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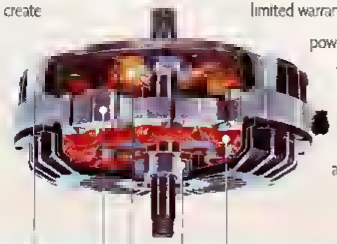

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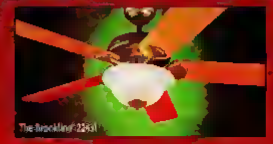

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CONTENTS

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JULY/AUGUST 2002

This month we celebrate some quintessential summer pleasures, from lounging poolside (page 113) to swaying on a porch swing (page 56) to relaxing in a secluded garden gazebo like the one pictured here (page 136).

features

POOL TILE STYLE, P. 113

THE HANDLE ON LOCKSETS, P. 81

GOTHIC REVIVAL, P. 118

cover A wicker porch swing offers a taste of gracious living. For a portfolio of swing styles and information on choosing and installing one—even if you don't have a porch—see By Design, page 58. PHOTOGRAPH BY TRIA GIOVAN

PHOTOS CLOCKWISE FROM TOP: (ROMAN) SUE VORRILLON; TOM RUPRATH; DAVID CARMACK; DAVID HAMBLEY; STYLIST (TOP), ANTHONY ALBERTUS

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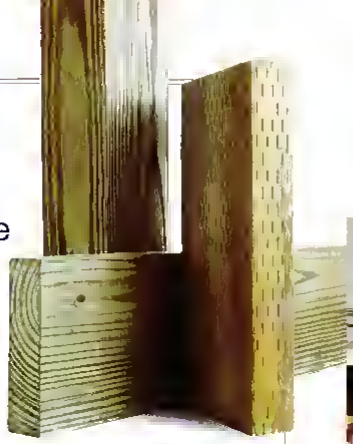
REY, MR. POSTMAN P. 64

"We don't believe there's any reason to remove or replace existing structures [treated with CCA preservative]."

—DAVID DEEGAN, EPA SPOKESMAN



ARSENIC ALTERNATIVES P. 34

departments

SAW CHOPS P. 72

columns

plus

WHERE TO FIND IT – SEE DIRECTORY – PAGE 143

PHOTOS, CLOCKWISE FROM TOP LEFT: ROLIN SMITH; DAVID HAMBLEY; COURTESY WALPOLE WOODWORKERS; DAMIEN HARDAS

SWING TIME P. 56

CONTRIBUTORS

CURTIS RIST has long been following the controversy over wood preserved with arsenic ("Pressure-Treated Wood Alert," page 34), in 1998, he wrote in this magazine about the toxicity of the popular rot-resistant lumber. This month, as home-improvement stores across the nation prepare for the upcoming phaseout of the product, he tells us about some equally durable arsenic-free alternatives. "Using pressure-treated wood containing safe preservatives costs a little more, but you don't have to worry about your children getting traces of arsenic on their hands if they touch it," he says. Rist, a home-improvement columnist for *USA Weekend* magazine, is coauthor, with "Mr. Fix It" Lou Manfredini, of *Mr. Fix-It Introduces You to Your New Home*.

In "Harvesting the Rain" (page 48), **JEANNIE RALSTON** focuses on the practical advantages of the rainwater-collection system at her house in drought-prone central Texas. But she can't completely ignore the fringe benefits. "It feels so great to take a rainwater shower," she says. Four years ago, Ralston and husband Robb Kendrick installed a system to catch, store, and purify rainwater for their household and landscaping needs. "Now we have great water, and we are more self-sufficient." A longtime contributor to *This Old House*, Ralston previously chronicled the renovation of the stone barn that now serves as her family home.

JILL CONNORS ("Porch Swing," page 56) fondly remembers swaying on her grandparents' wicker swing as a child. "It was a great place to be on a summer day or warm evening," she says. The former *This Old House* senior editor and her husband are "in the blush of first-home ownership," having recently purchased a 1950s Colonial in Middletown, Rhode Island. "I don't actually have a porch swing yet," Connors says, "but there's always one in my mind."

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LETTERS

Where Are They Now?

My favorite part of *TOH* magazine has to be the last page: Save This Old House. While it is the first thing my hubby looks at, I always remain patient and save it for last. My question is: What is the track record for the houses shown in the past? Have they all been bought? Moved? Saved?

DONNA ASCHENBRENNER, YPSILANTI, MICH.

Judging by our mail, many readers share a soft spot for Save This Old House. We haven't yet tracked down the fate of all the "orphan" houses we've featured since 1995, but the good news is that of the half we do know about, only a few have been destroyed. Most have at least been purchased, a number moved and/or renovated, one dismantled and put in storage, and some remain available. Look for a follow-up on some of the "adoptees" in an issue this fall.

Underground-Line Clarification

"Twin Peaks" [Transformations, April 2002] was a good example of seeing the potential in an otherwise uninspiring property. The owners have created an interesting play on the Adirondack-style lodge. However, the sidebar "Pole Position" [on rerouting the house's electrical and phone service lines underground to eliminate an unsightly pole] may be misleading. If I read it correctly, the electrical service conductors, cable, and phone wires are buried all in the same conduit. My understanding is that the National Electric Code does not allow this.

DONALD D. TAYLOR, TOPEKA, KANS.

We thought our wording was clear, but if you misread it, perhaps others did, too. Only the electrical wiring was housed in the PVC pipe; the phone and cable wiring don't require conduit and were just laid in the trench alongside the PVC. All the work was performed according to code and properly inspected.

Furnace Rebate

I read Richard Trethewey's letter "Fuel for Thought," in the October 2001 issue, about upgrading to a more efficient furnace. That same month, our furnace broke down. A contractor's estimate to replace our 80,000-Btu furnace was $2,500. I then visited a local heating supply center, which stocked the same 80k unit for only $500. Fortunately, they talked me into a high-efficiency 100,000-Btu furnace for only $50 more. They also informed me that my local power company offers a rebate program for residents who install high-efficiency furnaces, boilers, or water heaters. By installing the new unit we qualified for a cash rebate of $300. We now have a new furnace that is more efficient and heats the house faster for a little over $250 (having done the work ourselves). Please encourage your readers to check with their power company to see if they can qualify for a similar rebate program.

TOM LEMON, MOORESTOWN, N.J.

Good tip, and those who don't want to install a furnace themselves may find summer a likely time to get a lower quote from a heating contractor.

Sweet Gummed Up

As a landscaper, I found "The Night the Lights Went On in Georgia" [April 2002] very interesting, since I work with outdoor lighting in some of my installations. But the tree in the front yard is an American sweet gum, not an oak, as stated. Many of my clients ask me to rake up the [spiny] seed balls these trees drop in the yard every winter and spring. The *Liquidambar styraciflua* is a beautiful tree that does very well in our area as well as in Georgia, produces a great fall color, and is a great shade tree.

KYLE HORTON, CINCINNATI, OHIO

punch list

***definition:** a list of items incorrectly done or remaining to be finished as a construction job*

- Due to space constraints in the May 2002 Directory we were unable to include CAI Technologies of Frederick, Pa. (800-580-3033), in our thank yous for "Keeping It Pure," our article on home water filters.
- In Directory Jan./Feb. 2002, we misprinted the phone number of Woods of the World Inc., a supplier for "Magnificent Mahogany." The correct number is 603-352-8000.

Address mail to: Letters, *This Old House* magazine, 1185 Avenue of the Americas, New York, NY 10036; or e-mail us at TOH_letters@timeinc.com. Please include your full name, address, and daytime phone number. Published letters will be edited for clarity and length and may be used in other media.

PHOTO: DAVID STANBURY

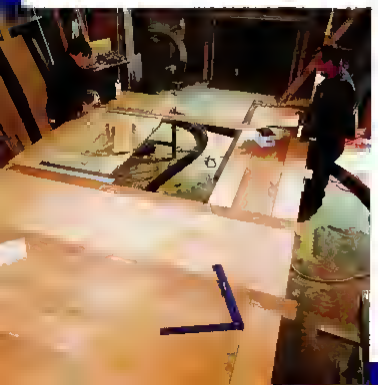
Hot New Joint

Tom Silva discovers a timesaving tool

Professional craftspeople are always on the lookout for a new tool or technology that does a job faster and better. Most new gadgets prove to be more trouble than they're worth, but every so often a tool comes along that makes you wonder how you ever got along without it.

Tom Silva, *This Old House* general contractor, feels that way about a new joinery machine from Germany that he's added to his arsenal of tools. This bench top power tool—the Hoffman Dovetail Routing Machine—joins wood faster, better, and more efficiently than any method he's used in the past.

The machine has a built in router that cuts dovetail shaped slots in each piece. Tap a little plastic insert (shaped like a bow tie) into the slot, and the two parts of the joint snug up tight. So tight, in fact, that you don't even need to clamp the joint and wait for the glue to dry; the piece can go into place immediately. The alignment of the two parts is perfect, so Tom also saves time on sanding. He and his brother Dick Silva used it to piece together large sections of paneling for the music room at the TV show's project house in Manchester, Massachusetts.



Priced at $2,200, the machine is geared toward professionals, but Tom doesn't discount the serious home enthusiast. "I've met a lot of people who aren't in the business but who have good hands and own a lot more tools than me," he says. "They'd get some mileage out of this one." A smaller version that can handle picture framing and trim carpentry is also available, for $1,000. —*Dan DiClerico*

Plastic "bow-tie" inserts in dovetail-shaped slots are the key to a new joinery system (ABOVE) *that Tom Silva found indispensable on the Manchester TV project.* LEFT: *He and brother Dick used the system to assemble large wall panels for the music room.* BELOW: *A built-in router cuts the slots.*

PHOTOS: KOLIN SMITH/TOH; DAVID CARLSON (BOTTOM)

Permanent Pediment

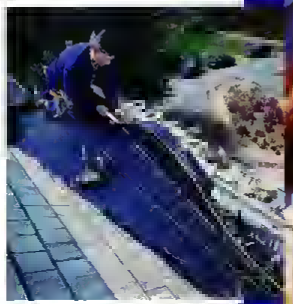
The right materials help decorative exterior elements stand the test of time

When it comes to re-creating exterior details on a renovation, Tom Silva is a perfectionist. But he doesn't want to duplicate the rot and wear that have cut short the life of the wooden original. Instead, he tries to match the original designs using durable engineered materials and weather-resistant construction methods.

He recently followed this practice when he restored the curved pediment above the portico at the Manchester project house. The original 1890s Colonial Revival detail was made entirely of wood, it eventually rotted and was torn off in a 1979 renovation. Tom created its replacement out of medium-density overlay (MDO) plywood. "It's the same thing often used to make road signs, so you know the stuff stands up to weather," he says. For the trim, Tom turned to urethane foam boards, which he milled on-site, and urethane-resin pieces molded to order by a company in North Carolina. Both materials resist shrinking and cracking, and, like MDO, they take paint extremely well. He built a "cricket" behind the pediment, covered with a double layer of rubber membrane, to direct water to either side and protect the roof under the ornament.

In the center, Tom installed a small MDO plaque commemorating the year in which the house was built—1883. Thus crowned, the house will reach its bicentennial long before Tom's rebuilt pediment needs replacing. —*D. D.*

The old pediment on the Manchester project house (shown ABOVE *circa 1920) eventually rotted and had to be removed. Tom Silva re-created this detail* (BELOW) *using weather-resistant materials and building methods, such as MDO, rubber roofing, and a water-channeling cricket* (RIGHT).



WHERE TO FIND IT – SEE DIRECTORY – PAGE 143

July/August 2002
***This Old House* Personal Appearance Calendar**

NORM ABRAM

August 11 National Hardware Show, McCormick Place, 2301 S. Lake Shore Drive, Chicago, IL. Details (trade only) 888-425-9377 or unnonationalhardware show.com

STEVE THOMAS

August 11 National Hardware Show, Arrow Fastener Exhibit. Address and details see above.

Clever cabinetry and space-saving appliances (ABOVE) *subtly and seamlessly modify the old kitchen* (RIGHT) *The work shows how an original style can be preserved and still satisfy modern demands.*

Retro Redo

A 1930s kitchen gets an efficiency update—but keeps its vintage charm

For 10 years, almost from the moment they moved into their 1934 Spanish Revival house in Los Angeles, Karen Bodner and Michael Olecki contemplated redoing their kitchen. "It had a lot of character but too few work surfaces and too little storage space," says Karen, the cook in the family. A major concern was preserving the kitchen's charming period tilework. How could they update the space without ripping it out? "It takes time and commitment to pull off a surgical redo," says *This Old House* host Steve Thomas. "Most people would have told Karen and Mike to gut the place."

By a stroke of luck the owners were able to create a new, more functional kitchen without losing the old one's period character when their architect, Raun Thorp, of Tichenor & Thorp, found a company that manufactures the same yellow and aqua tile.

The only change Thorp made to the room's 10 by-11 footprint was a 27-inch bump-out into the adjacent laundry room. With the refrigerator relocated to that corner and a small pantry removed, the homeowners gained a stretch of real estate they could dedicate to the new, spacious prep area Karen desperately needed. Steve approves. "Stealing space from a neighboring room is an easy and often overlooked way to effect a change."

Similarly, relocating an arched doorway to the breakfast room made space for a newly tiled wall enhanced by a feature common to 1930s homes: a telephone niche. Pale yellow painted cabinetry, custom fabricated to replicate the original, along with hardware from architectural salvage sources, reinforces the period authenticity. Underfoot, black linoleum flecked with color recalls period flooring. "What's great about this renovation," says Steve, "is that the kitchen is a better, more functional version of the original without anyone being aware of the changes."

BY HEATHER SMITH MacISAAC
PHOTOGRAPHS BY DOMINIQUE VORILLON

PHOTO OF STEVE THOMAS: PASCAL BLANCHÉ

before

after

before: *Too much broken wall space made it impossible to have enough storage and work surfaces.*

after: *Bumping into the laundry room, annexing a pantry, and relocating the fridge made it possible to add a 6 foot butcher-block counter, with microwave above and storage below, near the stove. Shifting the entry to the breakfast room created wall space for the phone and bookshelves.*

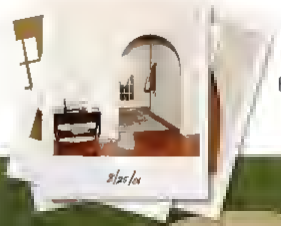
ABOVE: *Drawer and door fronts disguise a counter-depth built-in refrigerator and energy saving two drawer dishwasher. A touch-latch cupboard above the fridge holds linens. Built into its side cabinetry is a painted steel magnetic blackboard for messages and grocery lists.*

A niche set into a newly built wall between the breakfast and dining rooms features a reconditioned 1930s telephone and a pencil drawer. The bookcase holds cookbooks and conceals a volume control for the built-in sound system.

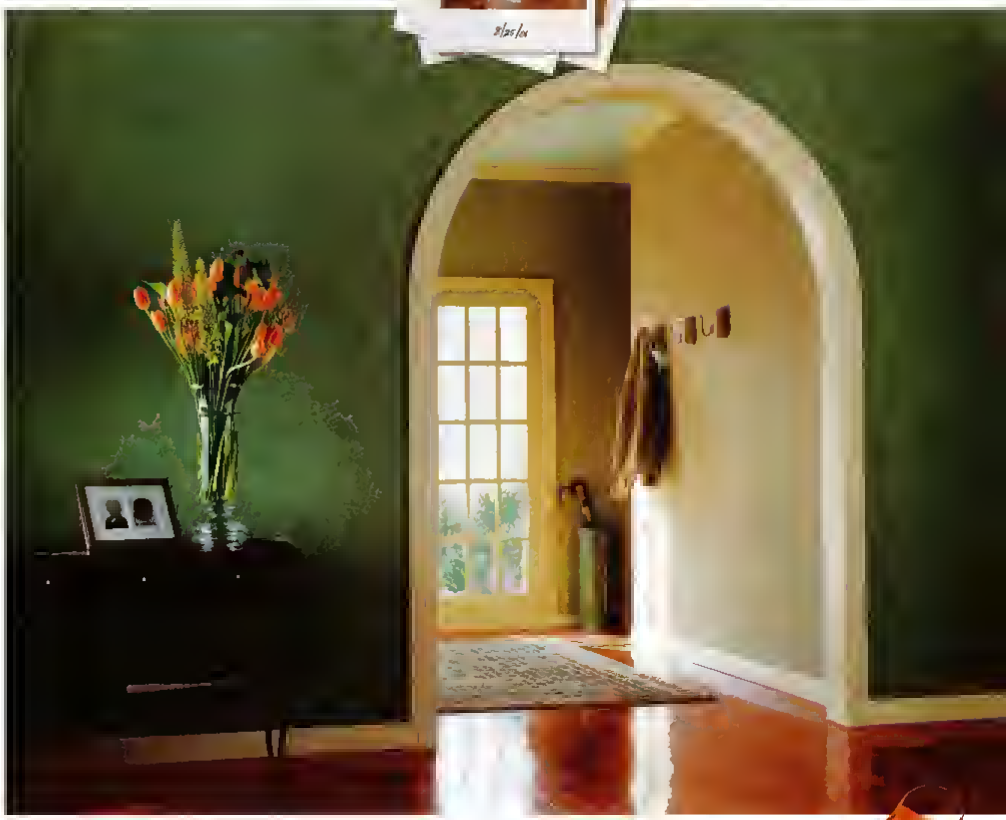
A reconditioned 1930s O'Keefe & Merritt stove nestles in an arched alcove from the original kitchen. Porthole lights, a pot-filler tap, and a wooden shelf for oils and vinegars are modern fixtures that blend with the old time feel.

A built-in mirrored medicine cabinet (handy for vitamins and first-aid supplies) over the sink is a holdover from the original room. Most of the tilework from the window ledge up is also vintage, the backsplash and counter tiles are new.

A room screaming for personality
Faux plaster texture like the
expert in the orange apron showed me



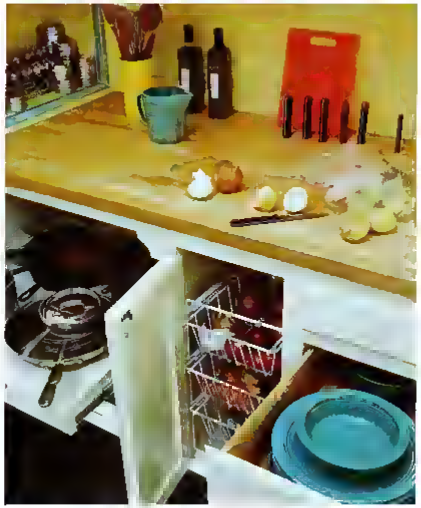
Potential is a wonderful thing.



Faux plaster te

IDEAS NOTEBOOK: STORAGE SOLUTIONS

As shown here, every spare inch of the Bodner/Olecki kitchen (pages 22 and 24) was tapped, from the smallest nooks and crannies in cabinets and drawers to a tiny wall niche. "Inventive storage opportunities exist in any kitchen," says Steve Thomas. "You just have to work at finding them." Obviously, the time to reserve space for slide-out trays, deep drawers, and other specialized storage is when you're planning a new kitchen. "Before ordering cabinetry, take an inventory of every item you want to keep in the kitchen, and think about where and how you'll use them when preparing meals. That will help you create a place for everything," Steve says. To maximize space in existing cabinetry, pull-out baskets, wire bins, plate racks, drawer dividers, and other organizers can be purchased in the housewares section of a department store or kitchen specialty shop and easily retrofitted.



Touch-latch drawers that hold infrequently used kitchenware occupy toekick space that is usually overlooked. The shallow drawers are ideal for bakeware, linens, and seasonal items.

A spice niche fills otherwise wasted space above the butcher-block counter. The homeowners outfitted it with a simple store-bought wire rack that neatly houses matching bottles.

Butcher block defines a workstation where everything is within easy reach. Knife storage in the wooden countertop keeps cutlery safe and handy. Wide pull-out trays hold pots, pans, and lids at the ready, but hidden when not in use. Behind a narrow cupboard door, a stack of bins holds vegetables best stored in the dark.

WHERE TO FIND IT — SEE DIRECTORY — PAGE 143

ASK **NORM**

Professional tips on supporting floors, reusing windows, and changing a roof's color

MYSTERIOUS SOOT

We live in a three-year-old ranch house at the top of a hill and have a serious problem with soot. I began to notice the problem when drywall joints darkened, including where ceiling and walls meet. Now the inside of our windows and the TV screen require frequent cleaning. When I dust, the rag and my hands are black. Even the shelves inside my kitchen cabinets get sooty.

We heat with a gas-fired forced-air furnace, and the problem began after a furnace starter malfunctioned. Since then, we've had the furnace checked professionally three times and been assured that it's working properly. We've had this type of system in three other homes but never had a soot problem.

SILLIE SHERSOCKER,
NEW CUMBERLAND, PA.

There are lots of possible sources of soot in a house, including a woodstove or fireplace that isn't drafting properly, or burning candles. (Hold a dinner plate over a candle flame for just a second and you'll see how much soot it produces.) In an older furnace, a cracked heat exchanger could be the culprit, says *This Old House* plumbing and heating expert Richard Trethewey. But the fact that yours has been checked three times rules out that possibility.

Lila Albin, an industrial hygienist at Purdue University who specializes in indoor air quality, suspects your soot could be coming from the carbon-black coating on the fiberglass sound-dampening insulation that lines the inside of the furnace's air handler—the big box that blows the heated air from the burner into the smaller ducts. Her investigations have shown that the coating deteriorates and gets brittle over time—usually three to five years, but in some cases in as little as three months. Servicing the furnace can jostle the air handler and shake particles loose, which may be the reason that you noticed "soot" after your system was checked.

If your air handler has an access door, open it and touch the insulation with a white tissue; if it comes away black, you've found the problem. If there's not ready access, or if you don't feel comfortable doing the checking yourself, ask your furnace guy to try it. Your best recourse is to replace the disintegrating insulation with new material. (If you're lucky, the manufacturer who made your system may offer a lifetime warranty on its insulation.)

If the swab test gives your air handler a clean bill of health, then fix the chimney's draft or cut back on the candles. And if that doesn't curb the problem, you can always send a sample to a testing laboratory for an analysis that could pinpoint the soot source, but it'll cost you about $600.

LIGHTENING A FLOOR

We live in a four-bedroom house built in 1975. We've updated a lot of it, but in the kitchen and family room, which receive little natural light, the dark-stained veneer-wood flooring adds to the gloom. Is there any way that we can lighten the wood, given that it's too thin to sand and refinish? We appreciate your advice.

NANCY POPKIN, YARDLEY, PA.

I hate to be equivocal, but the answer to your question is: It depends. What you have is known as engineered flooring, which has a top layer of high-quality wood veneer glued to a plywood substrate. Back in 1976, these veneers were often only 1/16 inch thick, which makes refinishing tricky, if not impossible.

Steven Seabaugh, technical director at the National Wood Flooring Association, says that it might be possible to remove a stain from even a 1/16-inch veneer, but you'll need to find a skillful, attentive floor refinisher with a light touch. Sanding won't reach the tiny grooves between the boards in most '70s-era engineered flooring; they'll all have to be scraped by hand. Seabaugh has two additional warnings. Don't expect a perfectly flat surface when they're done, and don't expect to be able to sand the floor again; this is a one-time operation.

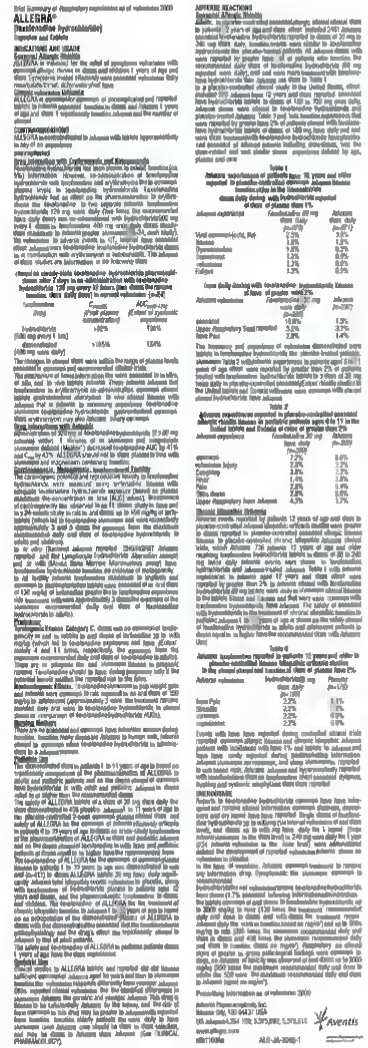
Alternatively, you could try using a scraper and a low-fume chemical stripper. Just keep the windows open and everyone else away from the gooey mess that will be created. The floor will need a light sanding afterward, as well.

Whichever way you remove the old finish, you'll need to protect the flooring with three coats of polyurethane. For maximum lightness, use water-based polyurethane, which will dry crystal clear. (Oil-based poly has an amber tint.)

When you consider all the work involved, and that there's no guarantee that you'll be satisfied with the result, perhaps it would make more sense to rip out the old floor—it wasn't meant to last a lifetime, anyway—and put in a new one of the same overall thick-

PHOTO: DAVID CARMACK

WHERE TO FIND IT ▸ SEE DIRECTORY ▸ PAGE 143



ness You can find engineered flooring these days with 50-year warranties for factory applied finishes and top layers up to ¼ inch thick, which can be sanded and refinished a number of times (See "Floor in a Flash," January/February 2001, page 46.)

SEAM OF PINE

Our living room and two of our bedrooms are paneled in heart-pine planks. At least we've been told it's heart pine. How can we tell? And if it's heart pine and not just plain pine, is it valuable?

FRED BLUM, CLARKESVILLE, GA.

According to the folks at the U.S. Forest Service's Center for Wood Anatomy Research, heart pine is one of more than 50 common names for the longleaf pine (*Pinus palustris*). (Other names include Georgia pine, hard pine, and pitch pine.) They describe the wood as having yellowish-white sapwood and reddish brown heartwood. A local wood flooring contractor or a woodworker might know at a glance. Or, if you can, send a 1-by-3-by-6-inch piece to the center for a definitive identification. Its service is free.

Heart pine has long been valued for its exceptionally strong, hard, and rot- and insect-resistant wood, but by the early 20th century, overharvesting, seedling-loving feral hogs, and forest fire suppression led to the near extinction of the older, most desirable trees as a commercial product. Heart pine is still being felled—it's called new heart pine, which we used in the Savannah project, in 1996—but beautiful, old-growth wood is in such great demand that it's regularly reclaimed from the timbers in old building frames or recovered from river bottoms where logs sank on their way to the mill. (Antique or reclaimed lumber may be called heart pine even if it's another southern pine species.) The majority of salvaged wood is milled for flooring, but it's also used for moldings, paneling, even furniture. Depending on the condition of the wood (whether it has nail stains or other imperfections), reclaimed flooring can cost $7 to $17 per square foot. Top grades of flooring from river-recovered logs cost almost $23 per square foot.

As for the value of the wood on your walls, well, that's hard to say. If it's beautiful and you like it, that might be value enough. Is it better quality than standard pine? Most likely. Would someone buy it if you tipped it out? Probably, as long as it was in good condition. But I doubt it would command a price that would make the effort worthwhile.

PLANNING FOR DISHWASHER REMOVAL

I want to install ¾-inch-thick hardwood flooring in an existing kitchen. I've been told that I should install the planks near the dishwasher in a way that allows them to be removed, to make it easier to replace the dishwasher later on. How is this done so the planks stay in place?

MIKE TAYLOR, SHAWNEE MISSION, KANS.

Accommodating a dishwasher may be easier than you think. It may be that all you have to do is remove the dishwasher, lay a piece of plywood that matches the thickness of the new flooring, reset the washer's four adjustable feet, and reinstall.

If the feet are already up as far as they can go, I suppose you could arrange your new flooring so that a relatively short piece is screwed down in front of the dishwasher. This would allow you to remove the piece when the time comes to put in a replacement. (Countersunk trim-head screws concealed with wood plugs would be virtually invisible.) There's also a third solution you should consider: Remove any old flooring before installing new. This should help, if not solve, the other difficulties you're likely to encounter as the new floor is being installed, such as the raised lip where the new floor meets the old and the need to cut down trim and doors.

SUPPORTING A FLOOR FROM ABOVE

We're renovating a 1911 bungalow and find that the floors on the second floor bounce, particularly over the living room. I measured a ¾-inch deflection in the floor when we piled all our boxes of books in this location. It turns out that a first-floor bearing wall was removed sometime in the '30s or '40s—to expand the living room—and replaced with an 18-foot beam made of three 2x8s, installed even with the bottom of the old joists. We like the openness of the living room, so I'd rather not put a wall back in place. But I wonder what you think of this solution. There's a partition wall on the second floor directly above the beam. Can I attach it to the beam below to help stiffen the floor system?

DOUG CHAMBLIN, PORTLAND, OREG.

If the house has been livable for 60 years or more without the wall, maybe the problem isn't really as serious as you think. A span of 18 feet is rather long, but a ¾ inch deflection over this distance doesn't seem excessive to me. By the way, the beam you describe is called a flush beam, or sometimes an inset beam.

Your idea of reinforcing the beam using the upstairs wall is certainly plausible—I've used this technique to correct problems just like yours, though they were much more severe. Basically, you'll have to turn the wall into a plywood sheathed box beam, or sheat wall, that will carry the flush beam and thereby stiffen the floor system. (It's possible that whoever removed the original living room wall took the precaution of turning the partition into a sheat wall for you. Before you start, peek into the partition wall by removing the cover plate on an outlet box. If it's a sheat wall, you'll see a layer of ½-inch or ¾-inch plywood on top of the studs.)

Before you tackle this project, you'll need advice from a structural engineer. He'll determine exactly how the wall should be attached to the beam, the thickness of the plywood, the spacing and size of the fasteners, and many other details. Then you'll have to strip both sides of the wall down to the framing, and glue and fasten plywood to both sides of the studs—that's what provides the necessary stiffness.

You should also ask yourself whether all this work will be worth it. Not only will the demolition be messy but the thickness of your new wall will increase by an inch or more, which will affect door frames, electrical boxes, and trim. I think you get the idea.

REUSING VINYL WINDOWS

A few years ago, we replaced the windows in our 80-year-old home with vinyl double-hungs. We really like their look and performance, but we've

new decided to put an addition on the house, in part to get an extra bathroom (if you have daughters, you'll understand). Unfortunately, several windows have to be removed to make room for the new addition. I'm hoping to save a little money by reusing the windows, but the addition will have 2x6 walls instead of the 2x4 walls in the original house. Will the old windows work?

Rae Riley, Noblesville, Ind.

I do understand about daughters, although mine is now in college. And I also know why you're looking to save some money—bathrooms are expensive. There should be no problem with reusing the windows if they're still in good shape.

This Old House general contractor Tom Silva, who has pulled out a lot of windows recently, says that yours should come out almost as easily as they went in. First, pry off the exterior and interior window trim. (There's almost no way to do this without damage, so just plan on installing new trim later on.) Then pry off the flashing above the window. Next, remove the nails from the nailing flange that holds the window to the sheathing. (Do this carefully, the flange might be brittle.)

Tom prefers to remove and reinstall windows with the sash in place, figuring that it helps the frame stay square. If you do this, just be sure to fasten the sash locks to hold the upper sash in place. Also, screw a scrap piece of wood across the midpoint of the window unit to keep the jambs from bowing. All that's left is to pop the unit out.

To reinstall the window, simply take all the same precautions for weatherproofing it and squaring it to the opening that you'd follow if the window were new. Then nail the flange to the sheathing. (See Home-owner's Handbook, "Installing a Window," March 2002, page 61.)

The thickness of the wall only matters on the inside, where you'll have to attach pieces of wood called jamb extensions to fill the gap between the existing jambs and the face of the wall. If your windows are made of vinyl-clad wood, you can cut extensions from ¾-inch stock, fasten through their edges into the old jambs, and plane them flush with the wall. But if the windows are all-vinyl, fasten the extensions directly to the exposed studs, then plane.

SAY IT WITH SHINGLES

The only way I could get my wife to agree to purchase this house, out first, was to promise her that we'd repaint it, even though the existing paint was only four years old. But now that the house is a nice shade of gray, the brown roof doesn't look right. Is there something I can put on my roof to change its color? It's only five years old and I can't afford to re-shingle right now.

Peter Tinnesz, Trumbull, Conn.

There's only one way I know to change the color of an asphalt roof without changing the shingles, and that is to cover it with a thick, acrylic-based elastomer. In the South, this rubberlike coating is used to protect shingles from the sun and keep them from being blown away in hurricanes. Once the base coat is down, you can apply a compatible paint of any color you choose. The cost is about 12 percent cheaper than putting on new shingles, according to the manufacturer. Before you go ahead, just be aware that this material may compromise whatever warranty you have from the company that made your roofing. And also be sure it's the look you want; a slick, rubber-encased roof is not an everyday sight in New England.

IN-SLAB PIPE CORROSION

I own a single-story brick home that's about 30 years old and rests on a concrete slab. The ½-inch water-supply pipes, which are made of galvanized steel, are buried in the slab. Our water comes from a well. I've noticed recently that the flow of cold water is gradually getting weaker and weaker, and rustlike stains have been appearing on the inside of the toilet tank. I assume this is happening because the pipes are corroding. Is there some sort of solvent I could use to clean the pipes out? I really don't like the idea of digging them out of the slab.

Sam Janes, Monroe, Oreg.

There's often iron in the groundwater, which can leave rusty stains in sinks and toilets unless the water is treated. But I suspect you're right in thinking that your rust comes from corroding pipes.

I'm afraid there is no solvent to flush out rust, and if there were, you wouldn't want to be putting it in your water pipes anyway. Richard Trethewey, *TOH*'s plumbing and heating expert, says that the only cure is to abandon the old supply lines and route new ones through the house. It'll probably be a job, though—you can't just snake rigid tubing through a wall like you can with wires. That's where PEX plastic tubing could be a boon, if it's permitted by your local building code. Its flexibility would allow you, theoretically, to run water lines throughout the house with little or no damage to the existing walls and framing.

SUNROOM FLOOR

Some time ago, I built a 10-by-18-foot deck off the back of my home. Now I'd like to turn the deck into a sunroom, and after submitting plans to the building department, I got a permit. I've decided to insulate the floor to keep the sunroom warm in the winter and cool in the summer. What material would you recommend?

DeLjuan Calvin, Memphis, Tenn.

There's nothing wrong with enclosing a deck and turning it into a three-season room—but a floor built on posts poses some problems. First of all, its underside needs some kind of a surround to keep out critters looking for a nice warm shelter. Lattice will stop larger animals, but not mice or bugs. For a better barrier, you could mount cement backer board and trowel on a coat of stucco so it resembles a solid foundation. A skirt of backer board will also help moderate outdoor temperatures, but you'll have to cover the ground under the deck with overlapping sheets of 6-mil plastic, to block moisture.

I'd then strip off the decking (to prevent floor squeaks) and lay down an insulated subfloor. You can make it yourself with 4 inches of extruded-polystyrene-foam boards sandwiched between two layers of ¾-inch plywood. Just be sure the bottom layer is treated to resist insects and rot—check out the borate treated sheets that are chrome- and arsenic-free—and is glued and fastened to the joists. Build the walls on top of this layer, then assemble the sandwich. Screw the top layer of plywood through the foam and into the joists with 7-inch long wide-head screws, the kind used for joining structural insulated panels.

If this assembly makes the sunroom floor too high, you could try insulating between the joists with fiberglass batts or spray-in-place foam. But batts will be hard to install and not as effective. And for what spray-in foam will cost you, you could probably pour footings and build a concrete-block foundation, which is what I'd prefer if it were my sunroom. ■

Send questions to Ask Norm, *This Old House* magazine
1185 Avenue of the Americas, 27th floor, New York, NY 10036
or e-mail toh_letters@timeinc.com
Include a complete address and daytime phone number.
Published letters will be edited for clarity and length and may be used in other media.

Want more advice from Norm? This Old House Books has published a 176-page collection of Norm's answers to readers' questions, all drawn from this popular column. To order a copy of *Ask Norm*, call 800-978-2643.

Pressure-Treated Wood Alert

Arsenic preservatives are being phased out. Here's what you need to know

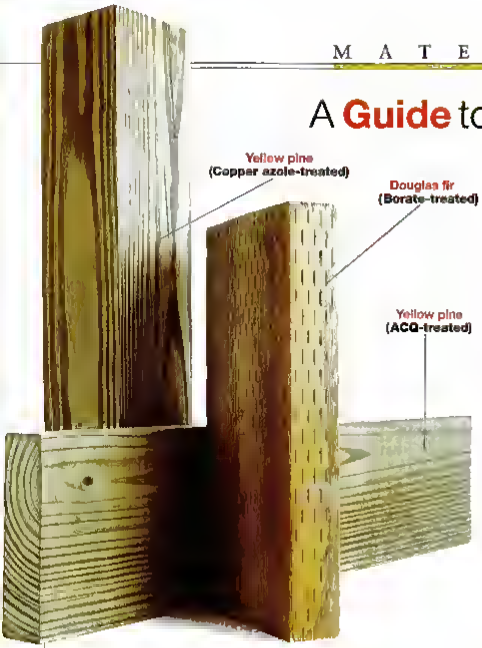
As a building material, pressure-treated wood has a Jekyll-and-Hyde character. Its ability to resist rot and insect damage has made the familiar greenish tinged lumber indispensable for use outdoors in everything from decks to swing sets and given rise to a $4 billion industry. But the wood gets its longevity from preservatives containing arsenic, a proven toxin and carcinogen. Reacting to concerns about the long-term safety of exposure to pressure-treated wood, the U.S. Environmental Protection Agency (EPA) announced in February that the three manufacturers of chromated copper arsenate (CCA), the chemical used to preserve wood, will stop producing it for residential applications by December 31, 2003. For homeowners, the decision raises two serious questions: What will replace this ubiquitous product? And, perhaps more important, what should be done with CCA-treated decks, play sets, fences, and other structures already in place?

As to the first question, no one doubts the need for preserved wood. While wood can last for centuries when kept dry, "it will quickly rot in continual contact with the ground or steady moisture," says *This Old House* general contractor Tom Silva. "That's why you have to use wood treated with a preservative." Certain species, such as redwood and cedar, are naturally resistant to rot, (continued on p. 38)

This picnic table was made with wood treated with chromated copper arsenate (CCA), which renders it impervious to rot and insects. Because it contains arsenic, it's potentially hazardous to your family's health, which is why manufacturers have agreed to stop producing the preservative for residential uses by the end of next year.

BY CURTIS RIST PHOTOGRAPHS BY MICHAEL GRIMM

A Guide to the Alternatives



Borate-Treated Wood

Borate preservatives, environmentally safe mineral compounds, have no toxicity to humans and other mammals but resist decay and insects. The downside is that borates will leach from wood that is exposed to water or left in contact with damp soil. "Borate-treated wood should be used only in applications where the wood is kept free from rainwater standing water and ground contact," says Forest Products Laboratory spokesman Gordie Blum. That makes it ideal for sills, structural posts in basements, subflooring, and even wall sheathing, especially in areas of high termite hazard. Sold under the brand names Pec-Bor and Advance Guard, wood that has been pressure-treated with borates is priced comparably to CCA-treated lumber at about $4 for an 8-foot length of 2x4, and carries a 20-year warranty if used as directed.

Copper Azole–Treated Wood

Developed in the last decade, copper azole relies on copper and the biocide tebuconazole to protect wood. The EPA says the treatment is nontoxic to humans, yet it has proven effective against fungi and bugs in tests by the Forest Products Laboratory. Not yet as widely distributed as ACQ, copper azole is manufactured by Arch Wood Protection, which sells treated wood under the brand name Wolmanized Natural Select. While several varieties of Wolmanized wood have long been on the market, they generally contain CCA; only wood labeled Natural Select is made with copper azole. The cost is comparable to wood treated with ACQ, typically 15 to 30 percent more than CCA-treated lumber.

ACQ-Treated Wood

The most widely available of the new preservatives, ACQ—a mix of ammonia and copper—has been proven effective by the USDA Forest Services Forest Products Laboratory, in Madison, Wisconsin. "It's a one-to-one replacement for CCA-treated wood," says Alex Wilson, editor of *Environmental Building News* in Brattleboro, Vermont. The wood is currently sold under two brand names, ACQ Preserve and NatureWood. Both are warrantied for the lifetime of the user against rot, decay, and termites. An 8-foot length of 2x4 costs around $5.

Natural Woods and Composites

The heartwood of some species such as redwood, cedar, and ipe contains naturally occurring chemicals that protect it from attack by decay and insects. But how resistant the wood is to rot depends on the tree's age and varies from tree to tree. "Naturally durable species such as redwood and cedar are not as consistently durable as wood that has been pressure-treated with standardized preservatives," says Blum. However, these species are a good—if expensive—at around $2 a linear foot of 2x4—alternative for aboveground outdoor applications, such as decking. Plastic and wood composites and all-plastic products also resist rot and insects, as well as the sun's ravages. While good for decking and railings, these options don't have the strength of wood and are currently not available in the larger dimensions needed to frame decks, for that there is plastic structural lumber. These nonwood alternatives generally are priced competitively with redwood and cedar.

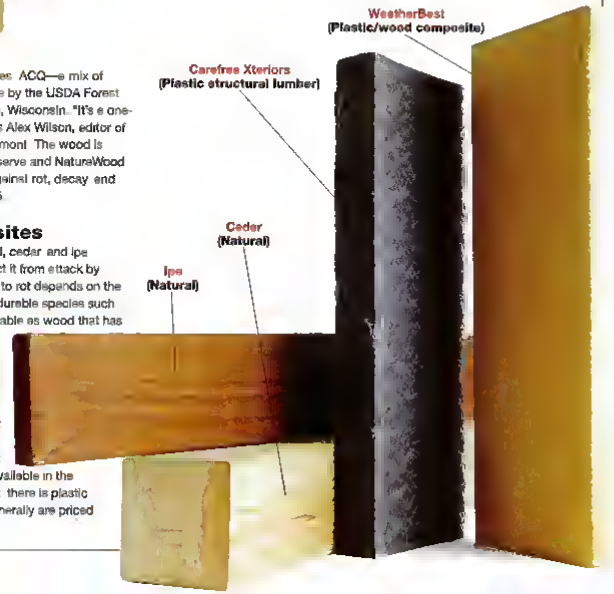


PHOTO: DAVID HANNLEY

Tom says, "but they will eventually give way, too, when they're buried in the ground for something structural, such as deck posts."

Substitutes for CCA are already available at major home-improvement centers. "Home Depot will be fully stocked with the alternatives well in advance of the December 2003 time limit," says company spokesman Don Harrison. The two main replacements for CCA will be alkaline copper quaternary (ACQ) and copper azole, both typically injected under pressure into southern yellow pine. (For a guide to these and other options, see page 36.)

In appearance and performance, these alternatives are nearly identical to wood treated with CCA. They get their insect and rot resistance from higher concentrations of copper, which acts as a fungicide and termite repellent. The biggest difference is price: ACQ and copper azole will cost from 15 to 30 percent more than CCA lumber. "The reason is the increase in the amount of copper, which is the most expensive ingredient," says Al Heberer, marketing manager for Osmose, which manufactures ACQ.

As to the second question—what to do with the countless CCA-treated structures already in place—the EPA leaves that decision largely to homeowners. "We don't believe there's any reason to remove or replace existing structures such as decks or play structures, or to disturb surrounding soils," says agency spokesman David Deegan. He notes that there may be some benefit to sealing CCA-treated wood to prevent arsenic from leaching (see "To Seal or Not to Seal?" below). "But we need to do more testing," he says.

In the meantime, the only way to guarantee that you and your children will never be exposed to potentially harmful chemicals is to avoid using them altogether. Manufacturers of nonwood products, such as plastic and composite decking, are expecting a surge in popularity once the ban formally kicks in on January 1, 2004. Says Home Depot's Harrison, "When it comes to building materials that last, no one's in the market for wood alone anymore." ■

For a natural alternative to pressure-treated wood, consider redwood, used to make this play set from Rainbow Inc.

PRECAUTIONS FOR HANDLING CCA-TREATED WOOD

While the EPA is not recommending that homeowners remove existing structures built with CCA-treated wood, the agency has issued these guidelines regarding proper handling of the material:

- Never burn CCA-treated wood in open fires, stoves, fireplaces or residential boilers. It cannot be recycled for mulch or compost.
- When sawing or sanding treated wood, wear a dust mask.
- Wear gloves when working with the wood; wash exposed skin before eating or drinking; and do not let food come into direct contact with any treated wood.

Even arsenic-free pressure-treated wood still needs to be handled with care. That includes washing hands after handling it, not letting food come in contact with it, and disposing of wood according to local solid waste requirements.

TO SEAL OR NOT TO SEAL?

In announcing the shift away from CCA lumber, the EPA noted that "some studies suggest that applying certain penetrating coatings (e.g., oil-based semitransparent stains) on a regular basis (e.g., once per year or every other year depending upon wear and weathering) may reduce the migration of wood preservative chemicals from CCA-treated wood." This falls short of an actual recommendation to seal pressure-treated wood, notes agency spokesman David Deegan. "Some studies suggest it holds the arsenic in; some suggest it does not. It really becomes a matter of personal choice at this point," he says.

In recent testing by the Forest Products Laboratory, coatings were found to "greatly" reduce leaching of arsenic from CCA-treated deck boards, says laboratory spokesman Gordie Blum. "Any coating that retards the movement of water into and out of the wood will probably work, but coatings that are likely to blister and peel and subsequently require sanding or scraping, such as varnish, would not be desirable for this type of application." Nor would film-forming sealers such as paint or polyurethane. The best choices are water-repellent preservatives containing mildewcide and semi-transparent stains.

In addition to locking in the arsenic, sealers also help to prolong the life of pressure-treated wood, whether it's preserved with CCA or one of the newer formulations. "Just because it won't rot or get eaten by insects doesn't mean it won't warp, check and weather," says Tom Silva. "That, to me, is the number-one reason why you should always seal exposed wood, especially on a deck." Tom does so every year or two, or whenever the stained surface starts to look dull. On a new deck, he waits a month before sealing. "That gives the moisture that was trapped in the wood when the trees were cut time to dry out," he says.

PHOTO: TUDI WYERS (BOTTOM)

WHERE TO FIND IT — SEE DIRECTORY ➔ PAGE 148

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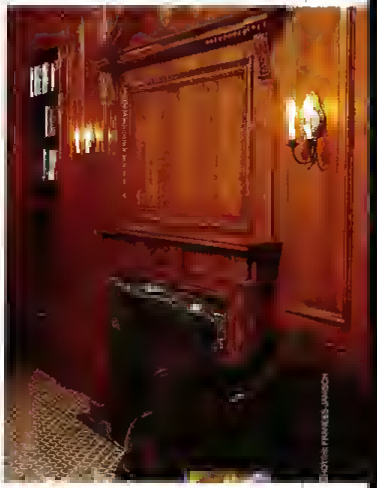
Now You See It, Now You Don't

Flat-screen TVs can disappear when the show is over

BY DAN DICLERICO

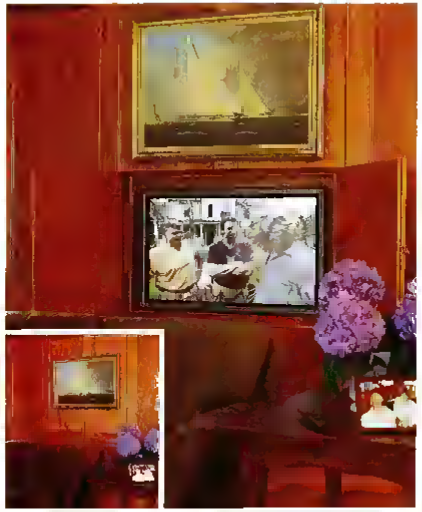


Measuring a svelte 3 to 5 inches thick, plasma screens have literally altered the shape of television. They're revolutionizing the look of the TV room, too, as people discover inventive ways to integrate the sleek (and, for now, pricey) monitors into their homes.

Take the case of Marc and Mindy Utay. During the renovation of their Manhattan apartment, the couple found themselves in a familiar bind—how to get one room to perform two functions. "On the one hand, we wanted to create a calm, quiet study in which to relax and read," Marc says. "But we still needed a place where the family could hang out in the evenings and watch a movie." Since a standard, boxy television would upset the formal feel of the room, Manhattan-based audiovisual

ABOVE: *The screen and components of this plasma TV are recessed into a wall over a fireplace mantel.* RIGHT: *When not in use, the giant screen is concealed by a sliding panel.*

PHOTOS: FRANCES JANISCH

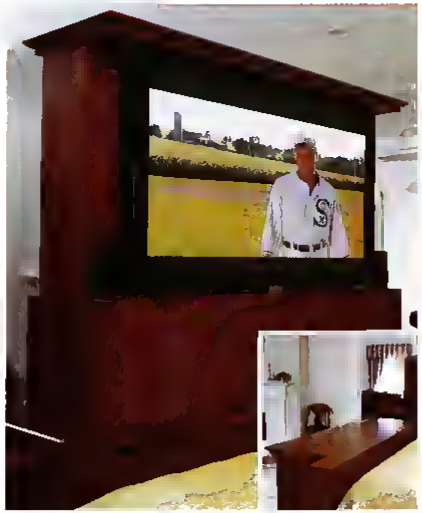


ABOVE LEFT: *Shutters are another hideaway solution for a plasma over a mantel.* ABOVE RIGHT: *A painting slides down over the screen.* RIGHT: *Sleek cabinetry designed to accommodate a flat-screen set was custom-made to go at the foot of a bed.*

consultant Bill Mayer suggested recessing a 50-inch plasma screen, just 4 inches thick, into the wall above the fireplace mantel. Architect Alfred Wen liked the solution. "Both the fireplace and the TV demand to be the focal point of the room," he explains, "so furniture would be arranged around them in the same way."

The result is a TV room disguised as an English-style library, where Surround sound emanates from speakers set in the cherry-paneled walls. The system's peripherals—DVD player, VCR, cable box—are housed in an adjacent cabinet built into the wall, while the wires connecting the components are hidden away in a flexible 2-inch pipe snaked behind the paneling. When the room is in full library mode, the television disappears behind a mechanized panel that slides along steel tracks and is operated by remote control. Custom designed by Eric Andkjar, the panel moves horizontally back 2 inches before lifting up, so the Utays have the option of hanging a painting on it. The monitor is ventilated through a series of holes drilled into the wooden box that holds it, as well as through the door mechanism.

There's no question that plasma technology (see "The Skinny on Flat-Screen TVs," page 46) is a boon to multipurpose rooms. "When space is at a premium, the design options are as wide as your imagination," says Mayer, who has helped tuck the screens into handsome cabinets at the foot of beds and recessed them in wall cavities cov-



PHOTOS: CLOCKWISE FROM TOP: KELLER & KELLER; PASCAL BLANCHÉ; JOHN GRUEN (3)

WHERE TO FIND IT ~ SEE DIRECTORY ~ PAGE 148

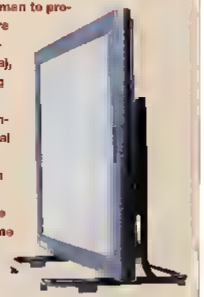
ered by movable paintings. But hiding them over the fireplace remains a popular approach, in part because it places the monitor at a good viewing height. To hear Marc Utay talk, the beauty is as much about what you *can't* see. "With the panel down, it's like sitting in my own private study instead of in the middle of the TV room." ■

THE SKINNY ON FLAT-SCREEN TVs

A plasma screen's slim profile is its strongest selling point, but it's not the only one. For starters, the technology (simply put: charged particles of gas like plasma strike light-emitting colored phosphors on the back of the screen to produce an image) results in an exceptionally bright picture. When paired with a high-definition signal, from a satellite, cable, DVD, or over-the-air broadcast (roof antenna), the resolution is four times sharper than regular analog TV. Plus, its flat screen stops images from bending at the edge of the picture, making for 160 degrees of comfortable viewing. And its rectangular shape, proportional to a movie screen, means films can be viewed in their intended "widescreen" format. Finally, a plasma screen can double as a computer monitor, letting you check your e-mail and the score of the game at the same time.

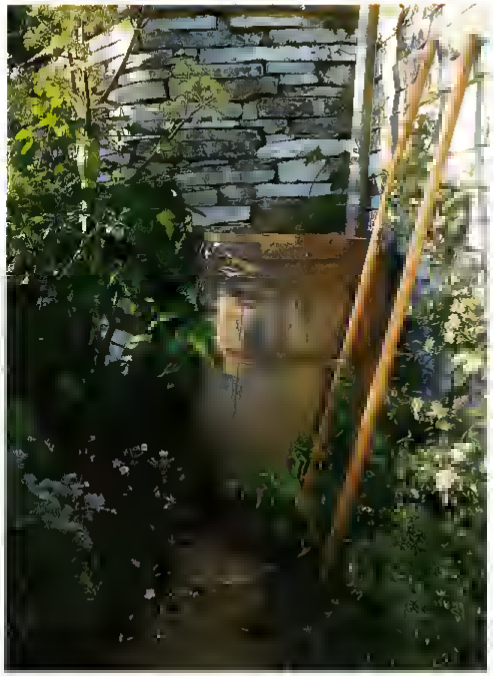
While prices remain high (the average 42-inch plasma screen runs about $6,000, though some can be had for half that), experts predict that increasing demand will drive costs down by a third every year, until they're as affordable as high-end tube TVs. Manufacturers expect to sell 4½ million monitors to households worldwide in 2005 alone. A less expensive option is LCD (liquid crystal display), which is as thin as plasma but retails for under $1,500. However, the smaller price tag reflects a smaller screen size and reduced viewing angle. LCDs are typically 15 or 20 inches, compared to the standard 42 or 50 inches of plasma, and many models must be watched straight on, like the screen on a laptop. On the plus side, LCDs almost always come with a tuner and speakers. Though a few plasma manufacturers offer lines with the same plug-and-play capability (including an outboard or built-in tuner), most models still function as a monitor, not a TV. In other words, they require a separate tuner (a cable or satellite box will suffice) as well as a sound system.

Neither plasma nor LCD will become obsolete anytime soon, since they can be adapted to HDTV, digital TV, or any new broadcast technology on the horizon.



Besides its space-saving design, a plasma's perfectly flat screen is distortion free.

At a few inches thin, LCD TVs offer the same installation choices as plasma sets. The model above is shown with an optional stand.



Harvesting the Rain

Rainwater collection systems can provide a year-round, high-quality alternative water source

With a year-long drought affecting much of the country, people who once took their water supply for granted are having second thoughts. Faced with reservoirs at record-low levels, many communities are putting limits on lawn watering, car washing, and other nonessential uses. These restrictions are temporary in most places, but in some parts of the country drought conditions are chronic, and depleted groundwater—springs and other forms of underground H_2O that supply wells—is a long term serious problem. "The population is growing, but the water supply is not," says Bill Hoffman, a coordinator for the City of Austin Water Conservation Program, in Texas. That's why more and more people around the country are turning back to the centuries-old idea of collecting rain as an alternative source of water.

Collecting rain for watering lawns or washing the car can be as simple as placing a rain barrel at the end of a downspout. More complicated systems can supply some or even all of a household's water needs

By collecting rain from a roof during wet months and storing it in a tank or cistern, homeowners can create an alternative supply that won't tax the groundwater or jack up the water bill. And because rain doesn't contain the minerals found

BY JEANNIE RALSTON

in wells or the chlorine in municipal supplies, it's ideal for watering the lawn, washing the car, doing the laundry, taking a shower—even drinking if it's properly filtered. "Rainwater is the purest water you can find," says Dr. Hari Krishna, president of the American Rainwater Catchment Systems Association (ARCSA).

A rainwater collection system can be as simple as a rain barrel at the end of a downspout or as elaborate as a whole-house system like the one on page 52, which supplies all the water needs for my family of four in the Texas Hill Country. Cost and complexity depend on how much water you need and how you plan to use it. A simple system is adequate for landscaping needs, but cost, complexity, and maintenance increase if you're planning to drink rainwater or pipe it into the house. Check with your local building official about the regulations on rainwater systems for indoor use—codes differ widely from one community to another.

ABOVE. *For more storage capacity, several 55-gallon plastic rain barrels can be connected.* RIGHT: *This 150-gallon closed fiberglass tank in Austin, Texas, can be full after only an inch of rain.*

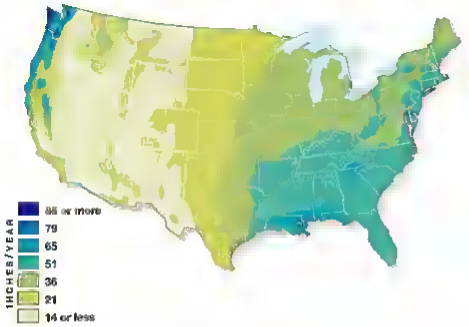
A SIMPLE COLLECTION SYSTEM

A house with a sloped roof, gutters, and downspouts is well on its way to "harvesting" rainwater for landscape irrigation or other nonpotable uses. All you need to do is add a few simple components: some wire-mesh gutter screens to keep out debris, a storage tank to hold the water, and a way to move the water out of the tank.

The storage tank, or cistern, can be made from almost any material—even a clean recycled metal drum. Gardening stores sell 55- to 75-gallon plastic rain barrels, complete with leaf screens and spouts, for about $50 to $250. Wooden barrels have a nostalgic charm, but they're hard to come by and expensive. A wine or whiskey barrel made by a professional cooper will cost at least $250. Larger storage tanks can be made of stone, cement, metal, wood, or fiberglass.

To prevent mosquitoes from breeding in tanks, make sure they are covered or screened. Also, during winter months barrels should be kept only three quarters full to allow freezing water to expand.

Gravity is the easiest (and cheapest) way to move rainwater out of the storage tank. Systems that work by gravity are a good option for watering landscapes; you only need to open a spigot or valve at the bottom of the tank. However, if you have to move water to a level higher than the tank, you'll need a pump. A 1-horsepower electric jet pump, mounted in a small shed near the tank, costs about $400 and can provide about 8 gallons of water a minute up to 500 feet away from the water tank.



How much rainwater a household can collect depends on the size of the roof (or catchment surface) and local rainfall amounts. A thousand square feet of roof will collect about 600 gallons of water for every inch of rainfall.

COLLECTING FOR HOUSEHOLD USE

Things get more complicated if you're planning to drink or wash or bathe with the rainwater you collect. The equipment you need includes specific types of roofs, gutters, and storage tanks, as well as a way to filter and purify the water and pump it into your house. Also, for those living in areas with heavy air pollution, rainwater may not be good enough to drink. "If you live in a highly industrialized area, I recommend using rain for gardening only," says Hoffman. Even so, there are filters that can take out most bacteria and particulates, and reverse osmosis will keep out anything harmful, including the sulfuric and nitric acids in acid rain. "If you have any concern about rain quality, have a professional water test done on a sample," says Hoffman. Unpainted galvanized metal roofing is the best catchment surface for potable-water systems because it's smooth and nontoxic. Clay or concrete tile and *(continued on p. 54)*

PHOTOS: COURTESY OF GARDENER'S SUPPLY COMPANY (LEFT); HARI RR BHNA (RIGHT); ILLUSTRATION: IAN WORPOLE

RAIN FOR THE WHOLE HOUSE

Collecting rainwater isn't just for keeping lawns and gardens green. Here in the Texas Hill Country, my husband, two young sons, and I use rain for everything from drinking to showering. Rainwater is much softer than the mineral-heavy well water we used to use, and because of that it leaves no milky scum on tiles and fixtures. Plus, it tastes great. At 30,000 gallons, our system is large enough to last us seven months.

Because we drink the water, what comes out of our faucets must be clean. Our storage tanks are coated on the inside with an FDA-approved food-grade resin and on the outside with gelcoat, an opaque resin that blocks out sunlight and helps prevent algae buildup. Before the water enters the house, a 5- and then a 3-micron carbon filter take out any suspended sediment that the roof washer (which filters out most debris) missed. Then the water passes a UV light that zaps any bacteria. To clean the filters in the roof washer we take them to a self-service car wash and spray them with a high-pressure hose. We change the 5-micron filter every month and the 3-micron filter every three months; the UV light is cleaned every five months and replaced every 14 months. We also regularly check the tank gauges so we know how many months' worth of water we have. To stretch our supply, we conserve mightily by using water-saving toilets that require only 1.2 gallons per flush, a front-loading washer that uses 50 percent less water, and by limiting showers to two minutes, which is not popular with our guests.

At just under $25,000, the cost to install our system wasn't cheap compared with using city water or drilling a well. But now that it's up and running, we pay only for the electricity to run a 1-horsepower pump and $150 a year to replace all the filters. The payoff is delicious: chemical- and mineral-free tap water that's far better than anything from city or well sources. Dishes, clothes, and skin rinse clean, and there's no buildup of iron or lime on the fixtures. Plus, we have a modicum of self-sufficiency, which is worth a lot to us these days. During the Y2K scare and after the terrorist attacks, many people told us that if the public utilities were ever crippled, they were coming to stay with us. Fine, I said, but the two-minute-shower rule still applies.

In the Texas Hill Country, Jeanne Ralston and husband Robb Kendrick use rainwater for all their needs. The 30,000-gallon system consists of three 11,000-gallon fiberglass tanks and two with a capacity of 3,000 gallons each. Located 150 feet from the main house, a 900-square-foot shed (which also collects rain) helps hide two of the 10-foot-tall tanks from view (1). Before the water empties into the tanks, a primary filter called a roof washer (2) helps remove leaves and other large debris. Inside the shed, a 1-horsepower electric jet pump and a pressure tank push the water through two carbon filters and past a UV disinfecting light before it goes back to the house via a 1½-inch PVC pipe (3).

PHOTOS: PAUL BARNSLEY ILLUSTRATION: IAN WORPOLE

WHERE TO FIND IT – SEE DIRECTORY – PAGE 143

slate also work well. Asphalt, asbestos, chemically treated wood shingles, and some painted metal roofs, however, can leach toxic materials and are recommended only for nonpotable water uses.

As in a simple system, gutters and downspouts should have leaf screens. But it's important that those gutters not have lead solder or lead-based paints. Seamless aluminum and vinyl gutters are fine. Also, a roof washer, a filtration system that removes any remaining leaves, debris, and bird droppings, should be placed in the line before the water enters a storage tank.

As long as the inlet pipe to a storage tank is lower than the roof of the house, the captured rainwater will flow up and into the tank.

As with nonpotable systems, storage tanks can be made of stone, cement, metal, wood, or fiberglass. But if you're planning on showering with or drinking rainwater, stone and cement can leach minerals, and galvanized tanks can release zinc in the water, unless a PVC liner is used (zinc from galvanized roofs is filtered out before being stored). Fiberglass tanks, though hardly the most attractive, are by far the cleanest and most durable. You'll need to keep the tank out of the sun, which can heat up the water and foster algae growth. Tanks are sometimes buried, either partially or fully, to keep the water cool or to hide the tanks (and to prevent the water inside from freezing). However, buried tanks add costs for excavating and can't easily be cleaned. A better option is to shade the tanks to ensure that only rain—and not sunlight—gets in.

By looking at the average rainfall levels in your area (see map, page 50) you can figure out how much rainwater you can expect to collect per year and whether that will meet your family's water needs. (An average household with newer plumbing fixtures such as 1.6-gallon-per-flush toilets and 2.5-gallon-per-minute showerheads uses roughly 55 gallons per person per day.) In general, 1,000 square feet of roof will collect 600 gallons of water for every inch of rain that falls. Remember that actual rainfall amounts fluctuate with the seasons, while household needs remain reasonably steady. If you're depending on rainwater for all or most of your water needs, your tanks have to be big enough to get you through the dry spells. Plus, you'll need a fair amount of space to house those tanks, and be sure to follow municipal restrictions on tank placement. Some homes with acreage have multiple 10,000-gallon tanks receiving water from several thousand square feet of roof surface.

The cost for a 10,000-gallon tank, PVC lines to and from the house, silt filters, UV light, pressure tank, and pump runs from $7,500 to $9,000. To offset these expenses and relieve overburdened public water services, some cities, such as Austin and Portland, Oregon, are offering incentives like tax-free equipment or property-tax rebates to install collection systems.

MAINTENANCE

Good maintenance of a rainwater collection system is crucial for keeping water quality high, particularly if the water is to be consumed. Gutters must be kept free of leaves, no matter what kind of system you install. If you have a potable-water system, the roof washer has to be drained after a big rain (a simple turn of a valve) and all filters have to be changed periodically. "I also recommend keeping back overhanging tree branches," says Krishna. "That way you can keep down the amount of leaves and bird droppings that go into the system."

With the right equipment and steady maintenance, rain can be a quality source of water in the dry months as well as in the wet ones. Plus, using rainwater for gardening and lawn irrigation will lower your consumption of well or city water. "And that could lower your water bill," says Krishna. ■

FOR MORE INFORMATION

American Rainwater Catchment Systems Association www.arcsa-usa.org

Texas Guide to Rainwater Harvesting (PDF file) www.twdb.state.tx.us/publications/reports/RainHarv.pdf

Water Wiser www.waterwiser.org

PHOTO: A CHARLIE HERSCHEDEN TANK TOWN

PHOTO: BRAD SIMMONS/ESTO

Porch Swing

Relax on a bench that moves with the breeze

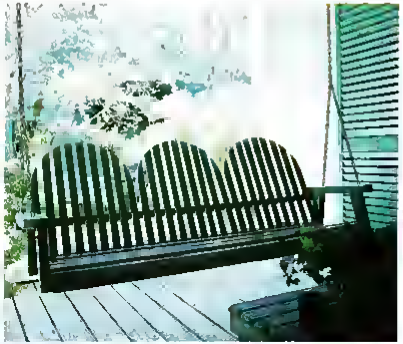
A porch swing isn't just a piece of furniture, it's a state of mind. Hop on, sway for a bit, and you're transported to a stress-free zone. Just ask Suzanne Henninger, who owns a weekend cottage in Seaside, Florida, where the front porch features a swing painted a cool blue. "I get my cup of coffee and head there first thing in the morning," says this health-care company vice president. "I listen to the birds, smell the ocean air, and slowly rock. It's heaven."

Even the simplest porch swing offers a taste of gracious living, perhaps because it's a reminder of more genteel times. Such swings became popular in the mid-1800s, an era known for houses with wraparound porches, when Americans began enjoying more leisure time. They were particularly favored in the sultry South, where they provided a much-appreciated artificial breeze.

While metal and wicker versions are available, most porch swings today are wooden, made from teak, cedar, pine, maple, or oak. Seeing a beautiful antique swing in Newport, Rhode Island, led *This Old House* master carpenter Norm Abram

A white swing provides just the right finishing touch for the gingerbread-trimmed front porch of a Victorian-era house.

BY JILL CONNORS




CLOCKWISE FROM TOP LEFT: *A green-painted Adirondack-style swing with room for three, Suzanne Henninger's treasured blue swing in Seaside, Florida, a white-painted model designed with the clean lines of a piece found at the Weatherend estate in Maine, white wicker, a classic material for all kinds of porch seating*

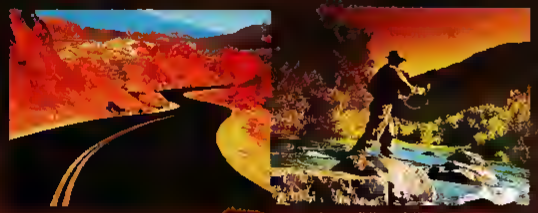
to craft his own, out of plantation teak. "Teak is very strong as well as rot resistant, so it can hold up to the outdoor environment. And it weathers beautifully," says Norm, whose design was inspired by a classic English garden bench. Indeed, swings made of teak ($500 to $1,000) or cedar ($250 to $400) are meant to weather in the elements, turning silvery or dark gray. Some homeowners may prefer a painted swing, either crisp white or a color that complements their porch or exterior trim. In that case, a less expensive pine, oak, or maple swing ($150 to $400) can be coated with exterior trim paint or high-gloss porch enamel to suit.

For the most part, swing seats come 4 or 5 feet long; they may be contoured or flat. Seat depth varies widely, from 18 to 36 inches. The porch swing Norm built measures 4 feet long and has a seat that is 18 inches deep, dimensions he finds just right. Since comfort comes down to personal preference, it's a good idea to test-drive a swing before you buy.

Style differences emerge mainly in the swing's back. It may be squared off or curved, and constructed with horizontal or vertical slats, which may be set close together or spaced wide apart. While the peaked back of an Adirondack-style might seem more appropriate for the porch of a clapboard cottage than a brick Georgian, most swings can adapt to their architectural surroundings with the addition or omission of fabric-covered cushions.

Whatever way a porch swing is personalized, its appeal remains universal. When Suzanne Henninger bought her cottage four years ago, "the swing was the very first thing I added," she says. "When friends come to visit me, they rock on that swing, then go home and buy one. It's contagious." *(continued on pg. 62)*

PHOTOS, CLOCKWISE FROM BOTTOM LEFT: MARK HUMPHREYS (2); COURTESY HENNINGER BECKER FURNITURE; STOUT IDEAS; PRIVATE



No matter how many curves the road throws your way, the All-Wheel Drive Subaru Outback can handle them with ease. In fact, in recent tests the Outback outcornered, outhandled and showed more stability in a turn than the Lexus RX 300. So not only does the Outback easily handle difficult driving conditions, it easily outhandles the competition. Visit us for a test-drive, online at www.subaru.com, or call 1-800-WANT-AWD.

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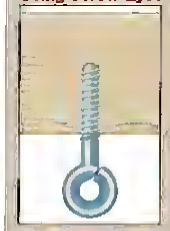
HOW TO HANG IT

When positioning a porch swing allow for at least a 4-foot arc for the swing to move through. As for height off the floor, use 17 inches as a starting point, and adjust from there. Hanging chains can be stainless or galvanized steel, if you prefer the look of rope, make sure it is marine-grade braided nylon or polyester, and check it regularly for signs of wear.

"The biggest thing in installing a porch swing is to make sure it goes into something structural," says *TOH* general contractor Tom Silva. In Seaside, Florida, where many of the porches feature exposed beams and joists, and most of the cottages were built in the past 15 years, town carpenter Jim Eichberger uses stainless steel screw-eyes with a 4-inch shaft as hanging hardware. He first drills a pilot hole slightly smaller than the shaft, then twists the screw-eye into place as far as it will go, using a screwdriver wedged through the eye for the final tightening.

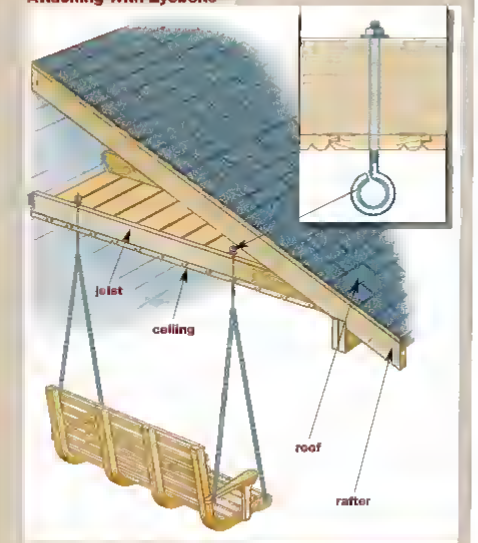
Using Screw-Eyes



Tom Silva is more accustomed to working on the porches of older homes, where the condition of joists is often hidden by a finished wood ceiling. Rather than remove a section of the ceiling and have to replace the whole thing later, he prefers to cut a 3-by-3-foot hole in the porch roof and patch it when he's done. From the roof, he predrills holes through the joists, then inserts 6-inch machine threaded eyebolts through the ceiling and joists, securing them with nuts. (A threaded connector and nut can be used to lengthen a 6-inch eyebolt, if needed.) If the joists aren't located exactly in line with where you want to put your swing, Tom advises hanging a timber between two joists, then putting the eyebolt through the timber and securing the nut. Where a swing is to be installed parallel to a single joist and older, full-dimension lumber isn't in place, the joist should be sistered.

"It's definitely more of a pain to do it this way," says Tom—and likely to take the project out of the hands of most do-it-yourselfers. "But it's the safest, strongest approach. I wouldn't feel comfortable any other way."

Attaching With Eyebolts



OTHER OPTIONS: NO PORCH REQUIRED

A deck, backyard, or garden is also a perfect place to site a swing. A rope-hung bench looks right at home beneath a sturdy tree limb; one suspended from a chain is a welcome addition under a well-built pergola or arbor. (Norm, who doesn't have a porch, hung his under an arbor at the New Yankee Workshop.) A number of companies have swings that come suspended in their own frames, or with an arched or flat-topped arbor from which to hang them.

Walpole Woodworkers offers both a rustic Lakewood Swing ($690) with facing loveseats that move in unison and the lattice-covered Plantation Arbor arch with cedar Kimball Swing ($1,985), left. A glider—a bench that gently moves forward and back on a mechanized base—is even more versatile, since it requires less space and can be relocated with ease. Wood Classics offers a kit that turns any of its 4-, 5-, or 6-foot-long teak garden benches into a glider.

ILLUSTRATIONS: IAN WORPOLE. PHOTO: COURTESY WALPOLE WOODWORKERS

WHERE TO FIND IT – SEE DIRECTORY – PAGE 143

Steve Thomas road-tests the new mailbox and post he just installed.

Post Haste

This Old House host Steve Thomas makes quick work of replacing a damaged mailbox

Installing a mailbox isn't a yearly chore, but every homeowner with curbside delivery faces the triple threat of rot, vandals, and the errant car bumper. At some point, that precariously tilted wood post will have to be replaced. We asked Steve Thomas to demonstrate how to pull an old post, dig a new hole, and set a replacement mailbox plumb.

After a quick call to *TOH* landscape contractor Roger Cook for the right tools and a few tips, Steve, who in his youth honed his digging skills punching out fence postholes on a horse farm, set to work one spring morning. With the aid of a Gibbs digger—its articulated head and arm reach deep into a narrow hole—and a digging bar for prying up rocks, Steve took care of the entire task, from removing the old post to snapping shut the lid on the newly mounted box, in about an hour. He installed a 4½-inch-square cedar post, chosen for its sturdiness and rot resistance, though a 4x4 or 6x6 pressure-treated post will do the job just as well. The new white-stained post was rock-solid and the spacious box ready to receive letters by the time the mail carrier rode up in his Jeep.

BY JORDAN REED PHOTOGRAPHS BY KOLIN SMITH

Locating Utilities

1 Before breaking ground, telephone a one-call center to make sure you won't hit phone, cable, electrical, water, or sewer lines. These nonprofit services contact utility companies, which send representatives to mark the lines' locations. "Never, ever dig without knowing what's in the ground," cautions Roger Cook. "I've seen people do some serious damage to themselves and their property." (For a listing of state one-call centers, phone 888-258-0808 or go to www.digsafely.com/OneCallNumbers.htm.)

Expanding the Hole

2 After wrestling out the damaged post, widen the hole to make room for the new post and the soil around it. As you dig, set the soil aside on a tarp. Local regulations dictate the height of the box (see below), so subtract that figure from the length of the post to calculate how deep you'll need to dig. Then add another 4 to 6 inches for a gravel base that will provide drainage. The post should be long enough to be buried at least 24 inches so that constant use and the occasional nudge by a fender won't knock it over.

Prying Out Rocks

3 Steve recommends using a long digging bar to root under and pry out any rocks you hit while digging. "A 6-foot bar is indispensable," he says. "You can't get a sizable rock out without it." The steel bar is sturdier and smaller than the blade of a shovel or post-hole digger, both of which are prone to break and too big to get any leverage in the narrow hole.

Postal Regulations

The United States Postal Service has the following guidelines for roadside mailboxes, although they're subject to local highway laws. Before installing a box, call your post office to double-check.

- **The box must be on the right-hand side of the road as the carrier travels the mail route, and must be located so he or she can post mail without getting out of the vehicle.**
- **The bottom of the box should be between 42 and 48 inches off the road surface.**
- **The front of the box must be flush with the back of the curb.**
- **The house number has to show on the side the carrier approaches from and be at least 1 inch high and in a contrasting color to the box.**

Checking for Proper Depth

4 Before you set the post and start filling the hole, double-check that you've dug deep enough, remembering to account for the height of the box plus a layer of gravel 4 to 6 inches deep.

Filling the Posthole

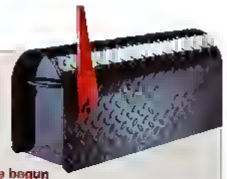
5 Pour in 4 to 6 inches of pea-size gravel to ensure that water will drain away from the post end properly; this precaution isn't always used where the soil has good drainage. Roger recommends mixing earth with the gravel to help hold it together as you tamp. Where there's sandy soil that drains well, instead use pack, a mix of stone dust and gravel.

Plumbing the Post

6 Stand the post on the gravel base and fill in about 3 inches to stabilize it. Compact the soil with a tamper or a spare 2x4, then check two adjacent sides for plumb so the post doesn't lean forward or to the side. It shouldn't be necessary to brace the post in place; just continue to alternately fill, tamp, and plumb until the hole is full.

Tamping Down the Soil

7 Once the hole is topped off, tamp one last time, making sure the soil is level with the ground around it. With a final check for plumb, the post is ready to receive the box, which should attach with a few screws or bolts. As a neat finish, plant around the post base or lay strips of sod to match the lawn.



STRONG BOXES

For years, bat-wielding vandals have taken aim at mailboxes for sport in rural and suburban communities, so clever entrepreneurs have begun to sell "vandal-resistant" boxes. The tougher ones are pricier than the typical $5 to $10 home-center offerings. Welded-steel versions, with thicknesses as formidable as 10-gauge, go for anywhere from $80 to over $400; flexible plastic models that bounce back to their correct shape with a little hand pressure start at around $50.

Success rates for these products vary, so some homeowners have tried their own methods to stave off would-be Babe Ruths. One chat-room participant tells of building a frame of 4x4 posts and suspending the mailbox on chains inside it. Another boasts of fitting a small box into a larger one and filling the space between them with concrete. But creative homeowners, beware: Substituting concrete, bricks, or other unyielding material may cause injury to hooligans and innocents alike, which could leave you vulnerable to legal action.

WHERE TO FIND IT – SEE DIRECTORY – PAGE 143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Making the Cut

How to choose the right circular saw and use it safely

BY CLAYTON DeKOHNE

A good circular saw should have enough raw power to slice through everything from wet lumber to dense hardwood without bogging down. "When the motor slows, the blade heats up and dulls quickly," explains Tom Silva, *This Old House* general contractor. This not only produces a poor cut, it's dangerous because the blade can climb out of the kerf and push the saw back toward the user.

However, evaluating power from the motor ratings can be misleading. Amps indicate only the amount of electricity a motor draws, not the power it sends to the blade. Horsepower accounts for torque (rotational force), but not necessarily under working conditions.

In the end, the most reliable appraisal may be price. A dependable sidewinder—the more compact design, in which the motor sits alongside the blade—starts at around $100. There are many saws on the market under this price, but they're not as powerful, nor are they built for a lifetime's use. Professional-grade sidewinders, which run quieter and cut through dense wood better, cost between $125 and $150. *TOH* master carpenter Norm Abram prefers this tool, noting that buyers should choose one based on balance and maneuverability. "I'd never buy a saw I didn't have a chance to hold first," he says.

On the other hand, a good worm drive saw, Tom's choice for framing because of its high torque output (its beefy spiral gear transfers power to the blade more efficiently), will set you back at least $200. Either way, a top-of-the-line saw, if treated with care, should still be cutting well when you're ready to hand it down.

PHOTOGRAPHS BY KELLER & KELLER

Saw Styles

WORM DRIVE →
The motor is in line with the blade, delivering enough torque to carve up wet lumber or saw through concrete, which makes a worm drive ideal for framing or major renovation jobs. With the handle farther back, a user can better resist kickback and steer the 16-pound saw through long rips. As on most full-size worm-drive saws, the blade of this Skil HD77 sits to the motor's left—in easy view for right-handed users.

← SIDEWINDER
The motor sits alongside the blade, making for a lighter (11 pounds or less) saw, which is more maneuverable over a long day than a worm drive. The helical gearing on higher-end sidewinders, such as this Milwaukee 6390-20, beefs up the torque, making these models worthy competition for worm drives.

SMALL SIDEWINDER →
Weight, balance, and handle size are all key features to consider when choosing a saw that fits you. For a slight-bodied person, a small pro model like this 7.7-pound Makita 5740NB may be more appropriate than a full-size sidewinder.

← CORDLESS
Battery-driven models have increased in size as their power packs have gained voltage, making them convenient tools out in the field or when the electricity's not on. This Bosch 1660K sports a 6½-inch blade and a 24-volt battery—the largest in its class. However, cordless models still have limited run times and generate less torque than corded saws.

TRIM SAW →
For finish work or paneling, Norm Abram prefers a small trim saw; blades range from 3½ to 4½ inches. This Porter-Cable 314, with a 4½-inch blade, is the one worm drive on the market—all others are sidewinders.

FEATURES

EASE OF ADJUSTMENT →
Large, smooth-cornered lever locks and full-round knobs that can be tightened down with the whole hand, like this one on the DeWalt 364, make it faster and easier to change the depth of cut and bevel settings than small, hard-to-grasp levers and wing nuts.

← SHOE STYLES
"No matter what you do, you will drop your saw," warns Tom Silva. Cast metal shoes with raised reinforcing ribs on the top surface, as seen here on a Porter-Cable 347, won't bend like flat aluminum shoes if the saw hits the ground. On the other hand, a cast metal shoe adds weight to a saw.

PHOTOGRAPHS BY DARRIN HADDAD

—Norm's Circular-Saw Basics—

SAFETY FIRST Circular saws can be dangerous. Always wear safety glasses and follow the safety instructions printed in your saw's owner's manual

Setting Blade Depth

Set the blade so that its bottommost tooth is ⅛ to ¼ inch below the work piece. Always make sure the power source is unplugged before making any adjustments to the saw.

Setup

Support the material on a bench or two strong sawhorses, overhanging enough so that the cut piece will fall. Never prop up this off-cut, or the material will buckle and bind the blade, causing a dangerous kickback.

Cross-Cutting

For an accurate cut, mark the side of the material that will become waste, then line up the blade to just leave the pencil line on the keep side. To make the cut, support the front of the saw shoe on the work piece, but keep the blade about an inch from the material. Then start the saw, letting it come up to full speed before pushing it steadily through the wood.

TIP: For 90-degree cross-cuts, use a speed square to guide the saw (above).

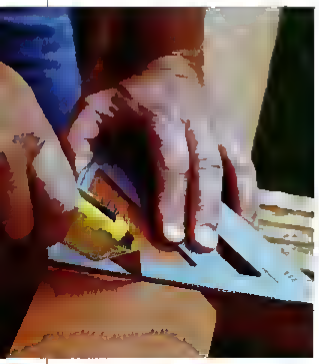
Ripping*

Place large sheets of plywood on 2x4s laid across sawhorses and positioned to support both sides of the cut. Clamp a strip of plywood or other straight material to the work piece at the right distance to guide the saw shoe while cutting the line. Walk alongside the plywood as you cut, holding the cord to make sure it doesn't get snagged.

TIP: For narrow rips, keep the saw straight by holding the shoe with your free hand and bracing your forefinger on the wood's edge. You can also use a pair of locking pliers (right) or a rip-fence accessory.

*sawing with the grain

—More Saw Tips From Norm—



Finish Cutting

As a circular saw blade cuts up through wood, the fibers on top splinter off, a condition known as tear-out (usually worse on cross-cutting). If appearances are important, put the good side down when cutting. If you must cut the board face-up or if both sides will show, score the cut line with a utility knife before cutting.

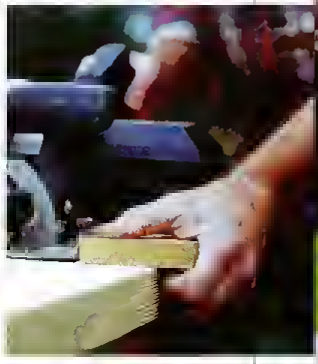
TIP: When cutting a finished piece, such as a painted door, duct-tape the bottom of the saw shoe so it can't scratch the finish.

Plunge Cutting*

A saw blade sinking through the face of a board can "walk" back across the surface, so make sure that no part of your body or the cord is in line with blade. Release the lever for the depth setting and drop the shoe below the blade. Then tighten the lever slightly to keep the blade from dropping, but don't lock it all the way. Bring the saw up to full speed, lift the guard, and slowly push the body of the saw down to start the cut.

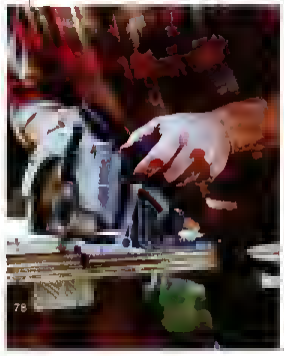
TIP: Make sure to start back far enough so that you only push the saw forward; never drag a spinning saw back.

***starting the cut in the middle of a board**



Ripping Wider Lumber

If a board is too wide for the saw shoe to hang over the edge during a rip cut, hold a narrow scrap of wood between thumb and forefinger bracing your finger along the edge of the board, and butt the saw shoe against the edge of the wood scrap as you push both along the board.



Gang Cutting

When cutting more than one piece of plywood to the same size, stack them on top of each other (or side by side in the case of dimensional lumber), clamp them together firmly, and cut the lot in one pass to save time and ensure consistency.

Beveling

Blade guards have a tendency to jam on steep bevel cuts, so carefully nudge the guard lever with one finger to ease it over the edge. Once the cut has been started, let the lever go. Never remove the guard or rig it so that it stays up permanently.

WHERE TO FIND IT — SEE DIRECTORY ➔ PAGE 143

HOMEOWNER'S
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DETACH HERE

Installing a Lockset

with *This Old House* master carpenter Norm Abram

BY SCOTT GIBBON PHOTOGRAPHS BY DAVID CARMACK

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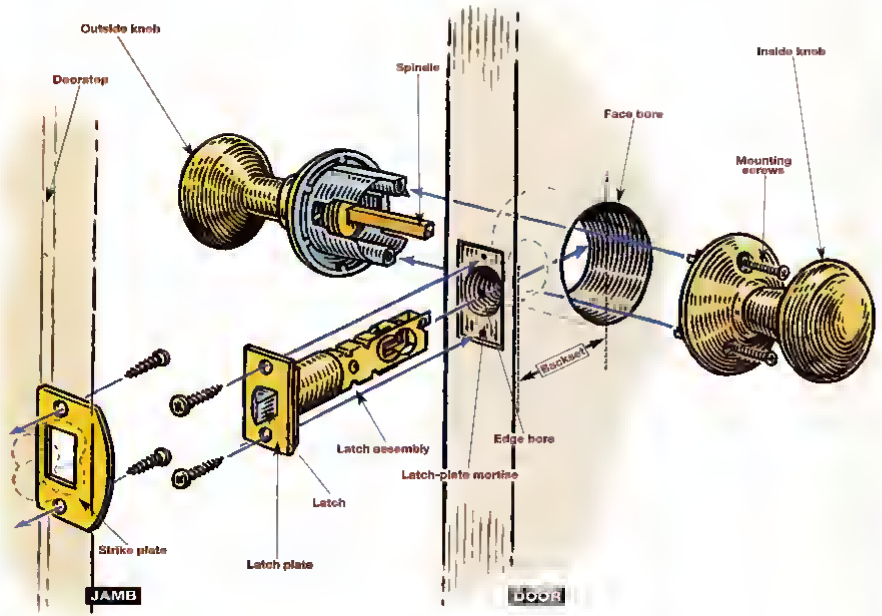
anatomy

the lockset

ILLUSTRATION BY GREGORY NEMEC



The two important variables when installing a lockset are the **height of the knob** above the finish floor and the **backset**—the distance from the center of the knob to the near edge of the door. Most knobs are positioned a comfortable 36 or 38 inches above the floor; check the height of other knobs in the house and keep it consistent. (For hollow-core doors, make sure there is a solid lock rail at the desired hardware height.) Backset typically measures 2⅜ inches for interior doors and 2¾ inches for exterior doors. The point at which the knob height and backset measurements intersect represents the center of the **face bore**, the circular hole that houses the lockset. A second hole, the **edge bore**, contains the latch assembly. Most locksets come with a cardboard **template** to help align the two bores. Check the template for the lock's bore diameters and choose drill bits accordingly.

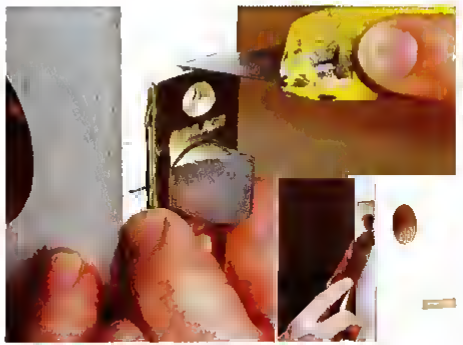
installation

STEP 1 Prepare the Door

- Open the door halfway and tap two shims (one from each side) between the floor and the door bottom to hold it steady.
- Measure up from the finish floor 36 inches (or the height of other knobs in the house) and mark the door's edge.
- With a square, extend this mark across the door's edge (ABOVE) and 3 inches onto one face.

STEP 2 Mark the Face and Edge Bores

- Wrap the cardboard template supplied with the lockset around the door's edge. Align its centerline with the line drawn in Step 1.
- Punch a nail (or awl) through the center of the template's face bore (ABOVE). This marks the center of the face bore on the door.
- Do the same to the template's edge bore to mark the center of the edge bore on the door. Remove the template.



STEP 5 Cut the Latch-Plate Mortise

- Insert the latch assembly into the edge bore. Be sure the latch's bevel faces toward the doorjamb.
- Outline the latch plate with a utility knife (ABOVE), then remove the assembly.
- Using a chisel, cut along the outline as deep as the plate is thick. Then chisel to the same depth every ⅛ inch between the top and bottom of the plate outline.
- Turn the chisel bevel-side down and remove the waste (INSET), working from the middle out. The plate should lie flush with the door edge when inserted into the finished mortise.

STEP 6 Install the Latch Assembly and Knobs

- Reinsert the latch assembly and mark the latch plate's screw holes inside the mortise. Remove the assembly.
- Drill pilot holes for the plate's two screws with a 7/32-inch bit, then reinsert the assembly and screw it in place.
- Slide the outside knob with the spindle through the face bore and latch assembly. Then fit the inside knob over the spindle.
- Hand-thread the mounting screws (see "Anatomy," FAR LEFT). Tighten them firmly with a screwdriver (ABOVE).

STEP 3

Drill the Face Bore

- Place the hole saw's pilot bit on the face-bore mark and drill a pilot hole. Stop when the saw's teeth touch the door's surface.
- Check that all saw teeth touch the surface uniformly, then drill the bore. Remove the hole saw periodically to clear sawdust from the cut (ABOVE). Stop when the tip of the pilot bit breaks through.
- On the opposite side of the door, align the hole saw with the pilot hole made previously, and finish drilling the face bore.

STEP 4

Drill the Edge Bore

- Position the tip of a ⅞-inch spade bit on the edge-bore mark made in Step 2.
- Drill into the edge of the door at medium speed until the tip of the bit emerges in the face bore (ABOVE).
- Reduce pressure on the drill to avoid tearing out excess wood, and finish drilling the edge bore.

STEP 7

Drill the Strike-Plate Mortise

- Close the door until the latch touches the edge of the doorjamb. Mark the jamb at the latch's midpoint (ABOVE).
- With a square, extend this mark across the jamb to the doorstop. Mark the midpoint of this line.
- Use a ⅞-inch spade bit to drill two partially overlapping ⅝-inch-deep holes, centered above and below the midpoint (INSET). Square up the sides of the mortise with a chisel, if necessary.

STEP 8

Install the Strike Plate

- Hold the strike plate over the mortise and score its outline with a utility knife (above).
- Using the technique described in Step 5, chisel out a mortise as deep as the strike plate is thick.
- Drill pilot holes for the strike plate's two screws with a 3⁄32-inch bit, then screw the plate in place.

TIP: *If the mortise is too deep, cut a cardboard shim to bring the face of the plate flush with the edge of the door.*

tools&hardware

1. ½-inch drill
2. ⅞-inch spade bit
3. 2⅛-inch hole saw
4. Wood shims
5. Phillips-head screwdriver
6. Tape measure
7. 1-inch chisel
8. Utility knife
9. Hammer
10. Pencil
11. Radius-cornered latch plate (for factory-mortised doors)
12. Latch assembly with square-cornered latch plate
13. Cardboard template (included with lockset)
14. Radius-cornered strike plate (for factory-mortised jambs)
15. Square-cornered strike plate
16. Doorknobs
17. Combination square

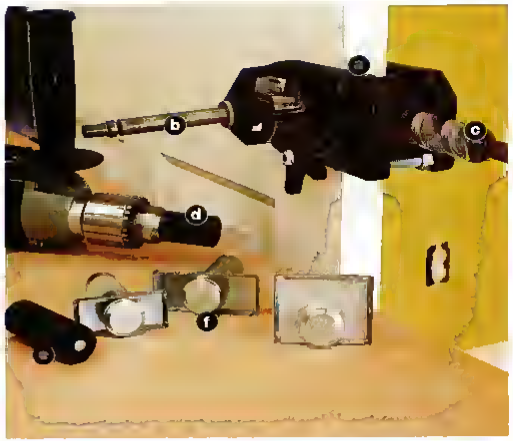
also have on hand:
awl, ⅜s-inch bit

"If the door rattles when closed, bend the metal tab in the strike plate's opening out slightly. That will tighten the door's fit." —NORM ABRAM

tool spotlight

the boring jig

"For one or two doors, I'll drill the bores freehand," says Norm Abram. "But for a houseful of doors, it's easier and faster to use a boring jig." This cast-steel device **(a)** is really a heavy-duty version of the cardboard templates most manufacturers include with their locksets. The jig, which can accommodate both 2⅜-inch and 2¾-inch backsets, clamps onto the door and aligns and guides two bits—one for the 2⅛-inch-diameter face bore **(b)** and another for the smaller edge bore **(c)**. A quick-change chuck **(d)** speeds switching between bits. This $200 kit includes a tubular strike locator **(e)** that fits into the finished edge bore and is used to accurately mark the location of the strike plate on the doorjamb. The set also comes with metal stamping dies **(f)** that chop perfect outlines for the latch and strike plates with one whack of a mallet.



PHOTOS: DAVID CAMARDO

LETTER FROM

THIS OLD HOUSE

Master Class

BY ROGER COOK

Roger Cook, This Old House landscape contractor, took in some lessons in craftsmanship from his show colleagues

It's not often that I talk about landscaping and craftsmanship at the same time, but the work I did at the TV project in Manchester, Massachusetts, gives me the chance. Usually my crew and I come in after everyone else has left, to install plantings, seed the lawn, and maybe build a wall or a patio. But at Manchester we were busy during the whole project, creating spaces designed to be as artistic and welcoming as any room inside the house. There were so many distinctly different areas, both hardscaped and landscaped—from the bluestone-bordered patios, the Goshen-stone spa area, the curved driveway, and the auto courtyard to the sculptural island in the front and the eye-popping flower beds in the back.

Manchester was also a great experience for me because I spent a lot more time there than on any other show project. I got to watch Tom, Norm, Richard, and all the other guys close up and see what makes them such good craftsmen. Sure, you need knowledge and the right tools, but the thing that sets them apart, I think, is their patience and attention to detail.

If you're a fan of the show or the magazine, you may have seen some of this in practice. But you probably don't know that when everyone has gone, Tommy will stick around—or come in on weekends—so he can check on all the little things, giving each the time it really deserves. And Norm is great with his "Measure twice and cut once." But what you don't see is the hours he spends alone in the workshop on a piece he's building and how often he goes back to the project to check on changes and make sure everything will slide into place without a hitch. You also don't see Richard sneaking down to the basement by himself to patiently lay out where the fittings for the systems will go, before they're delivered to the job. Because of his thoroughness, the large, heavy boiler fits in perfectly when it shows up, and all the plumbing runs and heating ducts line up, resulting in less time and labor charged to the homeowner.

So as I prepare to cut the bluestone banding with a diamond-bladed saw—a one-shot deal—I'll take care to double-check my measurements, make sure the saw is ready to go, take a moment to clear my head, and then slowly make the cut with the extra measure of dedication and patience I've seen in these craftsmen. It's amazing what you can learn watching them. ●

PHOTOGRAPH BY KINDRA CLINEFF

COMING NEXT ISSUE

New Show Season

- Uncovering the history of the new TV-show project house in Winchester, Mass.
- Smart thermostats
- Choosing the right grass for your lawn

PLUS

- Engineered-stone countertops
- Fixing fireplace problems

SEPTEMBER: *On sale August 12*

The New
This Old House
TV PROJECT
Winchester, Mass.

WELCOME to the neighborhood

A sneak peek at the new fall TV project

BY JEFFERSON KOLLE

Check out www.thisoldhouse.com
Watch the progress of the Winchester renovation in real time on our four webcams

Drive up to the new *This Old House* TV project house in Winchester, Massachusetts, and you'd swear you've been there before. There's a sidewalk on both sides of the street, and if you don't see a boy on a bicycle flinging newspapers onto porches, it's easy to imagine he's just been there. It makes you think of 1950s sitcoms like *Father Knows Best* and *Leave It to Beaver*, or of going to visit Grandma.

Although the pale-yellow Colonial Revival is vacant, dated, and well used, you can sense the comfort and joy it provided the families who lived here. Matted paths traverse the wall-to-wall, and fingerprints smudge the woodwork, starting down low from when the kids were young and getting higher as they reached for the light switches. At the front of the house are the living room, with its soot-stained fireplace, and a formal din-

The new fall TV project house—a 1922 Colonial Revival—is reminiscent of every small-town home featured in a 1950s sitcom. OPPOSITE: *Homeowners Bruce Leasure and Kim Whittemore with dogs Sammie, Lucy, and Alex*

PHOTOGRAPHS BY PETER VANDERWARKER

ing room. At the rear, behind the dining room, is an outdated kitchen filled with brown cabinets and gold-marbled Formica. On the second floor are four modest bedrooms and two more garret-style rooms on the third floor. Peek out back and you'll see a garage that looks like a miniature of the house, along with flower beds and blueberry bushes.

The neighborhood was developed in the 1890s, carved from a parcel of land known as "The Flats," between Winchester's hills and the Aberjona River. According to local historian Ellen Knight, in the 1910s the local newspaper touted the area as the ideal commuter suburb of Boston, a short 15-minute train ride to the southeast. The architecture is diverse—Tudors, Shingle Styles, center-hall Colonials, and bungalows.

The *TOH* project house was built in 1922, and since then three families have lived in it. New owners Kim Whittemore and Bruce Leasure, recent transplants from Huntsville, Alabama, but native Northeasterners, are excited to be next. "We're really pleased with the home's proportions, the hardwood floors, the sunroom off the living room. At the rear, behind the dining room, is an outdated kitchen filled with brown cabinets and gold-marbled Formica. On the second floor are four modest bedrooms and two more garret-style rooms on the third floor. Peek out back and you'll see a garage that looks like a miniature of the house, along with flower beds and blueberry bushes.

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CLOCKWISE FROM TOP LEFT: *Incongruous bump-outs and a cantilever with structural problems muck up the back of the house; the outdated kitchen needs a makeover; a 1923 garage mirrors the house's design and may hold clues to changes made on the main residence over the years; the view from the center hall through the well worn living room and into the enclosed sunporch.*

But before the couple can move into the 2,800-square-foot house with their canine kids—three Labrador retrievers—the *TOH* crew will spend seven months on the project. Years of past repainting means weeks of paint stripping, inside and out. Both staircases, the grander one in the front hall and the narrow, winding back stair that runs from basement to third floor, need work. The awkward layout of the master suite begs for rearrangement, and an efficient heating system is needed to replace the behemoth in the basement. Kim would like a small greenhouse, Bruce wonders about a wine cellar, and both want a more modern and comfortable kitchen area. "Very little updating has been done in the past 30 years," says Kim. "Of course, we'll make some changes, but we never want to alter what drew us to the house the first time we drove up the street." Stay tuned. ■

2002

LEFT: Rebirth—The Manchester house has been through a lot in its 120 years. With luck, the next century will be less eventful. OPPOSITE: Working from old photographs, architect Stephen Holt restored the entry hall by calling for a lost colonnade that had been replaced by a blank wall. Beyond, the new dining room.

return to SPLENDOR

The TV crew wraps up a 10-month renovation, bringing back an 1883 masterpiece

PHOTOGRAPHS BY PASCAL BLANCON

BY BRUCE IRVING Producer, *This Old House*

Maybe it was on the very first day, when David and Janet McCue pointed to the historic photograph of their Manchester, Massachusetts, house and said, "We want to put it back to this." Maybe it was a few weeks later, when the sixth Dumpster was hauled away, or even as late as when the windows showed up in a tractor trailer that took six hours to unload. But, sooner or later, every member of the *This Old House* crew had his or her moment of realization: This was the Big Kahuna-by-the-Sea.

2001

In the end, Manchester was the longest and most expensive renovation we'd ever undertaken with homeowners. But the 10 months and $1.5 million budget yielded an eye-popping result, no less than the rebirth of a once lost building. The 1883 house, aptly described at the beginning of the project as looking like "a motel in Hyannis" (translation for non–New Englanders: "an unadorned shingled box"), is once again the seaside beauty it was at the turn of the 20th century, when the

circa 1920

The 1883 house, once described as looking like "a motel in Hyannis," is again the seaside beauty it was at the turn of the 20th century.

original Shingle Style building was done up in Colonial Revival finery.

We'd all been infected with the spirit of the venture, which had its roots in the McCues' strong feelings about the historical importance of their home and their desire to preserve what old bits were left. That's why painter John Dee spent untold hours painstakingly restoring the intricately detailed portico, and why Janet McCue pressed the limits of several friendships as she and her weekend warriors reglazed the curved diamond windows of the old bay in the kitchen.

The new music room, like the original wing it was patterned after, is anchored by a classic Inglenook. The room's period look is achieved with modern materials—including a floating floor of quartersawn oak, mahogany paneling made of veneer plywood, and a vaulted ceiling covered in acoustical plaster.

But it was reconstructing what had been lost that took up the bulk of the time and money. Where inappropriate white-cedar shingles were, on went red cedar. Where skylights had been, the old dormers were rebuilt. Where an entire wing had disappeared, a new one went back on, complete with an inglenook built with expert care by *TOH* master carpenter Norm Abram. And because the original wood roof, trim, and divided-light windows had been lost partly due to their deterioration in the seaside environment, we made sure, when putting them back, to build them from long-lasting, low-maintenance materials: 50-year-warranted wood shingles for the roof, urethane foam for the trim, aluminum cladding for the windows.

RIGHT: The piano that launched a thousand square feet, give or take. As an avid pianist and singer, David McCue wanted a room in which to practice and perform, which led to the resurrection of the lost wing. BELOW: For the occasional dry throat, the room also boasts a wet bar.

Inside there were a few high-tech surprises as well. The new wing's chimney went up fast, thanks to its modular construction. The room itself was rendered acoustically true by the work of acoustician John Storyk and the remarkable plastering system he specified. Richard Trethewey, *TOH* plumbing and heating expert, showed us the future of oil storage by installing a pair of leakproof tanks in the basement. And while the beautiful mahogany kitchen was built the

old-fashioned way, the rest of the house's casework sprang from cabinetmaker Tom Perkins's laptop computer, with the materials cut in the Midwest and assembled in a nearby workshop.

But fancy materials and high-tech methods didn't solve all our problems. As usual, *TOH* general contractor Tom Silva provided solutions to one of the most vexing challenges the original building posed. The first floor, especially the long, narrow living room, felt cramped beneath a low ceiling. Architect Stephen Holt addressed part of the problem by raising the headers of the sea-facing window and doors into the ceiling and out of the way, giving the illusion of height.

LEFT: Enthusiastic cooks the McCues decided early on that their new kitchen would be front and center. They provided the architect and kitchen cabinetmaker with seven pages of notes detailing their culinary habits. BELOW: The result was a room with two islands, surrounded on three sides by mahogany cabinetry—a kind of modern inglenook. OPPOSITE: The unique octagonal passage from the mudroom to the kitchen/family room boasts an inlaid compass rose.

But the McCues wanted to take things further and expand the area into one large space to hold both the kitchen and the family room. Enter Tommy. First he engineered a wood-padded I-beam, inserted one dramatic afternoon like a giant needle through a hole in the side of the house. That opened the room up, but what about the low ceilings? As we all discussed the pros and cons of raising the ceiling or lowering the floor, Tommy quietly worked out a way to strengthen the ceiling joists with thin steel plates and

shave off the joist bottoms, gaining 2 inches of room height. They proved to be crucial inches, giving the room a feeling of height while preserving the floors below and above.

In the whirl of material deliveries, weather worries, subcontractor sequencing, on-the-spot problem-solving and the thousand other details that fill the air of a construction job, the ultimate goal sometimes gets a bit obscured. But in the final few days, the beauty of the building emerged from beneath its mantle of tools, boxes, and dust. Craftspeople and crew, slightly dazed, joined other guests at the wrap party and saw that, indeed, the new house worked. One visitor observed that the building was both wonderfully transparent, with its many windows giving ocean views, and irresistibly tactile, the beautiful woods, old-fashioned trim, and silky-smooth paint job in rich colors drawing the ocean-gazer back inside. Nicely put, we think. ■

OPPOSITE, CLOCKWISE FROM TOP. Comprising a roomy bedroom with a full harbor view, a capacious walk-in closet, and a bathroom with a steam shower, the new master suite gives very few reasons to ever leave it. ABOVE: Carved out of a tangle of small rooms and narrow hallways, the new central hall gives the second floor a focus and a gathering spot it never had. The coffered ceiling mimics original details from downstairs. LEFT: Down at the far end of the second floor, the guest bedroom features a gas fireplace surrounded by the mantel that once graced a fireplace in the master bathroom.

Check out www.thisoldhouse.com for an archive of stories about the Manchester project and a virtual tour of the finished house.

WHERE TO FIND IT – SEE DIRECTORY – PAGE 143

vinyl siding

love it or hate it, plastic is here to stay

MARK FEIRER

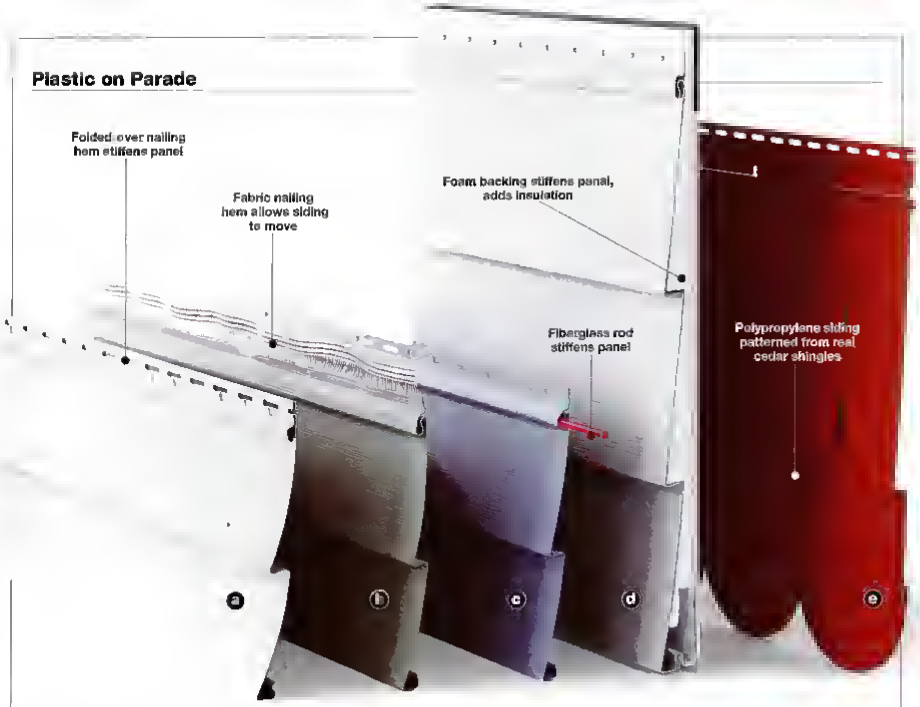
There are few subjects in the whole arena of residential construction products that draw battle lines as sharply as vinyl siding. Proponents harp on the fact that it never needs painting, while its detractors insist that houses should never be covered with anything but real wood.

As a building material, vinyl siding is relatively new—it was introduced in the late 1950s as a substitute for aluminum siding. But its reputation was tarnished in the early days when it cracked, faded, buckled, and sagged. Ongoing changes in the product's chemistry and installation techniques have improved its performance and furthered its acceptance by builders and homeowners. In fact, vinyl has captured 32 percent of the U.S. siding market for *(continued on page 106)*

Installer Joe Fagone slides a cut-to-fit, 4-foot-long panel of embossed-shingle siding around a window. As with most clapboard or wood-shingle siding jobs, trim pieces are installed at corners, doors, and windows before the first length of siding is attached.

PHOTOGRAPHS BY KOLIN SMITH

Plastic on Parade



a) *CertainTeed Monogram Studfinder has a folded over nailing hem and slots for fastening into studs on 16- or 24-inch centers* **b)** *Wolverine Millennium has a flexible web nailing hem.* **c)** *Wolverine Benchmark 44's fiberglass rod in the nailing hem stiffens panels* **d)** *Foam-backed CraneBoard Solid-Core Siding absorbs outdoor noise and boasts an R-value of 4* **e)** *CertainTeed Cedar Impressions half-round shingles are made from molded polypropylene*

new homes, with no end in sight to its growing popularity. The reason, in part, is because it's often (but not always) cheaper than red cedar or redwood and takes less time to install. A mid-grade vinyl costs about $1.60 per square foot to install, not including the necessary trim pieces, while the installed price of mid-grade cedar clapboard, exclusive of trim and paint, is about 2.5 times higher. (Some premium vinyls cost about the same as the best grade of cedar, but the installed cost is still lower because it goes up faster and doesn't need painting.)

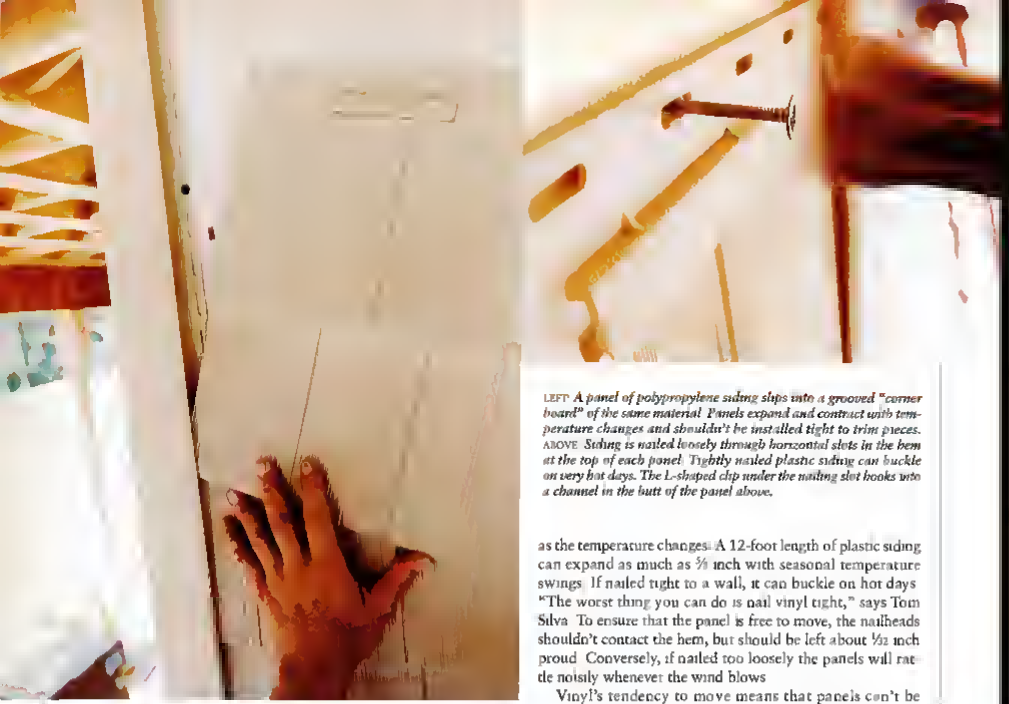
For many people, price isn't the issue at all; the real seduction of plastic siding is reduced maintenance. That's exactly why a wood guy like *This Old House* general contractor Tom Silva put vinyl on his house 20 years ago. "I don't have time for painting," he explains. "I'd rather spend weekends on my boat." Of course, with the right maintenance, wood will last indefinitely. Vinyl can't match that claim because no one knows for sure how long it will last.

ALL PLASTIC SIDING IS NOT THE SAME

Vinyl is a polymer formed during a chemical do-si-do between ethylene gas and chlorine, which produces a fine white powder called vinyl resin. When it's melted and mixed with different additives, the resulting compound can be as rigid as pipe, as supple as a shower curtain, or durable enough to survive the heavy foot traffic on a kitchen floor. New, so-called virgin vinyl siding has a greater complement of the key additives that impart flexibility and resistance to UV degradation. Some manufacturers will tout their product as 100 percent virgin (along with a mention of its supposed superiority), but most siding is made with a core of remelted vinyl top-coated with virgin material. Typically, vinyl siding is extruded through a die, but to produce the deepest patterns and crispest edges, panels must be molded from polypropylene, a more expensive plastic. Molded panels are typically no more than 4 feet long, while vinyl extrusions can be virtually any length.

Rap on a vinyl-sided wall with your knuckles, and it will flex and sound hollow. That's because, in most cases, only a relatively small area of a vinyl panel is actually resting against the sheathing. A thin panel, or one without support, is more likely to sag over time. The thinnest siding that meets code is .035 inch thick. Premium siding can be .044 to .048 inch, and a few manufacturers sell

PHOTO: ERIC PASBOSH



LEFT: *A panel of polypropylene siding slips into a grooved "corner board" of the same material. Panels expand and contract with temperature changes and shouldn't be installed tight to trim pieces.* ABOVE: *Siding is nailed loosely through horizontal slots in the hem at the top of each panel. Tightly nailed plastic siding can buckle on very hot days. The L-shaped clip under the nailing slot hooks into a channel in the butt of the panel above.*

.055-inch siding. The thicker sidings tend to be stiffer, and therefore more resistant to sagging, but stiffness depends on other characteristics as well. Panels with a folded-over, doubled nailing hem and a relatively deep profile tend to be stiffer than others, as do those with narrow "clapboards". The more bends the better. Although claims are made that thicker siding is also more impact resistant than thin siding, test results suggest that it has more to do with its chemical makeup, which, unfortunately, is not available to consumers who want to compare products.

Thinner, less-stiff sidings can also be sucked off a house when high winds blow. Reading the manufacturer's warranty should give you a good indication of the product's ability to handle heavy weather. Some even comply with the 146-miles-per-hour wind code in hurricane-prone Miami–Dade County, Florida (see "Weathering the Storm," May 2001, page 102). One siding, Wolverine Millennium, comes with a "won't-blow off" warranty, and its literature states that it will withstand 180 mph winds, when nailed properly.

THE INSTALLATION IS AS IMPORTANT AS THE SIDING

While wood siding is fastened tightly to the house, vinyl siding literally hangs from nails driven through horizontal slots at the top of a panel's nailing hem. The reason for the loose nailing has to do with the vinyl's (and polypropylene's) need to expand or contract as the temperature changes. A 12-foot length of plastic siding can expand as much as ⅝ inch with seasonal temperature swings. If nailed tight to a wall, it can buckle on hot days. "The worst thing you can do is nail vinyl tight," says Tom Silva. To ensure that the panel is free to move, the nailheads shouldn't contact the hem, but should be left about ½2 inch proud. Conversely, if nailed too loosely the panels will rattle noisily whenever the wind blows.

Vinyl's tendency to move means that panels can't be butted tight to trim, either. Quality-conscious installers leave about ¼ inch of clearance (⅜ inch in temperatures below 40°F) at the end of panel courses, at corners and door and window openings a trim piece called J-channel covers and conceals the resulting gap. Other proprietary trim pieces, made by manufacturers to fit their own brand of siding, include soffits, rake boards, and crown moldings. All help to improve the appearance of an installation, giving it a more custom look.

In addition to J-channels, one characteristic that distinguishes vinyl from other siding is its overlaps. While lengths of wood (or cement) siding meet in an unobtrusive butt, vinyl panels must be overlapped by about 1 inch wherever they meet, resulting in telltale vertical lines. The thicker the vinyl, the more obvious the overlap. Compounding the problem, most vinyl siding panels are molded to represent double or even triple widths of clapboards. This slashes installation time dramatically, but it also makes panel overlaps even more visible. A good installer will orient overlaps away from dominant views, for example, by running the siding from a back corner to a front corner. On the front of the house, panels should be installed so seams are least visible to someone approaching the front door.

Contrary to what many people expect, vinyl is actually less likely than wood to trap moisture, Tom says. "There are tiny weep holes in the butts of the panels. And because it's hung loosely, air can move

behind it." Just make sure your siding contractor first installs flashing and either housewrap or builder's felt, just as he would under wood siding.

Every quality vinyl siding job starts with the contractor. Don't hesitate to ask potential installers for their certifications—most of the large manufacturers certify installers in proper installation techniques—and for the names of satisfied customers. Also check complaint lists established with local and state business associations, as well as with state contractor licensing boards.

Plastic siding is quick to install. The seven-man crew from Hansen Home Designs trimmed and sided this 3,200-square-foot house in less than two days. The total cost of labor and materials was less than $16,000.

NOT ENTIRELY MAINTENANCE FREE

To keep vinyl siding looking its best, it should be washed periodically to remove the mold, mildew, dirt, and chalky oxidation that collects on the surface. Tom uses a soft-bristle brush and a bucket with a 30/70 mix of vinegar and water. (If that doesn't do the job, the Vinyl Siding Institute suggests mixing ⅓ cup laundry detergent, ⅔ cup powdered household cleaner, 1 quart liquid laundry bleach, and 1 gallon water.) He just brushes it on, working from the bottom up, and gently hoses it off. Tom discourages homeowners from using a power washer on their siding; the high-pressure equipment is likely to drive water behind the panels.

Repairing a damaged panel is simple. With a zip tool and a flick of the wrist, Tom simply unhooks it from the ones above and below, then pulls out the nails. A new panel can then be snapped in place, nailed, and rehooked. The biggest problem is matching the replacement to the surrounding pieces, which will undoubtedly have faded. "What I'll do," Tom says, "is replace the damaged piece with some siding from a less conspicuous part of the house." Then he replaces that piece with the new, unfaded length.

All vinyl siding will fade somewhat. After 10 to 15 years, the change can be significant. When that happens, or if you simply want to change its color, vinyl can be painted, as self-defeating as it may seem. (Check with the manufacturer first; many companies void the warranty if siding is painted.) Wash the siding first, and use latex paint, which will flex with the vinyl's movement. But don't count on changing a pale-yellow house to hunter green; dark colors absorb more heat than lighter ones and can cause panels to expand too much and buckle. (For that very reason, vinyl's color palette is limited to lighter shades.)

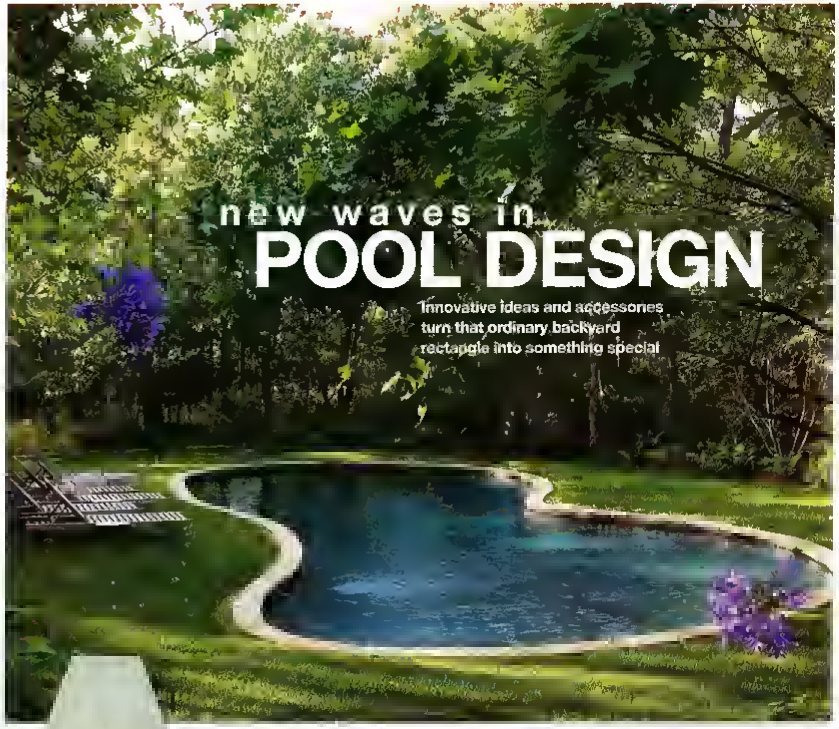
Tom is well aware of the fact that plastic siding draws strong opinions from his clients. "It's pretty hard to convince someone who wants vinyl to use wood siding instead, and vice versa," he says. "Some people like it and some don't, just as some people like Fords and some prefer Chevys." Whether vinyl siding is good or not depends a lot on the quality of the product and the installation job. "Would I put it on my house again, if maintenance issues weren't a factor? Probably not," Tom says. "I really prefer wood." But he really, really doesn't like to paint. ■

RE-SIDING WITH VINYL

Much of what appeals to us about older historic houses, apart from their architectural style, is the graceful moldings, well-proportioned trim, subtle shadow lines, even the slight irregularities in the spacing of the siding—testaments to the skills of this country's housewrights. But in countless slipshod re-siding jobs, where vinyl is slapped up over the existing shingles or clapboards, these details have been obliterated, making the facades of handsome gingerbread houses as plain as sheet cakes. "I've seen a lot of cases where they've sawed off moldings, window trim, cornices, even knocked them off with hammers," says Tom. "It looks worse than terrible. And it takes away what makes old houses special."

For those contemplating having a house re-sided, Tom recommends finding a contractor who specializes in old-house work, not just in vinyl siding, and insisting that all the architectural details remain in place. "Run J-channel around them and butt the siding into it," he says. "Of course, it takes more time and money to do it this way." A proper paint job may make more sense, if that's the case. Sometimes, re-siding jobs are sold as a way to "tighten up" the house and reduce energy bills. The installers simply nail up a layer of foil-faced foam before the vinyl goes up. Tom doesn't think much of this practice. "The foam panels are only ⅛ inch thick; they don't add much R-value," he says. "You'd be better off packing the walls with blow-in cellulose." The final word: If you have any doubts about its effects, don't put vinyl siding on your old house.

WHERE TO FIND IT – SEE DIRECTORY – PAGE 143



new waves in POOL DESIGN

Innovative ideas and accessories turn that ordinary backyard rectangle into something special

A backyard swimming pool used to be a pretty predictable affair: a blue rectangle, deep at one end and shallow at the other, perhaps with a diving board. Not anymore. Inspired by the creative variations they've enjoyed at vacation resorts, homeowners are incorporating new features into their residential versions. "They're having such a good time in those elaborate pools with the vanishing edges or waterfalls, they're thinking, 'How can I have a similar experience at home?'" says James Grayson Trulove, editor of the book *The New American Swimming Pool*. The $9 billion U.S. pool industry has been happy to oblige, with innovative surfacing materials, high-tech lights and filters, features such as reefs and fountains, and a raft of other extras designed to make backyard bathing as thrilling as a dip in the ocean.

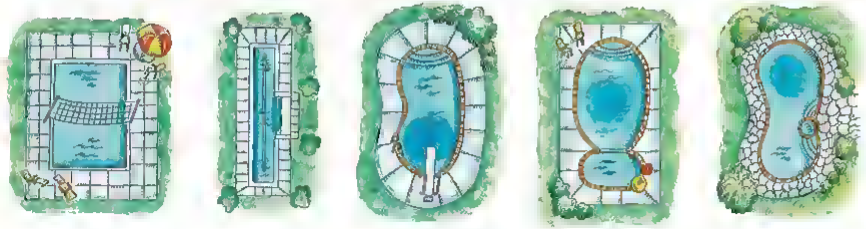
To create the look of a garden pond, the owners of this curvaceous pool opted for a simple stone surround instead of traditional decking.

PHOTO: BRUCE KATZ

BY JORDAN REED AND AMY R. HUGHES

choose a pool

Like to swim laps? Prefer volleyball? Whatever your pleasure, there's a size and shape to suit



sports pool
At 5 feet deep in the middle and 3 feet at the ends, it's good for games, aerobics, and lap swimming

lap pool
Typically 32 feet by 6 feet and 5½ feet deep, an exercise pool can fit where bigger units can't.

diving pool
The standard we remember from childhood: 6 feet deep at one end, 3½ feet at the other

splash pool
An oval with a foot-deep "kiddie pool" at one end is perfect for families with small children.

free-form pool
Anything goes. Pools can be built in the shape of your choosing, with built-in features like a hot tub.

options for surfaces

Traditionally, concrete pool shells were covered in plain gray or white plaster. These days, homeowners planning new pools can choose from a variety of surfacing materials, including glass tiles and pebble aggregate, which lend glimmer and texture. (While it's possible to resurface existing concrete pools, fiberglass and vinyl shells cannot be altered, although replacement vinyl liners are available in a wide range of colors, patterns, and even custom shapes.)

Glass mosaic tiles (below) can be set into a concrete shell either as a border, a uniform solid-color surface, or a vibrant multicolor blend (right). Prices for glass tiles start at $2.35 a square foot for a solid color and can go as high as $8 a square foot for a custom blend. Installation begins at about $7 a square foot, depending on design complexity.

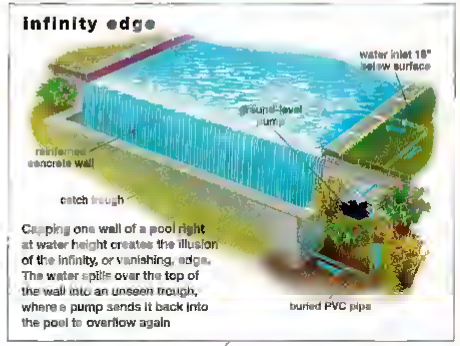
A lower-priced alternative to tiles is pebbles, which are mixed with cement and spread over the pool's shell. A natural look that's perfect for a pool with a beach entry (see page 115), a pebble surface costs between $3 and $5 a square foot installed. Less expensive still are ceramic-coated quartz granules, which can be added to plain-vanilla plaster to expand the range of colors. The granules come in 14 shades, including dark blue, plum, green, and peach. But don't expect to swim in peach-colored water. Because the contents of a pool always reflect the sky, the various hues will only create lighter or darker shades of blue. Depending on pool size and design, colored quartz granules add between $1,200 and $3,500 to the cost of a basic plaster application.

To create this multicolor look, ¾-inch glass tiles (like the ones pictured below), which come mounted on 12-by-12-inch paper sheets, are set into a layer of mortar troweled onto the pool's walls.

ILLUSTRATIONS: JENNIFER THERMES. PHOTOS FROM TOP: COURTESY MOSAICART INC.; DAVID KAMBLEY

reefs, fountains, and other "natural" features

For a bird's-eye view of the ultimate in home-pool design, we visited this new backyard lagoon in Murrieta, California. (While some of these features can be incorporated into existing pools, retrofitting usually isn't practical, experts say, because it requires extensive and costly structural work.) The experience starts with a **beach entry (1),** which slopes gradually into the pool's shallow end for a feeling akin to wading into the ocean (roughly $1,500 to install, depending on the length and width of the slope). An **infinity edge (2),** also known as a vanishing edge, makes swimmers think they are looking off toward a distant horizon (see illustration, right, for details on how it's done; prices range from $10,000 to $40,000). **Rock waterfalls (3)** and **fountains (4)** add a luxurious look while helping drown out background noise—and youngsters love to frolic in the spray (waterfalls start at around $3,500; fountains range from $500 to $1,500 for a pair). Finally, large submerged platforms called **reefs (5)** sit under a few inches of water, creating a perfect spot for sunbathers to keep cool (cost: $300 to $800).



Capping one wall of a pool right at water height creates the illusion of the infinity, or vanishing, edge. The water spills over the top of the wall into an unseen trough, where a pump sends it back into the pool to overflow again.

ILLUSTRATION: IAN WORPOLE. PHOTOS: DAVID ALBANESE

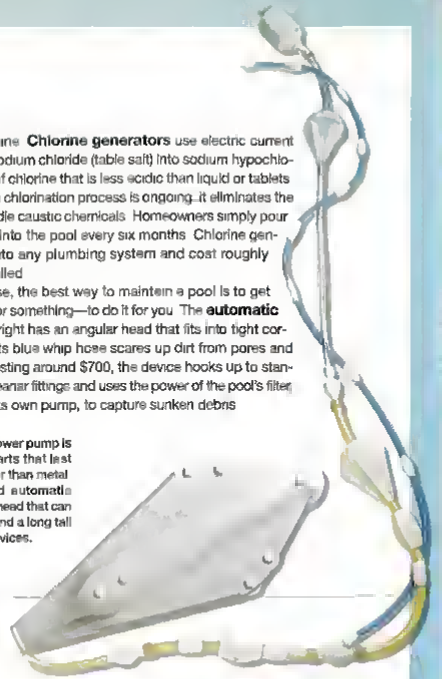
clean machines

High-tech tools simplify maintenance

Along with advances in pool design have come developments in pool technology, including more sophisticated equipment for easy maintenance. While the latest pumps still need occasional checkups, they are far more efficient and simpler to care for than their predecessors. The **1½-horsepower pump** pictured below is made with lightweight nylon and plastic parts, which are less prone to pitting and last longer than metal components. Plus, its 220-cubic-inch strainer basket means less frequent clean-outs. Cost: about $500.

Two increasingly popular devices for keeping water clean are ozone and salt-based chlorine generators. **Ozone generators** use oxygen to produce sanitizing ozone molecules. These units, which start at $1,000, require the use of only small amounts of chemical disinfectant, such as chlorine or bromine. **Chlorine generators** use electric current to convert sodium chloride (table salt) into sodium hypochlorite, a form of chlorine that is less acidic than liquid or tablets. Because the chlorination process is ongoing, it eliminates the need to handle caustic chemicals. Homeowners simply pour salt directly into the pool every six months. Chlorine generators fit into any plumbing system and cost roughly $1,500 installed.

Of course, the best way to maintain a pool is to get someone—or something—to do it for you. The **automatic cleaner** at right has an angular head that fits into tight corners, while its blue whip hose scares up dirt from pores and crevices. Costing around $700, the device hooks up to standard pool-cleaner fittings and uses the power of the pool's filter, rather than its own pump, to capture sunken debris.



LEFT: This 1½-horsepower pump is made with plastic parts that last longer and run quieter than metal. RIGHT: A kite-shaped automatic cleaner has a narrow head that can fit into tight corners and a long tail to scour dirt from crevices.

electric extras

You can run almost all your pool's systems by remote control

With an **indoor control panel system** like the one pictured below, you can turn on the pool pump, adjust water temperature, and operate cleaners at the touch of a button, even via a cell phone or a computer. A basic version that operates pool equipment (lights, filter, heater, spa jets) costs about $1,000; for $4,000 you can get a unit that will also handle household and landscape lights and even the front gate. Retrofitting for an existing pool may require some digging in the backyard as well as threading wires into the house. Wireless versions are also available.

Underwater lighting is an easy and affordable way for homeowners to add a splash of color to their pool. Metal-halide lights (the kind used in luxury-car headlamps) can turn an ordinary pool into a Vegas-style showpiece with beams of dark blue, green, magenta, or a slowly rotating combination of all three. Can lights, like the one pictured above right, can easily replace existing lighting. Cost: $600.

With **electric-powered covers**, closing a pool doesn't have to be a chore. The cover at left slides open and closed on tracks recessed under the coped edge of the pool (tracks can also be installed directly atop the deck). When not in use, the cover rolls into a housing unit underneath the deck or is hidden beneath a bench at the end of the pool. Cost: $5,500 to $9,500.

PHOTOS: (DAVIS HAMPLEY (CLEANER) COURTESY COVER POOL, INC. (POOL))

americangothic

A Wisconsin couple's renovation brings long-lost details back to their 1800s house

About to inherit a passel of Victorian furniture that no one else in the family wanted, Roy and Jo Cole wondered where they would ever put it. Their newly remodeled 2,000-square-foot 1930s Colonial in the Milwaukee suburb of Wauwatosa wasn't big enough. So they started searching for something they had always wanted—a second home in the Wisconsin countryside. What captured their fancy, however, was a rambling 3,000-square-foot Gothic Revival, with steeply pitched gables dripping with gingerbread, on a half-acre lot about a mile away in the same town. With 12 rooms, the mid-19th-century dwelling was spacious enough to accommodate the family heirlooms, and the fine old pieces matched the period of the house. "Instead of buying a place in the country and being there part-time, we decided to buy the house and live there full-time," says Jo.

When the Coles (ABOVE RIGHT) bought the house in 1982 (TOP), it had gone through eight renovations, including one by a family who lived there in the 1920s (ABOVE LEFT), which had whittled away many of the original details. Today, repainted in period-accurate colors and topped with replicas of the missing finials, the house (OPPOSITE) is a historic landmark.

Because the house had been sorely neglected, friends thought the Coles, who were both approaching retirement (Jo from teaching and Roy from his job as a mechanical engineer), would work themselves into early graves. Stripping decades of paint and dreary wallpaper from interior walls and removing stainless steel siding from the

BY CARRIE LORANGER GASKA PHOTOGRAPHS BY TOM BURAZIN

The living room renovation unearthed a mahogany mantel and red oak floors. The dining room beyond was enlarged to its original size by removing a butler's pantry.

original clapboard exterior was hard labor, but taking on a ramshackle barn, four rundown bathrooms with broken fixtures, and a woefully outdated kitchen was lunacy. Far from being intimidated, however, the couple saw only possibilities in the historic structure they think was built in 1845 by Wauwatosa's founder, Thomas B. Hart, who owned the local sawmill. In fact, the Coles believe the house, with its six different patterns of decorative bargeboard, two types of batten on the barn, and various styles of trim, casings, and doors, served as a life-size showroom model for the building products Hart sold at his mill.

By the time the Coles happened upon the property, the house had undergone eight different remodels, including a three-story addition at the rear, a sunporch, bathrooms, and a master bedroom with an oriel bay window on the second floor. Consequently, many Victorian details had been lost, including five original finials that had been sawed off at the roofline.

In the spring of 1982, immediately after the Coles moved in, they began what would become a 20-year renovation, doing only what they could afford as they went along. "We've kept receipts, but were wise enough never to total it all up,"

A 1912 stair rail (YELLOW) was cut off level with the floor and a 1900s-style newel post added. The master bathroom is all new, but replicates a bygone era.

says Jo, laughing. The couple's top priority was the kitchen, because, as Jo reasons, "if you can fix a good meal, you can face even the worst construction mess."

Except for a picture window that was added in the 1950s, little in the room had changed in decades. "There was an electric stove from the 1940s, a badly damaged cast-iron sink circa 1912, and some poor quality pine and maple cabinetry shoehorned in," recalls Jo. She wanted to bring the kitchen up to speed with modern appliances and lots more storage space but keep a 19th-century look. So out went the picture window, replaced by a bay window that matched one in the front of the house. And in went a new sink and appliances surrounded by vintage-look oak cabinets with wainscoting doors. The grungy linoleum flooring was peeled away to reveal an intact original maple floor, which was then refinished. And instead of repairing the plaster ceiling, which had suffered extensive damage from leaky plumbing in the bathroom above, Roy removed it and installed a pressed-tin ceiling, common to homes of that era, which he painted antique white. Years later, when a drainpipe broke in the bathroom above, Roy's practical foresight paid off. To replace the faulty pipe, he simply unscrewed the tin panels below the leak, and screwed them back in place when the work was done.

In 1985 the Coles came upon two old photographs of their house. One, taken in 1870, showed that a brick Gothic home of a similar style once stood next door. Through locals, they learned that it had been torn down in 1967 to make way for a church parking lot. To ensure that their house would not meet that fate, the Coles added it to the state and national registers of historic places. Affirming that their house was a significant landmark spurred the couple on to restore the exterior to its 1845 image.

Enlarging the other photograph revealed that the missing roof finials were all of different patterns. Drawing on architectural pattern books, Roy sketched five designs similar to the originals. Once the State Historical Society approved the

Tell Us Your Story

Did you renovate your house and do most of the work yourself without hiring a general contractor? If so, we'd like to hear about your project. Please send copies of before and after photos, a floor plan (we cannot return any materials), and a brief description of the work you did to:
This Old House/SF
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FAR LEFT: *Replacement roof finials were designed by Roy and made by Ron Raasch—each in a different pattern closely resembling the originals.* LEFT: *Together Roy and Raasch install their handiwork.*

renderings, the couple enlisted the help of Milwaukee restoration specialist Ron Raasch to craft the replacements. Jo recalls the mild spring day Roy, from the front porch roof, hoisted each one up to Raasch, who was straddling the gables, ready to install them. "Seeing the finials back up there was icing on the cake," says Jo.

In the 1990s, the couple retired, leaving them free to remove the home's 1950s siding and strip coats and coats of paint off the original clapboard and bargeboards. It was a painstaking job consuming six long summers, even with Roy keeping a heat gun and 30 sharp paint scrapers with him at all times so he didn't have to clamber on and off scaffolding to replace tools.

While summers were reserved for exterior painting and scraping, winters were taken up with indoor projects concentrated on bringing back period details throughout the house. Damaged bathroom fixtures were replaced with vintage replicas. Four-panel pine doors from previous remodels that had been chucked in the barn by a previous owner were salvaged and rehung in their original locations. In the living room the Coles restored the mahogany and birch mantel and the red oak floor, long buried under paint and strip carpeting. And in the entry foyer Raasch replaced a 1912 iron stair railing with a historically correct salvaged and restored walnut one.

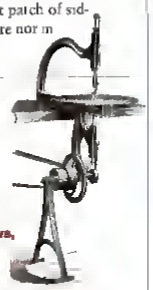
Just as Jo and Roy had envisioned, the house indeed is a perfect setting for their fine Victorian pieces, and it has become once again the town showcase. Even after 20 years, however, there is yet more work to be done. "An 8-by-10 foot patch of siding still needs to come off," says Jo. "But we're not in any rush—it will eventually get done." ●

OLD-FASHIONED GINGERBREAD

Fanciful "gingerbread," also known as vergeboard or bargeboard, tucked under steeply pitched gable ends is a hallmark of the Gothic Revival cottages that first sprang up in England in the mid-1700s. The style was adopted in the United States between 1840 and 1880.

Reminiscent of detailing on medieval cathedrals, these decorations were traditionally carved from stone. But an abundance of trees in the American countryside spurred builders here to copy the masonry ornamentation and wall cladding in wood. This interpretation was later termed Carpenter Gothic.

Adding to the popularity of vergeboard was the advent of steam-powered sawmills and humming scroll saws, shown right, that could cut with new speed and accuracy. Common patterns include trefoil and quatrefoil (three- and four-lobed cloverleaf), lacy, floral, and vinelike scrollwork—all found on the Coles' home, above, and pictured in detail below. *—Amy Hughes*



VERGEBOARD PHOTOS, COURTESY WAUWATOSA HISTORICAL SOCIETY

BY SCOTT GUMMER

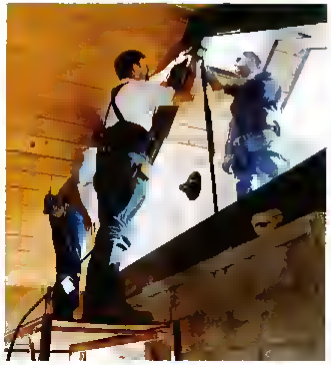
SUBURBAN RENEWAL

After a fire, a couple rebuild their classic 1950s house

Jim Herold remembers wondering why there were sheets of plywood covering the glass panels in his entryway that Presidents' Day in 1998. He knew for a fact the plywood wasn't there two-and-a-half hours earlier when he and his wife, Tisa, stepped out for an afternoon hike. But two-and-a-half hours turned out to be more than enough time for three-day-old fireplace ashes placed in a wastebasket to ignite. The blaze that followed gutted the Heralds' house and nearly extinguished their dream.

Post-and-beam construction and glass walls that blur the distinction between inside and out are hallmarks of 1950s California developer Joseph Eichler OPPOSITE: The plain facade is capped by a glassed in gable flanked by flat roofs.

PHOTOGRAPHS BY DOMINIQUE VORILLON



The U-shaped house is built around a distinctive central atrium (right) with lots of fixed glazing to let in light and treetop views. Rebuilding it to earthquake code meant installing safety glass (above).

As newlyweds in 1996, the Herolds walked through more than 150 houses before they found "the one": a flat-roofed, single story home whose modest facade hid a striking open-air atrium and walls of shimmering glass. Built in 1963 on a quiet cul-de-sac in Sunnyvale, California, the house was one of more than 11,000 erected in the northern part of the state from the late 1940s to the early '60s by developer Joseph Eichler. For their legion of fans, these "Eichlers," as they're known, represent the finest incarnation of mid-century modern American architecture. The developer employed teams of architects to design post-and-beam homes that featured floor-to-ceiling glass and, often, a central atrium, all of which brought light and views of trees and the hills beyond to small rooms. With a minimal number of interior walls and kitchens that often opened onto a family room, Eichler homes were designed to look and feel more spacious than the 900 to 1,200 square feet that comprised the early models.

By the time the tract that includes the Herolds' home was developed, the floor plans had expanded to just under 2,000 square feet, with four bedrooms and two baths. The Herolds got a tip about theirs before it hit the multiple listings, sealed the deal, and got to work.

They spent 15 months fixing up the place, restoring mahogany paneling to walls that had been covered with grass wall cloth, and replacing asphalt floor tiles with cool white Berber carpeting, among other projects. Then in a matter of hours all the Herolds were left with was the facade, some posts and beams, a cast

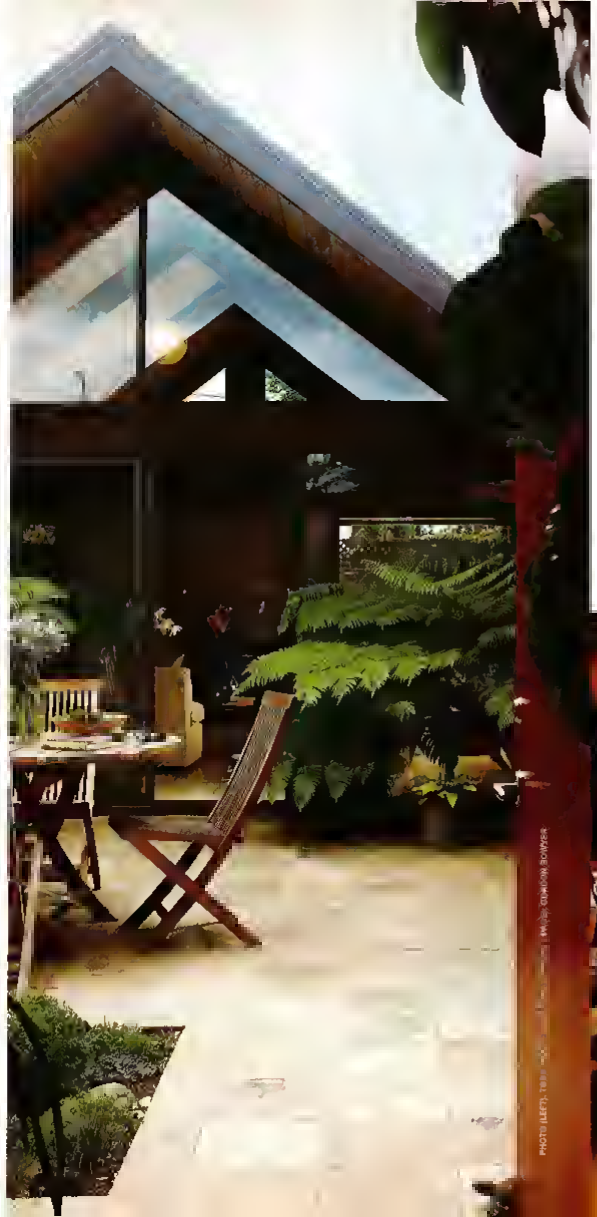
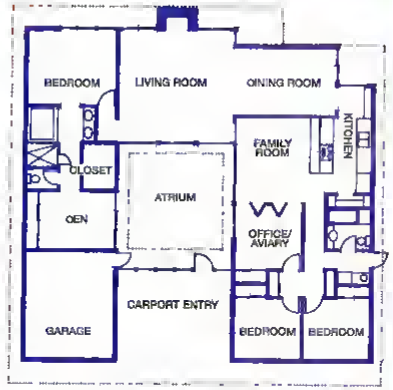


PHOTO (LEFT): TERRY HOPE | PHOTO: DOMINIC BOWYER

theplan

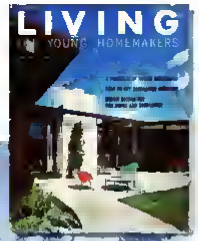


ABOVE: Plans for rebuilding borrowed space from the existing den for a bigger master suite. BELOW AND RIGHT: The Herolds updated the kitchen with granite countertops and custom wood cabinetry with space-saving sliding doors.

EICHLERHISTORY

JOSEPH EICHLER BEGAN his career as a merchant builder in his late forties, after spending the first half of his working life toiling in his in-laws' wholesale food products business. It was while living in a rented house designed by Frank Lloyd Wright in the San Francisco suburb of Hillsborough that Eichler and his wife, Lillian, developed a passion for modern architecture and design. When the family business was sold, Eichler found himself with the time, money, and freedom to pursue his ambition of developing affordable homes with a custom-designed look.

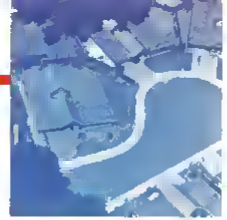
He blazed his own trail. Unlike most postwar developers, Eichler employed teams of talented architects—including noted California designers Anshen & Allen, Jones & Emmons, and Claude Oakland & Associates—to design affordable homes for the young families who shared his modern tastes. Eichler Homes also instituted a pioneering (though unpublicized) policy of selling 30 to 40 homes a year to African-Americans.



In 1959, the company went public, and Joseph Eichler felt increasingly shackled by having to put sales ahead of innovation. Branching out beyond the suburbs, Eichler suffered a series of failed ventures with urban developments and a high-rise that eventually cost him control of his company. However, he continued to build custom homes and develop small tracts until his death in 1974.

Today, most Eichlers are located in a Bay Area triangle defined by San Rafael, Concord, and San Jose. Of the 600 houses in Southern California, 350 are in the city of Orange, where real-estate broker Stephanie Raffel, who deals exclusively in Eichlers, currently counts 339 interested parties on her mailing list.

That level of devotion has spawned stand-alone businesses like the *Eichler Network*, a quarterly newsletter, and a companion Web site (www.eichlernetwork.com) that gets 18,000 visits a month from people looking for Eichlers for sale, tapping into renovation advice, and buying up Eichler plans for a bargain $300 a set.



The market for postwar Eichler houses was young couples with a taste for modern design (LEFT) ABOVE, FROM TOP: Built around cul-de-sacs to encourage community, the homes featured airy entryway atria, efficient galley-style kitchens, and even radiant-heated concrete subfloors.

PHOTOS (COUNTERCLOCKWISE FROM TOP): ERIK S. BRAUN/EICHLER NETWORK ARCHIVES (4); FRED LYON

iron skillet, and a Dutch oven. "At that point you have two choices: walk away or rebuild," says Jim. "We started rebuilding."

Another home on their street was the mirror image of theirs, but hiring an architect to draw plans from scratch would have been prohibitively expensive. Instead, Jim enlisted the help of Marty Arbunich, publisher of the *Eichler Network* newsletter and Web site, who led them to the archives of A. Quincy Jones, the chief architect who designed their model for Joseph Eichler. Within a week the Heroldss had a copy of the blueprints on which their house was based.

In need of an architect to update the plans to meet present-day codes and make a few modern modifications, the Heroldss hired K.C. Marcinik, of Greenmeadow Architects in Palo Alto, whose own

Eichler had won a prestigious award for its restoration Marcinik welcomed what she viewed as a unique challenge. "A lot of people told us that because of stricter energy and safety regulations, as well as cost issues, building an Eichler home couldn't be done in this day and age," she recalls. "I wanted to show that it was more than possible."

First, to withstand an earthquake, an ever-present threat in California, the new plan called for deeper foundation footings and an increase in the number, size, and strength of metal connectors throughout the structure. Because the perimeter walls were mostly glass (which this time had to be safety glass), the plan turned some of the few interior walls into shear walls, and more beams were added to decrease the span of the roof decking. Originally the beams were made of sturdy Douglas fir while the ceiling was made of redwood, but since the estimate for replacing the redwood came in $50,000 higher, the Heralds decided to use matching Douglas fir there.

Strict California energy codes require significantly more insulation than Eichlers originally had. Given the extensive use of glass, and the absence of a crawl space or an attic, Marcinik specified a commercial roof system of tapered rigid insulation. Because the wiring lies on top of the roof sheathing and below the insulation and roofing, electrical needs had to be carefully thought out. Although insulated glass was used in the rebuild, the plan called for more glass than is allowed by code. Says Marcinik, "We got around that with a big energy credit for the radiant heat in the concrete slab," an early feature of Eichlers.

RIGHT: The small master bathroom original to the house was enlarged to accommodate a double vanity, steam shower, and Jacuzzi tub. Neutral tones of wood and stone complement its clean design.

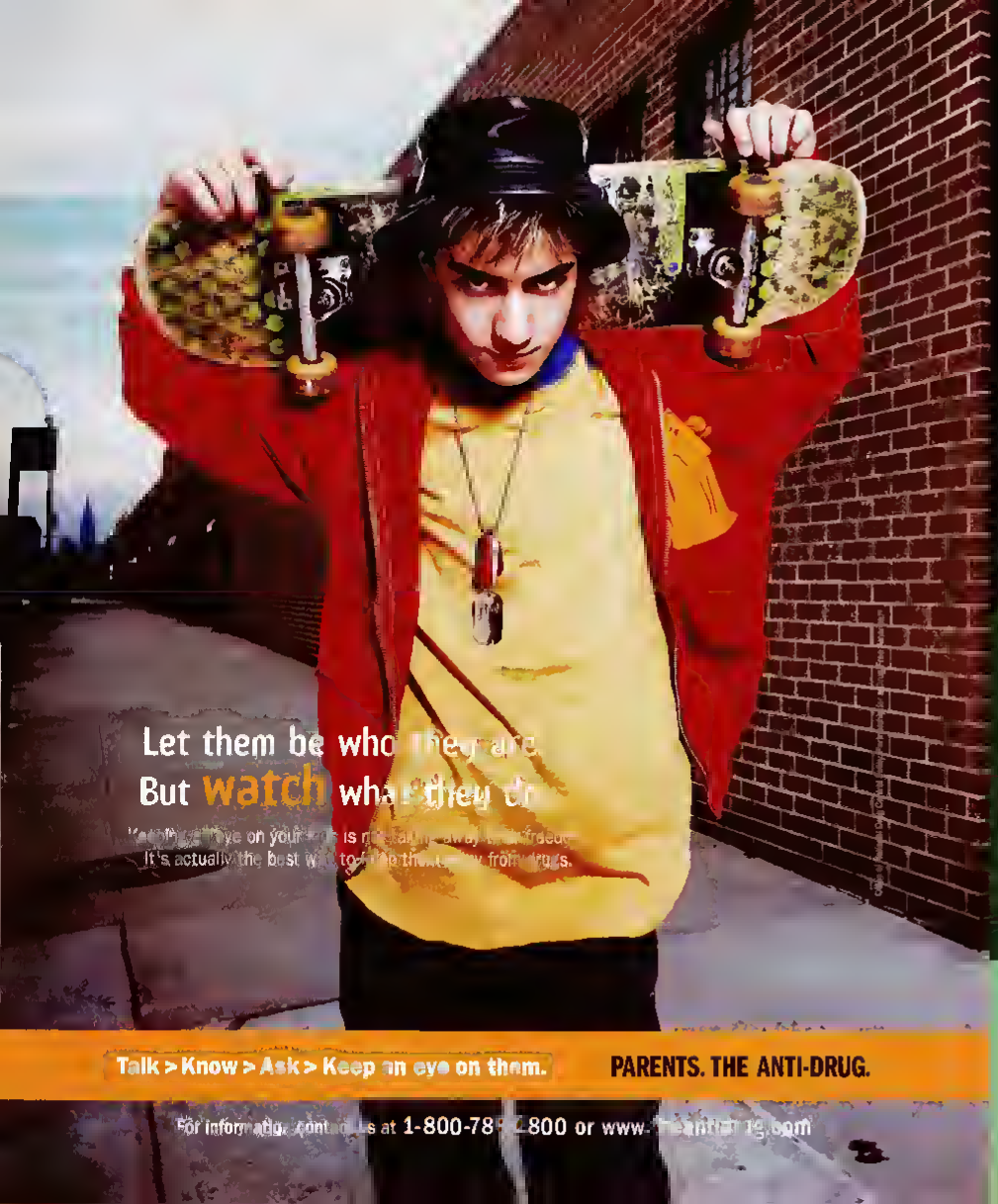
The Heralds' U-shaped house has an A-frame center area with cathedral ceilings that rests on two flat-roofed wings. The entire house wraps around an atrium, which Marcinik believes was meant to maintain the indoor/outdoor spirit of early Eichler homes as models grew in size in later years. "By taking the center out," she says, "all the rooms on the atrium get light from more than one side."

The Heralds and Marcinik made a few contemporary tweaks, expanding the master bath to include a Jacuzzi tub, steam shower, and spacious walk-in closet. ("Another Eichler trademark was tiny bathrooms and closets," says Marcinik.) On the opposite side of the house, the kitchen's painted cabinets, plastic laminate countertops, and electric stove were replaced with a custom African hardwood called anigre, polished granite, and a gas range, respectively. Decorative shoji doors, added to what had been the fourth bedroom (located off the atrium), created a light, airy aviary for the Heralds' three exotic birds. And when it came time to rebuild the fireplace, "we built a trapdoor outside," says Jim, "so that ashes never come inside the house."

Since moving back home in February 2000, the Heralds have slowly put their house—and their life—back together. "We have been in the build cycle since 1994, when we remodeled my house to sell for the down payment for this house," says Tisa. Together, they have organized a work party to stain the massive beams, painted the entire house inside and out, hung the interior paneling, finished the tile patio, built the atrium trellis, backyard deck, and retaining walls, and picked out and planted nearly all of the extensive landscaping. "We are ready for maintenance mode," admits Jim, who has focused on the finishing touches full-time since Silicon Valley's dotcom crash cost him his job as a network consultant last summer.

For four-and-a-half years, the Heralds have worked hand in hand toward the project's completion, chalking up their success to "sheer will, determination, and love." Says Tisa, "It's been challenging, but we never lost our vision." ■

WHERE TO FIND IT – SEE DIRECTORY – PAGE 149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But watch what they do
Talk > Know > Ask > Keep an eye on them.
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BY STEPHEN WHITLOCK

Whether custom designed or built from a kit, a backyard pavilion provides a perfect place to unwind

Great Gazebos

Say "gazebo" and what springs to most people's mind is an octagonal white garden building at the end of a long sweep of lawn. Although many gazebos do fit this traditional gingerbread-trimmed image, today's versions are just as likely to be square, rectangular, or round; have sleek lines; and sit close to the house, to encourage outdoor dining. They can even be built right into a porch (see opposite) or onto a deck, patio, or pool surround.

For Kathryn Keele, a homeowner in Pasadena, California, the formal redwood gazebo in the rose garden just steps from her Tudor-style house (shown on page 139) is a welcoming retreat. "It's very peaceful and private, but because it has lights and stereo speakers built in it's also wonderful for entertaining. We can squeeze six chairs around the table, but it's comfortable with four," she says of the 12-foot-wide pavilion painted deep hunter green.

A BIT OF HISTORY

old sturbridge village | berkeley | colonial williamsburg

The gazebo's ancestry can be traced back to ancient Japanese teahouses, Chinese garden shelters, and small buildings the Dutch built beside their canals. Some historians believe that the term gnaebo (*ge-zay-bo*), which came into use in the 1700s to describe garden viewing pavilions, may be the result of a linguistic joke, in which "gnze" was altered to make it sound more Latin. Designer and draftsman Peter Joel Harrison relates another version of the word's origin in his pattern book *Gazebos and Trellises: Authentic Details for Design and Restoration*. The story goes that at a garden party in 16th-century England, where all things French were in vogue, a guest remarked of the hostess's small teahouse, "*Ça, c'est beau!*" The Englishwoman then whispered to her friends that the fashionable term for her new teahouse was "gazebo."

Putting One Up

A gazebo is generally defined as a free-standing, open-sided structure with a solid roof and (usually) a floor, though designers are constantly reinterpreting the form. While traditionally made of wood, gazebos also can be built of metal, stone, or even reinforced concrete. Cedar and redwood are top wood choices for their stability and weather resistance, and both can be painted or left unfinished. Pressure-treated lumber is a less expensive option, but it should be covered with a semitransparent stain. Floors, which are often raised by one or two steps, may be wood, brick, concrete, or

ILLUSTRATIONS: PETER JOEL HARRISON/JOHN WILEY & SONS, INC.
PHOTO OPPOSITE: SUSAN SEUBERT (STYLIST: MARY BOARD)

Victorian-era octagonal structures—and a narrow Seattle lot—inspired the gazebo bump-out on Richard and Cathy Gaspar's porch. Its turned columns complement their 1909 house, and the continuous roofline provides additional all-weather living space.

CLOCKWISE FROM TOP LEFT: A casual garden gazebo with a mulch floor; a welcoming white octagon perched on a small rise; a rustic-style structure built from trees and branches that retain their natural shape; a Moorish extravaganza.

PHOTOS: CLOCKWISE FROM TOP LEFT: TRIA GIOVAN; HARRY MARKAMICHI; DESIGN: CHRIS CHOBSI; KEN BRUSE; JOHN HALL
PHOTO COMPOSITE: MARC LEHMAN (STYLIST: SUNNY HENDRICKSEN)

stone. Most often, the roof is clad in cedar shakes, though other materials, including copper and slate, may be used, particularly to echo that detail of the main house.

There are three basic approaches to putting up a gazebo: building one from a set of plans, putting together a kit, or commissioning an original design.

Building one from scratch requires excellent carpentry skills—and a good set of plans. *Gazebos & Other Outdoor Structures* (Creative Homeowner, $15) is an excellent resource for those with the requisite experience. *This Old House* master carpenter Norm Abram built a screened 8-foot-wide gazebo suitable for a pair of benches or Adirondack chairs; plans ($15) are available from the *New Yankee Workshop* (www.newyankee.com). A more manageable do-it-yourself approach is to assemble a gazebo from a kit (see "Building From a Kit," page 140). If you don't have the time or inclination to put it together yourself, hiring a contractor to do it for you can still be a good way to get a quality structure built quickly. Expect to pay $500 and up for labor, plus the cost of the foundation.

Commissioning a gazebo isn't necessarily more expensive than buying and assembling a high-quality kit (they start at $2,000 to $3,000 for a 6- to 8-footer), and it allows you to get a truly customized design. For example, Paul Blazek, a landscape designer in San Francisco, designed an 11-foot-square gazebo with a wooden potting bench and plumbed copper sink inside. The green stained cedar structure serves

Kathryn Keale's gazebo in Pasadena, California, has a louvered roof and a raised brick floor for a good view of the rose garden. A pendant light fixture and built-in stereo speakers encourage entertaining.

both as a working area in a raised-bed garden and as a gathering place for a family with young children. Joan Honeyman, a landscape architect in Washington, D.C., recently built a 17-foot-square gazebo attached to her client's house by a matching arbor—and wired it for high-speed Internet access so it could serve as an alfresco home office.

LEFT: An open-sided garden structure doesn't close you off from the garden. RIGHT: Built-in benches maximize seating in a small gazebo while latticed sides provide some privacy.

Planning Ahead

"While a gazebo design needs to blend with the landscape and work with the style of the house, size is also a major consideration," says Honeyman. "A lot of times a gazebo is too small, but it's not often that it's too big." She finds that clients either want a gazebo as a focal point in the garden, in which case a smaller 8-foot structure can suffice, or they want a destination, somewhere to go other than the patio or deck. "Once a family realizes how useful it is, and how much they'll be living in it, they want to put more stuff in it. We often start out designing a 12- or 13-foot-wide gazebo to fit a table and four chairs, and then the clients find they want to add more seating, and the size grows."

When choosing a site for a gazebo, avoid low-lying areas where water collects. Set it on a level or elevated spot in order to keep it—and you—dry, and to maximize the view. Before building, make sure you or your contractor consults the local building department about whether you need a permit. (In some towns, one is required only for structures larger than 10 feet across.) Local building codes also dictate what kind of foundation you'll need. Sometimes a smaller structure can be built on concrete blocks or pressure-treated timbers laid directly on the ground, then reinforced with shed anchors. Larger structures will require concrete piers or a continuous concrete footing dug down to the frost line. Where frost isn't an issue, the footings should be at least 18 inches deep; otherwise, a reinforced concrete slab, 4 inches thick, can serve as both support and floor.

BUILDING FROM A KIT

Perhaps the most popular option for putting up a gazebo these days is buying a prefab kit. Pieces come precut, often with the largest components (roof, floor, sides) preassembled in sections, no sawing required. Less expensive kits are made from pressure-treated fir or pine, while higher-end models are made of weather- and rot-resistant cedar. All fasteners (stainless or galvanized steel) should be included. Thanks to precision cutting and fitting, kits can deliver extremely well-engineered structures. "Because they're milled and built in the controlled environment of a factory, the quality control is very good," says Christopher Peeples, owner of Vixen Hill, which makes cedar kits of all shapes and sizes (a screened version is shown below).

Support columns are typically held by gusset plates bolted directly onto the foundation piers, deck, patio, or concrete floor. Sections bolt together through predrilled holes; smaller pieces screw together. Designs range from simple square latticework structures ($1,500 and up for a 9-footer) to octagons dripping in decorative millwork and capped by a two-tiered, cupola-topped roof ($3,500 to $10,000 for a 12-footer). Most company literature says that a couple of people can put together a small to midsize model in a day or two with just a cordless drill, a wrench and sockets, and, in some cases, a hammer and a nail set.

That time frame may or may not include the groundwork. For most homeowners, the hardest part is the foundation. Typically that requires digging and pouring concrete piers around the perimeter and one in the center—for an octagonal structure, nine footings.

How much skill is required? Bruce Swallow, a homeowner who lives outside of Pittsburgh and who modestly describes himself as "pretty handy," put together a Dalton Pavilions 13-foot gazebo kit with three friends in five hours after church one Sunday afternoon. "But that was after the footers had been poured and the floor joists bolted down," he points out. The foundation work took two men eight to 10 hours (they were nice enough to do the job while he was out of town). Though he concedes that he and his pals have more skills than most people—one's a plumber, another a drywall contractor—"none of us had ever done it before. Even with only half as much skill, it wouldn't take twice as long."

The gingerbread-trimmed octagon with a pagoda-style roof, curved balusters, and a ceiling-mount fan was a surprise for his wife's fiftieth birthday. It stands one step up from a corner of their backyard deck, where they use it for casual dinners, gatherings with friends, and reading the morning paper.

"Getting the floor sections completely level, which a lot of people might not even bother with, was probably the most painstaking part," says Bruce. Now it's a perfect spot for many birthday celebrations to come.

PHOTOS: CLOCKWISE FROM TOP LEFT © DK IMAGES (DESIGN: LISA STANDLEY); JEFF SAUER; COURTESY OF VIXEN HILL; PHOTO ©PHOTOTE: MARK RIGHARMS (STYLIST: TAMARA LOPEZ)

At a home in Key Largo, Florida, a round gazebo with a bell-shaped copper roof provides poolside shelter from the sun—and a cool vantage point for viewing the ocean beyond.

Bells and Whistles

While not every gazebo needs to be wired, it's a popular option. Most homeowners don't want to limit the usefulness of a structure that can serve as a dining room, reading room, or space for entertaining.

When it comes to electrical wiring, consider not only the best way to illuminate the inside of the gazebo, but also what will make it most attractive when seen from a distance. Swimming pool lights installed in the floor can provide uplighting that bolsters the gazebo's role as a garden feature, as can exterior lighting. An outlet can power a reading lamp, a blender for mixing drinks, or a plug-in sound system. An overhead ceiling fan provides a cooling breeze.

Screening the sides will deter mosquitoes from joining your dinner parties, while adding removable windows can extend the gazebo's use in cooler weather. Sliding lattice panel sides provide privacy screening as needed.

In warm climates, the gazebo is often built complete with a hot tub. "But from a design perspective, it's a poor choice," says Ed Repak, director of construction and drafting for Archadeck, a custom deck and gazebo builder. "In my experience, the gazebo becomes a lawn ornament covering the hot tub. But I've been in one where the guy had run cable for an outdoor TV mounted on a post. He loved it. It was his own realm." Further proof that a gazebo's uses are limited only by the owner's imagination. ■

WHERE TO FIND IT ➤ SEE DIRECTORY ➤ PAGE 148

D I R E C T O R Y

WHERE TO FIND [illegible] GRAM SCHEDULE, [illegible] 146 • TV CLASSICS, PAGE 150

[illegible] RAPHS BY MICHAEL GRI[illegible]

ON THE JOB
pp. 18–20

Tabletop dovetailing machine: Hoff mann Machine Co Inc., Bohemia, NY, 631-589-6322, www.Hoffmann USA com
Polyurethane trim: Fypon Molded Millwork, Stewartstown, PA; 800 537-5349

HOUSE CALLS WITN STEVE
pp. 22–28

Architects: M. Brian Tichenor, AIA, and Raun Thorp (princi-pals) and Kevin Wnlverton (project manager), Tichenor & Thorp Architects, Beverly Hills, CA, 310-358-8444. General contractor: Roy Petrim, North Hollywood, CA, 818-769-1458. Vintage stove: Antique Stove Heaven, Los Ange les, CA, 323-298-5581. Tiles: B&W Tile Co., Gardena, CA, 310-538-9579. Cabinetry: Cabiner Creations, Sun Valley, CA, 818-771-1020. Dishwasher drawers: Fisher & Paykel, 800-863-5394, www.fisherpaykel com. Refrigerator: Sub-Zero; 800-222-7820; www.subzero com

ASK NORM
pp. 28–33

Heart-pine information: USDA Forest Products Laborarory, Center for Wood Anatomy Research, Madison, WI; 608-231-9200, www2.fpl.fs.fed.us. Southern Pine Council, Kenner, LA; 504-443-4464; www.southernpine.com. The Longleaf Alliance, Auburn Univer-sity, AL; 334-844-1032; www longleafalliance.org. Acrylic-based elastomeric roof mastic: Somay Products, Inc., Miami, FL, 888-247-6629; www.somay.com. Extruded polystyrene foam: The Dow Chemical Company, 800 441-4369, www dow.com. Foam fabrication and accessories: 7-inch SIP screws, Windlock Select, Leesport, PA, 877-468-5643, www.hotknife.com. Our thanks to: Keith Flohr, foren-sic chemist, Engineer and Fire Investigations (EFI), 800-334-0200; www.efiinfo.com. National Wood Flooring Associ-ation, Ellisville, MO, 800-422-4556; www.woodfloors.org

On the Job, p. 18: This nifty new routing machine cuts dovetailed slots for fast, snug wood joinery—which makes it a favorite of Tom Silva.

MATERIALS: PRESSURE-TREATEO WOOD ALERT
pp. 34–38

Borate: Tim-bor, The Pacific Wood Preserving Com-panies, Bakers-field, CA; 520-466-7801; www.pacific wood com. Copper azole: Wolmanized Natural Select, Arch Wood Protection, Atlanta, GA; 866-789-4567, www.naturalselect.com. ACQ: NatureWood, Osmose Wood Pre-serving, Griffin, GA; 770-228-8434, www.osmose.com. Composite: WeatherBest by Louisiana-Pacific, Huntersville, NC, 800-521-4316, www.weatherbest lpcorp.com. Structural fiberglass lumber: Carefree Xteriors Decking Systems, U.S. Plastic Lumber Corp., Boca Raton, FL; 888-733-2546; www.carefreexteriors.com. Our thanks to: Peoples Supply Co., Hyattsville, MD; 301-927-2200, www.peoplessupply.com

LUXURIES: NOW YOU SEE IT, NOW YOU OON'T
pp. 42–48

Audiovisual consultant: Bill Mayer, Mayer Associates, New York, NY, 212-595-8723. Plasma-screen lift fab-ricator: Eric Andkjar, Electro-Kinetics Inc., Callicoon, NY, 845-887-4930; www.electrokinetics.com. Architect: Alfred Wen, KSA Architects, New York, NY, 212-643-2655. General con-tractor: Steve Moy, Innovative Concepts, New York, NY, 718-326-4373. Mill-work: Architectural Paneling Inc., New York, NY, 212-371-9632. Plasma-screen manufacturers: Sharp Electronics Corp., Mahwah, NJ, 800-237-4277; www.sharp-usa.com. Pioneer, Long Beach, CA; 800-421-1404, www pioneerelectronics.com. Our thanks to: Gary Merson, editor/publisher, *HDTV Insider Newslet-ter*, Plainview, NY, 516-933-0246; www.hdtvinsider.com. Stephen A. Booth, *Television Digest*, New York, NY; 212-686-5410. Harvey Electronics, Green-wich, CT; 203-622-0324, www.harveyelectronics.com.

EQUIPMENT: NARVESTING THE RAIN
pp. 48–55

Collection systems and design installation: Tank Town, Dripping Springs, TX; 512-894-0861, www.rainwater collection com

By Design, p. 56: This classic porch swing, based on one at the Weatherend estate in Maine, invites a relaxing outdoor sit-down by the sea.

BY OESIGN: PORCN SWING
pp. 58–62

Cedar swings: Walpole Woodworkers, Walpole, MA, 800-343-6948, www walpolewoodworkers com. Oak swings: Creative Woodworking, Spruce Pine, AL; 888-225-2029, www.oakswings.com. Teak swings: Wood Classics, Gardiner, NY; 800-385-0030, www.woodclassics com. Mahogany swings: Wearherend Estate Furniture, Rockland, ME; 800-456-6483; www.weatherend.com. Wood, wicker, and vinyl/aluminum swings: Porches and Yards, 800-872-6525, www.porchesandyards com

UPKEEP: POST NASTE
pp. 84–88

Post: Dover Mail Post #262040, Walpole Woodworkers, Walpole, MA, 800-343-6948
Mailboxes
Page 64—*(opener)* The Strong Box #276182 (green) from Walpole Wood workers. Page 68—*(sidebar)* Diamond plate "Ironbox" #SDP-1B, The Steel City Corporation, Youngstown, OH, 800-321-0350; www.scity.com. Our thanks to: Odell Youog, supervisor, On Target Locating Services, Gardiner, ME, 800-598-0628; www.ontarget services.com. Steve Schultz, branch manager, Walpole Woodworkers, Wilm-ington, MA; 978-658-3373. Ron Packard and Mark Rizzio, USPS, Con cord, MA, 978-369-7613. Peter Zareski, owner/manager, Mr. Mailbox, Norwalk, CT; 203-849-1144; www.mrmailbox.com.

TALKING SNOP: MAKING TNE CUT
pp. 72–78

Page 74—*Circular saws*
Wormdrive: Skil HD77, 5-B Power Tool Company, Chicago, IL, 877-754-5999, www.skil.com. Sidewinder: Milwaukee 6390-20, Milwaukee Electric Tool Cor-poration, Brookfield, WI; 800-414-6527, www.mil-electric-tool.com. Small sidewinder: Makita 5740NB, Makita USA Inc., La Mirada, CA; 800-462-5482; www.makitatools.com. Cordless: Bosch 1660, Bosch Power Tool Com-pany, Chicago, IL; 877-267-2499, www boschtools.com. Trim: Porter Cable 314, Porter Cable Corporation, Jackson, TN, 800-487-8665, www.porter-cable.com
Features
Full-round knobs: DeWalt 364, DeWalt Industrial Tool Co., Baltimore, MD; 800-433-9258, www.dewalt.com. Cast-metal shoe: Porter-Cable 347, Porter-Cable Corporation.

NOMOWNER'S NANOBOOK: INSTALLING A LOCKSET
pp. 81–87

Lockset: Polished brass Plymouth F-series passage lock by Schlage, Olathe, KS, 800-847-1864; www.schlage lock.com. Lock boring jig: Cylindrical lock boring jig #511, Porter-Cable, Jackson, TN, 800-487-8665; www.porter-cable.com. Our thanks to: Marc Serravezza, senior applications engineer at Schlage Lock Company.

(continued on pg. 148)

PHOTO (BOTTOM): COURTESY WEATHEREND ESTATE FURNITURE. STYLIST: RYUNA FORBES

This Old House

Where and when to watch current-season *This Old House* on PBS and *This Old House Classics*® on commercial stations

(or check local listings for latest

ALABAMA

BIRMINGHAM
WBIQ Sat 1 p.m.
● WBMA

DEMOPOLIS
WIIQ, Sat. 1 p.m.

DOTHAN
WEIQ, Sat 11 p.m.

FLORENCE
WIIQ Sat 1 p.m.

HUNTSVILLE
WHIQ Sat 1 p.m.
● WYLE

LOUISVILLE
WEIQ Sat 11 p.m.

MOBILE
WEIQ Sat 1 p.m.
● WALA

MONTGOMERY
WAIQ Sat 1p.m.
● WAKC/WETV

MOUNT CHEAHA
WCIQ, Sat. 7 p.m.

ALASKA

ANCHORAGE
KAKM Thu. 8 p.m. Sat. 9:30 a.m.
KMTX Thu. 1 p.m. Sat. 10 a.m.
KYUK, Thu. 8 p.m., Sat. 10 a.m.
● PSMO

BARROW
KUAC, Thu. 8 p.m., Sat. 10 a.m.
● KATV

JUNEAU
KTOO, Thu. 8 p.m., Sat. 10 a.m.
● KATP

ARIZONA

PHOENIX
KAET Sat 5 p.m.
● KTVK/KASW

TUCSON
PBAS, Thu., 8:30 p.m., Sat. 10 a.m. and 6:30 p.m.
KUAT, Thu. 8:30 p.m., Sat. 10 a.m. and 6:30 p.m.
● KTTU/KMSB

ARKANSAS

ARKADELPHIA
KETS, Sat 9 a.m. and 12:30 p.m.

FAYETTEVILLE
KAFT Sat. 9 a.m. and 12:30 p.m.

HARRISON
● KPBH/KPBF

JONESBORO
KTEJ, Sat 9 a.m. and 12:30 p.m.

LITTLE ROCK
KETS, Sat. 9 a.m. and 12:30 p.m.
● PWBF

PINE BLUFF
KEMW, Sat. 9 a.m. and 11:30 p.m.

CALIFORNIA

BAKERSFIELD
● PUVT

CHICO
● KHCH

FRESNO
PLET Sun 1:30 p.m. Sat 10:30 a.m.
● KMJE

HUMBOLDT
KVPT Sat. 11:30 a.m.
● PFHN

HUNTINGTON BEACH
KOCE, Tue. 7 p.m.—Wed. 1:30 p.m. Sat 9:30 p.m.

LOS ANGELES
KLCT Sat 1:30 p.m.
● PANC

MONTEREY/SALINAS
● KUSA/KION

PALM SPRINGS
● PPSP

REDDING
KHCI Sat 10:30 a.m.

SACRAMENTO
KVIE Tue 7 p.m. Sat 9 a.m.
● KJVK

SAN CHARLOTTES
PVCH Mon 1:30 p.m.

SAN DIEGO
KPBS, Sat 1:00 p.m.
● KGTV

SAN FRANCISCO
KQED Sat. 5 p.m.
● KPIX

SAN JOSE
PTTN, Wed. 9 p.m.

SAN MARCOS
KCSM, Sun. 10 a.m.

SANTA BARBARA
● KSBY

COLORADO

BOULDER
KBD Wed. 1:30 a.m. and 7:30 p.m.

COLORADO SPRINGS
● KRMA

DENVER
KRMA, Sun 1:30 p.m., Sat 6:30 p.m.
● PCNC

GRAND JUNCTION
KRMJ Sun 11:30 p.m. Sat 7:30 p.m.
● KJCT

MOBILE
KTSC, Sun. 5:30 p.m., Sat. 4:30 p.m.

CONNECTICUT

FAIRFIELD
WEBY, Sun. 10:30 a.m., Thu 11 p.m., Sat. 7 p.m.

HARTFORD
WEDH, Sun. 1:30 a.m., Thu. 11 p.m., Sat 7 p.m.
● WTNH/WCTX

NEW HAVEN
WEDY Sun. 10:30 a.m., Thu. 11 p.m. Sat 7 p.m.

NORWICH
WLDN, Sun. 10:30 a.m. Thu 11 p.m., Sat 7 p.m.

DISTRICT OF COLUMBIA

WETA Sat 2 p.m. and 10:30 p.m.
WHUT/Sat 1:30 p.m.
● WRC

FLORIDA

BOCA RATON
WGCU Sat 1:30 p.m.

DAYTONA BEACH
WEFL Tue 7 p.m., Sat. 6 p.m.

FORT MYERS
● WFVU

GAINESVILLE
WUFT Sat. 9 a.m. and 1:30 p.m.

JACKSONVILLE
WJCT Sat 11 noon and 2:30 p.m.
● WTLV/WJCT

MIAMI
WLRN, Sat 1 p.m.
WPBT, Sun. 1 a.m.
● WAZI

ORLANDO
WMFE Sat. 5:30 p.m.
● WKCF

PANAMA CITY
WFSU, Sat 1:30 p.m.

PENSACOLA
WSRE, Sat., 1:30 p.m.

SARASOTA
● WWSB

TALLAHASSEE
WFSU, Sat. 1:30 p.m.

TAMPA
WEDU Sun. 6:30 p.m., Sat. 11:30 a.m.
WUSF Sun. 5:30 p.m., Wed. 9 p.m.
● WACH

WEST PALM BEACH
WXEL, Sat. 1:30 p.m.
● WPTV

GEORGIA

ALBANY
● WXST

ATLANTA
WGTV Sun. 2 noon, Sat. 11 a.m. and 1:30 p.m.
WPBA, Mon. 1 p.m. and 11:30 p.m., Wed. 1 p.m., Sat. 10:30 a.m. and 8 p.m.
● WXIA

AUGUSTA
WEBA, Sat 9 a.m.
● WJBF/WF

CARTERSVILLE
WCLP Thu. 7 p.m., Sat 11 a.m. and 1:30 p.m.

COCHRAN
WECO Sun 12 noon, Sat. 11 a.m. and 1:30 p.m.

COLUMBUS
WJSI Sun. 1 noon, Sat 11 a.m. and 5:30 p.m.
● WTZZ

DAWSON
WAFV Thu. 11 noon, Sat 1 p.m. and 1:30 p.m.

SAVANNAH
WVAN, Tue. 12 noon, Sat 11 a.m. and 1:30 p.m.
● WJCL

THOMASTON
WKA A Sun 12 noon, Sat 11 a.m. and 1:30 p.m.

VIDALIA
WCES, Sun. 11 noon Sat 1 p.m. and 5:30 p.m.

HAWAII

HONOLULU
KHET Sat. 1:00 p.m.

IDAHO

BOISE
KAID Sun. 6:00 p.m.
● KTRV

COEUR D'ALENE
KCDT Sun 1:30 p.m.

IDAHO FALLS
● PTEI

MOSCOW
KUID Sat 1:30 p.m.

POCATELLO
KISU Sun. 6:30 p.m.

TWIN FALLS
KPIT Sun. 7:30 p.m.

ILLINOIS

CARBONDALE
WSIU Thu. 7 p.m., Sat. 12:30 p.m.

CHAMPAIGN/URBANA
WILL, Sat. 3:30 p.m., Sat. 10 a.m. and 1:30 p.m.

CHARLESTON
WEIU Fri. 11 noon

CHICAGO
WTTW Sat. 12 noon and 7 p.m.
WYCC, Sat. 6 p.m.
WGBO, Thu. 7 p.m.
● WCIU

DECATUR
● WAND

JACKSONVILLE
WSIU Sat 1:30 p.m.

MOLINE
WQPT Thu. 7 p.m., Sat. 1:30 p.m.

OLNEY
WUSI, Thu. 7 p.m., Sat 1:30 p.m.

PEORIA
WTVP Thu. 10 p.m. Sat 12:30 p.m.
● WAOE

QUINCY
WQEC, Sat 1:30 p.m.
WMEC, Sat. 1:30 p.m.
● WGEM

ROCKFORD
● WTVO

INDIANA

BLOOMINGTON
WTIU Sat 12:30 p.m.

EVANSVILLE
WNIN, Sun. 4:30 p.m.
Sat 8 a.m. 12:30 p.m. and 6 p.m.
● WFIE

FORT WAYNE
WFWA Sat 11 a.m.
● WKJG

INDIANAPOLIS
WFYI Sa 9 a.m. and 1 p.m.
WTBU Tue 1 p.m.
● WALA
● WTIP

MERRILLVILLE
WYIN Tue 7 p.m.

MUNCIE
WIPR Sat 11:30 a.m.

SOUTH BEND
WSBT Sa 1:30 p.m.
● WNDU/WNIT

TERRE HAUTE
● WTWO

BROOKHILL
WVUT Sat. 1:30 p.m.

IOWA

DAVENPORT
● PWQC

COUNCIL BLUFFS
KDN, Wed. 6:30 p.m., Sat 1 p.m.

DAVENPORT
KQCT Tue. 7 p.m., Sat 1:30 p.m.
● WQAD

DES MOINES
KDM, Wed. 6:30 p.m., Sat 1:30 p.m.

FORT DODGE
PTFN, Wed. 8:30 p.m., Sat. 1:30 p.m.

IOWA CITY
PTN, Wed. 6:30 p.m., Sat. 1:30 p.m.

MASON CITY
KYIA, Wed. 6:30 p.m., Sat 1:30 p.m.

OTTUMWA
● PYOU

SAC CITY
KHIN, Wed. 6:30 p.m., Sat 1:30 p.m.

SIOUX CITY
KPTS, Wed. 6:30 p.m., Sat 1:30 p.m.
KDIN, Sat. 12:30 p.m.

WATERLOO
KBIN, Wed. 6:30 p.m., Sat 1:30 p.m.

KANSAS

BUNKER HILL
KOOD, Sat. 12:30 p.m.

LARNED
KSWA, Sat 12:30 p.m.

SALINA
KPTU, Sat 9:30 a.m.
● KTMJ

WICHITA
KPTS, Sun 10 a.m., Sat 11 a.m.
KDCU, Sat. 12:30 p.m.
● KWCH

KENTUCKY

ASHLAND
WKAS Sun. 1 p.m.

BOWLING GREEN
WKGB, Sun., 5 p.m.
WKYU, Sat 12:30 p.m., Tue 1 p.m. and 9:30 p.m.

COVINGTON
WCVN Sun. 1 p.m.

ELIZABETHTOWN
WKZT Sat 1 p.m.

LEXINGTON
PTLT Sun 1 p.m.
PTLT, Fri 10 p.m.
WKLE Sun 1 p.m.
● WTV 2

LOUISVILLE
WPMJ, Tue 1 p.m.
WKLE Sun 1 p.m.
● WDRB/WFTS

MADISONVILLE
WKMA Sun 1 p.m.

MORehead
WKLH, Sun 1 p.m.

MURRAY
WKMS Sun 1 p.m.

OWENSBORO
WPSD Sat 1 p.m.

OWENTON
WKPD Sun 1 p.m.

PADUCAH
WPSD Sat 1 p.m.
WKMS Thu 7 p.m. Sat 2:30 p.m.
● WDKA/WSIL

PRESTONSBURG
WKPI Sun. 1 p.m.

RADCLIFF
WKLH Sat 1 p.m.

LOUISIANA

ALEXANDRIA
KLPA Sat 2:30 p.m.

ARCHIBALDEAUX
KLPB/WLPB, Sat 12:30 p.m.
● WGMB/WBRH

LAFAYETTE
PLFL, Sat. 12:30 p.m.
● KADN/KLAF

LAKE CHARLES
PITL Sa 12:30 p.m.

MONROE
KTAM Sat 12:30 p.m.
● KNOE

NORMAN HITT
● PWBJ

NEW ORLEANS
WYES, Sat 12:30 a.m.
● WVUE

SHREVEPORT
KLTS Sat 12:30 p.m.
● KTBS

MAINE

BANGOR
WMEH Sat 1:30 p.m.
● WBGP

CALAIS
WMEH Sat 1:30 p.m.

LEWISTON
WEBE, Sat. 3:30 p.m.

PORTLAND
WMEA Sat 1:30 p.m.
● WMTW

PRESQUE ISLE
WMEM Sat 1:30 p.m.

MARYLAND

ANNAPOLIS
WMPT Sun. 11 a.m. Tue 11 p.m.

BALTIMORE
WMPB, Sun. 1 p.m. Sat 11 a.m.
● WMAR

FREDERICK
WHPT Sa 11 a.m., Sat. 7 a.m.

HAGERSTOWN
WHPT Sun. 11 a.m., Thu 7 p.m. Sat. 11 a.m.
● WJAZ

SALISBURY
WCPB, Sun. 11 a.m., Sat. 11 a.m.
WDPB, Sat 10 a.m. and 8 p.m.

MASSACHUSETTS

BOSTON
WGBH Mon 7:30 p.m. Thu 8 p.m., Sat. 1:30 p.m.
Select P4, Sun. 2:30 p.m. and 1 p.m.
● WHDH

BRAINTREE
WLNE Sat 1 p.m.

BROCKTON
WGBY Thu. 8 p.m. Sat 5:30 p.m.

MICHIGAN

ALPENA
WCMI Sat 1 p.m.

BAD AXE
WUCX Sun 1 p.m. Thu 8 p.m.

CADILLAC
WLMI Sat 11 p.m.
● WWTV/WWUP

DETROIT
WTVS, Thu. 6:30 p.m., Fri. 1:30 a.m., Sat 10 a.m.
● WDIV

EAST LANSING
WKAR, 1 a.m., Sat. 1:30 p.m.

FLINT
WDCM/WDCQ Sun. 5 p.m.
WJRT Sat 1:30 p.m.
● WNEM

GRAND RAPIDS
WGVU Thu 8:30 p.m. Sat 1 p.m.
● WOOD/WWKZ

KALAMAZOO
WGVK, Thu. 1 a.m., Sat 1 p.m.

LANSING
● WHTV

MANISTEE
WCMW Sat 1 p.m.

MARQUETTE
WNMU Sat 1:30 p.m.
● WBUP

MOUNT PLEASANT
WCMU Sat 1 p.m.

UNIVERSITY CENTER
WUCM, Sat 1 p.m., Thu. 8 p.m.

MINNESOTA

APPLETON
KSMN Sat 12:30 p.m.
PWCM, Fri. 1 p.m., Sat. 12:30 p.m.

BEMIDJI
KSMQ Sat. 12:30 p.m.

BENSON
KAWE, Thu. 7:30 p.m., Sat. 12:30 p.m.

BRAINERD
KAWE, Thu. 7:30 p.m., Sat. 12:30 p.m.

DULUTH
WDSE Sun 9:30 a.m., Tue. 2 p.m., Sat 1:30 p.m.

MINNEAPOLIS/ST. PAUL
KTCA, Sat. 9 p.m.
KTCI/KTCJ, weekdays 1 p.m. and 10 p.m.
TPT, Tue. 7:30 p.m., Sat. 6 p.m.
● KSTP/KSTC

ROCHESTER
● KYLT

MISSISSIPPI

BILOXI
● MAH, Sat. 6:30 p.m.

GREENVILLE
WMAE, Sat. 6:30 p.m.

JACKSON
WMAH Sat. 6:30 p.m.
● WJTV

COLUMBUS/TUPELO
● WCBI

GREENWOOD
WMAH, Sat. 6:30 p.m.
● WXTV

JACKSON
WMPN, Sat. 6:30 p.m.
● WJBW/WDBM

MERIDIAN
WMAH Sat. 6:30 p.m.

MISSISSIPPI STATE
WMAH, Sat. 6:30 p.m.

OXFORD
WMAH Sat 6:30 p.m.

MISSOURI

COLUMBIA
● KMIZ/KQFX

SPRINGFIELD
WGSU Thu. 8 p.m. Sat 5:30 p.m.

JOPLIN
KODE, Sat 12:30 p.m.

KANSAS CITY
KLJC Sun, 6:30 p.m. Sat 2:30 p.m.
● KMBC

ST. LOUIS
KETC, Wed., 7:30 p.m., Sat 7:30 p.m.
● KSDK

SEDALIA
PLTN Sa 1:30 p.m.

SPRINGFIELD
KOZK Sat. 12:30 p.m.
● KDEB

MONTANA

BILLINGS
● PTTP

BOZEMAN
PUEM, Sat. 11:30 a.m.

BUTTE
● KBTZ/KMMS

GREAT FALLS
● KUMN

HELENA
● WYDC

LONG BRANCH
WLNE Sun 8 p.m. and 8:30 p.m., Mon 1:30 a.m. and 11 a.m.

NEW YORK CITY
WNET Sat 5:30 p.m.
● WCBS, Sun 7:30 a.m.

BINGHAMTON
WSKG Sat 11:30 a.m.
WSKG, Sun 7:30 a.m.

BUFFALO
WNED Sat. 6 p.m.
WNED, Sun. 4:30 p.m.
● WIVB/WNLO

CHARLESTON
● WCAX

ELMIRA
● WYDC

LONG ISLAND
WLIW Sun 8 p.m. and 8:30 p.m., Mon 1:30 a.m. and 11 a.m.

NEW YORK CITY
WNET Sat 5:30 p.m.
● WCBS, Sun 7:30 a.m.

ROCHESTER
WXXI Sat. 11:30 a.m.
WXXI, Sun 1 p.m.
● WHEC

SYRACUSE
WCNY/WCNY2, Sat 10:30 a.m.
● WSTM

UTICA/ROME
WPRI Sat. 10:30 a.m.

WATERTOWN
WPBS Sat. 10:30 a.m.

NORTH CAROLINA

ASHEVILLE
WUNF Sun. 8 a.m., Sat 1 p.m.

CHAPEL HILL
WUNC, Sun. 8 a.m., Sat 1 p.m.

CHARLOTTE
WTVI Sun. 10:30 a.m. Thu. 8 p.m. Sat. 1 p.m.
WUNG, Sun. 8 a.m., Sat. 1 p.m.
WUNC, Sat 8 a.m.
● WCCB

COLUMBIA
WUNG, Sun. 8 a.m., Sat 1 p.m.

DURHAM
WUNC, Sat. 5 p.m.

GREENSBORO
● WUPB/Sat 10:30 a.m.

GREENVILLE/NEW BERN
● WITN

GREENVILLE/SPARTANBURG
WUNG, Sun. 8 a.m., Sat 5 p.m.
● WLOS/WSPA/C

JACKSONVILLE
WUNM, Sun. 8 a.m., Sat. 5 p.m.

LAURELS
WUNP, Sun. 8 a.m., Sat 1 p.m.

LINCOLNTON
WUNP, Sun. 8 a.m., Sat 1 p.m.

RALEIGH
● WTVD

LUMBERTON/FAYETTEVILLE
WUNP Sun. 8 a.m., Sat 1 p.m.

WILMINGTON
WUNJ Sun. 8 a.m. Sat 1 p.m.

WINSTON-SALEM
WUNL, Sun. 8 a.m., Sat. 1 p.m.

TRENTON
WNJ1 Sun. 1 p.m. and 11 p.m.
Fri. 8 p.m. and 1 a.m. Sat 1 p.m. and 11 p.m.

NEW MEXICO

ALBUQUERQUE
KNME Sat 8 a.m., Sat 10 a.m.
● KOB

LAS CRUCES
KRWG, Sat 1:30 p.m.

PECOS
● PVIT

ROSWELL
KENW Wed 10:30 p.m., Sat. 8 p.m.

NEW YORK

ALBANY
● WXXA

BINGHAMTON
WSKG, Sat 9 a.m. and 1:30 p.m.
● WBNG

BUFFALO
WNED Sat. 6 p.m.
WNED, Sun. 4:30 p.m.
● WIVB/WNLO

CHARLESTON
● WCAX

ELMIRA
● WYDC

LONG ISLAND
WLIW Sun 8 p.m. and 8:30 p.m., Mon 1:30 a.m. and 11 a.m.

NEW YORK CITY
WNET Sat 5:30 p.m.
● WCBS, Sun 7:30 a.m.

ROCHESTER
WXXI Sat. 11:30 a.m.
WXXI, Sun 1 p.m.
● WHEC

SYRACUSE
WCNY/WCNY2, Sat 10:30 a.m.
● WSTM

UTICA/ROME
WPRI Sat. 10:30 a.m.
● WPTZ

WATERTOWN
WPBS Sat. 10:30 a.m.

NORTH CAROLINA

ASHEVILLE
WUNF Sun. 8 a.m., Sat 1 p.m.

CHAPEL HILL
WUNC, Sun. 8 a.m., Sat 1 p.m.

CHARLOTTE
WTVI Sun. 10:30 a.m. Thu. 8 p.m. Sat. 1 p.m.
WUNG, Sun. 8 a.m., Sat. 1 p.m.
WUNC, Sat 8 a.m.
● WCCB

COLUMBIA
WUNG, Sun. 8 a.m., Sat 1 p.m.

DURHAM
WUNC, Sat. 5 p.m.

GREENSBORO
● WUPB/Sat 10:30 a.m.

GREENVILLE/NEW BERN
● WITN

GREENVILLE/SPARTANBURG
WUNG, Sun. 8 a.m., Sat 5 p.m.
● WLOS/WSPA/C

JACKSONVILLE
WUNM, Sun. 8 a.m., Sat. 5 p.m.

LAURELS
WUNP, Sun. 8 a.m., Sat 1 p.m.

LINCOLNTON
WUNP Sun. 8 a.m., Sat 1 p.m.

RALEIGH
● WTVD

LUMBERTON/FAYETTEVILLE
WUNP Sun. 8 a.m., Sat 1 p.m.

WILMINGTON
WUNJ Sun. 8 a.m. Sat 1 p.m.

WINSTON-SALEM
WUNL, Sun. 8 a.m., Sat. 1 p.m.

NORTH DAKOTA

BISMARCK
KBME, Sat. 9:30 p.m.

BOTTINEAU
KMY, Mon. 8 p.m. Sat. 9:30 a.m.

ELLENDALE
KJRE Sat 9:30 p.m.

FARGO
KJR, 11 a.m. Sat. 8:30 p.m.
● PAS

GRAND FORKS
KCPE Thu. 8 p.m., Sat 9:30 a.m.

JAMESTOWN
KDSU Sat 4:30 p.m.

MINOT
KMPR Sat 4:30 p.m.
● MINOT/MAIN

WILLISTON
KWSU Sat. 4:30 p.m.

OHIO

ATHENS
WOUC Sun. 1 p.m., Sat 11 noon

AKRON
WEAO Sun. 1 p.m., Sat 11 noon

CANTON
WCMH, Sun. 1 p.m.

BOWLING GREEN
WBGU Sat. 1:30 p.m., Mon. 3 p.m.

CAMBRIDGE
WEGE, Sat 1 p.m.

CINCINNATI
WCET Sat 9 a.m. and 4:30 p.m.
WCET Sun 1 p.m.
● WCPO

CLEVELAND
WVIZ, Sun. 1:30 p.m., Sat. 4:30 p.m.
● WEWS

COLUMBUS
WOSU Thu 7 p.m., Sat. 6 a.m. and 4:30 p.m.
● WSYX/WTTE

DAYTON
● WPTD, Sat 9:30 p.m.
● WHIO

LIMA
● WOHL/WLQP

OXFORD
WPTO, Sun. 12:30 p.m.

PORTSMOUTH
WPBO Thu. 1 p.m., Sat. 6 a.m. and 9:30 p.m.

TOLEDO
WTTE Sun 1 p.m. Sat. 1 p.m.

YOUNGSTOWN
WNEO, Sun. 10 a.m., Sat. 11 noon
● WFMJ

OKLAHOMA

GUTHRIE
PWLI Sun 7 p.m., Sat 9:30 a.m. and 1:30 p.m.

ILLAHOMA
KOET Sun. 1 p.m. Sat. 9:30 a.m. and 1:30 p.m.

OKLAHOMA CITY
KTTA, Sun. 7 p.m., Sat. 9:30 a.m. and 12:30 p.m.
● KWTV

TULSA
KCHI Sun. 5 p.m., Sat. 9:30 a.m. and 2:30 p.m.

OREGON

BEND
PHAR, Fri. 8 p.m., Sat. 1 p.m.

CORVALLIS
PHAC, Fri. 8 p.m., Sat. 1 p.m.

EUGENE
PIPA, Fri. 6 p.m., Sat. 1 p.m.
● PHFC

KLAMATH FALLS
KFTS, Sat 10:30 a.m.

LA GRANDE
PTVE Fri 7 p.m., Sat 1 p.m.

MEDFORD
KSYS Sat 1 p.m.
● KHSD

PORTLAND
KOPB, Fri. 9 p.m., Sat. 5 p.m.
PBAM, Fri. 7 p.m., Sat. 1 p.m.
● KATU

PENNSYLVANIA

ALLENTOWN
WLVT Fri 7:30 p.m. Sat 12:30 p.m.

ERIE
WQLN Sun 6:30 p.m.
● WJET
● WTAE

HARRISBURG
WITF Sat 9 a.m. and 1 p.m.
● WHTM

PHILADELPHIA
WHYY Sat 10 a.m. and 8 p.m.
WNJS, Sun. 1 p.m. and 5:30 p.m.
Fri 8 p.m. and 8:30 p.m., Sat 1 noon
● WCAU

PITTSBURGH
WQED Sun. 11 a.m., Sat 11 a.m.
WQED Sat. 4 p.m.
WQES, Sat 5 p.m.
● WPXI

PITTSTON
WVIA, Sat. 5 p.m. and 11:30 p.m.

RHINESTER PARK
WTSG, Sun 8:30 p.m., Sat 8 a.m. and 10 p.m.

WILKES-BARRE
● WYLN

RHODE ISLAND

PROVIDENCE
WSBE, Mon. 7:30 p.m. Sat 1 p.m.
● WJAR
● WLNE

SOUTH CAROLINA

ALLENDALE
WJA, Sat 9 a.m.

BEAUFORT
WJW, Sat 9 a.m.

CHARLESTON
WITV Sat 9 a.m.

CHERAW
WITH Sat 9 a.m.

FLORENCE/MYRTLE BEACH
WJPE Sat 9 a.m.
● WPDE/WFXB/WB

GREENVILLE
WNTV Sat 9 a.m.
WNEH Sat 9 a.m.

ROCK HILL
WNSC Sat 9 a.m.

SPARTANBURG
WRET Sat 9 a.m.

SUMTER
WRJA Sat 9 a.m.

SOUTH DAKOTA

ABERDEEN
PEID Sat. 8 p.m.

EAGLE BUTTE
KDSD, Sat 8 p.m.

HURON
PZSD Sat 3 p.m.

MINNETONKA/MOORHEAD
KPSD, Sa 8 p.m.

MITCHELL
KDSD Sat 8 p.m.

RAPID CITY
PSIH, Sat. 3 p.m.
PRS, Sat 10 a.m. and 1:30 p.m.
● KLPR/KRVV

SIOUX FALLS
KCSD, Sat 4 p.m.
KESD, Sat. 8 p.m.
KSMN, Tue. 8 p.m. Sat 12:30 p.m.
● KTTW

VERMILLION
KUSD Sat 8 p.m.

TENNESSEE

CHATTANOOGA
WCFE Sun 12 noon, 11 p.m. and 5:30 p.m.
WTCI Sat 5 p.m.
● WDSN

COOKEVILLE
WCTE Sat 1:30 p.m.

JACKSON
● WMTN

KNOXVILLE
WKOP Sat 1:30 p.m.
WKPT Sat 1:30 p.m.

LEXINGTON-MARTIN
WTLJ Sat 9 a.m.

MEMPHIS
WKNO Sat 9 a.m.
● WHBQ

NASHVILLE
WDCN, Sat at 11 p.m.
WNPT Sat 4:30 p.m.

TRI-CITIES
● WKPT/WKPK

TEXAS

ABILENE
PACX, Sat 9 a.m. and 2:30 p.m.
● PTXT/KRBC

AUSTIN
KLRU, Sat. 9:30 a.m.

WASHINGTON/BRENHAM
KAMU, Tue 1 p.m., Sat 2:30 p.m.

CORPUS CHRISTI
KEDT Sat 12:30 p.m. and 9 p.m.

DALLAS/FORT WORTH
KERA, Sat 4:30 p.m.
● KDFW/KHSU

EL PASO
KCOS, Sat 1:30 p.m.
KSCE, Sat 1 p.m.
● KVIA

HARLINGEN
KLUJ, Sat 12:45 p.m.
● KLTJ

HOUSTON
KUHT Sun. 1 p.m.
● PBH

KILLEEN
KNCT Sat 12:30 p.m.

LAREDO
● KGNS

LUBBOCK
KTXT Thu 11 noon Sat 1:30 p.m.

MIDLAND
KOCV Sa 12:30 p.m.

SAN ANTONIO
KLRN, Sat 1:30 p.m.
● KSAT

TYLER
● KTPN/KFXK

WACO
KCTF Mon 12:30 p.m. Sat. 6:30 p.m.
PWSU, Mon. 12, 1:30 p.m. Sat 6:30 p.m.
● KWTX

UTAH

ALPINE
PBNU, Sat 8:30 a.m., 8 a.m. and 2 p.m.

SALT LAKE CITY
KUED, Sat 9 a.m., 8:30 a.m. 1 p.m. and 4:30 p.m.
● PTVU

VERMONT

BURLINGTON
WETK, Sat 1 p.m.
● WCAX

RUTLAND
WVER, Sat. 11 a.m.

ST. JOHNSBURY
WVTA, Sat 1 a.m.

WINDSOR
WVTA Sat 11 a.m.

VIRGINIA

CHARLOTTESVILLE
WHTJ Sa 8:30 a.m.

FALLS CHURCH
WNET Fri 2:30 p.m.

HARRISONBURG
WLJC Sat 8:30 a.m.
WVPT Sa 1 p.m.

MARION
WVMV Sat 11 p.m.

PORTSMOUTH
W 30 Sat 11 a.m.

RICHMOND
WCV Sat 9:30 a.m.
WCVW Fri. 8 p.m.
● WTVR

ROANOKE
WBRA, Sat 1:30 p.m.
● WSLS

WASHINGTON

CENTRALIA
KCSA, Thu. 7 p.m., Sa 12:30 p.m. and 1:30 p.m.

PULLMAN
KWSU, Sat. 1:30 p.m.

RICHLAND
KTNW Sat. 1:30 p.m.

SEATTLE
KCTS, Sun 1 p.m.
PCTS, Sat. 10:30 a.m.
● PNW/KONG

SPOKANE
KSPS, Sun 1:30 p.m. Sa 9:30 a.m.
● KSEV

YAKIMA
PBTY Thu. 7 p.m., Sat 1:30 p.m. and 5:30 p.m.

YAKIMA
● KAPP/KEVW

WEST VIRGINIA

BECKLEY
WSWP Sa 1:30 p.m.

CHARLESTON
WOCH Fri. 8 p.m.
WPBY Thu. 7 p.m., Sat 9 a.m. and 1:30 p.m.
● WTAP

CLARKSBURG
● WBOY

HUNTINGTON
WPT Y Sa 1:30 p.m.

MORGANTOWN
WV N Sa 1:30 p.m.

WISCONSIN

GREEN BAY
WPNE, Sun. 1 p.m., Thu. 1 p.m.
● WGBA/ACV

LA CROSSE
WLSA Sun. 6 p.m., Thu. 7 p.m.
● WXOW

MADISON
WHA, Sun. 1 p.m., Thu. 7 p.m.
● WMTV/WKOW

MILWAUKEE
WMVS, Sat 11 a.m.
● WVTV

PARK FALLS
WHLA Sun. 7 p.m. Thu. 8 p.m.

RHINELAND
WHLA Sun. 4 p.m. Thu. 8 p.m.
● WJFW

WYOMING

RIVERTON
KCWC, Sat 11:30 a.m. and 1 p.m.

SWEETWATER/STATE
KTWC, Sat 10 a.m. and 6:30 p.m.

MANCHESTER TV PROJECT: RETURN TO SPLENDOR
pp. 94–103

Landscape contractor: Roger Cook, K&R Tree & Landscape, Burlington, MA, 781 272-6104. Painting contractor: Jim Clark, Clark Painting Corp, Sudbury, MA, 978-443-5091. Plumbing and heating contractor: Bilo Plumbing and Heating, Hamilton, MA, 978-468-4389. Acoustical consultant: John Storyk, Walters Storyk Design Group, Highland, NY, 845-691-9300, www.wsdg.com. Chimney specialist: Mark Y. Schaub, Chimney Savers, Hillsborough, NJ, 888-576-4574. Flooring contractor: Pat Hunt, Hunt Hardwood Floors, Lexington, MA, 781-862-3559. Cabinetry: Tom Perkins, Perkins Carpentry, Ipswich, MA, 978-768-0161. Cabinets: Woodmeister Corp., Worcester, MA, 508-753-5343; www.woodmeistercorp.com. Columns: Polystone I, Chadsworth's, Wilmington, NC; 800-265-8667, www.columns.com. Windows: Pozzi Wood Windows, Bend, OR, 800-257-9663. Polyurethane trim: Fypon Molded Millwork, Stewartstown, PA, 800-537-5349, www.fypon.com. Floor medallion: Compass Rose #322, Historic Floors of Oshkosh, Winneconne, WI, 920-582-9977. Carpet: Landry & Arcari, Salem, MA, 800-649-5909; www.landryandarcari.com. Wine storage unit: Sub-Zero Freezer Corporation, Madison, WI, 800-222-7820, www.subzero.com. Closet system: California Closets, Hollis ton, MA, 800-274-67543; www.calclosets.com.

Accessories: Page 95—candlesticks. Page 101—silver vase set. Page 102—alabaster lamp, bed throw, pillows, bath towels, and bath mat. Page 103—mission bed and side table, clock, vase. All available from Restoration Hardware, 800-762-1005, www.restorationhardware.com.

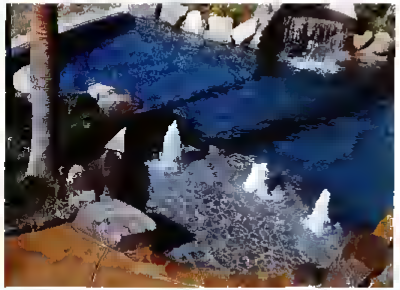
DWNER'S MANUAL: VINYL SIDING
pp. 104–110

Siding used in installation: Portsmouth Shake, Crane Performance Siding, Columbus, OH, 800-366-8472, www.cranesiding.com.

Page 106—*(left to right)*
a. CertainTeed Monogram Studfinder (Light Maple), CertainTeed Corp., Valley Forge, PA, 800-782-8777, www.certainteed.com. b. Wolverine Millennium (cypress) from CertainTeed. c. Wolverine Benchmark 44 (shale) from CertainTeed. d. CraneBoard Solid Core Siding, Crane Performance Siding. e. CertainTeed Cedar Impression Half Round (barn red).

Installer: Hansen Home Designs, Inc., Massapequa Park, NY, 516-541-2618.

Our thanks to: Tinny Golfo, Golfo Development Corp., Calverton, NY, 631-727-2299.



"New Waves in Pool Design," p. 113: This "reef"—a shallow submerged platform set off by jets of water that's a perfect place for sunbathers to keep cool—is part an elaborate backyard lagoon.

LANDSCAPING: NEW WAVES IN POOL DESIGN
pp. 113–116

Swim-in-place pools: Endless Pools Inc., Aston, PA, 800-732-8660, www.endlesspools.com. AquaPlay and AquaTrainer, Hydropool Aquatrainer Inc., Toronto, ON, Canada, 877-675-9449, www.hydropoolspas.com.

"Natural" features design and pool construction: California Pools and Spas, Temecula, CA; 909-676-3227; www.californiapools.com. Ozone generator: ClearWater Tech, LLC, San Luis Obispo, CA; 800-262-0203, www.cwtozone.com. Chlorine generator: AutoPilot Systems Inc., Fort Lauderdale, FL; 800-922-6246, www.autopilot.com. Pump: Northstar from Hayward Pool Products Inc., Elizabeth, NJ; 908-351-5400, www.haywardnet.com. Electronic ignition heater: Pentair Pool Products Inc., Sanford, NC, 800-831-7133; www.pentairpool.com.

Pool and spa products: Ray-Vac Automated Pool Vacuum, AquaLink RS series indoor control panel system, Water Pik Technologies Inc., Petaluma, CA, 800-227-4482, www.waterpik.com. Pool lights: Metal halide Jazz Light, Fiberstars Inc., Fremont, CA, 800-327-7877, www.fiberstars.com. Electronic pool covers: Cover Pools Inc., Salt Lake City, UT, 800-447-2838, www.coverpools.com. Glass mosaic tiles: Hakatai Enterprises Inc., Ashland, OR; 888-667-2429, www.hakatai.com. Mosaic pool design: Mosaicist Inc., Miami, FL, 305-447-1977, www.mosaicist.com. Pebble aggregate: Pebble Tec, Pebble Technology Inc., Scottsdale, AZ, 800-937-5058; www.pebbletec.com. Quartz granules: 3M Colorquartz Aggregate, 3M Industrial Mineral Products Division, St. Paul, MN, 800-447-2914; www.3M.com/pools.

Our thanks to: Patty Hulbert, manager of communications, National Spa and Pool Institute, Alexandria, VA, 703-838-0083, www.nspi.org. James Grayson Trulove, editor, *The New American Swimming Pool: Innovations in Design and Construction* (Whitney Library of Design, an imprint of Watson-Guptill Publications), www.watsonguptill.com. Gary Minor, California Pools and Spas, Temecula, CA. Ray Hamaker, California Pools and Spas, Mesa, AZ, 480-345-0005; www.backyardsplash.com. Chris Fisher, Pleasant Pools, Chester, NJ; 908-879-7561, www.pleasantpoolsandpatio.com. Doug Hackl, owner, Hackl Pool Construction Company Inc., Lake Worth, FL, 561-588-7493.

SUBURBAN RENEWAL
pp. 126–132

Eichler research: *Design for Living: Eichler Homes*, by Jerry Dilio and Lanning Stern (Chronicle Books). *Eichler Network*, www.eichlernetwork.com.

GREAT GAZEBOS
pp. 136–141

Porch gazebo *(opener)*: Gaspar's, Seattle, WA, 206-324-8199, www.gaspars.com.

Page 139—Keele's gazebo, Glen Hampton Garden Designs, Pasadena, CA, 626-523-9605.

Page 140—*(sidebar)* Gazebo kits: Vixen Hill, Elverson, PA, 800-423-2766; www.vixenhill.com. Dalton Pavilions Inc., Telford, PA, 215-721-1492, www.daltonpavilions.com. Cedarshed, Langley, BC, Canada; 800-830-8033; www.cedarshed.com. Summerwood Products, 800-663-5042, www.summerwood.com.

Page 141—Bell-shaped gazebo, William Taylor, AIA, The Taylor & Taylor Partnership, Miami Beach, FL, 305-534-9862; www.taylorntaylor.com.

Our thanks to: Jordan Honeyman Landscape Architecture, Washington, DC, 202-737-0451, and Suzman Designs, San Francisco, CA, 415-252-0111. Pattern illustrations: *Gazebos and Trellises: Authentic Details for Design and Restoration*, by Peter Joel Harrison (John Wiley & Sons, 1999).

Page 139—Bowl and tablecloth, Sur La Table, 800-243-0852.

SAVE THIS OLD HOUSE
p. 166

Our thanks to: Jean and William Park for their Scotch Cross recollections and family photos. Tina Hardy for her technological savvy. Susan Smith of the Abbeville-Greenwood Regional Library for her news clippings. David Morgan for his *Star/Beacon* account of Zemula's return from the dead. Walter Carr for his commentary on a house he has long admired from many miles away.

PHOTO: DAVID ALBANESE

PHOTO: BOWIE BUE VORILLION

"Suburban Renewal," p. 126: Post-and-beam construction and glass walls that fill rooms with light and welcome the outdoors are signature features of much-coveted "Eichlers," classic modern homes built in California in the 1950s by developer Joseph Eichler.

This Old House CLASSICS

This Old House Classics: **A week-by-week synopsis of vintage episodes airing on HGTV and broadcast television**

For stations that carry *TOH Classics* in your area, check TV Listings, page 148

Watertown

Key West

This Old House **tackled a 5,000-square-foot 1886 Queen Anne (LEFT) in Watertown, Massachusetts, in 1996. A 1,600-square-foot conch house (ABOVE) in Key West, Florida, was *TOH*'s winter project in 1999.**

Watertown

Episode 17 (of 18)
(airs July 6–7)

TOH host Steve Thomas looks at the Watertown project's completed **copper gutters, downspouts, and roofs**. *TOH* landscape contractor Roger Cook lays down the perimeter cobbles for a **gravel walkway** and garden path. Finish specialist John Dee treats the relocated oak staircase with **three coats of clear shellac**, then tops it with paste wax. The **kitchen cabinet** units are custom fabricated and installed. In the master bathroom, tiling contractor Joe Ferrante sets down the combination of **marble tiles and mosaics**.

Episode 18
(airs July 13–14)

Steve and Roger take a final spin around the **grounds**. *TOH* general contractor Tom Silva and *TOH* master carpenter Norm Abram **hang the stainless steel range hood** and vent. Decorative painter Ins Lee Marcus **simulates a moiré silk texture** on the dining room walls. Norm helps **closet systems** installer John Meleinstall the master bedroom storage units while electrician Allen Gallant puts the finishing touches on the second floor **fiber-optic lighting system**.

Episode 19
(airs July 20–21)

Steve and *TOH* plumbing and heating expert Richard Trethewey tour the house's **kitchen and bathrooms**. Wall-cover installer John Gravallese **hangs wallpaper** in a second floor bedroom. Tom and Steve inspect a pair of **stained-glass windows**, one brand new and the other restored. Along with lighting designer Doreen Madden and electrician Gallant, Steve checks out the **lighting schems**. Norm visits electrical systems designer Steve Hayes as he hooks up the **sound and video systems** just in time for the wrap party.

Key West

Episode 1 (of 7)
(airs July 27–28)

Steve and Norm arrive at the home of Michael Miller and Helen Colley. The **late-19th-century cottage** is typical of local "conch style" architecture. Michael leads the 10-cent **tour** of the symmetrical floor plan upstairs and down, as well as a wraparound porch. By closing in the rear porch and altering its roofline, the couple hopes to **open up the layout** of the downstairs and **increase the storage space** on the second floor. General contractor Roger Townsend promises to complete the renovation in 12 weeks.

Episode 2
(airs August 3–4)

Townsend gives Steve a more **comprehensive walk-through** of the property, pointing out which walls and roofs will be reoriented and which removed to create the desired floor plan. Then Michael takes Steve to a nearby house he designed, pointing out **the elements he hopes to incorporate** into his own project—the finished porch in particular. Excavator Ray Vango begins **digging up the backyard** for the new swimming pool.

Episode 3
(airs August 10–11)

Tom Silva tours the project site with Norm, he suggests covering the rough-framed **porch** with beadboard rather than creating a costly vaulted ceiling. Vango continues **excavating the swimming pool**. Flooring specialist George Goodwin delivers 1,100 square feet of clear, **quartersawn heart pine** for the tongue-and-groove floors.

Episode 4
(airs August 17–18)

The kitchen and great room have been rough-framed and the **new HVAC** (heating, ventilation, and air conditioning) system installed. The fully excavated **pool** has been formed out in masonry mesh. Siding contractor Rick Holeonback hangs a course of **pressure-treated yellow pine siding**. Insulation contractor Bill Fruechl and crew spray on the **expanding-foam insulation**.

Episode 5
(airs August 24–25)

Glazier Karl Lown fits true-divided light **restoration windows** into the new sashes. Lead carpenter Bev Horlick shows the **rough-framed porch roof** to Steve, including its oversize 3x8 rafters. The concrete crew sprays cement over rebar grids along the walls and floor of the **pool** and then free-forms it with trowels, screed boards, and other masonry tools. Steve inspects the roof, which includes a layer of **galvanized metal shingles** over two layers of 30-pound felt paper.

Episode 6
(airs August 31–Sept. 1)

Norm helps window contractor Charles Matte replace the house's louvered metal units with 6-over-6 double-hung sash with **handblown glass panes**. Cabinet installer John Mele outfits the kitchen with **freestanding upper and lower cabinets**. Trim carpenter Steve Roth has installed moisture- and insect-resistant **polyurethane foam casework**. Flooring contractor Howard Yeager **inlays the heart pine floor** with a diamond pattern. Roofing contractor Seamus Heany covers the porch's sawtooth **roof with heavy-gauge metal panels**, capping them with a 14-inch ridge roll.

PHOTOS: WILLIAM HUBER (LEFT); ANDREW KAUFMAN (RIGHT)

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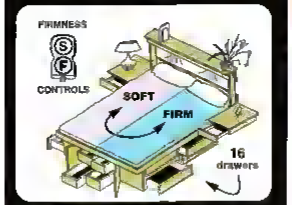

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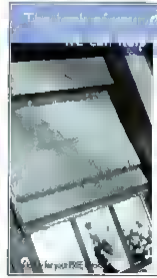

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$105,000

LOCATION
Greenwood, South Carolina

In 1815, J. Wesley Brooks built the Scotch Cross House as a wedding gift for his young bride. He surrounded the Federal style structure with acres of cotton, quinces, and sugarplums, and for the next 120 years, the plantation was home to much of his extended family, including the indomitable Zemula Estelle Creswell Fleming. In one incident in the late 1890s, Zemula, sensing that death was upon her, raided the property's orchards and prepared a batch of fruitcakes for her own funeral. Soon after, she collapsed, and her body was laid in state in her bedroom. The vigil that followed would have gone off without a hitch had Zemula not stirred from beneath the shroud—quite furious that the mourners had already eaten most of her sweets.

Zemula actually died 30 years later, but the house—four rooms over four, with wide halls and a two-story, square-pillared front portico—lived on. In 1945, the newly wedded Olin Turner moved his wife, Virginia, onto the farm. Together, they raised corn, oats, and a daughter, Mary Ida. They also updated the house by enclosing part of the back porch for use as a kitchen. Virginia continued to live in the home after Olin passed away in 1956.

Recently, Virginia turned down a developer's offer for the National Register–listed property. "I don't want to see a historical place like this go down in rubble," says Virginia. Among the highlights: a pair of fanlighted front doors and eight hand-carved mantels that the Brooks clan had ox carted up the 200 miles from Charleston.

The purchase price includes five acres and several outbuildings, among them the old kitchen and cook's quarters and a hay barn. The house was retoofed in 2001, but will require updated systems. "Hopefully, a millionaire comes along with a pile of money he doesn't know what to do with," says Virginia. "Tell him I'm available, too." Suitors of the house, at least, should call the number below.

CONTACT
The Palmetto Conservation Foundation
803-771-0870

The South's cotton economy bankrolled the Scotch Cross House (TOP), *which in 1815 cost $10,000 to build. The two-tiered portico's Federal style Palladian doors have hand-blown half-moon sidelights and fanlights that swivel open. A 1904 snapshot* (ABOVE LEFT) *shows visitors to the house navigating the front path's once tame boxwoods and roses, which were kept in line, no doubt, by then-owner Zemula Fleming* (ABOVE RIGHT)

PHOTOS: JENNIFER HUMPHRIES (TOP)

If you know of a house that should be saved, please write to: Save This Old House, 1185 Avenue of the Americas, 27th floor, New York, NY 10036.

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