-storey windows: Years intervened between these shots!

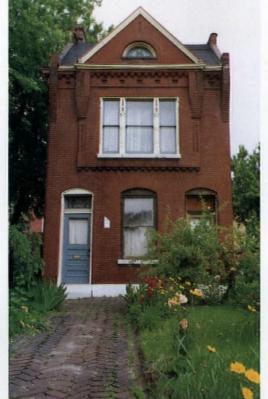
were my college friends doing on their weekends? Where were the girlfriends I used to date? At such times I'd often find strength outside my front door: The neighborhood around me was changing. Nearby buildings by the dozen were now under rapid restoration. In two years I went from being

one of the first urban pioneers to having one of the last unfinished houses in the vicinity. The desire to catch up with my neighbors became one more reason to continue. And then there were the individual projects that kept my spirits up. Like the time I hired a floor refinisher to ply his craft on my first-storey pine floors. His sanding was gentle and the revealed patina of the old wood was and is a glorious reward for the years I spent nurturing that finished image of my home.

The house still is not done. I'm still painting walls and all that woodwork, a project that may last into the millenium. Myriad small jobs also demand my attention in this eighth year of my two-year plan. Taking stock of the last 7½ years, I many times have asked myself whether it was all worth it. Though there were moments of crisis and despair, I can now answer emphatically YES. I'd even do it over again.

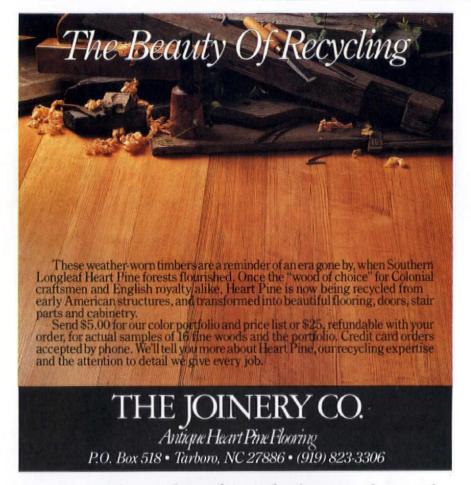
Oh, when I think of the money spent, the innumerable hours dedicated, and the knowledge gained! My Dad calls this sum of things my "Master's Degree in Restoration." There's reward in that knowledge, and in the fact that my house and I are in the midst of a now-thriving historic neighborhood of homes, apartments, shops, and markets.

The biggest reward, however, is the feeling of having recycled something, of having brought this charming old building back from the dead. There are many houses in Soulard still waiting for saviors. Maybe I'll go for my "Ph.D."

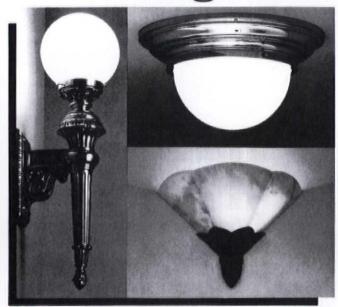


A "pretty" photograph of the exterior of my house as it looked last spring.





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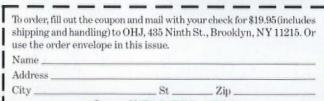
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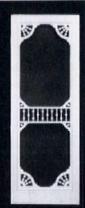
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OLD-HOUSE MECHANIC

by Gordon Bock

Boring holes in brick, stone, or concrete masonry is dusty and tedious work, but if you've got to anchor anything

from an iron stair railing to an entire house in one of these materials, there are three ways to proceed.

Star drills are used for hand drilling, a low-tech approach these days that's practical for just a hole or two, or when there isn't any power available. Star drills are forged from hard-



Star drills are band tools that operate like chisels.

ened steel and have a tempered, four-fluke cutting point that inspired the name. They also can be used on tile, plaster, or asphalt, and are available in good hardware stores in diameters from 1/4 inch to 1 inch and over.

To use a

star drill, you simply strike the end of the tool repeatedly with a large ball pein or drilling hammer, rotating the drill a few degrees after every blow to chip a fresh face at the bottom of the hole. As the hole deepens, clear out chips and dust to keep the drill cutting and to prevent

it from getting stuck. Also, wear safety goggles to protect eyes from flying chips, and never use a drill that is bent or cracked.

Masonry bits are designed for chucking into a conven-

Hammer drills are electric power tools designed to drive masonry bits and other specialized implements.

tional electric hand drill - the most popular combination for mediumduty masonry boring. Similar to beefy twist drills with a tungsten-carbide edge inserted in the tip (note drawing at top of page), these tools let the rotary action of the drill do the cutting. Masonry bits from 1/8inch to 3/4-inch and larger diameters are carried by hardware stores and tool-supply houses. Drills with 1/2inch chucks are usually necessary for large bits. It also takes constant pressure, or "putting your shoulder into the drill," to keep the bit cutting. Masonry bits should be withdrawn from the hole periodically to check for overheating: Friction can heat them to cherry red and loosen the joint that holds the carbide tip.

Hammer drills are the tools of choice for making multiple large holes in masonry. These are massive, heavy electric drills that incorporate mechanisms for percussive drilling with masonry bits — that is, they rotate the bit and strike it like a jack-hammer at the same time. This action, a kind of star-drill/masonry-bit hybrid, is very effective. With a switch of bits, hammer drills can have other applications, such as chip-

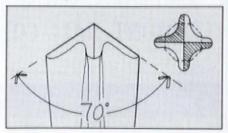


ping and chiseling. Hammer drills come in various weights to match the job.

They are expensive tools to buy for one project (\$200

to \$700) but are standard items at tool-rental outlets.

As one might imagine, masonry drills — even carbide-tipped ones — get dull before many holes are through. Carbide bits may be worth resharpening if wear at the sides has not affected their circumference. However, it takes a diamond wheel to sharpen carbide, and even rental companies send their bits out to sharpening services. (Check the Yellow Pages for local businesses.)



Resharpen the cutting edges of a star drill to a 70-degree angle.

Star drills, though, are easily dressed or resharpened with a standard grinding wheel or metal file. Each of the four faces is retrued to put an angle of roughly 70 degrees on the tip of drill (see drawing). As with all tempered tools, it is important not to kill the hardness of the metal when sharpening. Quench the drill in a bucket of water regularly — a cutting tool that's been overheated won't work so hot.

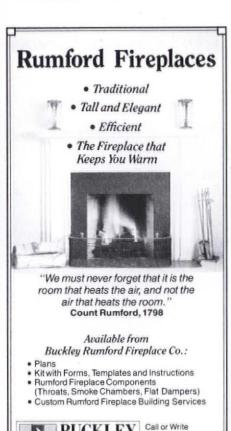
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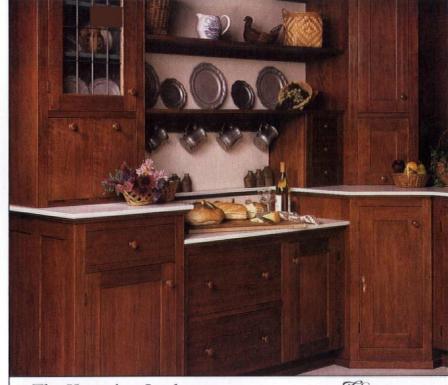
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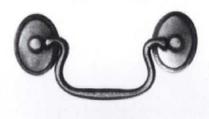
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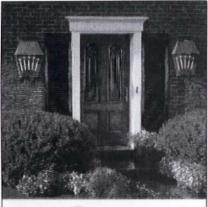




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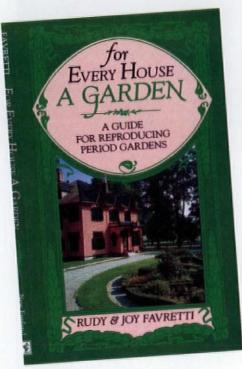
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For Every House a Garden

This little book is written in the very spirit of *OHJ*, with practical information that will help you identify the type of garden appropriate to your old house and its style requirements. Authors Rudy and Joy Favretti have many years between them as authorities on landscape history and restoration, which shows in the way they manage to telescope three centuries of gardening history into one handy guide — perfectly sized, I might add, for carrying in your flower basket.

For Every House a Garden will give you a sense of how specific garden plans were shaped by social history, and how preeminent landscape artists contributed to our ideas about gardening today. But you'll find that you are never more than just a few steps down the narrative path from understanding how this applies to your garden, whether it's Tudor or Gothic or Colonial in character. The essential features of each type of garden are profiled. The book also provides a list of plants commonly cultivated in different landscaping periods, which makes this a valuable

reference. Even if your patch of earth is a small one, or if your old house is a row house with no garden at all, *For Every House a Garden* makes pleasurable and informative reading.

Available for \$12.95 ppd. from University Press of New England, 17½ Lebanon St., Dept. OHJ, Hanover, NH 03755; (603) 646-3054.

Suzanne La Rosa

The Details of Modern Architecture

If you are interested in how Greene & Greene, H.H. Richardson, Edwin Lutyens, Gustav Stickley, and many other architects actually constructed their buildings, then this book is for you. Through the use of axonometric drawings showing wall sections, window details, and roof framing, plus the comprehensive text and photos, author Edward Ford analyzes the

structural and aesthetic details of over 80 buildings, many of them well-known houses.

Architects long have argued over the issue of "truth in building." The introduction of new building materials and methods created an uproar: A building that appeared to be cutstone but was actually steel-frame clad in stone presented a moral crisis within the architectural community of the late-19th and early-20th centuries. The Details of Modern Architecture presents many architects' interpretations of "truth in building," enabling readers to look past a structure's facade to its details. The refreshing aspect of this book is that it discusses architectural ideas along with practical building techniques.

Available for \$79.95 ppd. from MIT Press, Attn: Book Orders, Dept. OHJ, 55 Hayward St., Cambridge, MA 02142; (800) 356-0343. — Jeff Wilkinson

Recipes for Surfaces: Decorative Paint Finishes Made Simple

Decorative painting differs from standard painting in several ways — in the paints used and in the special emphasis on color. The process is also different. On top of two layers of interior paint, a thin coat of glaze is applied. The manner of its applica-

tion is the subject of this book, which features over 40 recipes for decorative painting.

Most historical styles have used decorative painting techniques to some extent. Although not oldhouse specific, many of the recipes included are applicable, especially the techniques of sponging, stencilling, stippling, marbling, and wood graining.

Mindy Drucker and Pierre Finkelstein have written a real how-to book, with straightforward directions. Of special interest is a chapter with general information. Available for \$19.95 plus \$1.50 postage from Simon & Schuster, attention: Mail-Order Sales, 200 Old Tappan Road, Dept. OHJ, Old Tappan, NJ 07675; (201) 767-5937. — Jeff Wilkinson

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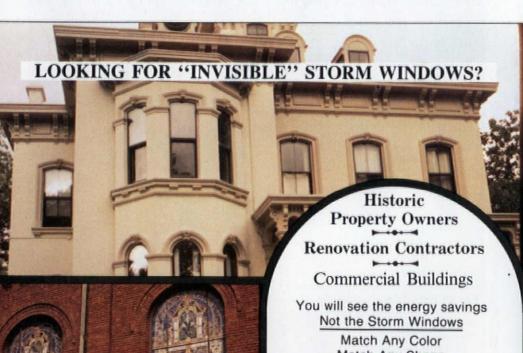
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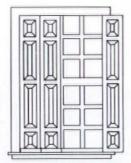
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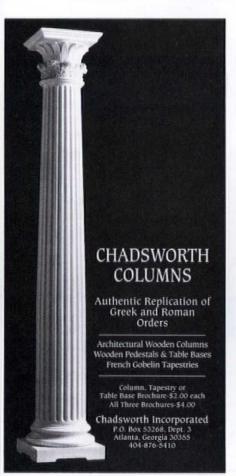
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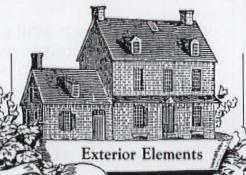
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The millwork for this elegant, circa-1760 colonial entrance is handcrafted by Early New England.

nial entryways copied from 18th-century originals in the Connecticut River Valley. The circa-1760 Broken Scroll Pediment Doorway shown above is composed of various millwork components such as carved eight-petal rosettes, tombstone base panels, and moulded plinths. Early New England also offers custommade mantels, stairways, and cabinetry, as well as house-restoration services. Prices vary. For information, contact Early New England Rooms and Exteriors, Inc., 37 McGuire Rd., Dept. OHJ, South Windsor, CT 06074; (203) 282-0236.

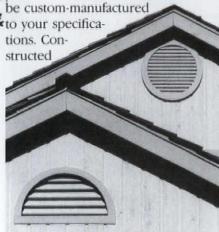


Dentil Moulding

We thought exterior dentil moulding would be a great item for RP, but any moulding large enough to use as an exterior detail was usually custommade. After contacting a few companies, the largest stock dentil moulding we've turned up is Classic Architectural Specialities' No. 845. Their dentil moulding is sizable enough to be noticeable over any entryway or window. Made of polymer plastic, it also can withstand the severe weather conditions faced by exterior architectural elements. CAS also offers a variety of architectural details such as Moorish carved-stone columns and Victorian gingerbread. The No. 845 dentil moulding costs \$4.48 per foot and is 16' L \times 6" H with a 11/2" projection. Contact Classic Architectural Specialities, 3223 Canton St., Dept. OHJ, Dallas, TX 75226; (214) 748-1668.

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of kiln-dried wood, all of the vents are designed to be recess-mounted, but surface-mounted vents are available. Prices range from \$10 to \$80, depending upon the size and shape of the vent that fits your needs. For information, contact Sammamish Woodworks, 2450 West Lake Sammamish Rd. NE, Dept. OHJ, Redmond, WA 98052; (206) 883-0558.

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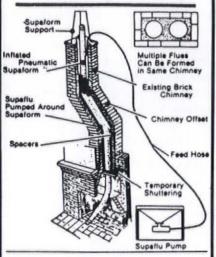
be easily filled; most orders — large or small — are shipped within two days. Clapboards come in standard widths from 4½" to 6½", and cost from 8¢ to 42¢ per linear foot. They also are available pre-stained. For

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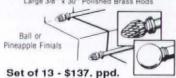
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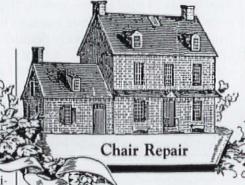
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Craftsman Leather

Recently, I noticed a Stickley chair that had been reupholstered in an ornate gold brocade. If your Craftsman chair also begs to be recovered, you may want to know about Dualoy. This leather company offers three types of leather hides suitable for Arts & Crafts furniture: vegetabletanned, antiqued, and upholstery.

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Homespun fabrics are reproduced from museum and private collection examples by Seraph West.

their more popular reproductions is an 1840s red- and white-check blanket wool. A line of colonial-style upholstered furniture, which features Seraph textiles, is also available. Textiles range in price from \$10 to \$50 per yard, reproduction furniture from \$100 to \$875. For information, contact Seraph West, 5606 St., Rt. 37, Dept. OHJ, Delaware, OH 43015; (800) 233-1817.



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- · Foundation plan for basement or crawlspace. (Crawlspace plans can easily be adapted for full basements by your builder.)
- · Detailed floor plans showing all dimensions for framing, plus detailed layout and 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.
- · A window and door schedule.
- · Building cross sections: cornice, fireplace, and cabinet sections when needed to help your builder understand major interior details.

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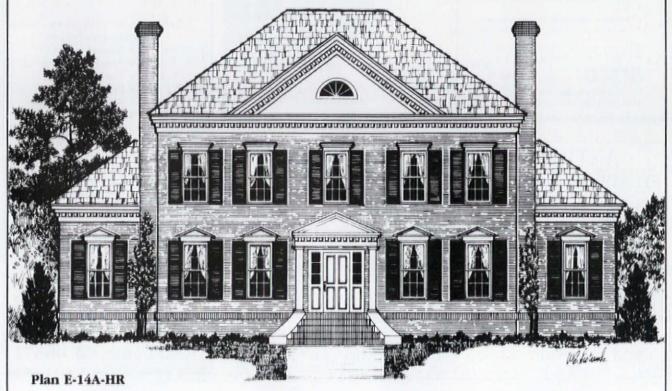
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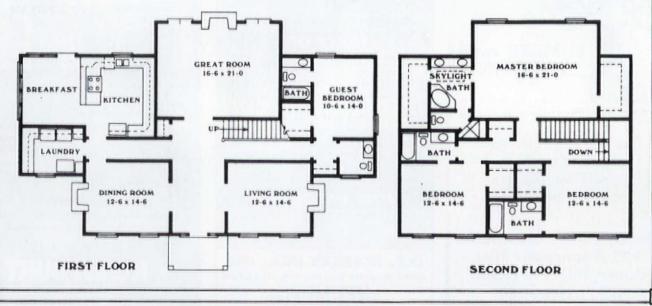
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FIRST FLOOR			i				4	1	3,	385	,
SECOND FLOOR											
CEILING HEIGHT											
FIRST FLOOR										10	į
SECOND FLOOR									į.	. 9	į
OVERALL DIMENSIO	N	S									
WIDTH			+							62	
DEPTH			į.							46	,

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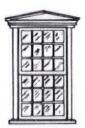
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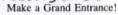
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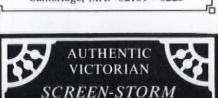
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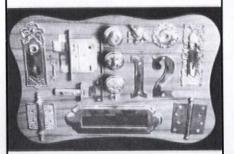
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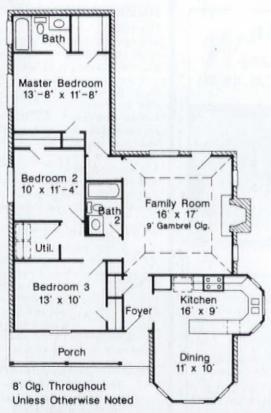
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Plan V-02A-LG

Cost: \$160 \$250 (set of 5) \$295 (set of 8)

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OVERALL I															
WIDTH															26
												 			. 10



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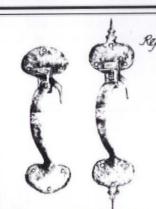
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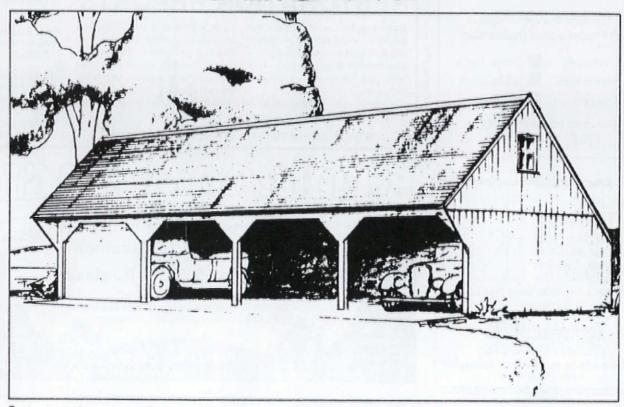
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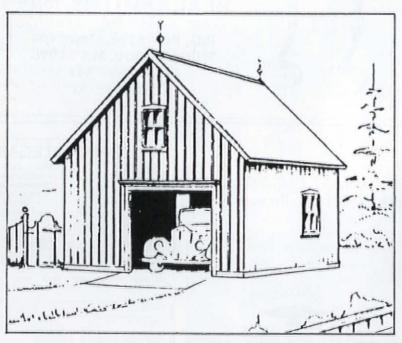


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WIDTH														38'6"
DEPTH														
HEIGHT														



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WIDTH									16'
									22
HEIGHT			-					1	8'6"

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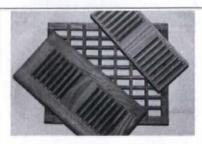


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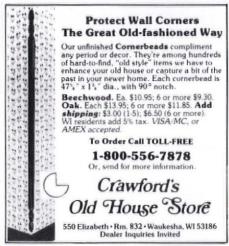
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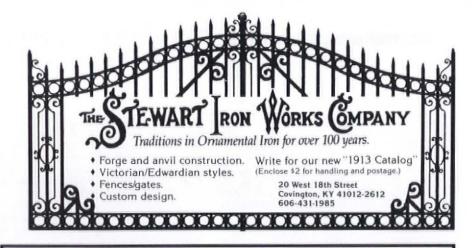
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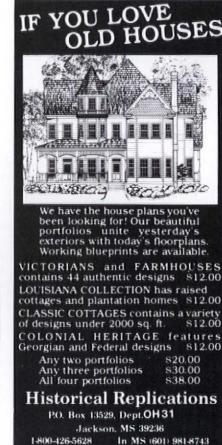
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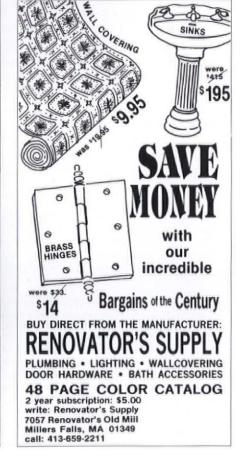




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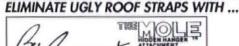
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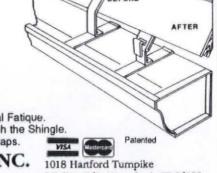




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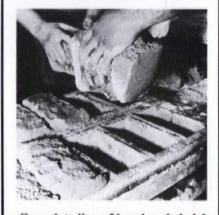
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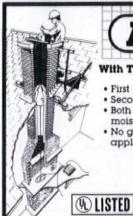


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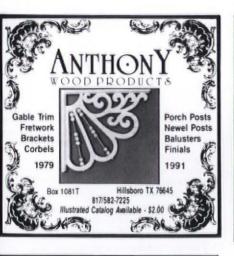
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9104

ADVERTISERS' INDEX

rodi letw No	ork	Page No.						
30	A-Ball Plumbing	69		Designs In Tile		69	Old Carolina Brick	87
20	AA Abbingdon Affiliates	89	101	Devenco Louver Products	20	32	Old Wagon Factory	63
31	Abatron	20	384	Dura Glaze	11	303	Ole Fashion Things	89
	Addkison Hardware Company			Durable Goods	79	53	Oregon Wooden Screen Door	73
23	Ahren's Chimney Technique	89		Durham, Donald Company	87	238	Pagliacco Turning & Milling	11
17	Albany Woodworks	91	487	Empire Woodworks	83	547	Pease Industries, Inc	67
	Allied Windows		516	Epoch Designs	27		Perma Ceram	
19	Anthony Wood Products	91	55	Erie Landmark	67	319	Perma Glaze	15
	Antique Doorknob Museum & Shop	70		Family Heir-loom Weavers		548	Phoneco, Inc.	
49	Antique Hardware Store		221	The Fan Man		532	Sandy Pond Hardwoods	
	Inside Back			Fastenation			Protech Systems, Inc.	
	Architects & Designers Book Service		3.3.7	Felber Studios, Inc.			Putnam Rolling Ladder	
0.000	Architectural Caricatures			Fischer & Jirouch			Raleigh, Inc.	
23.5	The Architectural Cataloguer			Follansbee Steel		64	Readybuilt Products	
	Architectural Components			Fourth Bay			Reggio Registers	
1000	Architectural Paneling, Inc.			Galena/Jo Daviess County			Rejuvenation Lamp & Fixture Co	
	ARSCO Manufacturing		553	The state of the s			Renovator's Supply	
	Arvid's Historic Woods			Goodwin Lumber Company			Resource Conservation Technology	
0.25 (2.5)	Ball & Ball		317			497	Rolscreen Co. • Pella Doors & Window	
	The Bank Architectural Antiques			Granville Manufacturing			Inside Front	
9	Bathroom Machineries		163	Green Enterprises			Roy Electric Company	
	Bendheim Glass			Gyp-Crete Corp.		70	Rutland Products	
143	Bendix Mouldings, Inc.		550	The Hardwood Group Ltd		1	Schwerd Manufacturing	
	Blue Boar Tile Company		110	Hart Tool Company			Shuttercraft	
	Blue Ox Millworks		449	Heritage Brass Company			Silverton Victorian Millworks	
	Bradbury & Bradbury		10	Heritage Fence Company		30	Smith-Cornell	
530	Brandon Industries		62	Historical Replications			South Coast Shingle	
	Sylvan Brandt Inc.			Horton Brasses			Southampton Antiques	
	The Brickyard			Iron Apple Forge			D.E. Stanley.	
	Bruce Post Company			The Iron Shop		***	Steptoe & Wife	
108	Buckley Rumford Fireplace			Janovic/Plaza, Inc.			Stewart Iron Works Co	
	Builders' Resource			JB Products		40	Richard Thibaut Inc.	
22	J.R. Burrows & Company			The Joinery Company		260	Touchstone Woodworks	
	Campbellsville Industries, Inc.			Kemp & George			Wayne Towle Inc.	
	Carlisle Restoration Lumber			The Kennebec Company			Tremont Nail Company	
	Carter Canopies			King's Chandelier Company		469	Triarco, Inc.	
	Certified Chimney Sweeps, Inc		455	Lamson-Taylor Custom Doors		400	Tuff-Kote Company, Inc. Urban Archeology	
	Chadsworth, Inc.			John Leeke Preservation Consultant			Urban Artifacts	
	Charles Street Supply			Livos Plant Chemistry			Vande Hey Roofing	
130	Charleston Battery Bench Inc			The state of the s			Victorian Lighting Works	
47			110	Lynch & Company, Ltd			Vintage Pine Company, Inc.	
4/	Chelsea Decorative Metal		110	Mac The Antique Plumber MacQuarrie & Niccum			Vintage Wood Works	
26	Chicago Old Telephone Company Classic Accents		172	Mad River Woodworks			Vixen Hill	
	Conant Custom Brass			Maple Grove Restorations			Vulpiani Workshop	
	Conservation Services			Marvin Windows			Ward Clapboard Mill	
	Country Curtains			Michael's Classic Wicker			Whitco/Vincent Whitney	
	Country Iron Foundry			Midget Louver Co			Williams & Hussey	
.07	Craftsman Lumber			Midwest Wood Products			Williamsburg Blacksmiths	
	Crawford's Old House Store			Miller Manufacturing, Inc.		334	The Wood Factory	
197	Crown City Hardware		341	Monarch Radiator Enclosures		524	The Woods Company	
	Cumberland General Store, Inc.			N.O.P.E.			Woodstock Soapstone Comapny	
	Cumberland Woodcraft		537	National Decks Inc.			Woodstone Company	
	Custom Wood Turnings			National Supaflu Products				
	Decorator's Supply			Nixalite of America			Worthington Group	
	Denninger Cupolas & Weathervanes			W.F. Norman		7.4	Yost Manufacturing & Supply Inc.	
128	Denninger Cupolas & Weathervanes	27	128	W.F. Norman	13,15		Yost Manufacturing & Supply Inc	***

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Appendage-iti\$

his issue's "Remuddling" page is devoted to a house-health crisis: appendage-itis. *OHJ* has been observing the spread of this debilitating disease, in which odd additions erupt on the surface of old houses. Radical shopectomy seems indicated, but one shudders to contemplate the scars left behind....

Any of the photos on this page could illustrate our dictionary's definition of *tumor*: "a morbid enlargement." None of these houses sports an idle tumor, however. These growths are all money-making enterprises; depending on their profit margin, they could remain attached to their host dwellings indefinitely.

Is there a doctor in the house?



These two Florida bouses (Key West, above, submitted by Mike Stewart; Gainesville, left, submitted by Stanley Smith) may rescue the soles of shoes, but have lost their own souls. The Denver, Colorado, bouse (below, submitted by Lawrence Harrod) is as victimized by Income Taxes as the average citizen is.



WIN FAME AND \$50: If you spot a classic example of remuddling, send us clear color slides. We'll award \$50 if your photos are selected. The message is more dramatic if you send along a picture of a similar unremuddled building. Remuddling Editor, Old-House Journal, 435 Ninth Street, Brooklyn, NY 11215.





Vernacular Houses





Shown above, two simple Stilt Houses probably built for tenant farmers. Below, a more refined example characteristic of landowner houses, and a typical floor plan. All buildings are located near Halls, Tennessee.

Stilt Houses of Western Tennessee

Rural Western Tennessee meets the Mississippi at a flood plain known to locals as the "bottom." Every spring, the swollen river spills over into its old bed and, upon leaving, enriches the farmland with silt. These bottoms were settled by many small- and mediumsized farmers who built houses on stilts that allowed them to endure these floods. People would leave for two to four weeks during spring's annual high water to live with relatives on higher ground. If the flooding was prolonged, johnboats were used to check on homes and barns.

The Stilt Houses that remain are generally small, averaging 800 to 1200 square feet. Most are square with gable roofs extended front and rear to form full-width porches. These porches are screened to keep out mosquitos and deep enough to provide protection from rain and access to the kitchen. Building on stilts limited the floor area that was practical to construct, and it is common for the front door to open directly into the parlor or living room without a hallway. As a rule, the two front rooms are reserved for the parlor and bedroom, with the kitchen and dining room placed at the rear. A privy was detached from the house. The stilts themselves (made from oak, cypress, or yellow pine) were often stretched with chicken wire to create pens for farm animals.

These Stilt Houses are quickly disappearing. After the Second

