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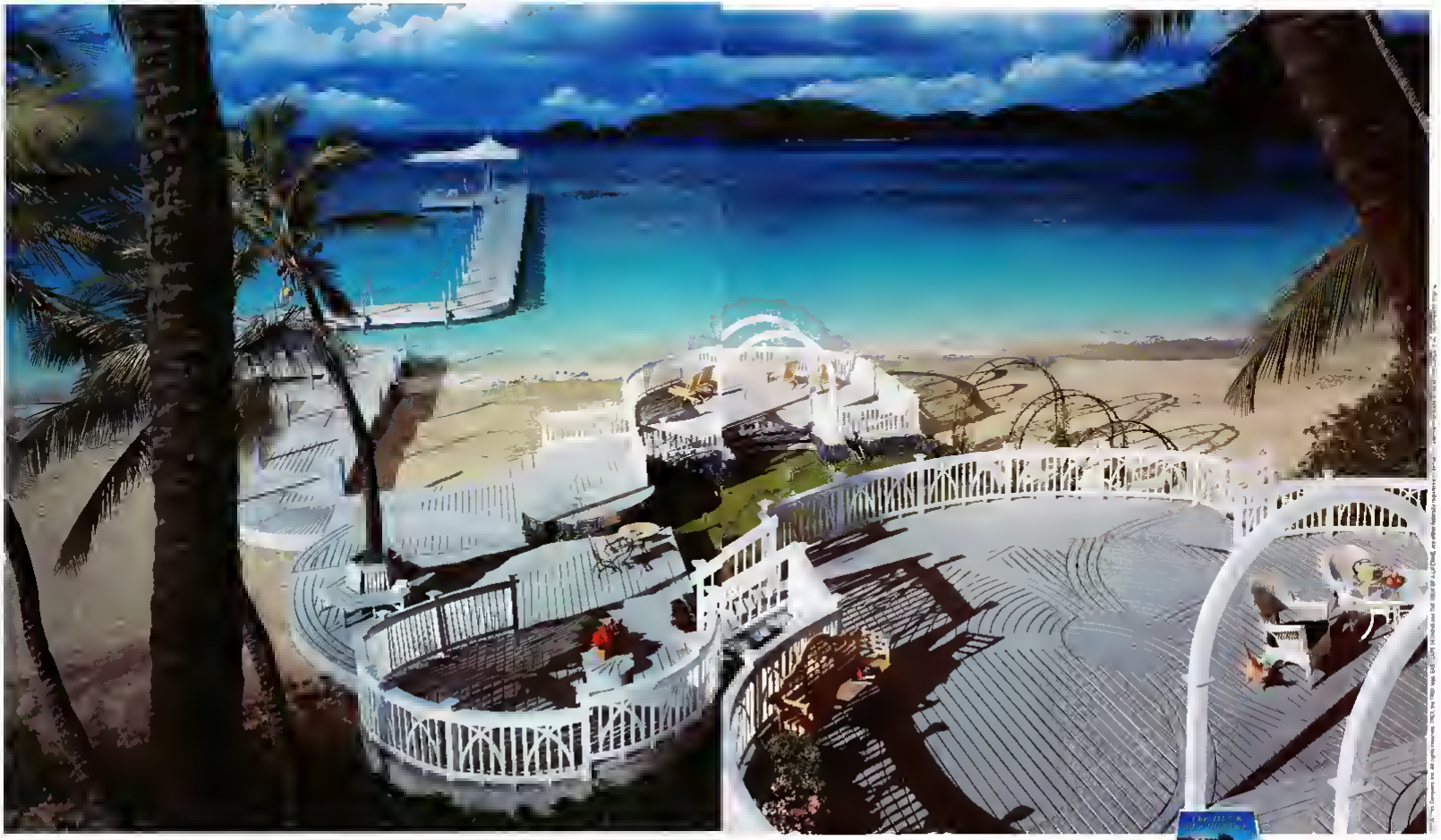

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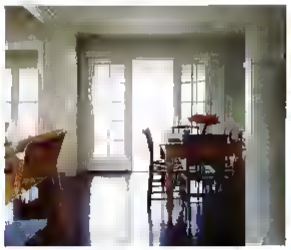
Onward and upward. This month's Poster features 10 climbers, including this sweet potato vine, that add vertical interest to the landscape. *See "Poster: Vines," page 129*
BY LIZ BALL

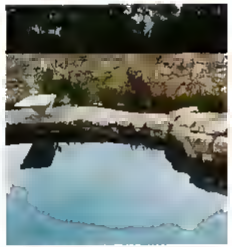
a new leaf

features

PLANTER'S PUNCH P 98



RANCH REDO P 108



EAU NATUREL P 122

cover Spotlights staggered along the driveway subtly illuminate the grounds of this shingled summer cottage overlooking Long Island Sound. Lanterns set into flower beds increase the house's warm glow. The landscape lighting was just one of the changes homeowners Nancy Butkus and David Auchincloss made to the waterfront property and former ranch house. For more, see "Sea Change," p 108. PHOTOGRAPH BY JOSHUA McHUGH

ILLUSTRATION ROLF HARTZ; PHOTOS FRANK PERRY; JR AND KM: JOSHUA McHUGH; ROBB KENDRICK

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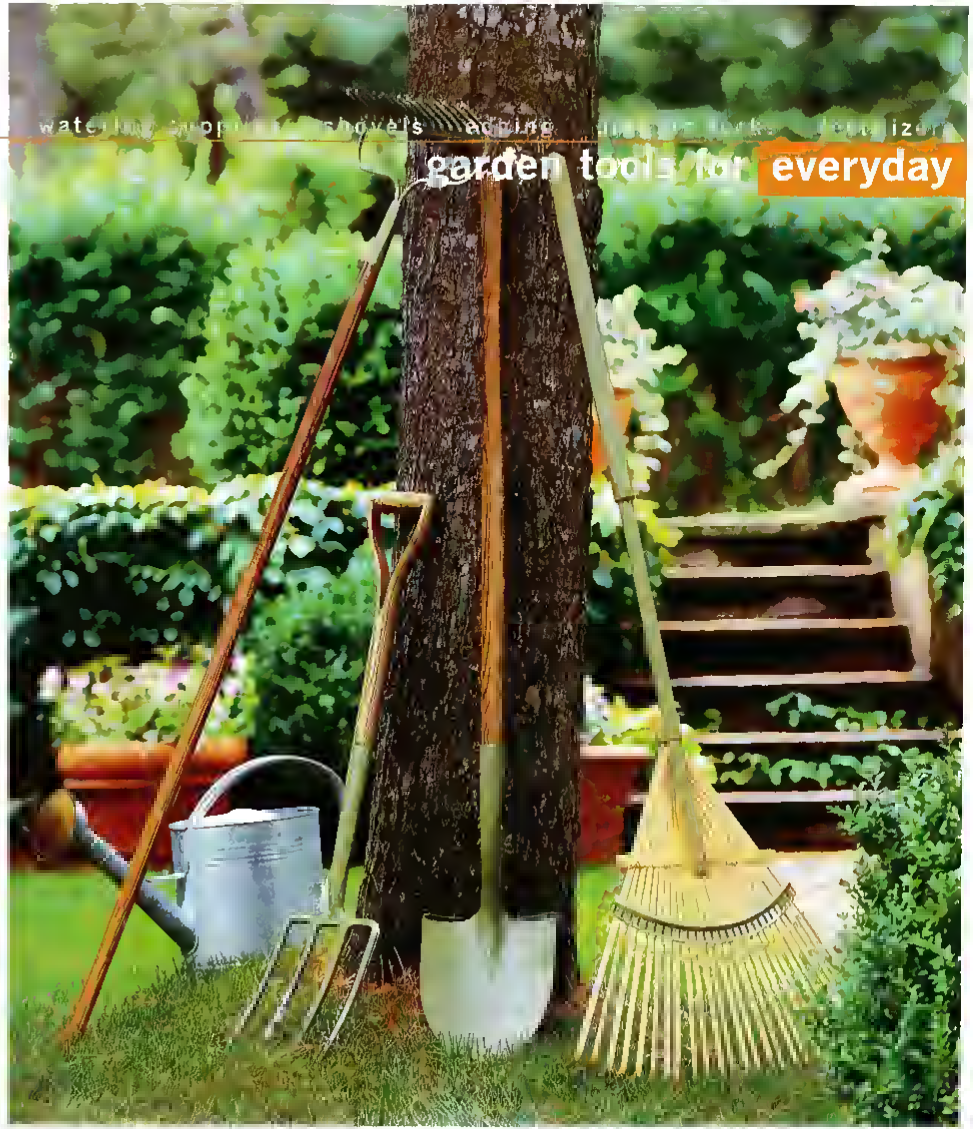


ROOM TO MOVE P 22

C O N T E N T S

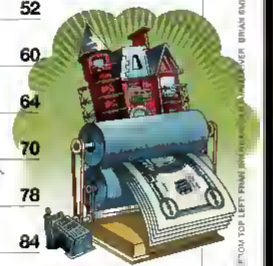
"My husband keeps saying how much he loves our whole house thanks to the new kitchen."
—*Fran Brennan, homeowner*

GRASS TACTICS, P 70

departments

columns

KING OF COATINGS P 70



PAYBACK TIME P 84

ILLUSTRATION: BRIAN SMITH PHOTOGRAPHER: PETER HUEY

plus

WHERE TO FIND IT – SEE DIRECTORY – PAGE 135

TODAY

Develop smart highway systems to help traffic move more smoothly

TOMORROW

Think up new excuses for being late to work

TOYOTA

"The dog ate my alarm clock."

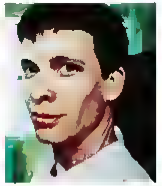
"My long lost uncle dropped in for tea."

"A squirrel short-circuited the garage door."

There will always be plenty of excuses for not getting to work on time. But in the future, traffic may not be one of them.

"Buying an old home is like marrying someone," says **CLAIRE WHITCOMB** who has owned a 1910 Arts and Crafts house in New Jersey for the last two years. "You fall in love and bond with the character, the personality." In "Sea Change" (page 108), Whitcomb follows another family's love affair—their stunning transformation of a 1970s ranch into a Shingle Style cottage. She is the coauthor, with her father, John Whitcomb, of *Real Life at the White House*, a chronicle of the everyday activities inside America's most famous residence.

The "weird dark stories about people and robots" that San Francisco illustrator **PETER HOEY** draws for *Blab*, an anthology of comics, are nothing like his editorial work ("Found Money," Finances, page 84). "They're much lighter," he says of his frequent *This Old House* contributions. Before freelancing, Hoey worked for five years as a designer and art director at *The Washington Post*.



A love of machinery and tools came to him early in life from his father, a mechanic and builder, says Talking Shop (page 78) columnist **CLAYTON DEKORNE**. When not writing on those subjects from his home in Burlington, Vermont, DeKorne channels his passion into studying for a master's degree in online curriculum development. He hopes to work toward combining vocational training at the high school level with more rigorous academic education. "I'd like to restore esteem to the building trades," he says.

Manhattan-based **DAVID PRINCE** finds beauty in the variety of down-to-earth subjects he's photographed for *This Old House*, including drills, cross cut logs, and even, for this month's What You Need to Know, a bisected toilet (page 44). "To me it looked like sculpture," he says. Such still lifes provide a contrast to his fine-art photos, dreamlike vignettes that he says are "about distortion—creating an altered environment." Prince's commercial work has appeared in *Martha Stewart Living* and *Food & Wine*.

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PHOTO OF CLAIRE WHITCOMB BY TUV PLAPP

PHOTO: RUSS MOORENELL

Hooray for Hollywood

My congratulations to Julia Claiborne Johnson and Chris Marcil—and their team of professionals—on the stellar renovation of their Hancock Park home ("L.A. Residential," April 2001). I found the humor that laced the narrative of their remodeling odyssey refreshing and was inspired by many of the cost-saving strategies Julia employed in the kitchen and baths while still aiming for a period look. The kitchen in particular evokes tangible memories of older homes I lived in or visited during the years I was in L.A. Thanks for an enjoyable article.

LYNNE MARKLE, NEW YORK, N.Y.

Realtor Bites

The statement "Your agent will take home at least 3 percent of the price you pay for a house" ("The Realtor Truth," Finances, April 2001) is misleading. Out of the 3 percent that goes to the buyer's agent's office, the agent herself typically gets only half.

DONNA TATLOCK, WESTFIELD, MASS.

There are incompetents in every field, and they should be held accountable, but any implication that realtors in general ignore ethical responsibilities just to make a sale and get paid is unfair. The vast majority do everything possible to keep their clients' best interests in mind and to provide professional and ethical representation.

SALLY BURGER, STAUNTON, VA.

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.

Buyers Aware

First and foremost, I would like to thank you for your coverage of forest certification in "The Forest for the Trees" [Materials, April 2001]. The article is thorough and articulates the increasing demand by consumers for environmentally responsible wood products. The way that all of us spend our money has a huge impact on how the earth's natural resources are managed. Even the simplest decision at the cash register—like buying or requesting wood and wood products bearing

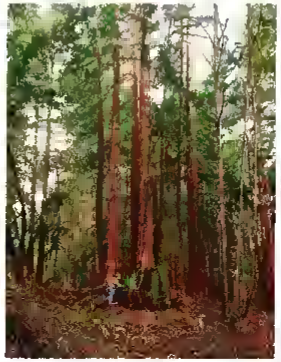

PHOTO: MARTY FARNYUH

the F.S.C. (Forest Stewardship Council) label—creates a ripple affect that can be felt thousands of miles away. We are proud that the certification concept has grown from an idea into a powerful conservation tool that influences buyer choice.

I need to point out, however, that the SmartWood certification program is sponsored, not by the Rainforest Action Network, but by the Rainforest Alliance. Richard Donovan, whom you quote in the article, is the chief of forestry for the Rainforest Alliance.

SOFIA PEREZ, DIRECTOR OF COMMUNICATIONS, RAINFOREST ALLIANCE, NEW YORK, N.Y.

punch list

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

In "Plan of Action" [April 2001], the architect for the West Palm *TOH* TV project, Roger Janssen, of Dailey & Partners Architects, was erroneously referred to as Peter Janssen in a portion of the article. Our apologies to Roger!

OUTTAKES

BEHIND THE SCENES AT *THIS OLD HOUSE*

BY NANCY LACKMAN AND JORDAN REED

A Style by Any Other Name

Finding the correct name for the style of the TV show's winter project house in West Palm Beach (above, center) has not been easy. Owner Rob Thompson after consulting members of the West Palm Beach Historic Preservation Board, labeled the house Mission Revival. The show, taking cues from local historical documents, amended this to Mediterranean Revival, and the magazine has followed the show's lead. According to some historians, however, the house more specifically falls into what has been termed the Spanish Eclectic style.

Virginia and Lee McAlester coined the name in their seminal 1984 architectural history book *A Field Guide to American Houses*. Virginia McAlester describes Spanish Eclectic as "a rich melding of Spanish Old and New World building traditions incorporating contemporary 1920s techniques and styles." The style, as illustrated by the West Palm Beach houses above, borrows details from many centuries of Spanish architecture, including asymmetrical facades reminiscent of Andalusian farmhouses built room by room; stucco exteriors and large round window and door arches, which the Spanish copied from ancient Roman architecture; pointed Moorish archways; the bell towers and decorative parapets of early Spanish missions; and the low-pitched red tile roofs common to all Mediterranean regions. Most architectural historians call this style Spanish Colonial Revival, but the McAlesters shun the term, arguing that the aesthetic was based on postcolonial structures.

Rob's house qualifies as Spanish Eclectic because of its large arched windows, asymmetrical profile, tile vents and eaves that have no overhang. But what to make of the other names attributed to it? Mission Revival or Mission style (which is a predominantly Californian and Southwestern phenomenon) includes wide overhanging eaves, expansive porches and fanciful parapets—none of which Rob's house displays. And Mediterranean Revival is a broad term often used to describe "anything with a red tile roof," according to Virginia McAlester.

Sherry Piland, historic preservation planner for West Palm Beach, agrees that the Flamingo Park builders "created eclectic houses by taking bits and pieces from different styles," but she prefers to stay away from formal designations. "It's not about labeling a house," says Piland. "It's about being able to see it for what it is, and what I see in the show house is an excellent example of 1920s South Florida architecture." —*N.L.*

PHOTOS: BRIAN SMITH

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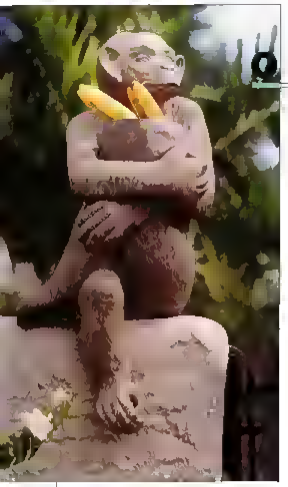


OUTTAKES

Monkey Business

When Rob Thompson purchased a cast-concrete monkey to overlook his backyard, the TV show's crew gave him some on-camera ribbing about it. "We thought it was a little over the top," recalls executive producer and director Russ Morash, who made Thompson lug the 130-pound creature around for take after take.

Turns out that Rob is really in the swing of things. Concrete monkeys had already been showing up all over town, as noted in a *New York Times* article on the hip Palm Beach design scene. The story featured a photo of an identical simian figure perched on a stone column. The inspiration for the statuette may be traced back to the 1920s, when famed Palm Beach architect Addison Mizner strode around the town with his pet spider monkey on his shoulder. Whatever its lineage, the figure's TV debut helped spread the mini craze for the accessory beyond Florida. Eve's Gallery and Garden Art, the salvage yard where Thompson bought his piece, tripled their monkey sculpture sales for a month after the show aired, even selling them to folks in Ohio and Kansas. And when Russ's wife, Marian, fell in love with Rob's statue, Russ bought her one for Valentine's Day. "It was some vindication to hear that he got one," says Thompson. "And so was the fact that he had to lug it back home." —*J R*

Book Fare

Summertime "beach" reading lists usually focus on the latest lightweight novels or potboilers. But here's a selection of recent or upcoming releases geared to the *TOH* fan looking for more constructive material.

A Building History of Northern New England (University Press of New England, June 2001), by James L. Garvin, is high on Norm Abram's reading list, and viewers interested in the craftsmanship behind historic American architecture might also enjoy it. Though the book focuses on Maine, New Hampshire, and Vermont houses built after the 17th century, its emphasis on preservation will appeal to homeowners in any region. For those who put their knowledge to practical use, there's the *Builder's Portable Handbook*, by August W. Domel Jr. (McGraw-Hill, 2000)—a quick reference guide to construction that provides tables, charts, and engineering information, from the load-bearing capacities of all sizes and species of wood to the codes for building a foundation. "It would come in handy for the novice professional or even the nonprofessional," says *TOH* general contractor Tom Silva. "And it's small enough to throw in a toolbox."

Those literally at work in the field might want to pick up a copy of *In the Company of Stone* (Artisan, September 2001), the first book by Dan Snow, the thinking man's stonemason. Featured in our November 2000 issue, Snow applies a Zen-like concentration to the construction of mortarless stone walls. "Dan's work is one of a kind," says *TOH* landscape contractor Roger Cook. "I drew inspiration from his book, and I plan to try a few things I saw in it."

Witold Rybczynski's 173-page book, *One Good Turn* (Scribner, 2000), focuses on what the author considers the most important invention of the first two millennia. The book details the rich history of the screw, beginning with the discovery of the power of spiral motion by the ancient Greek mathematician and inventor Archimedes. "It throws an interesting light on something we use every day," says Tom.

On a lighter note, Ronald S. Barlow's *The Vanishing American Outhouse* (Viking Studio, 2000) takes a thorough look at the history of the privy, including an array of blueprints and historical photographs. Says *TOH* plumbing and heating consultant Richard Trethewey: "Some of these folksy buildings are actually quite charming." —*J R*

PHOTOS, TAYLOR JONES/THE PALM BEACH POST (TOP); LEFT: ANNA MCCABE-KIESANYA

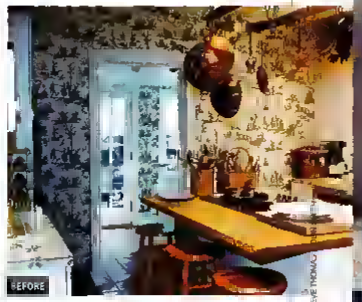
WHERE TO FIND IT – SEE DIRECTORY – PAGE 133

HOUSE CALLS WITH STEVE

He Cooks, She Cooks

A kitchen redo provides an efficient and luxurious workspace for two

BY MARY KELLY SELOVER



STYLIST: JOETTA MOULLIER; PHOTO OF STEVE THOMAS

TOP: *The Brennans' new open plan kitchen readily accommodates two cooks and eases traffic flow.* ABOVE: *Large-print wallpaper made the formerly tight space feel even smaller.*

Twenty years ago, when photographer Fran Brennan and her husband, Dan, a financial adviser, bought their 1936 Colonial in Houston, Texas, Fran did all the cooking. Dan's culinary skills extended only as far as the outdoor grill. But in the years since, Dan has become an accomplished amateur chef, preparing unusual dishes like fruited pork casserole with chorizo, a favorite of the couple's 16-year-old daughter, Nicole.

Unfortunately, the more time the Brennans spent preparing meals in the compact 11 by 12½-foot kitchen, the more they found themselves stepping on each other's toes. And Fran had grown tired of the kitchen's tiled countertop and toile wallpaper; she longed to have the same refined French country atmosphere there as in the rest of the house.

PROBLEM

Creating a kitchen for two cooks is a challenge familiar to *This Old House* host Steve Thomas. "A greater number of couples—and even their kids—are cooking as a team now," he says. "So when they remodel, they often request areas tailored for their personal culinary specialties, such as a baking area for her and a built-in wok or an indoor barbecue grill for him." The Brennans' demands were more basic. "The kitchen was so tiny, there was about two feet of counter space for each of us on either side of the sink, and only a little more on the island," says Fran. Their goal: to carve out independent prep areas.

There were other reasons to enlarge the kitchen. Before dinner parties, people would

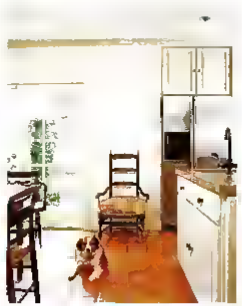
PHOTOGRAPHS BY FRAN BRENNAN

gather and watch Fran cook. "It drove me crazy," she admits. And the family needed more storage. They'd been storing much of their food as well as their formal dinnerware in the laundry room cabinets.

SOLUTION

Houston architect David Feeback suggested annexing the adjacent laundry area (relocating it upstairs) and tearing out a rear wall to enlarge the house with a two-story bump out extending 3 feet into the backyard. He would eliminate the wall that separated the kitchen from Fran's study, turning that space into an eating area, which would open via French doors onto a patio. By eliminating the laundry/kitchen wall and the study/kitchen wall, Feeback was able to expand and reposition the kitchen island, giving it a 90-degree turn allowed for one that measured 84 by 50 inches. To develop two separate work zones, Feeback focused on sink placement. He put a farmhouse style sink beneath the window, in the middle of the now extended, wall-to-wall countertop. A smaller sink went in the corner of the island opposite the refrigerator.

Fran requested a five-burner gas cooktop in the island to preserve valuable counter space. While this would typically require an exhaust hood, Fran envisioned instead her pot rack suspended above it.



The Brennans' 1936 Colonial (ABOVE) *now boasts a large, airy kitchen that includes a practical island workstation and an inviting eating area* (LEFT)

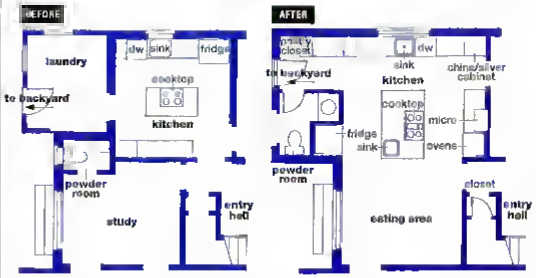
So to vent cooking vapors and odors, she chose a downdraft system that uses a fan housed beneath the cooktop to pull fumes down through a duct and out of the house. The downdraft vent can either be inset flush into the cooktop or in a retractable panel that sits behind it, like Fran's. "Downdrafts are an important item in the tool kit for a designer of an open-plan kitchen," says Steve. For maximum efficiency, he says, "keep the duct run short and, when cooking, put the vapor producing dishes on the burners closest to the vent."

To achieve the French country look, new custom poplar cabinets were painted a taupe gray and sanded in some areas for an antique finish. A pantry closet by the back door provides needed storage, as does a floor-to-ceiling cabinet for china and silver that's within easy reach of the dishwasher.

Fran specified cement countertops. "I like cement's color and texture," she says. Because concrete is very porous, says Feeback, the countertop was sealed before installation and must be resealed periodically. "Concrete counters can be coated with carnauba wax for protection, just like a car," says Steve. "But if you covet a pristine counter, forget concrete. They're for people who like the wearhered look of a bear-up leather jacket."

FINISHING TOUCHES

Taupe-brown tumbled-marble tiles on the backsplash echo the earth-toned cabinets and countertops. The stainless steel pot rack visually balances an antique iron French chandelier above the table. Says Fran, "My husband keeps saying how much he loves our whole house thanks to the new kitchen. ' Now, says Steve, the Brennans no longer need to dance a tortured tango. "They can finally cook comfortably together." ■

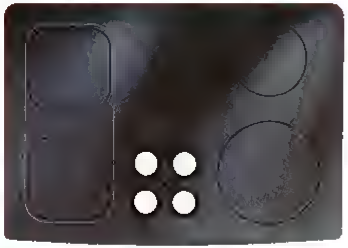


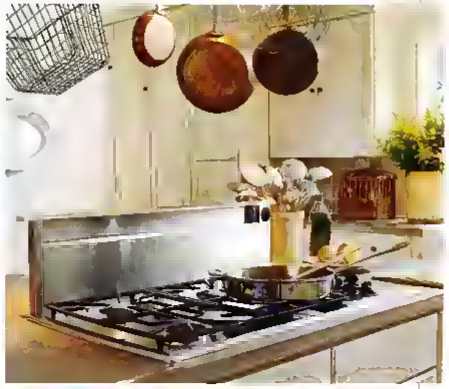
BEFORE *The original kitchen was hemmed in on two sides by small rooms.* AFTER *Absorbing the space of the laundry room and study, taking down the walls that separated these from the original kitchen, and adding a 3-foot bump-out gave the Brennans a gracious kitchen space in which to cook and entertain*

FLOOR PLANS: GUERSON, SAWYER

IDEAS NOTEBOOK

ABOVE: This gas cooktop offers a variety of cooking methods with four burners, a grill, and a griddle. BELOW: Along with two radiant-heat burners (right), this smooth-top appliance provides two induction burners (left), which stay cool to the touch when in use.





ABOVE: The cooktop in the Brennan kitchen is ventilated via a downdraft unit, which rises up or lowers with the push of a button. A fan and duct in the cabinet below pull fumes and odors down and out of the house.

"Installing the cooktop away from the oven gives you the ability to create two separate cooking areas."

—STEVE THOMAS

ABOVE: The curved shape of this smooth-top electric cooktop makes it a space-saver. It can be tucked into a 3-by-3-foot corner. RIGHT: Also designed for tight spaces, this stainless steel four-burner gas cooktop measures a slim 30 inches wide.

PHOTO, TOP RIGHT: FRAN BRENNAN

WHERE TO FIND IT ~ SEE DIRECTORY ~ PAGE 135

THE SECRET TO DOING IT YOURSELF IS: NEVER DO IT YOURSELF.

NOT WNEN YOUR TRUCK SEATS SIX. NOT WNEN THERE'S ROOM LEFT OVER FOR A LOAD OF LUMBER AND A MESS OF TOOLS.
AND ESPECIALLY NOT WNEN FIVE OF YOUR BEST BUDDIES WANT TO SECURE TNEIR FISNING PRIVILEGES FOR TNE SEASON.

ASK **NORM**

Tips for chimney flashing, asbestos siding, and first-time renovating

BATTERY LIFE AFTER DEATH

I teach automotive technology at a local technical high school, and my students use a lot of cordless tools, including screwdrivers, drills, and even an impact wrench. It seems as if I'm always replacing a battery for one tool or another. What should I do with the old batteries when they no longer hold a full charge?

Bob Lacivita, Trevose, Pa

The one thing you do *not* want to do is toss them in the trash. The packs of NiCd batteries (pronounced "Ni Cad") that most cordless power tools rely on are so named because of their concentrations of nickel and cadmium, of which cadmium is the biggest concern. It can contaminate ground water and get into the food chain. If ingested or inhaled, it can cause kidney and lung damage that gets worse with time. Fortunately, a recycling program run by the Rechargeable Battery Recycling Corporation (RBRC) kept 16 million pounds of batteries out of landfills between 1995 and 1999. The nonprofit RBRC, which is funded by battery manufacturers and the makers of battery-operated tools, enlists retail stores as the collection points for worn out battery packs, regardless of where they were originally purchased. The packs go to a reclamation facility in Pennsylvania, where the nickel is extracted for use in stainless steel, and the cadmium is refined for use in new rechargeable batteries.

As of January 2001, the RBRC program began accepting all rechargeable batteries, including nickel–metal hydride (NiMH), lithium ion (Li-ion), and sealed lead-acid (Pb) batteries up to 2 pounds, which variously power cell phones, two-way radios, portable computers, and motorcycle starters, as well as tools. To locate a store that participates in battery recycling, check the list on the RBRC's Web site (www.rbrc.org) or call 800-8BATTERY.

By the way, nonrechargeable alkaline batteries contain such an insignificant amount of heavy metals that the federal government has classified them as nonhazardous municipal waste. In my town, however, we are encouraged to recycle all batteries, and local recycling centers supply five-gallon, battery-only buckets for just that purpose.

VENTING CONCERNS

My house is 10 years old and has a modern, open kitchen design with a four-burner electric cooktop and a downdraft ventilation unit that pushes 300 cfm. The vent exhausts into a 6-inch flexible duct (the plastic sort you see on dryers) that runs down through the island and the floor, where it joins a 7-inch rigid duct that travels horizontally for about 10 feet through the foundation, then about 18 feet up a wall and through the roof to a vent cap. As you might imagine, the ventilation isn't very efficient, although it's plenty loud. I'd like to improve it but don't want to put in an overhead vent hood, which would block the light from a pair of fluorescent lights directly over the island. Do you have any suggestions?

Bernard Fulks, Victoria, Tex.

I'm surprised that this thing works at all. You'd get better performance if the exhaust duct were shorter or had fewer elbows—each one adds the equivalent of 5 to 10 feet to the length of the duct. Nevertheless, a 300 cfm (cubic feet per minute) vent fan should give you the ventilation you need, even if the ducting continued for the equivalent of 60 feet.

Your biggest problem is that flexible plastic duct, which goes against manufacturers' instructions and common sense. It increases turbulence, reduces air flow, and would be a safety hazard if a cooking fire occurred while the fan was on. Replace it right away with a smooth-walled metal duct.

If you're still bothered by the vent's performance or its loud noise after making this change, you can install a remote fan in the exhaust duct near the foundation. You'll need to disconnect the cooktop vent fan to avoid burning out both units, but leave the grease screens in place so that the duct doesn't accumulate cooking crud. Also, seal all the duct joints between the fan and the cooktop with aluminum tape. This will eliminate leaks, which reduce performance. And, finally, don't go overboard and buy a fan that's much more powerful than the one already in your vent. You'll end up removing large amounts of heated or cooled air from your house, along with the steam and grease.

ASBESTOS WATCH

At the time I purchased my home, I felt quite confident that its asbestos shingles didn't present a health risk to my family because they didn't appear to be deteriorating. However, as I have repaired and repainted my siding, I've started to wonder about the health implications of this material. How much asbestos do these shingles actually contain? What precautions should I take when removing or cutting asbestos shingles?

George Ferguson IV, Princeton, N.J.

There's a huge amount of information on the subject of asbestos, and much of it's unfathomable. But it all comes down to three basic facts. Asbestos fibers do not pose a health risk until they are inhaled or ingested. Once inside the body, however, they don't leave, and their presence can trigger the growth of cancerous tumors 20 or 30 years after exposure. There is no level of exposure that's safe.

PHOTO: HOLLY SMITH

ASK **NORM**

Asbestos was first declared a hazard by the E.P.A. in 1971. But long before then, these natural mineral fibers were highly regarded for their strength, heat tolerance, and durability, and were widely used in many building materials, including resilient flooring, pipe insulation, glazing putty, and cement roof and sidewall shingles. The asbestos in the shingles improved the cement's tensile strength, yielding a hard, fireproof, virtually maintenance-free product called Transite.

If your siding is in good repair, don't worry about it. The asbestos is bound into the cement. But the moment you sand, scrape, drill, cut, or try to remove a shingle, you run the risk of releasing the fibers.

If it were my siding, I'd keep it well painted until it showed any signs of deterioration. At that point, I'd immediately call in an asbestos removal contractor to remove and dispose of it properly. They have the gear and the training to do the job right. Just make sure they are certified and have an up-to-date license from their state or are accredited by the federal government to perform this work.

SHAFT OF LIGHT

We own an 1887 Queen Anne that has had only two owners and maintains much of its original charm, particularly some great woodwork and built-in cabinets. One of the most interesting features is a light shaft that goes up from the ceiling of the second-floor bathroom through the third floor and the attic to a Victorian-era skylight on the roof. No light comes in now because the shaft was roofed over some time ago, but we're thinking of opening it up. Is this worth doing, or will there be a leakage or heat-loss problem?

Danielle Allen, Chicago, Ill.

Leaking shouldn't be a problem, if you get a good roofer involved. In the winter, though, you may find that the reopened shaft is a source of cold drafts unless you install a new sealed skylight with efficient, argon-filled insulated glass to keep the cold outside where it belongs.

What I'm more concerned about is condensation. The large amounts of moisture generated in a bathroom could easily condense on the relatively cold walls of the shaft as it passes through the unheated attic. Persistent wetness leads to mildew, and you won't want to shinny up that shaft to clean it off.

To stop condensation, insulate the shaft's walls from the attic. In my house, I nailed foil-faced sheets of 1-inch rigid-foam R-7 insulation to the inside of the shaft framing, then taped the seams and covered everything with fire-rated drywall. I also wrapped the sides facing the attic with R-13 fiberglass batts for a total insulation value of R-20. You should also install an exhaust fan by the shower, if you don't already have one, to remove moisture before it heads up the shaft.

There's one other issue you'll have to consider. In the event of a fire, your shaft might act like a chimney and spread flames between floors. Chicago has a legendary and rather unpleasant experience with fire, so find out from your local building department if the long shaft passes muster.

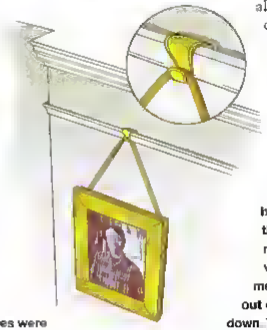


ILLUSTRATION: TOM BALY

PICTURE THIS

Years ago, I saw a photo of a room where the pictures were hung from long wires hooked over crown molding. I would like to install the same arrangement in my living room, but I've never seen anything like this for sale. Is this kind of molding still available?

Edith Montgomery, Ashland, Oreg.

I don't know of any crown molding like that, but maybe what you saw was a picture molding, a type of wood trim that has a curved lip intended for exactly the purpose you describe. Over the years I've seen many houses with it installed at various heights, although traditionally it was used in high-ceilinged rooms a foot or two below the top of the wall, and in rooms with average ceiling heights, an inch or two below the top. You should be able to find picture rail, or order it, at a lumberyard with an extensive stock of molding profiles. They may even have the hooks that fit it.

NIGGLING NAILS

Several years ago I built a deck at the back of my house using 2x4 cedar decking boards. I fastened them with galvanized 16d finishing nails—two nails wherever they cross a joist—then coated the wood with a deck sealant. But early each summer, about 60 percent of the nails work their way out of the wood, and I have to hammer them back down. The job is plenty tedious, so I've thought of paying my 12-year-old daughter a penny for every nail she pounds into place. Can you suggest a more permanent solution?

Thom Staunk, Eugene, Oreg.

If you teach your daughter how to use a cat's paw as well as a hammer (and increase her pay scale), she might be of some help to you. In other words, pounding in old nails won't solve your problem.

What's happening is that the deck joists are shrinking and swelling with the changing seasons. (The decking boards are doing

this too, but not as dramatically, since a board moves more across its width than its thickness.) The nails aren't able to resist all this movement and are gradually working themselves out.

You can use this to your advantage. Let the wood do the hard work of pushing the nailhead above the surface of the decking. Then pull the nail out and replace it with a stainless steel ring-shank nail, which holds better than the standard smooth-shank variety. You can put the new nails in the old holes as long as you drive them at a 45-degree angle into untouched wood. Just make sure they are long enough to sink at least 1½ inches into the joist. If the pair of nails above a joist pops at the same time, slant the new ones toward each other. After a couple of seasons of doing this, you (or your daughter) will have replaced all the nails that are likely to come loose.

SAVE THE CHIMNEY

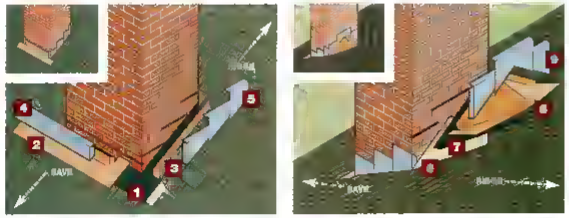
I hope you can help me win a battle with water that I've been waging for four years. Soon after moving into my then three-year-old house, I noticed a water stain in the ceiling of an upstairs bedroom. A visit to the attic revealed a leak where the roof meets the brick chimney, so we added a cricket [see illustration below, right] to keep snow and rain from collecting on the ridge side of the chimney, installed new flashing, and sealed the brickwork. When the leak recurred, we replaced the flashing a second time. That didn't work either. In our latest attempt, aluminum flashing was tucked into a shallow saw kerf cut into the brick. This also failed. The contractor who did many of the repairs has suggested that I tear the chimney down to the roofline and rebuild it, but I look forward to your suggestions.

CHARLES HORTON JR., BROWNSBORO, ALA.

Based on the photos you sent, I'd save the chimney and get rid of your contractor, it's obvious that his handiwork won't thwart an opponent as wily and unforgiving as water. To properly weatherproof a chimney, you need to take a three-layered approach using a sticky waterproofing membrane, metal flashing, and—very important—metal counterflashing.

A cricket (also known as a saddle) is also a good idea for any chimney that penetrates a roof below its ridge, because it keeps water, snow, and ice from collecting on the chimney's upslope side. I'm rather surprised that the original builder didn't install one. To prevent water from getting underneath, it should be covered with a self-adhesive waterproofing membrane made of rubberized asphalt and then capped with a single piece of metal that extends 6 inches out onto the roof and at least 3 inches up the side of the chimney. I like using lead-coated copper for the cap and all the flashing, because it's so long-lived.

First, have a roofer remove all the existing flashing and the shingles along the sides and back of the chimney. Then he should lay strips of waterproofing membrane around the chimney's perimeter so that they overlap the brick by 4 inches and the roof by 5 inches. The base flashing goes on next, against the side of the chimney that faces the eaves. Then comes the step flashing along the sides of the chimney. The roofer should lay a piece of step flashing against the chimney and nail it to the roof deck near the flashing's top edge. The new shingle goes over this piece of flashing, the next piece of step flashing goes over the shingle, and so on, until it meets the chimney's upper corner. Because step flashing is layered between the shingles, it provides a much better defense against water than the kerf-and-caulk method you ended up with. For additional protection, bend the flashing around the chimney corners.



LOOKING UP — LOOKING DOWN

ILLUSTRATION IAN WORPOLE

LEFT: Components of a properly flashed chimney, in order of installation: (1) waterproofing membrane, (2) base flashing, (3) step flashing, (4) base counterflashing, (5) step counterflashing. RIGHT: Components of a cricket, for chimneys that penetrate a roof below the ridge: (6) plywood, (7) waterproofing membrane, (8) copper cap, (9) cap counterflashing.

The critical last step is to put in the counterflashing, flaps of metal that cover the cricket and all the step flashing and base flashing, and prevent water from working its way down along the brick and into the house. Sheet lead makes good counterflashing because it's malleable and durable. This part of the project is best done by a mason, who should take out the horizontal mortar joints in the chimney just above the step flashing and repack the top edge of the counterflashing in mortar. When he's finished, a skirt of counterflashing should wrap all the way around the chimney.

As you've discovered, roof work is no job for the inexperienced or the incompetent. Hire the best, most reputable contractor you can find.

FIRST FOOT FORWARD

Three years ago, my husband and I purchased our first home, a 1920 Colonial Revival. Our problem is figuring out what needs to be repaired and what replaced, and determining the best order in which to undertake the projects. To say the least, we're feeling overwhelmed.

MIRIAM ANDERSON, BEVERLY, MASS.

If it's any comfort, "overwhelmed" is a word I see in a lot of the letters that land on my desk. And when I see it, I sympathize. Just remember that this is remodeling, not open heart surgery. It's okay to make some mistakes. Don't expect everything to be perfect on the first try. The other thing to keep in mind is that every project, no matter how large, involves solving a bunch of little problems one at a time. If you break a big job down into small, manageable steps and do them in a logical order, you'll eventually reach your goal, and with a lot less mental stress.

First, put any problem related to water, such as roof leaks, plumbing leaks, or basement seepage, at the top of your list, because nothing does more damage to a house. Then, try to get the big, dusty jobs—the structural, electrical, plumbing, and heating work—done early, before you tackle the painting, stripping, or floor refinishing. Finally, pick the battles you think you can win, and let someone else fight the others. If you can't stand wiring but love to sweat pipes, or if you enjoy painting but hate all the prep work, the smart thing to do is hire help as you need it.

Also, do as much homework as you can. Go to the library or bookstore to read everything you can get your hands on, and ask a lot of questions at the hardware store and the lumberyard. Invite a knowledgeable friend (or friend of a friend) to take a walk through your house and give you some pointers. You could also hire a home inspector to do the same thing.

Whatever you do, though, don't let that feeling of being overwhelmed keep you from doing anything at all. When you don't know exactly where to start, just start anywhere. Sometimes you can't find a path until you step into the woods. ■

Send questions to Ask Norm, *This Old House* magazine, 1165 Avenue of the Americas, 27th floor, New York, NY 10036. Include a complete address and daytime phone number. Published letters will be edited for clarity and length and may be used in other media.

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A Sprinkle in Time

Automatic irrigation systems mean beautiful landscapes without ever touching a hose

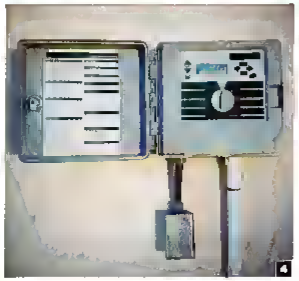
BY MOLLY MILLER

Back in Fort Wayne, Indiana, Frank Baldwin ministered to his congregation at the DuPont Road Wesleyan Church and didn't pay much attention to his lawn. The rainy climate provided all the water the turf needed. Even during the occasional dry spells, he and his wife, Ann, a gospel singer, only watered the grass as an afterthought. "We didn't have time to stand around with a hose," Baldwin remembers. But when the couple built their retirement home in Stuart, Florida, they knew their lawn would be subject to intense sunshine and would need regular watering. So they took the opportunity to install an automatic sprinkler system under the ¾-acre lawn. "The system turns itself on every other morning like clockwork," Baldwin says. "Without it, I'd have to run four hoses and constantly move them around to keep the grass green."

Automatic irrigation systems are mechanized gardeners, designed to handle the watering required to keep the landscape healthy and lush while leaving the homeowner with free time to enjoy it. "My clients can even go on vacation without worrying about whether their house sitter is going to water correctly—or at all," says Dan Downing, a landscaper in Tucson, Arizona. And there's an added perk: These robotlike watering systems actually conserve water, says *This Old House* landscaping contractor Roger Cook. "The worst time to water is when people have time to do it—in the afternoon and evening," he says. "A sprinkler system can operate between four and five in the morning, which keeps evaporation waste to a minimum," Roger says. "Automatic irrigation also provides the ability to fine-tune the amount of water released to

Despite the geysers of water they spout, automated sprinklers can actually conserve water, as long as they don't turn on when it rains. In many drought-prone areas, regulations require precipitation sensors to prevent unnecessary watering.

PHOTOGRAPHS BY ANDREW KAUFMAN REPORTED BY NANCY LACKMAN



(1) To avoid damaging an existing lawn or hitting utility pipes and cables, contractor Scott Fay and his crew often dig the 6-inch deep trenches by hand. (2) The solenoid valves that turn on the watering zones receive a low-voltage signal when it's time to open or close. This current magnetically moves a plunger and operates the valve. (3) "Modern sprinklers stay below ground when not spraying, so they're out of the way of feet and mower blades," says Fay. "They pop up with water pressure to spray." (4) The controller has a keypad to program the watering times and durations for each zone and a selector knob to choose each function.

what's really needed, so you don't get runoff." The lure of a green lawn with little effort, along with falling prices and increased marketing, are making irrigation systems more popular than ever, with sales increasing 7 to 10 percent annually over the past four years.

The systems use a network of underground PVC pipes to deliver water to sprinkler heads that pop out about 4 inches above ground when activated by water pressure. Because home water pressure is not sufficient to feed the dozens of sprinklers simultaneously, they are typically divided into zones, each controlled by an electronic valve under the lawn. By designing these zones properly, a system can be tailored to meet the varying water needs of different plants. "Let's say you have a row of shaded evergreen shrubs in one area, which might get watered just once a week, and a sunny bed of annuals in another, which might need to be watered every other day," says Downing. "With two zones, each area can get the water it needs."

The brains of the system sit in a wall-mounted controller—"really just a timer," Roger says. It opens and closes the valves that operate the zones based on programs set on a digital keypad. A top-of-the-line unit can operate up to 32 different zones and can override the set watering schedule based on climate sensors. There are two safeguards that prevent watering when Mother Nature has already done the job: rain sensors, which attach to the side of the house and shut down watering if a certain amount has fallen the previous day, and soil moisture meters, which shut them down when the moisture content reaches a specific amount at the root zone. Each measuring device can be wired to the controller and will add about $125 to the overall $2,500 to $5,000 cost of an installed irrigation system, but the added expense can be recouped in just 7 to 10 years from water savings.

Scott Fay, an irrigation contractor in Martin County, Florida, shows his customers how to adjust the controls seasonally, or if they prefer, he comes to make the changes when he conducts routine maintenance. He visits his customers at least four times a year to check that all the valves are working and to flush any clogs out of the valve stations and sprinkler nozzles.

In cold climates, sprinkler contractors like Ray Koziak, of Stamford, Connecticut, drain the systems each fall so that water doesn't freeze in the pipes. He uses an air compressor to blow all the water out of the lines and returns in spring to set up the system for the year and check its operation. But in warmer climes, sprinklers run year round. "In the Midwest I never thought about my lawn, and it stayed nice and green," Baldwin says. "In the Sunshine State, the sprinklers mean I can ignore my lawn again, with the same results."

UNDERGROUND WATERING

Not all automatic irrigation sprays water into the air. Drip systems deliver a slow, steady supply right where it's needed: at the roots of plants. First used for crops in arid forest in the 1960s, these subterranean systems distribute water efficiently and evenly, using 40 percent less water than sprinklers. That's why Rob Thompson chose drip irrigation for the flower beds, trees, and shrubs around his West Palm Beach, Florida, house—the *T.O.H.* winter project. "We're having the worst drought since 1981," says lawn irrigation contractor Scott Fay, who installed Rob's system. "Drip irrigation is a great conservation tool because water is applied directly to the root zone, leaving little opportunity for evaporation, overwatering, runoff, or water lost due to wind, which blows sprinkler spray off course."

The controls and the network of supply lines are just like those for sprinkler systems, but they deliver the water with perforated hoses that lay on the soil just below the mulch. The polyethylene drip hose comes in two varieties. Some have factory-made holes at predetermined intervals; in other cases, the installer punches holes where needed and attaches nozzles that direct the water toward the plants. In either case, each of these apertures has a tiny diaphragm that regulates the water flow.

Drip irrigation may cost more than sprinklers—the components are cheaper, but installation can be more involved. Though it represents 10 percent of the market in Florida, Arizona, and California, only 2 percent of the irrigation systems nationwide are drip systems. And drip watering is not typically used under lawns, the large expanses of which make sprinklers far more efficient.

Drip systems have the potential to clog, which can add up to big maintenance woes because emitters need to be dug free of mulch for repairs. Top models include a filter, which rids the water of debris before it enters the system. However, soil can still get into the hoses if the surrounding ground is disturbed. One helpful (but not fallproof) option is an automatic flush valve, which opens to purge the lines with high-pressure water for a few seconds each time a zone comes on. But if the equipment does get blocked, it isn't obvious, since drip systems have no aboveground moving parts or visible water release. For this reason, Fay installs moisture indicator stakes, pop-up flags that signal water flow on primary drip lines, though not in the many branches that lead directly to the plantings.

The best way to monitor the system's operation, he says, is to watch for browning or wilting foliage. "Plants are good at giving signals about their thirst long before they're dying," says Fay. If there's a problem, Fay locates the clogged hose, uncovers it, splices in the required amount of new line, and flushes the system twice. And even if they've gone thirsty for a while, the plants will be healthier than if they had been overwatered by a hose turned on and forgotten. —*Nancy Lackman*

Each watering zone is controlled by a valve (1) *similar to those on standard sprinkler systems, but these have the added tasks of regulating water pressure and filtering out mineral deposits. Drip lines need 25 to 30 pounds of pressure per square inch to ensure that the emitters can maintain a slow, measured release of water.*

The drip system is fed by ¾ inch polyvinyl chloride (PVC) supply lines, which are set 8 to 12 inches below ground. The perforated polyethylene drip hoses, which are ¼ to ½ inch in diameter, typically rest on the soil (2). *They are woven between the plants every 12 to 16 inches* (3) *and covered by 2 or 3 inches of mulch, typically chipped bark. This prevents evaporation while allowing easy access for future maintenance.*

Some installers place moisture indicator stakes (4) *at the end of each drip hose. These have yellow flags that are lifted by water pressure as a sign that the water is moving through the main drip line. But the only way to know if the hundreds of tiny emitters are working is to keep an eye on the plants: if they show signs of thirst, the system needs maintenance.*

PHOTOS: TAYLOR JONES

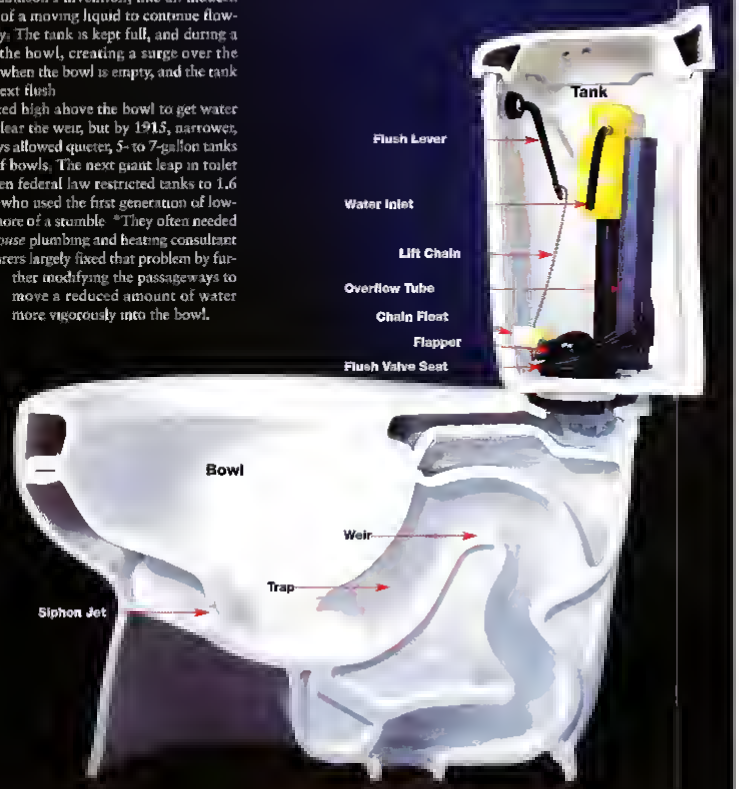
WHERE TO FIND IT – SEE DIRECTORY – PAGE 136

Low-Flow Toilets

BY MAX ALEXANDER

Contrary to popular myth, plumber Thomas Crapper did not invent the flush toilet. One of his contemporaries, though, did create the first toilet that prevented sewer gases from entering the home. Englishman Joseph Adamson's 1853 design—the siphon flush—eventually made obsolete both the chamber pot and the outhouse. Adamson's invention, like all modern toilets, relies on the tendency of a moving liquid to continue flowing, even in defiance of gravity. The tank is kept full, and during a flush, the water rushes into the bowl, creating a surge over the weir (or dam). The flow stops when the bowl is empty, and the tank refills in preparation for the next flush.

Originally, tanks were placed high above the bowl to get water moving forcefully enough to clear the weir, but by 1915, narrower, smoother porcelain passageways allowed quieter, 5- to 7-gallon tanks to be mounted on the backs of bowls. The next giant leap in toilet technology came in 1994, when federal law restricted tanks to 1.6 gallons per flush, but to those who used the first generation of low-flow toilets, this leap seemed more of a stumble. "They often needed two flushes," says *This Old House* plumbing and heating consultant Richard Trethewey. Manufacturers largely fixed that problem by further modifying the passageways to move a reduced amount of water more vigorously into the bowl.



PHOTOGRAPH BY DAVID PRINCE

FLUSH LEVER: Pulls the lift chain.

LIFT CHAIN: Opens the flapper. A *chain float* limits the flush to 1.6 gallons by closing the flapper when the *tank* has drained to a set level.

FLAPPER: Releases tank water into the *bowl*. When released by the chain float, drops against the *flush valve seat*, sealing the tank so it can refill.

TRAP: Holds water in the bowl, blocking the entry of sewer gases, until the flow from the tank pushes the water over the weir.

SIPHON JET: Concentrates flow from the tank, jump-starting the siphoning effect.

OVERFLOW TUBE: Protects against an accidental overfilling of the tank.

FLOAT: Shuts a valve on the supply line when the tank level reaches a predetermined depth.

RIM HOLES (not shown): Release water during the flush, cleaning the sides of the bowl.

WATER INLET PIPE: Delivers fresh water from the supply line.

WHERE TO FIND IT — SEE DIRECTORY — PAGE 135

Screen Adaptations

Removable panels make a porch more versatile

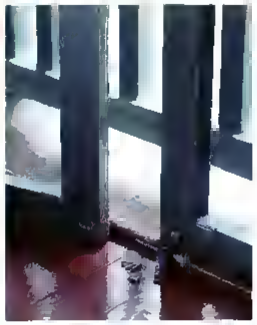
BY NANCY STEDMAN

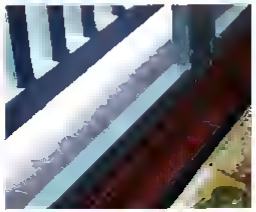
Joseph Nassaney had often looked forward to the moment when the screens could be permanently taken down from the porch of the four-story 1897 Queen Anne in South Orange, New Jersey, that he shares with Carl Baccaro. "I thought the screens detracted from the home because they weren't authentic to the period," says Joseph, 54. While the L-shaped wraparound porch is original, the screens on the 230-square-foot, north-facing portion were added during the 1930s and '40s. (Glass encloses the 117-square-foot section that faces west.) Still, when the house got a face-lift last summer and the screen panels were removed, Joseph was shocked to discover how much he missed them. "With the screens up, I could come out in my pajamas and not feel exposed," Joseph says. "They made the porch seem cozy." Not to mention that the screens protected against flying and crawling intruders, says Carl, 56. So the two decided to have the rippled and worn screening replaced while the porch, along with the rest of the 22-room, half-timbered house, was being repainted.

Although the porch is a charming throwback to a more genteel era, it wasn't one of the features that initially drew Carl and Joseph to the house in 1993. Instead, they fell for its flawless oak and chestnut paneling and numerous leaded-glass windows. "There is a total feeling of warmth inside," says Joseph. The close-knit neighborhood—the Montrose Park Historical District, which is packed

Screen panels, added in the 1930s and '40s, fit gracefully behind the original columns and railings of a Victorian porch. At summer's end, they're easily dismantled and stored.

PHOTOGRAPHS BY GEORGE ROSS





Screen panels hook to a wooden strip along the porch beam (LEFT) *and rest behind a molding nailed to the floor* (ABOVE). *A flat plate will be screwed into the panel stiles to join them. The porch ready for company* (BELOW)

with other large Victorian homes—enhanced that sentiment.

And yet once the two men moved in, the porch quickly became their favorite warm-weather retreat. On weekends from spring to late fall, Carl and Joseph frequently eat breakfast in the screened area and spend many balmy evenings there, gazing out onto the fountain in the yard. And they make especially good use of this virtual outdoor room when they give parties. "We've entertained up to fifty people, with thirty on the porch," says Carl. When the historical society brings groups on house tours, the pair direct the overflow to the porch, where they serve lemonade and cookies, a Victorian custom. "I love that the porch does what it was built for—it provides a spot for socializing," says Joseph.

For visitors who park in the semicircular driveway, the screened-in portion of the porch is the first part of the house they see. But because the screens are attached behind the elegant Arts and Crafts–style columns that support the porch roof, guests enjoy an unobstructed view of the panels and moldings painted in contrasting chestnut, squash, and gray-green tones.

The several screen panels, about 7 foot 9 inches long and 3 foot 6 inches wide, abut each other and attach to a wood stop at the porch ceiling via two hook-and-eye anchors. This means that when the screen panels are removed, no unsightly wood structure remains to clutter the view. "This is a fairly typical example of screen porch technology from the thirties and forties, and it works just as well today," says architect Bill Dahn, who also lives in the historical district and is a partner in Dahn & Krieger Architects Planners, in Hackensack, New Jersey. "These systems provide a semipermanent porch enclosure that can be easily removed in the late fall and reinstalled in the spring."

Joseph and Carl had to forgo use of the porch during the summer of 2000, while it was being repainted and repaired—work that included the replacement of two rotted structural columns and a cut-up beam that caused the porch to sag two to three inches in one corner. Now that the porch is back in service, Joseph is debating what color impatiens to add to the window boxes he places on top of the railings each summer. "I'm glad the screens are up again," he says. "We'll make the most of them all season long." ■

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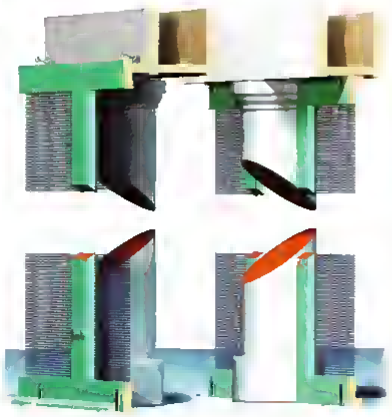
VIEWING THE SCREEN



OLD-FASHIONED UPDATED

The appeal of the detachable screen panel system used on this porch lies in its simplicity, architect Bill Dahn and *This Old House* general contractor Tom Silva agree. "Anyone can install this kind of removable screen structure—maybe that's why it's coming back into use," says Tom.

The screen frames are made from ¼x3 pieces of weather-resistant redwood stock, with one intermediate horizontal brace hidden behind the porch railing. The corners are held together with 2½-by-2½-inch flat angle plates screwed to the inside face of the panel. Gray wire-mesh screen, cut to overlap the frame by about ½ inch, is stapled to its outside face, then anchored with ¾-inch-wide wood batten molding. To prevent twisting, add another flat angle to each corner at the exterior face, Tom advises. "Better still," he says, "join the ends with a mortise and tenon, or miter the frame and fit the corners with a biscuit joint. Or use a pocket screw and then fill the pocket." It's also important to prime and paint the frames before fitting the screen and molding. "This provides full protection for the wood without having to painstakingly paint around the screen," says Tom.

The screen panels hang around the inner perimeter of the Bascare porch. At the top, each segment is attached by two hook-and-eye anchors to a ¼x3 wood strip nailed to the porch beam. The screens rest against each other lengthwise, their abutting stiles connected by 3-by-½-inch flat anchorage plates. The bottom of each panel rests behind a ¾-inch quarter-round molding nailed to the porch floor (see bottom left of illustration). The corners of the panels that are adjacent to the screen door are anchored to the floor with 2½-by-2½-inch steel angles in order to provide rigid jambs. A narrow screen transom tops the door frames. The door is hung from one panel by two spring hinges, and a latch links it to the screen frame on the strike side.

To modernize the system, Dahn suggests a few improvements. The edges of the panels can be rabbeted, or grooved, so that they overlap and interlock; 3-by-½-inch flat plates at the top and bottom of the frame would secure the connection. On a porch with no railing, the screens can be positioned between each post or column. A very narrow filler strip, made from the same stock as the panels and scribed to the contours of the column, can be permanently attached to both its sides. The stop provides a square edge to meet the screen frame. To seat the panel, nail one ¾-inch quarter round to the porch beam drop and another to the floor (see top right of illustration). Install steel angles in the top and bottom corners of every other panel to hold them tight to the porch. "For more stability, you could also apply a quarter-round strip to the floor on the interior side of the screens, creating a kind of track," says Dahn. —*N S*

ILLUSTRATIONS: JOE LERTOLA

Painting Pickets

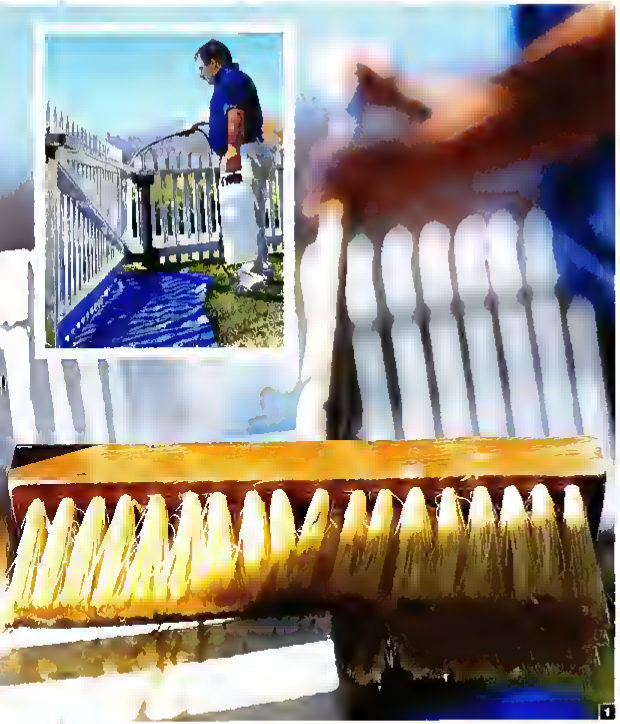
Proper prep and a roll-and-brush technique brighten a fence's worn finish

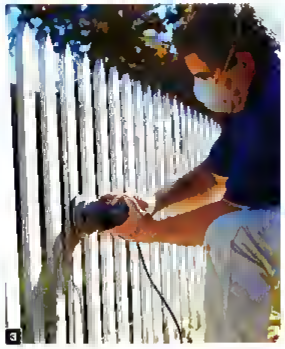
BY ERICA SANDERS

Painting contractor John Dee would have made Tom Sawyer's Aunt Polly proud. Rather than fobbing off the job of painting the fence around this 18th century Colonial farmhouse in Carlisle, Massachusetts, on a bright October day, Dee is working zealously with a brush in one hand and a roller in the other to turn the peeling palisade back into a snow white beauty. His 6-inch mini-roller quickly carries the paint from pan to picket, after which his 2½ inch brush "tips off" and smooths out the wet finish, spreading it into crevices and making sags and runs disappear. "Paint sets up fast," Dee explains, as he loads his roller. "You have to work quickly and efficiently." After a day, the front, back, sides, and bottom of each slat on this 50-foot-long fence have been painted with the first of two coats using the roll and tip method.

His speed at this point belies the days of labor-intensive preparations—washing, scraping, filling, and priming—that precede any good paint job outdoors. "Painting a fence is painless. It's the prep work that's hard," Dee says. "But if you take the time to do the job right, it should hold up for seven years." Long enough to bring a smile to the lips of any modern-day Aunt Polly—or Tom Sawyer.

PHOTOGRAPHS BY CRAIG RAINE





STEP 1: HAND WASNING
"Before scraping and sanding, wash the fence first," Dee says. "You've got to get rid of the dirt and mildew or it'll break down the paint." Working a section at a time, he lays down a plastic tarp to protect the grass, then methodically pump-sprays his mildew-cleansing solution—2 gallons of water, 2 quarts of bleach, and 1 cup of phosphate-free liquid detergent—over the fence (INSET). Dee waits five minutes for his mixture to loosen grime and obliterate the black fungus, then scrubs the wood with a medium-soft brush, paying close attention to the joints. He hoses down the section with water and repeats the process until the whole fence is scrubbed and rinsed. (Pressure washing—which can gouge wood if done improperly—is best left to a professional.)

STEP 2: SCRAPING AND FILLING
Armed with a 2-inch carbide-blade paint scraper, and working with short, fast strokes, Dee removes loose paint from the fence. "I'm trying to open up any cracks or checks," he says. He takes paint globs or ridges off, too. As he works, he probes for soft spots with a stiff putty knife. "Good sound wood resists pushing," Dee says. "If your knife sinks in, the wood is likely rotted." Decaying pickets are replaced, but at a spot on the top rail, a repair using a wood epoxy system makes sense. He chisels away the soft, damp wood, applies a thin layer of epoxy as a primer, then packs in the second filler coat. "Epoxy expands and contracts with the wood," he explains, "so I'm not worried about cracks forming and letting moisture into the paint."

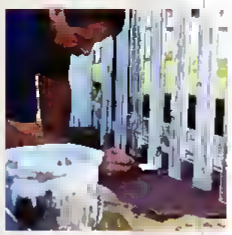
STEP 3: SANDING
Snapping a particulate respirator over his nose and mouth, Dee glides a 5-inch random-orbit sander with a 80 grit disc up and down each picket, simultaneously smoothing the wood and any filler, roughing up the old paint, and feathering out its edges. Where the sander can't reach, he does the work manually with 80-grit paper, also using it to sand the sharp edges of each picket by hand to help them hold paint. Then, with a soft, wide brush no longer suited for painting, he meticulously dusts the entire fence to make sure there's no grit to contaminate the primer coat. It won't be the last time. "I always re-dust the section I'm about to paint, no matter how many times it's been dusted before," Dee says. "It's a reflex."

STEP 4: PRIMING
Forty-eight hours after the washing phase, the wood is dry enough for what Dee calls "the most important part of the job"—treating the nailheads and priming the fence with a single coat of oil-based primer. First, he slides a drop cloth of stiff paper under the pickets. Then, to address the exposed nails, he scuffs them up by hand with 80-grit sandpaper before applying a rust-inhibiting primer. Twenty-four hours later, he works a coat of alkyd primer into the wood with a 2½-inch china-bristle brush. "I only use oil-based primers," Dee explains, "because they adhere to the wood so tenaciously and block the brown stains that bleed through cedar and redwood, something the latex primers can't do."

STEP 5: ROLL-AND-TIP FINISH PAINTING
After 48 hours, when the primer is dry, Dee lightly sands with 150-grit paper to flatten any raised grain. Then he loads up his 6-inch mini-roller with acrylic latex paint—it "allows the wood to breathe," he says—and, starting with the face and sides of the first six to eight pickets and continuing with the back sides and their corresponding section of horizontal rail, liberally rolls it onto the fence. A 2½-inch nylon/polyester brush held in his other hand follows the roller, "tipping off," or smoothing out, the paint just as it's applied. By painting in sections, Dee allows the paint surface to set up evenly. Where the roller can't reach, he uses his brush. The rolling and tipping off quickly returns the back, sides, and face of each picket to snowy purity. The next day he repeats—and finishes—this last step, until the entire fence gleams with two coats of fresh paint.

TRICKS OF THE TRADE

SEAL THE END GRAIN. Oftentimes the ends of the pickets near the ground are overlooked, even though they are the spots most vulnerable to water damage and rot. Dee always protects the end grain with primer, using a 1½-by 2-inch paint pad on an angled handle. "Don't skimp here," he says. "Give the end grain a real drink." He checks his work with a compact mirror.



FLAP, DON'T SCRAPE. To transfer paint cleanly and efficiently, Dee dips his brush bristles two-thirds of the way into the container, then lightly slaps one side of the brush against the inside of the can to knock off any drips. "Just scraping the brush against the can's lip removes too much paint and makes a mess," Dee says.

EASY CLEANUP. To keep paint from backing up into the ferrule—the brush's metal sleeve—Dee saturates his brushes before each day's work with water (for latex paints) or paint thinner (for alkyd paints). When shaken out, the bristles hold enough water or solvent to preserve a brush without bleeding into the paint. "This saves time during cleanup," he says. It he has to stop in the middle of a job, he just covers his oil paint-filled brushes in plastic wrap and stores them overnight in the freezer. "The paint won't dry, and you can pick up where you left off the previous day," says Dee. Brushes for water-based latex paint me cleaned after each use.

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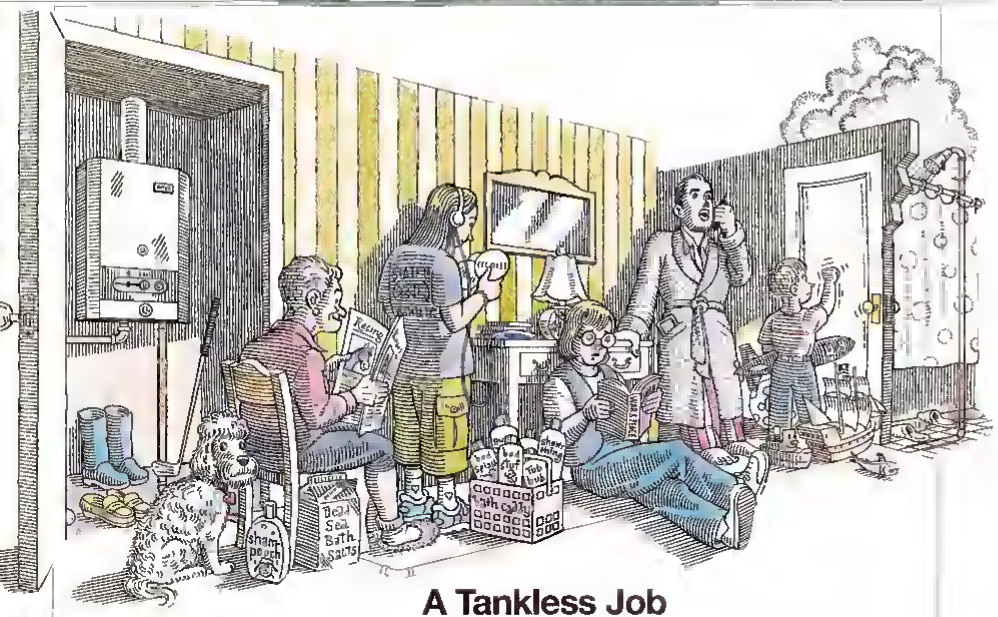

A Tankless Job

On-demand heaters mean an endless supply of hot water—and lower energy bills, too

BY ZACHARY GAULKIN

"Bath time in our household is like an assembly line," says Rebecca Knepley, who lives with her husband and four young children in central Pennsylvania. The successive filling of the tub for each child would empty their 50 gallon hot-water tank by bath number three, an unfortunate predicament for the occupant of bath number four. But for the last two years, the Knepley siblings have had no fear about having to bathe in cold water. These days, there's always plenty of hot water for all.

That's because in 1999 the Knepleys replaced their electric hot water tank with a "tankless" or "on-demand" water heater. Now, as soon as Rebecca turns on the bath faucet, the wall-mounted propane unit in their first-floor utility room senses the water flow and fires up with a quiet whoosh. Their well water comes into the system at a frigid 45 degrees and exits at a luxurious 110 degrees, making possible an endless supply of jolly, warm baths.

The nearly instant transformation of cold water into hot happens in the unit's heat exchanger, a thick sheet of copper wrapped with 15 feet of copper tubing that encircles the gas burner like a metallic cummerbund. The water, which typically enters the tubing at about 50 degrees, reaches shower temperature in the time it takes to pass through the exchanger—only 10 seconds at a flow of 3 to 5 gallons per minute (gpm).

Tankless heater technology, both gas-fired and electric (which uses an electric element inside the copper collar), is more common in Europe and Japan, where cramped living spaces and high energy costs put tank type heaters at a

ILLUSTRATION BY RON BARRETT

1) *Copper heat exchanger. Full metal jacket absorbs over 80 percent of the heat from the burner and transfers it to the water flowing through the copper tubing.* **2)** *Gas burner. Automatically regulates its flame to match demand for hot water. Shuts itself off when flow drops below about half a gallon per minute.* **3)** *Gas controls and igniter.* **4)** *Water valve. Sets the temperature and the flow of the outgoing hot water. Also senses changes in water flow and turns on or shuts off burners accordingly.* **5)** *Outgoing hot-water line.* **6)** *Incoming cold-water line.* **7)** *Gas line.*

disadvantage. But in this country, the vast majority of people draw their hot water from electric or fuel-fired tanks. The Knepleys, for instance, called four plumbers before they found someone willing to install their propane on-demand heater. "No one wanted anything to do with it," says Paul Knepley, Rebecca's husband. Eventually, they did manage to find a plumber who hung the unit on a utility room wall, hooked up the propane and water lines, fished an exhaust duct through to the outside, and hauled their old tank off to the dump.

Their persistence paid off. A gas-fired tankless system typically knocks about a third off of water-heating bills, says Richard Trethewey, plumbing and heating consultant for *This Old House*. The savings occur because tankless heaters only fire up when they are needed, so they are more energy-efficient than electric or gas-fired hot-water tanks. That's because all tanks, no matter how well insulated, inevitably experience "standby" losses as heat dissipates through their walls and, in the case of those with gas or oil burners, goes up the flue. The U.S. Department of Energy reports that the fuel or electricity needed to make up for these losses can account for 10 to 20 percent of a household's annual water-heating costs, which average from $200 to $450 per year. Most natural gas or propane tankless water heaters have an additional energy-saving feature—a "modulated" burner that automatically adjusts its flame to match demand.

Not having a tank offers other advantages. With nothing to rust or collect sediment, a tankless heater should last 20 years or so, according to Greg Moffroid, of Controlled Energy Corp., a distributor of various tankless units. That's twice the average life span of their tank-type cousins. And because there's nothing to drain, refill, and reheat, these heaters are ideally suited to vacation homes, says Richard.

But this efficiently generated, nonstop hot water also comes with some drawbacks. One is that the heaters can't always keep up with the demands of a busy household. If the need for hot water exceeds the heater's capacity at its highest setting—anywhere from 3 to 5 gpm, depending on the model—that steamy shower can turn into an unexpected initiation to the local polar bear club should someone decide to run the dishwasher. (Tank-style heaters aren't so restricted; they can supply any number of appliances or fixtures simultaneously, at least until they run out of hot water.) The Knepleys discovered that they had to be careful not to run laundry at the same time as baths or showers. (Installing multiple tankless heaters would have been impractical.)

Another drawback of these heaters is their high initial cost. They vary in price from $500 to $1,500, depending on heating capacity and the number of energy-saving features, such as electronic ignition (no pilot light) and modulated firing. A simple 40-gallon tank-type heater, by comparison, can be had for as little as $300. Richard estimates the energy savings from going tankless should make up for the steep purchase price in four or five years. The cost to install either system is the same in new construction, however, retrofitting a tankless system will cost a bit more than popping in a new tank.

"Given a clean supply of water, a tankless heater should run trouble-free," says Richard. But in areas with "hard" mineral-laden water, the accumulation of scale deposits inside the heat exchanger's tubing slows the transfer of heat, restricts water flow, and erodes overall performance. The best way to deal with these problems is to treat the incoming water with a water softener or regularly flush the system with a vinegar solution. "The tankless units can be exceptionally well-made," says Richard. "If you can live with their limited flow, there's probably no better way to heat your water." ●

PHOTO: DAVID HAMBLEY

WHERE TO FIND IT – SEE DIRECTORY – PAGE 156

Postgraduate Work

young Floridian
idhood home

As a child, Ivor Kincaide didn't count sheep to fall asleep, he counted water drops—the ones that fell through the roof of his home and into a bucket on the floor outside his bedroom. His mother, Carolyn, had purchased the place in 1973, the year he was born. But, as Ivor remembers, "For a single mother with two young children, the focus was on survival, not maintenance."

The 1,250-square-foot Cracker-style structure—raised on piers, with tin roof, one-story wood frame, and pine clapboard—had stood on a hillside in Gainesville, Florida, since 1948. The yard slopes gently down and ends in a creek that runs off into the wetlands of the Paynes Prairie State Preserve. Though the saw palmetto and sweet gum and longleaf pines had flourished under 50 years' sun and rain, the house had not. By the time he reached adulthood, "it was sagging, rotting, leaky, and rat-infested," says Ivor. "But it had been my home my entire life, and I didn't want to see it collapse." He often dreamed about rebuilding it.

After deeding the property to Ivor and his half brother, Noah, Carolyn moved away from Gainesville in 1995. While living in the house, Ivor completed his bachelor's in zoology at the University of Florida two years later. Then, not sure whether to continue on to graduate school, but with the summer stretching before him, he decided to finally restore the family home. He envisioned a raised roof, and walls full of windows that would turn the dark, cramped house into one

Tell Us Your Story

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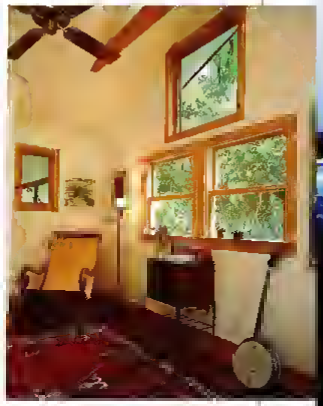
BY RYAN ROBBINS PHOTOGRAPHS BY RANDY SATISTA

thar looked and felt big and airy. "Before this I had only built tree houses," says Ivor, "but emotional attachment makes you do irrational things—and my interest in science came from all the wildlife surrounding the place." So the day after his graduation, he and Noah innocently began what would balloon into a four year project.

The brothers' first task was to stabilize the structure. The house sat atop 25 concrete piers, which had gradually sunk to various levels in the loose soil, resulting in warped floors and out-of-plumb walls. Using rented house jacks, they leveled the foundation, then stabilized it by pouring new concrete footers under the existing concrete piers and adding 15 new ones salvaged from a demolished residence nearby. Because the house was built on a hillside, run-off tended to sweep under the structure. Noah devised a French drain to protect the restored footings. The two dug a 24-inch-deep trench behind the house, filled it with gravel, and laid a 4-inch-diameter perforated PVC pipe that catches water and diverts it to the creek. They also completely replaced the failing cast-iron plumbing works with PVC stacks and drain pipes that run to the septic tank buried in the front yard. The new system includes links for a shower and the kitchen sink, which until then had emptied directly into the crawl space beneath the house. "The septic tank hadn't been checked in twenty-five years," says Ivor, "so I had a guy come and look. He said it was working perfectly—probably because only half the wastewater was actually going into it."



In the front bedroom (RIGHT), *Ivor gutted interior walls, replaced subflooring, vaulted the ceiling, and added five new windows to attain a bright, airy space* (BELOW, RIGHT). BELOW LEFT: *Ivor sands an exposed 14-foot Douglas fir collar tie in the living room.*

After moving everything valuable into the barn, from the house's original oak flooring to Ivor himself, the brothers gutted the interior. They completely demolished a jerry-built 540-square-foot rear addition put up in 1968 and constructed another over the old one's footprint. They put down plywood subflooring in the addition and in the kitchen and front room of the original structure. "With most of the framing, we just winged it," laughs Ivor. 'We thought, 'We're smart enough guys—we've seen houses built before.'"

Ivor and Noah next tore off the damaged tin roof. Then, without sketching a single elevation, they reframed it to allow for a 13½-foot vaulted ceiling, nearly doubling the original's 8-foot clearance. They nailed down plywood roof decking and covered it with tar paper in preparation for a new tin roof. By early fall they were left with a sturdy but bony frame that disheartened them. Working with little professional guidance was also taking its toll. "I was frustrated by making too many big errors," says Ivor. "The building inspectors would come by to check my progress at various stages, and would point out a flaw in the framing or a bad angle in the plumbing—they were amazingly patient—so I'd tear out the work and do it over again. But I didn't really know what I was doing."

Fed up, Ivor left Noah in residence and fled on a three-week road trip with a childhood buddy. In tiny Whale Gulch, California, they visited a house built by Ivor's late father, an artist. "It really impressed me," remembers Ivor. "I realized that I had better get a job building houses to figure out how to put my own back together and make something my dad would have been proud of." When he returned to Gainesville, a message was waiting for him from a local contractor, Mitch Flanagan, to whom Ivor had been referred by a mutual friend. Within a week, Ivor found himself on a job site painting siding and hanging Sheetrock. "I treated it like a class, quizzing Mitch and the crew at lunch," says Ivor. Flanagan adds, "We called him 'college boy' because he asked so many questions."

The house stood relatively unchanged during Ivor's year-and-a-half-long apprenticeship. "I was so incredibly poor," remembers Ivor. "My student loans were due, plus I had utility bills. I could barely afford materials and orange juice." But his patience and frugality paid off. He was able to save a little money and throw his stockpiled knowledge and funds back into the project in 1999. For Noah, a chef, balancing the long, hard days of his career with the long, hard days of construction proved impossible, and he drifted out of the project.

THE IVOR TOWER

While many modern cupolas are primarily decorative, the one crowning Ivor Kincaide's home is practical as well. Its screened louvers allow rising hot air to escape and, as the thermostat kicks on less often, gives the air conditioner a welcome breather. The cupola's electric fan can pump out 3,600 cubic feet of air per minute—quite a gust for landlocked Gainesville. Says Ivor, "Just switch on the fan and crack open a window—instant breeze." Ivor built the cupola like a miniature house, using standard 2x4s, and slid the fan in onto a supporting ledge before completing the framing. To meet code requirements, he attached the structure to the house's rafters with hurricane strapping. Then he hung three sets of screened louvers fabricated from old cypress siding, and sheathed the walls in ½-inch plywood. Using hurricane clips, he attached the cupola's hip-and-jack rafters to its double top plate, sheathed its roof with more plywood, and topped it with galvanized tin, nailed on with 2½-inch neoprene-headed nails. Four ridge caps fold over and under one another at the peak. Tin flashing seals the edge where the roof of the house meets the cupola, which, like the house, is sided with cypress and painted green.

Just at this point, Ivor added the house's most striking feature: its intriguing, if motley, collection of windows. Having frequented many professional construction yards, Ivor realized that there were always misordered materials available at a discount. He acquired 29 new, but orphaned, double-insulated windows, both aluminum and vinyl-clad. "The light pours in, and you can't hear the traffic—and they cost $5,000 dollars less than if I'd bought them new."

To keep rain away from the house and the oversize windows, Ivor extended the roof overhangs to 24 inches. Then he sheathed the house's exterior with oriented strand board (OSB) and installed pressure-treated fascia boards and window and door trim. He pulled out the old pine siding he had stored and used it to cover the back of the house; for the front and sides he chose traditional cypress, then painted everything a pale grass green. Finally, after surviving 18 months of Florida weather protected by only tar paper, the house got a new galvanized tin roof and aluminum gutters and downspouts.

The outside work completed, Ivor focused on finishing the interior. The loan of a miniature drafting board and some quick lessons in scale drawing from a friend, architectural intern Joshua Shatkin, advanced the process. "Ivor kept getting distracted by the minutiae," Shatkin said. "Drawing everything out helped him stay focused, and the construction really sped up." Ivor created a simple floor plan that took advantage of the new roofline and windows and utilized every inch of space. In the rear addition, he designed a master bedroom around a pair of 78-inch-high, east-facing windows that rake in the sunrise over the woods, and a study with a view of his rustic greenhouse. These rooms share a bathroom and walk-in closet. In the front of the house, he built a second bedroom, with windows on three sides and an adjacent bath. The heart of the house is the open space joining the dining room, kitchen, and living room beneath five 14-foot exposed Douglas fir collar ties that span the vaulted ceiling. Light floods in through 14 large windows and two glazed doorways. "It still amazes me that he never drew a single exterior elevation," says Shatkin. "But the house really works, incorporating modern materials into traditional Cracker style."

With summer blazing again and the house sealed tight, however, the vaulted ceiling proved to be a massive heat trap. To augment ventilation, Ivor decided to retrofit the roof with a cupola (see "The Ivor Tower," this page). He also had independent load calculations done by the local utility company and two HVAC contractors before choosing a properly sized air-conditioning unit and gas furnace—quite an upgrade from the old wood-burning stove that had long served as the only climate control system. With the help of a retired contractor, Ivor ran the ducts underneath the house from the A/C unit, which rests on concrete lintels in the back, to the addition and the front rooms.

Another friend helped him replace the original 60-amp service panel with a 200-amp one and add new electrical wiring and outlets. "Throughout high school all of the power in my bedroom came through a single extension cord," says Ivor. They also installed 100-Kbps telephone lines and a security system and prewired every room for an audio system. Ivor then arranged for the power company to disconnect the low-slung overhead service wires and put them underground. With the end finally in sight, Ivor insulated the roof, walls, and floor with fiberglass batts, drywalled, corner beaded, and taped the walls and ceiling—and ran out of money. "If I did it again, I would wait until I had enough capital to do everything at once," he says.

His bank account replenished by a 12-month stint as a carpenter, Ivor resumed working on the house in early 2001. He plastered and painted, relaid the original red-oak strip flooring, and bought a stove and refrigerator. He installed kitchen cabinets and trimmed the interior with cypress. He added a long-planned 160-square-foot pine deck. Then there was little left to do except enjoy the place.

"I really appreciate having this shelter from the elements," says Ivor. "I remember once, as a child, finding a family of opossums in the bathroom. They had crawled in through the rotted floor. Now I can just relax in bed, think about my next step, and listen to the rain patter off the tin roof." ■

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The Art of Stucco

An ancient siding material with durability and style

Fifty-eight years ago, Ken Howard began a stucco apprenticeship at his father's side. "My daddy told me, 'You learn this trade, and no machine will ever replace you,'" Howard recalls. And the prophecy held true. Now 73, the longtime resident of West Palm Beach, Florida, claims he would like to retire, but his skill with a trowel keeps him busy throughout the city's many neighborhoods of stuccoed homes.

Case in point: Earlier this year, a call came from John Kern, one of the contractors for *This Old House*'s winter TV project in West Palm. The Mediterranean Revival house, just three years older than Howard, needed a major patch-and-repair. "Could you come over and take a look?" Kern asked. So once again, the old mason packed up his tools and went to work.

Stucco is a defining characteristic of this house and many others in south Florida, but the appeal of the protean material transcends any particular style or region. Given an exuberant texture of swirling arcs and shallow craters, it's at home on the walls of Tudor Revivals and French colonials. Troweled smooth, it forms the taut skin typical of Prairie-style and Modernist designs. But no matter

Though it will cure into a rock-hard wall, stucco begins its life as soft as spring mud. At TOH's winter project, mason Ken Howard patches damage caused by an old, leaky roof.

BY DIANE SIMON

PHOTOGRAPHS BY BRIAN SMITH

LEFT: *To keep the wet mix evenly moist, Howard paddles it with his trowel before scooping it onto the hawk (background) in his other hand.* ABOVE: *He pushes the first coat through the metal lath and roughens it with a wallpaper brush so the top coat will adhere*

what face it's given, contemporary stucco remains a water-resistant, low maintenance exterior cladding able to withstand the worst extremes of almost any climate.

Stucco's service as protective veneer, structural ballast, and aesthetic signature extends across centuries and continents. In the third century B.C., Romans made their stucco with a mixture of volcanic ash and lime putty. At the same time, Japanese builders were slathering lime stuccos laced with seaweed extracts (*shikkui*) on their temples, teahouses, and palaces. Along the southeastern coast of America, colonials mixed sand with burned oyster shells to make a rough stucco, and in the Southwest, thousands of years ago, Native Americans protected their adobe buildings with stuccos made from clay.

All these traditional mixes, while ingenious and inexpensive, were not exceptionally durable; each rainfall would wash some stucco into the soil. Only regular recoating could keep walls intact. That changed at the end of the 19th century with the introduction of Portland cement, a blend of fired limestone and clay. This proved simpler to mix, quicker to cure, and much stronger than its lime- or clay-based predecessors, allowing builders to apply lath and stucco over wood frame buildings. Cement stucco is the gritty gray mud Ken Howard grew up mixing and spreading on walls—two or three thick coats, one at a time—with little more than a hawk and a trowel.

In the case of the *T.O.H.* project, the original stucco had actually survived quite nicely, except where a roof leak and a termite infestation in the wall of the sunroom had destroyed the framing and left nothing but the cracked, inch-thick stucco skin to hold up the rafters.

Before Kern and his partner Hatley Edgell could rebuild the wall, the old skin would have to come off—with the urging of a diamond-blade circular saw and cold chisels. After temporarily shoring the roof, they replaced the damaged framing with pressure-treated lumber and sheathed the exterior with ½-inch plywood. On the sheathing, Edgell stapled overlapping lengths of 30-pound roofing felt and nailed shiny strips of diamond lath. The felt protects the sheathing from the wet mix and from any water that might manage to leak through later. The lath gives the wet stucco something to grab until it hardens, and then provides all-important reinforcement against cracking and delamination.

Then it was Howard's turn. In a gasoline powered mixer, he first blended together his dry ingredients—48 shovelfuls of sharp sand and four 80-pound bags of mortar mix—then added about 20 gallons of clean water. He mixed it until the wet stucco reached the stiff but pliable consistency of cookie dough.

Howard had an hour to move the mud out of the mixer, into a wheelbarrow, and onto the wall before it would begin to set up. After wetting down the edge of the existing stucco where it would meet the new, so it wouldn't suck the water (and strength) out of the new batch, he loaded up his hawk and began troweling. Using a quick, sure flip of his wrist, he slapped the stucco against the wall with the trowel's blade and pushed the gray goop through the lath. Another flip scraped the trowel clean on the hawk's edge so he

FINISH LINES

With a few simple tools, stucco master Ken Howard can manipulate his finish coat in more than a hundred different ways. Here are four textures common in south Florida. 1) Heavy Spanish. Howard achieves this texture by skipping a trowelful of thin stucco over the surface. 2) Stipple. To produce this look, he pats the wet cement with a wet sea sponge. 3) Light Spanish. This texture is simply a smoother, more heavily troweled version of Heavy Spanish. 4) Blown-On. This finish uses a thick, buttermilklike mix pneumatically applied with a paint spray gun. No trowel needed.

could level out any lumps on the wall. Over and over, the flipping, scraping, and leveling continued until he had covered the wall with the first ½-inch-thick coat. This is called the scratch coat because the old timers would take grooves into the surface to make it rough enough for the next layer to grab. Howard simply uses a wallpaper-smoothing brush with tampico bristles.

As he rinsed off his hawk and trowel—tiny gold replicas of which hang from a chain around his neck—to prepare for the second coat, someone pointed out that his crisp white outfit had almost no spatters, drips, or stains. "The sign of a master at work," says Edgell.

The next day, he mixed up a new batch of stucco—same recipe—and troweled on a smooth ½-inch-thick finish coat. Before it set, he evened it out with a shicket—a thin, 3-foot-long aluminum straightedge. "It takes out the 'frogs'—the lumps and valleys," Howard explains.

A day later, he began the true craftsmanship—creating the finish texture. The original stucco on the house has an irregular texture known as Heavy Spanish, a common look in south Florida; Howard reproduced it with practiced ease. He hoed up a mix to the consistency of cake icing, put a dollop on his trowel, and randomly skipped it over the finish coat, creating a rough, cratered surface that is almost indistinguishable from the original one. After letting it set for about 20 minutes, his final touch was to soften the texture slightly by whisking it with the dry wallpaper brush.

Once the walls had cured for a week, the entire exterior was painted with one coat of water-based masonry sealer and another of paint. This protects the stucco from weather and saves Howard the trouble of trying to match the color of the new stucco to the old, a tedious process that requires mixing up a number of test batches with different proportions of powdered pigments and comparing them to the existing wall color after an overnight cure.

Having to color-match and create complicated texture may push the cost of stucco over $25 a square yard. But most simple two-coat jobs in Howard's area cost about $20 a square yard. Prices will be higher where stucco experts are relatively scarce.

The hardest part of stucco work may be finding a pro like Howard who knows how to wield a hawk and trowel. (Often, it's the same person who handles interior plastering.) But those who persevere in getting their own stucco master will be rewarded with a tough surface that needs hardly any upkeep. "The beauty of stucco is that it lasts as long as your house," says Howard. "It's like using a sidewalk for siding." ■

RIGHT: *Howard always works down from the top of the wall, moving across his plank staging, then lowering it a few rungs and refilling his hawk as needed—here, he's doing the second coat.* BELOW: *The walls were sealed and painted.*

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TALKING SHOP

BLADE RUNNERS

BY CLAYTON DEKORNE

Imagine an emerald sweep of grass, where children play a game of badminton or bocce, neighbors gather for an afternoon barbecue, or sunbathers lounge on towels, twirling their toes in the lush turf. Whether measured in acres or fiked to a postage stamp, the well-tended lawn provides a cool, clean carpet for summer living.

"Looking out over a healthy lawn always evokes a person's sense of pride," says *This Old House* landscaping contractor Roger Cook. "And it should. A beautiful lawn doesn't happen by itself—you have to work at it." A newly planted tree or shrub soon survives itself, but a lawn requires devoting yourself to steady watering, fertilizing, reseeding, and mowing. "Mowing, especially," Roger emphasizes. "It commands the most time."

And if it's not done right, it can actually do harm. For instance, grass cut too short won't have enough surface area to absorb light and air. But left too long, it won't thicken out as it grows (see "The Right Height," page 80).

"The most important thing you can do is keep the mower blades sharp," says Roger. Whether for a sit-down lawn tractor, a self-propelled mulcher, or a hand-push reel mower, he recommends a thorough sharpening and cleaning several times during the growing season, depending on how much cutting is required. A dull blade rips the top off the grass, leaving behind frayed edges that turn an unsightly brown, impair growth, and invite disease. "It's like doing surgery with a jagged knife," Roger explains. "The incision is slow to heal and more likely to get infected. A cut with a razor-sharp scalpel, however, heals quickly and cleanly. That's what you want for a healthy lawn."

REPORTED BY JORDAN REED

PHOTOGRAPHS BY BENJAMIN OLIVER

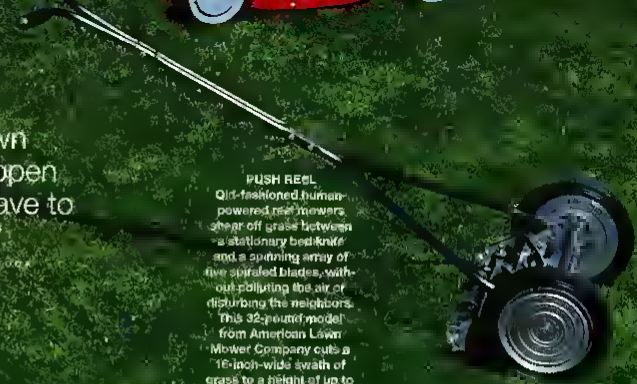
CORDLESS ELECTRIC
Forget the gas can. The rechargeable 24-volt battery in Black & Decker's 19-inch cordless mulcher provides as much power as a 5-horsepower gas engine, for an approximate running time of 45 minutes—enough to cut lawns as big as ½ acre. An optional bagging attachment captures clippings for the compost pile.

ROBOTIC
Like a bug crawling the terrain, a robotic mower roams the lawn while its "operator" snoozes in a hammock. Contained in the yard by a sensing wire buried around the perimeter, this battery-powered mulcher from Friendly Robotics moves in a random, triangular pattern. The machine can cover yards of any shape up to 3,200 square feet, and its motor emits a quiet hum.

RIDING
Meadow-sized lawns of ¾ acre or more call for a riding tractor, such as this 16-horsepower, two-cylinder John Deere. Zero-clearance turning permits close maneuvering around shrubs, trees, and flower beds, and tight turns at the end of each row. Below its steel deck, three blades mow a swath 48 inches wide at heights from 1 to 4 inches.

SELF-PROPELLED MULCHING
By forcing clippings back into its spinning blades a second time, a mulching mower minces them so finely that they all but disappear. This 86-pound machine from Toro has a 6-horsepower engine that starts with a key—not a cord—and has powered rear wheels that can be engaged for assists up hills and on straightaways.

"A beautiful lawn doesn't happen by itself—you have to work at it."
—Roger Cook



PUSH REEL
Old-fashioned human-powered reel mowers shear off grass between a stationary bed knife and a spinning array of five spiraled blades, without polluting the air or disturbing the neighbors. This 32-pound model from American Lawn Mower Company cuts a 16-inch-wide swath of grass to a height of up to 2½ inches, and leaves a more even surface than most rotary-blade power mowers can achieve.

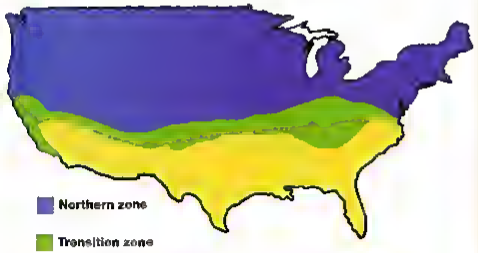
TALKING SHOP

TRIMMERS

A neat finish to any mowing job requires clipping edges next to walks, beds and fences. For pure untethered snipping power, gas-engine string trimmers are hard to beat. Ryobi's Trimmer Plus (right) uses a four-cycle engine that burns fuel more efficiently than a typical two-cycle engine and produces cleaner exhaust. Yet the tool weighs only 12¼ pounds, it cuts a 15-inch-wide path, has an automatic string feed, and accepts attachments, including a vertical edger and a snow thrower. Grass shears can't match a string trimmer's speed, but they are unsurpassed for quietly slicing through grass without fraying it. These long-handled, swiveling grass shears by Fiskars (left) also save wear on backs and knees. Hardened carbon steel blades rotate 180 degrees for precise edging around plant beds and walkways.

The Right Height

The optimal height for any lawn varies by the type of grass growing in it, as well as by season. In summer, grass needs to grow a little taller to shade the crowns—the tight stem just above the roots—from the damaging heat. Cut grass when it grows to its maximum height range for the season, as detailed below, leaving two-thirds of the blade to preserve adequate leaf area and protection for the crown. Mowing frequency also varies with the seasons. During the spring and early summer, when grass is shooting up the fastest, a lawn should be sheared at least once a week to keep it in bounds. But when hot, blistering summer days slow down growth, a lawn might go for weeks before it needs a trim.



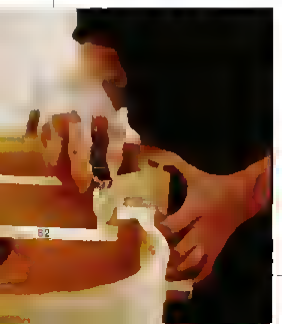
GRASS TYPE	MAXIMUM HEIGHT: SPRING AND FALL	MAXIMUM HEIGHT: SUMMER
NORTHERN AND TRANSITION ZONES		
Bent Grass	½ to 1¼ in	1 in.
Bluegrass	2 to 2½ in	3 in.
Fescue	1 to 1½ in.	2 in.
Fescue – Red	2 to 2½ in	3 in.
Fescue – Tall	2 to 3 in.	4 in.
Rye – Annual	1½ in.	2 in.
Rye – Perennial	1 to 2 in	2½ in.
SOUTHERN AND TRANSITION ZONES		
Bahia	2 to 2½ in	3 in
Bermuda – Common	½ to 1 in	1½ in.
Bermuda – Hybrid	½ to ¾ in.	1 in.
Buffalo Grass	1 to 2 in	3 in
Carpet Grass	1 to 1½ in	2 in
Centipede	1 to 1½ in.	2 in.
St. Augustine – Floratine	½ to 1 in	1½ in
St. Augustine – Other	1 to 2 in.	2½ in.
Zoysia	½ to 1 in	1½ in.

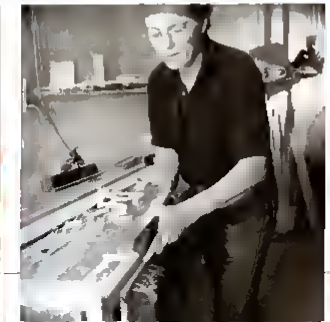
WHERE TO FIND IT – SEE DIRECTORY – PAGE 136

WINDOW MAKER

BY MAX ALEXANDER

Wielding the tools of her trade, Caroline Sly uses a chisel (ABOVE) *to trim excess wood from a window muntin in preparation for glazing;* (BELOW, LEFT) *a finger plane to smooth the ribs of what will become a cello, and* (BELOW, RIGHT) *a sash plane to fashion a muntin.*





NAME: Caroline Sly

OCCUPATION: An architectural joiner and cabinetmaker, Sly builds virtually every kind of wooden object required for the restoration or re-creation of an 18th-century house—from paneling to gateleg tables. Increasingly, she is commissioned for her meticulously crafted windows. A recent job involved handcrafting more than 20 authentic plank frame windows with mortise and tenon joinery for a 1794 home in Ashfield, Massachusetts, where Sly also lives and works.

TRAINING: After receiving an M.A. in music from Smith College, Sly, now 58, taught herself woodworking from books and by looking at old houses. "I went to every living history museum I could find," she says. Music remains a passion. About half her time is spent making violins, violas, and cellos. She plays viola in two orchestras.

STYLE: Sly does 18th-century architectural woodwork. "Since I'm using the same tools that were used then, the result is exactly the same," she says. Her goal is to achieve period authenticity. "I'm not trying to deviate or be original," she says.

THE PROCESS: Sly uses hand planes to carve 6- and 12-light sash pieces, then assembles them with mortise-and-tenon joints to construct each window frame. Usually, she does her own glazing, too. "When I can get it, I use handblown 18th-century glass, with its bubbles and waves."

WORKSHOP: A thousand square feet in her basement. Her workshop displays 35 antique molding planes, and she's always on the hunt for more. She also has a dimension planer, radial arm saw, drill press, and table saw. She uses the last for making rough cuts that in the 18th century were handled by apprentices. "It's so strenuous and would take so long to do by hand, it isn't worth it," says Sly.

FAVORITE WOOD: Radially cut, air-dried heartwood from hundred-year-old white pines—the wood used in New England in the 18th century. The trees are felled near a reservoir in central Massachusetts; she buys the wood from a sawyer she's known for years. "Heartwood pine is stable and takes the plane well," she says. "There's nothing better."

PET PEEVE: Glue. All her windows are pinned together. "I've seen many two-hundred year old wood windows that still work fine," she says.

PHOTOGRAPHS BY CRAIG RAINE

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Found Money

Own a special old home? A renovation doesn't have to leave you penniless—as long as you know where to look for the financial breaks

BY SCOTT NOLAND

When Sally and Ted Oldham came across a charming 1850s house in the historic district of Annapolis, Maryland, they knew it was time to put their years of professional experience in preservation to work. Ted, an architect, was brimming with design ideas for the folk-Victorian building. And as a former vice president of the National Trust for Historic Preservation and a private consultant on historic restoration, Sally possessed an equally important skill: She knew how to take advantage of tax breaks that would help them defray the cost of the work they wanted to do.

Maryland, for instance, offers a tax credit equal to 25 percent of rehab costs over $5,000 on any house which is designated as a local landmark or is on the National Register of Historic Places, as the Oldhams' house was. This meant that the couple's $100,000-plus renovation would make them eligible for a reduction of more than $25,000 on their state income tax bill—with any balance applied to following years for up to 10 years. The money they expected to save allowed them to refinish the original heart pine flooring, remove obtrusive laundry and trash chutes, and peel away a clumsy dropped ceiling. Says Sally: "The credit gave us the means to restore some things that we otherwise couldn't have touched."

Finding ways to shave costs off a renovation is always important to homeowners, but with belts tightening all over the country, it may soon become an art form. Those who know about government "subsidies" that may be available to them will be in an excellent position. Currently 39 states offer some kind of tax incentive to homeowners who renovate an old, usually historic, home that meets local eligibility requirements. Eighteen of them allow eligible homeowners to apply a portion of the total cost of their construction—between 10 and 50 percent—directly against that year's state tax bill. And in most cases, the credit can be carried forward for at least four years until the full amount is recouped. In 27 states, local governments have the power to freeze property taxes on a rehabbed historic home at its pre-reno rate regardless of its post-renovation assessment (see "Rating the States," p. 86, to find out what applies in your area). The federal government also provides some relief in the form of limited income-tax credits and deductions.

States have varying eligibility requirements for tax abatements, but they are less stringent than one might imagine. Usually, the renovated house must be located within a historic district created by the state or city or have attained a spot on the National Register of Historic Places, a designation awarded to houses more than 50 years old that have maintained a certain level of architectural integrity (see "Register Now," page 87). The state may expect the renovation to meet certain standards, specify a minimum

ILLUSTRATION BY PETER HOEY

to be spent on the work, place a cap on the eligible amount, and/or limit the length of time it takes to finish the job. In some locations, the residence must be "income-producing," that is, contain one or more rental units or a professional office, operate as a bed and breakfast, or be located on a business property—as, for example, the homestead on a working farm would be.

The inspiration for tax incentives dates to the Historic Preservation Act of 1966, which was designed to protect important buildings from the fate that befell New York City's Pennsylvania Station, demolished in 1963. The Act authorized the creation of the Federal Historic Preservation Tax Incentive Program, which allowed most owners of income-producing homes listed on the National Register to take 20 percent of their renovation costs off their federal tax bill. States gradually adopted the language of that program, motivated not only by the desire to preserve important buildings but to bolster state and local economies. People who moved into old neighborhoods and rehabbed the existing housing stock buoyed up property values and encouraged new business.

In Georgia, for example, where many city neighborhoods have declined, the state promotes local restoration by offering an eight-year freeze on property taxes to homeowners who renovate historic houses. Lee Webb, who directs the tax abatement program for the Georgia Historic Preservation Division in Atlanta, points out that this is especially rewarding to those who buy old houses in marginal downtown areas. "People who go early into neighborhoods that eventually become more expensive save on rapidly rising property values," says Webb. Rick and Sue Whitten, who bought a Greek Revival house in Macon, Georgia, estimate that the program will reduce their property tax bill by $3,000 a year, or about $24,000 over the state's eight-year freeze.

The federal government's more narrow set of opportunities is still well worth investigating. (The Historic Homeownership Assistance Act, which would offer a federal income tax credit of 20 percent to owners of nonincome-producing historic residences, is currently in committee in the House of Representatives.) Heritage Preservation Services, a division of The National Park Service, administers an easement donation program. This encourages homeowners of a historically important house to deed its facade to an approved nonprofit organization, such as a local historical society or preservation trust. The homeowner reaps significant financial benefits. The easement, which becomes part of the house's chain of title, is considered a charitable donation and can be taken as a deduction on federal and some state income taxes. And because the homeowners own less of their house, they pay less in property taxes.

Bret and Patrice Clesi donated the public face of their 1869 Gothic Revival cottage in New Orleans's historic uptown district to the Preservation Resource Center (PRC.), a private, nonprofit organization, in 1999. When the couple bought the building, it was in such a state of disrepair that neighbors dubbed it the "haunted house." Today, with pristine wood siding and fresh white trim, the people at the PRC. call it a "gingerbread showpiece." The Clesis have already saved an estimated $25,000 on their federal and state tax bills and may eventually reduce their local property taxes, as well. "The realtor said it would make it harder to sell," says Bret, because potential buyers might not want outsiders to have aesthetic control of their home's facade. "But we think the people who would be interested in this house would also want it protected. And the tax cut is still an attraction."

Homeowners looking to defray much of the cost of their renovation should match their project with the right incentive. To find out if you qualify for state or local options, contact the National Trust for Historic Preservation or call your local historic commission. It's also worth a call to the National Park Service in Washington to see if you're eligible for any federal incentive programs. In fact, because many of the state and federal programs require that you invest a minimum amount of money on the renovation, it's a good idea to enlist a tax attorney or accountant to analyze whether the benefits justify the expenses. Unfortunately, for that consultation you'll have to pay. ■

RATING THE STATES

Below is a summary of the existing state tax incentives for preservation. Since towns oversee property taxes, some state laws merely create a structure specifying the nature and length of the abatement, which local governments have the option of following. For income tax breaks, states may place a cap on the credit or require a minimum expense, but most allow the credit to carry forward several years. States may apply some or all incentives to income-producing or National Register residential properties only.

STATE	PROPERTY TAX ABATEMENT	INCOME TAX CREDIT
AZ	Statewide law: up to 50% reduction for nonincome-producing residences; for income-producing properties, 32% reduction on value added by reno	
CA	town's choice: up to 50% reduction	
CO		20% of min. $5K reno costs; $50K cap; 10-yr carry forward
CT		30% of min. $25K reno costs; $30K cap
DE	Available in 2 counties	20% for income-producing properties, 30% for nonincome-producing; statewide cap of $3 mil
FL	Town's choice: up to 10-yr. abatement	
GA	Statewide law: 8-yr. freeze, phased out over 2 yrs.	
HI	Total exemption for state-designated historic properties in 4 counties; variable term	
IL	Statewide law: 4-yr. freeze, phased out over 4 yrs.	
IN		20% of min. $5K reno costs; $20K cap
IA	Town's choice: 4-yr. freeze, phased out over 4 yrs.	25% of reno costs; National Register properties only
KS	Town's choice for tax rebate; variable term	Legislation pending
KY	Statewide law: 5-yr. freeze	
LA	Statewide law: 5-yr. freeze, 5-yr. renewal	
ME	Town's choice: variable term	20% of min. $5K reno costs; income-producing properties only
MD	Town's choice: 10-yr. freeze	25% of min $5K reno costs
MA	Town's choice; phased out over 5-yrs.	
MI		25% of reno costs; 10-yr. carry forward
MN	Statewide law: 10-yr. freeze, phased out over 2-5 yrs.	Legislation pending
MS	Town's choice: up to 7-yr. freeze	
MO	Statewide law: reduction for houses in "blighted" areas	25% of reno costs, National and State Register properties only; 10-yr. carry forward
MT	Town's choice: 8-yr. freeze.	
NM		50% of reno costs, $12.5K cap; 4-yr. carry forward
NY	Town's choice: 8-yr. freeze, phased out over 5 yrs.	
NJ	Town's choice: 5-yr. freeze	
NC	Town's choice: variable term	30% of min. $25K reno costs
ND		50% of reno costs in designated areas; 5-yr. carry forward
OR	Statewide law: 15-yr. freeze	
PA		Legislation pending
RI		10% of min. $2K reno costs; $1K cap per year
SC	Town's choice: 2-yr. freeze, 5-yr. reduction	
SD	Statewide law: 8-yr. freeze	
TX	Available in 18 cities	
UT		20% of reno costs, 10K min. over 3 yrs.
VT		25% of reno costs; $25K cap
VA	Statewide law: up to 10-yr. freeze	25% of reno costs; 10-yr. carry forward
WA	Town's choice: 10-yr. reduction	
WV		20% of reno costs, National Register properties only, 5 yr. carry forward
WI		25% of reno costs; $10K min. over 2 yrs., $10K cap

REGISTER NOW

Having one's home listed on the National Register of Historic Places is often required to qualify for tax incentives. The register, administered by the National Park Service, was created in 1966 by the National Historic Preservation Act to heighten awareness of historic buildings or locations. Inclusion is primarily a mark of prestige, the designation doesn't prohibit structural changes, though major ones could convince local authorities to rescind your status. (Less than 1 percent of the register's properties are National Landmarks, a status indicating a kind of "Washington slept here" importance). Properties eligible for the register are usually at least 50 years old and display some architectural integrity. A home doesn't have to be a unique or even fine example of a style—a good one can suffice. A well-kept pre–World War II Colonial might make the grade. The application (at www.cr.nps.gov/nr/publications) requires an essay on the house's historical significance and an inventory of its architectural elements, along with a photo and property map. It goes to the state's historic preservation officer (see www.sso.org/ncshpo/shpolist.htm for a nationwide listing), and, if approved, is forwarded to the National Register. The process takes at least 6 months. Over the last few years, for example, New York State's Office of Parks, Recreation, and Historic Preservation received hundreds of applications; virtually all the properties made their list and were sent to the National Register. Says Commissioner Bernadette Castro: "In my six-year tenure, the Feds haven't turned down one of our nominations."

WHERE TO FIND IT – SEE DIRECTORY – PAGE 156

DETACH HERE

HOMEOWNER'S STEP-BY-STEP PROJECT SERIES HANDBOOK

LAYING A STONE PATIO

Roger Cook and Tom Pica lay a bluestone slab onto a wet bed of cement and stone dust. They use orange mason's twine as a guide for stone placement and pitch

BY CHARLES WARDELL

With all the beauty of a well-manicured lawn but without the maintenance, a stone patio makes an elegant addition to almost any outdoor living space and will long outlast a wood deck. A variety of flat stones will do—whether they're smooth squares of slate or rough flags of limestone—as long as they can withstand foot traffic and the local climate. For most of his patio projects, *This Old House* landscaping contractor Roger Cook favors 1¼- to 2-inch-thick bluestone, a tough, weather-resistant sandstone quarried in New York, Pennsylvania, and Vermont.

"Setting a stone patio is similar to laying bathroom tile," Roger says. As with tile, you prepare a base, level each piece to the next, and fill in the joints. But while most tile can be set with one hand, moving and laying a 2-inch-thick, 100-pound slab of stone takes some brawn and is best handled by two people. "You only want to move them once," Roger says, "so take your time to set each stone straight and create uniform ¾-inch gaps between them." Also, vary their size and color to give the patio a quilted, cohesive look. Using reference lines at each course will ensure that the surface has no dips or humps and is pitched just enough so that rain doesn't pool. Says Roger, "The best thing about laying a stone patio is that when you've finished with all the hard work, it's there for good."

—Shannon Brady Mann

PHOTOGRAPHS BY KINDRA CLINEFF

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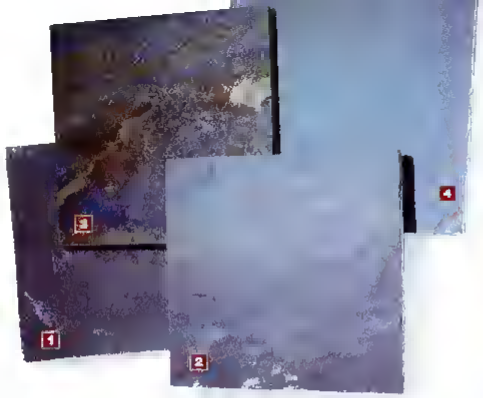
HOMEOWNER'S HANDBOOK

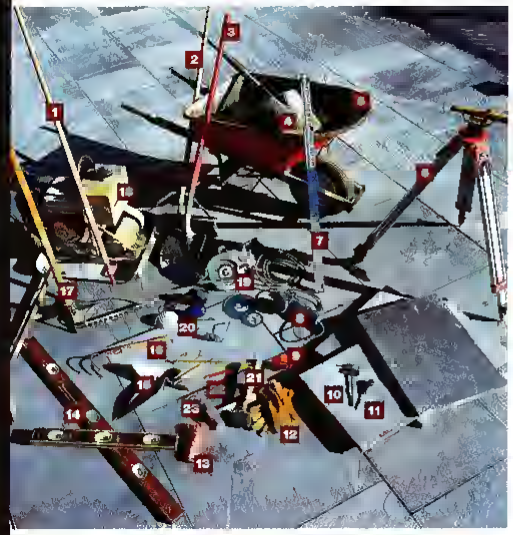
Materials



Although bluestone is often confused with slate (a smooth metamorphic rock formed from fine-grained silt) it is actually a grittier, less brittle material derived from sandstone that traces its lineage back 100 million years. Its name is something of a misnomer; it includes several different types of green, brown, purple **(1)**, yellow and blue-gray **(2)** sandstone, as well one with a variety of colors **(3)**. Price depends not only on color, quality, and thickness but also on size. A 1- to 1½-inch-thick stone measuring 2 by 3 feet costs $30 throughout most of the country ($5 per square foot—but if you live far from the Northeast, the shipping expense can tack on an extra dollar per square foot). The nature of the surface of the stone—natural-cleft **(1, 2, 3)** or flame-treated **(4)**—will also affect the price. The stones should have a consistent thickness—from 1 to 2 inches—to avoid difficulty when setting them. Roger uses only premium stone on patios because of its smooth surface and because it is less likely to fracture during installation. Lower grade stone is more suited for a rustic-looking stepping-stone walkway than a patio.

"When laying a stone patio, the work that counts the most is the work that you don't see."
—Roger Cook

Tools



1. **Steel rake:** for spreading stone dust
2. **Push broom:** for sweeping stone dust
3. **Spade shovel:** for digging and spreading
4. **Square shovel:** for measuring and mixing
5. **Wheelbarrow:** for mixing wet material
6. **Builder's level:** for determining pitch
7. **Leveling rod:** for measuring pitch with builder's level
8. **Angle grinder:** for cutting curves in stone
9. **Tape measure:** for measuring
10. **Circle cutter:** for scribing stone
11. **Carbide-tipped awl:** for marking stone
12. **Leather gloves:** for hand protection
13. **Mason's twine:** for establishing reference points between stakes
14. **2- and 4-foot levels:** for leveling stones
15. **Pointing trowel:** for adding cement mix and packing in joints
16. **Hand rake:** for leveling wet material
17. **Hand tamper:** for tamping base along walls and siding
18. **Power tamper:** for compacting base (rent if needed)
19. **Circular saw with diamond blades:** for cutting stone
20. **Goggles, dust mask, ear protection:** for eye, lung, and ear safety when cutting stone
21. **Rubber mallet:** for tapping stone into cement mix
22. **Carpenter's pencil:** for marking stakes at finish grade
23. **Hand sledge:** for driving stakes and snapping stone

Skid-steer loader (not shown): for clearing and digging base (rent if needed)

Illustration

STEP 1: EXCAVATE THE SITE

- Mark the work area by driving 3-foot-long wooden stakes into the ground about 1 foot outside the corners of the planned patio area.
- Set up a builder's level (above) in the middle of the patio area. Find a benchmark—a spot that the surface of the patio will meet and be level with next to the house. Sight through the level's scope while a helper holds a leveling rod at the benchmark and moves the rod's marker until it falls in the scope's crosshairs (above). Then, at any stake, have your helper, with the marker still at the established point on the rod, move the rod up or down until the marker falls in the crosshairs. Mark the stake where it meets the bottom of the rod. Swivel the level and repeat at each stake. On the two corner stakes farthest from the house, measure down from the mark ½ inch for every foot between it and the benchmark. The marks show your finish grade.
- Dig 8 to 12 inches below finish grade to reach the subgrade. (See "Planning Ahead.") Compact it with a power tamper.

STEP 2: SET THE BASE

- Cover the subgrade in batches of 3-inch-thick layers (called "lifts") of pack, a blend of ¾-inch crushed stone and stone dust. Dampen each lift with water to help it settle and to keep down dust.
- Compact each lift with a power tamper (above). Use a hand tamper near walls, sidewalks, or foundations. Repeat process of adding, dampening, and tamping each 3-inch lift until all the pack is roughly 2½ inches below the marks on the stakes (if you're laying 1¼-inch thick stone).
- Drive additional stakes every 2 feet between the corner stakes closest to the house and again on the opposite end of the patio, which the grade slopes toward. Stretch a chalk line between the finish grade marks and snap the line against the new stakes. Run strings along the pitch of the patio between the new stakes at their finish-grade marks.

TIP: *To provide for garden irrigation lines or outdoor electricity, lay 3-inch-diameter PVC conduit over the subgrade.*

STEP 4: CUT STONES TO FIT

- Mark the cut with a pencil on the top face, then scribe the cut-line using a carbide-tipped awl. For straight cuts, use a level as a straightedge to guide the scribe. (For curved cuts, see "Carving Curves.")
- Elevate the edge that will be cut off by placing a piece of wood under the cut-line.
- Put on safety goggles, ear protection, and a dust mask.
- To score a slab, set the saw blade to a ¼-inch cutting depth, start the saw, and slowly guide it along the cut-line. Then set the blade to 1 inch and make another, final pass.
- With solid premium-grade bluestone—which is less likely to flake or chip—a scoring cut halfway or three quarters of the way through is sufficient. Just knock off the waste side with a hand sledge. A cheaper, lower-grade stone that's prone to fracturing has to be cut all the way through.

TIP: *Cuts will be easier, they will produce less dust, and your blade will last longer if it is kept cool with water. Make your own water dispenser by sticking a finish nail into the bottom corner of a plastic gallon milk jug. Have a helper hold the jug over the saw, remove the nail when you begin cutting, and trim the trickle of water at the spinning blade.*

STEP 3: LAY THE STONES

- In a wheelbarrow, mix 1 part dry cement with 12 parts stone dust to use as a setting bed for the bluestone. Slowly add enough water to make a stiff mix.
- Starting in one corner, shovel out enough mix to lay one stone (ABOVE, LEFT). Level the mixture with a rake or hand trowel. Depending on size and weight, bluestone slabs will settle into the wet mix half an inch or more, so spread the mix thicker than its planned final thickness. Check bed thickness by measuring the distance between it and the string. For 1½-inch-thick stones, that distance should be roughly 1 inch, to allow for about ½ inch of settling. Add or remove mix to meet the finish grade.
- Lower the stone, smoother face up, into the setting bed. You'll need two people to handle stones weighing 100 pounds or more. Twist the stone slightly to put it firmly in contact with the bed, then tap the slab around the edges and in the center with a rubber mallet to set it firmly into place (ABOVE, MIDDLE).
- With a level, check the edges of the stone to make sure they are flush with any adjacent slabs, and check the strings to make sure the stone is pitching at the correct angle. The stone face should be as close to the string as possible without actually touching it. To adjust a stone for flush and pitch, pry it up with a square shovel, then use a trowel to add or remove wet mix.
- Repeat the same shoveling, laying, twisting, and tapping procedure for the next stone, leaving a ¾- to ½-inch gap between stones. Lay a level across both stones to ensure they are in the same plane (ABOVE, RIGHT).
- Brush and rinse the stones before the wet mix has a chance to dry.
- Keep off freshly laid stones for a day or until the setting bed hardens.

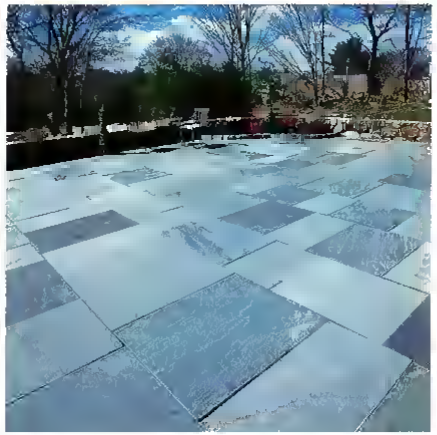
TIP: *Safely "walk" heavy stones into place by holding an edge on the ground and shifting the weight from one corner to the other.*

STEP 5: FILL THE JOINTS AND EDGE THE PATIO

- While a patio doesn't need edging to hold the stones in place, cobblestones are an option. To install them, dig a trench far enough into the pack to accommodate a 4-inch bed of concrete and set each stone 3½ inches below finish grade.
- After the patio is firm enough to walk on, spread stone dust over the stones and sweep it into the joints and along the edge (LEFT).

- Using a hose, spray the joints gently with water to encourage the stone dust to pack tightly. A mason's pointing trowel also helps to tamp wet stone dust into the joints.
- Repeat until the joints are firm and level with the face of the stone.
- Roll out the chaise and have a well-deserved lemonade.

TIP: *Avoid filling joints with cement, or they'll pop out in winter, and don't use sand, which can attract ants and give grass and moss a place to grow.*



CARVING CURVES

When everything's straight and square, there's little need for cutting. However, if the patio meets a rough stone wall (as in this case) or a gently curving planting bed, the stones at the edge may need to take a few twists.

First, Roger cuts (or picks) a slab at least 3 inches longer than the longest distance between the edging wall he wants to fit against and the preceding stone. He aligns and sets it so it overlaps the adjoining stone, and just touches the wall while resting on the pack. Then he runs the point of a circle cutter (or compass) set to 3¾ inches along the profile of the wall and transfers the wall's irregularities to the stone surface **(1)**. This is his cut-line. The extra ¾ inch on the cutter allows for two ¾-inch gaps: one between the cut stone and the adjoining stone, and another between the cut stone and the wall.

Gentle, even curves—those with a large radius—can be cut with several tangential and shallow passes of a circular saw. But for tight curves, Roger uses an angle grinder with a 4-inch diamond blade **(2)**. He makes the first cut ¾-inch deep, then goes over the cut again to make it an inch deep, and snaps off the excess. Some curves are so tight he has to slice a series of parallel cuts with a circular saw to make small "teeth," then knock them off and smooth the edge with a grinder. The result is a fine detail that whispers "expert craftsmanship" **(3)**.

PLANNING AHEAD

- Sketch out the project on graph paper first to minimize cuts, stagger the joints, and estimate how much material you'll need. Bluestone comes in rectangles and squares—from 1- to 4-foot-square pieces, in 6-inch increments. One ton of stone dust, for a 1-inch setting bed, will cover about 200 square feet. A ton of pack laid at 3 inches will cover 75 square feet.
- Align delivered stone near the side where you will finish the patio so you don't retrieve material over just-laid stones.
- To save time and energy, rent a skid-steer loader to clear away debris and dig the patio base.
- Locate and mark any in-ground gas, electric, water, or phone lines by spray-painting the ground.
- If you live where the ground freezes or drains poorly, dig down at least 12 inches to save your new patio from being being heaved by frost. Those living in mild climates where the soil is sandy and drains well should excavate down to 6 inches.

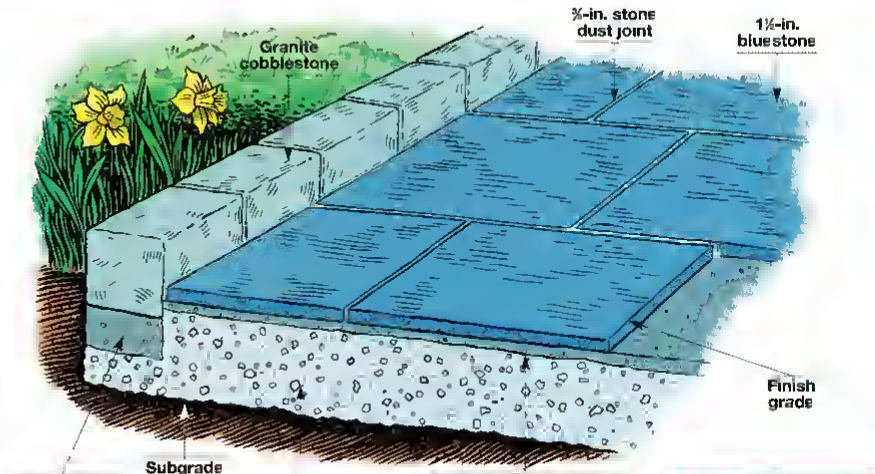


ILLUSTRATION: GREGORY NEMEC

NEXT INSTALLMENT OF HOMEOWNER'S HANDBOOK
Hanging a shower door

THIS OLD HOUSE

Serial Renovator

BY RUSSELL MORASH

Renovation is in my blood. My grandfather was a builder, and my father followed in his footsteps. While I was young, he took on a succession of renovation projects, and we'd move into one place while he fixed it up, then move on to the next when the first sold—over one five-year stretch, we occupied seven houses. During high school, my brother and I shared an unfinished attic: just studs and insulation and 8-penny nails for clothes hooks.

I took up the mantle in 1960, when my wife, Marian, and I paid $15,000 for our first house. At first, it didn't seem as if it needed anything, really—but then we stood back and said, "It's too small, we have to have more space," and "Nobody works in a kitchen like this anymore." And then we were off. New kitchen, new family room, new plumbing and wiring. Soon we were digging out a foundation and putting up a two-story addition. We did it mostly by ourselves (with a little help from Dad) and never had to borrow a dime.

We stayed in that house, constantly remodeling it, for 15 years. But as soon as we got the place really sweet, we sold it and bought a house down the street. Now that was a real fixer-upper. We did everything to it over the next 25 years—and I mean everything.

Yet somehow we squirreled away enough cash to buy a small house at the beach. I reassured Marian that it was in such good shape and had so many things going for it that I wouldn't have to change a thing. That lasted about five minutes. We proceeded to add a new master bedroom, fireplace, kitchen, and guest cottage—and then we took the whole place down and built a new house. I doubt either home will ever truly be finished.

It's a way of life for us, this living in the blueprint. Perhaps because of this, we can sympathize with people undergoing the stress of having their house torn apart by strangers. When workers rip out a counter, it's like they're ripping out your heart. Builders treat things apart while you kill yourself trying to keep the place clean. And at the end of the day some guy walks up to you and says, "I need a check for $713." Still, despite the anguish, you become so dependent on the craftsmen, and on all their great ideas, that you want these capable people to stay forever. When they finally do go, the payoff is that you survived it, you improved the house, and maybe you even increased its value without spending too much money. I like that feeling so much I've literally made a career out of renovation, gardening, and craftsmanship.

Perhaps my taste for moving, building, and rebuilding is a genetic aberration—something slightly off in my DNA. While I hope some day to retire from renovating, if I saw a place tomorrow with a little more land and a nice old building on it with good lines and potential, I'd probably start itching to do it all over again. I'll never learn.

This Old House *executive producer and director Russ Morash has turned the urge to renovate into a career*

PHOTOGRAPH BY DAVID CARMACK

Putting Down Roots

The plot thickens and becomes green with foliage

Ever since the *This Old House* winter project began last December in West Palm Beach, Florida, the already haggard landscape at Rob Thompson's house had suffered the additional insults of construction activity. Workers parked pickup trucks and vans on the scraggly grass, rolled in 20-yard Dumpsters six times (flattening a bougainvillea and a bed of ground cover in the process), and positioned ladders in the shrubbery. Meanwhile, hundreds of pairs of shoes—the boots of tradesmen, the sneakers of TV crew members, and the loafers of curious neighbors—trampled plantings into the dirt.

But as the Dumpsters and backhoes made their exit in the last week of the project, Chas Ward, vice president of Boynton Landscaping, and his crew moved in to surround the house with lush subtropical flora, following landscape architect Jeff Blakely's design. The yard's transformation from barren to beautiful proceeded with remarkable swiftness. One day, for instance, the landscapers worked late, planting bushes and laying sod over the scalped front and side yards. The next morning, as contractors John Kern and Harley Edgell stepped out of their pickup trucks, they paused in the street, amazed by the sight of all the fresh greenery. "It's like when Dorothy wakes up in Oz, and suddenly everything goes from black-and-white to color," says Kern.

Planting a 15-foot foxtail palm tree is a five-man job, and requires equipment more commonly associated with moving refrigerators than with landscaping. A hand truck provides leverage to help position the five trees that will line the pool.

Check out www.thisoldhouse.org for stories about the landscape design and pool installation, as well as a site drawing and plant list.

BY JEFFERSON KOLLE PHOTOGRAPHS BY BRIAN SMITH

"One of the great things about living in Florida is that you can swim year-round," says homeowner Rob Thompson, standing on the back steps of his almost complete house and admiring the 38-foot aquamarine lap pool that occupies most of his backyard.

When he bought the house back in October 2000, this portion of the property was a narrow, overgrown tangle dominated by a large avocado tree. Unfortunately, the glossy-leaved specimen occupied the only spot on the property where he could wedge a pool, so before any construction work started, Rob had the tree removed.

The installation of the concrete pool began early on a February morning, when Scott Curtis, of Royal Palm Pools, fired up his backhoe and started scooping out a 5-foot-deep rectangular hole in the now treeless yard. By lunchtime the hole was done and 90 cubic yards of dirt had been hauled away. "Digging in this sugar sand goes a lot faster than in the rocky soil up north," Curtis explains to his Yankee onlookers.

Curtis and crew assembled a framework of 2x4s along the sides of the hole and sheathed them with ½-inch-thick Thermoply, a hard fiberboard sheathing often used in forms for poured foundations. The bottom needed no 2x4s or Thermoply—the concrete would go directly onto the sand. Then they laid a crisscrossing network of ½-inch rebar alongside the ply and over the bottom of the hole to strengthen the concrete and keep it from cracking. They also stretched lines of piano wire 6 inches from the face of the formwork, one along the top of each wall and one along the bottom.

A few days later, three trucks lumbered into the yard carrying the ingredients for 33½ yards of shotcrete, a concrete designed to be pumped into place through a hose. As a pump groaned and churned at one end of the 3-inch hose, four men standing in the bottom of the hole, aiming the hose's nozzle end like fire

TOP: *Because the soil in West Palm is soft sand, a temporary form work of 2x4s and plywood has to be erected.* LEFT: *Once the concrete hardens and the forms are removed, Stan Kielszek installs a border of 1-inch square aqua glass tiles at the pool's water line. These are applied in 1-foot squares, held together by sticky paper until the thinset hardens.* ABOVE: *The patio around the pool consists of tumbled concrete pavers set on edge over a compacted bed of crushed concrete and sand. An interlocking block retaining wall in the background is topped with cast-concrete coping stones; a similar material caps the edge of the pool.*

To screen the property from the neighbors, landscape contractor Chas Ward erected the 6-foot pressure-treated pine board fence, then hid it behind a line of foxtail palms and podocarpus shrubs, and another of flowering white alder, a ground cover. Homeowner Rob Thompson added the citronella torches and teak patio set.

men dousing a blaze, sprayed the thick stream of wet concrete over the rebar until the mix reached the level of the piano wires. The process continued nonstop for four hot, grueling hours. Then Curtis dragged a 4-foot cutting rod along the piano wires, screeding off the excess concrete. The final forming—shaping the steps and smoothing around the drains and lights—was completed with hand trowels. After curing for two days, the shotcrete was hard enough for the 2x4s and Thermoply to be removed, and for the workers to shovel backfill around it (see "Dip in the Heart of Texas," page 122).

To dress up the pool's walls above the waterline, Rob chose a foot-wide band of 1 inch square glass mosaic tiles, which were stuck to the concrete walls with thinset and then grouted. Below the waterline, he specified Pebbletec, a patented surfacing product made with tumbled pebbles and cement. These were mixed and sprayed onto the interior of the pool, then troweled. After the finish had been allowed to harden for 24 hours, it was bathed with acid and then pressure-washed to expose the rounded stones. "The pebble finish is twice as expensive to apply as cement plaster, but it's supposed to last forever," Rob says. "And I like the textured feel."

No pool would be complete without a patio, Rob's wraps around three sides of the water. "We used pavers made in Quebec from cement and pulverized marble," says Bob Goossens, of Precise Paving. "They're queen-size—2¾ inches by 7¾ inches—and tumbled. Here, we've laid them on their sides. It makes a great look." Goossens's crew set the pavers on a 1-inch layer of sand covering a 4 inch thick layer of firmly tamped, crushed concrete. Once the beds were prepared, setting and fitting the pavers was a two-day job. "You can cut them with a masonry saw, but we like to snap them with a guillotine splitter, the rough edge looks better with the rusticated surfaces." For the perimeter of the pool and the tops of the retaining wall, they used cast-concrete coping stones set in mortar.

Stepping onto his now finished patio and walking around the pool, Rob discussed the appeal of all the masonry surfaces. "The pool, the coping stones, the patio pavers—they all remind me of Tuscany." But the surrounding plant life is strictly Palm Beach. Along the wooden fence, in the narrow bed between the water's edge and Rob's neighbor's home, a row of five foxtail palms, each 15 feet high, stand at attention and provide screening. Planted between them are podocarpus bushes, with their high gloss, dark green needles. A row of hibiscus decorates the far end of the pool; their large showy flowers will bloom almost year round.

> "The pool, the coping stones, the patio pavers—they all remind me of Tuscany."
> —Homeowner Rob Thompson

A warm wind corrugates the pool's surface and rustles the palm fronds. "It's amazing how the trees set the mood," says Rob. "I can almost taste the piña coladas."

PHOTO: ANDREW KAUFMAN

Just to the left of Rob's house as you approach it from the street, a majestic 50-foot-tall, 20-year-old royal palm tree soars above the tile roof. Blakely's design called for another royal to be planted to the right of the property, in the hope that it would eventually grow to match the height of the existing one. But Rob doesn't have to wait for that to happen, thanks to a lucky discovery by *This Old House* producer Bruce Irving. "I was driving a few blocks from Rob's place," Irving recalls, "and I saw a 'For Sale' sign nailed to a 35-foot palm tree. At first I thought it meant the house, and then I realized it was the tree itself." Irving talked to the owner, "Cactus Jack" Thomas, who grows and sells palm trees from his small yard, and $1,200 later, the tree was Rob's. All he had to do was get it home.

That responsibility fell to the Boynton landscaping team. They dug a hole 6 feet deep by 6 feet across in Rob's front yard, and the next day they headed off to pull up the tree. Wielding sharp spades, the crew chopped through the sod and roots 3 feet out from the trunk and cut a 6-foot-deep trench around the tree. Then crew member Joe Ellifon Jr. eased in a front-end loader fitted with a burlap-wrapped boom, and workers hooked it to a soft nylon strap wrapped around the tree. Gently, Ellifon moved the machine forward and back, rocking the palm. Then, he lifted the boom and plucked the 6,000-pound palm out of the ground. As it hung in the air, the crew wrapped burlap around the roots to hold the soil in place en route. Palms are relatively easy to relocate, Ward explains, because there's no taproot and the 6-foot root ball is relatively small for such a tall tree. "It's like a small bundle of wires."

The tree's quarter-mile trip to Rob's house turned into a miniature parade, with Ellifon as the slow-moving parade master carrying a huge baton, followed by shovel-toting workers marching along behind. Ellifon paused now and then to rebalance the load or to dip the fronds under power lines. On arrival at the project site, he waited for the burlap to be removed and the fruit and flowers to be pruned so the tree would direct its energy into growing roots and leaves. Then, with one sure swing of the boom, he straightened the tree up and lowered it neatly into the waiting hole.

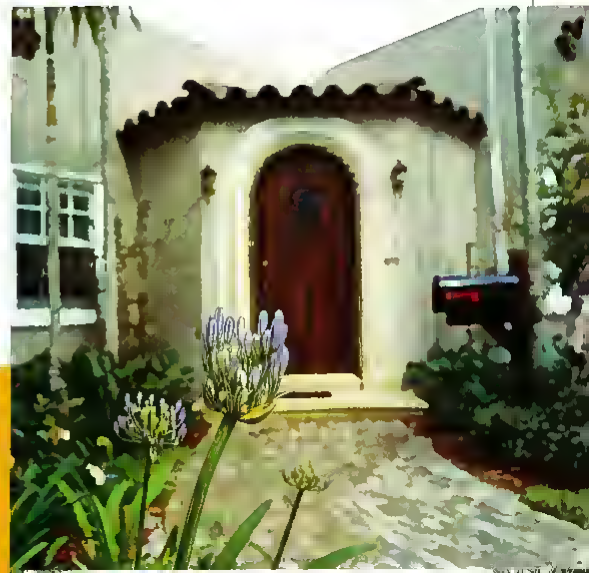
ABOVE: As the project winds down, the site is turned over to the landscapers, who deliver more than 2,000 plant specimens, ranging from 25-foot solitaire palm trees (in truck) to podocarpus shrubs. BELOW LEFT: Solitaire palms are light enough for one person to steady, while other workers position the roots and keep an eye on power lines. BELOW RIGHT: To prevent the white older, Indian hawthorn, and podocarpus (front to back) from drying out while the crew transplants palms, they are temporarily planted along the facade. After they're moved to their permanent locations around the property, this corner will be home to an areca palm.

The shovel brigade fell immediately to work, filling in around the exposed root ball. "Air pockets are a concern with palms," says Ward. "Otherwise the roots won't grow out into the surrounding soil. So, we add water while we backfill and rock the tree." A slow fertilizer and a beneficial fungus were applied to the roots. Finally, workers tied three diagonal braces to the trunk and staked them firmly to the ground. "The braces stay until the roots have a chance to grow out and take hold," says Ward. "We'd hate for it to blow over in the next hurricane."

Ward's landscaping crew then turned its attention to the smaller shrubs and trees that would further define the space. Potted plants had been set around the property in the locations where they would be dug in. And some existing specimens—macho ferns, giant spider lilies, and areca palms—awaited relocation. Unlike the pool area, with its narrow beds and its soldier-straight line of trees, the feeling in the front yard would be more organic—lots of curves and serpentine shapes. "Everything in the backyard is dictated by the edges of the house, the garage, and the rectangular pool," says Blakely. "Out here in front, we have room to open things up a little bit."

The crew dug holes for 20-foot solitaire palms on each side of the front entrance, amending the sand with topsoil, fertilizer, and beneficial fungus before tipping in the tall trees. The delicate fronds shimmered as the workers packed soil tightly against the roots. "The solitaire palms help to define the entryway," says Blakely. "Kind of the same way a cornice molding works in a room."

The planting went quickly, by late afternoon the trees and shrubs were all in, and the landscapers were unloading sod from pallets at the curb. Blakely stood on the sidewalk between the two matching royal palms, arms spread wide. "They give the yard a kind of formal boundary, a balance that it didn't have before," he says. "You see the pair of trees and get the feeling that everything between them is part of the same property." Blakely held up a photo of Rob's front yard taken a few months ago to show the extent of the changes. "Before, all you saw was sky," he says. "Now everything looks grounded."



TOP: The blue buds of lily of the Nile are ready to open as the season warms. Meanwhile, Indian hawthorn and bougainvillea 'Barbara Karst' take root on both sides of the entryway. BOTTOM: Two small trees were planted near the sun porch windows: magnolia 'Little Gem' (to left of house) and Japanese privet (far right) can be enjoyed from both outside and inside.

PHOTOS: ANDREW KAUFMAN

CLOCKWISE FROM TOP LEFT: *The slabs being sliced from the original straight driveway will be ground into chunks for use in new road paving material. A slab saw's diamond blade does the cutting. It's cooled with a spray of water that leaves a thin, gray slurry in the saw's wake. The new driveway's grass center strip means more greenery in the small landscape. By curving out, the driveway allows more planting space next to the building and provides a graceful approach to the backyard.*

On a warm day in March, a small crowd stands on the sidewalk, fingers in their ears. They're watching Steve Wells, of ABC Cutting Contractors, cutting Rob's driveway. Wells, wearing safety glasses and ear muffs, walks behind a 120-horsepower slab saw, a washing machine–size tool with a 2-foot, diamond-encrusted blade that can eat through 10 inches of concrete and rebar in a single pass. Man and machine crisscross the 6-inch-thick driveway with the ease of a knife slicing through warm brownies. The noise is deafening.

As Wells cuts each piece free, Brian Henwood moves in with his Bobcat and, working its forklift blades like a spatula, lifts the chopped-up slabs and carries them to an idling dump truck. In two hours, crew, machines, and noise are gone, leaving behind a bed of fine sand. Hauling away a perfectly good driveway is seldom part of a renovation. But Blakely wanted to give the pavement a different twist—literally. "I've seen old photos of driveways with a grass strip in the middle," he says. "I've wanted to do one for twenty years. Rob's was the perfect opportunity." Rob's old drive, the one Wells hacked to bits, ran dead straight from street to garage. Taking its place will be a pair of serpentine strips separated by a 2-foot-wide grass median.

Early on a Saturday morning, Scott Berry, of Wes Kam Concrete, bobs and weaves around Rob's yard on a Bobcat, establishing the rough grade for the new driveway. Once the area is flat, other crew members use a rotating laser level to set the exact heights for the new driveway's two ribbons of concrete. Pounding grade stakes into the soft sand is easy work. For the form's straight runs, the crew nails 1×4s to the stakes; the curves are made with 4-inch-wide lengths of plastic-coated Thermoply.

It's Wednesday morning when the concrete truck arrives with 20 yards of fiber-reinforced concrete. After the 125-foot driveway and teat parking area are poured, the Wes Kam crew pulls screed boards along the tops of the forms to even out the surface, then smooths the concrete with bull floats. The edges are troweled, and the surface is lightly brushed with a broom to give it a nonskid texture.

Although this was his first such driveway, Blakely has been noticing that the ribbon style is making a comeback in Florida. "But I don't think developers are doing it for historical reasons," he says. "They like it because it reduces materials costs." ■

WHERE TO FIND IT – SEE DIRECTORY – PAGE 108

PHOTO: ANDREW KAUFMAN (LEFT)

seachange

A '70s ranch is transformed into the quintessential waterfront cottage

The homeowners kept the basic footprint of the original three-bedroom, two-bath ranch house (TOP RIGHT, BEFORE). By raising the roof (TOP RIGHT, DURING), they accommodated a second story that provided them with two more bedrooms and baths. The result: this timeless, yet cozy, shingled summer cottage.

BY CLAIRE WHITCOMB

PHOTOGRAPHS BY JOSHUA MCHUGH OF BETH MARY SCOTT HINES

There it was—down a dirt road, through a cornfield, and at the end of a winding drive—perched high above the sea, a ranch house so predictably 1970s that realtors sometimes didn't bother to take their clients inside. But Nancy Butkus and David Auchincloss were undeterred by the house's dull brown exterior. They were also unfazed by the cookie cutter floor plan inside—three boxy bedrooms, a prosaic cathedral-ceilinged living room, and a drab rec room in the basement. The couple could ignore the drawbacks because of the view. Out the back window, the house overlooked an endless expanse of Long Island Sound.

For ten years Nancy, an art director, and David, a media executive, had sought relief from Manhattan summers in a hundred-year-old farmhouse on the north fork of Long Island. But when they discovered that an open field nearby would soon become a housing development, they decided to look at properties a little farther east, only five miles away, where the towns still retained their rural character.

This ranch house caught the couple's imagination immediately. With its seven wooded acres, it offered seclusion along with the waterfront setting. The house could be remodeled to their taste—even gutted, if need be—and given a second story to provide plenty of room for them and their daughters, Annie, now 10, and Nell, 7. Nancy quickly sketched the structure as she imagined it transformed, adding a second story with dormers and an old-fashioned porch across the back to take advantage of the view. She envisioned a shingled house, she says, "because it's very practical on the water, where it gets battered by high winds and salt spray. Cedar shingles weather well and wear well." So they went ahead

To maximize the light, the living room was given a 9½-foot ceiling (BELOW, DURING) *and a large bay window.*

and bought the place in the early spring of 1998, then turned to a friend—a fellow parent at their daughter's nursery school—architect Terry Atkin, of Atkin Kramer Architects in Manhattan, to make their dream a reality.

When classes let out in June, the two families and their kids headed out to look the project over. Nancy's vision was clear: a vernacular cottage that "did not look designed at all," Atkin says. They met with a local contractor, Mark Boeckman, who is known for his work on shingle-style houses. While the little girls played, the grown-ups brainstormed, and Nancy's sketch acquired a few changes. They first figured out that the stairs to the second story should go in the dining area just beyond the entry. Nancy imagined a water-view master bedroom upstairs, along with a big room for the two girls to share. "Initially, David and I thought we could get away with only one bath upstairs, but Terry talked us into a separate one for the girls," says Nancy. "We realized that when they become teenagers, we probably won't want to share with them." The couple wanted to keep the existing bedrooms and baths downstairs as private guest quarters for David's two grown children.

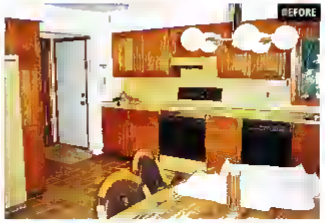
Perhaps the most dramatic change to the structure involved the back porch. The existing house had a truncated, rustic deck. "I felt it ought to be extended," says Atkin. And she thought it should wrap around the corner, leading to a screened-in porch adjacent to the kitchen.

With the plan refined, everyone headed back to New York, and Atkin sat down at her drafting table with the original blueprints of the house, which Nancy had obtained from the previous owner. Not having to draw them from scratch "saved time and money," she explains.

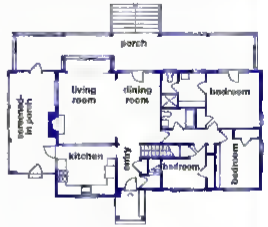
In thinking through the details of the renovation, Atkin was guided by Nancy and David's lifestyle and sensibility. A jeans-and-khakis couple who favor casual entertaining, they liked the small scale of the place and how it hunkered down on the land. The architect wanted to preserve that unpretentiousness yet provide the family with the comfort they desired.

For example, Atkin used the steep

before/first floor



after/first floor



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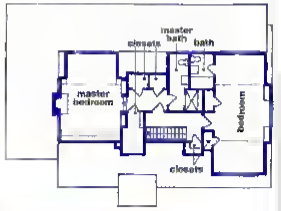


PLANS *The homeowners kept the three first-floor bedrooms of the original house* (TOP LEFT) *for guests.* RIGHT: *They reconfigured the kitchen, living and dining rooms, and added two bedrooms and baths upstairs.*

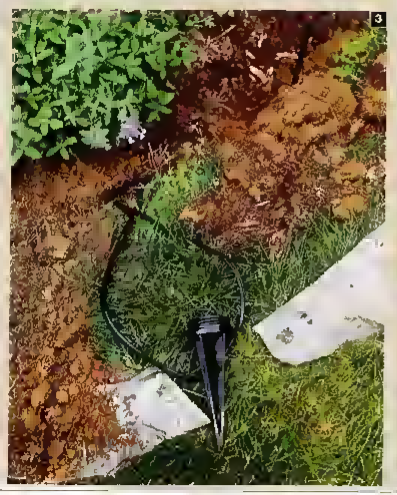
The dated harvest-gold kitchen (ABOVE, BEFORE) *took on a new look with custom-made farmhouse-style open shelving for storing dinnerware.*


1

When the time came to design the landscape lighting for her Long Island summer home, Nancy Butkus was momentarily stymied. "I'd seen plenty of examples of what I didn't want—that glaring, floodlit effect right off the Vegas strip—but few of what I did want," she says. But her discerning art director's eye eventually focused on a plan that would be both functional and discreet.


2

Three small spotlights along the driveway (OPPOSITE PAGE) light the way for visitors without turning it into a runway. Another pair of spots in back straddle the path to the pool, which lies 50 yards from the house. "You can't mix cocktails by them, but they keep my kids from wandering off into the woods at night," says Nancy. For these, installer Jim Sage tapped into the 120-volt main line from a poolside electrical panel and ran 12-2 UF (underground feeder) cable to the fixtures, burying the cable 15 inches below grade, according to code, to keep it from becoming exposed.


3


4

The house itself is subtly illuminated by four 2-foot lanterns installed along the wraparound garden bed to the left of the entrance. For these fixtures, Sage and Ed Loper Jr. used low-voltage lighting. Lower installation and energy costs make it about 20 percent cheaper than high-voltage main-line installation. (1) Loper began in the basement, installing a 250-watt step-down transformer that converts the main line from 120-volt AC to 12-volt DC, the same mild current used to power children's toy trains. (2) He fed 12-gauge exterior-grade cable through a hole he drilled in the sill that runs along the top of the foundation wall, which he covered with a metal sill plate, then laid it in trenches dug 6 inches deep in the flower beds. A total of 100 feet was required. (3) Where each of the lanterns would go, Loper hand-looped the cable through 6-inch plastic stakes fitted with "connectors," small clamps with pierce-point teeth that penetrate the cable insulation, tapping into the current and, thus, eliminating the need for cutting and splicing. (4) After he planted the stakes in the soil, leaving the exterior threads above ground, he screwed in the metal-and-glass fixtures, each fitted with a 20-watt halogen bulb.

Sage also would have preferred low-voltage wiring for lighting the driveway, the path to the pool, and around the pool itself. But given the distance between the fixtures, the voltage drop—the decrease in power that becomes more pronounced the farther a fixture gets from its original power source—would have been too severe. "With anything more than 200 feet of cable, it isn't really an option," he says. This job required more than 1,000 feet.

Controls for the low-voltage lanterns and the high-voltage spotlights are inside the front entrance by the door. The high-voltage lights can also be switched on and off at poolside. The controls for the high-voltage lighting work by means of a built-in remote switching device, which sends high frequency signals along the AC circuit to receptor modules installed at the pool panel, and even allows Nancy to activate them via a key chain remote.

—Dan DiClerico

pitch of the new roof—its cedar shingled expanse broken only by the dormer of the girls' room—to camouflage the spaciousness of the second story along the front of the house. However, out back, where the land sloped down to a cliff overlooking the beach, the house threatened to appear overwhelming with its three-story stretch grandly revealed from basement to roof.

To diminish the scale of the building on that side, Nancy's sketch had called for regrading the land so it would be less steep and would hug the structure more closely. Since the basement would be used for storage, not living, there was no need for outdoor access. Atkin suggested that its sliding glass doors be replaced with a high window and that the grade be brought up to just below the window line. Then the basement and the porch supports would be hidden with a series of 1x6 vertical cedar boards.

Atkin wanted to keep the porch simple, yet give it visual impact. She designed it with square columns and a crisscross-patterned railing. The screened-in area is a generous 24 feet wide by 11 feet deep, and has become the family's outdoor living and dining room, furnished with a sofa, table, and chairs.

Inside, Atkin transformed the living and dining areas into a lighter, airier space, visually separated by a large framed opening. Originally, the living room had a cathedral ceiling, and the adjacent dining room a standard 8-foot ceiling. Because the renovation retained the basic structure of the existing bedrooms and dining area, those ceiling heights would remain the same. However, Atkin says, "since the living room ceiling would be new, to allow for a bedroom above, we made it taller—nine and a half feet, with exposed joists."

To bring more light into the living room, she employed an idea Nancy had included on her original sketch: a 7-foot-high bay window. Jutting into the porch, the 12-foot-wide-by-3½-foot deep alcove offers just enough space for a sofa.

The existing rear deck (LEFT, TOP) *was rebuilt as a porch that wraps around one side of the now two-story house* (LEFT, MIDDLE); *the ground was regraded to lessen the structure's apparent height from the back. A series of vertical planks hide the basement and the porch supports* (LEFT, BOTTOM)

Throughout the house, painted single-panel doors and crown and baseboard moldings provide traditional touches. In the living room, the dingy stone-veneered fireplace was rebuilt to accommodate a new furnace flue, necessitated by a switch from electric baseboard heating to an oil-burning forced air system. The fireplace was finished with a simple, painted poplar mantel, and a similar one was made for the fireplace in the master bedroom upstairs.

Though most of the design process proceeded amicably, the couple did differ on at least one point. "David and I couldn't agree on the kitchen," says Nancy. "He does all the cooking, and he wanted a completely open space." Nancy wanted the kitchen to be separate, closed off from the living room. Since an open plan would allow for a view straight through the living room and out the large bay window onto the water, David had a strong argument in his favor.

Atkin resolved their differences brilliantly. To separate the kitchen and living room, she created a 4½-foot-high wall topped with four 3 foot-tall divided light windows, set on a track like sliding doors. The windows can be opened for a party or closed when the girls are having dinner in the kitchen. A door links the kitchen and the screened porch.

Outfitting the kitchen was a snap, since the couple wanted to replicate the look of the one they had had in their farmhouse. "I like open shelving," says Nancy. "Cupboards take up too much space and enclose the room. Besides, we go to lots of yard sales and pick up a lot of great dishes there. I enjoy looking at them." Atkin designed a combination bracket-and shelf unit of painted poplar, with a lip running along the front edge of each shelf. On the lowest shelf, this lip conceals an undermount light. Counters are topped with white laminate and edged in aluminum, a feature borrowed from diners, to hide the black edge where two pieces of laminate are joined. For the backsplashes, Atkin continued the V groove 1x6 paneling that lines the room.

Throughout, the original red-oak floorboards were finished with a combination of ebony and mahogany stains. "I've always liked dark wood floors," Nancy says. "They have a nice cooling effect on a hot day." The rest of the color palette is simple and soothing. The kitchen and bathrooms are white; the girls' room is pale pink, the master bedroom, a pale celadon. Perhaps the boldest color is the one in the living and dining rooms: a strong but subtle blue-green that brings the feeling of the outdoors inside. "I knew I wanted a color that reflected the sea," says Nancy. "After all, this is a house that's oriented to the water." ■

WHERE TO FIND IT – SEE DIRECTORY – PAGE 138

"Unless a porch is fully enclosed, treat it as you would an open deck. Spacers between the porch and the wall will prevent rot by creating an air gap. And it's always a good idea to pitch the structure slightly away from the house."

– STEVA

Al fresco dining is only one of the pleasures afforded by a generous 800-square-foot deck equipped with a kitchen and fireplace.

STYLED BY MARINA KELLER

afulldeck

An L.A. family gives their Shingle Style house an open-air room they can enjoy year-round

Whether it's a flagstone patio by a pool, a redwood deck in the backyard, or a lushly landscaped brick terrace, in warm weather an outdoor space can become the heart of a home. So when a couple with two young boys left winters behind and moved to the endless summer of Los Angeles, they were determined that the place they would live would provide plenty of room for the kids to romp, the adults to grill, and friends to socialize.

The couple turned to architects Brian Tichenor and Raun Thorp, principals of the Beverly Hills architecture and landscape firm Tichenor & Thorp Architects, to design their house and its outdoor family room, an 800-square-foot deck just off the den and kitchen. "It's a modified Shingle Style house," says Tichenor. "Very traditional on the outside, hip and modern inside." The 7,000-square-foot residence sits on a distinctive one-acre lot. "The backyard slopes steeply to an oak forest, with a view of the Getty Museum," says Tichenor, who decided to site the deck near a spectacular *Tipuana tipu* tree. "It's a specimen tree and it is the single best element on the property," declares the firm's garden designer, Myva Newman.

BY JILL CONNORS PHOTOGRAPHS BY DAVID ALBANESE

To support the deck's 300-square-foot expanse (ABOVE, LEFT), *which sits 30 inches aboveground, the crew poured perimeter foundation walls along three sides and lag-bolted a ledger board to the floor framing of the family room. Six 4x4 wood posts on concrete piers stabilize the substructure of 2x10 joists over 4x8 beams. One crew member* (TOP RIGHT) *mortar-sets bricks to create the fireplace's firebox. The finished fireplace* (BOTTOM RIGHT) *is covered in thinset ½-inch brick veneer; custom-cut bluestone completes the outer hearth, providing a warm perch on a chilly evening.*

"We wanted an extension of our indoor family room, a place where we could sit out and enjoy the big tree and the beautiful weather," says the wife. Three pairs of French doors open onto the deck, which is an indestructible playroom for her 6- and 8-year old boys, not to mention the Labrador and the German shepherd. "I can have lots of kids out there and not get too worried about it," she says, laughing.

To maximize the amount of time they can spend outdoors, the family specified that the house include an outdoor kitchen and fireplace. These are built against a 10½ foot high, 20-foot-long free-standing wall with its own foundation that abuts one end of the deck. It is made of cinder block finished with a brick veneer and a solid brick cap. A 10-foot-long cooking area installed along the wall contains a stainless steel sink and a barbecue grill set into a honed Appalachian bluestone counter. The homeowners decided against including an outdoor refrigerator because the house's kitchen is easily accessible. "I use a rolling cart or just carry the things I need out there," the wife says. The 13-foot-high fireplace to the right of the cooking area provides ambience as well as warmth. "It quickly cools off to fifty degrees here in the evening in spring and fall," says Tichenor, "so the fireplace actually extends the use of the deck by a couple of hours."

The homeowners chose dark decking to echo the stained walnut floors in the adjacent family room. Although they originally considered using redwood, their contractor suggested another option. "Redwood is soft, and when marred it will show the interior of the wood, which is not dark," explains general contractor Eric Hinds, of Estrin-Hinds Construction Company. "So I did some research and found a strong, durable Brazilian hardwood called ipe." (While some are concerned that this hardwood may become endangered, many brands are sold as "certified" by the Forest Stewardship Council, meaning that the wood has been responsibly grown and harvested.)

A 36-inch two-tier gas grill with a retractable hood is the centerpiece of the outdoor kitchen. Stainless steel doors on the face of the brick unit hide storage space for barbecue utensils and other items. Beneath the sink is an open area designed to house additional firewood. A worker (BELOW, LEFT) *prepares a mortar bed for the bluestone countertop. The 18-by-20-inch stainless steel sink* (BELOW, RIGHT) *is epoxy-set into place. Later the unit will be hooked up to water lines installed for the outdoor kitchen when the house was built.*

To stain the deck, a worker preps the wood (TOP LEFT) *with a random orbital sander. The finish was applied with rollers* (RIGHT), *allowed to set for 30 seconds, then wiped off with cotton rags* (BOTTOM LEFT) *and allowed to dry overnight. The process was repeated four times.*

Switching from redwood to ipe meant not only a more durable deck for the family, but an additional challenge for their team of contractors. "Our original drawings called for 2x6 redwood deck boards framed by 2x10 bands, but the ipe we used comes in 1x6s and 1x4s," says Hinds. So he reworked the plans and brought in Chris Murray, of CM Construction, to help execute them accurately.

Given ipe's hardness, instead of smoothing the deck boards with handheld sanders on site, Murray had them professionally drum-sanded at a nearby door manufacturing facility. Once at the house, he applied an initial coat of wood stain to them. The crew assembled the deck using a special system of metal clips that attaches the boards to the joists from below, so that there are no exposed nailheads, and automatically spaces the boards at ⅛-inch intervals. He and his crew then did a finish sanding to prep the wood for the stain. To create the color, the wood was stained with an oil-based finish of sable tint to which black pigment had been added.

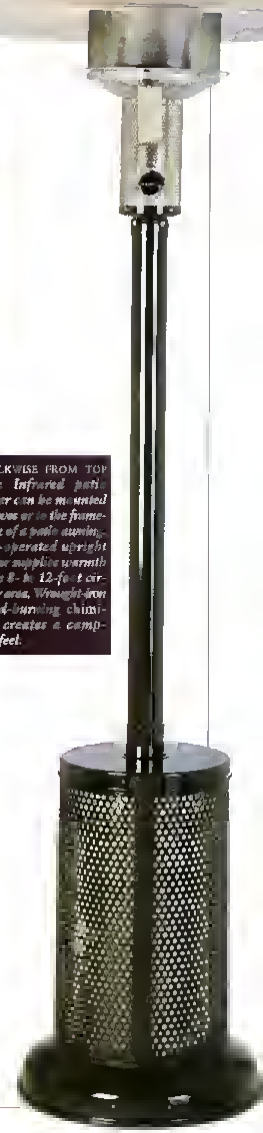
The deck has all the comforts of home. It's furnished with chairs that have the look of wicker but are woven of a resilient resin that resists sun deterioration and can be sprayed clean with a garden hose. An outdoor stereo system provides music, and phone hookups offer convenience.

It does, however, lack one element of an interior of a room: a ceiling. The couple intentionally left the space open to the elements. "The big tree is so beautiful overhead, and we love to look up through it to the stars," says the wife. "This is Los Angeles, after all."

In many areas of the country, the issue facing homeowners creating or expanding an outdoor living space is: How can we stretch its usefulness into the chillier seasons and squeeze every last minute out of each day in comfort? The solution is a patio heater, a device originally marketed to restaurateurs who wanted to extend their outdoor dining season. It radiates heat up to 12 feet away and can elevate the temperature of the surrounding area 15 to 20 degrees. The heater, which stands almost eight feet high, is fueled by propane gas that can either be supplied from an in-ground or aboveground tank or from a smaller cylinder attached to the unit, allowing it to be easily moved from place to place. Each cylinder will fuel from six to ten hours of use. The heat comes from an infrared radiant heating element; the umbrella top directs the warmth to the surrounding area. Safety features include a push-button ignition and a switch that automatically shuts the unit off if the pilot light goes out.

An alternative to the umbrella style is a slender, lozenge stainless steel space heater that mounts to the wall or ceiling at an angle on struts installed for spacing. It requires clearance of at least ten inches from any nonfire-resistant surface, and must be hung at least eight feet above the floor. A wall-mounted switch turns the unit on and off. This type of heater generally provides more heat than an umbrella-style unit.

For a wood-burning alternative to mechanical heaters, consider a *chiminea*. Originally used in Mexico as bread ovens, these wood-burning outdoor fireplaces bring light and warmth to decks and patios.



CLOCKWISE FROM TOP LEFT: *Infrared patio heater can be mounted to eaves or to the framework of a patio awning. Gas-operated upright heater supplies warmth to an 8- to 12-foot circular area. Wrought-iron wood-burning chiminea creates a campfire feel.*

DIP in the HEART of TEXAS

Folks in Texas have turned their stock pools into pools to look like a natural swimming hole

BY JEANNIE RALSTON

Until last spring, the most exciting thing to have ever happened to the stone cistern beside our central Texas home was to have a pregnant guest throw off her clothes during our housewarming party five years ago and go skinny-dipping in it—in broad daylight. From 1937, when it was built, until my husband, Robb Kendrick, and I bought the Hill Country ranch where it sits, the 5-foot-deep vessel had functioned as a water-storage tank for the cows that roamed the pastureland. Since we decided to forgo cattle-ranching, the cistern served little purpose after we purchased the place. It normally stayed filled with rainwater, surrounded by weeds.

What we really wanted—and what our friend's daring dip demonstrated that we needed in this hot climate—was a pool, one that blended with the rolling, rocky landscape and resembled a certain swimming hole in the creek on our property, half a mile from our house. It's fed by water that cascades down a limestone outcropping and is a shimmering green. We also wanted to create a pool that makes sense environmentally in this drought-prone part of the country. As it turned out, our stone cistern found new life as a practical and picturesque part of a new poolscape, storing rainwater to help fill the pool.

PHOTOGRAPHS BY ROBB KENDRICK

The pool design mimics a natural stone rock outcropping along a creek nearby. The sound of the water trickling down the rocks makes lollygagging on a float even more relaxing.

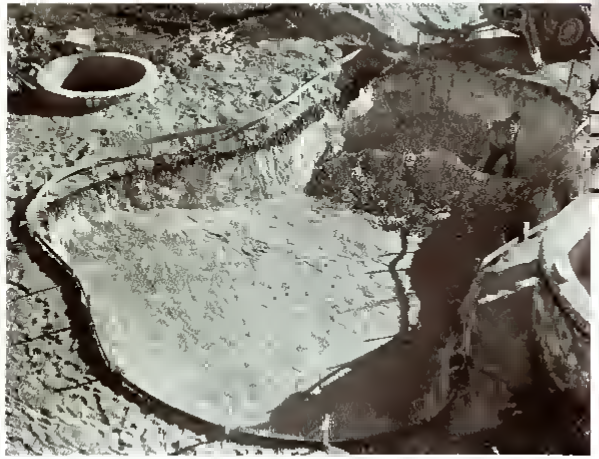
The first step toward shaping the pool of our dreams was finding a contractor who could understand our notions—not an easy task. We spoke to sales reps at several reputable pool companies but came away feeling that we would just get model number 103 plopped down on our spot, rather than something truly custom-designed for us. Then we found a small pool company out of San Antonio called Laden Pools. The owner of the company, Rick Laden, is also the salesperson and the designer. He grew up in the business, his father having started the company 48 years ago, and he was excited about creating something different.

To spark ideas, we showed Laden pictures of the swimming hole. He looked at the terracelike stone waterfall and said he knew just what we had in mind. He could build us a pool with a limestone deck and steps, and water the tranquil blue-green of the rivers and streams here. He would also provide a detailed drawing and a cost estimate before we had to sign any papers committing to the project.

Since a natural look was key, we decided to go with an irregularly shaped pool that would echo the curves of both the cistern and a nearby cattle trough that its water once emptied into. The pool would be placed in between the two vessels, and the trough would become a garden planter. Other pool companies had a book of standard "irregular" pool shapes to pick from, but ours came from no such preconceived notions. At Laden's urging, we simply went to the site with stakes and twine and marked off a rough profile of the shape, something like a guitar body. Then we climbed the old windmill (once used to pump the well) for an aerial view before the digging began.

Laden made several recommendations that improved upon our vision of the pool. He suggested that we tie it in with the cistern by creating a 4-foot-high limestone waterfall between the two that would simulate the way the stream feeds our natural swimming hole. It would be fed with water recycled from the pool and piped to the top of the rocks so that it would appear to be coming out of the cistern. And he proposed adding an underwater bench, placed so we could sit in the pool and get splashed by the falling water.

Laden also suggested a "swim out." Gone are the days when swimmers would hoist themselves out of the water on a ladder. Now, pool companies are making a small ledge that people can swim to, stand up on (made easier by the buoyancy of being in the water), and step out of the pool from gracefully. We put one of these in the deep end, next to the diving board (which my husband, a great diver and flipper from way back, insisted upon having).



TOP: *A worker excavated the staked-out pool shape using a backhoe, which made quick work of removing some 150 tons of soil.* ABOVE: *But the machine became useless when it hit rock about 7 feet down, and a hydraulic trailer-mounted jackhammer was brought on-site.*

In front of the diving board we had to make the pool at least 9½ feet deep to conform to safety regulations. Excavating that far down was a little worrisome, since we live in extremely rocky terrain. When the contractor came up with his estimate, he added a $3,200 allowance in case he hit rock, how much of that would be spent depended on how much rock he encountered. Luckily, the backhoe didn't reach stone until only 18 inches of depth remained to dig out of the deep end, which meant we were only charged $850 for jackhammering.

Once the 22-by-39-foot hole was complete, I became a little anxious. I had heard that pool contractors will often leave clients hanging at this point as they finish other jobs (you can't easily back out then, the logic goes). "Nobody I know has ever had a good experience putting in a pool," my sister had warned. Fortunately, the day after the backhoe left the job site, Laden's crew returned to put pipe connections into the walls for the skimmers (which draw water from the pool into the filtering system), the returns (which send the water back into the pool), and the drain (which connects to the pump and empties the pool for maintenance).

ABOVE: *A grid of number 3 rebar would provide the structural rib cage of the pool's shell.* LEFT: *The concrete that formed the walls went on like spray paint, though the process was deafeningly loud because of the monstrous diesel compressor mounted on a truck.*

The next step was installing a length of ½ inch rebar every 7 inches along the pool's length and width. This latticework of steel would give the concrete its resistance to cracking. Laying in the rebar was a painstaking process that took two days. Workers cut each piece with 40-inch bolt cutters, bent it to the profile of the pool with their hands, then lashed it to its neighbors at every intersection with steel bar ties, similar to short lengths of baling wire.

For the next step, Laden brought in a subcontractor, Builder's Gunite, to spray concrete onto the steel grid. Years ago, in ground pools were made out of poured concrete or concrete blocks. Then, in the '50s, pool companies began shooting concrete through a nozzle so that they could do away with the staid, rectangular pool shapes that poured or block concrete necessitated. This sprayable concrete, called shotcrete (Gunite is one brand), is pumped under pressure from a cement truck to a spray nozzle, and in the case of the product that we chose, it's pumped dry, with the moisture added just as it passes through the nozzle.

The application was a sight to behold. Nine workers arrived before dawn, employing giant halogen spotlights to illuminate their workspace. They set up a mixing vat beside a truck containing two bays, one of sand and the other of cement. A separate compressor truck

was connected to the vat and the spray nozzle by a 600-foot hose. Water was provided by a garden hose running from the cistern.

The troupe all wore rubber boots, and the crewman who appeared to be strongest began operating the jerking, unruly hose—akin to wrestling a noisy anaconda. Starting at the bottom of the walls and spiraling up to the top, he sprayed the shotcrete onto the rebar grid. Others followed closely behind, hand troweling the surface to create the desired 6-inch thickness and remove air pockets.

TOP: *The masons carefully chose—or used a hammer to break—each stone to fit in with those around it, as if putting together a puzzle.* ABOVE: *A coat of plaster was the final step, tinting it gray instead of the standard white darkened the water's natural color.*

The most interesting step was the creation of the benches and the stairs. No rebar framework was needed to make these, since the shotcrete can adhere to itself and sets up in 60 minutes (and such a framework would be time consuming and cumbersome to make); the sprayer merely dumped large amounts of shotcrete into place, then the trowel man, trailing behind him, shaped the bench. To form the stairs, the sprayer deposited globs of shotcrete in wedding-cakelike tiers, which were again molded by the "sculptor." Finally, the shotcrete team turned its attention to the pool bottom, working from the deep end to the shallow end.

By the next day, the shotcrete had hardened enough so that Laden's team could return to install the skimmer (built into the patio at the edge of the pool) as well as the filter and pump (hidden behind a stone wall). They made the connections with Schedule 40 PVC piping, which is rated for underground use.

The sand filter uses regular beach sand to trap particles as small as 20 microns, such as dust. We chose this filter because it is inexpensive and requires the least maintenance. It only needs back washing (done with a flick of a button) every two or three weeks. The two other filter options use either a cartridge (which requires frequent hosing off and replacement every nine months) or what's called diatomaceous earth, a soft, chalky substance made up of fossilized shells. This filter removes the finest particles, but it's more expensive, and the owner must replace the earth and clean the filter element frequently. We liked the idea of making the pool as easy to maintain as possible.

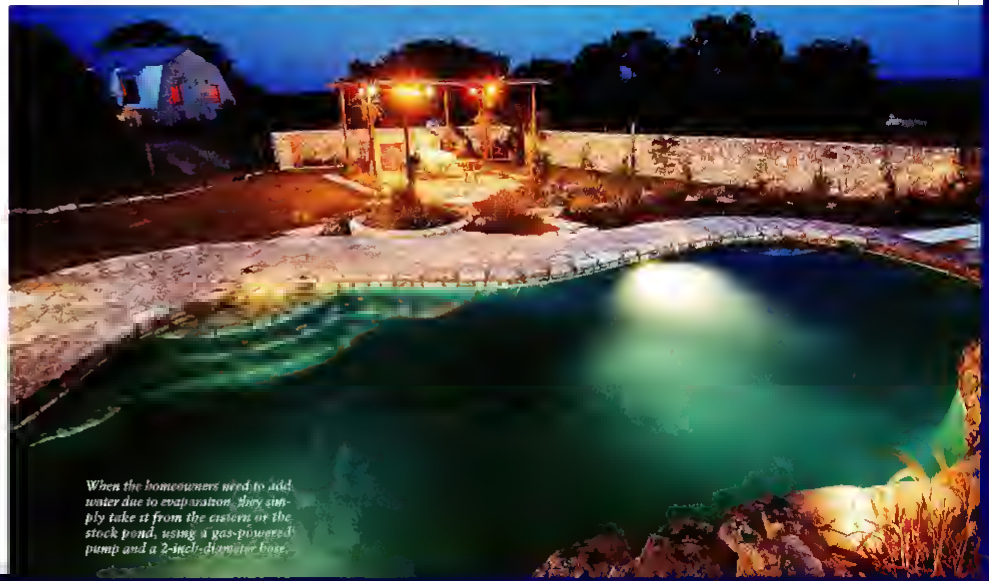
With the pipes in and the earth backfilled against the concrete pool walls, we were ready for the rock work. To enhance the swimming hole effect of the limestone deck, we used the same material on the coping around the pool's edge, the pool walls above the waterline, and on the stairs, benches, and swim-out. Much of the rock came from our creek bed and had already been smoothed by years of rushing water. We had scavenged our property for weeks looking for large, flat stones no thicker than 1½ inches. Laden's guys poured a concrete pad for the deck, then pieced together the paving. The stones on the stairs, the benches, and the sides of the pool were laid directly on the shotcrete, and the spaces between them were filled with gray mortar. The waterfall required limestone boulders, wrestled into place with the help of many hands and given an artfully haphazard look, to conceal all the pipes and valves that feed it.

Besides limestone, one of the other spectacular features of the Hill Country is the soothing, deep aqua color of the water in the rivers. With that in mind, we didn't want the look of a Las Vegas hotel pool. The color of the water, we learned, depends upon the color of the plaster that's laid over the shotcrete—the final step in a six-week process. Since clean water has a naturally blue cast, white plaster yields the standard turquoise we associate with swimming pools. We suspected that Laden would use a green tint to create the natural blue-green look we wanted and were a bit skeptical when he told us he'd be using a light gray plaster. But by that point, he'd won our trust completely.

His crew returned to spread a ¾-inch-thick layer of colored plaster over the shotcrete, using trowels. Then they immediately filled up the pool, since the plaster cures better—without any cracking—underwater. Most of the water was pumped through a 2-inch hose from an existing stock pond nearby; two 6,000-gallon loads were trucked in. As the water crept up the sides during the 10 hours it took to fill, the pool turned a sparkling green-blue, making it look like a deep spot in the nearby Blanco River instead of anything man- and machine-made.

Filling the pool required some 27,000 gallons of water, and since we live in Texas, using this much of a precious resource for pleasure alone was a bit guilt inducing. From the beginning, Robb refused to build a pool unless we could come up with a system to store water to keep it filled, so we wouldn't tax the groundwater. As a solution, Robb designed a "rain guzzler," a 40-by-80-foot structure with a V-shaped roof, raised 3 feet off the ground. The two sides gently slope to the middle, where a gutter collects the rainwater. (With 3,200 square feet of roof surface, we capture 2,000 gallons for every inch of rainfall.) The contraption is screened by trees and sends its water via underground pipes to our storage system—the 6,000-gallon cistern and an existing stock pond that we had expanded to 250,000 gallons for the purpose. A polyethylene liner on the pond bottom keeps the water free of mud and prevents it from seeping into the ground.

So we have a pool that's not only natural-looking, it's nature-friendly. And that makes us feel good when we swim—or skinny-dip—in it. What can I say? We're big on all kinds of naturalness. ■



When the homeowners need to add water due to evaporation, they simply take it from the cistern or the stock pond, using a gas-powered pump and a 2-inch-diameter hose.

Vines

BY LIZ BALL

Vines are plants on the go. Vertically inclined and born to run, they bridge the gap between earth and sky with color, pattern, and texture as they soften the hardscape features of a property. Whether they're energetic annuals or slower-growing perennials, vines enliven a landscape, trellis, or pergola with their lush greenery. Flowers, berries, or seed pods add another layer of intrigue.

Vines are among nature's best scenic designers. Growing up a fence or wall, they provide a verdant backdrop for flower borders in the garden. Properly coaxed up poles or other tall structural elements, they can even visually substitute for trees. They can give a lift to a plain-Jane structure or disguise an architectural flaw, and lightweight vines can be used to hide unsightly necessities such as electric meters and gutter downspouts.

These rangy plants can even make you more comfortable. Deciduous vines offer climate control: In summer, their leaves will cover walls or a lattice set against a house and block unwanted reflected heat. After the leaves drop, welcome warmth penetrates the spaces between their stems. A vine trained to entwine a pergola, like the wisteria shown here, can filter bright light, provide privacy, and muffle neighborhood noise.

With their myriad uses and varied good looks, well-chosen vines can bring a landscape to new heights.

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ILLUSTRATIONS BY RODICA PRATO

This Old House CLIMBERS

Sweet Potato Vine
(*Ipomoea batatas* 'Blackie')
Annual (in the North) trailer that grows up to 20 feet
Blooms in summer. Needs full sun; hardy in zones 9 to 11
Flowers. *Inconspicuous, trumpet-shaped, lavender*
Foliage. *Glossy, purplish black, deeply cut, 3-lobed on fleshy purple stems*

Moonflower
(*Ipomoea alba*)
Annual (in the North) twiner that grows up to 15 feet. Blooms summer to frost. Needs sun or partial shade; hardy in zones 9 to 11
Flowers. *Unfurl in late afternoon for night bloom. Each blossom lasts only one day. Fragrant, trumpet-shaped, luminous white, 5 to 5½ inches across*
Foliage. *Rich green, round or heart shaped leaves*

Carolina Jasmine
(*Gelsemium sempervirens*)
Perennial twiner that grows 10 to 20 feet. Blooms spring and summer. Needs full or partial sun, hardy in zones 7 to 9
Flowers. *Fragrant, trumpet shaped, up to 1½ inches long, pale to deep yellow with orange throats*
Foliage. *Glossy green, lance shaped leaves, 2 inches long. Evergreen*

Climbing Hydrangea
(*Hydrangea anomala petiolaris*)
Perennial climber that grows up to 50 feet. Blooms for 4 to 6 weeks in late spring. Rough, peeling bark on stems provides winter interest. Needs full sun, hardy in zones 4 to 9
Flowers. *Fragrant white lacecap, 6 to 10 inches across*
Foliage. *Green, sometimes yellow in fall, finely toothed, heart-shaped leaves, up to 4½ inches long. Deciduous*

Clematis Montana
(*Clematis montana rubens*)
Perennial twiner that grows up to 30 feet. Blooms May to June for up to 4 weeks. Needs sun or light shade, hardy in zones 6 to 9
Flowers. *4 pink petals, 2 inches across*
Foliage. *Green leaves, tinged with purple. Deciduous*

Kiwi Vine
(*Actinidia kolomikta*)
Perennial twiner that grows up to 25 feet. Blooms late spring, early summer. Needs full sun or partial shade, hardy in zones 5 to 8.
Flowers. *Produces tiny white blooms, but grown primarily for foliage. Inch long, yellow-green edible fruits ripen on female vines in the fall*
Foliage. *Green leaves with pink and white splashes on tips, to 6 inches long. Deciduous.*

Cardinal Climber
(*Ipomoea x multifida*)
Annual twiner that grows 3 to 6 feet. Blooms summer to frost. Prefers full sun but will tolerate partial shade
Flowers. *Fragrant, trumpet-shaped, scarlet with white throat. Attract hummingbirds*
Foliage. *Green, deeply lobed, broadly triangular leaves, 1½ to 5 inches long*

Bougainvillea
(*Bougainvillea glabra*)
Perennial twiner that grows 15 to 25 feet. Blooms summer to frost. Needs full sun, hardy in zones 9 to 11
Flowers. *Three petal like pink, crimson, magenta, purple, or bronze bracts surround tiny white florets that form in clusters at tips of stems*
Foliage. *Green or variegated, heart shaped leaves, 3 inches long, on thick, woody, sometimes thorned stems. Evergreen.*

Hyacinth Bean
(*Lablab/Dolichos purpureus*)
Annual twiner that grows 6 to 20 feet. Blooms midsummer to frost. Needs full sun
Flowers. *Small, scented, pinkish purple, pea like, on an 8 to 10 inch upright stem. Shiny, flat purple pods appear with flowers, self sows seeds*
Foliage. *Dark green, tinged with purple. Triangular leaves, 3 inches long, in threes on purplish stems*

Dutchman's Pipe
(*Aristolochia macrophylla*)
Perennial twiner that grows 25 to 30 feet. Blooms May and June. Needs full sun or partial shade, hardy in zones 5 to 8.
Flowers: *Meerschaum pipe–shaped, but inconspicuous, greenish with purple, yellow, and brown mottling*
Foliage. *Dark green above, paler below, broad, dramatic, heart shaped leaves, 4 to 12 inches long. Deciduous.*

Upwardly Mobile

Every vine has the same destiny: to extend itself far and wide. To accomplish this, many vines are equipped with remarkably efficient tools that enable them to use other plants or structures, to support them in their quest. Vines look their best when they are properly trained to a support that will bear their mature weight and accommodate their growing habits, while allowing them to display their flowers and foliage to the greatest advantage. Since annuals live out their brief lives in only a season, they are fast-growing and prolific. They are typically lighter in weight than perennial vines, which develop increasingly thick, woody stems over the years. **TWINERS (1)** such as the annuals morning glory and hyacinth bean readily wrap their stems around a string or wire, or a more sturdy structure such as a trellis, lamppost, or tuteur (an open, tower-shaped structure). They also make a terrific camouflage for a chain-link fence, and will ramble over a nearby shrub. Perennial twiners such as kiwi and wisteria should be anchored on a strong structure—a pergola with cement footers or a sturdy porch, for instance—that won't collapse under the weight of the mature plant's heavy, ropy stems. **CLINGERS**, like clematis and climbing hydrangea, use sticky suction-cuplike holdfasts **(2)** or hairy rootlets **(3)** to grab onto their supports; they prosper on sturdy latticework or over an arbor. **GRABBERS**, like sweet pea, use their delicate tendrils **(4)** or, like passionflower, their leaf stalks **(5)** to attach themselves to virtually any surface. **LEANERS (6)**, like roses, pull themselves up by snagging their thorns onto another plant or a trellis and need to be fastened to a support as they grow.

It's a good idea to avoid growing a vine directly on your house; those that climb by means of sticky suction-cuplike holdfasts will damage brick, mortar, stucco, and wood. Instead, train them on a support structure attached to the house, which can be removed when you need to paint or make repairs. This could be a trellis or even an old wooden ladder. Another alternative is to run a matrix of wires attached to the wall with eyehooks, allowing one or two inches of breathing room between the vine and the house's exterior.

ILLUSTRATIONS BY RODICA PRATO

SPACE INVADERS

Vines are vigorous growers. Some, if you don't keep an eye on them, will overrun your property. The notorious kudzu (LEFT)—brought from Japan in the 19th century to the southern United States, where it has since blanketed broad swaths of the region—will smother whatever stands in its path. Wild vines are not the only culprits; there are nursery plants that will take over unless you keep them in check. These include five-leaf akebia, oriental bittersweet, porcelain berry, trumpet vine, and Japanese honeysuckle. If one of these vines is growing in your yard, there are three surefire ways to limit its mischief: (1) Kill it with an herbicide, unearth it, and replace it with a vine that has a reputation for good citizenship. (2) Prune it severely and repeatedly. Cut its resin stems nearly to the ground each fall or late winter, then remove excess sprouts and suckers periodically over the growing season to limit its spread. (3) Snip off all flowers before they develop seeds.

PHOTO © BILLY MAYBUCHER/IRIS

WHERE TO FIND IT – SEE DIRECTORY – PAGE 136

DIRECTORY

PHOTOGRAPH BY RICK LEW

OUTTAKES
pp. 16–20

"A Style by Any Other Name," page 16: *A Field Guide to American Houses*, by Virginia and Lee McAlester, Alfred A. Knopf, 1998

"Monkey Business," page 20: Eve's Gallery and Garden Art, West Palm Beach, FL, 888-838-9040, www.adamandevesalvage.com

"Book Fare," page 20: *A Building History of Northern New England*, available June 2001 from University Press of New England, Hanover, NH, 800-421-1561, www.upne.com. *In the Company of Stone. The Art of the Stone Wall*, available September 2001 from Artisan Books, New York, NY, 800-722-7202, www.artisanbooks.com. *Builder's Portable Handbook*, The McGraw-Hill Companies, New York, NY, 800-352-3566, www.mcgraw-hill.com. *One Good Turn. A Natural History of the Screwdriver and the Screw*, Scribner; available at www.amazon.com. *The Vanishing American Outhouse*, Penguin Group; available at www.amazon.com.

HOUSE CALLS WITH STEVE
pp. 22–26

Architect: David Feeback, Houston, TX, 713-520-6514

Page 26 *(clockwise from top left)*—Gas cooktop: PCS484GGUS 48-inch Professional, Thermador; 800-656-9226, www.thermador.com. Gas cooktop with vent downdraft: Thermador Cook 'n' Vent Gas cooktop: CCGP2420P 30-inch Pro-Style, Jenn-Air; 800-536-6247, www.jennair.com. Radiant heat cooktop: CMT364 Curve, Caldera, 800-725-9711, www.calderacorp.com. Induction and radiant heat cooktop: CCE3451 30-inch Designer Line, Jenn-Air.

ASK NORM
pp. 30–35

For more information on asbestos: Environmental Protection Agency; 202-554-1404, www.epa.gov/asbestos.

Picture rail hooks: The Swan Company, Arland, CA, 530-865-4109, www.swanpicturehangers.com.

LUXURIES: A SPRINKLE IN TIME
pp. 38–42

Sprinkler and drip irrigation installation: Scott Fay, Treasure Coast Irrigation, Hobe Sound, FL, 561-546-4535; www.tcirrigation.com

Drip irrigation system manufacturer: Mike Stoll, Netafim Irrigation System, Penfield, NY, 716-586-6440

Sprinkler irrigation system manufacturer: Hunter Industries, San Marcos, CA, 760-744-5240; www.hunterindustries.com.

For more irrigation information: Irrigation Association, Falls Church, VA, 703-536-7080

NEED TO KNOW: LOW-FLOW TOILETS
p. 44

Toilet: American Standard, 800-223-0068, www.americanstandard-us.com.

"Dip in the Heart of Texas," p. 122: This custom pool in central Texas holds some 27,000 gallons of water. To avoid excessive use of the area's scarce groundwater, a collection device sends rainwater to a nearby 250,000-gallon storage pond and 6,000-gallon cistern that are tapped to keep the pool filled

PHOTO: ROB KENDRICK

BY DESIGN: SCREEN ADAPTATIONS
pp. 48–50

Architect: Bill Dahn, Dahn & Krieger Architects Planners, Hackensack, NJ, 201-489-8575.

Contractor: Igor Nikitin, NI Home Improvements, South Orange, NJ, 973-374-6790.

For further information: Amy Dahn, President, Montrose Park Historic District Association; 973-763-1880.

UPKEEP: PAINTING PICKETS
pp. 52–58

Cleaner: Liquid TSP substitute by Savogran, Norwood, MA, 800-225-9872, www.savogran.com.

Painting contractor: John W. Dee Painting & Decorating, Concord, MA, 978-369-8837; www.johndeepainting.com.

Two-part epoxy: Advanced Repair Systems; 607-264-9040; www.advancedrepair.com.

EQUIPMENT: A TANKLESS JOB
pp. 80–82

Tankless hot-water heater: AquaStar 125B from Bosch, distributed by Controlled Energy Corporation, Wallingford, VT, 800-642-3199, www.controlledenergy.com

TRANSFORMATIONS: POSTGRADUATE WORK
pp. 84–88

Salvage company: Re-Use Building Products Inc., Gainesville, FL, 352-379-4600.

MATERIALS: THE ART OF STUCCO
pp. 70–74

Stucco contractor: Ken Howard, Palm Beach, FL, 561-432-1698

TALKING SHOP: BLADE RUNNERS
pp. 78–80

Page 78—Cordless mulching mower: model #CMM1000, rechargeable, with bag attachment, from Black & Decker Inc., Towson, MD, 800-544-6986, www.blackanddecker.com.

Robotic lawn mower: RL500 from Friendly Robotics, Irving, TX, 888-404-7626, www.friendlyrobotics.com.

Page 79—Lawn tractor: SST18 from John Deere, Moline, IL, 800-537-8233; www.johndeere.com

Gas-powered mower: Recycler model #20048 from The Toro Company, Bloomington, MN, 800-595-6841; www.toro.com.

Reel mower: model #1414-16 from American Lawn Mower Company, Shelbyville, IN; 800-633-1501, www.reelin.com.

Page 80—Grass trimmer: 825r 4-Cycle TrimmerPlus from Ryobi Outdoor Power Products, Chandler, AZ, 800-345-8746; www.ryobioutdoor.com

Grass shears: long-handle model #9210 from Fiskars Consumer Products Inc., Madison, WI, 800-500-4849, www.fiskars.com.

PRO FILE: WINDOW MAKER
p. 82

Woodworker: Caroline Sly, Ashfield, MA; 413-628-0130.

FINANCES: FOUND MONEY
pp. 84–87

For further information on historic homes: National Trust for Historic Preservation, 1785 Massachusetts Ave., NW, Washington, DC 20036, 800-944-6847, www.nthp.org. National Register of Historic Places, 1849 C Street, NW, NC400, Washington, DC 20240, 202-343-9536, www.cr.nps.gov/nr.

Federal historic-preservation tax incentive: Heritage Preservation Services, National Park Service, 1849 C Street, NW, NC200, Washington, DC 20240; 202-343-9578, www2.cr.nps.gov/tps/tax/index.htm.

Georgia Historic Preservation Division, 156 Trinity Ave., SW, Suite 101, Atlanta, GA 30303, 404-656-2840, www.gashpo.org

For further information on tax incentives: The Historic Homeownership Assistance Act, Gordon Kerr, Director of Congressional Affairs, 202-588-6255

Easement donation information: Heritage Preservation Services, National Park Service, 1849 C Street, NW, NC200, Washington, DC 20240, 202-343-9578, www2.cr.nps.gov/tps/tax/easement.htm.

New York State Office of Parks, Recreation and Historic Preservation, Agency Building #1, Empire State Plaza, Albany, NY 12238; 518-237-8643; www.nysparks.state.ny.us

Preservation resources: Heritage Preservation Services, National Park Service, 1849 C Street, NW, NC200, Washington, DC 20240, 202-343-9583, www2.cr.nps.gov/planpres.htm

HOMEOWNER'S HANDBOOK: LAYING A BLUESTONE PATIO
pp. 89–95

Bluestone: Goliath Stone Sales, Huntington, NY, 888-423-5175, www.goliathstone.com Edward Greene & Sons, Susquehanna, PA, 570-727-2352.

WEST PALM BEACH TV PROJECT: PUTTING DOWN ROOTS
pp. 98–103

Landscape designer: Jeffrey Blakely, Blakely and Associates Landscape Architects and Planners Inc., Palm Beach Gardens, FL, 561-627-6145. General contractors: John Kern and Harley Edgell, Kern Construction, Juno Beach, FL; 561-626 9582. Landscape contractor: Chas Ward, Boynton Landscape Co., West Palm Beach, FL, 561-655-5900. Pool contractor: Scott Curtis, Royal Palm Pools, West Palm Beach, FL, 561-798-3711. Irrigation contractor: Treasure Coast Irrigation, Hobe Sound, FL, 561-546-4535, www.tcirrigation.com. Driveway removal: ABC Cutting Contractors Inc., Pompano Beach, FL, 800-899-6222. Driveway concrete: Wes Kain Concrete, Lake Worth, FL, 561-966-3215. Drip irrigation system: Mike Stoll, Netafim Irrigation System, Penfield, NY, 716 586-6440. Patio pavers: Robert Goossens, Precise Paving, West Palm Beach, FL, 561 845-6040. Alba-Stone Products, Wilmington, NC, 800-267-2522. Retaining walls: Anchor Retaining Wall System, Minnetonka, MN, 952-979-8414; www.anchorwall.com.

SEA CHANGE
pp. 108–115

Architect: Terry Atkin, Atkin Kramer Architects, New York, NY, 212 877-7994. Contractor: Mark Boeckman Construction, Mattituck, NY, 631 284-0848. Landscape lighting: Jim Sage Electric, Greenport, NY, 631-477-2118.

A FULL DECK
pp. 117–121

Architect: Brian Tichenor, Tichenor & Thorp, Beverly Hills, CA, 310-358-8444. General contractor: Eric Hinds, Estrin-Hinds Construction Co., Agoura, CA, 818 865-1000. Deck construction: Chris Murray, CM Construction; 562-430-8600; cmconst@earthlink.net. Page 117—Dining table and chairs: Fusion, designed by Richard Frinier for Brown Jordan, El Monte, CA, 800-743-4252, extension 221, www.brownjordan.com. Page 121—Infrared mounted heater: Del Rey Comfort Heater, Dynamic Cooking Systems; 800-433-8466, www.dcsappliances.com. Outdoor fireplace: wrought iron chiminea #98864, Summer Classics, Columbiana, AL, 205-669-9977, www.summerclassics.com. Standing portable heater: Homestead Patio Heater, Grand Hall USA, 877-934-7455, www.grandhall.com.

DIP IN THE HEART OF TEXAS
pp. 122–127

Designer/contractor: Rick Laden, Laden Pools, San Antonio, TX, 210-732 2521. Subcontractor: Builders Gunite Inc. Central Texas, New Braunfels, TX, 800-448-9643.

Milton Gets Shellacked

T.O.H. rejuvenates the project house's original woodwork

BY RYAN ROBBINS

Special delivery: Rich and crew prepare to maneuver a 500-pound cast-iron soaking tub through the master bath's second-story window.

Week 12 (June 2–3)

T.O.H. general contractor Tom Silva finishes hanging red-cedar clapboard on the Milton project house, while painting contractor Seth Knipe shows host Steve Thomas the four proposed exterior colors. Insulation contractor Don Sawyer and crew spray a fast-expanding foam insulation between wall studs in the media room and master bedroom and into the first floor joist bays. Outside, *T.O.H.* landscape contractor Roger Cook supervises the installation of an in-ground sprinkler system. After the soil is prepared, the grounds are hydroseeded with a mixture of fiber, fertilizer, seed, and "hydro-tackifier"—which glues the applied mixture in place. Master carpenter Norm Abram has spent the day in the workshop building screens for the house's three-season porch.

Watch and learn: Hanging clapboard.

Resources: Clapboards: Pre-primed western red cedar by Western Red Cedar Lumber Association, Vancouver, BC, Canada; 604-684 0266. Engineered exterior trim boards: PrimeTrim, by Georgia Pacific Corp., 800-639 2588. Nylon-reinforced spinning around windows: Molstop, by Fortifiber Corp., Fernley, NV; 775 575-5557. Fiberglass bulkhead: Clamdock, by Palmer River Products Inc., Bristol, RI; 401-253 1711. Insulation: Insalation, by Icynene, Mississauga, Ontario, Canada; 888 946 7325. Paint: Glidden Duluc, by ICI Paints, Cleveland, OH; 216-344 8000. In-ground sprinkler: Hunter Industries Inc., San Marcos, CA; 760 744-5240. Workshop stationary tools: Delta International Machinery, 800 438 2486; www.deltamachinery.com.

Week 13 (June 9–10)

Electrician Allan Gallant installs a $24 lightning arrestor that protects the entire property's plug-ins from power surges. Stonemason David Nyren and crew re-create an old farmer's wall from stones found on site and form the banked riprap stone entry of the new driveway. Plumbing and heating consultant Richard Trethewey inspects the copper supply lines and cast-iron waste pipes installed by plumber Ronald Caldwell; then looks at an exterior hose bib with a 14-inch extension designed to keep water away from freezing conditions outside. Finally, Steve Jones, Norm and Tom in the newly insulated dining room as they discuss reinstalling old horizontal wainscoting.

Watch and learn: Laying a brick terrace.

Resources: Lightning surge arrestor: Delta Lightning Arrestors Inc., Big Spring, TX; 915 267 1000. Lattice fencing: Walpole Woodworkers Inc., Walpole, MA; 800-343-6948. Copper piping: Copper Development Association Inc., New York, NY; 212-251-7200.

Week 14 (June 16–17)

Steve admires the new central vacuum system and meets with Tom Smithson, who is constructing a temperature-controlled wine cellar. Rich is busy installing radiant floor heating, using a system of aluminum-backed plywood panels with precut channels for PEX piping. Gutter contractor Chip Newman forms clog-free aluminum gutters on site from rolls of aluminum, then tests an installed portion. To match the dining room paneling, Norm and Tom hang horizontal wainscoting machined from medium-density fiberboard (MDF). In the media room, Outside, Tom Wirth oversees the planting of perennials and the final placement of a less-bark elm in the driveway turnaround.

Watch and learn: Installing a radiant floor heating system.

Resources: Central vacuum system: Broan NuTone, LLC, Hartford, WI; 262 673-4340. Wine cellar: Baltic Leisure, Oxford, PA; 800-441 7147. Radiant floor heating tubing and prefabricated channels: Stadler Viga, Bedford, MA; 800-370-3122. Wainscoting system: New England Classic, Portland, ME; 888 880-6324. Clog-free gutters: Englert Leafguard gutter system, Perth Amboy, NJ; 800 532-3482. MDF: Georgia Pacific Corp.

Week 15 (June 23–24)

Painting contractor John Dee mixes shellac—made from a by-product of the lac bug—for the front hall's white pine paneling. Rich visits the foundry in Wisconsin where the soaking tub for the master bath was cast. Steve watches tiling contractor Joe Ferrante cut the floor tiles at the master bath with a wet saw; then climbs to the attic where HVAC consultant Ken Winchester has installed an air-to-air heat exchanger that will filter pollution from outside air before distributing it inside the house. The brick terrace gets a curved trellis fence that lets views in and a cast-iron fountain to fade street noise out.

Watch and learn: Shellacking wood paneling.

Resources: Soaking tub: Kohler Co., Kohler, WI; 920-457 4441. Wet saw: MK Diamond Products, Torrance, CA; 800-421 5830. Tile-setting products: Boetik; 800-592-8656; www.boetik.com. Air-to-air heat exchanger: Lennox Industries, Dallas, TX; 972-497 5000. Fountain: "Putto With Dolphin," by Robinson Iron, Alexander City, AL; 256-329 6486.

Week 16 (June 30–July 1)

Roger's crew installs a granite traffic circle to protect the elm planting. Painting contractor Steve Kiernan and crew apply a primer in preparation for wallpaper in the library, and they shellac the wood paneling in the front parlor. Steve Thomas helps Tom position the patio's gas grill on a brick foundation built by mason Lenny Belliveau. Then takes a ride with Rich on a cherry picker to look at a new chimney-top damper and boiler flue cap. They descend back to earth to look at two condensers that will dissipate heat for the A/C system. Flooring contractor Jeff Hosking removes wax and dirt from a parlor's wood floor before restoring worn areas to their original color with a gel stain, sealed with two coats of shellac and a layer of paste wax. Tom and Norm fashion MDF cornice molding for the media room and install it, while carpenter Charlie Silva hangs plywood panels—pregrooved to look like beadboard—on the stairway.

Watch and learn: Refinishing wood floors.

Resources: Deglosser for shellacked wood: Wil-Bond No Sanding Deglosser, by Wilson Imperial Co., Newark, NJ; 973 589 6050. Gas barbecue and side burner: Summit 475 series, by Weber-Stephen Products Co., Shaumburg, IL, 800-337 3664; www.weber.com. Top sealing chimney cap: Lymanance Locktop, Louisville, KY; 502 366-7180. Flue liner: Z-Flex Inc., Bedford, NH; 800 654 5800. A/C chiller units: Lennox Industries (see Week 15). High velocity A/C system: Unico Inc., St. Louis, MO; 800-527 0896. Shellac: William Zinsser & Co. Inc., Somerset, NJ; 732 469-4367. Laminate flooring: Pergo Inc., 800 337-8746. Beadboard wainscoting system: Plybead, by Georgia Pacific Corp.

Here's to wood friends! Norm and Tom refurbish horizontal wainscoting uncovered during construction.

PHOTOS COURTESY OF WGBH

This Old House

Where and when to watch This Old House *and* This Old House Classics

● Indicates *This Old House Classics* vintage episodes rebroadcast on nationwide stations

ALABAMA

DOTHAN
WMPI Sat 7 p.m.
● WCFT, Sun. 8:30 a.m.
● WSFI, Sun. 8:30 a.m.

DEMOPOLIS
WHQ Sat 1 p.m.

DOTHAN
WHQ Sat 8 p.m.

FLORENCE
WIPQ, Sat. 8 p.m.

HUNTSVILLE
WHIQ, Sat 8 p.m.
● WVLE, Sat 1 p.m.

LOUISVILLE
WGIQ, Sat 1 p.m.

MOBILE
WHIQ, Sat 8 p.m.
● WALA, Sat. 8 a.m.

MONTGOMERY
WAIQ, Sat 8 p.m.

MOUNT CHEAHA
WCIQ, Sat. 8 p.m.

ALASKA

ANCHORAGE
KAOM Thu 8 p.m., Sat. 9:30 a.m.
● KMO, Sun 9 p.m.

FAIRBANKS
KUAC (+) 1 p.m., Sat. 8 a.m.
● KATN Sun. 1 p.m.

JUNEAU
KTOO, Fri. 8 p.m. Sat 8 a.m.
● KIUF Sun 8 p.m.

ARIZONA

PHOENIX
KAET Thu. 8 p.m. and 8:30 p.m. Sat. 8 a.m. and 8 p.m.
● KNXV Sun. 10 a.m.

TUCSON
● UAS 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 Sat. 8 a.m.

ARKANSAS

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

FAYETTEVILLE
● AETN Sat. 9 a.m. and 12:30 p.m.

JONESBORO
KTEJ Sat 8 a.m. and 12:30 p.m.

LITTLE ROCK
KETS, Sat 8 a.m. and 12:30 p.m.
● KTHV Sun. 10:30 a.m.

NORTHWEST NEW
● LMV Sat 8 a.m. and 12:30 p.m.

CALIFORNIA

BAKERSFIELD
● BUVI Tue 7:30 a.m. Sat 7 a.m.

CHICO
● KPCR Sun. 8 p.m.

EUREKA
KHUP, Mon. 7:30 p.m., Sat. 10:30 a.m.
● KADF Sun. 1 p.m.

FRESNO
KVPT Sat. 8 a.m.
● KFSN, Fri. 8 a.m.

HUNTINGTON BEACH
● OCE, Sun. 11:30 a.m.

LOS ANGELES
KCET, Sat. 8 p.m.
● ABC, Sun. 8 a.m.

● MONTEREY/SALINAS
● KCBA, Tue. 8 p.m.

PALM SPRINGS
● PSE Sun. 8 a.m.

RIVERSIDE
KIXI Sat 6:30 a.m.

SACRAMENTO
KPJE Thu. 7 p.m., Sat. 9 a.m.

SAN BERNARDINO
KVCR, Mon. 9:30 p.m.

SAN DIEGO
KPBS Sat. 9:30 p.m.
● KGTV, Sun. 11:30 a.m.

SAN FRANCISCO
KQED Sat 1 p.m.
● KPIX Sun 9 a.m.

SAN JOSE
KTEH Sun. 9 p.m. Wed. 9 p.m., Sat 9:30 p.m.

SAN LUIS OBISPO
KCBX, Sun. 10 a.m.

SANTA BARBARA
● KSBY Sun 8 a.m.

COLORADO

BOULDER
● BAD Sun 8 p.m. Wed. 3:30 a.m., and 9:30 p.m. Sat 8 p.m.

COLORADO SPRINGS
● KPDO, Sun 11 a.m.

DENVER
KRMA, Sun. 9 p.m. Sat. 9 a.m.
● KCNC Sun 8 a.m.

GRAND JUNCTION
● BHY Sat 1 p.m.

MOBILE
KTSC Thu 7:30 p.m. Sun 9:30 p.m.

CONNECTICUT

FAIRFIELD
WEDH Sun. 10:30 a.m., Thu. 11:30 p.m. Sat. 5 p.m.
● WFSB Sat 9:00 a.m.

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

NORWICH
WEDH Sun 10:30 a.m., Thu. 1:30 p.m. Sat 7 p.m.

DISTRICT OF COLUMBIA

WETA Sat 7:30 a.m.
● WRC, Sun. 8:30 a.m. and 1:30 p.m.

FLORIDA

FORT MYERS
● WTVK Sat 1:30 a.m.

PANAMA CITY
WUFT Sat. 9 a.m. and 10:30 p.m.
● WCJK, Sat. 8 p.m.

JACKSONVILLE
WJCT Sat 2 noon
● WJXT Sat 12:30 p.m.

MIAMI
WLRN, Sun. 7 p.m.
● WPBT Sat 11 a.m.
● WBZL, Sun 9:30 a.m.

ORLANDO
WMFE, Sat. 5:30 p.m.
● WKCF Sat 6 a.m.

PENSACOLA
WSRE, Sat. 12:30 p.m.

SARASOTA
● WUSF Sun. 11:30 a.m.

TALLAHASSEE
WFSU Sat. 1:30 p.m.

TAMPA
WEDU, Sat 11:30 a.m. and 12 noon
WUSF Sun. 5:30 p.m., Wed. 8 p.m.
● WTVT Sat 8 a.m.

WEST PALM BEACH
● WPTV Sun. 9 a.m. and 12:30 p.m.

GEORGIA

ALBANY
● WCVP Sun. 9 a.m.

ATLANTA
WGTV Sun. 11:30 a.m., Sat. 5:30 p.m.
WPBA Mon. 8 p.m. and 6:30 p.m., Wed. 9 p.m., Sat. 8:30 a.m. and 9 p.m.
● WSB, Sat 9 a.m. and 5:30 p.m.

CHARLESTON
WJCF Sat. 1 p.m., Sun. 11:30 a.m.

COCHRAN
WDCO, Sun 11:30 a.m., Sun 1:30 p.m.

COLUMBUS
● JPT Sun., 1:30 a.m., Sat. 9:30 p.m.

DAWSON
WACS Mon. 10:00 a.m., Sat. 9:30 a.m.

SAVANNAH
WVAN, Sun. 11:30 a.m., Sat. 5:30 p.m.
● WTOC, Sat 2 a.m.

WAYCROSS
WXGA Sun. 11:30 a.m. Sat 1:30 p.m.

UNION
WCES, Sun 11:30 a.m., Sat 5:00 p.m.

HAWAII

HONOLULU
KHET Sat 7:30 p.m.
● KI NI Sat 9:30 p.m.

WAILUKU
KMEB

IDAHO

BOISE
KAID, Sun. 7:30 p.m.
● KTRV Sun. 6:30 a.m.

CHUBBUCK
KCDT Sun. 9:30 p.m.

MOSCOW
KUID, Sun. 1:30 p.m.

POCATELLO
KISU Sun 9:30 p.m.

TWIN FALLS
KIPT Sun 9:30 p.m.

ILLINOIS

CARBONDALE
WSU Thu. 7 p.m., Sat. 2:30 p.m.

CHAMPAIGN/URBANA
WILL Sun 8:30 p.m. Sat. 10 a.m. and 5:30 p.m.
● WCHU, Fri. 9:30 a.m.

CHARLESTON
WEIU-TV, 10 noon

CHICAGO
WTTW Sat 9 p.m.
● WLS-T Sun. 11:30 a.m.

JACKSONVILLE
WSIU, Sat. 1:30 p.m.

MACOMB
WIUI, Sat 1:30 p.m.

MOLINE
WQPT Tue. 7 p.m. Sat. 9:30 p.m.

OLNEY
WLSI Thu. 8 p.m., Fri. 12:30 p.m., Sat. 2:30 p.m.

PEORIA
● WTVP Fri. 9:30 a.m. Sat 12:30 p.m.
● WHOI, Fri 1:30 a.m.

QUINCY
WQEC, Sat. 1:30 p.m.

ROCKFORD
● WTVO, Sat 9:30 p.m.

SPRINGFIELD
● WICS, Sat. 9:30 a.m.

INDIANA

BLOOMINGTON
WTIU, Sat 1:30 p.m.

EVANSVILLE
WNIN, Sun. 9:30 a.m. Sat. 12:30 p.m. and 9 p.m.
● WFIE, Sun. 9 a.m.

FORT WAYNE
WFCI, Sat. 1:30 a.m.
● WHL, Sun. 8 a.m.

INDIANAPOLIS
WFYI Sat 9 a.m. and 5 p.m.
● WALV Sat 9:30 a.m.
● WTIC, Sun. 6:30 a.m.

MOUNT VERNON
WYIN Tue 7:30 p.m.

PENDLETON
WIPB, Sun. 9:30 p.m.

SOUTH BEND
WNIT Sat 1:30 p.m.
● WBND, Sun. 7:30 a.m.

TERRE HAUTE
● WTWO, Sun. 9 a.m.

VINCENNES
WVUT Sat. 1:30 p.m.

IOWA

CEDAR RAPIDS
● KWWI 9 a.m. 10 a.m.

COUNCIL BLUFFS
KDIN, Tue 9:30 p.m. Sat 1:30 p.m.

DAVENPORT
KQCT Tue 9 p.m., Sat 1:30 p.m.
● WQAD, Sun. 11 a.m.

DES MOINES
KDIN, Fri 6:30 p.m., Sat. 1 p.m.
● WHO, Sun. 10 noon, Sat. 9 a.m.

FORT DODGE
KTIN, Tue 6:30 p.m. Sat. 1:30 p.m.

IOWA CITY
KHN, Fri 6:30 p.m., Sat. 1:30 p.m.

MASON CITY
KYIN, Fri 6:30 p.m., Sat. 1 p.m.

RED OAK
KHIN Fri. 6:30 p.m. Sat 1:30 p.m.

SIOUX CITY
KSIN, Fri 9:30 p.m. Sat 1:30 p.m.

WATERLOO
KBIN Fri 9:30 p.m. Sat 1:30 p.m.

KANSAS

GARDEN CITY
KGOO Thu. 8 p.m.

HAYS
KSWK, Thu. 8 p.m.

TOPEKA
KTWU, Sat. 9:30 a.m.
● KSNT Sat 8 a.m.

WICHITA
KPTS, Sun. 10 a.m. Sat 10 a.m.
● KSNW Sun 9:30 a.m.

KENTUCKY

ASHLAND
WBAS Sun 1 p.m.

BOWLING GREEN
WKGB, Sun. 8 p.m.
WKYU, Sat 8 p.m. and 6:30 p.m.
● WBKO Sun. 6:30 a.m.

COVINGTON
WCVN Sun. 1 p.m.

ELIZABETHTOWN
WKZT Sun 8 p.m.

HAZARD
WBHA Sun. 1 p.m.

LEXINGTON
WKLE Sun 8 p.m.

LOUISVILLE
WKMJ Fri. 9:30 p.m.
WKPC, Sun. 1 p.m.
● WAVE, Sat. 9:30 a.m.

MADISONVILLE
WMAA 5 p.m. 8 p.m.

MORehead
WKLE Sun. 8 p.m.

MURRAY
WKMU Sun. 1 p.m.

OWENSBORO
WKOH, Sat 1 p.m.

PAINTSVILLE
WKOH Sun. 8 p.m.

PIKEVILLE
WKPI Sun. 8 p.m.

SOMERSET
WKSO, Sun. 9 p.m.

LOUISIANA

ALEXANDRIA
KLPA, Sun 1 p.m.

BATON ROUGE
KLPB, Sat. 1 p.m.
● LWBR Sun. 1 p.m.

LAFAYETTE
KLPB, Sat. 1 p.m.

LAKE CHARLES
KLTL, Sat 1 p.m.

MONROE
KTAM, Sat. 1 p.m.

NEW ORLEANS
WYES Sat 1:30 a.m.
● WDSU, Sat. 9 a.m.

SHREVEPORT
KLTS, Sat. 1 p.m.
● KTBS, Sun. 9:30 a.m.

MAINE

BANGOR
WMEB Sat 1:30 p.m.

CASAN
WMEB Sat 1:30 p.m.

LEWISTON
WCBB, Sat. 1:30 p.m.

PORTLAND
WMEA, Sat. 1:30 p.m.
● WPXT Sat 8:30 a.m.
● WKNE Sun 8 a.m.

PRESQUE ISLE
WMEM Sat 1:30 p.m.

MARYLAND

FREDERICK
WMHT Sun. 10:30 a.m. Sat 9 p.m.

BALTIMORE
WMPB, Mon 10:30 a.m. Sat 9 p.m.
● WMAR Sat 11:30 a.m.

FREDERICK
WFPT Sun. 10:30 a.m., Sat. 1:30 p.m.

HAGERSTOWN
WWPB, Sun. 10:30 a.m., Sat 9:30 p.m.

OAKLAND
WGPT Sun. 1:30 a.m. Sat 9:30 p.m.

SALISBURY
WLPP Sun. 10:30 a.m. Sat 4:30 p.m.

MASSACHUSETTS

BOSTON
WGBH Thu. 9 p.m. Sat 9:30 p.m.
Saturday PBS Pre-PBS 9 a.m. and 1 p.m.
● WHST Sun. 10 a.m.

SPRINGFIELD
WGBY Thu 9 p.m. Sat 9:30 p.m.

MICHIGAN

ALPENA
WCML, Sat 9 p.m.

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

CADILLAC
WCMV Sat. 9 p.m.
● WFTV/WWUP, Sun. 10:30 a.m.

DETROIT
WTVS, Sat. 10 a.m.
● WDIV Sat. 6:30 a.m.

EAST LANSING
WKAR Sun 9 p.m. Thu 9 p.m. Sat 1:30 p.m.

FLINT
WFUM, Thu. 9:30 p.m., Sat 1:30 p.m.
● WJRT, Fri. 10:30 a.m.

GRAND RAPIDS
WFPU Thu. 8:30 p.m., Sat. 1 p.m.
● WZZM Sat. 2:30 p.m.

KALAMAZOO
WCVK, Thu. 8:30 p.m.... Sat 1 p.m.

LANSING
● WLX, Sat. 9 a.m.

MARQUETTE
WJMN Sat 8 a.m.

MARQUETTE
WNMU Sat 5:30 p.m.

MOUNT PLEASANT
WCMU Sat 2 p.m.

UNIVERSITY CENTER
WUCM Sun 4 p.m. Thu 8 p.m.

MISSISSIPPI

BILOXI
WMAH, Sat 4:30 p.m.

BOONEVILLE
WMAH Sat 9:30 a.m.

BUDE
WMAU Fri 9:30 p.m.

COLUMBUS/TUPELO
● WCPT, 1—3:30 a.m.

GREENWOOD
WMAH Sat 9:30 p.m.

JACKSON
WLJN Sat 6 PM p.m.

MERIDIAN
WMAW Fri 9:30 p.m.

MISSISSIPPI STATE
WMAH Sat 9:30 p.m.

OXFORD
WMAH Sat 9:30 p.m.

MISSOURI

COLUMBIA
● KMOS, Sun 9 a.m.

JOPLIN
KOZJ, Sat. 10:30 p.m.
● KOAM Sat 9 a.m.

KANSAS CITY
● KCPT Sun 12:30 p.m.
● KMBC, Sat 4:30 a.m.

ST. LOUIS
KETC, Wed. 1:30 p.m., Sat. 6:30 p.m.
● KTVI Sat 12:30 p.m.

SEDALIA
KMOP Sat 12:30 p.m.

SPRINGFIELD
KOZK, Sat. 12:30 p.m.
● KSPR, Sat. 9 a.m.

MONTANA

BILLINGS
● KULR/KVUH, Sat. 9:30 a.m.

BOZEMAN
KUSM, Sat 11:30 a.m.

MISSOULA
KUFM, Sat 11:30 a.m.

NEBRASKA

ALLIANCE
NLTV Sat. 1:30 p.m.

BASSETT
NETV Sat 11 a.m. and 9:30 p.m.

HASTINGS
NETV, Sat 10 a.m. and 9:30 p.m.

LEXINGTON
KLNE, Sat. 9:0 a.m. and 9:30 p.m.

LINCOLN
NETV Sat. 9:0 a.m. and 1:30 p.m.
● KHAS, Sat. 1 p.m.

MERRIMAN
NLPF, Sat 10 a.m. and 9:30 p.m.

NORFOLK
NETV Sat 11 a.m. and 9:30 p.m.

NORTH PLATTE
NLTV, Sat. 10 a.m. and 6:30 p.m.

OMAHA
NETV Sat. 10 a.m. and 5:30 p.m.
● WOWT Sun. 8 a.m., Fri 1 a.m.

NEVADA

LAS VEGAS
KLVX, Sat. 9 a.m. and 12:30 p.m.
● KTNV Sun. 9:30 a.m.

RENO
KNPB, Sat. 10:30 a.m.
● KAME, Sat. 10 a.m.

NEW HAMPSHIRE

DURHAM
WENH Sat. 2:00 p.m.

PEEMI
WEKW Sat 2:30 p.m.

LITTLETON
WLED Sat 2:30 p.m.

MANCHESTER
● WMUR, Sat. 8 a.m.

NEW JERSEY

CAMDEN
WNJS, Sun. 5:30 p.m., Fri 8:30 p.m. Sat. 8 p.m.

MONTCLAIR
WNJN, Sun 1:30 p.m., Fri. 1:30 p.m. Sat 9 p.m.

NEW BRUNSWICK
WNJB, Sun. 8:30 p.m., Fri. 1:30 p.m. Sat 1 p.m.

TRENTON
WNJP Sun 5:30 p.m. Fri. 2:30 p.m., Sat 9 p.m.

NEW MEXICO

ALBUQUERQUE
● NME, Thu. 7 p.m., Fri. 1 p.m. Sat 11 a.m.
● KOB, Sun. 9:30 a.m.

LAS CRUCES
KRWG, Sun. 11:30 a.m.

PORTALES
KENW Wed. 10:30 p.m. Sat. 8 p.m.

NEW YORK

ALBANY
● WMHT Sat 10 a.m. 1:30 p.m.

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

BUFFALO
WNED Wed 9 p.m.
WNI O, Sun 7 p.m.
● WIVB, Sat. 8 a.m.

ELMIRA
● WYNC

FORT PLAIN
WLIW Sun 8 p.m. and 9:30 p.m. Sat 1:30 a.m.

GLENS FALLS
WCFE, Thu. 8:30 p.m., Sat 1 p.m.

ITHACA
WSKG Sun 8 p.m.
● WHCU, Sat 8 a.m.

LOCKPORT
WCFE Sat 9 a.m., Sun. 6:30 p.m.

NEW YORK CITY
WNET Sat 9:30 p.m.
● WCBS, Sun. 2:30 p.m.

NORWOOD
WNPE Sat 1:30 p.m.

PLATTSBURGH
WCFE, Sun. 11:30 a.m.

ROCHESTER
WXXI Sun. 1:30 p.m., Sat 10:30 a.m.
● WHEC, Sun. 6 a.m.

SCHENECTADY
WMHT Sat 10:30 a.m.
WMHQ Sun. 9:30 a.m.

SYRACUSE
WCNY Sat. 10:30 a.m.
● WSTM Sun. 8 a.m.

WATERTOWN
WNPE, Sat 10:30 a.m.

NORTH CAROLINA

ASHEVILLE
WUNF Sat. 9 p.m.

CHAPEL HILL
WUNC, Sat. 1 p.m.

CHARLOTTE
WTVI, Sun. 10:30 a.m., Sat 9 p.m.
WUNG, Sun. 9 a.m., Sat. 9:30 p.m.
● WAKN, Sun. 12:30 p.m.
● WSOC, Sat. 6:30 a.m.

COLUMBUS
WUNF Thu 9 p.m., Sat. 9:30 p.m.

DURHAM
WUNK, Sat 9 p.m.

GREENSBORO
● WCHP Sat. 6:30 a.m.

GREENVILLE
WUNK, Sun. 9 a.m., Sat. 9:30 p.m.
● WUNG Sun 9 a.m.

JACKSONVILLE
WUNM Sat 9 p.m.

LINVILLE
WUNE, Sat 9 p.m.

LUMBERTON
WUNG Sat 9 p.m.

RALEIGH
● WTVD Sun. 8:30 a.m.

ROANOKE RAPIDS
WUNP Sat 1 p.m.

WILMINGTON
WUNJ Sat 1 p.m.

WINSTON-SALEM
WUNL, Sat. 9 p.m.

NORTH DAKOTA

BISMARCK
KBMI Fri 9 p.m. Sat 4:30 p.m.

DICKINSON
KDSE 1 p.m., Sat. 6:30 p.m.

JAMESTOWN
KJRE, Fri 6 a.m., Sat. 4:30 p.m.

FARGO
KFME, 1 p.m. Sun., Sat. 4:30 p.m.
● WDAY Sun. 6:30 a.m.
● WDAZ, 1 p.m. 6:30 a.m.

GRAND FORKS
KGFE, Fri. 8 p.m., Sat. 4:30 p.m.

MINOT
KSRE, Fri. 8 p.m., Sat. 4:30 p.m.

WILLISTON
KWSE Sat 9:30 p.m. Fri 8 a.m.

OHIO

AKRON
WEAO Sun. 10 p.m., Sat 12 noon

ATHENS
WOUC Sat. 1 p.m.

BOWLING GREEN
WBGU Sat 1:30 p.m. 30 min 3 p.m.
● WPBO Sun. 6:30 a.m.

CANTON
● WVIZ

LONG ISLAND
WLIW Sun 8 p.m. and 9:30 p.m. Sat 1:30 a.m.

NEW PHILADELPHIA
WNET Sat 9:30 p.m.
● WCBS, Sun. 2:30 p.m.

NORWOOD
WNPE Sat 1:30 p.m.

PLATTSBURGH
WCFE, Sun. 11:30 a.m.

ROCHESTER
WXXI Sun. 1:30 p.m., Sat 10:30 a.m.
● WHEC, Sun. 6 a.m.

SYRACUSE
WCNY Sat. 10:30 a.m.
● WSTM Sun. 8 a.m.

WATERTOWN
WNPE, Sat 10:30 a.m.

OKLAHOMA

PERRYTON
KWET Sun 9 a.m. Sat 4:30 a.m. and 1:30 p.m.

ENID
KOED Sun. 3 p.m., Sat. 9:30 p.m. and 1:30 p.m.

OKLAHOMA CITY
KETA, Sun 9 a.m. Sat 9:30 a.m. and 1:30 p.m.
● KOCO, Sat. 9:30 a.m.

TULSA
KOED Sun. 1 a.m., Sat. 9:30 a.m. and 1:30 p.m.
● KTUL Sun 11:30 a.m.

OREGON

BEND
KOAB, Sun 9 p.m.

CORVALLIS
● OAC Sat 1 p.m.

EUGENE
KEPB, Sat. 8 p.m.
● KATE, Sun 9 a.m.

KLAMATH FALLS
KFTI Sat 10:30 a.m.

LA GRANDE
KTVR Sat. 8 p.m.

PENDLETON
KOPB Fri 9 p.m., Sat. 8 p.m.
● KATU, Sun. 12:30 p.m. Sat 6:30 a.m.

PENNSYLVANIA

ALLENTOWN
WLVT 1 a.m. 7:30 p.m., Sat 10:30 p.m.

ERIE
WQLN Sat 8:30 p.m.
● WJET Sat. 6:30 a.m.
● WFXP Sun. 9:30 a.m.

HARRISBURG
● PA Sun 9 a.m. and 9 p.m.
● WCAL, Sun 11:30 a.m.

JOHNSTOWN
● WATM 1 a.m. 10:30 a.m.

PHILADELPHIA
WHY Sat 10 a.m. and 6 p.m.
● WTXI Sun 8 a.m.

PITTSBURGH
WQLN Sun 8 p.m.
WQLN Sat 1 p.m.
● WDVA Fri. 1:30 a.m.

PITTSTON
WVIA Fri 9 p.m. and 3:30 p.m.

UNIVERSITY PARK
WPSX Sun 4:30 p.m. Sat 9 a.m.

WILKES-BARRE
● WILF 1 a.m. 10 a.m.

RHODE ISLAND

PROVIDENCE
WSBE, Sun 4 p.m. Tue 1:30 p.m.
● WLNE Thu 1:30 a.m.

SOUTH CAROLINA

ALLENDALE
● LBA Sat 9 a.m.

PEARISBURG
WBWJ Sun 9 a.m.

CHARLESTON
WITV, Sun 9 a.m.
● WCSC, Sat 7:30 a.m.

COLUMBIA
WRLK Sun 9 a.m.
● WLTX Sun 9:30 a.m.

CONWAY
WHMC, Sat. 4 p.m.

FLORENCE/MYRTLE BEACH
WJPM Sat 9 a.m.
● WPDE, Sun. 9 a.m.

GREENVILLE
WNTV Sat. 9 a.m.

GREENWOOD
WNPH, Sat 9 a.m.

ROCK HILL
● WJSC, Sat 9 a.m.

SPARTANBURG
WRET Sat 9 a.m.

SUMTER
WJA Sat 8 a.m.

SOUTH DAKOTA

ABERDEEN
KDSD, Mon. 9:30 p.m., Sat. 9:30 a.m. and 1:30 p.m.

HURON PBS
KUSD Mon 1:30 p.m. Sat 9:30 a.m. and 1:30 p.m.

EAGLE BUTTE
KPSD Mon 1:30 p.m. Sat 9:30 a.m. and 1:30 p.m.

LOWRY
KQSD Mon 1 PM p.m. Sat 9:30 a.m. and 1:30 p.m.

MARTIN
KZSD, Mon. 1:30 p.m., Sat. 9:30 a.m. and 1:30 p.m.

PIERRE
KTSD, Mon. 9:30 p.m., Sat 9:30 a.m. and 1:30 p.m.

RAPID CITY
KBHE, Mon. 1:30 p.m., Sat. 9:30 a.m. and 8:30 p.m.
● KCLO, Sat. 8 p.m.

SIOUX FALLS
KCSD, Mon. 1:37 p.m., Sat 9:30 a.m. and 1:30 p.m.
● KSD, Sat. 8 p.m.

VERMILLION
KUSD, Mon. 1:00 p.m. Sat 9:30 a.m. and 1:30 p.m.

TENNESSEE

CHATTANOOGA
WTCI, Sat. 4 p.m.
● WDSN, Sat. 11 a.m.

COOKEVILLE
WCTE, Sat 12:30 p.m.

KNOXVILLE
WBQP Sat 1:30 p.m.
WSJK Sat 1:30 p.m.
● WATE, Sat. 9:30 a.m.

LEXINGTON-MARTIN
WLJT, Thu. 9:30 p.m. Sat 1:30 p.m.

MEMPHIS
WKNO, Sat 9 p.m.
● WMC, Sat 7:30 a.m.

NASHVILLE
WDCN Sun 4:30 p.m.
● WKRN Sat. 5:30 a.m.
● WKAE, Sun. 10 a.m.

TRI-CITIES
● WJHL/WKPT, Sat 10:30 a.m.

TEXAS

AMARILLO
KACV Sat 12:30 p.m.
● KCPN Sat 8 a.m.

AUSTIN
● BU Sat 9 p.m.
● KTBC, Sat. 9:30 a.m.
● KVC, Sat 1 a.m.

BEAUMONT
● KBMT Sat 9:30 a.m.

COLLEGE STATION
KAMU Sat 12:30 p.m.

CORPUS CHRISTI
● EDT Sat 1:30 p.m. and 10 p.m.
● KRIS, Sat 11:30 a.m.

DALLAS/FORT WORTH
KERA Sat 9:30 p.m.
● 8:30, Sun. 10:30 a.m.

EL PASO
KCOS, Sat 9 p.m.

HARLINGEN
KMPH, Sat. 12:30 p.m.
● KPEQ Sun. 8 a.m.

HOUSTON
KUHT Sun 11:30 a.m.
● KTRK Sun 1 a.m.

KILGORE
KNCT Sat 10:30 p.m.

LUBBOCK
KTXT Thu. 11 noon, Sat 11:30 p.m.
● KLBK Sun. 1 p.m.

ODESSA
KCCV Sat. 1 p.m.

SAN ANTONIO
KLRN Thu 8:30 p.m. Sat 1:30 p.m.

TYLER
● KFXN, Sat 10 a.m.

WACO
KCTF, Mon. 12:30 p.m., Sat 9:30 p.m.
● KXXV Thu. 12 noon and 12:30 p.m.

UTAH

PROVO
KBYU Sat. 9:30 a.m., 2 p.m. and 2:30 p.m.

SALT LAKE CITY
● UEN, Sat. 9 p.m.
● UTVX, Sun 11 a.m.

VERMONT

BURLINGTON
WETK, Thu. 8 p.m., Sat 11 a.m.
● WCAX Sun 8:30 a.m.

RUTLAND
WVER, Thu 9 p.m., Sat. 11 a.m.

ST. JOHNSBURY
WVER, Thu. 1 p.m., Sat. 1 p.m.

WINDSOR
WVTA Thu. 1 p.m. Sat. 11 a.m.

VIRGINIA

CHARLOTTESVILLE
WHTJ, Sat 9:30 a.m.

FALLS CHURCH
WNVT Sat 9:30 p.m.

HARRISONBURG
WVPT Sat 1:30 p.m.
● PPY Sun 1:30 p.m.

NORFOLK
WHRO, Fri 11 p.m., Sat. 1:30 p.m.

RICHMOND
WCVE Sat 4:30 a.m.
WCVW Fri. 9:30 p.m.
● WTVR Sat 8 a.m.

ROANOKE
WBRA, Fri. 11 p.m. Sat. 1:00 p.m.
● WSLS Sat. 9:30 a.m.

WASHINGTON

PENTICTON
KCBA Thu 9 p.m.
Sat. 11:30 p.m. and 9:30 p.m.

PULLMAN
KWSU Mon.—Fri 9 p.m.

RICHLAND
KTNW, Sun. 9:30 p.m., Thu. 9 p.m. Sat. 8 p.m.

SEATTLE
KCTS Sun. 1 p.m. Mon 7:30 p.m.
● KPO Sun 12 noon

SPOKANE
KSPS, Sun 9:30 p.m.
Sat 9:30 a.m.
● KXLY Sun. 9:30 a.m.

TACOMA
KBTC, Thu. 7 p.m. Sat 10:30 p.m. and 5:30 p.m.

YAKIMA
KYVE

WEST VIRGINIA

BECKLEY
WWPB Sat 9:30 p.m.

PLATEAU
● WOAY

CHARLESTON
● WCHS Sun 8 a.m.

HUNTINGTON
WHPY Sat 1:30 p.m.

MORGANTOWN
WNPB Sat 1:30 p.m.

WHEELING
● WTRF

WISCONSIN

GREEN BAY
WPNE Sun 9 p.m. Thu 8 p.m.
● WFRV Sun 9:30 a.m.

LA CROSSE
WNLA Sun 8 p.m. Thu 8 p.m.
● WKBT, Sun. 9 a.m.

MADISON
WHA Sun 6 p.m., Thu. 4 p.m.
● WISC, Sat. 6:30 a.m.
● WKOW Sun. 9 a.m.

MINOCQUA
WJPC, Sun. 9 p.m., Wed 7:30 p.m.

MILWAUKEE
WMVS Thu 7:30 p.m. Sat. 1:30 a.m.
● WTMJ Sun. 9 a.m.

PARK FALLS
WLEF Tue 9 p.m., Thu 8 p.m.

WAUSAU
WHRM Sun. 9 p.m., Thu 9 p.m.
● WJFW Sun. 10:30 a.m.

WYOMING

RIVERTON
KCWC, Sat. 11:30 a.m.

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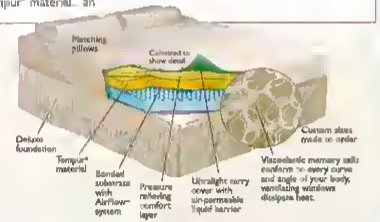

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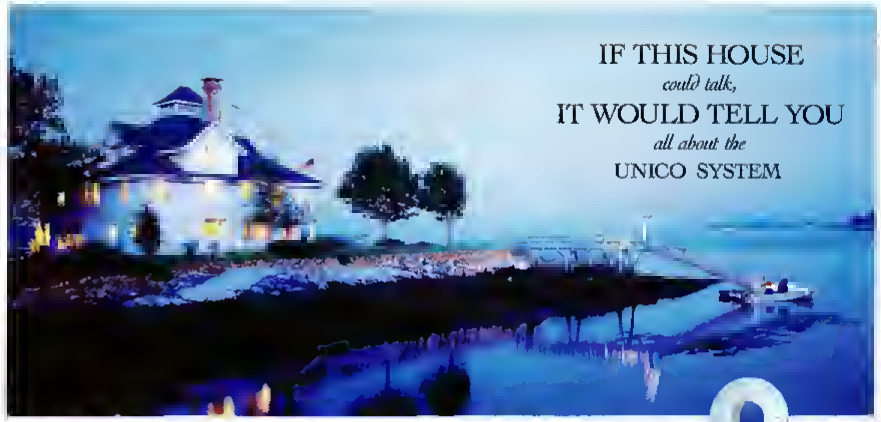

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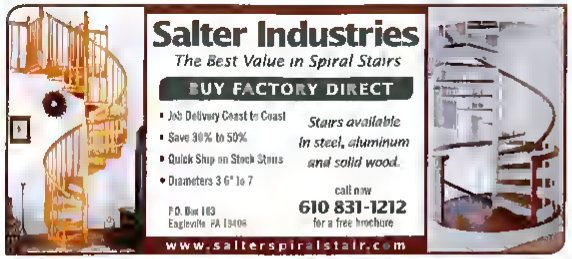

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LOCATION
New Orleans, Louisiana

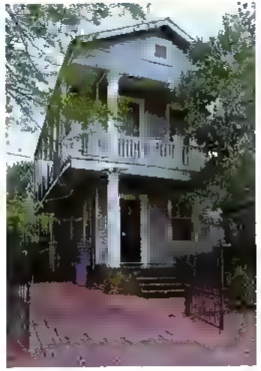
Though its wraparound balcony offers views of the stylish French Quarter, this two-story 1880s Victorian shotgun with Eastlake details —one room wide, four rooms deep, with an entry landing on each end—finds itself in a state of noble dishabille. However, the sun-bleached cypress siding, porch posts, and trimwork hint at a restorable former glory, as evidenced by renovations in other historical neighborhoods in the city. Such architecture is typical of Faubourg Tremé, the oldest section of New Orleans's Esplanade Ridge National Register District.

Adding a relaxed air, a pair of screened doors flank the front entry. Though each floor covers approximately 850 square feet, the over-hanging balcony gives the impression that the upper story, with its three bedrooms and full bath, is somewhat larger than the ground floor, which has two parlors, a kitchen, and a bath (added in the 1960s). The interior is daylit by transomed, double-hung windows in various states of repair, some with operational louvered shutters. Nearly all of the wood elements, including the floors, remaining molding, and fireplace mantels, are of the original cypress. The lot includes a gated driveway that leads to a backyard with a solitary tree.

Before a certificate of occupancy can be granted by the city, the plumbing and electrical systems must be brought up to code. In addition, the house has no central heating. All proposed exterior alterations, particularly those that are material- or design-related, must be approved by the local Historic District Landmarks Commission.

CONTACT

Alyce and Nicholas Barrett
504-522-5557
The Preservation Resource Center
504-581-7031



Only six blocks from the once jazz-rich Storyville neighborhood, the house is fittingly attired in elaborate fretwork (TOP), as well as newel posts flanged by graceful Eastlake brackets, all fashioned from cypress. Though much of the plasterwork has been torn out, six brick fireplaces remain (ABOVE); five original mantels are in storage. A similar but restored 1880s home resides in a neighboring district (RIGHT).

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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