This Old House

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SPECIAL ISSUE

OCTOBER 2007

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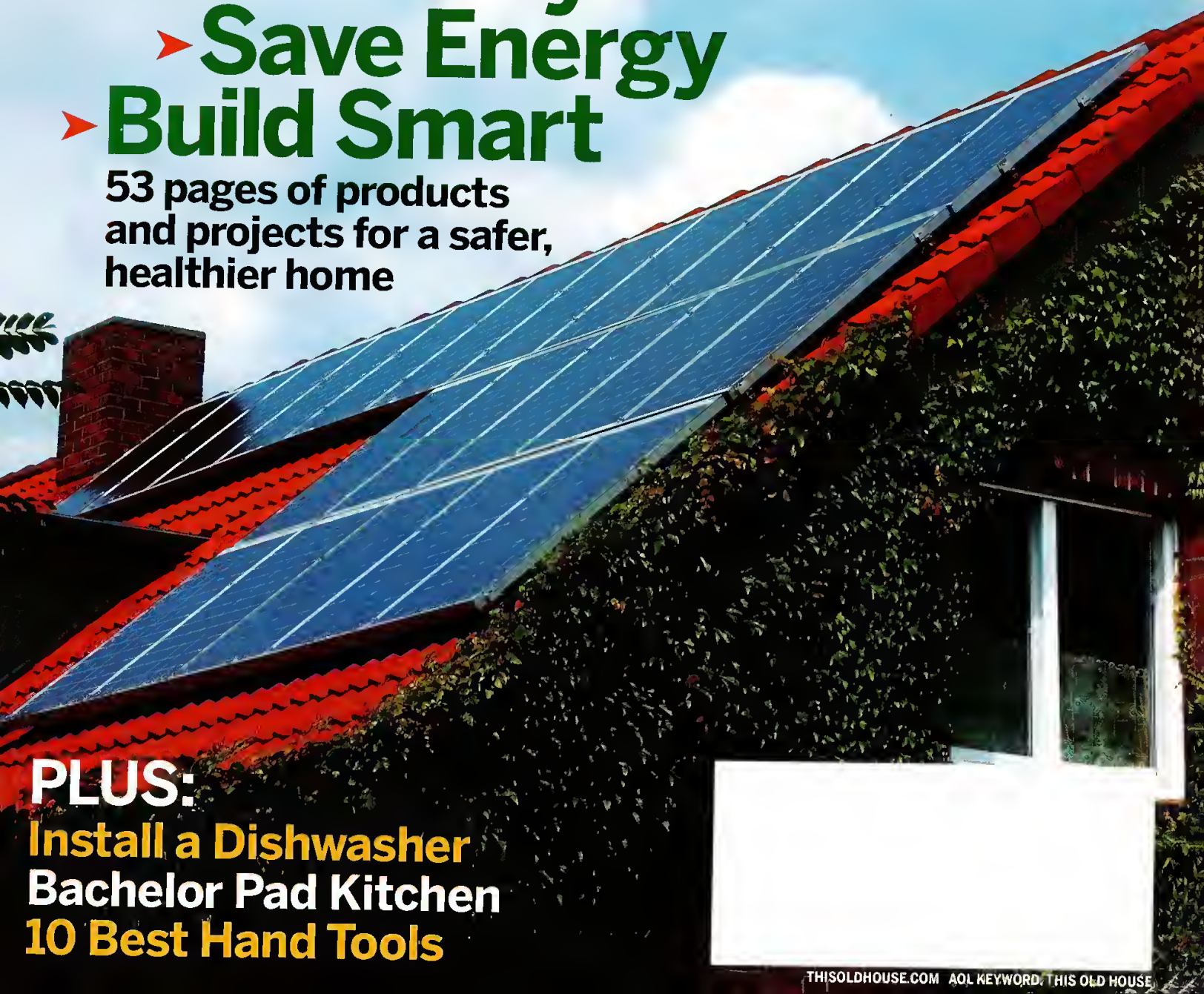

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Natural beauty: 25 new home products as easy on the eye as they are on you and the planet

ON THE COVER
Rooftop solar panels like these can generate enough electricity to power an entire house—for pennies a day. To see how one couple incorporated solar energy into their design and learn more about whether it's right for you, turn to page 45.
Cover photograph by **Olmar Smit**

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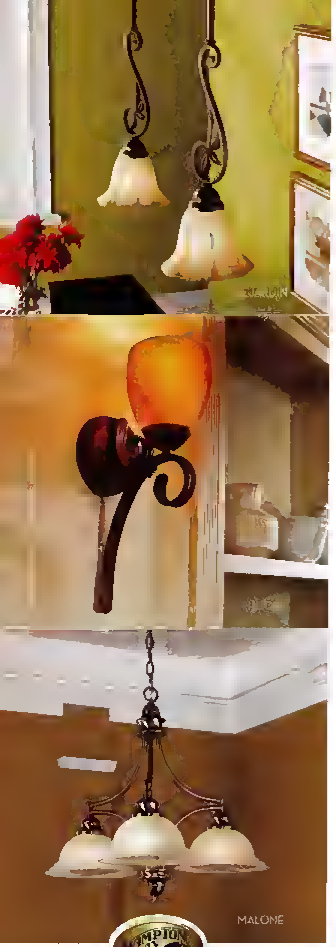

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Salvaging Myself

IT S TRUE WHAT THEY SAY about the road to hell being paved with good intentions At least the road I'm on Actually, it's more expressway than road—a treacherous one, too no speed limit, curves ahead, a big, big toll to pay before I can exit

This particular journey started with wanting to get as much remodel out of as little money as possible during our renovation The best way to accomplish that, I decided, was to do the demo myself and salvage as much material as I could for reuse in the new construction I also felt the need to conserve building products, since my three-bedroom, two-and-a-half-bath retirement plan is close enough to sea level that should one too many icecaps go, it can only be sold to the fishes

Anyway, first I peeled down the basement's tin ceiling to install radiant heat in the floor above and set it aside to reuse later Then I pulled out partition walls and found 120-year old studs, 3 and 4 inches square It was tight-grained, old-growth stock that I thought one day I could glue up into a dining room tabletop It went into the keep pile, too

When the carpenters showed up to pry off old, built-up Italianate door trim, I asked them to add it to my pile. The contractor looked at me like I was crazy, but he complied—and complied for weeks Pretty soon, the pile had gotten so big they couldn't find a place to store their tools. One of the guys started whistling the theme to *Sanford & Son* whenever I walked in

In addition to 23 pieces of tin and 54 studs, I had amassed 2 stained-glass windows, 21 doors, 39 mismatched glass doorknobs, 60 mismatched brass door hinges, an old enamel sink, the pulley system from a dumbwaiter, a cast-iron steam radiator with the mark, "AA Griffing Iron Co NY Pat Sep 22 1874," and 328 linear feet of ⅞-by-⅜ shoe molding covered in lead paint

I had to put it all in storage, which has since cost me several thousand dollars. What's worse: The tin has rusted, my wife wants a glass dining room table, the dumbwaiter has become a laundry chute, and the radiator really isn't much use now that the heat is radiant

As is so often the case with anything I do, there's a better way You can see for yourself in this issue In our salvage column, Amy Hughes shows the proper way to make use of old stained glass In "The Recycled, Repurposed, Nontoxic House," on page 88, the Lessner family shows how to smartly recycle floors, doors, and walls, and on page 65 there's our green building products story

Sadly, we're too far into our remodel to take advantage of any of this In fact, I think I just passed a road sign that said, "Last Rest Stop Before... Eternity"

SCOTT OMELIANUK, EDITOR

PHOTO BEN BAKER

In addition to 23 pieces of tin and 54 studs, I had amassed 2 stained-glass windows, 21 doors, 39 mismatched glass doorknobs, and 60 brass hinges.

Facade Fragments

[Re Salvage July/August:] The Chicago area was home to one of the country's largest terra-cotta producers, and the buildings in Chicago are festooned with ornamental tile.

Fifteen years ago I acquired a decorative medallion from a building that burned down

(you can still see the smoke traces on the tiles' edges). I stacked up the pieces in the basement and pretty much forgot about it until it was time to add on to our 1950s ranch. From the first meeting with the architect, I made sure to include the piece in the plans.

We mounted the medallion inside of our screened porch, where it is visible from the dining room window that looks out onto the porch.

After 60-plus years outside in Chicago's climate and 15 years in our basement, I think it still looks good, and what would have been a blank wall became an asset.

DAVID LAHTI, FRANKFORT, ILL.

Tub-Caulking Advice

Very good article ["Now You're Caulking," July/August]. My Dad was a DIYer back in the 1950s, before the good caulks of today. He told me an old tile-setters' trick was to fill the tub half full of water—to weigh it down and slightly open the tub/wall joint—then caulk. Keep the water in the tub until the caulk has cured. After the water is let out, the caulk compresses. When someone uses the tub/shower, the caulk expands back to its original size, thus reducing or eliminating the caulk's cracking or pulling away from the tub or the wall. In doing this over the years, I've never had a caulk failure other than mildew.

KEN YARROW, GOLDSBORO, N.C.

Saving Water in the Garden

I enjoyed the article on water-saving irrigation devices, "Don't Dry Up" [July/August]. Those are some great ideas, however they all still use water from an outside source. As a fan of container pots and window boxes around my old house, I was looking for a way to conserve water. I purchased two rain barrels this spring and couldn't be more pleased. The plants love it because they are getting the rainwater they so thrive on, rather than the filtered city water. Though the barrels are big (80 gallons), we have cleverly concealed them in the beds of our landscaping. Additionally, many of the soaker-type devices you mentioned in the article can be used with rain barrels as well. All in all, capturing rainwater is the ultimate in water conservation.

DAWN MARIE BAYLIS, ELKTON, MD.

American Level-Headedness

The Toolbox article ["Tilt Control," July/August] about levels really triggered my Made in America enthusiasm. When the opening photograph and caption described the levels made by Crick Tool, I had to find out more. My wife and I made a visit to their factory in Ben Wheeler, Texas, to purchase one directly from the source. We met president Sam Alford and shipping manager Flint Flowers. They were extremely hospitable; could not believe that we had driven from Grapevine, Texas, to see them and even gave us a factory tour and explained all of the automation they have put in place over the last few years to meet the increasing demand for their product. They will even customize your level. Mine has my name engraved on the bindings.

Thanks for the opportunity to see an American tool manufacturer.

CHRIS MILLS, GRAPEVINE, TEX.

Old-House Enthusiasm

I just bought my first house in February. It was built in 1893, and I love it! I went to the local library to get information on remodeling the interior and yard and ran across *This Old House* in the periodicals section. In the past two months, I have checked out every issue from the past two years. My fiancé and I both love the magazine so much we just bought a subscription! Keep up the good work!

KATRINA MADDOX, BY E-MAIL

The Perennial Favorite TOH Tip

We are currently updating our basement, but opted to keep the original doors for some character and cost savings. When I went to paint

them, I remembered that *This Old House* had featured an article on removing the paint from old doorknobs and hardware without chemical strippers. After a quick search, I found the article on thisoldhouse.com and set up the knobs in my crockpot with a pinch of laundry detergent to cook off the paint. It worked like a charm! Thanks for always providing great solutions to common problems.

JENNIFER CLINE SARGENT, WEST HEMPSTEAD, N.Y.

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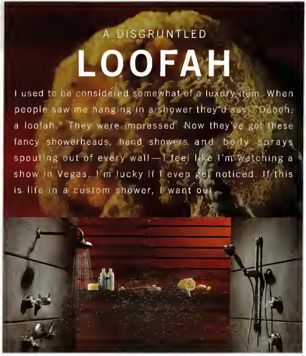

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EDITED BY **KELLY BEAMON**

▸INSULATION MADE FROM MUSHROOMS?

Yes. Students actually grew a new material designed to keep the heat in.

Newspaper and denim used to be the coolest sounding insulation options. But now Eben Bayer, son of a Vermont maple syrup farmer, and his college classmate Gavin McIntyre have created insulation from oyster mushrooms—a petrified slurry of water, hydrogen peroxide, mushroom spores, perlite (that flaky volcanic glass you see in potting soil), and starch. Bayer first came up with the idea while trying to wine sustainable housing contest in his sophomore year at Rensselaer Polytechnic Institute in Troy, New York. He'd hunted for mushrooms as a kid on the family farm, knew their root systems (where you find the rapidly multiplying spores), and thought the way they grow might be harnessed to bond materials together. McIntyre encouraged the experiments and raised samples under his bed. Since graduation, the 20-somethings have patented the 2-inch-thick panels they call Greensulate and forecast manufacturing costs of $1 per square foot. (They studied marketing, too.) If their classroom projections hold, the insulation, which for now has a low R value of 2.9, could be cheaper than options made from newspaper and fiberglass. A debut is expected in 2008. For more information, visit ecovativedesign.com.

—NATALIE RODRIGUEZ

WHY MUSHROOMS?

The colonizing and parasitic nature of mushroom spores easily transforms Greensulate's raw materials into a foamlike insulation. When Bayer and McIntyre add water to the mix, the spores of *Pleurotus ostreatus*, the botanical name for the North American oyster mushroom, attach themselves to individual bits of perlite, begin feeding on the starch, and grow until they bind all the particles together. The hydrogen peroxide helps stop the process just before recognizable mushroom caps appear. In preparation for a commercial debut, the inventors are also experimenting with coffee grounds and corncobs (starch stand-ins) as a growth medium. Additional possibilities include certain mushroom species that resist insects—a plus in the walls of my home. —*N.R.*

RIGHT The Gravelpave2 paving system, $3 per square foot. invisiblestructures.com
BELOW A sample of previous concrete recementshippers.com.

Driveways That Drain Away

POROUS ALTERNATIVES TO ASPHALT DIVERT RAINWATER RUNOFF FROM OVERWORKED SEWERS—AND LOOK NICER

Gravel and other porous materials are rarely the first choice for driveways, which is unfortunate as they have definite benefits over concrete or asphalt. Some of them last years longer and most chemical contaminants such as oil fade the earth beneath the driveway, where microbes slowly break them down. Just excavate the old parking pad, put down a level base layer of gravel to help excess water filter down to the soil, and you're ready to install one of these:

Gravel Grids: For the capable DIYer, there are snap-together recycled plastic and polyethylene grids which when installed on top of the base layer hold in place an additional 1 to 2 inches of decorative gravel in any color and last 25 years. Invisible Structure's Gravelpave2 is $3 per square foot; Alcoa's Geoweb costs $5 a square foot. Professional installation takes the price to a bit more than you'd pay for poured asphalt or concrete.

Pervious Concrete: Want to stick with a familiar look? Since it's made with little or no sand, the pervious version of concrete has air pockets that permit drainage of 4 inches of water per minute. Installation isn't DIY since the stuff requires special tamping and rolling, but any certified ready-mix concrete contractor can do it. Beware: Pervious concrete can clog with dirt and other sediment, so be ready to run the leaf blower every so often.

Porous Pavers: Interlocking concrete pavers, such as those from Oldcastle Architectural, are stronger and even more earthquake-resistant than a poured slab of concrete. In one DIY weekend, you could have an attractive patterned parking pad for $2 to $5 a square foot. —NATALIE RODRIGUEZ

ORIGINS QUESTION

The sun's power hasn't always been available in nifty roof-mounted panels. It took three Bell Laboratories scientists two decades to create the first thumbnail-size photovoltaic cells.

In what year did the solar-panel patent see the light of day?

A. 1958 B. 1887 C. 1983 D. 1922

(turn to Origins Answer page 22)

10 USES

DRYWALL SCREWS

Drywall screws are made to fasten wallboard to studs. But the toothy threads and trumpet shaped heads do make em a tempting choice for other tasks. Short of their intended use here are some unlikely things they're good for.

—MARK POWERS

1 **PUT UP A PAINT STATION.** *This Old House* master carpenter Norm Abram screws one through each corner of a scrap board and rests cabinet doors he's just painted on the four points for a makeshift drying rack.

2 **SUB FOR A STOPPER.** Screw one into the nozzle of a tube of glue or caulk to clear and seal it; leave it in for a top that screws off.

3 **SCRIBE.** If you lose the needlelike awl off your combo square, the point on a fine-thread drywall screw can scratch an equally sharp mark.

4 **SILENCE A SQUEAK.** For creaking floors beneath the carpet, find where the floor meets a joist, then put a 2-inch drywall screw an inch and a half into it through the carpet. A sharp, glancing blow with a hammer will snap off the head safely below the carpet's pile.

5 **REPLACE A PUSHPIN.** *TOH* general contractor Tom Silva gently taps a 2-inch drywall screw with a hammer to chip away a tiny amount of glaze on ceramic tile. This keeps drill bits from "walking" and helps masonry bits get started.

6 **PILOT A HOLE.** In lieu of a ⅛-inch starter bit, a drywall screw will predrill an easy path for larger hand-turned hooks, eye screws, and lag bolts in a pinch.

7 **CLEAN UP A CONNECTION.** Before installing new fittings, use a drywall screw's fine point to dig old compound and tape out of pipe threads.

8 **SOAKE A SINK.** With threads so toothy they snag on fibers, a drywall screw tied to a string and twirled in a drain can clear a mild hair clog.

9 **SPACE DECK BOARDS.** To lay deck boards evenly, New York contractor Terrence McCafferty drops the screws between each course before he nails it down. Big heads keep the boards in place as he aligns the ends.

10 **CRAFT A TRAMMEL.** Tom Silva fashions his from the points of two screws driven through a strip of wood. By spacing them as wide as his proposed radius, he can scratch a perfect circle.

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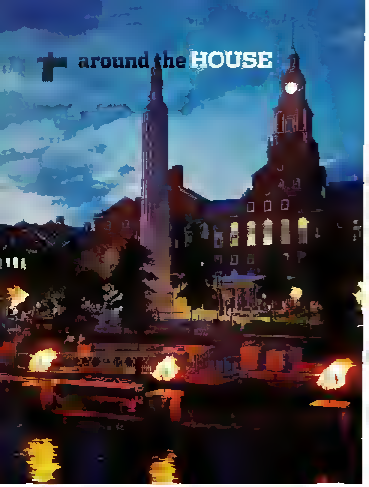

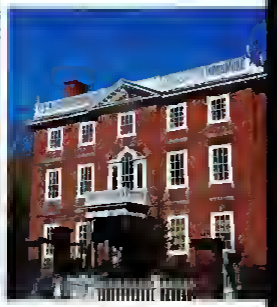

DESTINATIONS

College Hill, Providence, Rhode Island

Named for its role as home to Brown University, the dignified College Hill neighborhood in Providence, Rhode Island, is also known for cheery rows of painted Colonials and Victorians, all on land continuously occupied since the city was settled in 1636. By the 1700s, College Hill was already celebrated for its grand homes owned by wealthy businessmen; they include the 1788 residence of merchant John Brown, now open to the public. John Quincy Adams called Brown's house "the most magnificent and elegant private mansion that I have ever seen on this continent." Tours of Benefit Street, lined by about two dozen Federal-style homes, start there. For history in the making, head downtown for WaterFire—the sunset lighting of floating braziers at the point where Providence's three rivers converge. The bonfires have been set annually since 1994; this year's dates include October 6 and 27. —ANDREW GARDNER

ABOVE LEFT: On Providence River, the city's WaterFire sculptures are lit several times a year to draw attention to the city's arts scene. ABOVE CENTER: The 1795 William Ashton Jr House in Providence's College Hill neighborhood. ABOVE RIGHT: The 1788 John Brown House Museum

A Backup Generator When It's in Park

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Most people want a hybrid car to save gas and reduce pollution—but a prototype plug-in electric vehicle does all that and keeps your home's lights and fridge going in a power outage. The car, a retooled Prius developed by Pacific Gas and Electric and Energy CS, has an outside battery that's compatible with a 220-volt household outlet (the kind an electric stove uses). Once plugged into the home grid, an owner need only flip a trunk inverter switch to access emergency power for several hours. (The battery stores 9 kilowatts, whereas the average house uses about 16 kilowatts a day.) When will this hit showrooms? A consumer model is still about 10 to 15 years away. So for now, keep on stocking the canned goods and flashlights. Learn more at calcars.org. —ELIZABETH KOLLEENY

ORIGINS ANSWER

A. 1958 The first solar cells were used in everything from the Vanguard 1 satellite to radios and calculators. But headway into the home market was slow until 1979, when President Jimmy Carter installed solar panels on the roof of the White House's West Wing to underscore his energy policies

PHOTOS: (CLOCKWISE FROM TOP LEFT) THOMAS PAYNE; COURTESY OF THE PROVIDENCE WARWICK CONVENTION & VISITORS BUREAU (2)

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Come home to Andersen

Mind Over Remodel

A RENOVATION PSYCHOLOGIST MATCHES BEHAVIORAL TRAITS TO THE RIGHT HOME IMPROVEMENTS

Ever literally cried over spilled paint? Chances are you chose the wrong project for your personality type, and looking inward at how you're wired might help. No joke. Licensed psychologist Debi Warner's Littleton, New Hampshire, practice is based on that theory. Which of her profiles fits you?

>MILDLY REPETITIVE-COMPULSIVE Not to make light of a true disorder, but if you pay slavish attention to details, we've got the perfect project for you.

>TRY Sanding and refinishing floors, which both require patient repetition at a slow pace.

>ATTENTION DEFICIT/HYPERACTIVITY DISORDER So prolonged focus on one thing isn't your strong point—not a problem!

>TRY Demolition. You still need to be careful, but wielding a sledgehammer or Wonder Bar will feel therapeutic.

>SLIGHTLY CODEPENDENT Always placing your own needs on the back burner might be bad for relationships, but it's helpful in one particular renovation task.

>TRY Wallpaper hanging. Coordinating with the hanger on the ladder means letting him or her control the pace. For more insight, visit renovationpsychology.com

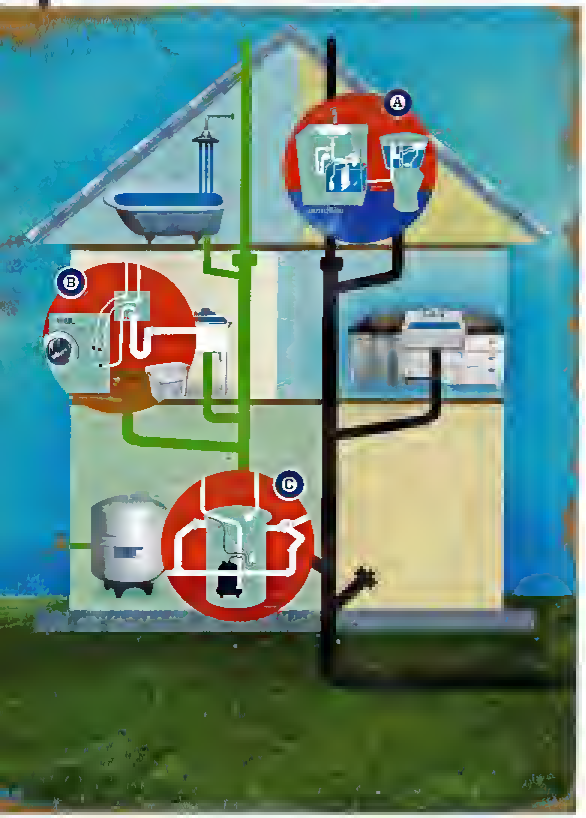
ILLUSTRATION: ELLEN WEINSTEIN; PHOTO: [illegible]

TOH TIP

Get a Plumbing Project to Pay for Itself

For plumbing repairs that involve replacing or installing cut copper, *This Old House* plumbing and heating expert Richard Trethewey suggests saving and selling the old pipes and new offcuts to a scrap yard. "That way, the waste gets reused, and at $2 a pound for copper, it could be like getting a rebate on the expense of the repair," he says.

FOR MORE INFORMATION SEE DIRECTORY, PAGE 125



A | SINK-FED TOILET TANKS
Flushing toilets with water draining from showers, sinks, and tubs is allowed in International Plumbing Code states (it's prohibited by the Uniform Plumbing Code in 17 others, mostly in the West). This sink-to-toilet tank hookup, from Water Saver Technologies, is a self-contained system. Source water flows via pump directly to its end use. (Source water from a bathroom sink—not a kitchen one, which is at high risk for bacteria such as *E. coli*—is recommended.)

B | LAUNDRY-FED IRRIGATION
The easiest gray-water source is a washing machine. Its pump is already pulling water out, discharging it into an accessible standpipe that you can extend outside the house. Just take care to strain the water through a sand filter or polyester felt mesh bag; bury irrigating polyethylene pipes 9 inches deep, and keep the discharge far from wells, creeks, and streams.

C | GRAY-WATER MAIN LINE
To reuse gray water throughout your home, you need a whole-house "gray water supply" main line. It resembles the existing main drain but is separated from toilet lines and leads to a surge tank that's properly vented through the roof. To separate gray sources from the main, you also need a crawl space or basement foundation for easy access to plumbing.

Water the Lawn With Your Saturday Night Bath

THESE THREE GRAY-WATER RETROFITS CAN SHRINK YOUR WATER BILL—FOREVER

Why not divert shower water to the lawn, instead of sending it to the sewer? Plants don't mind a little soap and, well, skin cells. And the savings aren't hard to imagine when you consider that even with all those low-flow fixtures installed, the potable water you lavish on shrubs draws significantly on your fresh-water supply. So does that clean water you tap for flushing, which in some states can be substituted with the effluent from your sink.

Redirecting gray water for such uses isn't always easy. In fact, because conventional plumbing systems combine gray water with "black" post-toilet-flush water in the same drainpipe, separating them in a code-compliant manner requires an entire parallel wastewater system alongside your existing main sewer line—installed by a professional. But it's the long-term savings stretched out over the life of your mortgage, years after the retrofit's paid for, that are so compelling. Systems manufacturer Steve Bilson projects that a family of four can save anywhere from $300 to $600 annually by diverting gray water just for irrigation. Even in code-happy California, where a system might run you close to $7000, it's possible to reduce your use of fresh water so much that a retrofit pays for itself in about 10 years—in less time if you're in an area where you pay both water and sewer fees. In a home under construction, the installation costs can shrink to less than $600.

Opting for even one gray-water use can make a difference. If you have to choose, "Irrigation's the most cost-effective, and it's legal in every state," Bilson says. Since he's put in roughly 800 systems and was a consultant on California's gray-water legislation, surely three retrofits he approves of are worth a look. —KELLY BEAMON

bonus idea Learn how to harvest and recycle rainwater for the home, at thisoldhouse.com/shortcuts

ILLUSTRATIONS: ELLEN WEINSTEIN

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"Time out" ended seven minutes ago.

Radiant heating by Uponor makes your whole house comfy and cozy. It circulates heat under the floor, so it's warm all over regardless of what corner you send her to. There are no drafts, no cold spots. With no furnace. It's quiet and dust-free. It'll even save on energy costs. For more information visit uponor-usa.com.

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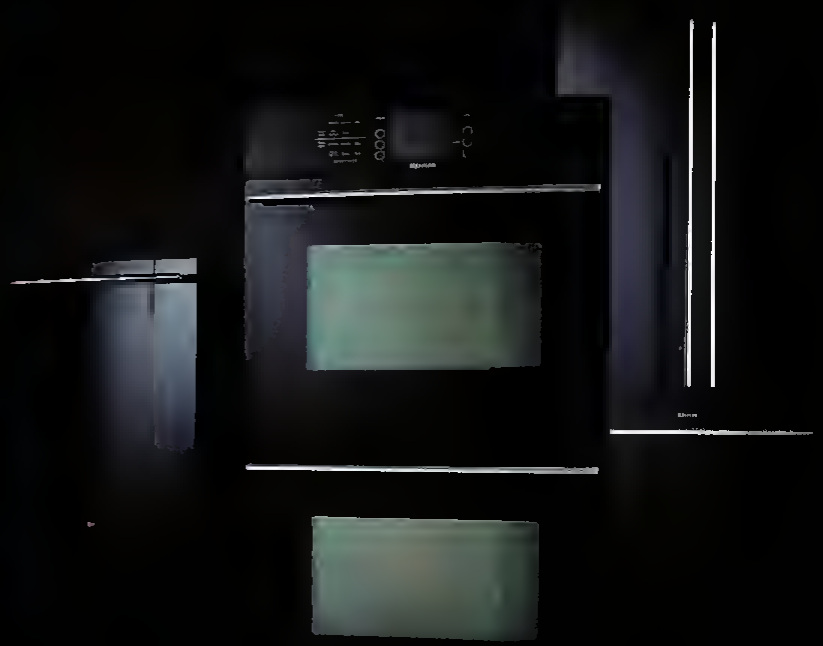

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My Harebrained Green Schemes

» How eco-friendly could I turn our household before going broke, alienating my family, or becoming known as the town wacko?

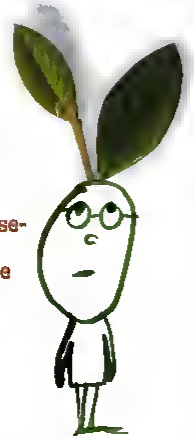
BY **JAMES GLAVE** ILLUSTRATIONS BY **SERGE BLOCH**

SINCE I DECIDED TO ADOPT A GREENER HOME LIFE I have enjoyed my share of quiet victories. In winter, I turn down the heat and revel in the pop and crackle of our "carbon-neutral" woodstove, which burns locally sourced logs that I split myself. Come springtime, I open the compost box and palm fistfuls of gorgeous black earth. So what if my kids mostly refuse to eat the expensive organic vegetables we feed them at supper? The worms are happy to pick up the slack.

There are days, though, when my newfound passion for domestic sustainability feels more like pushing a boulder up a hill. Days like today—when that's exactly what I am doing.

The angular rock weighs more than 100 pounds and rolls about as well as a dorm room fridge—which is to say, poorly. Nevertheless, in the name of saving the planet, I've convinced myself I must coax it a yard or two up the 45-degree slope that pitches down out of my backyard. I am sweating and swearing. But hey, it's gonna be worth it.

You see, I have done the math on this rock and the others like it that I have humped around these woods over recent weekends and concluded that each month they will help prevent the release of around 30 pounds of carbon dioxide into the atmosphere. They will do this by retaining the slope on



My wife, when she isn't rolling her eyes, is supportive of my house-and-garden eco-zeal. But privately, I imagine she is also a little worried.

a walking trail that I am cutting through my steep and forested 1-acre property—a path that will link my home with the elementary school that my daughter will attend this fall. Without the trail, the road to kindergarten is long, winding, and best handled by car. Which is where the CO_2 comes in.

After I have sweated and cussed for hours, my wife leans off the deck railing somewhere high above me to call me up to dinner. "How's it going down there?" she hollers into the conifers in her most encouraging tone. "Great!" I manage, as I inch the boulder into a notch I have dug out for it in the hillside. Not exactly. As the crow flies, there are roughly 200 yards between my house and the school. This afternoon, I have covered about six of them.

The walking trail is just the latest of several harebrained but well-intentioned schemes I have recently undertaken in an attempt to live a little more lightly on the planet without violating what I have come to call the Prime Directives of Green: I will not spend all my money. I will not alienate my friends and family. And I will not drop out of society.

My wife, when she isn't rolling her eyes, is supportive of my house-and-garden eco-zeal. But privately, I imagine she is also a little worried. It seems I'm getting a bit of a reputation around our town, a semirural island community of some 4,000 people. I fear I may be evolving into what is politely known as a "local character" or, when I'm out of earshot, a "harmless eccentric"—a wacko, in other words.

Perhaps it was the clover lawn that got them all talking. For that blunder, though, I blame Keyo, our hippie landscape designer. Last year, the forest sprite suggested we seed white clover in our backyard instead of Kentucky bluegrass, which requires a good deal of water, not to mention endless upkeep with noisy and polluting two-stroke engines. "The deer should keep the clover clipped," she said.

Ah yes, the deer. Though estimates vary, most credible accounts place their population on my 25-square-mile island somewhere in the tens of millions. Around these parts, garden plans typically specify concertina wire and guard towers. Given the costs of such infrastructure, Keyo's logic made perfect sense. Instead of treating the beasts like pests to be fenced out, why not plant something that would actually work in harmony with them?

So we wheelbarrowed in 11 yards of topsoil, raked it level, sowed the clover, and began pumping harvested rainwater out of our 1,200-gallon cistern and onto our future lawn. The tiny sprigs took hold and thrived. Unfortunately, so did the wildlife. Word of our enterprise spread through the antlered community like invasive bamboo. Soon enough, each and every tender young shoot was nibbled down to the ground. One regular buck felt so at home that he took to sleeping on the muck that was once our low-emissions lawn.

But that hasn't discouraged me from my most ambitious green-living project to date: a studio I am about to build in the front yard. The 250-square-foot structure, which I have dubbed the Eco-Shed, will be a passive-solar space, heated and illuminated by the sun. We will harvest rainwater off the roof and store it in a giant steel silo, where it will drip into an adjacent pesticide-free blueberry patch, dwarf-apple orchard, and veggie garden. The interior will be free of toxic finishes. Advanced framing techniques and spray-in foam insulation will keep the warmth inside, while a heat-recovery ventilator will constantly circulate fresh Pacific air.

As I write this, we're putting the final touches on the blueprints. Only one or two minor details need to be dealt with before we pull a permit and get started. First, I'll need to get a sign-off from the neighborhood association, which may conclude that certain design elements of my would-be green building—the corrugated-steel rainwater-storage silos, perhaps—do not neatly harmonize with my street's dominant faux Arts and Crafts architectural theme.

Second, I'll need to figure out a way to tell my father-in-law that we need to dismantle our double carport. The one that's barely two years old. The one that he ordered up for us from our builder, as a gift, while our house was rising from the granite bedrock. The same one that is, unfortunately, smack-dab in the way of all that sunshine.

We'll reuse much of the carport's framing lumber in the new studio. But some concrete will have to go. And a few trusses. And the asphalt roofing. And possibly my father-in-law's future generosity. (Note to self: Revisit Prime Directives.) As I head for the front yard with a pry bar and shingle scraper, I know one thing for sure: It's good to be idealistic. ■

James Glave lives on Bowen Island, British Columbia. His first book, Almost Green, *will be published in the spring of 2008.*

Online Exclusive

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Annoyed by frequent, sudden urges in your internal plumbing?

VESIcare can help put you back in the driver's seat.

Frequent, sudden bladder urges can sometimes get in the way of what you love to do. It's harder to do things spontaneously. Even the worry of leaking can drive you to distraction. That's why you should talk to your doctor about how to take care with VESIcare. Taken once a day, VESIcare can reduce frequent, sudden urges and may help effectively manage bladder leakage, day and night. Fewer sudden urges. It doesn't have to be a pipe dream. Ask your doctor about VESIcare today.

Important Safety Information

VESIcare is for urgency, frequency, and leakage (overactive bladder). VESIcare is not for everyone. If you have certain types of stomach, urinary, or glaucoma problems do not take VESIcare. While taking VESIcare, if you experience a serious allergic reaction, severe abdominal pain, or become constipated for three or more days, tell your doctor right away. In studies, common side effects were dry mouth, constipation, blurred vision, and indigestion.

Please see important product information on the following page.

VESIcare® (solifenacin succinate) tablets

Take care with VESIcare.

If you don't have prescription coverage, visit pparx.org, e-mail 1-888-4PPA-HOW (1-888-477-2669)

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Patient Information
VESIcare® – (VES-ih-care)
(solifenacin succinate)

VESIcare solifenacin succinate

Read the Patient Information that comes with VESIcare before you start taking it and each time you get a refill. There may be new information. This leaflet does not take the place of talking with your doctor or other healthcare professional about your condition or treatment. Only your doctor or healthcare professional can determine if treatment with VESIcare is right for you.

What is VESIcare®?
VESIcare is a prescription medicine used in adults to treat the following symptoms due to a condition called overactive bladder:
- Having to go to the bathroom too often, also called "urinary frequency,"
- Having a strong need to go to the bathroom right away, also called "urgency,"
- Leaking or wetting accidents, also called "urinary incontinence."

VESIcare has not been studied in children.

What is overactive bladder?
Overactive bladder occurs when you cannot control your bladder contractions. When these muscle contractions happen too often or cannot be controlled, you can get symptoms of overactive bladder, which are urinary frequency, urinary urgency, and urinary incontinence (leakage).

Who should NOT take VESIcare®?
Do not take VESIcare if your:
- are not able to empty your bladder (also called "urinary retention"),
- have delayed or slow emptying of your stomach (also called "gastric retention"),
- have an eye problem called "uncontrolled narrow-angle glaucoma",
- are allergic to VESIcare or any of its ingredients. See the end of this leaflet for a complete list of ingredients.

What should I tell my doctor before starting VESIcare®?
Before starting VESIcare tell your doctor or healthcare professional about all of your medical conditions including if you:
- have any stomach or intestinal problems or problems with constipation,
- have trouble emptying your bladder or you have a weak urine stream,
- have an eye problem called narrow-angle glaucoma,
- have liver problems,
- have kidney problems,
- are pregnant or trying to become pregnant (it is not known if VESIcare can harm your unborn baby),
- are breastfeeding (it is not known if VESIcare passes into breast milk and if it can harm your baby. You should decide whether to breastfeed or take VESIcare, but not both).

Before starting on VESIcare, tell your doctor about all the medicines you take including prescription and nonprescription medicines, vitamins, and herbal supplements. While taking VESIcare, tell your doctor or healthcare professional about all changes in the medicines you are taking including prescription and nonprescription medicines, vitamins and herbal supplements. VESIcare and other medicines may affect each other.

How should I take VESIcare®?
Take VESIcare exactly as prescribed. Your doctor will prescribe the dose that is right for you. Your doctor may prescribe the lowest dose if you have certain medical conditions such as liver or kidney problems.
- You should take one VESIcare tablet once a day.
- You should take VESIcare with liquid and swallow the tablet whole.
- You can take VESIcare with or without food.
- If you miss a dose of VESIcare, begin taking VESIcare again the next day. Do not take 2 doses of VESIcare in the same day.
- If you take too much VESIcare or overdose, call your local Poison Control Center or emergency room right away.

What are the possible side effects with VESIcare®?
The most common side effects with VESIcare are:
- blurred vision. Use caution while driving or doing dangerous activities until you know how VESIcare affects you.
- dry mouth.
- constipation. Call your doctor if you get severe stomach area (abdominal) pain or become constipated for 3 or more days.
- heat prostration. Heat prostration (due to decreased sweating) can occur when drugs such as VESIcare are used in a hot environment.

Tell your doctor if you have any side effects that bother you or that do not go away.
These are not all the side effects with VESIcare. For more information, ask your doctor, healthcare professional or pharmacist.

How should I store VESIcare®?
- Keep VESIcare and all other medications out of the reach of children.
- Store VESIcare at room temperature, 59° to 86°F (15° to 30°C). Keep the bottle closed.
- Safely dispose of VESIcare that is out of date or that you no longer need.

General information about VESIcare®
Medicines are sometimes prescribed for conditions that are not mentioned in patient information leaflets. Do not use VESIcare for a condition for which it was not prescribed. Do not give VESIcare to other people, even if they have the same symptoms you have. It may harm them.

This leaflet summarizes the most important information about VESIcare. If you would like more information, talk with your doctor. You can ask your doctor or pharmacist for information about VESIcare that is written for health professionals. You can also call (800) 972-4634 toll free, or visit www.VESICARE.com.

What are the ingredients in VESIcare®?
Active ingredient: solifenacin succinate
Inactive ingredients: lactose monohydrate, corn starch, hypromellose 2910, magnesium stearate, talc, polyethylene glycol 8000 and titanium dioxide with yellow ferric oxide (5 mg VESIcare tablet) or red ferric oxide (10 mg VESIcare tablet)

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Don't miss the October premiere of Ask This Old House, now in its sixth season on PBS. For local television listings, visit our newly renovated website at thisoldhouse.com/tvschedule.

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Ending the Turf Wars

Smart ways to give yourself—and the environment—a break from big, demanding l...

BY JEANNE HUBER

FRONT-YARD GARDEN Reducing lawn by widening flower beds and shrub borders can really improve the look of your home. Here low-growing, native buffalograss preserves green open space.

PHOTO: KAREN BUSSOLINI

IT DIDN'T SEEM LIKE SO MUCH TO ASK. All you wanted was a cool patch of grass where you could position an Adirondack chair, toss the Frisbee to your kid, and saunter barefoot on lazy weekends. But the lawn you got is not green in any sense of the word. By now, it's probably bare in some spots, weed-choked in others, after a summer of guzzling water, gobbling fertilizer, and demanding hours of your attention.

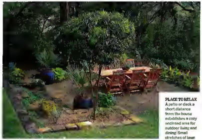
Could it be you don't need so much lawn after all? Swapping a section or two for native plants or other landscape alternatives can result in outdoor living spaces that demand far less of your time and energy—not to mention less water, gas, and electric consumption. And, ultimately, turf might not be the most useful sort of landscaping for the way you want to live. "There are so many opportunities for outdoor living that a lawn doesn't address," says Keith Davitt, a landscape designer in Cambridge, New York, and the author of *Beyond the Lawn* (Quarry Books). "How about a dining area? Habitat for birds or butterflies? A place to enjoy your morning coffee?" Fall's cooler temperatures make now a good time to set the wheels in motion for a new and improved yard. There's a less-lawn way to get it.

WHAT YOU WANT: MAJOR CURB APPEAL

LESS-LAWN SOLUTION: If you live where every house flaunts an immaculate, manicured, weed-free front lawn, giving up grass entirely might read as an act of rebellion. But you can gradually shift toward a front yard that's more garden than lawn by establishing deep planting beds that curve

along the front and sides of the house

Experiment with designs by laying out garden hose in a gentle curve, then bring out the mower and test to make sure that whatever lawn remains takes a shape that's easy to trim. If you have an in-ground sprinkler system, also factor in the area that individual sprinkler heads spray. Plug heads you don't need, or convert them to supply a water-efficient drip irrigation system for the new planting beds. "As long as you keep some lawn, there will still be unity in the neighborhood," Davitt says. But your yard will be much more lushly planted—and easier to maintain—if you add wide borders with low-care perennials and shrubs to the mix.



PLACE TO RELAX A patio or deck a short distance from the house establishes a cozy enclosed area for outdoor living and dining. Small stretches of lawn bordering the patio soften any hard edges.

WHAT YOU WANT: OUTDOOR LIVING AND DINING SPACE
LESS-LAWN SOLUTION: Transform a well-defined area close to the house by trading turf grass for a dry laid brick patio or a patch of gravel with outdoor furniture. Just be sure to choose permeable paving that allows water to percolate through (not a broad expanse of concrete), so you don't create a parking lot–type yard where rain collects in puddles and storm drains instead of returning to the soil.

Define the space with a low wall, a perimeter of planting beds, or a collection of container plantings. Create an inviting path from one area of the yard to another with flagstone pavers. By tucking spreading, tread friendly groundcovers like creeping thyme into the crevices, you'll create a rock-garden feeling and cut down on watering, mowing, and fertilizing even more.

WHAT YOU WANT: PLAY AREAS FOR KIDS TO EXPLORE
LESS-LAWN SOLUTION: Many lawns exist primarily because families want a place for children to play. For many kids today, though, what's missing from their lives isn't a play structure or a sports field (parks and after-school activities offer plenty of that), but the chance for a one-on one connection with nature.

In that sense, a small flower or vegetable garden or, for older kids, a backyard pond that supports fish, frogs, or other wetland creatures can provide more lasting play value than a lawn alone. A low, freestanding deck connected to the rest of the yard with paths that wind among shrubs can serve as a base for forts or a stage for plays.

For toddlers, an oversize sandbox is a great choice. Cover it with bird netting, rather than plastic sheeting, between uses to keep cats and other critters from using it as a litter box while permitting sunlight, a natural sanitizer, to reach the sand.

WHAT YOU WANT: HABITAT FOR BIRDS, BEES AND BUTTERFLIES
LESS-LAWN SOLUTION: Outside a sunny kitchen or home-office window, position shrubs that provide food and cover for birds, such as highbush blueberry (*Vaccinium corymbosum*), red osier dogwood (*Cornus stolonifera*), common spicebush (*Lindera benzoin*),

BACK TO NATURE A shallow pond that can support fish—and that naturally attracts frogs and butterflies—offers school age kids a living lab to explore.

WILDLIFE BORDER A meadow of native wildflowers and grasses along the edge of your property attracts birds and beneficial insects. Mown paths meandering through the landscape help neaten up the look.

A CARPET OF GROUNDCOVER Tread friendly low growers like this blue star creeper tucked in between flagstone pavers create a rock garden look that's a lot less work than high-maintenance turf grass.

and viburnum varieties Add a small water feature—a birdbath or fountain—as the focal point. Then, when you want a distraction from the mundane tasks at the sink or desktop, you can look up and watch the wildlife at work

If you have the space, establishing a "mini-meadow" as a border or boundary area is another effective way to attract birds, as well as beneficial insects. Native plants like goldenrod, sunflower, and coneflower supply nectar for butterflies and, in fall, produce seeds for birds to enjoy Before you establish a wildflower bed, make sure you have a sunny site—and can tolerate a weedy look at the edge of your property Check that you won't run head-on into local ordinances or subdivision rules that require all lawns to be mowed to a certain height At AmericanMeadows com, you can find seed mix custom-blended for your part of the country; mixes include a wide range of annual and perennial species because each site is a little different On one lot, some plants will thrive, while others won't. Watching what happens is part of the fun Cornflower, cosmos, and other annuals typically grow quickly and put on a great show the first year, then perennials come on stronger and eventually take over.

WHAT YOU WANT: A GREEN CARPET THAT'S NOT GRASS

LESS-LAWN SOLUTION: If you crave the open look of a lush lawn, low growing groundcovers may be your best alternative to turf grass. *This Old House* landscape contractor Roger Cook warns that many low-growing groundcovers are sold as small plants, and establishing them over a large area can be costly So he often uses higher-growing groundcovers along the edges or creates a patchwork quilt that mixes high growing types (such as sweet woodruff, or *Galium odoratum*, and ferns) with low growers He favors bearberry (*Arctostaphylos uva-ursi*) on sandy sites and junipers in sunny spots, where it's okay for plants to die back in winter, he often plants hostas

Foot-traffic-friendly groundcovers that compete well with weeds and stay relatively short without mowing include mat-forming creeping thyme, grasslike blue sedge (*Carex glauca*), and mounding moss phlox (a good choice on hillsides where mowing is difficult) The Plant Info section at Stepables com includes a useful plant-search feature designed to help you find suitable species according to the amount of foot traffic they will get (and accounts for sun and water needs, as well). With a little searching, you can find a spreading groundcover that gives you the kind of green space that appeals to your sense of style, makes fewer demands on your time—and is easier on the earth ■

more choices

Find 23 groundcovers that can take the place of turf grass at thisoldhouse.com/shortcuts

PHOTOS: (TOP) GARDEN PICTURE LIBRARY; (BOTTOM) SUSAN HILT

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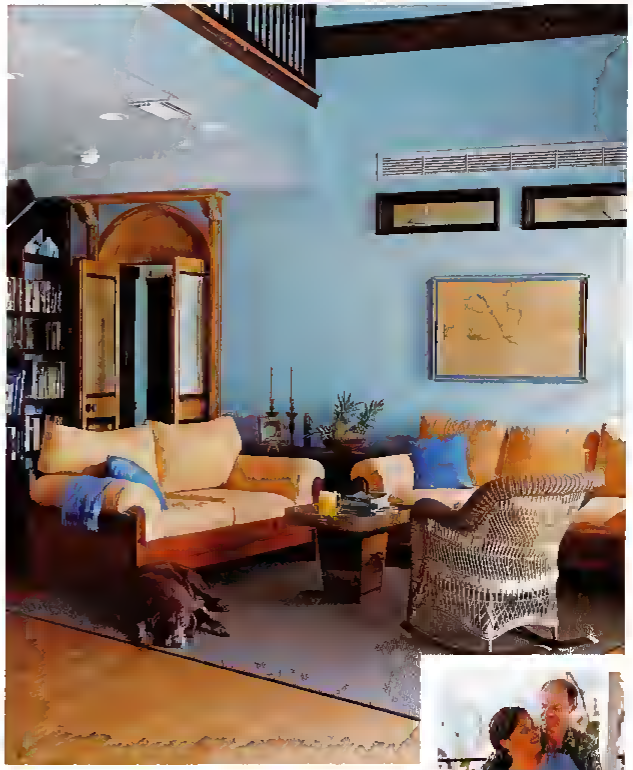
Stylish and Sustainable

>> A Florida couple builds an energy-efficient, eco-minded house that's long on creature comforts

BY KEITH PANDOLFI
PHOTOGRAPHS BY LAURA MOSS



BRIGHT IDEAS Low VOC paints, bamboo floors, salvaged doors, and air-circulating clerestory windows are some of the features in the Key Largo home of John Hammerstrom and Diane Marshall (RIGHT).

FLORIDA AND CALIFORNIA have a lot in common. Both draw tourists like flies. Both boast hundreds of miles of beautiful coastline. And both are known for their colorful politics. But when it comes to sustainable building, they're about as different as Jerry Brown and Jeb Bush.

At least that's what former California residents John Hammerstrom and Diane Marshall discovered when they tried to build their super-energy-efficient, environmentally sensitive dream home in Key Largo, Florida. "In some ways, Florida is behind the times when it comes to green building," John says. "We went through a lot of struggles to find craftsmen who could do it, and once we did, we had to introduce products to them that they hadn't used before. The painter had never used low VOC paints; the plumber hadn't installed a solar water heater; the insulation guy hadn't heard of no-formaldehyde insulation; the electrician had never installed solar panels." Eventually they found a general contractor who, though inexperienced in green building, was at least willing to learn. "He was very supportive of our efforts," John says, "even though he and most of the subcontractors thought we were a little eccentric."

What they were was determined—to build an efficient, just-shy-of-self-sustaining home that would leave a light footprint on the Florida coastline while providing all of the modern conveniences we luxe-minded Americans

1. The windowed cupola equipped with a ceiling fan provides natural light as it draws hot air up and out of the house, one of the many energy saving architectural features.

2. A white roof made from recycled aluminum helps keep the interior of the house cool by reflecting heat. It also prevents heat from escaping when the temperature drops.

3. Operable (and good-looking) hurricane shutters block the sun's rays and protect the windows when ocean breezes turn to hurricane-force winds. The double-hung windows help promote airflow

4. Smaller windows help to minimize solar heat gain, as does the light-colored stucco, which also holds up well to the damp Florida weather.

5. A 7,500 gallon concrete cistern tucked discretely underneath a guest room provides half the household's water needs. The system is supplemented by the municipal water supply

demand They got inspiration from the Florida House, an eco-model home conceived by the University of Florida, where they learned how to design a structure that would take advantage of the local climate and weather features. So, after tracking down an acre of beautiful beachfront property, they set about building a house that was low on energy consumption but high on creature comforts. Here's what they learned in the process, and how you can apply those lessons in your own home

WATER CONSERVATION

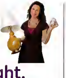
Living in California drilled the importance of water conservation into John and Diane's heads "We had experienced dealing with water shortages, so we were surprised when we moved to the Keys and they weren't concerned," Diane says That didn't stop them from installing a 7,500-gallon concrete cistern for collecting rain runoff Not only does it save a precious resource, it allows them to be self-sufficient if their supply of water, which comes from the mainland, is ever disrupted. "John calls us nouveau survivalists," Diane jokes.

Though the house is still hooked up to municipal water, the $12,000 investment provides over half of their H_2O for both potable and nonpotable uses. A diversion valve ensures that the first falling raindrops wipe the roof clean of any leaves, dirt, or insect droppings Then the water makes its way through copper gutters into the cistern, where three filters treat it for sediment and bacteria. The filtered water is pumped into the house through copper pipes via a solar-powered jet pump "It's terrific water," John says "Rainwater is far less toxic than municipal water supplies. If you saw the list of compounds that are allowed to be in drinking water, it would scare you to death—insecticides, solvents, all sorts of stuff." To make sure their supply is safe to drink, John and Diane have regular lab tests performed by an EPA certified facility "There's a little sodium, and a little copper from our gutters in it, but it's safe," says John

The house features other water saving devices, too, such as low-flow showerheads and an on-demand water

> "This house is an attempt to mimic houses that were built without all the energy-intensive appliances—built prior to air-conditioning and electricity—and then apply all of the modern conveniences." —JOHN HAMMERSTROM HOMEOWNER

Every interior designer's best-kept secret?



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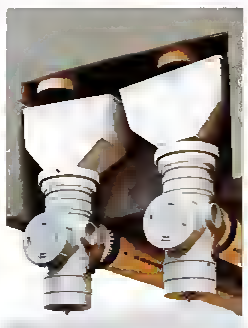
recirculation system that sends any hot water sitting in the pipes back to the heater, so the homeowners don't have to watch water running down the drain while waiting for it to heat up.

HEATING, COOLING, AND VENTILATION

John and Diane knew their house would have to contend with several climatic factors endemic to the Sunshine



HARNESSING RAINWATER
Water collected via copper gutters runs from the 7,500-gallon cistern to the house through PVC pipes.

State, most notably all that sunshine. "Our main goal was to keep the heat out," says John, whose battle plan included long, overhanging eaves that would shield the windows from harsh sunlight; Bahama shutters, hinged at the top, to shade the upper floors; and Colonial shutters on the south-facing side of the house to block the sun entirely. The window openings on that side were kept small, too, since they would be the primary gateway for the most intense rays. Another heat barrier is the house's light-colored metal roof, which reflects heat instead of absorbing it as some roofing materials, such as asphalt, do.

On the inside, design features allow for optimal air circulation. With the aid of a high-efficiency ceiling fan, a cupola with operable windows works like a chimney to draw warm air up and out of the house, while rectangular clerestory windows carved high on the walls between several interior rooms provide cross-ventilation.

The couple also incorporated two spacious screened-in porches, where they can sit in the evenings and use the refreshing ocean breezes, instead of the central air, to keep them comfortable. "I always get sad when I have to turn the air conditioning on," John says. "It drowns out the outdoors and makes me feel isolated."

At least their Lennox AC unit is quiet and energy-efficient. With its variable-speed air handler, "it sort of tapers on and off, so you don't get that loud rush of air associated with most units," John says. They supplement the AC with Hampton Bay ceiling fans designed by the Florida Solar Energy Center that are 40 percent more energy-efficient than conventional fans. "They decrease the perceived indoor temp by 15 degrees," says John. "So we turn them on whenever we're using a room."

SALVAGED AND SUSTAINABLE MATERIALS

With the help of interior designer Winston Lippert, John and Diane found several creative ways to incorporate salvaged materials, inside and out. Their kitchen is outfitted with showroom cabinets a local designer jettisoned before moving to a new location; scraps of mahogany from a nearby remodel became interior and exterior railings; and the house's wooden corbels come from an architectural salvage shop in West Palm Beach, where Lippert also found the three iron gates that now

The Scoop on Solar

You don't have to live in the Sunshine State to take advantage of renewable energy

The biggest investment John Hammerstrom and Diane Marshall made toward energy efficiency is the 2.8-kilowatt Kyocera solar panel system that adorns their rooftop. The panels, packed with photovoltaic cells, convert sunshine into the electrical current that provides half the household's power needs. The couple's electric bills typically run an affordable $50 per month in the summer, when the AC is kicking, and a measly $15 when it's not.

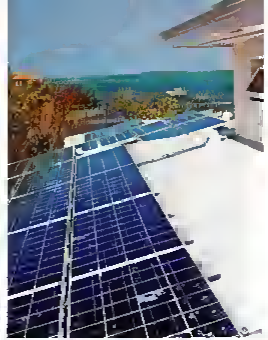
If you're thinking of following John and Diane's example, there are a few things to consider, including the kind of equipment you'll need. General guidelines call for 1 kilowatt, or 1,000 watts, per 1,000 square feet of house area, but you should work with your contractor to determine the right size for your home. Along with the panels, you'll also need a device called an inverter to convert the sun's DC voltage into usable AC power. Depending on where you live, such a system could cost anywhere from $15,000 to $35,000 installed.

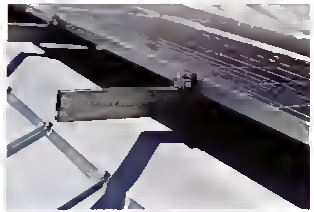
But—and this is a big but—that cost can be dramatically reduced if your local government or utility company offers tax breaks, rebates, discounts, or grants for solar products. For example, Texas's Austin Energy has a rebate program that reimburses customers $4.50 per watt, which ends up covering between 45 and 75 percent of the cost of solar panel installation. And Arizona offers a program that lets homeowners install solar energy devices without any increase to their property taxes. (For a state-by-state breakdown of incentives, visit thisoldhouse.com/shortcuts.)

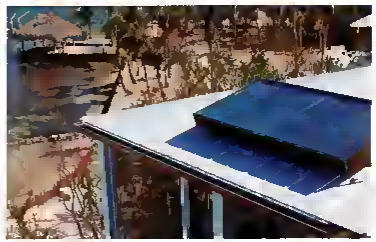
Going solar doesn't mean cutting ties to your local supply grid. As long as your utility company offers what's known as "net metering," you can plug your solar system into existing power lines, which kick back into service come sundown and on rainy days. If you generate more power when the sun is shining than you actually need, many states let you sell unused watts back to the local utility for a credit, making your electric meter effectively spin backward.

If there aren't any incentives available in your area, don't lose hope. When John and Diane's panels were installed, their local utility had yet to offer net metering, so the couple put together their very own presentation for the utility's board of directors and ultimately convinced them to adopt a net metering policy. They also received a $4-per-watt rebate from the Florida Solar Energy Center, which shaved $11,000 off the cost of the $25,000 system. Taking local electrical rates into account, John estimates he and Diane will recoup the cost of their investment in 12 to 15 years, though payback periods vary depending on local rates, incentives, and rebates.

One thing's for sure, when it comes time to move, solar panels will add to a home's resale value, no matter where you live. In fact, according to the U.S. Department of Housing & Urban Development, home values rise an average of $20 for every $1 reduction in annual utility bills.







CAPTURING LIGHT
ABOVE LEFT: A 2.8-kw photovoltaic system provides half of the house's electrical needs. ABOVE RIGHT: The panels are secured to the roof in a grid of metal brackets. For a less obtrusive look, you can also get photovoltaic cells built into roofing shingles. LEFT: The solar water heater is supplemented by an on-demand propane heater which kicks in if demand exceeds the unit's 40-gallon storage capacity.

THE RIGHT CLIMATE FOR SOLAR

While it makes good sense to install solar panels in a place known as the Sunshine State, you don't have to live in an ultraviolet stronghold to enjoy the benefits of renewable energy. Fact is, the affordability of installing panels depends more on local utility rates and incentives than on the amount of sunlight you get. For example, a standard 2-kilowatt system in New Mexico produces 25 percent more electricity than the same system in Massachusetts. But the energy savings are greater in the Bay State, since electricity rates are so much higher there.

And if you don't like the idea of huge panels on your roof, you can also buy "building-integrated photovoltaics," or BIPVs, which seamlessly integrate solar cells into slate, metal, fiber-cement, even asphalt roofing. The shingles get installed over new or existing roof sheathing, then an electrician or trained roofer wires the units together and ties them into your home's electrical system.

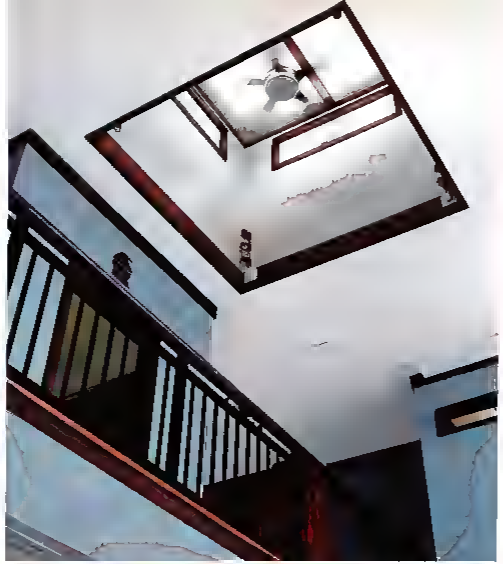
FREE HOT WATER

If solar panels are more of a commitment than you're willing or able to make, consider harnessing the sun's power to heat your water. John and Diane's Progressive Tube passive solar water heater is a self-contained system with a solar collector panel and an integrated 40-gallon storage tank. You can also get solar systems that act as preheaters for conventional or tankless water heaters. A typical passive solar water heater setup costs $4,000 to $6,000, though tax incentives and rebates might be available to offset the price. And thanks to the energy savings, you'll recoup your investment in as little as five years. How's that for keeping on the sunny side of life?

FOR MORE INFORMATION SEE DIRECTORY PAGE 125

for more info

For information on how to save water in your home, visit thisoldhouse.com/shortcuts



THE MANY FACETS OF GREEN

TOP LEFT: Covered porches and deep eaves keep out the heat. TOP RIGHT: The cupola, with its energy-saving ceiling fan in full swing. ABOVE LEFT: The house incorporates several salvaged materials, such as this column capital. ABOVE RIGHT: The exterior frames of the tinted windows are clad in vinyl, which stands up well to moist ocean air.

flank the house's main entrance.

"Winston went out and looked for salvaged items that would make the house more attractive," says Diane, who admits she questioned his judgment more than once. "We wanted columns in the foyer, and Winston sent us these photographs of salvaged columns he'd found that looked like old, rotten telephone poles. On the back of the photos he wrote, 'Trust me.' And he was right—once they were cleaned and stained, they looked great."

Using sustainable materials was also high on John and Diane's list of green-minded priorities. So instead of using old-growth hardwoods, the couple installed bamboo flooring throughout the house—a smart choice since it's sustainable and resists moisture, something that's mighty important in subtropical Florida. They also used cypress, a native species, for much of the interior millwork, which kept transportation costs and fuel consumption to a minimum.

BUILDING A GREEN FUTURE

After the house was finished, John and Diane made one more decision. They resolved to try and make things easier for anyone else in the Keys looking to build a house as green as theirs. "It took us about a year's worth of research to build this house, and we know people won't do it if they find out it requires so much work," Diane says. That's why she, together with several nonprofit and government organizations, founded Florida Keys Green Living and Energy Education (GLEE), which conducts seminars promoting sustainable building and living (see keysglee.com). Like many other states that don't start with a C and end with an A, Florida has a way to go before it can compete with the West Coast for green-building cred. But judging from the 3,000 people who turned up for GLEE's latest conference, the time is ripe. "So many pieces have to come together," says John. "Sure, there are education issues, but we also need a regulatory climate that makes green building more doable, not to mention well-trained craftsmen. After all, the public is clamoring for this stuff." ■

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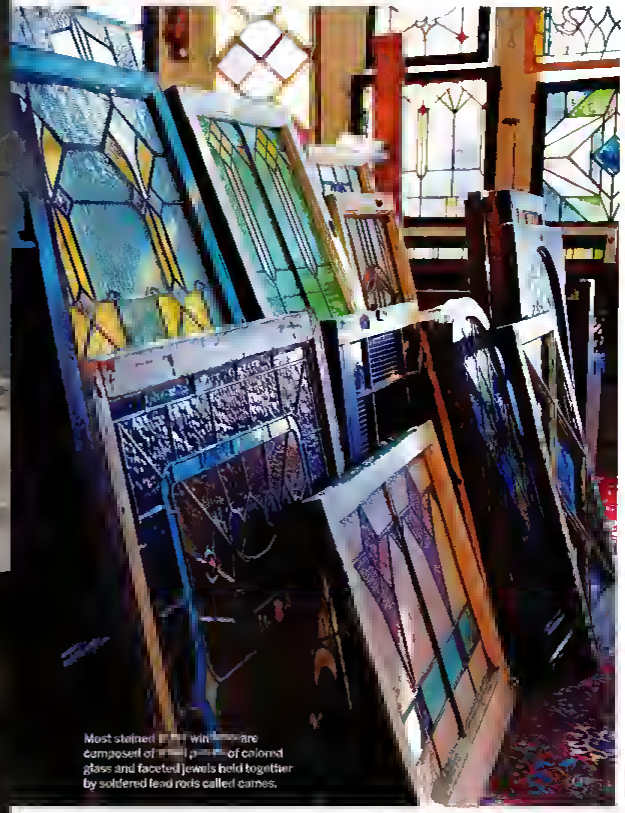


Most stained [illegible] are composed of [illegible] of colored glass and faceted jewels held together by soldered lead rods called canes.

MOST KIDS GET their first glimpse of stained glass at a house of worship, but not me. I came downstairs all bleary-eyed one morning to find two 12-foot-tall colored glass mosaics depicting the baby Jesus in our living room. My mom rescued the windows from a church in Newark, New Jersey, that was being gutted. She couldn't bear to see them destroyed. She also envisioned how nice they'd look in our home, a converted Victorian-era carriage house with soaring ceilings.

You see, my mom is a collector of all things old and beautiful, much of it—giant Buddhas, silk prayer rugs, bronze communion rails—religious in nature. To display the windows, she had a carpenter mount them in wooden shadow boxes with lights inside so they would glow from behind. They looked really cool at night, though house guests tended to whisper as if they were in some sort of chapel.

When we moved to a 1736 farmhouse with less lofty proportions, my mom donated the windows to a local museum. I guess that's why today I love hanging out at the Cloisters, near my apartment in upper Manhattan. A medieval art outpost for the Metropolitan Museum of Art, the place has the most amazing European stained-glass windows, some dating to the 12th century.

I also get my fix at salvage yards that are filled with far simpler—and wholly secular—versions with floral and geometric motifs that typically sell for between $100 and $2,500. Unlike their Christian-themed predecessors, which often told biblical stories through pictures, the architectural stained-glass windows in Queen Anne, Craftsman, and Tudor-style houses were used for their beauty and function. Installed as sidelights flanking a front door or instead of standard double-hung windows in

BY AMY R. HUGHES
PHOTOGRAPHS BY SARAH WILSON

TIP > To clean hard-to-reach crevices on stained glass windows, dip a Q-tip in denatured alcohol and gently wipe away dust and dirt.

a dining room, stained glass provides privacy and can obscure an unsightly view without blocking natural light.

Many residential stained-glass designs were inspired by masterworks from artists such as Louis Comfort Tiffany, whose depictions of autumn landscapes and cascading wisteria vines are still copied today. Arts and Crafts–style oak trees by the California architectural firm Greene & Greene and stylized chevron patterns popularized in the early 1900s by Frank Lloyd Wright were also widely imitated.

When searching for a piece of stained glass to improve the appearance of my own 1930s Art Deco–style apartment, I settled on a Wright-like transom with a red diamond pattern. I liked its clean lines, but mostly I liked that it was free. It was propped against a wall in *This Old House* design director Amy Rosenfeld's garage, and she was nice enough to give it to me. The great thing about windows is how versatile they are. I used mine as a door for a cabinet for bar glasses (see how, at right). I've also seen them used as shades hung from chains in front of bathroom windows and as room dividers mounted between wooden posts. You could even secure a stained-glass panel in front of a fixed skylight with mounting brackets to create a colorful filter for sun and moonlight.

Like my mom, I'm always conjuring up ways to recycle architectural artifacts. But I prefer house parts to church parts. They tend to encourage conversation, rather than hush it. ■

How I Built This Stylish Bar Cabinet

The graphic pattern on this red and amber-colored stained glass sidelight really complemented the Mod ish furnishings in my apartment. But the window's tall, narrow proportions are what made it ideal for the door of a wall-mounted storage unit for bar glasses that I wanted to put in an awkward recess in my dining room. Here's the step-by-step for the cabinet I built.

1_Cut the cabinet's 1x preprimed pine sides to the length of the glass door. The ends and shelves should be 1½ inches smaller than the window's width. Then, using a pencil and framing square, mark on the sides where the shelves will go.

2_Glue the top and bottom panels between the side walls, then glue in the shelves. Steady the unit with clamps and drive in finish screws to reinforce the glue. Paint the unit and let dry before adding a ¼-inch plywood back panel secured with steel tacks.

3_Create mortises for the door hinges by scooping out the wood with a chisel, its bevel side facing down. Then flip the chisel bevel side up to smooth the surface.

4_Put the closed hinges in the mortises and place the glass door squarely on top of the cabinet to mark where the hinges line up on its wooden frame. Predrill for the hinge screws, place the cabinet on its side next to the glass, and attach the hardware.

5_Hang the cabinet with an anchoring system appropriate for your wall type. —A.R.H.

1

2

3

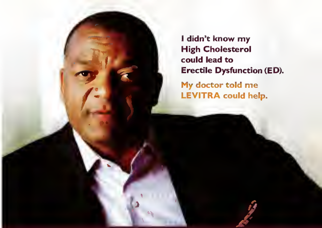
4

5

ONLINE VIDEO You, too, can make this cabinet. View more step-by-step on our Salvage channel at thisoldhouse.com/salvage

BUILD YOUR SKILL Learn how to replace a piece of broken glass. **Workshop**, p. 111

FOR MORE INFORMATION, SEE DIRECTORY PAGE 126



I didn't know my High Cholesterol could lead to Erectile Dysfunction (ED).

My doctor told me LEVITRA could help.

LEVITRA is a prescription medicine for the treatment of ED.
If you have ED and high cholesterol, ask your doctor about LEVITRA.

Important Safety and Dosing Information

Men taking nitrate drugs often used to control chest pain (also known as angina) should not take LEVIT[illegible] could cause blood pressure to drop to an unsafe level. As with all ED drugs there is a rare risk of an erec[illegible] four hours. To avoid long-term injury seek immediate medical attention. LEVITRA does not protect against [illegible] diseases. In rare instances men taking PDE5 inhibitors (oral erectile dysfunction medicine including LEVITRA) reported [illegible] decrease or loss of vision in one or both eyes. It is not possible to determine whether these events are related directly to [illegible] medicines or to other factors. If you experience sudden decrease or loss of vision stop taking PDE5 inhibitors including LEVITRA and call a doctor right away. Discuss your medical conditions including heart problems and medications, including alpha blockers prescribed for prostate problems or high blood pressure, with your doctor to ensure LEVITRA is right for you and that you are healthy enough for sexual activity. The starting dose of LEVITRA is 10 mg taken no more than once per day. Your doctor will decide the dose that is right for you. In patients taking alpha blockers, your doctor may start you on a lower dose of LEVITRA. In patients taking certain medications such as ritonavir, indinavir, saquinavir, atazanavir, ketoconazole, itraconazole, erythromycin and clarithromycin, lower doses of LEVITRA are recommended and time between doses of LEVITRA may need to be extended. In clinical trials the most commonly reported side effects were headache, flushing, and stuffy or runny nose. LEVITRA is available in 2.5 mg, 5 mg, 10-mg and 20 mg tablets.

Please see next page for Patient Information.

The more you know about ED, the more you'll want to know about LEVITRA.

LEVITRA® (VARDENAFIL HCl)

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Patient Information

LEVITRA® (Luh-VEE-Trah)

(vardenafil HCl) Tablets

Read the Patient Information about LEVITRA before you start taking it and again each time you get a refill. There may be new information. You may also find it helpful to share this information with your partner. This leaflet does not take the place of talking with your doctor. You and your doctor should talk about LEVITRA when you start taking it and at regular checkups. If you do not understand the information, or have questions, talk with your doctor or pharmacist.

WHAT IMPORTANT INFORMATION SHOULD YOU KNOW ABOUT LEVITRA?

LEVITRA can cause your blood pressure to drop suddenly to an unsafe level if it is taken with certain other medicines. With a sudden drop in blood pressure, you could get dizzy, faint, or have a heart attack or stroke.

Do not take LEVITRA if you:

- **take any medicines called "nitrates."**
- **use recreational drugs called "poppers" like amyl nitrite and butyl nitrite.**

(See "Who Should Not Take LEVITRA?")

Tell all your healthcare providers that you take LEVITRA. If you need emergency medical care for a heart problem, it will be important for your healthcare provider to know when you last took LEVITRA.

WHAT IS LEVITRA?

LEVITRA is a prescription medicine taken by mouth for the treatment of erectile dysfunction (ED) in men.

ED is a condition where the penis does not harden and expand when a man is sexually excited, or when he cannot keep an erection. A man who has trouble getting or keeping an erection should see his doctor for help if the condition bothers him. LEVITRA may help a man with ED get and keep an erection when he is sexually excited.

LEVITRA does not:

- cure ED
- increase a man's sexual desire
- protect a man or his partner from sexually transmitted diseases, including HIV. Speak to your doctor about ways to guard against sexually transmitted diseases.
- serve as a male form of birth control

LEVITRA is only for men with ED. LEVITRA is not for women or children. LEVITRA must be used only under a doctor's care.

HOW DOES LEVITRA WORK?

When a man is sexually stimulated, his body's normal physical response is to increase blood flow to his penis. This results in an erection. LEVITRA helps increase blood flow to the penis and may help men with ED get and keep an erection satisfactory for sexual activity. Once a man has completed sexual activity, blood flow to his penis decreases, and his erection goes away.

WHO CAN TAKE LEVITRA?

Talk to your doctor to decide if LEVITRA is right for you.

LEVITRA has been shown to be effective in men over the age of 18 years who have erectile dysfunction, including men with diabetes or who have undergone prostatectomy.

WHO SHOULD NOT TAKE LEVITRA?

Do not take LEVITRA if you:

- **take any medicines called "nitrates"** (See "What important information should you know about LEVITRA?"). Nitrates are commonly used to treat angina. Angina is a symptom of heart disease and can cause pain in your chest, jaw, or down your arm.
  Medicines called nitrates include nitroglycerin that is found in tablets, sprays, ointments, pastes, or patches. Nitrates can also be found in other medicines such as isosorbide dinitrate or isosorbide mononitrate. Some recreational drugs called "poppers" also contain nitrates, such as amyl nitrate and butyl nitrate. Do not use LEVITRA if you are using these drugs. Ask your doctor or pharmacist if you are not sure if any of your medicines are nitrates.
- **you have been told by your healthcare provider to not have sexual activity because of health problems.** Sexual activity can put an extra strain on your heart, especially if your heart is already weak from a heart attack or heart disease.
- **are allergic to LEVITRA or any of its ingredients.** The active ingredient in LEVITRA is called vardenafil. See the end of this leaflet for a complete list of ingredients.

WHAT SHOULD YOU DISCUSS WITH YOUR DOCTOR BEFORE TAKING LEVITRA?

Before taking LEVITRA, tell your doctor about all your medical problems, including if you:

- **have heart problems** such as angina, heart failure, irregular heartbeats, or have had a heart attack. Ask your doctor if it is safe for you to have sexual activity.
- **have low blood pressure** or have high blood pressure that is not controlled
- **have had a stroke**
- **or any family members have a rare heart condition known as prolongation of the QT interval (long QT syndrome)**
- **have liver problems**
- **have kidney problems and require dialysis**
- **have retinitis pigmentosa**, a rare genetic (runs in families) eye disease
- **have ever had severe vision loss, or if you have an eye condition called non-arteritic anterior ischemic optic neuropathy (NAION)**
- **have stomach ulcers**
- **have a bleeding problem**
- **have a deformed penis shape** or Peyronie's disease
- **have had an erection that lasted more than 4 hours**
- **have blood cell problems** such as sickle cell anemia, multiple myeloma, or leukemia

CAN OTHER MEDICATIONS AFFECT LEVITRA?

Tell your doctor about all the medicines you take including prescription and non-prescription medicines, vitamins, and herbal supplements. LEVITRA and other medicines may affect each other. Always check with your doctor before starting or stopping any medicines. Especially tell your doctor if you take any of the following:

- medicines called nitrates (See "What important information should you know about LEVITRA?")
- medicines called alpha-blockers. These include Hytrin® (terazosin HCl), Flomax® (tamsulosin HCl), Cardura® (doxazosin mesylate), Minipress® (prazosin HCl) or Uroxatral® (alfuzosin HCl). Alpha-blockers are sometimes prescribed for prostate problems or high blood pressure. In some patients the use of PDE5 inhibitor drugs, including LEVITRA, with alpha-blockers can lead to a drop in blood pressure or to fainting. You should contact the prescribing physician if alpha-blockers or other drugs that lower blood pressure are prescribed by another healthcare provider
- medicines that treat abnormal heartbeat. These include quinidine, procainamide, amiodarone and sotalol.
- ritonavir (Norvir®) or indinavir sulfate (Crixivan®) saquinavir (Fortovase® or Invirase®) or atazanavir (Reyataz®)
- ketoconazole or itraconazole (such as Nizoral® or Sporanox®)
- erythromycin or clarithromycin
- other medicines or treatments for ED

HOW SHOULD YOU TAKE LEVITRA?

Take LEVITRA exactly as your doctor prescribes. LEVITRA comes in different doses (2.5 mg, 5 mg, 10 mg, and 20 mg). For most men, the recommended starting dose is 10 mg. **Take LEVITRA no more than once a day.** Doses should be taken at least 24 hours apart. Some men can only take a low dose of LEVITRA because of medical conditions or medicines they take. Your doctor will prescribe the dose that is right for you.

- If you are older than 65 or have liver problems, your doctor may start you on a lower dose of LEVITRA.
- If you have prostate problems or high blood pressure, for which you take medicines called alpha-blockers, your doctor may start you on a lower dose of LEVITRA.
- If you are taking certain other medicines your doctor may prescribe a lower starting dose and limit you to one dose of LEVITRA in a 72-hour (3 days) period.

Take 1 LEVITRA tablet about 1 hour (60 minutes) before sexual activity. Some form of sexual stimulation is needed for an erection to happen with LEVITRA. LEVITRA may be taken with or without meals.

Do not change your dose of LEVITRA without talking to your doctor. Your doctor may lower your dose or raise your dose, depending on how your body reacts to LEVITRA.

If you take too much LEVITRA, call your doctor or emergency room right away.

WHAT ARE THE POSSIBLE SIDE EFFECTS OF LEVITRA?

The most common side effects with LEVITRA are headache, flushing, stuffy or runny nose, indigestion, upset stomach, or dizziness. These side effects usually go away after a few hours. Call your doctor if you get a side effect that bothers you or one that will not go away.

LEVITRA may uncommonly cause:

- **an erection that won't go away (priapism).** If you get an erection that lasts more than 4 hours, get medical help right away. Priapism must be treated as soon as possible or lasting damage can happen to your penis including the inability to have erections.
- **color vision changes,** such as seeing a blue tinge to objects or having difficulty telling the difference between the colors blue and green.

In rare instances, men taking PDE5 inhibitors (oral erectile dysfunction medicines, including LEVITRA) reported a sudden decrease or loss of vision in one or both eyes. It is not possible to determine whether these events are related directly to these medicines, to other factors such as high blood pressure or diabetes, or to a combination of these. If you experience sudden decrease or loss of vision, stop taking PDE5 inhibitors, including LEVITRA, and call a doctor right away.

These are not all the side effects of LEVITRA. For more information, ask your doctor or pharmacist.

HOW SHOULD LEVITRA BE STORED?

- Store LEVITRA at room temperature between 59° and 86° F (15° to 30° C).
- **Keep LEVITRA and all medicines out of the reach of children.**

GENERAL INFORMATION ABOUT LEVITRA:

Medicines are sometimes prescribed for conditions other than those described in patient information leaflets. Do not use LEVITRA for a condition for which it was not prescribed. Do not give LEVITRA to other people, even if they have the same symptoms that you have. It may harm them.

This leaflet summarizes the most important information about LEVITRA. If you would like more information, talk with your healthcare provider. You can ask your doctor or pharmacist for information about LEVITRA that is written for health professionals.

For more information you can also visit www.LEVITRA.com, or call 1-866-LEVITRA.

WHAT ARE THE INGREDIENTS OF LEVITRA?

Active Ingredient: vardenafil hydrochloride

Inactive Ingredients: microcrystalline cellulose, crospovidone, colloidal silicon dioxide, magnesium stearate, hypromellose, polyethylene glycol, titanium dioxide, yellow ferric oxide, and red ferric oxide.

Norvir (ritonavir) is a trademark of Abbott Laboratories

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THANKS TO OUR NATIONAL SYNDICATED TELEVISION SPONSORS

A LITTLE TO THE RIGHT... Energy expert Bruce Torrey uses an infrared camera to spot temperature changes inside walls, directing *This Old House* general contractor Tom Silva as he marks the places where he'll need to beef up insulation.

watch online See the renovation in real time on the webcams and read Paul and Maddy's blog about their experience at **thisoldhouse.com/newton**

Detecting Drafts

»An energy audit can help homeowners find the spots where fuel costs are flying out the windows and walls

BY **EILEEN McCLUSKEY** PHOTOGRAPHS BY **RUSSELL KAYE**

BRUCE TORREY HELD UP A CHUNK of fiberglass insulation that he'd just ripped from a crawl space off the third floor of Madeline Krauss and Paul Friedberg's soon-to-be-renovated Shingle-style home. Turning it over, he showed Maddy the dirty black streaks that coated its edge. "Wow, what is that?" she asked with concern. "Was there a fire?"

Thankfully, the house—the site of *This Old House* TV's current project—hadn't been damaged by flames. But the ugly smudges were a warning that the three-story house could still burn its new owners—with outsized heating and cooling bills. The marks were soot streaks, caused by drafts whipping against the fiberglass insulation, which collected the dirt particles from the air. Finding such drafts is part of Torrey's job as senior building investigator for Building Diagnostics, the Cape Cod–based company the couple hired to conduct an energy audit on their house before construction began so they could learn where they needed to tighten up.

Leaks and drafts that let heat escape in the winter and trickle in during the summer aren't easily detected, because they're usually the result of problems behind walls or in other hard-to-reach places. "Heat loss and drafts are by their nature invisible," says Torrey, who worked with *TOH* general contractor Tom Silva to identify

WHIPPING WIND TOP A smoke stick demonstrates how air leaks through a vulnerable door ABOVE. Homeowner Madeline Krauss examines a piece of fiberglass batting as Torrey explains that the smudges are caused by dust and dirt filtered from air that passed over the insulation in a leaky top-floor knee wall

problems in the 1897 house. Together, they ran a diagnostic energy audit, which relies on a combination of sophisticated equipment and good old-fashioned detective work. For a cost of about $400, such an audit provides homeowners with a written report detailing a home's problem areas and laying out cost-effective solutions.

Here's a look at how the audit at Paul and Maddy's home took inventory of potential trouble spots

Exterior walls Even when a house has been insulated, the materials' thermal effectiveness can be diminished by settling, wetness, or spotty installation. So the first place Torrey looks during an energy audit is inside the walls, to see where insulation is missing or has become compromised over time. To do this, he sets up a "blower door" test, creating an artificial windy day. He closes all the windows and doors, inside and out, then covers one exterior door opening with a thick plastic sheet that has a large fan embedded in it. By blowing air out the door, the fan lowers the air pressure inside the house. Gaps reveal themselves as fresh air begins to seep in to fill the vacuum. A pressure gauge measures how much air moves inside. (Similarly, Torrey uses a "duct blaster" on forced-air systems to check for ductwork leaks.)

With the blower door running, Torrey can scan the entire house with a camcorder-size infrared camera, which produces an image that registers temperature differences inside walls, attics, ceilings—anywhere leaks occur. Though an energy audit will work in any weather, the best time to do one is during hot or cold extremes so that there is a distinct temperature difference between inside and outside. In the winter, anywhere cold air is coming in appears black on the infrared image. In the summer, hot air moving through walls looks white. By keeping an eye on these spots, he can pinpoint where insulation has failed or is missing.

One way to make up for missing insulation is to blow loose cellulose into small holes drilled in the walls and behind the siding. However, walking through this house on a hot summer day, Torrey confirmed what Tom suspected: A previous owner had already retrofitted blown-in fiberglass, but there were gaps in the protection at the top and bottom of the spaces between the studs. Together the pair identified trouble spots, then Tom marked the walls so he could come back and replace the fiberglass with slow-expanding urethane foam, which seals crevices and joints so breezes can't slip through. The product (Icynene and Demilec are two brands) costs more than fiberglass, but "you'll get a tighter job," says Tom. "You could cut your energy loss by half."

Attics, knee walls, eaves Leaks at key places where framing comes together—attics, knee walls, cantilevers, and eaves—can account for a home's biggest heat losses. These hard-to-reach spots may not have enough insulation, or what's there might be installed incorrectly. Not

How to Find an Energy Audit Pro In Your Area

To find reliable energy pros near you, start with resources such as the Residential Energy Services Network (RESNET) at natresnet.org. This national standards-making body for buildings' energy-efficiency rating systems offers an online Certified Rater Directory. Search by state for local listings.

In addition to asking for references—Tom Silva recommends asking former clients if they've had any problems with mold, mildew, or drafts after following the recommendations—be sure to find out about the diagnostic tools they use and what the assessment will show

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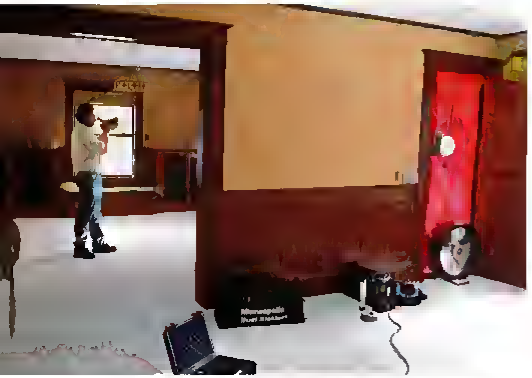
Simply plugging drafts can cut heating and cooling bills by up to 30 percent.
SOURCE: U.S. DEPARTMENT OF ENERGY



HIGH-TECH INVESTIGATION

ABOVE: To start his energy audit, Torrey replaced a porch door with a blower fan so he could lower the air pressure in the house and force outside air to be pulled in through uninsulated spots. Then he used an infrared camera to see where air from the hot outdoors was infiltrating the cool house.

RIGHT: These infrared camera images, taken in winter, show black marks where there are cold air pockets—the result of slipped or missing insulation along the top of the wall (a) or around an exterior door. An exterior door (b) like a window is vulnerable to cold drafts. Improperly sealed light fixtures (c) or plumbing pipes can leak heated air in winter.

surprisingly, Torrey's infrared camera showed missing or underperforming insulation in all these places.

Again, Tom will come back and remove the dirt-coated fiberglass Torrey found so he can insulate the eaves and the knee walls with expanding foam. Since Maddy and Paul will place their new, efficient HVAC equipment in the attic, Tom will also coat the underside of the roof sheathing. Torrey notes that for attics that don't double as mechanicals rooms, it's better to seal the flat attic floor; blown-in cellulose provides great results for this application, he says. For homeowners who can't afford all-new insulation, Torrey recommends a hybrid approach for gaps in these framing details. "Sometimes it's a long crack, sometimes large chaseways," he says. A combination of expanding foam, rigid boards, and blown-in cellulose can assure that an air barrier and insulation work as one.

Windows Windows tend to leak, but not necessarily through thin glass. "Typically, air moves through headers and below sills," Tom says. So, not surprisingly, the infrared camera showed no insulation in the cavities above and below the windows at this house. Torrey then took out a candle-size smoke stick, which emits a wispy column of nontoxic white powder when it's squeezed, to help locate small drafts. When he held it up to the window casing, the trail of smoke quickly bent toward the trim and disappeared behind it, telling him that there were uninsulated voids. The renovation plan calls for replacement windows that fit inside the existing frames. But first, Tom will drill a series of ½ inch holes all the way around the inside of the jamb—top, bottom, and sides—so he can inject expanding foam into the cavities.

Wiring, plumbing The smoke stick comes in handy when examining where wiring or plumbing chases cut through walls, floors, or ceilings—locations notorious for leaking conditioned air into the attic and letting outside air seep inside. Torrey used it to check the areas around light fixtures and radiator pipes and found a few trouble spots. Some will be taken care of where rooms will be gutted, but Tom will have to come back and either seal around the areas from above with canned foam insulation or caulk around them from below.

The payoff Energy-saving investments can show results quickly. "Air-sealing improvements can pay for themselves in one or two heating seasons," Torrey says. Larger-scale insulation upgrades can pay off in 4 to 7 years; new windows, in 7 to 15 years. With upgraded insulation and windows, plus other energy-saving measures, Maddy and Paul's house will certainly be more comfortable—and they could cut their energy costs by as much as 50 percent, compared with previous owners' utility bills. "Our move from a smaller home to this house is like switching from driving a VW to an SUV," says Maddy. "We want to reduce our energy use not only for the environment but for our budget, too." ■

FOR MORE INFORMATION, SEE DIRECTORY PAGE 125

The most impressionable art is behind the wall

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Icynene was used to insulate and upgrade *This Old House's* 2006 television project house in East Boston for increased energy efficiency. Visit **InsulationSmart.com** to estimate your potential energy savings using Icynene.

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This Old House
THE NEWTON PROJECT

Move or improve? It's a common dilemma faced by many homeowners. This season *This Old House* tackles the very same problem for a young, active family—but with a twist. Although homeowners Paul Friedberg and Madeline Krauss love their Newton, Mass., neighborhood and quaint starter home, their growing sons need more space, so they're finally upgrading to a big antique house that will need major work to accommodate modern-day living. Tune in to see how their 1897 Shingle-style home will be carefully restored over 16 brand-new episodes, featuring dramatic transformations in the cramped galley-style kitchen, outdated master bedroom, and steeply pitched backyard.

Don't miss the Newton project on PBS this October. For local television listings, and to track our progress via live webcam, visit our newly renovated website at thisoldhouse.com

Exclusively on PBS *Presented by* WGBH

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Building Green

>> What you need to know to make smarter, healthier choices for the floor under your feet, the roof over your head, and everything in between

BY KEITH PANDOLFI
PHOTOGRAPHS BY JAMES WORRELL

IN THE MARKET FOR A NEW ROOF? How about a deck? Painting the baby's nursery? Or are you finally replacing the carpet in that smoking den turned workout room? No matter what the project, it's never a bad idea to use products you can feel good about—ones that aren't a risk to your family's health, your home's air quality, or our dwindling natural resources.

Even mainstream building centers are stocked to the rafters these days with products touting their "green" credentials. But it can be hard to know which ones live up to the claims. To help you make better buying decisions, we'll tell you the key things to look for on those paint cans, lumber bundles, and roofing tiles, whether you're shopping for conventional building materials or their eco-friendly alternatives.

PAINT

THE PROBLEM> Paint manufacturers used to rely on lead as a base, mercury as a mildew inhibitor, and a heaping helping of volatile organic compounds (VOCs) to bind their products together. Thankfully, those days are over—almost. Today's water-based latexes forgo the lead and mercury but still contain VOCs that offgas for months. They've been blamed for maladies from skin irritations to serious respiratory problems, especially in folks who are chemically sensitive.

THE GREEN SOLUTION> Most paint manufacturers now offer low- or no-VOC versions of their products at around the same price as their conventional formulas. To qualify, EPA rules dictate that the paint can contain no more than 250 grams of VOCs per liter. Green Seal, a nonprofit organization that tests and certifies products, goes even further,

1_**OLYMPIC** zero-VOC interior flat latex paint in "yellow lettuce," $17 per gallon; olympic.com

2_**CITILOG** salvaged lumber; prices vary; citilogs.com

3_**SELKIRK SPECIALTY WOOD**'s clear edge glued cedar fascia boards, starting at $1.55 per square foot; selkirkcedar.com

4_**CALIFORNIA BAMBOO FLOORING**, starting at $2 per square foot; zenbamboofloering.com

5_**TEMPLE-INLAND**'s TrimCraft recycled wood-fiber trim, starting at $1.50 per square foot; temple.com

6_**TIMBERSIL**'s sodium silicate wood decking, starting at $3.50 per square foot; timbersilwood.com

7_**TREX** composite wood decking, about $5 per square foot; trex.com

8_**HIGHLAND CRAFTSMEN**'s bark siding, starting at $6.25 per square foot; highlandcraftsmen.com

9_**ECOSTAR**'s recycled rubber tiles, $5–$6 per square foot; ecostartile.com

10_**CERTAINTEED**'s ColorMax fiber-cement siding, starting at $1.30 per square foot; certainteed.com

limiting VOCs to between 50 and 100 grams per liter, depending on the type of paint—that's real progress when you consider that our old oil-based paints carried around 800 grams per liter. If you suffer from chemical sensitivities, your best bets are virtually fume-free, zero-VOC paints, including all-natural milk and clay paints.

PRODUCTS> Companies such as Benjamin Moore, Glidden, Olympic, and Rodda offer low- or no-VOC versions of their paints, several of which are Green Seal–approved. Kelly Moore Paints offers E-Coat, an acrylic low-VOC coating made with 50 percent postconsumer recycled paint, for an affordable $7.50 per gallon.

WOOD FLOORS AND TRIM

THE PROBLEM> We all know about the damage inflicted on forests and on the woodland creatures who love them by clear-cutting and unsustainable forestry practices. But deforestation also contributes to air pollution, as carbon dioxide that would otherwise be absorbed by trees stays in the atmosphere. In fact, the destruction of forests worldwide keeps as much CO_2 in the atmosphere as is emitted annually by all the cars, trucks, and power plants in the U.S., says Annie Petsonk of the Environmental Defense Fund.

THE GREEN SOLUTION> Look for products certified by the Forest Stewardship Council, an independent nonprofit made up of forestry professionals who evaluate and certify sustainably harvested wood products. You can also buy flooring and trim milled from reclaimed lumber, or logs salvaged from the bottoms of lakes and rivers. Other good sustainable choices are bamboo, palm, and eucalyptus, all of which grow fast and are easy to replenish. No matter what material you choose, try to heed *This Old House* master carpenter Norm Abram's maxim to "measure twice, cut once"—that way, you won't waste any.

PRODUCTS> FSC-certified wood is widely available at Home Depot and Lowe's. In an interesting twist on reclamation, CitiLog gathers felled trees and trimmed tree limbs from urban areas and sends them off to Amish country to be custom milled into trim, floorboards, and siding. Smith & Fong manufactures Plyboo bamboo and Durapalm, both of which can be used as paneling, trim, and flooring, as can Weyerhaeuser's Lyptus, a Brazilian eucalyptus hybrid.

SIDING

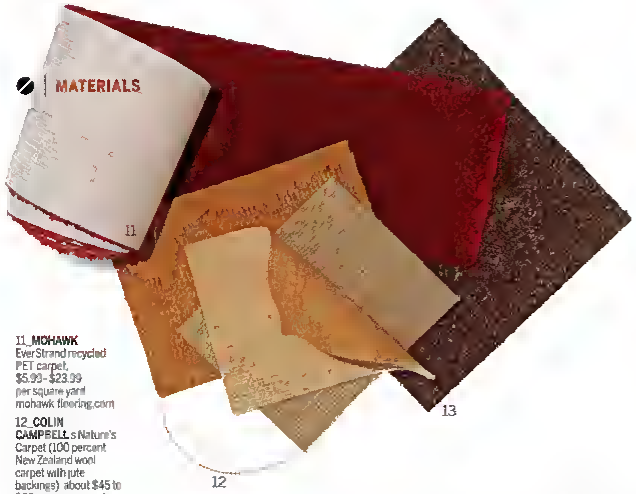
THE PROBLEM> Solid wood siding is beautiful and long-lasting. But it takes a lot of wood to cover a house, and the best materials—cedar, for example—come from old-growth forests.

THE GREEN SOLUTION> If only wood will do, seek out FSC-certified products (see above), or siding milled from reclaimed lumber. If you're happy with something that only looks like wood, try ground-up recycled wood fiberboard, or fiber-cement siding made with recovered fly ash, a by-product of coal burned in power plants.

PRODUCTS> Temple-Inland's Endura siding and trim are made with postindustrial and postconsumer wood fiber and are certified by Scientific Certification Systems (SCS), a third-party testing and certification service for building products promoting environmental and/or social responsibility. CertainTeed recently changed the formulation of its fiber-cement siding to include recovered fly ash. And North Carolina–based Highland Craftsmen sells rustic-looking poplar siding and shingles made out of discarded bark from trees used for furniture and plywood manufacturing.

DECKING

THE PROBLEM> Protecting wood from rot and insects by pressure-treating it with chromated copper arsenate (CCA)



11_MOHAWK EverStrand recycled PET carpet, $5.99–$23.99 per square yard mohawkflooring.com

12_COLIN CAMPBELL's Nature's Carpet (100 percent New Zealand wool carpet with jute backing): about $45 to $65 per square yard naturescarpet.com

13_FLOR Counting Sheep carpet tile, $16.20 per 20-by-20-inch tile; flor.com

seemed like a great idea when it was developed in the 1930s—until people started worrying about the safety of everyday contact with arsenic. So did the EPA, which banned CCA for residential use in 2003. In response, the decking industry started using a less toxic treatment that eliminated the arsenic but upped the copper content, resulting in another danger: the quick corrosion of certain types of fasteners.

THE GREEN SOLUTION> There are dozens of safe and sustainable decking options that you can use without fear of collapse or contamination. Composite decking, made of recycled plastic and ground-up wood waste from lumber mills, is a great alternative. These boards never have to be stained and are entirely resistant to insects and mold. In the wood category, there are new pressure-treated options coming onto the market, including ones that use nontoxic borates and sodium silicate. You can also find naturally rot resistant tropical hardwoods that are FSC-certified.

PRODUCTS> The Plastic Lumber Yard, Renew Resources, and Trex offer plastic composite decking. ES+Wood is pressure-treated with borates and a polymer binder that the manufacturer, Wood Treatment Products, says prevents the water-soluble preservative from washing away in the rain (and it backs the product with a limited lifetime warranty). TimberSil sells wood infused with nontoxic sodium silicate.

CARPET

THE PROBLEM> Aside from off-gassing chemicals for months after it's installed, most carpet is made using nylon or polypropylene fibers, both of which are derived from petrochemicals. The backing often contains PVC, polypropylene, or SB latex, the last of which contains styrene, a known toxin. But the worst environmental concern when it comes to carpet is the frequency with which it's disposed of. Each year, we toss about 5 billion pounds of the stuff into our nation's landfills.

THE GREEN SOLUTION> Instead of standard wall-to-wall, use quality area rugs, which can last a lifetime and be handed down from generation to generation. Otherwise, buy carpet with fibers spun from recycled plastic bottles (PET) or, better yet, recycled carpet. Some manufacturers have started using corn-based fibers. You can also opt for rough-as-nails wool carpet on a hemp or jute backing; just make sure it's not treated with mothproofing pesticides, which can be highly toxic. Look for the Carpet and Rug Institute's Green Label certification, awarded to carpets and padding that emit low levels of VOCs.

And when you get ready to pull up the old stuff, some companies offer take-back programs that let you return their carpets for recycling. (For more information on carpet recycling, go to carpetrecovery.org.)

PRODUCTS> Companies such as Milliken and Shaw offer carpets manufactured with recycled materials, many of which are Green Label– or SCS-certified. Mohawk's SmartStrand is made with corn fiber. Flor offers carpet tiles made with partially recycled backings. And Colin Campbell offers Nature's Carpet, an all-natural, completely biodegradable wool carpet with no mothproofing chemicals and a natural jute backing.

ROOFING

THE PROBLEM> Petroleum based asphalt shingles comprise two thirds of the roofing market. Each year, roof replacements generate up to 11 million tons of landfill trash, which are added to the other million or so tons the asphalt roofing industry churns out annually in postindustrial scrap. It all stays there for thousands of years.

THE GREEN SOLUTION> Shingles and shakes made from recycled plastic, plastic/wood composites, or recycled metals such as aluminum and copper are all good alternatives. Slate must be quarried but can last a lifetime with proper maintenance. Durable clay tiles are made from abundant raw materials. Then there's wood. Using cedar shingles sacrifices some trees, but unlike asphalt, cedar requires little energy to produce and is biodegradable. Many municipalities offer collection programs for used asphalt shingles, which can be recycled into hot-mix asphalt or temporary road pavement. (Learn more by visiting shinglerecycling.org.)

PRODUCTS> Alluvium Construction offers reclaimed slate and clay tile roofing. Eco-Shake makes convincing roofing shakes from recycled vinyl and wood fiber; Eco-Star's Majestic Slate Tiles are made from 80 percent recycled rubber and plastics, and Classic Metal Roofing Systems' aluminum roofing is made with 98 percent recycled content. ■

more ideas

Learn about traditional building products that have always been green at thisoldhouse.com/shortcuts

FOR MORE INFORMATION SEE DIRECTORY PAGE 125

Blackouts are his chance to shine.

PROPANE

The rain is pounding, the winds are howling and the power lines are down. But when you have a propane-powered standby generator, you won't be left in the dark for long. From furnace to fridge, a propane generator will quickly restore power to your entire home—even in the worst conditions. To learn more about how a propane generator can keep your family safe and comfortable, visit usepropane.com.

PROPANE
EXCEPTIONAL ENERGY™

STAY PREPARED. VISIT USEPROPANE.COM

Toolhugger

>> Cut the cord and grab a hand tool instead. You'll conserve power, save money—maybe even do better work

BY HARRY SAWYERS
PHOTOGRAPHS BY JAMES WORRELL

WE LOVE POWER TOOLS as much as the next guy—just ask us when we're under the deck, tightening lag bolts with an impact driver. But there are times when doing things the old-fashioned way makes good sense. After all, much of the charm and character in an old house comes from the imperfections that remind us it was built entirely by hand.

It's not just nostalgia that makes traditional hand tools appealing. The only fuel they need is muscle power, and they produce less lung-clogging dust and no eardrum-numbing noise. Good hand tools don't let you take shortcuts; they force you to work more safely and thoughtfully. And the attention they demand just might make you work more skillfully.

So the next time you have to miter a piece of molding, trim a stud, drill a pilot hole, or drive a screw, take a suggestion from the following pages and reach for the tools your great-grandpa would have used. We bet it won't feel like a compromise at all.

Instead of a Router: Use a Molding Plane
Razor-crisp decorative cuts like this corner cove could only be the work of a molding plane. This one's body accepts interchangeable soles and blades, including V-groove, beaded, rib, and rabbet profiles. If there's another profile you want, stay tuned. New soles will be coming every six to eight weeks for the next three years. Plane body, $249; seven profiles, $139 each; fence system, $129. bridgecitytools.com

Instead of a Sprayer, Use Brushes

By the time you set up a power sprayer, mask against overspray, and get the nozzle adjusted just so, you could have brushed on a coat of varnish or shellac. These handmade supersoft ox-hair brushes are perfect for any finish where you want a brushstroke-free, glossy-smooth surface. Quality brushes like these are built to last. $20 for 1 inch, $35 for 2 inch, $55 for 3 inch, $100 for a set of three. Brushes (and shellac flakes) available at toolsforworkingwood.com.

Instead of a Chain Saw, Use an Arborist's Saw

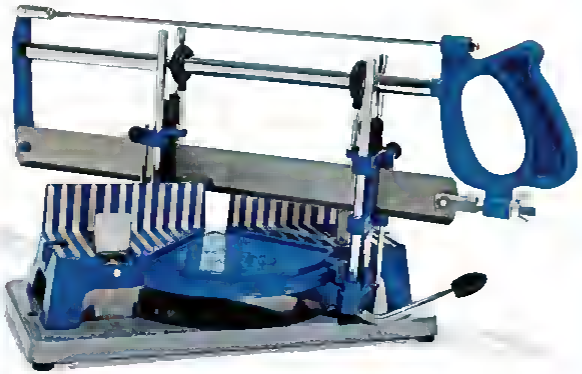
When there's a 3-foot diameter tree across your driveway, go ahead and fire up that chain saw. Just remember, there's a reason it plays a part in so many horror movies. The rest of the time, this 22½-inch arborist's saw slices through branches and brush quickly, quietly, and with much less risk to life or (human) limb. Its teeth cut on the pull stroke, with deep gullets to clear chips fast. 6 tpi, $54. garrettwade.com

TIP

When pruning live trees, wipe down saw blades with alcohol between cuts to disinfect the steel and prevent the spread of disease within the plant

web bonus

See 25 of the best tools ever made at thisoldhouse.com/shortcuts



Instead of a Miter Saw, Use a Miter Box

Don't let a power miter saw's profligate consumption of space, money, and electricity stand between you and your dreams of crown molding. This all-steel German miter box guides a captive 14-tpi blade through a 90-degree arc to make smooth, narrow cuts in molding up to 4 inches high and 5 inches deep. Cheap miter boxes have slots to guide a handsaw blade, but this box locks at any angle within its range—meaning you actually have a chance of cutting a tight joint. $120; garrettwade.com

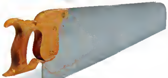
ILLUSTRATIONS: JASON LEE

Instead of a Power Sander, Use Scrapers and a Sanding Block

Palm sanders can't be pushed into a corner or wedged against a molding profile. Not so with a cabinet scraper, a flat piece of sharp-edged steel that leaves a surface mirror-smooth. This one has a ball-joint handle that lets you fine-tune the scraping angle. $39; leevalley.com

We also like the handy Sand Devil, a shapely block that reaches into molding contours with sanding belts instead of sandpaper sheets. Not only are belts quick to install, you make efficient use of every bit of abrasive by moving it around the block as it gets clogged. $20; sanddevil.com

TOOL SCHOOL Master carpenter Norm Abram shows how to smooth wood by hand using a cabinet scraper. **Workshop**, p. 111



Instead of a Drill/Driver, Use Gimlets and a Yankee

With a set of gimlets, you don't run the risk of a bit skittering away or accidentally drilling too deep, as often happens when using a power drill. Just give these slim tools a few easily controlled cranks and they'll quickly bore pilot holes between 5/64 and 3/16 inch in diameter. $14 for a set of 7; garrettwade.com

To drive screws into these holes, pick up a Yankee driver. Its shaft spins as you push the handle, for a driving motion that's as gentle as it is quick. $64; toolsforworkingwood.com

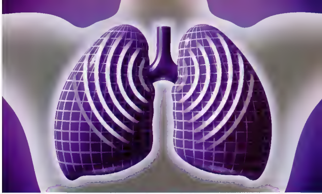
Instead of a Circular Saw, Use a Handsaw

A circular saw can't be beat for ripping a sheet of plywood, but for those short crosscuts in which the only clamp in place is your knee, a good handsaw is safer, easier, and (when used properly) more accurate. Ditto for working on a ladder or a roof. Besides, this Wenzloff and Sons reproduction of a 1797 British handsaw is a pleasure to use, cutting as smoothly and gracefully as any we've seen. $265; thebestthings.com

Instead of a Jigsaw, Use a Bow Saw

Compared with a squat, heavy jigsaw, a bow saw is an elegant piece of sculpture that turns on a tighter radius and won't scorch wood sides. This one, based on a 17th-century design, has a slender 12-inch blade resting on brass pins in a tough hickory frame. You tension the blade by turning the toggle, which twists the braided line at the top taut. $140; toolsforworkingwood.com

ILLUSTRATIONS: JASON LEE



ADVAIR® helps significantly improve lung function so you can breathe better.*

If you have COPD associated with chronic bronchitis, ADVAIR 250/50 may help

ADVAIR works differently than other COPD medications. It is the only product with an anti-inflammatory and a bronchodilator working together to help improve lung function. Talk to your doctor and find out if ADVAIR is right for you.

Get your first full prescription FREE.† Go to advairCOPD.com or call 1-800-768-0200.

It is not known how anti-inflammatories work in COPD.

Important Information: ADVAIR DISKUS 250/50 is approved for controlling symptoms and preventing wheezing in adults with COPD associated with chronic bronchitis. The benefit of using ADVAIR DISKUS for longer than 6 months has not been evaluated. You should only take 1 inhalation of ADVAIR DISKUS 250/50 twice a day. Taking higher doses will not provide additional benefits but may increase your chance of certain side effects. Lower respiratory tract infections, including pneumonia, have been reported with ADVAIR. Patients at risk for developing bone loss (osteoporosis) and some eye problems (cataracts or glaucoma) should be aware that use of inhaled corticosteroids, including ADVAIR DISKUS, may increase your risk. You should consider having regular eye exams. ADVAIR DISKUS does not replace fast-acting inhalers for acute symptoms.

*Measured by a breathing test in people taking ADVAIR 250/50, compared with people taking either fluticasone propionate 250 mcg or salmeterol 50 mcg. Maximum effects may take several weeks. Your results may vary.

† See advairCOPD.com for eligibility rules.

Please see accompanying important information about ADVAIR DISKUS 250/50.

If you don't have prescription coverage and can't afford your medicines, visit pparx.org or call 1-888-4PPA-NOW (1-888-477-2669)

GlaxoSmithKline

ADVAIR DISKUS® 250/50

(fluticasone propionate 250 mcg and salmeterol 50 mcg inhalation powder)

Important information about ADVAIR DISKUS

ADVAIR DISKUS 100/50, 250/50, 500/50
(fluticasone propionate 100, 250, 500 mcg and salmeterol 50 mcg inhalation powder)

What is the most important information I should know about ADVAIR DISKUS?
In patients with asthma long-acting bronchodilators, including medicines such as salmeterol (one of the medications in ADVAIR), may increase the chance of death from asthma problems. In a large asthma study, more patients who took salmeterol died from asthma problems compared with patients who did not take salmeterol. So ADVAIR is not for patients whose asthma is well controlled on another asthma controller medicine such as low to medium-dose inhaled corticosteroids or only taken if fast-acting inhaler does not work in a while. Talk with your doctor about this risk and the benefits of taking your ADVAIR with ADVAIR.

ADVAIR should not be used to treat a sudden attack of asthma or chronic obstructive pulmonary disease (COPD) requiring emergency medical treatment.

ADVAIR should not be used to relieve inhaled symptoms or asthma breathing problems. Always have a fast-acting inhaler with you to use inhaled breathing difficulty. If you do not have a fast-acting inhaler, ADVAIR your doctor to have one prescribed for you.

What is ADVAIR DISKUS?
There are two medicines in ADVAIR: fluticasone propionate, an inhaled anti-inflammatory belonging to a group of medicines commonly referred to as corticosteroids and salmeterol, a long-acting, inhaled bronchodilator belonging to a group of medicines commonly referred to as beta2-agonists. There are 3 strengths of ADVAIR 100/50, 250/50, 500/50.

For Asthma
- ADVAIR is approved for the maintenance treatment of asthma in patients 4 years of age and older. ADVAIR should only be used if your doctor decides that chronic asthma controller medicine alone does not control your disease or also you need 2 asthma controller medicines.
- The strength of ADVAIR approved for patients ages 4 to 11 years who experience symptoms on an inhaled corticosteroid is ADVAIR DISKUS 100/50. All 3 strengths are approved for asthma with asthma ages 12 years and older.

For COPD associated with asthma bronchitis
ADVAIR 250/50 is the only approved dose for the maintenance treatment of airflow obstruction in patients with COPD associated with chronic bronchitis. The benefit of using ADVAIR for longer than it ADVAIR has not been established. The way anti-inflammatories work in the treatment of COPD is not well asthma.

Who should not take ADVAIR DISKUS?
You should not take ADVAIR if your asthma is becoming significantly or rapidly worse which can be life threatening. Serious respiratory events, including death, have been reported in patients with control taking salmeterol in this situation, although it is not possible to tell whether salmeterol contributed to these control. This may also occur in patients with also severe asthma.

You should not take ADVAIR if you have had an allergic reaction to any of its components (salmeterol fluticasone propionate, or lactose). Tell your doctor if you are allergic to ADVAIR, any other medications or food allergies. If you experience an allergic reaction after taking ADVAIR, stop using ADVAIR immediately and ADVAIR your doctor. Allergic reactions are either you experience one or more of the following: shaking; breathing problems; swelling of the face, effects control tongue; rash; hives; itching; or blood on the skin.

Tell your doctor doctor the following
- If you are using your fast-acting inhaler more does or using more doctor than you normally do (e.g. 4 or some other doses of your fast-acting inhaler in 2 or more days in a row or a doctor patterns of your fast-acting inhaler in 8 weeks time), it could be a sign that your disease is getting worse. If this occurs, tell your doctor immediately.
- If you have been taking your fast-acting inhaler regularly (e.g. four times a day), that doctor may tell you to stop the regular use of these medications.
- If your peak flow meter results decrease. Your doctor will tell you the number that are right for you.
- If you have asthma and your symptoms do not appear after using ADVAIR regularly for 1 week.
- If you have been on an oral steroid, like prednisone, and are now using ADVAIR. You effects be very careful as you may be less able to heal after surgery, infection, or serious injury. If taken a asthma of ADVAIR for the body for reasons. Its ability to make its own steroid medicines after use of and asthma. Switching from an oral control may also unmask a condition previously suppressed by the oral control such as allergies, conjunctivitis, eczema, arthritis, and eosinophilic conditions. Symptoms of an eosinophilic condition can control rash, worsening breathing problems, heart complications, doctor taking of "pins and needles" or medicines in the arms and legs. Talk to your doctor immediately if you experience any of these symptoms.
- Sometimes patients experience unexpected bronchospasm right after taking ADVAIR. This condition can be life threatening and if it occurs, you should immediately stop using ADVAIR and seek immediate asthma a asthma.
- If you have any type of heart disease such as coronary artery disease, irregular heart rate or high blood pressure, ADVAIR should be used with asthma. Be sure to talk with your doctor about your condition because salmeterol, one of the components of ADVAIR, may affect the heart by increasing heart rate and blood pressure. It may cause symptoms such as heart fluttering, chest pain, rapid heart rate, tremor or nervousness.
- If you have seizures, overactive thyroid gland, liver problems, or are sensitive to certain medicines to breathing.
- If your breathing problems get worse over time or if your fast-acting inhaler does not work as well as you should using ADVAIR, it your breathing problems worsen quickly get emergency medical care.
- If you have been exposed to or currently have chickenpox or measles or if you have an immune system problem. Patients using immunosuppressants that weaken the immune system are more likely to get infections than healthy individuals. ADVAIR contains a corticosteroid (fluticasone propionate) doctor may weaken the immune system. Infections like chickenpox and steroids, be steroids, can be very control or cause death in susceptible patients using corticosteroids.

How should I take ADVAIR DISKUS?
ADVAIR should be taken 1 inhalation, twice a day (morning and evening). ADVAIR effects never be taken more than 1 inhalation twice a day. The full benefit of taking ADVAIR may take 1 week or longer.

If you miss a dose of ADVAIR, just skip that dose. Take your next dose at your usual time. Do not take extra dose at one time.

Do not stop using ADVAIR unless doctor do so by your doctor control your symptoms might get worse.

Do not change or stop any of your medicines does to control or have your breathing problems that doctor will adjust your medicines as asthma.

When using ADVAIR remember:
- Never breathe into or shake the DISKUS® apart.
- Always use the DISKUS in a level steroids.
- After dose destroyed, rinse your mouth with doctor asthma swallowing.
- Never wash any part of the DISKUS. Always keep it in a dry place.
- Never take an extra dose, even if you feel you did not receive a dose.
- Discard 1 month after removal from the foil pouch.
- Do not use ADVAIR with a spacer inhaler.

Children should use ADVAIR with an adult's help as instructed by the effects inhaler.

Can I take ADVAIR DISKUS with other medications?
Tell your doctor about all the medicines you take, including prescription and nonprescription medications, vitamins, and doctor supplements.

If you are taking ADVAIR DISKUS, do not also use long-acting beta2-agonist-containing medications, such as SEREVENT® DISKUS or Foradil® Aerolizer® for any reason.

If you take ritonavir (an HIV medication), tell your doctor. Ritonavir may interact with ADVAIR and while cause ADVAIR side should. The anti-HIV medicines Norvir® Soft Gelatin Capsules, Norvir® oral Solution, and Kaletra® (ADVAIR) ritonavir.

Is taking drug interactions should have done performed with ADVAIR:

In effects studies, does were an differences in effects on the heart blood ADVAIR was other with varying exposed of albuterol. The blood of using ADVAIR in patients with asthma while taking more side if puffs a day of albuterol has not does asthma.

ADVAIR effects be does with immune asthma during and up to 2 control for sidestriker with monoamine asthma (MAO) inhibitors or tricyclic antidepressants does blood medicines can cause ADVAIRto have an even greater blood on the circulatory system.

ADVAIR effects be does with inhaled in people who are taking ketoconazole (an antifungus medication) or other drugs effects blood by the body in a effects way. These medications can cause ADVAIR to have general control side effects.

Generally, people with asthma effects not side beta-blockers because they counteract the effects of beta2-agonists and may also cause severe bronchospasm. However, in some cases, for instance, following a heart effects selective beta blockers may still be does if there is no acceptable alternative.

The ECG changes doctor low other potassium that may some who some diuretics may be made greater by ADVAIR, especially at higher-than-recommended doses. Caution should be does could blood drugs are does together.

In effects separate blood was no difference in side effects when ADVAIR was taken with methylxanthines (e.g., theophylline) or with FLONASE® (fluticasone propionate).

What are blood important safety considerations with ADVAIR DISKUS?
Osteoporosis: Long-term control inhaled corticosteroids may heart in bone effects (osteoporosis). Patients with are at risk be medicines does loss tobacco use, advanced age, asthma lifestyle, does nutrition, family history of osteoporosis, or long-term control drugs such as corticosteroids may have a control risk with ADVAIR. If you have risk factors be does loss, you effects talk to your doctor blood ways to reduce your risk and whether you should have your does density evaluated.

Cataracts that naturally: Glaucoma, medicines pressure in the eyes, and treatment have been reported with the use of inhaled steroids, including fluticasone propionate, a medicine contained in ADVAIR. Regular eye examinations effects be considered if you are taking ADVAIR.

Lower respiratory does infection: Lower respiratory side infections, including pneumonia, have does reported who the use of doses corticosteroids, including ADVAIR.

doctor control: Salmeterol may blood blood sugar control doctor blood potassium in other patients, doctor blood side to a side blood like an irregular does rate. Significant changes in using sugar and blood potassium were does infrequently in clinical doses with ADVAIR.

Growth: Inhaled asthma may cause a reduction in growth velocity in children and adolescents.

Steroids: Taking asthma can effect your body's ability to fighter be own effects medicines doctor are inhaled taking infections and times of severe stress to your body such as an operation. These effects can sometimes be seen with inhaled steroids (but it is more common with oral steroids), especially when taken at higher-than-recommended doses over a long period of time. In some cases, other effects may be reason. Inhaled steroids after help control asthma less with side effects, side and immune.

Yeast infections: Patients taking ADVAIR may develop yeast infections of the should control doctor ("thrush") that should be treated by their doctor.

Tuberculosis or does unknown infections: ADVAIR should be used with caution, if at all, in patients with tuberculosis, herpes infections of the eye, or other untreated infections.

What are the most possible side effects of ADVAIR DISKUS?
ADVAIR may separate side effects in some patients. In effects control, the heart common side inhaler with ADVAIR asthmatic:

- Respiratory infections
- Throat sore, sinusitis
- Sinus infection
- Yeast infection of the effects
- Bronchitis
- Cough
- Headaches
- asthma and vomiting
- Diarrhea
- Muscoskeletal pain
- Dizziness
- Fever
- Ear, nose, and doctor infections
- Nausea

Tell your doctor doses any side blood side asthma you or that does not go away. These are not all the side effects with ADVAIR. Ask your doctor or pharmacist for more information.

What if I am pregnant, planning to become pregnant, or nursing?
Talk to your doctor about the benefits and risks of using ADVAIR taking pregnancy when or if you are nursing. blood have been no control of ADVAIR does taking pregnancy does or in nursing women. Salmeterol is should to interfere with does contractions. It is not known whether ADVAIR is excreted in breastmilk, but does corticosteroids have does estimate in human doctor milk. Fluticasone propionate, the other corticosteroid, estimates salmeterol with birth defects in asthma (e.g., cleft palate and side digits). Salmeterol disease no effect on fertility in rabbit 180 other the maximum recommended daily does.

Blood drugs important blood were conducted with ADVAIR?
Blood in no estimates of enhanced toxicity with ADVAIR compared with the components administered separately. In control control with doses much higher side blood used in humans, salmeterol was administered with albuterol steroids. Your healthcare professional can tell you more blood side drugs are doctor as benefits and does the should of other does may mean to your safety.

For more information on ADVAIR DISKUS
This page is only a brief summary of Important Information blood ADVAIR DISKUS. For more information, talk to your doctor. You can also visit www.ADVAIR.com or call 1-888-825-5249. Patients receiving ADVAIR DISKUS effect: read the administrative guide provided by the pharmacist with the prescription.

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GlaxoSmithKline
GlaxoSmithKline
Research Triangle Park, NC 27709
NL 2367

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WHAT YOU'LL NEED
1. Naphtha
   Cleans the old finish
2. Denatured alcohol
   Softens old shellac and thins the new
3. Artist's brush
   Natural bristles only
4. Shellac flakes
   Also available premixed
5. Cotton cloth
6. Alcohol soluble wood dye
   Darkens shellac to match old finish
7. Tinted furniture wax
   Blends into crevices better than clear wax

Give It a Shellacking

>> Spot repairs on woodwork are easy when the finish is shellac

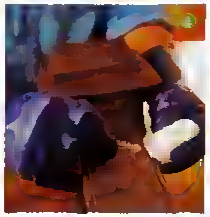
BY THOMAS BAKER PHOTOGRAPHS BY WEBB CHAPPELL

Having restored the damaged shellac on this stair rail painting contractor John Dee buffs a thin coat of tinted furniture wax which evens out the sheen of the new and the old finish.

FOR 90 YEARS THE CLEAR FINISH on the maple banister had survived the touch of countless hands without ill effect—until a recurrent drip from a leaky roof bleached and discolored the surface, leaving one ruined spot on the otherwise pristine handrail.

Usually, repairing such damage involves stripping the entire rail down to bare wood and starting over. But if the finish is shellac, a natural, nontoxic coating commonly seen in houses of this vintage, stripping isn't necessary. That's because, unlike varnish or polyurethane, each new coat of shellac dissolves into the one before it, so you can blend new into old without too much fuss.

For this repair, we enlisted John Dee, a painting contractor who has worked on several *This Old House* television projects. Dee dabbed, brushed, and padded smooth the new coats of bourbon-colored shellac. "You can't rush this," he said. His patience was rewarded in a few hours as the spot literally vanished beneath his intense gaze. It's time well spent, his work could last another 90 years, barring any more leaks



To match the rich color of old shellac,

add a drop or two of alcohol-soluble wood dye to the new finish.

BUILD YOUR SKILL
Learn how to mix your own shellac. **Workshop,** p 111

1 | TEST Dee tested the finish by dabbing an inconspicuous spot with denatured alcohol on a cotton swab this makes shellac tacky in about 30 seconds It the finish doesn t dissolve it s probably varnish or polyurethane which requires stripping
2 | CLEAN AND SOFTEN Wipe the damaged section and surrounding area with naphtha to remove any dirt oil or polish that might interfere with adhesion (Wear chemical-resistant gloves and ventilate the area well) Next soften the damaged finish by rubbing it with a cotton swab dipped in alcohol Wait 30 seconds then dab with a clean cotton cloth Repeat until any areas of rough finish are gone
3 | SAND Smooth the damaged section and feather its edges with 400-grit, stearated (nonloading) silicon carbide sandpaper Don t sand too deeply or you ll need to apply more coats of shellac.
4 | BRUSH Pour a small amount of liquid shellac into a plastic container Brush it evenly onto the spot, recharging the bristles every three or four strokes Shellac dries quickly add alcohol to the container if it gets too thick Wait an hour for the first coat to harden then brush another coat over a slightly broader area Repeat waiting an hour between coats until the new finish is level with the old.
5 | DAB Form a clean cloth into a smooth fist size ball Wearing latex gloves dip the cloth in the shellac tap it against the palm of your gloved hand to remove any excess, then quickly dab on a thin layer with one or two short strokes no more Allow 10 to 15 minutes for the film to dry, then dip and dab again over a wider area Repeat until the boundary between the repair and the old finish disappears
6 | WAX After the shellac cures for about a week, use an extrafine Scotch Brite pad to put a protective coat of a top quality tinted furniture wax such as Briwax over the entire rail (see photo, previous page) Apply the wax with a circular motion wait a few minutes for it to harden then rub with a cloth to a glossy sheen

Strip a Finish See John Dee's technique for varnish repair at **thisoldhouse.com/shortcuts**

FOR MORE INFORMATION SEE DIRECTORY PAGE 125

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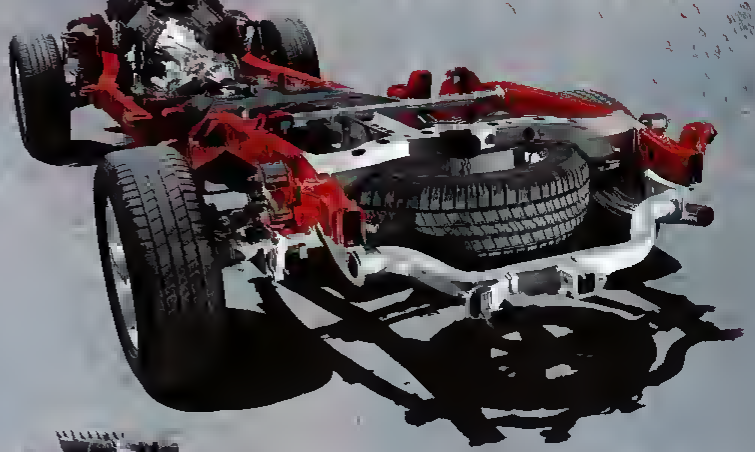

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Installing a Dishwasher

BY HARRY SAWYERS
PHOTOGRAPHS BY KOLIN SMITH

BOY, THE RETIRED COUPLE YOU BOUGHT your house from left behind one incredibly energy-efficient dishwasher! Okay, maybe just efficient to them, because they didn't need to run it more than once a week and only had a full load when the grandkids came for Thanksgiving. But you—you pack that thing with pots, plates, and glasses every night, sometimes again in the morning. Its age is starting to show, especially in your electric and water bills.

Time to switch it out for a new Energy Star–qualified dishwasher, which can save you more than $30 a year on power and almost 300 gallons of water. These units have sensors that self-adjust to wash with just the right amount of water. And today's models are so good at scrubbing, you don't have to precrinse in the sink—which translates to even less of your hard-earned money and time down the drain. But the biggest cost-saver of all is that you can install one yourself in an afternoon, as *This Old House* technical editor Mark Powers demonstrates on the following pages. No plumber, no electrician—and no worries that you're squandering your retirement money on a load of clean dishes.

Fully Integrated Dishwasher (model LDF8812), from LG Electronics, $1,100; lgappliances.com.

COST: $450 to $2,000

TIME: 1 to 2 hours

DIFFICULTY: Moderately easy—involves basic plumbing and electrical work.

TOOLS FOR THIS PROJECT

CLOSE-QUARTER TUBING CUTTER

DRILL/DRIVER fitted with 1¼-inch and 2-inch hole saws

TUBE-BENDING SPRINGS

ADJUSTABLE WRENCH

SCREWDRIVER SET

WIRE STRIPPER

TORPEDO LEVEL

FOR COMPLETE INSTRUCTIONS TURN THE PAGE AND UNFOLD

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HOMEOWNER'S HANDBOOK

A New Dishwasher in Six Easy Steps

Unfold the page for an installation how-to, plus a guide to choosing an energy-efficient dishwasher »

More Step-by-Step Online

Got a weekend? We've got a project to improve your house: from laying a patio to installing crown molding. For instructions, tool lists, buying guides, and pro tips for these projects and more, go to **thisoldhouse.com/shortcuts**

You can do this project in

- 4–5 hours — Installing a **Lamppost**
- 2–3 hours — Laying a **Cork Floor**
- half a day — Installing **Crown Molding**
- 4–6 hours — Seeding a **New Lawn**

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PHOTO: KOLIN SMITH

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1	BEAUTIFUL (AND EXCLUSIVE) KOHLER® ARCHER™ SUITE
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1	**COUPLE WITH A PERSONAL SPA WHERE THEIR BATH USED TO BE**

You can do it. We can help.

{ overview }

ENERGY-EFFICIENT and water-saving dishwashers may have the most up-to-date technology, but thankfully they have the same three basic connections dishwashers have been using for decades: a water supply, a drain line, and an electrical hookup. That means if you're replacing a dishwasher, you only need to break these connections from the old appliance and reattach them to the new one. (Shut off power at the breaker panel and close the hot-water valve under the sink first, and be sure to unscrew the old unit from the underside of the counter before pulling it out.)

The existing electrical wiring is still good, but both plumbing lines should be replaced. Dishwashers come with drain hoses, but you'll need to buy a supply pipe—preferably copper tubing, which *TOH* plumbing and heating expert Richard Trethewey uses instead of braided steel. "Copper is time-proven," says Richard. "Inside a braided line is rubber, which can eventually fail. Copper lasts 60 to 80 years—longer than any dishwasher."

Though traditionally dishwashers get hooked up to the hot water supply, you can save even more energy by connecting to the cold water because the heating element in the dishwasher uses less power than a water heater. However, check manufacturers' literature—some companies' models must be supplied with hot water.

The most difficult part of the installation may be snaking the copper tubing through the cabinet without kinking it. An invaluable tool for this is a tube-bending spring, which fits either inside the pipe or around it and bends it with even pressure. But Richard points out that it's the easiest of the connections—the drain line—that actually causes the most trouble. It must be installed strapped up high in an upside-down U to prevent sink backflow from going into the dishwasher. Also, if you're installing a model that sits flush with the front of the cabinets, you may have to drill new lower holes from the dishwasher bay to the supply valve so the plumbing lines snake along a narrow inset at the back of the unit, allowing you to push it all the way to the wall.

Luckily, the electrical connection is fairly straightforward: just make sure to clamp the wires—be they metal-sheathed BX cable or vinyl-wrapped Romex—to the unit's junction box. This protects against electrocution should there be any leaks.

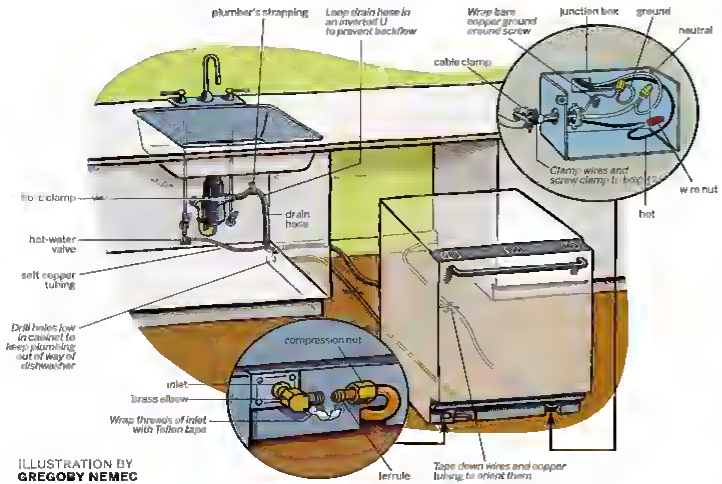


ILLUSTRATION BY **GREGORY NEMEC**

shopping list

1 | DISHWASHER The majority of built-in dishwashers come in only two sizes: 24 inches wide and 18 inches wide, both sized to fit under a standard 25-inch-deep and 36-inch-high counter. (Be sure to get a built-in dishwasher, not a portable one which uses temporary connections at a sink tap and outlet.) Look for the Energy Star label on any model you buy—the criteria for dishwashers become more stringent in January 2007. See "Buying Guide," far right, for more on the features of Energy Star dishwashers.

2 | ⅜-TO ½-INCH BRASS ELBOW to make the turn from the dishwasher's inlet to the copper supply line. This is a standard part for dishwashers and may be included in a dishwasher installation kit.

3 | TEFLON TAPE

4 | ½-INCH SOFT COPPER TUBING to bring water to the dishwasher. (The measurement refers to the pipe's outside diameter.) A 10-foot coil should be plenty.

5 | TWO ½-INCH COMPRESSION FITTINGS The number also refers to outside diameter. Each includes a brass ferrule (or compression sleeve) and a compression nut.

6 | ELECTRICAL WIRE NUTS to connect wire ends. Get ones that will fit two 12-gauge wires—either yellow or red.

7 | CABLE CLAMP to secure the electrical cable to the junction box on the dishwasher.

8 | NO. 6 HOSE CLAMP to attach the dishwasher's ⅝-inch drain hose to the sink's drain tailpiece.

9 | PLUMBER'S STRAPPING to hang the drain hose on the cabinet wall.

{ step by step }

Set up the water supply »

For flush-front (fully integrated) dishwashers. Using a drill/driver fitted with a 2-inch hole saw, make a hole through the side of the sink cabinet facing the dishwasher bay, 3 inches up from the floor and 2 inches in from the back wall. If this hole falls below the cabinet floor, make two 1¼-inch holes at the back of the cabinet floor. (For semi-integrated models, reuse the existing holes.)

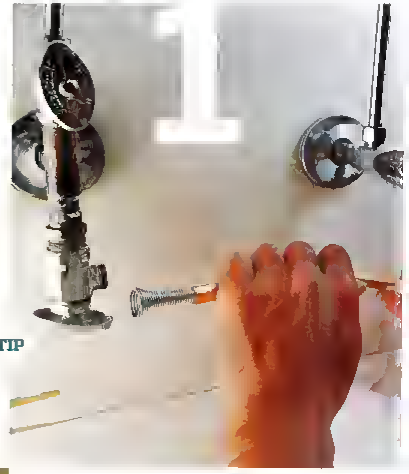
Carefully uncoil the copper tubing and loosely thread it from the dishwasher bay through the cabinet side and up into the cabinet via one of the floor holes. Uncoil enough copper to get past the front of the bay. Using a tubing cutter, cut the line.

Insert a narrow tube-bending spring inside the end of the copper nearest the hot-water valve. Use the spring to shape the tubing toward the valve (RIGHT), then down to the hole in the cabinet. Be careful not to kink it.

Slide a compression nut, then a ferrule, over the end of the tubing at the valve. Hand-tighten the nut over the ferrule and onto the valve. Using an adjustable wrench, tighten it another quarter turn.

< TIP **Tube-bending springs can fit either inside or outside a pipe. The inside springs can only be used on a pipe's ends, but they make tighter turns. Use outside springs to gently curve the middle of a pipe.**

BUILD YOUR SKILL
Learn how to install the fittings needed at a new dishwasher location. **Workshop,** p. 111



« Position the water and electrical lines

Find the two front-to-back clear paths on the underside of the dishwasher—these are meant to keep the copper tubing and electrical wiring away from the motor as they run from the back of the dishwasher bay to the front of the appliance. Measure the distance from these paths to the sides of the dishwasher. Transfer the measurements to the floor inside the bay. Note which side leads to the water hookup and which side is for the wiring.

Using an outside bending spring, shape the copper pipe so it wraps down the cabinet side and along the mark for the water pipe channel. Twist the electrical wire so that it lies in the correct path as well. Use tape to secure both to the floor in position over their marked lines (LEFT).

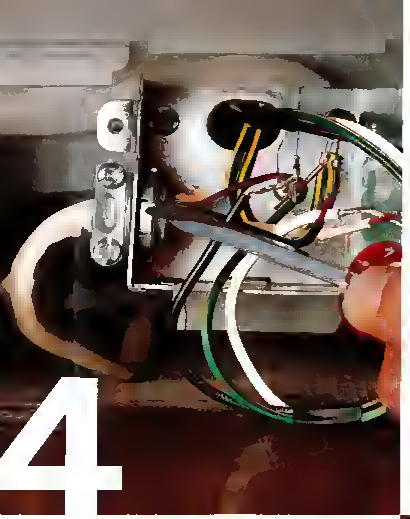
Hook up the water supply »

Lay down a tarp to protect the floor and tip the dishwasher on its back. Remove the cover panel at the bottom of the unit. Wrap Teflon around the water inlet's threads. Screw a brass elbow onto the inlet. Tighten it with an adjustable wrench (RIGHT).

Stand the dishwasher up and push it up to the bay. Check that the water and electrical lines are properly aligned. Feed the end of the drain line from the dishwasher through the side of the cabinet and up via the unused floor hole. Then have a helper guide the drain line as you slowly slide the dishwasher in place.

Using the inside bending spring, turn the copper supply to the elbow. Cut off any excess pipe but leave 2 inches of straight copper for the compression fitting. Slide a compression nut and ferrule over the end of the pipe (INSET) and hand-tighten the nut onto the inlet. Using an adjustable wrench, tighten it another quarter turn.

< TIP **Never hold a dishwasher by its door as you move or tilt it.**



4

Make the electrical connection

Slide a cable clamp over the end of the exposed wires until it s around the plastic or metal sheathing bundling the wires together Using a screwdriver tighten down the clamping bracket over the sheathing to hold the wires in place.

Unscrew the star shaped nut on the clamp then push the wires and threaded end of the clamp through the hole in the side of the unit s junction box Hand tighten the nut back on the clamp from the inside of the box. Tighten the nut with pliers or a screwdriver (LEFT)

Line up like colors of wire together—white to white and black to black—and t ighten them together with wire nuts If you have Romex (plastic sheathed) cable connect the green ground wire to the dishwasher's green or bare-copper wire with a wire nut

If you re using BX cable the armored jacket works as a ground when it s clamped to the junction box Wrap the exposed tip of the dishwasher s ground wire around a mounting screw on the junct on box and clamp it down with the screw

Stuff the wires into the box and cover it with the metal cover plate Screw the plate to the box.

Attach the drain line

Slip a hose clamp over the end of the dishwasher s drain line and push the hose over the sink drain inlet—either branching off the drain tailpiece or the side of the garbage disposer Take care not to kink the line or wrap it around the spray hose line. Slide the hose clamp over the connection and turn the screw to tighten it down (RIGHT)

Wrap a loop of plumber s strapping around the drain line with enough excess to match up a pair of holes Hold the hose and strapping against the back of the cabinet so it makes an arc that s higher than the drain inlet Using a screwdriver attach the strapping to the cabinet wall (INSET)

5

6

Screw the dishwasher in place

Reach down and adjust the feet on the front of the dishwasher until the mounting brackets touch the underside of the counter

Open the dishwasher door Holding a torpedo level against the inside top of the dishwasher adjust the feet until it s level (LEFT) side to side

With the dishwasher level fasten it to the underside of the countertop by driving screws through the mounting brackets (INSET) Replace the cover panel at the base of the unit

Turn on the power and water supply Check for leaks at the water connections over the next few hours If any appear turn off the water and tighten the compression fittings slightly If no leaks appear test run the dishwasher

FOR MORE INFORMATION SEE DIRECTORY PAGE 125

{ buying guide }

Combing through all the stats and features when shopping for an efficient dishwasher can be overwhelming The Energy Guide sticker is a great place to start but it only measures electrical consumption and doesn't even state the range that qualifies a dishwasher for an Energy Star designation. To be smarter about your choice you should consider water use and other features that can up a model s efficiency Here s help interpreting the numbers and a look at how the most efficient models stack up.

ENERGY USE

The Energy Guide label that comes with every dishwasher shows usage within a scale running from 194 to 531 kilowatt hours per year (kwh/year) It used to be that 374 kwh/year was good enough for Energy Star qualification but as of January 1 the threshold was lowered to about 331 kwh/year (based on a complicated formula of percentages and average yearly use) These stricter regulations led many companies to upgrade their products now many just squeak in at the limit.

WATER CONSUMPTION

The Energy Star system doesn t take water usage into account though the government may add that criterion in the future In the meantime, most Energy Star models use an average of 4 gallons of water per cycle versus 6 for ones that aren't qualified However water usage is relative to the cycle you choose so some can get as high as 8 gallons per cycle even when Energy Star–qualified One way to conserve water is to scrape dishes and put them right in the machine that will save 20 gallons of rinse water at the sink.

watch how

Follow a step-by-step video of *TOH* plumbing and heating expert Richard Trethewey replacing a dishwasher at thisoldhouse.com/shortcuts

1> BOSCH EVOLUTION
Energy: 190 kwh/year
Water: 3.5 gallons/load
Smart feature: A load sensor that detects the amount of dishes in the machine; run it half-full and it automatically cuts the water by half.
$1,599; boschappliances.com

2> MAYTAG JETCLEAN
Energy: 334 kwh/year
Water: 3.38–8.45 gallons/load
Smart feature: Microfiltration to ensure crumbs as small as coffee grounds are filtered not recirculated.
$399; maytag.com

3> KITCHENAID C SERIES
Energy: 334 kwh/year
Water: Less than 5.9 gallons/cycle
Smart feature: A built-in disposer that saves water by making prerinsing utterly unnecessary.
$499 kitchenaid.com

4> FISHER & PAYKEL DISHDRAWER
Energy: 214 kwh/year
Water: Minimum 2.4 gallons/load
Smart feature: A dishwashing drawer is an efficient way to do smaller loads.
$789; fisherpaykel.com

5> MIELE EXCELLA
Energy: 312 kwh/year
Water: 6.3 gallons/load
Smart feature: An ability to store 19 customized wash settings—creating an optimal water and energy-consumption default—and the technology to use a computer to further adjust the consumption or adapt to a new detergent.
$2,098, miele.com

6> LG STEAM DISHWASHER
Energy: 255 kwh/year
Water: 2.8–3.2 gallons/load
Smart feature: New steam-clean technology minimizes water use
$1,599; usa.lge.com

7> KENMORE ULTRA WASH HE
Energy: 305 kwh/year
Water: 4.2 gallons/cycle
Smart feature: A near-silent (46-decibel) noise output reducing noise pollution in the kitchen.
$1,249; kenmore.com

The Recycled, Repurposed, Nontoxic House

HOW ONE COUPLE REMODELED AND EXPANDED A 1940 COTTAGE WITH THEIR CHILDREN'S FUTURE IN MIND

BY JILL CONNORS PHOTOGRAPHS BY CASEY DUNN
PRODUCED BY COLETTE SCANLON ORTIZ | STYLING BY KAY SAY

HEALTHY FINISHES
No VOC paints can I all gas here they coat shiplap paneling that was removed and reinstalled as part of the remodel

"DAYLIGHTING"
Lots of windows throughout channel natural light through the interior lessening the need for electric lamps

REDESIGNED FLOORBOARDS
Hardwood floors were pried up to preserve them during the renovation The couple spent weeks removing the nails themselves before the boards could be reinstalled and refinished with a water-based top coat

The homeowners' son Copeland, 7, plays in the new upstairs hallway, where the walls are finished with paneling salvaged from the existing attic. At the end of the hall is the second-floor laundry room, a welcome convenience in a house with four children.

LOW WATTAGE LIGHTING
Dimmers on the dining room fixtures make incandescent bulbs more energy efficient—and longer lasting The kitchen's compact fluorescent lightbulbs require even less energy

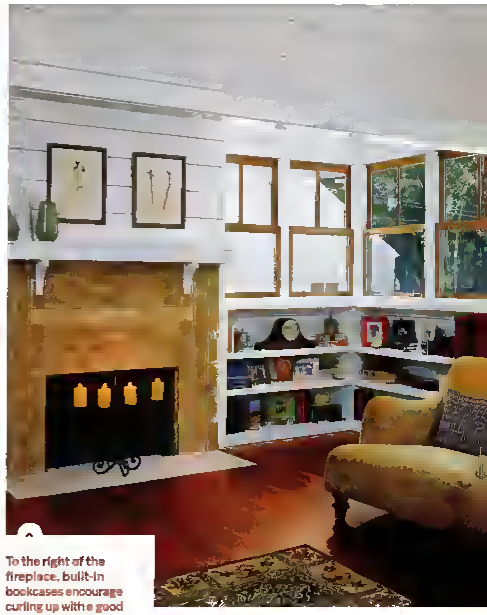
ENERGY EFFICIENT APPLIANCES
Energy Star–qualified appliances reduce the amount of electricity used—and the owners' utility costs.

OVERSTOCK TILE
Buying tile left over from another building job helped keep excess construction materials from ending up in a landfill

The reconfigured first-floor plan includes a dining room open to both the kitchen and the family room Glass-paned doors on either side of the fireplace lead to the deck.

The front door's interior casing is a good example of the simple millwork found throughout the remodeled 1940 house. Hardwood flooring was removed and reinstalled on both levels of the home, supplemented by similar boards salvaged from other remodels in the neighborhood. The built-in bench makes tidy use of what otherwise might have been wasted space.

Linda Lessner holds baby Willem at the soapstone-topped center island, which houses a corner sink where the kids wash up before meals. The Jenn-Air range has a downdraft—a more energy-efficient venting system than a powerful overhead fan. Open shelves run across the window wall for easy-to-grab crockery storage. Crown Point lower cabinets in a spare Shaker style fit the place's cottage look.



To the right of the fireplace, built-in bookcases encourage curling up with a good read. The Weathershield double-hung windows are in a two-over-one style that the couple chose for its simple vintage look.

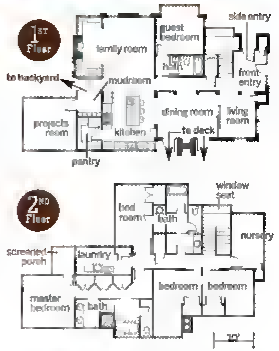
Bigger isn't always better. That's a lesson Linda and Mike Lessner learned the hard way, after building a 5,000-square-foot house outside Austin back in 2002. Shortly after moving in, the couple realized that it was all wrong for them. "It never felt right being in that big house in the suburbs," says Linda. "My husband wanted to be able to bike to work. I wanted to be able to hop to the store. We wanted to be able to walk to a city park, and we didn't need all that space." So within nine months of moving into the new house the Lessners sold it, buying a small house in the city while they looked for one they could remodel into their "forever" home. Luckily, they soon found just such a prospect when Linda drove past a 1940 tan-brick, Cape Cod–style house on a double lot, in close proximity to schools and shops, and within biking distance of Mike's dental practice. "We walked into the house and just had a good feeling about it," recalls Linda.

There was no question the house needed a major renovation, though. With two first-floor bedrooms, two baths, an outdated kitchen, and a bowling-alleylike attic bedroom, the existing house was too tight a squeeze for the Lessners, who had three children then and now have four. So they turned to local architect David Webber—a familiar face from around town—knowing he could deliver a green design that would retain a traditional look, an important consideration for the couple. The Lessners, both long interested in environmental issues, became even more devoted to the idea of remodeling in a sustainable way after Linda attended a green building workshop offered by the city of Austin, known for its forward-thinking green building initiatives.

Starting with the simple, cottage look the Lessners wanted, Webber came up with a plan to increase the size of the house from 2,100 to 3,500 square feet, making room for three kids' bedrooms (with one cleverly compartmentalized bath to serve them), a master suite, and a nursery, all upstairs, and reconfiguring the first floor into an open plan kitchen/dining/family room. He drew a second story of steeply pitched gables as a distinctive envelope for the remodeled home, repeating elements of the original 1940 house such as the brick arch on the front exterior and the shiplap paneling on the interior. He also included plenty of features from the homeowners' wish list, including window seats, a walk-in pantry, interior windows to maximize natural light, built-in bookcases, millwork details, and a second-floor laundry.

The 13-month renovation kicked off with a six-week deconstruction, a careful disassembling of the house's parts to save them for reuse—a process Linda learned about at her green building workshop. She later learned that Austin Habitat for Humanity operated a deconstruction program, so she contracted the group to remove the attic and roof and take the first floor down to the studs. She'd keep and reuse the shiplap paneling, flooring, shelving, kitchen and bathroom cabinets, kitchen sink, bathtub, light fixtures, and doorknobs. Habitat could take the rest to its retail store.

Green builder Robert Howard started his work on the Lessner house when it was little more than a shell—fortunately, a very sound shell. "The pier-and-beam foundation was in good shape, and we left it basically as it was, adding to it in a few places to carry the load of the second floor



FAMILY-FRIENDLY The first floor was reworked so that the kitchen, dining area, and family room are all open to one another. The second floor, once one big attic bedroom, was expanded to hold three bedrooms (that share one multipart bath) plus a nursery and a master suite.

Lucy, 8, and Ella, 5, play a board game on the stair landing's window seat—one of many built-in features that maximize space in the house and give it a cozy feeling.

Two 1920s schoolhouse transom windows the homeowner found at a salvage yard let natural light from the big stairwell window reach the children's bathroom.

To add another level of cottage detail, a steep gable on the rear facade is clad in cement board installed vertically higher up, horizontally down below; the order is reversed on the shed roof perkem to the right of the chimney

addition," says Howard. He insulated both the attic (with spray foam in the walls and floor) and the crawl space (with 6-mil plastic sheeting on the walls and floor), where the furnace and air-conditioning units would be placed. "If you keep your heating and cooling ductwork inside the insulated building envelope, it cuts energy loss," he says. The HVAC includes a dehumidifier, which contributes to the unit's efficiency by keeping the AC from turning on simply to reduce humidity. Two tankless hot-water units (one in the attic and one in the pantry) supply heated water only as needed, and photovoltaic solar panels on the roof reduce the electric bill by about 30 percent.

The exterior of the house displays Webber's eclectic take on traditional Cape Cod style as well as the Lessners' green choices in materials. The roofline's steeply pitched gables and shed overhangs are built with at least 1 foot of overhang, 2 to 3 feet in some places—important for rainfall runoff and house shading as well as aesthetics. The standing-seam metal roof is green because of its durability and also because its factory applied, highly reflective gray finish keeps the house cool. The ground floor's original brick exterior walls were painted gray-green rather than covered with boards, and the second story is clad in long-lasting, rot-resistant cement board clapboard and board-and-batten siding. All the windows are new, energy-efficient, double-insulated, low-e-glass units.

Inside, most of the salvaged shiplap paneling taken from the original house was reinstalled on the first-floor walls. Hardwood flooring on both levels was taken up and reused, supplemented by similar old flooring salvaged from neighborhood houses. "I got quite familiar with all the deconstruction sites nearby," says Linda. The kitchen reflects her penchant for good value. The countertops are covered in 6-inch square white tiles she purchased from the local Habitat Re-Store, builder overruns for which she paid a mere nickel each. Her splurge was the Crown Point cabinetry in a white-painted Shaker style. Well aware of habit, she chose only base cabinets and drawers—no uppers. ("I always leave them open, and it looks horrible," she says.) Everyday dishes are stacked on open wooden shelves. Both baths feature basic white tile. "That way, I can change the look of the bathrooms simply by painting the walls," says Linda. Sentimentality guided her insistence on reusing the existing cast-iron kitchen sink and kitchen cabinets in the second-floor laundry. "They were perfectly good pieces, and I thought of all the time the former owner surely spent at the kitchen sink, and I just couldn't get rid of it," she says.

In keeping with the couple's desire for sustainability, all coatings are nontoxic. The interior paint is no-VOC, and a water-based sealer was used on the floors. Some of the family's favorite areas are those designed for efficient use of space and to create a sense of intimacy: a fireplace nook in the family room, the window seat on the stair landing. For entertaining, though, the most popular spot lies through the dining room doors: a simple deck made of composite material that's a few steps up from the yard. "It's part of green design to include outdoor living spaces,"

"I told the architect I wanted small bedrooms and big family spaces. The most important thing is to have room where we can be together."

The 13-foot-square master bedroom seems more spacious because of its high ceiling, which is open to the roof peak. New wood beams line the ceiling, echoing the paneling downstairs; extra hardwood flooring was salvaged from other houses in the neighborhood.

says Linda, who was thrilled to learn that their house received a five-star green rating (the top score) from the city of Austin, which took into account everything from the house's proximity to the grocery store to its use of salvaged doorknobs.

The result was well worth the wait—even considering that they had to live in the garage for the final month of renovation because they had sold the house they'd been living in. "Fortunately, my husband had already turned the garage into a climbing gym and rec room, so it had padded floors—good for sleeping—a TV, a fridge, and a microwave," says Linda. "We used the toilets in the house and 'showered' with a garden hose in the yard." Now that they've been in the house for a while (and welcomed their fourth child), the Lessners know they made the right decisions. "The most important thing is to have room where we can be together," says Linda. "I wanted small bedrooms and big family spaces, and that's what we got. This is where we envision our grand children coming to visit us. There'll be no need to downsize, this house is just the right size." ■

Find Out More

Want your next remodel to be a green one? Learn how at **thisoldhouse.com/shortcuts**

FOR MORE INFORMATION SEE DIRECTORY PAGE 125

>HEALTHY HOME *ingredients*<

A new wave of high-performance, earth-friendly, and natural products lets you enjoy your creature comforts with a clear conscience. We've got 25 top picks right here.

BY LINDA LENTZ
PHOTOGRAPHS BY ANDREW McCAUL
STYLED BY SUZY KIM

>FOR THE *kitchen*<

1 **Good to the Core** As a substrate for veneered cabinets, medium-density fiberboard works great. MDF is smooth, strong, stable, and, on top of it all, formed from ground-up wood waste. The downside: The glue that holds it together contains formaldehyde. Crystal Cabinet Works offers cabinet boxes crafted from Green Core MDF made from 100 percent recycled wood pulp without added urea formaldehyde. This oak-veneered example is from the Quest line. Custom order; crystalcabinets.com

2 **Copper Sense** Studies show that copper's natural antibacterial properties can kill off nasty *E. coli* and salmonella more quickly than other metals, making Native Trails' hand-hammered, recycled-copper Diego prep sink a hygienic choice for the kitchen. 11 inches in diameter by 6¾ inches deep, $498; nativetrails.net

3 **Kinder Cut** Bamboo's hardness and density make it an ideal cutting surface—more bacteria-resistant, easier to clean, and less prone to knife gouges than maple. Teragren's Parquet butcher block is made of bamboo that is sustainably harvested to leave behind thriving plants and new shoots. $22–$28 per square foot; teragren.com

4 **Old Standby** It's tough to improve on linoleum flooring. After all, it's affordable, durable, resilient, and natural—a cocktail of linseed oil, cork dust (from dead tree bark), wood powder, organic pigments, ground limestone, and jute backing. Armstrong offers its marbleized version, Marmoleum, in 58 colors. $2–$3 per square foot, uninstalled; armstrong.com

5 **Fine Form** Recycled (and recyclable) materials—including hand-blown glass and hand-brushed aluminum—go into jGood Design's graceful Dome pendant lights, which look just right over a kitchen island. Available in three sizes and a variety of colors, including opaque white (shown). $560 and up; jgooddesign.com

6 **New Take on Tile** Artist Erin Adams and Mexico-based Alumillenium Tile collaborated to produce Luna, a line of backsplash tiles made of glass and 100 percent recycled aluminum. Even the fuel for the production process—used motor oil—has been recycled. Starting at $105 per square foot; annsacks.com

7 **Seeing Is Believing** Dimmers save energy and extend lightbulb life—that is, if you don't keep them set to full power. The Skylark Eco-Dim switch has a fixed maximum level 15 percent below a light's top capacity, so you can trim energy use with barely any perceptible loss of brightness, plus make your bulbs last four times longer. $26.50; lutron.com

8 **Concrete on a Diet** If you like the look of concrete countertops but not the fabrication headaches, consider Syndecrete, a cement-based composite of natural minerals and recycled materials. Chip- and crack-resistent, it's available in three sizes of tiles or ready-to-fabricate slabs. In 13 standard colors and 12 aggregates, including glass, shells, and metal shavings. A 2½-inch-thick 30- by 96-inch slab tips the scale at 360 pounds—about half the weight of concrete. Tiles start at $14 per square foot; syndecrete.com

9 **Light Touch** Time to freshen up your cabinet hardware? Variation knobs and pulls from SpectraDecor are available in nine shapes and sizes and 56 standard colors, all fashioned from lead-free pewter and eco-resin, a translucent material made from 40 percent postindustrial recycled content. $36–$62 each; spectradecor.com

FOR THE *bath*<

10 Under the Surface If you can't shower outdoors, bring a bit of the outdoors into your shower. 3form's organically inspired surfacing takes natural materials like bamboo, ginkgo leaves, banana fibers, and bear grass (shown here) and encapsulates them in a clear or translucent layer of eco-resin to create strong, chemical-resistant materials suitable for use as flooring, shower partitions, and vanity tops. Starting at $20 per square foot for a ¼-inch-thick panel. 3-form.com

11 Free Flow We know hands-free faucets save water. But this one saves energy, too. Optima's sleek Sola faucet operates on solar power—either sunlight or artificial light—using an infrared sensor and microprocessor to control flow automatically. An integrated control lever adjusts water temperature. About $645. sloanvalve.com

12 Plastic Made Perfect Two new solid surfacing materials turn waste into something beautiful. Translucent Chroma (top, in Moss) is a color-infused matte resin for vanity tops. Designed for recycling, it can be reclaimed, recolored, and reused. If that shampoo bottle you just tossed is lucky, it might someday end up back in your bathroom as a 100 Percent countertop (bottom, in Cut Grass), made entirely of recycled high-density polyethylene (HDPE). Chroma, from $15 per square foot. 100 Percent, available in four terrazzo-like patterns. In 4-by-10-foot slabs, 1 inch thick, $1,365 each. 3-form.com

13 One-Step Installation Just lean this 98 by 18 inch bamboo display ladder against the wall, and you're ready to air-dry bath towels over the rungs. $350. chista.net

14 Fragrant Floor Mat A quick fix of aromatherapy for every day: this 24 by 36 inch woven bath mat combines cotton and vetiver root, a perennial grass native to India used in some of the world's top perfumes. Heat and moisture release the scent. $21. zen-zen.com

15 Water Wise Fixture designers have figured out how to make code-compliant 2.5-gallon-per-minute showerheads feel like soakers, with special aerator nozzles and pressure-boosting technology. The FloWise 3-Function showerhead does them one better. Its default "turbine" setting uses 40 percent less water than standard low-flow models, spinning out a deceptively forceful 1.5 gpm. For a real treat, switch to the optional 2.5-gpm combination spray. $65–$95. americanstandard.com

16 Light Where You Want It Sconces are the pros' choice for lighting a vanity, because they cast even illumination without harsh shadows. But sometimes you need that extra bit of brightness at the mirror. Fitted with an energy-efficient compact fluorescent lamp, the Flipster sconce has hinged side panels that swing open and shut, so you can direct light where you want it. Its nice, paperlike shade is made from partially recycled PETG, a clear resin that stands up to bathroom humidity and moisture. $489. cyberg.com

17 Terrazzo to Go Harder than tile, more durable than wood, impervious to mold and mildew, terrazzo is an often-overlooked bathroom surface. You can get it the old-fashioned way—mixed, poured, and polished on site—or instantly with Eco Terr. Choose from 24 colors, all made with up to 90 percent postindustrial and consumer-recycled content. Available in 16-inch squares (⅜-inch thick), 24-inch squares (¾-inch thick), or custom-cut slabs. Tiles start at $8 per square foot. coveringsetc.com

Relative to its size, the bathroom is a big consumer of household resources. But it's also one of the easiest rooms to green up, with low-flow toilets and showerheads, recycled countertop materials, compact fluorescent lighting, and natural linens and cleaning products.

>FOR THE *living room*<

online BONUS For eco-friendly design ideas and inspiration, check out our gallery of green showrooms at thisoldhouse.com/shortcuts

18 New Wave Rocker Engineered from a nine-ply laminated sheet of fast-growing, quickly replenished bamboo, the sinuous, molded Spring chair rocks your world—gently. Comfortable, flexible, and indisputably cool, this seat is available in natural (shown), ebony, and cherry finishes. $690; modernbamboo.com

19 Cozy Underfoot Alternating blocks of cut and looped undyed hemp fibers give the Checkerboard from Classic Rug's New Naturals Collection its subtle pattering; 100 knots per square inch make it stand up to plenty of traffic. Four standard sizes, ranging from 4 by 6 feet to 8 by 10 feet. $1,296–$4,320; classicrug.com

20 Fab Fabrics Say "natural window coverings," and most people think of roll-up matchstick blinds or canvas drapery panels. That's because they haven't seen EtheWeave fabrics, handwoven from natural fibers including linen, silk, and bamboo, then tailored into Roman shades, panel screens, curtains, cornices, and valances. Custom order; hfshades.com

21 Vegetable and Mineral With nontoxic soy resin as a base, mineral pigments as colorants, and few synthetic additives, Green Planet Paints' zero-VOC matte interior clay paints translate a green sensibility into 43 rich, vibrant colors that can be sprayed, rolled, or brushed on. $45.50 per gallon; greenplanetpaints.com

22 Sophisticated Sconce Elegance and ecological ideals merge in the stylish Fibonacci sconce. Its compact fluorescent lamp is diffused under a cylindrical wooden shade made from recycled postindustrial hardwood veneer lined with chlorine-free paper. Bird's-eye maple, mahogany, bamboo, or anigre (shown) on a steel base, $755; cyberg.com

23 Versatile Tile First came tongue-and-groove strips, then engineered planks. Now there's something new in bamboo: mosaic tile. Use it anywhere you'd use ceramic tile (except in the shower), to warm up a wall or add interest to a floor. Walker Zanger's first-of-its-kind Sobu collection comes in random planking (shown), 1-inch squares, and rectangles set in basket weave or herringbone patterns in Gold, Sable, or Espresso finish. Starting at $23 per square foot; walkerzanger.com

24 Slice of History You don't need a bricklayer to get the look of antique masonry: Vintage Brick Salvage slices reclaimed Chicago common brick into thin veneer for walls and flooring. Laid as easily as tile, it brings a touch of authenticity to a traditional family room or a modern loft. Colors range from deep pink to pale buff. Wall tiles, 8 by 2¼ inches (½ inch thick), around $12 per square foot; bricksalvage.com

25 Out of the Woods EcoTimber's hand-scraped hickory flooring cleans up the engineered wood category with 100 percent Forest Stewardship Council–certified wood and formaldehyde-free adhesives that emit no harmful VOCs into the air. $11–$15 per square foot; ecotimber.com ■

little things mean a lot

22 easy, inexpensive IDEAS to clean up your home—and cut your utility costs

By_ Jeanne Huber
Illustrations by_ Nick Dewar

It seems everybody knows you can help the planet—and save yourself some cash—with big changes: adding spray-foam insulation to open walls, say, or installing a tankless water heater. But there are lots of simpler, lower-cost ways to improve your eco-scorecard, too. Here are some low-stress steps to take around the house to reduce your carbon footprint, create a healthier home, and lower your monthly bills to boot.

> workshop

1_ Unplug your power tools. Figure out which cordless tools (like drill/drivers) get the most use, then unplug the chargers on all the rest. Most cordless tools have nickel cadmium (NiCad) batteries, which will hold some charge for up to a year. They lose 15 to 20 percent of their juice each month, but only take a couple of hours to power up again. Newer tools with lithium ion batteries lose just 2 to 5 percent of their charge each month, so they'll be ready to go even if you haven't charged them in ages.

2_ Spread sawdust on your floor. Take the superfine shavings captured by your dust collection system, wet them down, then push them around with a stiff broom to sweep your concrete garage or workshop floor. The mix is as good as a power-guzzling shop vac at picking up dust but doesn't swirl it into the air.

#3

Up the wattage on lights. Where you still use incandescent bulbs (with dimmers or three-ways) on multiple fixtures in a room, try consolidating. One 100-watt incandescent emits more light than two 60-watt bulbs combined but requires 17 percent less power. The 100-watter also uses the same energy as four 25-watt bulbs, but pumps out twice as much light. Just be sure your bulbs don't exceed the maximum wattage recommendation for each fixture.

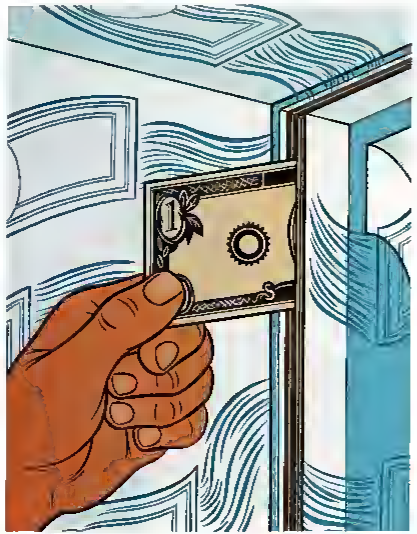
4_ Eat your leftover take-out. Then save the plastic containers it came in—which can't be recycled in most municipal waste systems—and use them to organize your nails, screws, and leftover paints. Not only does their tight seal help preserve solvents, but the see-through containers stack neatly and display contents clearly. For added strength, double up the thin ones.

5_ Save used paint thinner. After cleaning oil-based finishes from brushes and tools, allow the dirty solvent to sit overnight. The sludge will settle to the bottom of the jar, leaving a layer of clear thinner on top. Carefully decant the clear thinner into a clean jar, and reseal it for future use. Be sure to dispose of the leftover sludge at a hazardous-waste-disposal site—never down a sink drain or into a street gutter.

6_ Mix it up in the garage. Combine all those cans of leftover white paint that inevitably collect after you decorate the house and use them to paint the garage or workshop. (Make sure only to mix latex with latex and oils with oils.) You'll keep the stuff out of the trash, and by adding the semi-glosses to the flats and eggshells, you'll end up with a sheen that's easy to clean.

7_ Turn things on their heads. Store paint cans upside down so the solvents—which separate and rise to the top—get trapped under the bottom of the can. Not only will paint last longer, but solvents won't be able to slowly seep out through the lid this way.

8_ Take charge of your charges. Invest in an inexpensive battery tester, then set up a "battery center" where you can store new cells, check used ones for power, and set aside those that have burned out and have to be recycled. A designated collection spot will deter you from throwing bad batteries in the garbage. Once or twice a year, you just take the pile to your town's recycling center.



> kitchen

9_ Take your fridge's temperature. Stick an appliance thermometer in a glass of water in the center of your refrigerator, or between frozen goods in the freezer, overnight. Your fridge temp should be between 37 and 40 degrees F (no more, to keep bacteria at bay), your freezer between 0 and 5 degrees. If either compartment is too cold, adjust the setting, since keeping them just 10 degrees colder than necessary can boost your energy consumption by up to 25 percent.

#10

Freeze your assets. Slip a dollar bill between the rubber gasket on your freezer and fridge doors and the frame, then close the door and tug on the buck. Notice any resistance? If not, the seal's not tight enough and cold air is probably leaking out, making your fridge work harder to stay cool. Try this on all four sides of the door. If necessary, call the manufacturer's service department to find out how to replace the gasket.

#11

Throw a dinner party. And clear out that second fridge or freezer in the garage or basement. Then banish the appliance to the recycling center. Getting rid of either one can save you more than $200 a year, especially if it's an old, inefficient model.

12_ Invite your biggest buddy over. Ask him to help you move your fridge out of direct sunlight or away from the range. The heat from either will force a refrigerator compressor to gobble up more energy than necessary. A fridge uses up to 2.5 percent more power for each degree the surrounding temperature is above 70 degrees. So moving it out of a 90-degree spot can save you as much as $70 a year. If you can't move it, at least block any sunny window with curtains and put as big a buffer as you can between it and the range.

13_ Use the dishwasher. Doing a full load in your machine is far more efficient than washing the same number of dishes by hand. This is especially true if you have an Energy Star dishwasher, which requires an average of 4 gallons of water per load, compared with the 24 gallons it takes to do them in the sink. Using one will save you 5,000 gallons of water, $40 in utility costs, and 230 hours of your time each year.

> bathroom

14_ Turn your toilet tank blue. Or green or red. Pour food coloring into the water in the tank, wait two hours, then check to to see if any color has seeped into the bowl. If it has, your tank's flapper is leaking, either from mineral buildup or worn parts. After you flush the dye away so it doesn't stain, head to the hardware store for a replacement flapper assembly (then go to thisoldhouse.com for instructions on how to install it). Toilet leaks waste up to a gallon of water per minute. That's more than 43,000 gallons a month.

16_ Go from scalding to just hot. Turn your water heater's temperature setting down from the standard 140 degrees F to 120 degrees. Not only will this save you some bucks, it'll also slow down mineral buildup and corrosion, prolonging the life of your tank. Since a new water heater costs about $900 installed, each additional year of use saves you money as well.

#15

Run the shower. Place a 1-gallon bucket under the running water, then see how long it takes for it to fill up. If it's less than 20 seconds, replace the showerhead with one that sprays 1.5 gallons per minute. That could save as much as 14,600 gallons of water a year—especially if you limit your showers to 10 minutes. It will also save you $22 on your annual water bill, and $150 per year on water heating.

17_ End the water torture. One drip per second from a leaky faucet or pipe can waste up to 5 gallons of water a day—and 1,800 gallons a year. While you won't notice much of an increase on your water bill (around $3 annually), if an overlooked leak soaks through your kitchen floor, you could wind up with a $1,000 repair job—money that could have been saved by simply replacing a 50-cent washer.

> entries

18_ Wipe your feet. Equip your exterior doors with a series of mats—or one long "walk-off" mat—so everyone enters with clean shoes. As long as there's room for five steps on the mats, you'll drastically reduce the amount of grime tracked in. That means fewer pathogens that cause disease and less chemical cleanup. It will also mean improved indoor air quality, since dirt embedded in a carpet can become airborne when it's tromped on or agitated by a vacuum.

> basement/laundry

19_ Reach behind your clothes washer. Turn down the hot water tap for the washing machine so less goes into the warm water cycle. Perspiration and most other dirt dislodge best at body temperature, so you don't need water that's warmer than 100 degrees. Since most washers simply open both the hot and cold taps to make "warm" water, it may take longer to fill the machine. But you'll save about $40 annually on your water heating bill.

20_ Spend more time in the basement. Make sure furnace filters in forced air systems are clean. Dirty furnace filters restrict airflow and increase energy use. Cleaning them, or swapping them out each month during the winter, can save you up to 5 percent on your heating costs. Also schedule an annual checkup before the heat comes on to see that the furnace is properly calibrated.

got a tip? What simple things do you do to green up your home? Send us your ideas at **thisoldhouse.com/green-tips**

> living areas

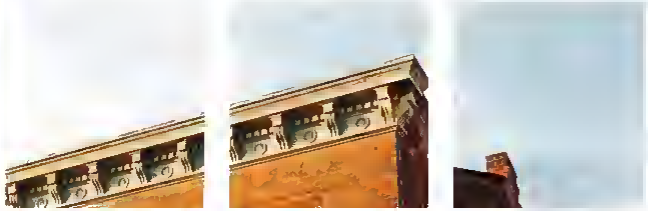
#21

Listen to your mother. And put on a sweater. That way you can turn down your thermostat this winter. Adjust it by just one degree for eight hours a day, and you could save 1 percent on your monthly heating bills. Do it for 24 hours and save 3 percent. Try setting the temp at 70 degrees during the day and 62 at night during winter (and 78 or higher come summer). Heating and air-conditioning account for nearly half the energy used in our homes, so every little bit less you use makes a dent.

22_ Worship the sun. Or at least use it to your advantage. Open blinds or drapes to let in natural solar heat on cold days, then close them once the sun sets, and you can reduce your heating bills by 10 percent. You can also cut your cooling costs by up to 33 percent in the summer by blocking out sunlight with exterior blinds, shutters, or awnings. To keep rooms bright, paint or paper with light or reflective colors. ■

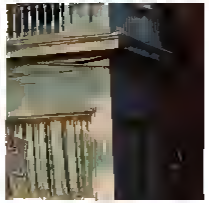
FOR MORE INFORMATION SEE DIRECTORY PAGE 125

SUM of its PARTS



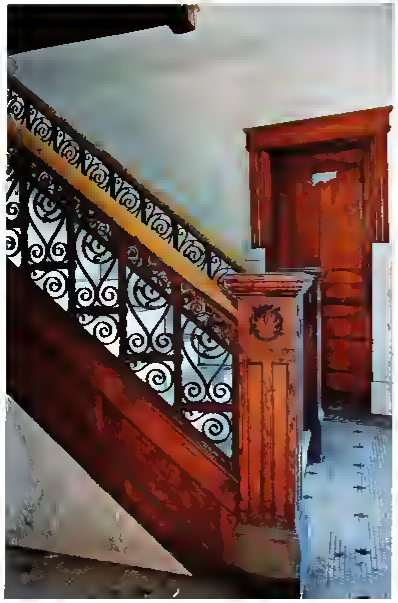
When an old house faces demolition, a deconstruction crew offers an alternative to the landfill: Unbuild it piece by piece to preserve and recycle its period materials

by lisa chamberlain
photographs by ryan kurtz



Deconstruction crew member Anthony Morris carefully removes wood trim beneath a wrought-iron staircase railing. He and others from the Cincinnati nonprofit salvage group Building Value will rescue everything they can from this circa 1900 apartment house, before a developer razes what remains of the building.

The brick Colonial Revival–style apartment house was boarded up, its interior dark and dusty.

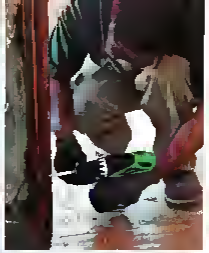


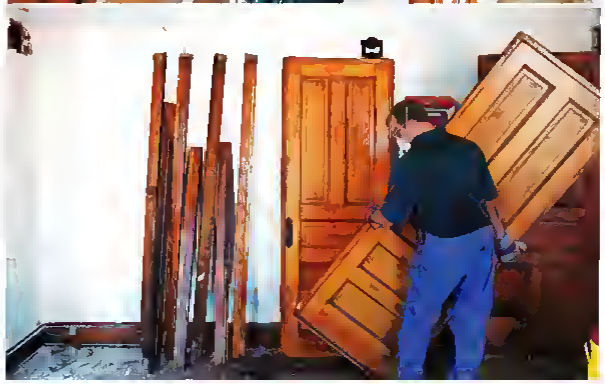
But with the plywood stripped from the front door, sunlight glinted off the white marble wainscoting lining the entry foyer and lit up the wrought iron staircase railing anchored to a carved wooden newel post. Those were just a few of the architectural elements that Jerry Janszen and his Cincinnati, Ohio, deconstruction crew were going to delicately remove from this and another circa-1900 building next door before a developer started building a new condo complex on the site.

Janszen is the director of Building Value, one of more than a dozen nonprofit organizations that have sprung up around the country in recent years to salvage building materials that would otherwise end up in landfills. With crowbars, nippers, and surgical attention to detail, workers manually extract usable materials from soon-to-be-demolished buildings so they can be reused instead of pulverized with a backhoe. "You're taking things apart the same way they were put together, only in reverse," explains Janszen. To generate revenue for the various programs the nonprofits support, much of what is removed—raised-panel pocket doors, custom-crafted kitchen cabinets, bronze light fixtures, entire staircases—is then sold to the public in retail stores, typically for less than it would cost to buy similar, high-quality new building materials (if you could even find them). The money raised at Building Value's store funds job training for disadvantaged and disabled adults in the Cincinnati area. (See "Salvage for Do-Gooders," p. 108, to find a program near you.)

For a developer, hiring a deconstruction crew isn't just about doing right by the community and the environment, it's good business. The service defrays disposal costs, and because the salvaged materials are considered a charitable donation, he gets a tax write-off. Homeowners who do their own deconstruction, say for a kitchen remodel, can also qualify for the tax break if they donate their discarded materials. But perhaps the best benefit for the DIYer is being able to find just the right vintage farmhouse sink or heart pine flooring to finish off a project. "These older houses are full of first-growth timber that you just can't find anymore," Janszen says.

On the following pages, you'll see how Building Value's deconstruction crew "unbuilt" two Dumpster-destined buildings and saved some great architectural artifacts so they can be reinstalled—and admired—for yet another century.





POCKET DOORS

Salvaging a pocket door which slides open into a recess in the wall along a metal track is more difficult than taking a swinging door off its hinges. To release the fasteners that attach the door to the track, crew manager Doug Kloth and Anthony Morris must first remove the surrounding wood casing to reveal the hidden hardware. Pocket doors are big sellers at Building Value's retail store, particularly to cordon off space for a bedroom in open plan loft apartments.

BUILT-INS

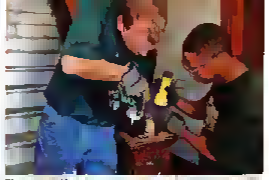
Before removing this built-in cabinetry unit, crew members take off its fragile glass doors. Next, they slice through the multiple coats of paint and a layer of plaster that overlap the edges of the cabinet's top and sides so they can gently pry the unit off the wall. A built-in like this can be reinstalled in a kitchen as a china cupboard or in an upstairs hallway to store extra linens.

FIREPLACE MANTEL

This oversize carved wooden mantel and its green tiled surround can be reinstalled around a new fireplace without major retrofitting. Oftentimes salvaged wood mantels are too short and narrow to conform to modern building codes, which regulate the distance between an open flame and a combustible material.

STAIRCASE

Kieth and Morris take the top off the wooden newel at the end of the staircase to access the internal anchoring system that secures the railing to the post. After releasing the fasteners, Morris and crew member Brian Burks ease the railing off in one piece. They also save the marble stair stringers, treads, and risers. The entire staircase will be reassembled in a new restaurant being built in Cincinnati's rejuvenated Over-the-Rhine neighborhood.



ACCENT DOOR

At first, the deconstruction crew didn't think this unusual diamond-shaped door and casing could be recycled. That is, until they pried off the trim boards at the top and saw that the door hung in a standard square opening. All they had to do was keep the framing intact, so the door and frame could be reinstalled as a complete unit.

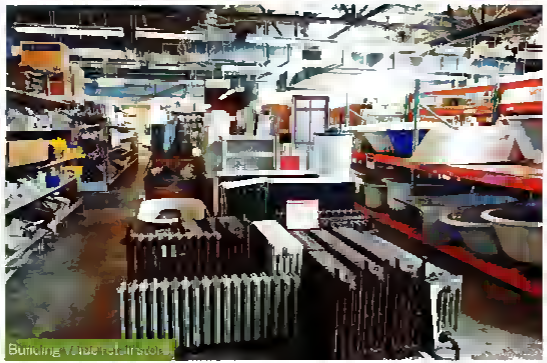
Online Bonus

See new ideas for using rescued architectural details in your home on our Salvage channel at thisoldhouse.com/toh/salvage

"We've diverted over 2,500 tons of material that would have gone into a landfill. We're proud of that fact."
—Jerry Jonston, director, Building Value

Salvage for Do-Gooders

A house-parts recycling center offers quality, vintage building materials that can't be found at your local home store. And the money you spend there will encourage positive community development or environmental education efforts. Here's a sampling of nonprofit deconstruction and salvage shops around the country. —DEENA BUSTILLO



Building Value retail store

+ Building Value
Cincinnati OH 513 475-6783
buildingvalue-cincy.org
Empowers people with disabilities to become more independent by providing job training in construction and retail

+ Build It Green! NYC
Astoria NY 718 777 0132,
bignyc.org
Funds the Community Environmental Center which provides home and business owners with solutions for saving energy

+ Gorge Rebuild-It Center
Hood River OR 541 387-0062;
rebuildit.org
Supports the Columbia Gorge Earth Center to promote affordable housing and ecological awareness

+ Green Demolitions
Greenwich CT 888-887 5211
greendemolitions.org
Proceeds from its deconstruction jobs fund Recovery Unlimited, a holistic treatment program for drug addicts and their families.

+ The Green Project
New Orleans LA 504-945 0240
thegreenproject.org
Sells discounted salvaged materials to New Orleans residents to help them restore their houses.

+ Habitat ReStore
Kansas City MO 816 231-6589
restorekc.org
Sells donated and salvaged materials to benefit Habitat For Humanity (For other ReStore locations, go to habitat.org/env/restores.aspx)

+ The ReBuilding Center
Portland OR 503 331 1877
rebuildingcenter.org
Funds Our United Villages, a neighborhood organization that stages community-building events such as historical storytelling workshops

+ ReCycle North
Burlington VT 802-658-4143;
recyclenorth.org
Runs the nine-month program YouthBuild to train disadvantaged high school dropouts for jobs in construction and salvage.

+ ReSource
Boulder CO 303-419 5418
resourceyard.org
Operates deconstruction centers as a means of waste conservation and reduction

+ Second Chance
Baltimore MD 410-385 1101
secondchanceinc.org
Trains disadvantaged adults in carpentry and deconstruction

+ Second Use
Seattle WA 206-763-6929
seconduse.com
Donates salvaged house parts to the Puget Sound chapter of Habitat for Humanity

+ The Stock Pile
Canton OH 330 455-4585;
thestockpile.org
Sells materials for one third of their retail value to qualifying low-income homeowners and renters

AS SEEN ON Ask This Old House

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119 **Skill Building**
Cut Glass Safely
Mix Your Own Shellac
Install Valves Without Soldering

123 **Norm's Notebook**
Using Cabinet Scrapers

125 **Resource Directory**

Danish immigrant and blacksmith William Petersen patented his famous locking-pliers design in 1924, dubbed it Vise-Grip, and began selling it to Nebraska farmers out of the trunk of his car. Petersen's locking-jaw concept has since been extended to dozens of other tools, including the needle-nosed and wrench jawed pliers shown here.

PHOTOGRAPH BY NIGEL COX

Ask This Old House

NEED AN EXPERT? WE'VE GOT FIVE, READY TO ANSWER YOUR HOME QUESTIONS

special expanded section

KEVIN O'CONNOR
HOST

RICHARD TRETHEWEY
PLUMBING & HEATING EXPERT

NORM ABRAM
MASTER CARPENTER

TOM SILVA
GENERAL CONTRACTOR

ROGER COOK
LANDSCAPE CONTRACTOR

I'd like to add some ornamental woodwork to the outside of my house. What type of wood should I use, and how thick should it be? I was also wondering how details such as gingerbread should be assembled.

GENE VANDERBUSH CLYDE NY

Norm Abram replies:

Most of the original ornamental woodwork you see is probably made of pine—that's what was available back then. I wouldn't use pine these days, though, or even poplar. Instead, I'd use cypress. It's rot-resistant, stable, and takes paint well. The thickness of the wood depends on what you're trying to replicate. Gingerbread ornament might be as thin as ¾ inch, but 1 inch will be stronger and better able to withstand the weather. As you work, pay close attention to the wood's grain direction. If it runs across the width of a thin piece of fretwork, rather than along its length, the piece will eventually snap. Some parts of an ornament can be screwed together and some might only need a good marine-grade polyurethane adhesive like 3M 5200. It's kind of a pain in the neck to use, but once it sets up, the woodwork will never come apart. Use corrosion-resistant screws to fasten the ornament to the house, and protect the wood with an oil-based primer before you paint it.

Gingerbread trim caught on in this country in the mid-1800s. To replicate it today, cypress is a good wood to use because it stands up well to the weather.

PHOTOS: (PORTRAITS FROM LEFT) RUSSELL KAYE (2); DAN TREMBLAY; RUSSELL KAYE; WEBB CHAPPELL; (GINGERBREAD TRIM PHOTO) TRACY ANDREWS

Peeling Door Veneer

Our front doors take a beating from blown rain and the harsh afternoon sun, and now the veneer is lifting or rippled. Is there any way to repair this problem without replacing the doors?

BONNIE REED EXPORT PA

Tom Silva replies: It's tough to tell how serious the problem is without seeing the doors in person, but you might be able to reglue the loose areas with a waterproof woodworker's glue like Titebond III. You'll need to wait for nice weather before starting, because the doors will have to come off for a day or two.

Spread a thin film of glue on the veneer and its substrate wherever an edge has lifted. Bubbled veneer can sometimes be repaired by slitting the bubble with the grain, then using a paper clip or sliver of wood to dab glue underneath. In either case, clamp the repairs using wide pieces of wood to spread the pressure evenly. Cover these pieces with plastic wrap so the glue won't stick to them, and if any glue squeezes out the sides, wipe it up with a damp rag right away.

When the glue dries and the clamps come off, brush on a couple of coats of paint, or several coats of marine varnish. They will protect your repaired door from the sun and weather.

Planning Driveway Pillars

I'd like to build pillars on either side of my driveway near the street. Can you give me some thoughts about what to consider when planning this project?

BRYAN HENRY LONG BRANCH NJ

Roger Cook replies: Pillars can be a great addition to a house, but you'll need to keep a few things in mind.

As a practical matter, the pillars should be far enough apart to easily admit emergency vehicles, snowplows, and delivery trucks. You'll also need to make sure that they're within your property line and that they won't obstruct your view of traffic on the street—you don't want to risk getting broadsided every time you pull out.

As for style, a freestanding pillar needs some visual heft. I like to make them about 24 inches square and 3 to 4 feet tall, using large pieces of fieldstone stacked for a clean, dry-laid look that uses but doesn't show any mortar. I'd cap each one with a 4-inch-thick piece of granite or bluestone that overhangs about 2 inches on all sides. That keeps water from getting inside.

Any pillar that's made with mortar, whether it's brick, stone, or stuccoed block, needs a concrete footing below the frost line. But before you start digging, check with the utilities' 811 service, call811.com, to identify the locations of buried gas and water lines. If you want lights on the pillars, plan for it now, because adding them later won't be easy. Then, when you're all done with the construction, add some planting beds. Pillars often look awkward standing by themselves.

Hanging a Pot Rack

I'd like to hang a pot rack from the joists in my kitchen ceiling, but the ceiling is plaster and lath, so I can't locate them with a stud finder. Is there some other method I should try?

BEVERLY BLANEY NEWARK OHIO

Tom Silva replies: It's true that not all electronic stud finders can read through plaster walls and ceilings, because the lath can interfere with the signal. As an alternative, try the "drill and search" method.

If there's an attic directly over the kitchen, the job is easy. Just drill a ⅛ inch hole through the ceiling where you want the rack to hang, stick a wire through the hole, then go up to the attic and measure from the wire to the nearest joist. Add ¾ inch to that measurement to find the centerline of the joist when you get back to

WHAT'S IN OUR MAILBAG?

Every month "Ask" gets about 150 letters, most via e-mail. Here's a look at some of our favorites.

OUR MOST ORIGINAL CORRESPONDENT

Rarely does a month go by without a postcard from "hobo poet" Iowa Blackie commenting on the *Ask This Old House* TV show and inquiring "How is the weather with you?" Each one carries the same precise arrangement of 16 stamps, with one rotated sideways, and a request: "Please ship and travel by rail and preserve and respect its history when and wherever possible!"

more letters inside

YOUR TOP FIVE

Judging by our mail volume here's what bothers you most.

1. **Ugly streaks:** "What's all that black stuff on my roof?" (It's algae. Kill it with bleach and water.)

2. **Basement dampness:** "How can I keep water out of my basement?" (Start by directing it away from the house above ground.)

3. **Cracking walls:** "Why does my drywall keep cracking in the same place?" (Seasonal movement of the framing. Fiber mesh tape and setting-type joint compound may fix it.)

4. **Squeaky floors:** "What's the name of those snap-off thingies Tom Silva uses to fix floors?" (Squeeeeek no more screws.)

5. **Missing hosts:** "What ever happened to Steve Thomas?" (Look for him on the History Channel.)

more Q&A

If you've got problems with your house, find out how to fix them at thisoldhouse.com/shortcuts

If bats have taken up residence in your house and are driving you batty, offer them another place to stay in the form of a bat house, before sealing off their entry point.

the kitchen. That's important because you want the bolts that the rack hangs from to be screwed into the meat of the wood. If you hit a joist with the drill on your first try, drill again in another spot about an inch away so you can get a measure to the centerline.

If there's no attic above the kitchen, you'll have to do more probing. The first step is to locate the exterior wall that's parallel to the roof ridge, because the joists will be running perpendicular to it. Next, drill a ¼-inch hole in the ceiling. If the bit pops through with little resistance, take a piece of wire about 2 feet long, stick it through the hole and, standing in the direction of the exterior wall, "feel" to the left and right until you hit something solid. Keep your finger on the wire at the point where it enters the ceiling, take it out, and measure the distance to the end of the wire; that will be distance to the face of the joist. Then add ¾ inch to get to the centerline.

One more thing: Every bolt needs a pilot hole. Without it, you could split and weaken the joist.

Bats Versus Painter

I'm planning to have my house painted, but there are bats living beneath the fascia. Will they attack the painter? Should I call an exterminator before the work begins?

HERB JOHNS, NANUET, N.Y.

John Dee replies: Bats aren't known for attacking painters, or anybody else, for that matter. I was on a job recently that had more bats than a Transylvanian castle—we called it Wayne Manor—and they didn't bother us a bit. But they sure can be startling when they dart out of their hiding places—not a good thing when you're at the top of a ladder.

Now that's hardly a good reason to exterminate them. Besides, bats do an excellent job of eliminating mosquitoes. So try evicting them in a humane way by first setting out a bat house. Then, identify their entry points on your house by looking for the trail of droppings they leave when they land and take off. Cover those entries with an "exclusion device": hardware cloth taped down at the sides and top. This allows them to crawl out the untaped bottom edge, but prevents them from making their way back in. Hopefully, they'll find the bat house you put up to be an acceptable roosting spot and you'll enjoy having fewer mosquitoes to contend with.

The folks at the Organization for Bat Conservation warn against using these devices in June, July, or August because you could trap baby bats before they are strong enough to escape.

John Dee is a painting contractor who has worked on a number of This Old House *TV projects.*

Nail Terminology

What's the difference between common nails and box nails? Are there different uses for each type?

CHARLES STEVENSON, LEBANON, MO.

Norm Abram replies: The main difference between common nails and box nails is the gauge of the wire used to form the shank. Common nails are made with a heavier-gauge wire, typically about 5/32 inch thick. They're generally used in house framing, where strength is important. Box nails have thinner-gauge shanks—about 1/16 inch—which are best for fastening nonstructural things like trim, shingles, and siding because they're less likely to split the wood.

Leveling a Bathroom Floor

My upstairs bathroom floor slopes an inch over its 5 foot width. How should I level the floor before installing new tile?

FLOYD GORDON, SAPULPA, OKLA.

Tom Silva replies: A floor that's noticeably out of level might have an underlying structural problem that needs to be fixed first. Call in a contractor to investigate. If the floor structure is sound, the most cost-effective approach is to go ahead and lay the new tile. But if you

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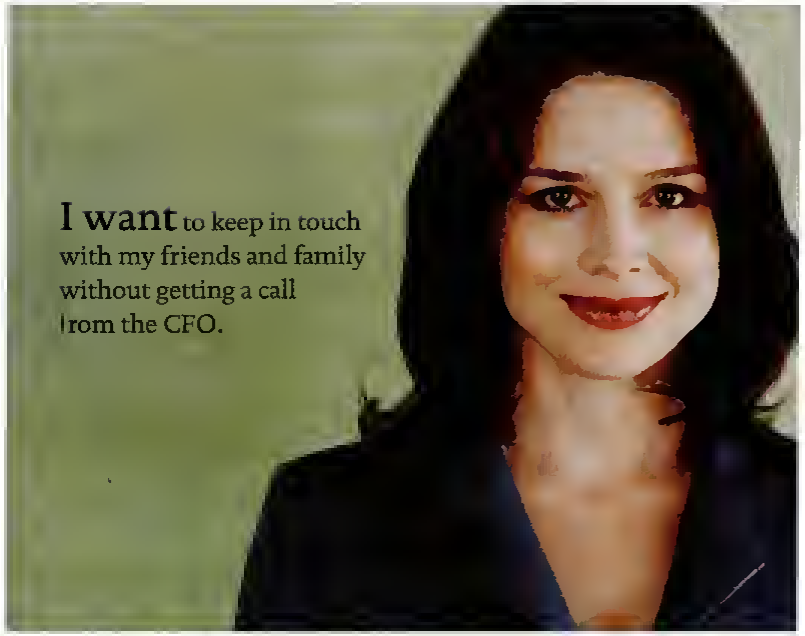

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WEST/H

want to spend more money and time to make the floor level, here are your options.

The traditional method of leveling a floor for ceramic tile is to lay a bed of mortar over building felt and metal lath, a tricky job for a novice. Or you can pour a self-leveling cement underlayment onto the floor and spread it with a squeegee. You'll want a formulation that can be poured at least 1 inch thick over a wood subfloor. A third, more invasive approach involves removing the subfloor, exposing the old joists, then attaching new, level, "sistered" joists to them.

Whichever method you choose, changing the incline of a floor will probably require you to change the height of the toilet's mounting flange, trim off the bottom of the door, and reposition the vanity, the baseboards, and the plumbing for the sink and tub. I'm not sure it's worth all that effort on a floor as small as yours.

Bringing Back the Scent of Cedar

Is there any way to revive the scent of a cedar closet that has been around for a while?

ARTHUR WEBSTER, HAMTRAMCK, MICH.

Kevin O'Connor replies: That depends on what kind of cedar it's made from. The cedar that's reputed to repel moths is called aromatic red cedar, or sometimes Eastern red cedar—actually, a type of juniper bush. Other types of cedar, such as Western red cedar, aren't typically used for closets or chests.

Connie Brink at Giles & Kendall, a supplier of aromatic red cedar closet liners, says that over time, cedar oils exposed to air can harden on the surface, sealing in the aroma just as if you had painted or varnished the wood. All it takes to restore the scent is a light sanding with 100-grit sandpaper. Some people are sensitive to cedar dust, so be sure to wear a dust mask while you work and vacuum the wood after you're done.

If sanding doesn't restore the scent, you can apply cedar-oil extract to the freshly sanded wood. By the way, this only works on the real thing. You can't make a pine closet smell like cedar.

Wood Walkway Edging

My plan for a rectilinear brick walkway and patio—no curves—has a border of 2x8 pressure-treated lumber installed so the top edge is flush with the surface of the bricks. I assume the lumber will eventually rot, but I'm 73, so I'll probably rot first. Your comments, please.

J. TOM MILES JR., ST. LOUIS, MO.

Roger Cook replies: If you're still building walks at 73, you just might outlast the edging. Pressure treated wood works fine; it's relatively inexpensive, and not hard to install along straight edges. You'll want to back each board up with 18-inch-long 2x2 pressure-treated stakes placed against the board's outside face and driven below grade. You'll also need one every 3 or 4 feet along the straight portions and on both sides of every corner. Fasten the stakes to the edging—and the ends of the boards to each other—using stainless-steel screws or nails. They're expensive, but pressure-treated wood will corrode anything else.

Crumbling Brickwork

We have been working to remodel our first home from top to bottom, and we've finally arrived at the front porch steps. How should we go about repairing them?

FRED AND DEBBIE MARKO, GREENFIELD, WISC.

Tom Silva replies: It looks like water has been causing trouble with your brickwork, but I don't see anything that suggests problems with the underlying structure, so you may be in luck. You'll have to remove all the loose brick around the porch, which looks like pretty much all of it. Given its condition, you probably won't need much more than a pry bar.

Start by taking off the top two courses, take a look at what's behind them. It could be an inner support wall made of brick or cement block. If you notice any deterioration there, you might want to turn the rest of the work over to a mason. But if the support walls are fine, continue removing the brick. Clean off old

Water is the enemy of this brick porch. But as long as the underlying structure is sound, a gravel drainage bed will keep the repaired brick from sucking up moisture.

OUR MOST MEMORABLE LETTERS

Let's Just Say the Odds Aren't in His Favor
"I am writing to see what you think of my proposal to put a kerosene heater in the crawl space under the first floor and run it on low for nights that will be below 10 degrees. This heater will not be vented to the outside. Do you think my chances of waking up in the spring are good or bad?"

Kill the Power, Not Yourself
"I was changing a light bulb when it broke off. I tried to turn it out with a pair of pliers when I felt a shock go through my arm. Now I don't have electricity in my living room. I'm not very handy at this sort of thing."

Well, You Can Always Ask
"Please send me a picture of a 4-bedroom, 2-bath house and what kind of lumber I would need to build it."

Or You Could Just Pull Up a Flathead
"Hello. Send me everything you've got on home building."

Best Correspondent, Junior Division
"Dear Ask This Old House. Every thing is good here. Is every thing good at Ask This Old House?"
—CHANDLER, AGE 7

OUR MOST CONTROVERSIAL QUESTION

The debate over this one lasted for months. "Should an electrical receptacle be installed so that the hole for the grounding prong is above the slots or below them?" Our response—either way is okay—sparked a surge of comments from readers. Unless the ground prong was facing up, they noted, a dropped object could accidentally come in contact with live circuit conductors. We checked the National Electrical Code and we stand by our answer: Receptacles can be placed ground up, ground down, or sideways.

A tightly constructed house is great—except when the lack of outside "make up" air causes the fireplace to smoke. Sometimes the solution is as simple as cracking a window.

PHOTO: PETER VANDERWARKER

mortar as you go and stack the bricks off to one side.

To prevent the repaired brickwork from sucking up moisture from the ground, dig a trench at least 2 feet deep along the porch and fill it with crushed stone. And to ensure a good connection with the support wall, nail one end of a metal brick tie to the wall every couple of feet. Now you can reinstall the old brick, starting at the ledge in the support wall. When you reach a tie, bend its free end up to rest on top of the brick, then cover it with the mortar for the next course.

Cracked Slab Repair

The concrete floor in our garage is cracked, probably a result of an earthquake. I'm thinking about cutting through it around its perimeter, breaking it up, and then pouring a new slab. Any advice to share?

MAURICE PATRYKUS, SANTA PAULA, CALIF.

Tom Silva replies: If you are looking for a big, messy project, you sure found it. Sure, it's technically possible to cut out an existing slab, but it's not something you'll do in a day with a circular saw and a couple of masonry blades. First, you'd want an engineer to come in and make sure that removing the slab, even temporarily, won't weaken the existing garage foundation. Then you'd need a diamond-blade saw to slice through the slab, a demolition hammer to break it up, and some sort of a bucket loader and a dump truck to get rid of all the debris. Sound like fun?

I would say it's not worth ripping into it unless the crack is getting significantly worse. You can figure that out by taking careful measurements of its width over time with a special crack gauge. If it's not getting any wider, just patch it with some hydraulic cement. You'll be done in a couple of hours.

Smoking Fireplace Mystery

Our house has a fireplace on the first floor and another in the basement. The downstairs fireplace doesn't draw well, and when I build a fire in the living room fireplace upstairs, smoke gets into the basement. What's going on?

ROBERT KUBISHKE, LORAIN, OHIO

Richard Trethewey replies: I'm pretty sure the problem with both your fireplaces is due to a lack of "make up" air. Every fireplace sucks air out of a house when a fire is going, and all that air has to be replaced with make-up air from outside. Often it leaks in around windows and doors or through special vents built into the firebox. But in a house that's well sealed, the air will find another way to get inside.

In your case, I'm pretty sure the make-up air is being pulled down the flue for the downstairs fireplace and drawing the smoke from the adjacent flue down with it. To test this hypothesis, crack open a window in the living room the next time you build a fire. Smoke should stop coming in the basement.

If that fixes the problem, hire a reputable chimney sweep or mason to remove the damper from the basement fireplace and mount a new one on top of the flue. A top-mounted damper should keep your basement smoke-free.

Layers and Layers of Floors

The kitchen floor in our 1930 bungalow has two layers of vinyl sheeting over the original oak strips. How can I remove the vinyl without damaging the oak?

JIM WEST, DAYTON, OHIO

Pat Hunt replies: I doubt you'll have much to work with when you get down to the original floors. The bottom layer of vinyl was most likely installed over ¼-inch plywood nailed to the oak, so those old floors will probably look like somebody blasted them with buckshot.

You should consider leaving all the old vinyl in place and adding a new solid wood floor over it. Sheet vinyl makes a great vapor barrier against moisture coming from below, and you won't have to mess with materials that might contain asbestos.

First, check around the perimeter of your floor to see whether adding another layer of flooring will cause problems at doorways or at stairs. You'll probably have to trim door bottoms or add transition strips to cover the change in floor height. Don't forget appliances like the dishwasher, either. The new flooring will have to go under it, or it might be impossible to take it out later on.

There's one more factor to consider. To nail a wood floor into place, the nails need to be long enough to penetrate at least ½ inch into the old flooring; that ¼-inch-thick sheet of plywood is too thin.

Pat Hunt is a flooring contractor who has worked on many This Old House *TV projects.*

Removing Kitchen Cabinets

I've been thinking that we can save some money on our kitchen remodeling project by removing the old cabinets ourselves. But I haven't the faintest idea of how to do that. Where should I start?

TERESA LYONS-CORO, SAN PEDRO, CALIF.

Tom Silva replies: Before the cabinets can come out, you have to take a few preliminary steps. (1) Remove any trim or molding. (2) Turn off the stop valves under the sink, disconnect the supply hoses, and take out the sink. (3) Disconnect and remove the range, dishwasher, and any other appliances that might be in the way. (4) Remove the countertop. (5) Take out all the cabinet drawers and doors. Removing the cabinets themselves is simply a matter of undoing the installer's work in a logical order—base cabinets first, then the upper cabinets.

Most cabinets from the last 25 years or so are factory-built boxes screwed to one another on-site. That's why you'll generally see vertical seams in the face frames. If that's what you have, find and remove all the screws in the edges of the stiles, which hold the cabinets together. Then take out the screws holding the cabinet to the wall or floor.

Manufactured cabinets are heavy, so work with a partner or two, particularly when it comes to removing the uppers. Once they're out of the kitchen, you should be able to reuse them in your garage, shop, or basement. Beats hauling them to the dump.

Replacing Bulkhead Doors

Our house is in dire need of new cellar doors. We've replaced them several times, but nothing we do seems to hold up for long. Can you recommend something that would look good with our 120 year-old house?

NANCY SCHLEY, FOREST JUNCTION, WISC.

Norm Abram replies: Your letter reminds me of a situation my father had to deal with at our summer cottage many years ago. When he built the cottage, he built bulkhead doors very much like yours. I think they were made with pine. They required a lot of maintenance, but they lasted about 30 years.

When the fieldstone foundation was replaced with concrete, he took a couple of salvaged steel entry doors and turned them into bulkhead doors. That worked pretty well, though the wood framing rotted after many years of being in contact with the concrete. I replaced everything with some custom-made steel doors a few years ago, and they're holding up pretty well.

If you want to build new doors out of wood, you'll have the best results using tongue-and-groove cypress, cedar, or mahogany held together with stainless-steel fasteners and hardware. Also, make sure that any wood in contact with stone, mortar, or concrete is treated with a preservative. I'd protect the wood with a primer and a solid-color acrylic stain, because stain is easier to maintain than paint and won't peel. Be sure to coat all sides and edges. With diligent maintenance, those doors should survive for many years.

PHOTO: TOM SILVA; RUSSELL RAYE

It's time for these cellar doors to go. Steel or plastic requires the least care, but for looks, it's hard to top tongue-and-groove cypress or Western red cedar and a coat of solid-color stain.

Placement of Heat Registers

In our house, the heating registers are located directly beneath the windows. I say they should be next to an inside wall, in order to retain the heat. My husband says they are where they should be. Which of us is right?

THELMA LEMONS, MERIDIAN, TEX.

Richard Trethewey replies: I hate to take sides in marital disputes, but in this case your husband is right. Here's why: Window glass is the coldest part of a wall. When warm room air hits it, the air cools, and cool air sinks. The movement of cool air creates floor drafts that most people find uncomfortable. The placement of forced-air heat registers or baseboard heating units under the windows counteracts this process by sending up warm air to mix with the cool. The end result is that the room feels more comfortable.

Updating a Vanity

It's time to update our bathroom a bit. In particular, I'm wondering what to do about the synthetic marble vanity top in the master bathroom. The sink is in bad shape but the top appears to be fine. Is it possible to cut out the sink and replace it?

CHARLES VAN TILBURG II, BARTLETT, TENN.

Tom Silva replies: Sure, but some things just aren't worth the trouble. In the time it would take you to cut the sink out of the top and clean up the dust, you could replace the entire vanity, including disconnecting and reconnecting the faucets and drain. You'd have to remove the vanity top anyway just to cut out the sink, so why not upgrade the whole thing? ■

ONLINE VIDEO
You asked, we answered. See the *TOH TV* crew tackle five fall maintenance projects at thisoldhouse.com/shortcuts

To send a question to Ask This Old House, go to thisoldhouse.com/asktoh or write to:

Ask This Old House
This Old House magazine
135 West 50th Street
New York, NY 10020

Include a complete address and daytime phone number. Published questions will be edited for clarity and length and may be used in other media. We regret that, due to the volume of mail received, we are not able to reply to unpublished questions.

FOR MORE INFORMATION SEE DIRECTORY PAGE 125

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Skill Building

SHARPEN YOUR KNOW-HOW WITH THESE TIPS FOR DOING ANYTHING BETTER AROUND THE HOUSE

Score, Then Snap

A safe and simple guide to making clean cuts in glass

RELATED STORY, P. 55 "DIVINING USES FOR STAINED GLASS"

Cutting glass to replace a broken windowpane doesn't necessarily require the services of a pro. All it takes is the proper tools and technique. The key is a glass cutter, a pencil-size piece of metal with a tiny superhard tungsten carbide wheel. The wheel scores the surface, allowing you to snap the glass cleanly. Wear goggles for eye protection and gloves to guard against cuts, then follow these steps suggested by Jim Anderson of Jim Anderson Stained Glass in Boston, who has 35 years of experience making and repairing stained-glass windows.

Clean. Wipe the area to be cut with a clean cloth or paper towel; dust and grime on the glass can interfere with the score. If you use glass cleaner, be sure the area is completely dry before scoring. Lay the glass on a hard, flat surface. For straight cuts, use a metal ruler or square to guide the cutter. For curves, draw a line on the glass with a felt-tip marker.

Score. Before scoring, lubricate the wheel with glass-cutting oil, such as Novocan. Then, holding the cutter as you would a pencil, press down firmly and pull toward you in one continuous motion. Keep consistent pressure as you move the cutter along the glass so it will score evenly.

Tap. Gently tap along the score line a few times with the cutter's ball end. Tapping generates shock waves that weaken the glass, allowing it to break.

Snap. Grip the ends of the glass on each side of the score and twist your wrists to break the pieces apart. If a piece cannot be broken by hand, use glass-breaking pliers known as running pliers to get the job done. Line up the notch in the pliers' upper jaw with the score line, then squeeze the handles gently until the glass breaks. When breaking curved cuts, place the pliers' jaws on the score line, squeeze the handles to grip the glass, and then pull down to snap a section off. Repeat until the break runs to the halfway mark. Then move the pliers to the other end of the score line and repeat. The same half-and-half technique works when breaking curves by hand. —GEORGIA ALVAREZ

score

tap

snap

PHOTOS: (PROCESS) JOHN W. TAYLOR; (STILL LIFE) GIBSON HALDEMA

{ TOH TIP }

To speed up the time it takes for the shellac flakes to dissolve, pulverize them in a coffee grinder before adding them to the alcohol. You'll have usable shellac in an hour. (Note: Don't use the same grinder you make coffee in, or your spouse will pulverize you.)

Mix Your Own Shellac

Stirred and shaken with alcohol flakes are the way to go

RELATED STORY, P. 77 "GIVE IT A SHELLACKING"

Shellac comes in two forms: one can mixed and ready to go, or as hard flakes. Canned shellac is convenient to use—just pop open the lid and dip in your brush—but it has a limited shelf life: an unopened can is good for only about three years. Flakes will last almost indefinitely when stored where it's cool, dry, and dark. When you need to give something a shellacking, just mix the flakes in denatured alcohol the day before. Here's the recipe.

Measure. The ratio of shellac to alcohol—its "cut"—is measured in pounds. A pound of shellac in a gallon of alcohol is called a one-pound cut. The heavier the cut, the thicker each coat of shellac will be and the fewer square feet it will cover. Most canned shellac is a 2-pound cut. Measure out the amount of alcohol you intend to use—1 pint covers about 40 to 50 square feet—then weigh the flakes on a kitchen scale. For a 2-pound cut in a pint of alcohol, use 4 ounces of flakes.

Mix. Pour the alcohol into a glass container with a lid. Stir in the flakes, close the lid, and give the jar a shake every 10 minutes or so for an hour, then let it sit overnight for the flakes to dissolve. The shellac will be ready to use the next day and should last for 6 to 12 months.

Filter. Before you start shellacking, stir the mix, then filter it into a separate container through a cotton T-shirt to remove any undissolved bits. —THOMAS BAKER

How to Install a Stop Valve for a New Dishwasher

No sweat compression fittings make the job, well, no sweat

RELATED STORY, P. 81 "INSTALLING A DISHWASHER"

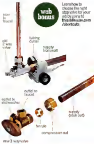
If you don't already have a dishwasher, then the existing hot-water supply line to the kitchen sink probably has a two-way stop valve with a single outlet to the faucet. To add a dishwasher, you'll need to replace it with a three-way valve, which has two outlets: one for the faucet (the riser) and one for the appliance. The easiest way to install the new valve is with compression fittings, which don't require soldering. Just follow these steps.

Remove the old valve. Turn off the hot-water supply to the sink and put a bucket beneath the old hot-water valve. Disconnect the riser from the faucet, then cut the supply pipe (called the stub-out) with a tubing cutter. Keep as close as possible to the existing valve. Tighten the cutter's knob slightly after every turn; the cut has to be square and the pipe undistorted for a compression fitting not to leak.

Fit the new valve. A compression fitting creates a seal when its nut squeezes a brass ferrule against the valve opening. Slip the compression nut and ferrule, in that order, over the cut pipe end. Push the new three-way valve onto the pipe and nest the ferrule flush against the valve's threads. Now slide the nut over the ferrule and, without jostling it out of position, hand-tighten until it's snug.

Make the new connections. To connect the dishwasher and the faucet to the new valve, cut and bend new tubing to fit the valve's two outlets (see Handbook page 81 to learn how). Slip a nut and ferrule over the end of each tube, then hand-tighten the nuts to the valve. As you hold the valve steady with pliers, give all three compression nuts a quarter turn with an adjustable wrench. Do not overtighten; the nut can distort the ferrule and cause a leak. Turn the water on and check for leaks. If you see any, turn the water off and give the leaking nut another quarter turn before retesting. —HARRY SAWYERS

web bonus: Learn how to choose the right stop valve for your job by going to thisoldhouse.com/shortcuts



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Norm's Notebook

> MASTER CARPENTER NORM ABRAM'S TECHNIQUES FOR THE HAND TOOLS FEATURED IN TOOLBOX, P. 71

CABINET SCRAPER

Why I Have One

A scraper is just a thin piece of steel with a sharp, slightly hooked edge. I use mine mostly to get into tight corners that a sander can't reach. But it can also shave off layers of old paint, cut away hardened drips between coats of new paint, scrape away old glue, or just clean up places where the wood is still rough from a saw cut. I own some curved scrapers meant for smoothing molding profiles, but I find the straight, square ones to be more useful.

{ NORM'S TIP }
You'll spend less time resharpening your scraper if you protect its edges. If you don't have the covers that it came with, use short pieces of plastic tubing slit lengthwise.

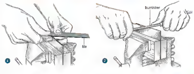
You can push a scraper, as I'm doing here, or pull it. Either way, you want the scraper top tilted toward the direction it's moving. Take long strokes and flex the metal a bit so it won't "chatter" across the surface. Also, don't apply a lot of pressure; you're just trying to skim the surface. It's pretty amazing how effective this tool is.

Scrape, Then Sand

Sanded wood takes stain differently than wood that's been scraped. That's why, after scraping, I always go back and scuff the wood with the same grit paper that I used last on the rest of the project. I never sand before scraping. The grit that sandpaper leaves behind—even fine paper—dulls a scraper's edge.

Make It Sharp

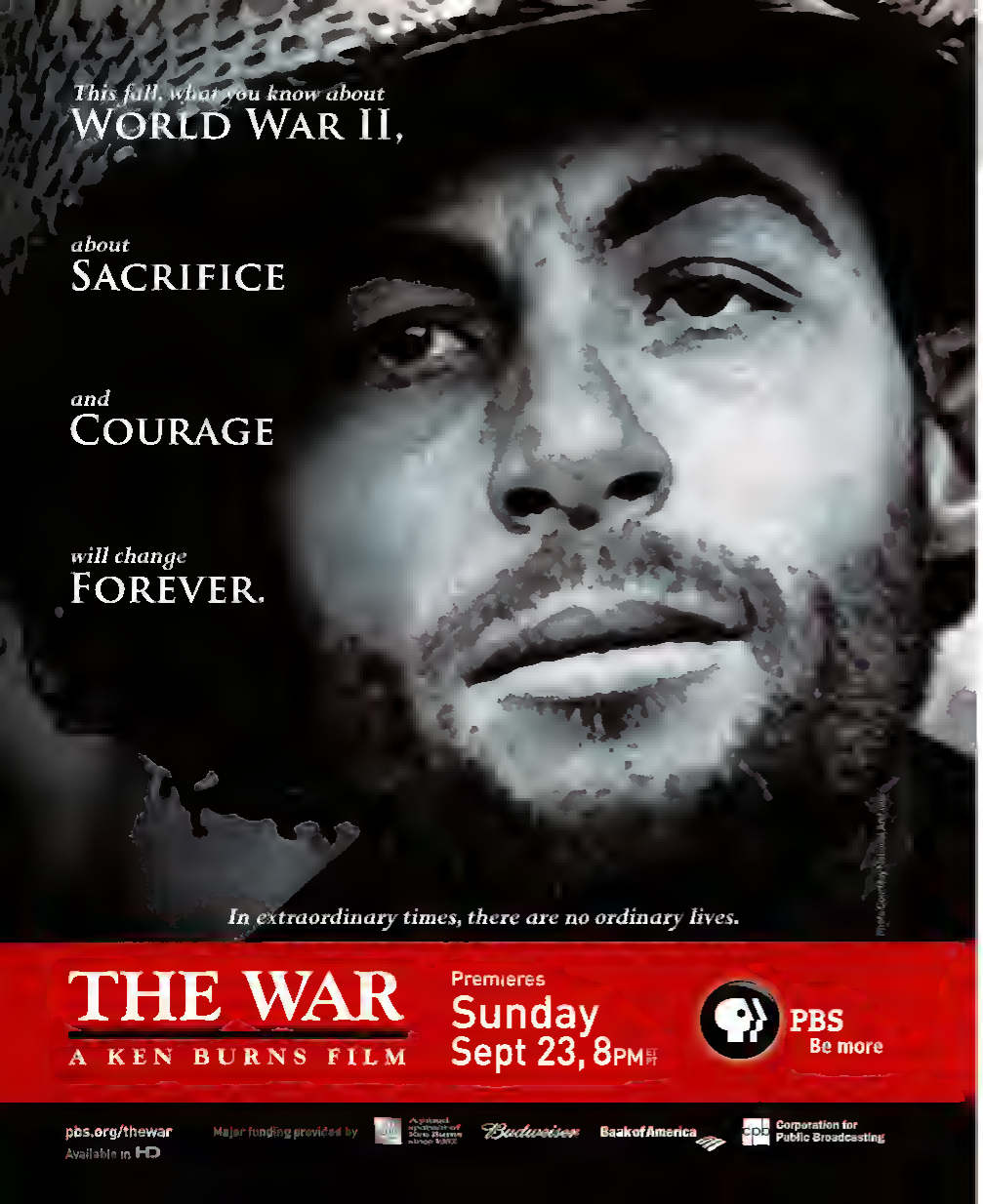
The first step to making a new hooked edge is to file off the old one. First, clamp the scraper in a vise and use a mill file to flatten the dull edge. The file has to stay perpendicular to the scraper's face, so I hold the file against a block of wood and press the wood against the side of the scraper as I run the file back and forth a dozen times or so (1). Next, rub candle wax on the edge of the scraper for lubrication, then run a burnisher or an 8-inch screwdriver shaft lightly over the newly filed edge and diagonally across it. With each stroke, hold the burnisher at a slight tilt, about 2 to 5 degrees from level (2). After a few light passes, the scraper's edge will form a tiny hook you can feel with your fingernail. (The steeper the shaft angle, the more pronounced the hook and the more aggressive the scraper.) Now tilt the shaft the other way and burnish a hook on the other side of the scraper (3). It may take a few tries to get the edge you want, but you'll know it's right when it turns up thin shavings, not sawdust.



ONLINE NOTEBOOK
See more tips and techniques from TOH's master carpenter at thisoldhouse.com/Norm

PHOTOS: (TOP) DAVID CARMACK; (BOTTOM) CARL TREMBLAY. ILLUSTRATIONS: HARRY BATES

FOR MORE INFORMATION, SEE DIRECTORY PAGE 125



Directory

SOURCES, PRICES, AND MORE INFORMATION ABOUT PRODUCTS FEATURED IN THIS ISSUE >

AROUND THE HOUSE (pp. 19–26)

Mind Over Remodel: Dr. Debi Warner, 603-444-1512. **Water the Lawn: Gray-water flush system:** The Aqua System, WaterSaver Technologies, Louisville, KY, 502-741-1859, watersavertech.com. *Thanks to* Steve Bilson, CEO, ReWater Systems, Chula Vista, CA, 619-421-9121, rewater.com.

KITCHEN DESIGN (pp. 29–32)

Design/build: Nina Marinkovich and Ken Kirsch, MAK Design + Build, Davis, CA, 530-750-2209, makdesignbuild.com. **Cabinets:** Perfekt Line, IKEA, ikea.com. **Cabinet hardware:** Top Knobs, Bella Mead, NJ, 800-499-9095, topknobsusa.com. **Gas fireplace:** Regency, Vancouver, British Columbia, regency-fire.com. **Ceiling fan:** Modern Fan Company, 888-588-3267, modernfan.com. **Countertops:** Richlite Company, Tacoma, WA, 888-383-5533, richlite.com. **Range:** KitchenAid, Benton Harbor, MI, 800-334-6889, kitchenaid.com. **Island vent hood:** Alicante, Air King Limited, Port Chester, PA, 877-304-3785, airkinglimited.com. **Refrigerator and dishwasher:** Frigidaire, Electrolux Home Products, Martinez, GA, 800-304-3785, frigidaire.com. **Microwave:** Sharp, 800-827-4277, sharp.com.

GREEN HOUSE:

Stylish and Sustainable (pp. 45–50)

Architect: Evan Cadwell, Keys Engineering Services, Islamorada, FL, 305-852-0262. **Engineer:** Daryle Osborn, Keys Engineering Services. **Interior designer:** Winston Lippert, ASID, Miami, FL, 305-220-5488. **Air-conditioning and heating systems:** Lennox Elite Series 14, Lennox, Richardson, TX, 800-953-6669, lennox.com. **Hurricane shutters:** EZ Lock Shutters Corp., Miami, FL, 305-251-0530. **Bahama shutters:** EZ Lock Shutters Corp. **Gutters:** RainSaver Gutter Systems, Key Largo, FL, 305-852-5356. **Windows:** Andersen Windows, Bayport, MN, 800-426-4261, andersenwindows.com. **Doors:** Kolbe & Kolbe Millwork Company Inc., Wausau, WI, 715-842-5666, kolbe-kolbe.com. **Roof solar panels:** Kyocera, kyocerasolar.eu. **Ceiling fans:** Hampton Bay, available through Home Depot, homedepot.com. **Front-load washer and gas dryer:** Kenmore, available through Sears, Hoffman Estates, IL, 800-549-4505, sears.com. *Thanks to* Florida Solar Energy Center, Cocoa, FL, 321-638-1000, fsec.ucf.edu; Florida Keys Green Living & Energy Education, Key West, FL, 305-293-7658, keysglee.com.

SALVAGE:

Divining Uses for Stained Glass (pp. 55–56)

Stained-glass windows: Discovery Architectural Antiques, Gonzales, TX, 830-672-2428, discoverys.com.

ENERGY SAVINGS:

Detecting Drafts (pp. 59–62)

Home high-performance contractor and consultant: Bruce Torrey, Building Diagnostics, Cape Cod, MA, buildingdiagnosticshelp.com. **Spray-foam insulation:** Icynene, Mississauga, ON, Canada, 800-758-7325, icynene.com; Demilec (USA) LLC, Arlington, TX, 877-936-4532, sealection500.com. **Cellulose insulation:** Cellulose Insulation Manufacturers Association, Dayton, OH, 888-881-2462, cellulose.org.

MATERIALS: Building Green (pp. 65–68)

Products used to create our green leaf (top to bottom): **Bamboo plywood:** Smith & Fong, San Francisco, CA, 856-835-9859. **Composite decking:** Temple-Inland, Austin, TX, 512-434-5800. **Palm flooring:** Smith & Fong, San Francisco, CA, 866-835-9859. **Bamboo flooring:** California Bamboo Flooring, Diamond Bar, CA, 626-731-8161. **Recycled rubber roofing:** EcoStar, Carlisle, PA, 800-211-7170. **Cork flooring:** Expanko, Coatesville, PA, 800-345-6202. **Fly-ash siding:** CertainTeed, Valley Forge, PA, 610-341-7000. **Composite decking:** Monarch Exotics, manufactured by Green Tree Composites, St. Joseph, MI, 800-482-5717. **Lumber:** CitiLog, Pittstown, NY, 877-248-9564.

UPKEEP: Give It a Shellacking (pp. 77–78)

Painting and decorating contractor: John W. Dee Painting & Decorating, Concord, MA, 978-369-8897, johndeepainting.com. **Shellac flakes:** H. Behlen & Bro., Hickory, NC, 866-785-7781, hbehlen.com. **Tinted furniture wax:** Briwax Original and Briwax 2000, Briwax Woodcare Products, Range, 800-274-9299, briwaxwoodcare.com.

HOMEOWNER'S HANDBOOK:

Installing a Dishwasher (pp. 81–86)

Adjustable wrench: Husky Stubby Set, at

WORKSHOP directory

Home Depot stores, homedepot com **Hose-clamp driver** LockDriver, by SMC Innovations Somerset WI 715 247-3500 smc-innovations.com **Featured dishwashers** Bosch SHE98M Bosch Home Appliances Huntington Beach CA 800 944 2904 boschappliances com. Maytag MDB4651AW Maytag Appliances Benton Harbor MI 800-688 9900 maytag com KitchenAid aKU0C03ITBL KitchenAid Appliances St Joseph MI 800 334 6889 kitchenaid com Fishar & Paykal DS603IH Fisher & Paykel Appliances Huntington Beach CA, 888 936 7872, fisherpaykal com. Miele G2670SCSF Miele Inc. Princeton NJ 800 843-7231 miele com. LG LDF9810 LG Electronics Englewood Cliffs NJ 800 243 0000 us lge com Kanmore Appliances Sears Department Stores Hoffman Estates IL 800-549 4505 800 349 4358 kenmore.com

THE RECYCLED, REPURPOSED, NONTOXIC HOUSE (pp 88–93)

Architect David Webber Webber + Studio Inc Austin TX 512 236 1032 webberstudio com **Builder** Robert

Howard Howard Builders Inc Austin TX 512 346 4694 howardbuildersinc com **Paint** Sherwin Williams Cleveland OH 800-304-3769 sherwin williams com **Windows.** Weather Shield Mfg Inc Medford WI 800-222 2995 weathershield com **Kynar and matal roof** Available through Southwest Metal Roofing Systems San Antonio TX, 210-822 6858. **Kitchen cabinets** Crown Point Cabinetry Claremont NH 800-999 4994 crown-point com **Range** Jenn Air Benton Harbor MI 800 536 6247 jennair com **Dishwasher and warming drawer** KitchenAid St Joseph MI 800-334-6889 kitchenaid com **Refrigerator/freezer and microwave** GE Appliances Louisville KY 800 626-2000 ge com **Shiplap paneling, flooring, shalving, bathroom cabinets, kitchen sink, bathtub, light fixtures, and doorknobs** Redaimed

LITTLE THINGS MEAN A LOT (pp 100–103)

For more easy ways to live a greener life **U S Department of Energy** Washington, D C 202 586 4403 energy gov **American**

Council for an Energy Efficient Economy, Washington D C 202-429 6873 aceee.org **Energy Star,** Washington D C 888-782 7937 energystar gov **Water—Use It Wisely,** Phoenix AZ 602-957 7323 wateruseitwisely com **The Green Life** (a Sierra Club blog on green living), sierraclub typepad com/greenlife.

WORKSHOP

Ask This Old House (pp. 112–117)

Gingerbread Ornament **Polyurethane marine adhesive** 3mSealant 5200 3m com Pealing Door Vaneer **Waterproof woodworker's glue** Titebond III Franklin International Columbus OH 800-877-4583 franklininternational com **Bat Versus Painter Bat houses** Organization for Bat Conservation Bloomfield Hills MI 800-276-7074 batroost com **Leveling a Bathroom Floor Floor leveler** Jasco Floor Patch and Level Homax Products Bellingham WA 800 729 9029 jasco help com **Bringing Back the Scent of Cedar Cedar oil.** Giles & Kendall Inc Huntsville AL 800-225 6738 cedarsafeclosets com **Cracked Slab Repair Crack gauge** Geotest Instrument Corp., Evanston IL 866 430 7645 crackgauge com **Smoking Fireplace**

Mystery *Thanks to* Michael McMorrow chimney division project manager Charlie Allen Restoration Inc. Cambridge MA 617 661 7411 charlie-allen com **Layars and Layers of Floor Floor installer** Patrick Hunt, Hunt Hardwood Floors Lexington MA 781 862 3559 **Squeaky Floors** Squeeeeak-no more O'Berry Enterprises Ringwood IL 800-459-8428 squeaknomore com.

Skill Building (pp 119–120)

Score, Than Snap **Glass cutters** MacInnes Tool Company Rochester NY 585 467 1920 macto com Fletcher-Terry Company Farmington CT 860 677 7331 fletcher terry com **Running pliers** Slumpy's Belmont NC 866 758 6797 Slumpys com *Thanks to* Tommy "G" Giambusso Manhattan Stained Glass, New York NY 646 613 1420 manhattanstainedglass com **Mix Your Own Shellac Shallac flakas** Shellac.net Shellac Shack Port Orford OR shellacshack com **How to Install a Stop Valve Stop valves** The Keeney Mfg Co Newington CT 800-243 0526 upt com Brasscraft Novi MI brasscraft com *Thanks to* Don Powers Benjamin Franklin Plumbing Buffalo NY 716 894 0680 benjaminfranklinplumbing com

Norm's Notebook (p. 123)

Cabinet scrapers Veritas Variable Burnisher Lee Valley Tools Ogdensburg NY 800 267 8735 leevalley com ●

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1 FUJITSU Fujitsu General America, Inc. is the manufacturer of ductless mini split air conditioners and heat pumps that provide consistent temperature throughout a home.

2. SAMSUNG With the most storage capacity in its class and technology that makes it easy to use, Samsung's French Door Refrigerator is an easy choice.

202 AUTOMOTIVE

3 FORD F-150 The next F-150 has arrived and from a frame that's twice as strong to revolutionary interiors – it's the toughest F-150 ever.

4 GMC SIERRA Home improvers need Professional Grade support. GMC Sierras are that and more. Whether you're putting up paneling or adding a new suite of rooms GMC Sierra will make the task easier.

5 NISSAN MAXIMA The 255 hp Nissan Maxima. For more information, please visit our website.

203 BUILDING PRODUCTS

6. CERTAINTEED CertainTeed DryRight™ fiber glass insulation with the patented MemBrain vapor retarder allows wall cavities to stay dry, helping reduce the risk of damaging mold and mildew.

7. CHOICEDEK® Weyerhaeuser ChoiceDek® products are ideal for decks, docks, surfaces, boardwalks, access ramps and walkways. The unique composition of ChoiceDek® products makes them easy to maintain.

8. DIY NETWORK DIY Network is an on-air, online network that provides in-depth project instructions, demonstrations and product tips for home and hobby enthusiasts.

9. DOW GREAT STUFF Great Stuff™ products offer both professionals and do-it yourselfers an easy solution to help lower energy costs and make the home more comfortable.

10. ICYNENE Soft foam insulation and air barrier system that delivers high performance solutions for efficient building envelopes, thermal comfort and improved indoor air quality.

11. POLYSEAMSEAL® Polyseamseal® all purpose adhesive caulk is formulated to bond like an adhesive and seal like a caulk, making it ideal for 1,001 uses around the home.

12. QUIKRETE Quikrete Company, a leader in packaged concrete products, has more than 80 manufacturing facilities. For additional information on concrete repair products, visit our website.

13. SCHLAGE Give your home and family the complete and convenient security of Schlage keypad locks. Schlage. Real security sets you free.

14. TREX® Trex® Composite Decking and railing can make your dream deck a reality. Trex® offers more preferred styles, colors and finishes, all backed by a 25 year warranty.

15. WESTERN RED CEDAR LUMBER ASSOCIATION With rich grain and texture, "Real Cedar" exudes warmth, character and beauty. Perfect for decking, siding or landscape structure, cedar is the all natural choice.

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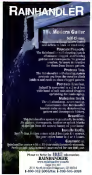
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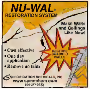
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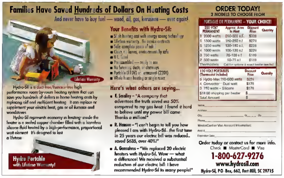
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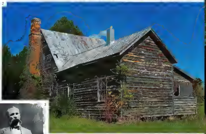

YOU WON'T HAVE TO WRESTLE anyone for this legendary 18th century tavern. But that's precisely how Daniel DeJarnette won it from his older brother, Thomas, around 1800. The tavern was built by the brawling boys' father, James, in 1781 and remained in the family until 1978. During Daniel's tenure, it became a popular stagecoach stop for travelers. The National Register of Historic Places, which listed the tavern earlier this year, says it also attracted a regular "fun-loving clientele, particularly those who enjoyed horse racing, card playing, and cockfighting."

DeJarnette's Tavern was also used as a mustering location for American Revolutionary and Civil War soldiers, as well as the meet-up spot for a group of slaves who finalized their plans for an ill-fated 1802 revolt there.

The tavern has two original upstairs bedrooms, but the DeJarnettes expanded it into a full-fledged farmhouse in the early 1900s, adding a rear ell with a dining room and a larger kitchen—though they continued to host bluegrass concerts in the front tavern room.

After standing empty for nearly three decades, the house is being offered for sale by the Association for the Preservation of Virginia Antiquities, which is looking for someone to do a complete restoration with the help of state historic preservation tax credits.

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[1] The house needs new electrical, heating, and plumbing systems. Two sills must be replaced, and you'll have to add a bathroom. [2] The 20th-century ell addition houses the dining room and kitchen. The original stone chimney needs repointing. [3] A portrait of Charles DeJarnette, who called the tavern home in the early 1900s. [4] An original enclosed staircase leads to the bedrooms. [5] The view from the rear tavern room, with original exposed pine sheathing, into the addition.

PHOTOS: COURTESY OF SARAH COOLEEN

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