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DECEMBER 2011

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At the TV project in Caswell, Mass., the family roof is parked back to add a dormer, while the left floor is lowered to gain headroom. For more, see "Top the Top," page 70.

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[illegible]

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An Old House is a photographic series by Jane Clarke Maffei.

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#### Our New Best

I just didn't see my "dream job" stretched everywhere I could ever hope. Good on letting the younger guys get a shot at things and help pass the knowledge down to the next generation. I was pleasantly surprised to learn your little position as TV program host. I know I would give anything to have mentors like Ron and Tom. I'm looking forward to the new season. Thanks for another great issue.

Rustin Murray, via e-mail

Re Kevin O'Connell's lesson that one pays twice for cheap work ("Just One of the Guys," October 2009). I am a devoted and ardent owner of a house that was built in 1922. In both my profession and my home improvement projects, I have learned that one pays three times for cheap work, once for the cheap work, a second time to replace it, and a third to correct the damage caused by it. Good luck on the show, Kevin. I look forward to learning with you.

LEAH S. FOWLE, 306, CORONA DEL MAR, N.Y.

#### Steve's Show?

I was taken aback when I saw that Steve Thompson had left the show. I missed whatever form this announcement took. I have been a loyal fan of the show from its inception, and T&E is one of the main reasons I continue to pledge local P95 station. While Steve will be missed, the move on and I am looking forward to seeing Kevin O'Connell meet the challenges on the upcoming projects.

Don Moore, Pittsford, Vermont

The editors reply: Many readers and viewers have written to ask about Steve Thompson's

departure. After 14 years as host of *This Old House* and contributing to the successful debut of *Ask This Old House*, Steve decided to pursue creative opportunities that will enable him to do more in front of and behind the camera. Although we're sorry to see Steve go, we're excited for him and wish him well.

#### Revolving Doors

In a "Warding to the Remodeling Game" article (October 2009), was excellent. It gave plenty of tips from your experts that no average person would ever think of. Tips that could save the money and frustration. Being informed and knowledgeable about your product and the process involved in complete it helps to cut down on surprises and steady workmanship. There are a lot of great contractors but also a lot of less-than-great ones. Following the advice in your article should help to keep them honest.

ROBERT T. WOOD, ELIZABETH, N.Y.

#### Low-Slope-Roof Advice

As a licensed roofing contractor in the Toledo area, I feel compelled to respond to Mr. Stein's roofing advice in *Ask This Old House*, September 2009, "Roofing with a Low-Slope Roof." He advised against the use of edge vents on a 4:12 pitch, the use of "down-sloping," and drilling the eaves of the shingles below the manufacturer's recommended and design specs.

Edge vents will mean horizontal ice or wind speeds in excess of 60 miles per hour. Asphalt shingles are approved for and will perform well enough on pitches down to 2:12 with adequate fastenings. And even if Class C wind speeds, down-sloping shingles instead of 4:12 is easily avoided. Buying shingles that extend 18 inches or adding the back of the side wall roof board is a better alternative. Finally, drilling the eaves is never recommended because it means the tabs wrap from the eaves or the shingles below and possibly wind that will not catch.

THOMAS G. BREWER, MOUNTAIN, GORE

Tim Silva replies: It's good to hear from conscientious professionals out there who take pride in their work and make it a point to keep up on the latest standards and practices. My recommendations may sound conservative, but they come from years of experience in my work of the woods. Your suggestions remind me to point out to our readers: Always check and follow the manufacturer's recommendations in order to keep your warranty valid and get the best performance from your materials.

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**Phone Line Extension**

In *Homeowner's Handbook* "Adding a Phone Line" in October 2002 I wrote the process you describe will result in an operational second line, it sets the stage for troubleshooting work with the extension jack.

An extension cable should match the gauge standard for the existing cable. Specifically, in Step 7, I suggest all four wires in the new cable, not just the two you indicate, should be snatched with the existing cable, matching color to color. Then you can make the transition between color pairs, connecting the yellow wire to the red screw terminal and the black wire to the green screw terminal. Everything else remains the same.

This approach has two advantages. First, if you want to see your primary line on your new jack, you already have an active signal on the correct wire pair. But most important, years down the road you (or a future owner) avoid grief when making changes or troubleshooting a problem. When you open the new jack, it is immediately obvious it is wired as a second line because the wire installation is made there and can be seen.

George Varnier, Turin, Calif.

**Best Bulbs for Recessed Lighting**

As a professional in the lighting industry, I enjoyed "Recessed Lighting" (September 2003), though I felt compelled to clarify the sections that recommended "best bulbs."

You suggest that standard incandescent Type-A bulbs are the best choice for ambient and well-task lighting. However, for reasons of lighting efficiency and future safety, we at Philips Lighting recommend using incandescent or halogen floodlights and spotlights, known as "R," "BR," and "PAR" bulbs. In addition to being far longer than Type-A bulbs, these bulbs use the amount of heat and light trapped in a recessed fixture, making safer and more efficient to use. Type-A bulbs project light and heat in all directions, most of which ends up trapped in the fixture, possibly damaging it over time.

Steve Quisenberry, Director of Consumer Communications, Philips Lighting

**Beloved EBPT**

There's been a fire at This Old House for as long as it has been on TV and here we're advertising the magazine for several years as well. As a result, I do my own retrofitting and always have some project under way. I have noticed something personnel, however

about the *Homeowner's Handbook* section of the magazine. For the past year the subject under discussion has always coincided with something I was about to do within the next two weeks. Is someone spying on me?

Quinn O'Neil, Sun Coast, N.Y.

**Home Inspection Advice**

"Looking for Trouble," October 2003, was informative but omitted an very important trade group: the National Association of Building Inspection Engineers (NABIE), located at [nabie.org](http://nabie.org). Further, the article indicates that "certification" from trade associations is a guarantee of a home inspector's experience and skills. Trade association certification often only signifies someone is a member of that trade group, it does not guarantee that an individual or company is qualified.

Also, by rehiring the services of a licensed professional engineer who flows home inspections, a huge portion of a building's structural integrity could be given the initial inspection, avoiding the need to hire a certified home inspector after structural issues to an engineer and avoiding the cost of two inspections.

W.C. Fuester, P.E., Business Development Director, Florida, Fla.

**In Memoriam**

James A. "Jim" Farris, a longtime supporter of This Old House, died August 16, 2003, at the age of 53. Jim's passion for building made him a valuable friend of the TOH team. "He loved taking on whatever Dave Strehle set on his



Jim Farris, a friend of the TOH team.

best whenever the scene called for a water shut," recalls Tom Silva. Besides their ability for the words "Rain" and "Get Dripping," as Farris was known to his family, also shared a special sense of humor. "Jim would introduce himself that way, and then take great pleasure waiting for long to look the other person to catch on," remembers Tom.

Jim is survived by five siblings and five parents.

Address and to Letters, This Old House magazine, 1000 Avenue of the Americas, New York, N.Y. 10018. E-mail at [tom@thisoldhouse.com](mailto:tom@thisoldhouse.com). Please indicate your full name, postal address and phone number. Correspondence may be used in other media.

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YOU SHOULD SEE WHAT'S ON



# ON THE JOB AT THIS OLD HOUSE

BY DAN DICLERICO

## Unlimited Access

**A** HOT TOPIC IN THE FIELD OF residential architecture is "universal design"—designed to the over-friendly design of products and environments for people of all ages and abilities. The concept is a big influence at the current TV project in Concord, Mass., where an 18th-century house is being converted into an "accessible" apartment for septuagenarian Jacqueline and Lou Buckley.

Though our aging population is a main force behind the trend, the number of U.S. citizens 65 years of age or older will nearly double to 62 million between now and 2025, according to the U.S. Census Bureau. "Our mission is to be able to create homes that we can share with family and friends as we go through life together, even if one of us needs a little extra help," says Leslie Young, director of design at The Center for Universal Design, in Raleigh, N.C. As more and more architects design "barrier-free" homes, product manufacturers are responding with better-looking fixtures and fittings—less most accessible grab bars in wheelchair-height cabinets—than don't evoke an institutional setting.

Here are some of the elements that architect Healy Crowley is incorporating into the Concord cottage.

- Extra-wide doorways with no thresholds throughout, and flush appliances in the kitchen, for a wheelchair-friendly floor plan.
- Lever handles on doors instead of hard-to-reach knobs.
- Lighting that is ample, but not glaring, to serve older eyes.
- A ground-floor plan that converts easily into full-time living quarters. The living room becomes a master bedroom with the addition of stairs. The powder room converts to a full bath by reconfiguring a wheel-in shower for accessibility, called.

For more about universal design, contact The Center for Universal Design at 800-697-6777 (NITT) or [www.design4all.org](http://www.design4all.org).



The powder room at the TCM Concord cottage isn't planned to accommodate a wheelchair-accessible shower stall. If needed, the bathroom shows the changes that would have to make a universal design full bath.

## Blow Out the Candles

Let tapes may say Happy Holidays to you, but they're a huge fire hazard! While home fires have dropped by half over the last two decades, the number that were caused by candles leaped 20 percent from 1996 to 2000, putting that figure at a 20-year high.

As the candle season heats up, here are three things you can do to keep safe:

- Ban candles from teenagers' bedrooms. "By a long way."
- Don't put lit candles in the window. They may spritz fire, but they're also a terrific way to ignite curtains and blinds.
- Don't use candles to find your way during a blackout. That's a real fire hazard.

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## ON THE JOB



### BEFORE & AFTER

Conley and Douglas McCann bought this single-family Cape in Ithaca, New York, in 1947, but 12 years slipped by before they began their dream renovation. Here's to prove it: A 600-square-foot addition contains a family room and master suite. Barbed up dozens on the original

roof, secured close to the edge line, means the house's overall proportions. The new vinyl siding is so undetectable, the homeowners say, visitors have to wonder to believe it. An embarking bridge gable adds just a hint of transitional playings to a gracious wraparound porch.

Have you dramatically altered the look of your house? It is a great before-and-after snapshot, put a brief description of the project. In "This Old House" 1100 Avenue of the Americas, 27th Floor New York, NY 10020.

BY DOUGLAS STEINMANN AND LARRY ROSENBERG, MINNEAPOLIS

### Lesson Learned



**W**HEN MY HUSBAND AND I BOUGHT OUR FIRST four apes, I worked days and he worked nights, so we divided up the projects we thought we could handle on our own. Previous owner of the 118-year-old Victorian had removed a worn-down tub-to-the-contingent area and replaced all the bathroom fixtures. Determined to refresh the old tub, I bought one of those tub-and-tile paint kits that require first etching the surface with hydrochloric acid, fully armed with goggles, a mask, a pair of elbow-high gloves, I read and reread the instructions on the box. Min and I went 3 to 1. It seemed like an awful lot of acid, but certainly the kit manufacturer knew best.

Roasting inside the tub, I dipped my soot-soaked foot into the bucket of diluted acid and watched to honor to the steel wool disinfectant in my hand. Having the room fumes, I walked there once covering pads before I gave up and ran outside for air. Finally, I called my dad, who yelled, "One part acid, three parts water!" I re-read the directions and my husband, even labeled water can make mistakes.

Call a professional whenever you have a project involving acid. It's not a DIY job. For more on this, see "This Old House" 1100 Avenue of the Americas, 27th Floor New York, NY 10020.

Hydrochloric acid is dangerous stuff. Always use with extreme caution. Goggles, mask, elbow-high gloves, I read and reread the instructions on the box. Min and I went 3 to 1. It seemed like an awful lot of acid, but certainly the kit manufacturer knew best.

### TOM TIP LIGHTEN UP



Replacing old standard incandescent bulbs for Energy Star-qualified compact fluorescents in your five most frequently used fixtures could save as much as \$60 off your yearly energy bill.

### Did You Know...

WITH A DIRT RICH atmosphere, a beetle population on average a half-microgram of methane per day. That may not be enough to clear a room, but it's bad for the world's atmosphere.

### TOO TECHNIQUE



### Tom Silva's Deadman

**E**VEN WITH AN ASSISTANT, hanging drywall on the ceiling is murder on the neck and shoulders. That's why Tom Silva likes to enlist the help of a "deadman." This simple-to-build, foot-to-ceiling brace holds the heavy sheetrock up against the rafters while he screws them in place.

**TO CONSTRUCT ONE:** Cut a 2x4 one inch shorter than the height of the ceiling rafters (the deadman should wedge slightly). Create a T with an 18-inch length of board screwed to the top of the 2x4. Since the T with two strips of 2x4 attached at a 45-degree angle on either side.

**HINT:** Wrap a cloth around the top of the brace when hanging finished panels.

—Mark Powers



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# HOUSE CALLS

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Apex glass wall tiles and Arzo limestone on the vanity, tub surround, and floor result in the relaxing colors of a beautiful coral beach. Designer Clark mixed the Arzo and Coria style of the rest of the house.

W

hen Marcia Goodness and Hiroshi Noto turned to architect Kathryn Quinn to redo their master bath, they wanted a calm, peaceful space that would blend with the Arzo and Coria style of their circa 1912 house and reflect their love of Japanese culture. "We didn't want a period look, yet a nod to harmonize with the rest of our home," says Marcia. The couple also went super for more elbow room. "The bath was very small, with an awkward layout that couldn't even accommodate a medicine cabinet over the sink," she adds.

Scraming space from an adjoining closet and home office, Quinn neatly tripled the size of the bath. This made room for much-needed storage and a separate shower area too. The new color scheme—tan and sand tones—was inspired by the couple's love of the beach. "It's a heavy brick house in a cold Chicago winter, our master bathroom is a welcome escape," says Marcia.

PHOTOGRAPHS BY JUDITH BROMLEY

A mix of wood, glass tile, and limestone plus a palette of sea and sand colors creates a relaxing atmosphere in this master bath

PHOTOGRAPH BY JUDITH BROMLEY



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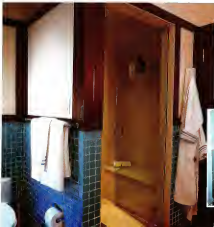
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## WHAT THEY DID

- 1 The old 4-ft-by-6-ft bathroom was nearly tripled in size by cutting closing space from an adjoining home office and hall closet. The interior was gutted and the bathroom clearly delineated several feet to accommodate the new layout.
- 2 A 50-in.-long vanity was installed on one side of the room. The 24-inch depth of the limestone countertop narrowed to 12 inches beyond the sink to create a second distinct grooming area.
- 3 A shed shower and a toilet were installed on the other side of the bathroom.
- 4 A whirlpool tub was tucked into the far end of the room, a window to one side of 8' brings in natural light through a bamboo shade.
- 5 In place of the green-block window that had been above the old sink there's now a new double-hung to match the window by the tub.



**BEFORE** Before, the sleek, modern 1970s bath room was shrunk by a glass block window just a small shower stall over the sink. The machine cabinet was awkwardly positioned on another wall.

**AFTER** The transformed 8-by-23-foot bath was significantly enlarged to accommodate a separate tub and shower. A silver glass door and floor-to-ceiling limestone tile give the shower more window look.



Photo: David Johnson



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## HOUSE CALLS



1 To keep the drawer-filled vanity looking open and vibrant but still provide plenty of storage, the Shalimar countertop moves and becomes a floating shelf beyond the sink area. A second shelf extends all the way around and top is single wooden drawer when it's closed on the wall.

2 Lead halfway up the walls, 2 by 2 inch square glass mosaic tiles form an abstract design that reminds the homeowners of the islands.

3 The dark, moored wall finished with dark wood veneer has recessed medicine cabinet—accessibly adjustable—above the sink at the bottom of the door. Tubular fluorescent fixtures mounted vertically at head height provide task lighting for grooming and define the shape of the peninsula overhead.

4 To evoke a Japanese style soaking tub, an extra-deep whirlpool is set in a raised limestone surround. The ergonomic (and hand) seats are mounted slightly to one side so bathers can lean back and relax in comfort. The wide deck makes it ready resting place for plants and towels.

For more kitchen design ideas, trends, and products go to [www.houzz.com](http://www.houzz.com) or America's Best Remodeler. This Old House will send "Star" in the live-how section.

## THE DETAILS

Simple lines and natural materials give this master bath a peaceful feeling.



SHOWN BY JEFFREY M. FOR REMODELING • PHOTO © JEFFREY M.

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# Ask THIS OLD HOUSE



**TOM REPP**  
Columbus, Connecticut



**RICHARD TROTHAWAY**  
Blaine, Minnesota



**ROGER COOKE**  
Cincinnati, Ohio



**ADAM AARON**  
Cincinnati, Ohio

## THE VALUE OF STORMS

**My family has a two-family brick Colonial-style house built in 1922. The current double-hung windows appear original to the house. I think the storm windows were added in the**

**'40s. I'm thinking about replacing all 36 windows, but someone told me that window technology these days is so good that storm windows are a thing of the past. Is that true?**

PETER LAM, BOSTON, MASS.

**Tom Repp replies:** Not even a little bit true. A good storm window will make any older window energy-efficient, whether the window is 50 years old like yours or made using the latest technology. And today's storm windows are so much better than they were just a few years ago. I think you ought to hunt some time shopping for them before you even consider taking on the huge and expensive job of replacing the main windows. Otherwise, you'll spend a lot more than you need to.

The best storm you can get will run \$200 or \$250 for a standard-size window, while a decent primary window costs at least two or three times that much. And there's not even counting the effort and expense of replacing all the interior window trim, which will also have to be done if you replace your windows.

If your existing windows are beyond repair, maybe replacements are the best option. But even then, don't count storm windows out. Compare the cost, energy efficiency and life span of storm windows and primary window combinations—including storm windows and new single-glazed windows—before you make your decision.

## NO-SPRINT TOILET

**Our water comes from a well and enters the house at about 45°F. Our sensors, that passed rather ardent consideration on our order books, I've checked indoor humidity levels and they're not excessive. In these two weeks we can do to prevent our tanks from freezing?**

CAROL ANN, GAITHERSBURG, MD.

**Richard Trothaway replies:** The same thing happens to a glass of ice tea at a summer picnic. Housed air hits the cold glass, cools, and gives up some of the moisture, which forms beads of water on the outside of the glass. You have a couple of choices to prevent the problem from recurring. Insulating the pipe—plastic or rigid foam that fits



Sam Jellus says a good storm window can save you the big expense of having to replace your old windows.

the tank—keep the cold water from touching the tank walls. They're available at hardware stores and home centers. While the insulation is unobtrusive, it can be a headache to install. Tank insulators aren't standard, and you'll want to make sure the foam doesn't interfere with the toilet's foot mechanism. Once in place, the kit is reasonably effective as long as the joints between the foam pieces are tight. It's also possible to buy a new toilet with an insulated tank, which will perform better than a retrofitted one. But in both cases, your toilet can still freeze if the insulating water is very cold and the room humidity is very high. The most effective (and expensive) approach is to install a rising water tank's convective hot-water pipe. Rerouting the incoming water slightly stops condensation completely but there are some drawbacks. For one thing, you'll be flushing water you paid dearly to heat down the drain. For another, it's often difficult

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## Ask THIS OLD HOUSE



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although the valve is a location that only allows the water to come out of the faucet, not the water coming out of the cold-water faucet, too. These valves are much easier to install during new construction.

Of course, you could decide just to throw a couple of towels under the sink to soak up the drips when the weather turns humid.

### PROBLEM-SOLVING KENNY FAN

We have a '90s era house with a tiled tub/shower area inside an attached garage. Unfortunately, the stuck tape mount and holds it against the plaster ceiling, which then cracks. I know ventilation would help, but there's a living space above the bathroom. Do you know any other ways besides adding a fan to break the mold?

ERIC TRAVIS, Evans, Ohio

### Recreate Shower Fan



**Tom Gilvin replies:** Don't give up on the idea of a fan just yet. If a standard tub/shower fan doesn't fit into your ceiling, you can buy fans that mount vertically anywhere along the wall at the duct. The ducting itself is typically 4 to 6 inches in diameter, small enough to fit between ceiling joists. (The smallest motors available: 10 inches in diameter.) Another advantage of the remote motor: It's less noisy than exhaust fans that blow all the working parts right next to the noise grill. If you can't install a fan of any type, however, you'll just have to wipe down the ceiling frequently. Or scrape and clean the ceiling with a bleach solution to remove the mold, then paint it with a high-quality high-gloss paint, which stands up well to repeated scrubbing. You can add a moisture prevention to the paint, too, for a longer long-life period, but siding always wears back eventually. I suppose you could eliminate the roof, but it's a slow life job, and I don't like the idea of something original that's done right.

### ADVISOR FOR HENRIETTA

Can you help me solve the problems of getting a mirror on my living room wall? I live in an 80-year-old apartment building

that has plaster joints over concrete walls. I've found that the plaster and concrete crumble when I drill into them, so I know I have to use a masonry bit and an anchor designed to accommodate any variations in hole size.

See NIKON, CONCRETE, SCREW, BOLT.

**Tom Gilvin replies:** Drilling into plaster and concrete isn't like drilling into wood—you don't always get a nice, clean, uniform hole. The trick is to use a masonry bit and an anchor designed to accommodate any variations in hole size.

First, choose the anchor. What you need is something that will expand in the hole as a screw is driven into it. Since you only have to support 36 pounds, a common lead screw or plastic screw anchor should do just fine—you can get these at any hardware store for pennies. (For a complete breakdown, see *Homeowner's Handbook*, page 61.) Then choose a masonry drill bit sized specifically for the anchor. If the hole you drill is too small, you won't be able to drive the anchor into it, and if the hole is too large, the anchor won't grip properly and may come out when the mirror is hung on it.

Drill the hole about 1/8 inch deeper than the anchor is long and allow out any remaining dust. A battery pack is good for this purpose because you can keep your eyes clear of the gritty dust that will come flying out. Once the hole is clean, tap the anchor into place, drive the screw into the anchor, and hang your mirror.

### LAST-STAND SHOWER

I am an 80-year-old who still makes a garden and some for yard. As I have gotten older, however, I've been having a hard time pulling the shower steps on my lawn mower. Is there anything I can do now to prevent this problem from happening?

SHERRI HENRIETTA, Chatham, Ohio

**Roger Cook replies:** The shower steps are never really going to get easier to pull as the mower gets broken in, so it's possible that something is obstructing the rope or the blade. Pulling the shower steps is the owner's manual, by taking off the pulley and loading and unloading it to dislodge any debris that may be inside. The mower is pretty easy to do, but you might also have a bent crankshaft, which will need to be fixed by an experienced small-engine repair guy.

I need my \_\_\_\_\_ installed, but I don't know who to trust.

- Cabinets
- Blinds
- Countertops
- Shutters
- Hardwoods
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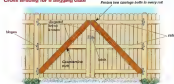
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## ASK THIS OLD HOUSE

### Cross-Bracing for a Sagging Gate



Or you might consider buying a new mower without a seat. You can take your pick of electric or battery-powered models, as well as gas mowers with steering wheels. With the last type, all you have to do is flip up the mowers to hold them in a self-erecting position and turn away. This labor-saving feature raises the price about \$100 over an equivalent manual-start gas mower.

### REPAIRING A DRAWER FRONT

I've lived in my 1912 house for 65 years, and it's in pretty good shape except for my aging kitchen cabinets. Recently, a whole drawer front came off in my hand when I pulled on it. I reached in with some nails on each side. When I pulled the drawer out to check my work, out came the drawer front again, this time with 14 nails sticking out the back. I hope you can tell me how to repair this drawer.

*Deborah Pearson, St. Paul, Minn.*

**Norm Abram replies:** Hairs are good for some things, but they're not good when it comes to resisting withdrawal, especially hairs and grain. That's the force you applied to the side when you pulled on the drawer front, so I'm not surprised they pulled out.

What you need instead is a good wood-working glue. It's important it's polyurethane type because it's so strong. The nails simply hold the pieces in place until the glue cures.

Make sure the edges of your drawer front and the sides behind the drawer face are clean and smooth. When gluing, be sure to use glue and apply a small amount of glue to the outside. Attach the face to the frame with a few 16d nails. If you know them, staples will help hold the drawer front while you hammer away. Stick the nail heads below the outside with a nail

set, and fill the nail holes with wood filler before you touch-up the finish. Let the glue foam and expand as it cures. When the surface is dry, put it away with a utility knife or chisel.

### SAGGING GATE

When I added a rockslide fence around the yard, I closed off my driveway with a pair of gates made from leftover fence sections. Now the gates are sagging, and I've had to put wheels under both to keep them from dragging on the driveway. Do you have any suggestions for correcting this problem?

*Bruce McNair, Brewster, Ohio*

**Tom Silva replies:** It shouldn't be hard to make them square. First, prop up the high side of each gate so it is square. Then shim it up another inch or so, to allow for settling. Now attach a diagonal 2x4 brace to the horizontal rails on each gate, using a pair of carriage bolts and washers wherever the brace crosses a rail. (Put the bolt heads on the outside of the gate and counterbore the nuts and washers.) Each brace should run from the end of the bottom rail closest to the lowest hinge, up to the end of the top rail closest to the other side (gluing the braces the other way won't do any good.) That should stiffen the sections enough for you to take the wheels off.

To send a question to ASK THIS OLD HOUSE, go to [www.thisoldhouse.com/askthisoldhouse](http://www.thisoldhouse.com/askthisoldhouse) or write to:

Ask This Old House  
P.O. Box 1000  
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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 volume of mail received, we are not able to reply to unpublished questions.

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## It's a Guy Thing Every man deserves a throne of his own

If a man's home is his castle, then his easy chair is most certainly his throne. It's the one place where the master of the house can always go to escape and take care of the really important stuff: watching TV, drinking a beer, snoozing. So it should come as no surprise that the list of these deeply padded, well-upholstered, and, above all, amazingly comfortable chairs made us drool during the reign of Louis XIV, whose furniture makers stuffed leather between layers of leather striping and wrapped them in linen to create cushioned seats suitable for royal headquarters.

The modern seat spread across the English Channel and, eventually, to America. Styles became more and more personalized, with curvilinear upholstery

BY RYAN ROBBINS PHOTOGRAPH BY GEOFFREY SOKOL

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# a houseful of English country charm



**HIP TO IT SQUARE**  
The black leather, box cushioned Morris chair (\$1,695) and ottoman (\$175) are reminiscent of the Craftmaster's sleek, modernist Glen Comfort chair of the 1920s ([www.thomsonline.com](http://www.thomsonline.com)).



**ARTS AND CRAFTS FAVORITE**  
Glen Comfort chair of the 1920s ([www.thomsonline.com](http://www.thomsonline.com)).



**A WING AND TWO AND A CHAIR**  
The upholstered wings on this high-backed, cabriole-legged recliner are no longer needed to block drafts, as they were in the 17th century, but they make a comfy headrest for a nap. (\$699, [www.broyhill.com](http://www.broyhill.com)).



legs, brass stool feet, and silk-velvet upholstery. By the turn of the 20th century, however, customers had begun to prefer new interpretations of the easy chair more focused on the straightforward luxury of the button-wrapped club chair, others, like the Cassa Seckley, achieved extravagant detail altogether and made exquisite jewelry the main attraction.

The last great leap forward—or leap back, really—took place in 1929, when two contemporary cousins from Monroe, Michigan, created the world's first upholstered recliner, dubbing it the La-Z-Boy. They tweaked the design periodically, most notably by adding an integrated footrest in the 1990s, and the Monroe Cassa of the world has

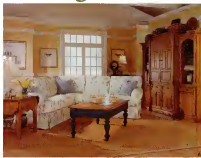
## AN ELECTRIC CHAIR YOU'LL ACTUALLY WANT TO SET IN

If you ever decide to test drive this reclining massage chair from The Slapper Image, make sure to fastenize yourself with its 18 button remote control before you sit down. I didn't. I just plumped into the leather seat and apparently hit the Chairs button. Within seconds the chair had the shoving myriarchaeon off in front of the line of people waiting to take my place—and I don't want those marionettes. Fortunately, the vibration quickly caused the chair to diminish across the floor and snaking itself. Granted it's expensive. I looked over the remote for a quarter ending before playing back in.

There are buttons to set your body type—I'm a firm 8' tall 2, as I selected "tall" and "manor." Then there are buttons that activate a variety of massage techniques—things like kneading, tapping, and rolling—plus controls for speed and intensity. The last thing I want to do while getting a massage, however, is to turn, so I simply punched the button for position "A," one of these programmed positions that target specific areas of the neck and back. Once this motion started working, I switched on the cabriole-legged ottoman and hit the chair's automatic recline button.

I felt to do so in a bit to get the "magic" frequent" to touch so to my shoulders, but they did a good job hitting the rest of my head—if they'd ventured any lower I might have pressed charges. As the pressure intensified, I knew I could leave the monitor inside the chair wondering as it pursued my nether regions—and nearly pushed me off of my perch in the process.

Don't get me wrong—I liked one of these massage chairs at my house, I do it. But for \$3,300, I should at least come with a seat belt.



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Model shown of Yorkshire Market are shown for design purposes only. ©2000 Broyhill Furniture Company, Inc.



## CLASSIC CLUB

The Mustang club chair packs a lot of details—real leather upholstery, nailheaded trim, two feet—into a mere 32-inch wide seat. (SL465, [www.us.fordglobal.com](http://www.us.fordglobal.com))



## NEO-CENTURY AERIAL

The neo-century Shell chair is common in the iconic modelled living rooms of the 1940s and '50s, but its leather seat makes it a whole lot more comfortable. (SL46, [www.bornocapt.com](http://www.bornocapt.com))



## RETRO RECLINER

Control remote-control arm just the right recliner's shell and then back. (SL57, [www.b-born.com](http://www.b-born.com))



## HIGH, WIDE, AND SHAPESOME

The deep-buttoning up the American chair (from SL470) is a new sign of back-springing inner springs, the matching family-sized recliner (from SL480) and goes you a leg up. ([www.fordglobal.com](http://www.fordglobal.com))



born in disintegrated heaven ever since.

Of course, as any chair, despite its outward appearance, is only as good as its insides. When shopping for one, make sure the chair's frame is built with kiln-dried wood and sturdy joints (not just glue and staples). The seat should be built high enough to allow your knees to bend at a 90-degree angle while your feet are flat on the floor and wide enough to allow you to place a foot between each thigh and the chair's arms. It should also be deep enough to fully support your thighs but not so deep that it fails to support your lower back.

Still, the only real test of a chair's comfort is to sit in it for an hour or two. Soak into it. Stretch a little. Make sure you're Ahh, you're Ahh.

**Want a month with stuff?** Try a roundup of carny chairs for your home theater. Go to [www.thesehouse.com](http://www.thesehouse.com) or **America Online Keyword: This Old House** and type "ladder chair" in the search box.

## ONE TOUGH EASY CHAIR

For an easy chair (this one sure had it tough, but only did the three-hour long look have to make such a chair's simple figure and split shells, but it had to do so much after work, in kind of a low-shade outdoor.

The chair was last threatened by a violent, non-injury, someone from the CBS prop department: at a modern California's Goodson show and signed for less than \$10. Almost overnight, it became a recurring role as one of the blue-collar World's Supporting Players in the groundbreaking 1971 sitcom, *All in the Family*. By the show's seventh season, the chair had become its own star. The episode "Archie's Chair" revolves around him in his "Middletown" Brown's reportedly threatened attempt to make the chair after accidentally breaking it.

The chair became such an icon that after the television show *Archie's Chair* the personal chair became an icon. Producer Marvin L. Lasker and the Smithsonian Institution's National Museum of American History. When the show was unexpectedly removed for a month, the chair was replaced by a special thousands of others looking a little like it.



Archie Bunker and his beloved easy chair.

PHOTO: FORD; CHAIRS: BORNOCAPT.COM



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TODAY TOMORROW

TOYOTA

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- ☐ b. Where's the take-out menu?
- ☐ c. Where's my tool box?

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ILLUSTRATION: JEFFREY J. HARRIS

U P K E E P

## Rock Revival

Removing stains and repairing scratches in stone surfaces

BY PHILIP DE LUCA, PHILADELPHIA



*Accidents happen. But stone doesn't have to be permanent. The right cleaning agent, mixed with a powdered pumice, can rub stubborn spots out of solid rock.*

**D**espite its reputation for toughness, stone can be stained, scratched, and chipped. That's the bad news. The good news is that most of the most damaged stone floors and countertops can be made to look new again.

As the director of the National Training Center for Stone and Masonry Trades, I give hands-on instruction in restoration techniques to countertop fabricators, tile and contractors, and other professionals, and field questions that come in through the training center's Web site ([www.ntrc.com](http://www.ntrc.com)). One recent visitor to the site wrote that she had just installed a new granite countertop that seemed to stain every time she prepared a meal. Frustrated, she was ready to rip the top out and replace it, until I explained how easy it

is, using the techniques shown on the following pages, to remove the stains and seal the stone to keep them from coming back. She wrote back to say that she tried it, was pleased with the results, and is now thinking of using granite wall panels elsewhere in her home.

Repairing scratches and chips or polishing dull stone is more difficult. It requires special tools and materials, as well as people who are trained to use them. But it's easy to find a professional who can do this work right in your home. Look for one in the Yellow Pages under "marble" or in the contractor directory at our Web site. Once your stone is restored, keep it looking fresh by regularly wiping it with a pH-neutral stone cleaner, available at most home centers and tile stores. And by keeping your wine in the glass.



## Removing Stains

The only way to remove a stain from stone is to carefully pull it out with a liquid chemical mixed with a powdered poultice. When placed on the stain, the chemical dissolves it, and the powder absorbs it. The chart below shows the chemicals that work best on common household stains. The powders for poulticing stone are readily available where stone and tile are sold. Look for the listed stain on each tile and haven't been treated with stain-removing chemicals.

Before applying a poultice, always clean a stain first with water and pH-neutral stone soap, such as Aqua Mix's Stone Cleaner ([www.aquamix.com](http://www.aquamix.com)) or Stone Care International's Marblecare ([www.stonecare.com](http://www.stonecare.com)). Blot, don't wipe, the area dry, then wet it with a little distilled water. Then follow the steps at right.



**1.** Stir the appropriate stain-removing chemical (see chart below) into a poulticing powder and make a paste with the consistency of peanut butter. Apply it to stain. Brush layer to the stain (lay thicker with dry tea towel) overlapping to edges by at least 1 inch.



**2.** Cover the poultice with a plastic sandwich bag of food wrap. Tape down the edges with blue, low-temperature tape. If the adhesive is in place, marking tape can frame a stain. Allow the poultice to sit for 12 to 24 hours.



**3.** Remove the plastic and stir the poultice, controlling drying. Once it's bone dry, scrape it off. Throw it away and rinse the area with distilled water.



**4.** If the stain is gone, let the stone dry and apply a sealer (see page 48). If any sign of the stain remains, repeat the poultice process. If the stain is again a few feet from you, call in a stone specialist.

## WHAT GETS THE STAIN OUT

To prepare a poultice, match the chemical to the stain. If you don't know what caused the stain, use our online Stone Stain Detective.

Go to [www.stonemaster.com](http://www.stonemaster.com) or America Online Keyword: This Old House and type "stain detective" in the search box.

| CLEANERS                  | STAINING |          |       |        |      |         |         |     |        |       |       |      |       |       |      |       |
|---------------------------|----------|----------|-------|--------|------|---------|---------|-----|--------|-------|-------|------|-------|-------|------|-------|
|                           | Acid     | Alkaline | Chalk | Grease | Iron | Organic | Protein | Red | Yellow | Black | White | Blue | Green | Brown | Grey | Other |
| Hydrogen peroxide         | ✓        |          |       |        |      |         |         |     |        |       |       |      |       |       |      |       |
| Alkaline degreaser        |          | ✓        |       |        |      |         |         |     |        |       |       |      |       |       |      |       |
| Mineral spirits           |          |          | ✓     |        |      |         |         |     |        |       |       |      |       |       |      |       |
| Toluene                   |          |          |       | ✓      |      |         |         |     |        |       |       |      |       |       |      |       |
| Distilled alcohol         |          |          |       |        | ✓    |         |         |     |        |       |       |      |       |       |      |       |
| Chlorine bleach           |          |          |       |        |      | ✓       |         |     |        |       |       |      |       |       |      |       |
| Acetone                   |          |          |       |        |      |         | ✓       |     |        |       |       |      |       |       |      |       |
| Iron remover              |          |          |       |        |      |         |         | ✓   |        |       |       |      |       |       |      |       |
| Ammonia                   |          |          |       |        |      |         |         |     | ✓      |       |       |      |       |       |      |       |
| eg. 1 liter of 3 per cent |          |          |       |        |      |         |         |     |        |       |       |      |       |       |      |       |

SOURCE: Stone Research Guide for Builders, 2d Edition by Frederick M. Hunsen

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## U P K E E P

### Repairing Chips and Scratches

Scratches and chips are best repaired in place by a professional restorer with the proper tools and skills. First, the restorer will fill any chips and deep gouges with a special polyester or epoxy, tinted on-site to match the color of the stone. Then scratches and spalls are honed with eight increasingly fine diamond-coated abrasive pads, starting with 60-grit and ending with 1,100-grit. A high-gloss polishing, if desired, requires a balling pad and abrasive compound. Restorers use a electric stone polisher for honing and pol-

ishing. The tool spins at a slow 3,000 rpm and holds the pads in place so the diamond abrasive doesn't scratch. Stone has a natural luster, so how long the process takes. Gouges might require several hours, smaller or less ones can be done in less than an hour.

A patient homeowner could rent and mix up a filler, spend \$25 on each of the eight diamond pads, and try honing with a car polisher (just a random-order scratch). But the process is tricky, and you're unlikely to save much money by doing it yourself.



**1.** To fill a chip, stone expert Frederick Houston shows a two-part epoxy with chips of pigment until it closely matches the color of the stone.



**2.** Houston shows the tested filler onto the chipped area, then attempts to match the contours of the counter. The material takes about 24 hours to cure hard enough to be polished.



**3.** Houston hones, fines and finished areas scratch with an electric polisher and a series of progressively finer diamond-coated pads. To reduce spalling, he removed the back of the stone and raised back the diamond abrasion by applying the stone with water.

## U P K E E P

### SEALING OUT STAINS

The best way to improve stone's stain resistance is to apply a penetrating sealer, also known as an impregnator. Unless worn or other coatings, the sealer goes below the surface and protect the stone from within. The product sealers—such as Miracle Sealants' D17 product line ([www.miraclesealants.com](http://www.miraclesealants.com)) and Stone Care International's StoneGuard ([www.stoneguard.com](http://www.stoneguard.com))—contain a chemical known as a fluoro-silicate, which repels both water- and oil-based stains. Promoting sealers that include silicones repel only water.

Not all sealerships need to be applied. Some stones, as so dense that staining isn't a serious problem. The test is simple: Just place a drop of water on the surface. If it doesn't darken the stone after several minutes, a sealer is optional. But if the area under the drop becomes dark, then the sealer is present and should be used.

First the sealer with dry stone and let it sit for a few minutes; then remove the excess with a soft cloth. Reapply gently, after the stone has been refinished or polished, or whenever it takes less than 6 minutes to absorb a drop of water.

Stone expert Frederick Houston gives his customers up twice a year education on a stone sealer and a soft cloth to keep staining to a minimum.



For more help removing stains from counters or floors, decks, or driveways, go to [www.stonecare.com](http://www.stonecare.com) or America's Online Knowledge: The Old House and Type "Stone" in the search box.

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## Workbenches

Choosing and using this essential tool

**A** workbench is an essential feature for any jobsite or workshop. Portable or permanent, equipped with drawers, vices, or drafting-table tilt top, a bench not only helps work go faster and more accurately, it also keeps you safe. "I very seldom work with something that's not clamped to the bench," says Norm Abrams, *This Old House* master carpenter. "You can't be accurate when you're squinting on the floor, and you're going to get hurt holding something in one hand and cutting with the other. It's really worth the effort to set up a bench, and it doesn't have to be expensive or elaborate."

Workbenches come in all shapes and sizes. Small, fold-

able ones can travel from job to job, while heavy, furniture-like pieces with drawers and cabinets become a permanent fixture in the workshop. Most permanent benches have standard tops set near counter height (36 inches), which will suit a lot of different projects. But adjustable benches are handy if you want to tailor them to your own height and the tools you're working with.

It's best to test out any bench in the store to see what feels most comfortable for your size and working habits. But with any of the ones shown here—plus several heavy-duty clamps to hold materials to them—you'll have a safe and convenient place to get the job done.

BY JOHN KELSEY PHOTOGRAPH BY SHAFFER SMITH PHOTOGRAPHY

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## Portable

A portable workbench travels with you whenever you need it. About \$100 buys a fold-up work center with a top around 2 feet by 3 feet, good for mixing paint, pasting wallpaper, setting up block, and cut-

ting lumber. Says Hanks, "I like a great leg table made simply from a sheet of 1/2-inch plywood on a pair of sawhorses, but I've seen some of the guys work great with a folding bench."

### Simple: Sawhorses ▶

**BEST FOR:** Jewels, especially cutting clean miters and trim, wallpapering, and other messy jobs.

**LOOK FOR:** Folding heavy plastic or sturdy wood supports with wide legs. Or make your own sawhorses with inexpensive 2x4s and 4x4s or lumber. Simply top with a sheet of plywood, secure it with screws, or an old door to complete the bench. Add a third sawhorse for center support if needed.

**SHOW:** One-way fold heavy plastic benches, \$6 a pair, with 2x4 legs. Daz legs and 1/2-inch plywood.



### Mid-range: Adjustable workstand ▶

**BEST FOR:** Clamping and layout, smaller carpentry projects (cabinet and box installation), seal putting etc.

**LOOK FOR:** Folding stand, top that tilts and slides up and down to hold cabinets during installation, clamping system.

**SHOW:** Watson Fold Work Center Pro, \$65

### High-end: Adjustable workstation ▶

**BEST FOR:** Easier carpentry projects, general woodworking, small furniture repair and wallpapering, painting, and product assembly.

**LOOK FOR:** Folding metal stand with variable height top that swivels to horizontal level. Built-in clamping system.

**SHOW:** Black & Decker Workmate Work Project Center, \$100



## Permanent

A permanent workbench is a sturdier alternative to portable benches, weighing up to a couple of hundred pounds. It should measure at least 3 feet by 5 feet and can cost anywhere from \$180 to \$1,000 or more, depending on size and construction. The ben-

ch ones include drawers and cabinets, so tools and materials are always at hand. It can go in the middle of the shop so you can walk around it for woodworking, or up against a wall for general storage and projects.

### Simple: Homemade ▶

**BEST FOR:** General carpentry, product assembly, furniture repair, messy jobs, heavy painting.

**LOOK FOR:** Strong wood framing that can hold together wood legs, rails, and benches.

**SHOW:** Simple Strong To PUGH construction. \$3 each (plus freight). 2x4 legs, plywood top and shelves, plywood back.



### Mid-range: Storage bench ▶

**BEST FOR:** Tool storage, general carpentry, light metalworking, sewing, paint, and taping wallpaper.

**LOOK FOR:** Sturdy metal construction, deep drawers for tools, extra bins for fasteners.

**SHOW:** Sears Craftsman 3-Drawer Workbench, \$200.

### High-end: Woodworker's bench ▶

**BEST FOR:** Furniture making, general woodworking and fine carpentry product assembly. Product of high-quality wood top, base, and other features.

**LOOK FOR:** Heavy hardwood legs and top, built-in vices, storage drawers or shelves, holes for metal clamps to hold work in place.

**SHOW:** Garrett Wade Traditional Storage Workbench, \$1,000



Can't decide on the right bench for your new bench? Go to [www.thisoldhouse.com](http://www.thisoldhouse.com) or [AmericanOnline.com](http://AmericanOnline.com). Keyword: This Old House and select "Tools & Materials" in the New-home section.

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# design

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# Find

On Furniture, Furnishings,  
Style, and Design

BY LEIGH KENO AND LESLIE KENO



## Collectible Chrome

Art Deco chrome pieces look as modern today as they did in their heyday

**L**eslie and I like to race vintage sports cars, a passion we learned from our father. Dad owned one of the fastest cars ever built—about 1936 (I don't know the year)—and we still race it today. This low-slung two-seater was built for speed, a fact accentuated by its chrome headlight and wingtip fenders. It's a wonderful piece of design. And perhaps it accounts, at least in part, for our love of the sleek chrome objects of the Art Deco era—things like cocktail shakers, serving dishes, and desk sets—that reflect a modern, streamlined aesthetic.

### EVERYDAY MODERN DESIGN

Today's small chrome objects, for the home dining, began the 1930s through the 1940s and available throughout the country at flea markets, antique malls, specialty shops, auction houses, and online sites. But in our village, John Sullivan, of David Rago Moderne Antiques, points out, there's a hierarchy of value in chrome pieces. While a common set of coasters can be had for as little as \$25, limited-production pieces or items by more designers have gone for more than \$20,000. From vases to serving bowls, such pieces can be used today as functional accessories or as scarce pieces in a wide variety of styles. They also look great displayed as a collection.

Though such chrome-plated objects actually started to appear in the 1920s, it's the Art Deco designs of the mid-1930s that are most sought after. Looking for a way to lure back wary consumers after the Depression, manufacturers such as Chase Brass & Copper, Manning Bowman, Forster Bros., and Kovens Copper & Brass released well-known designers of the day such as Walter von Nissen, Rosalind Wright, Lucille Gould, and Norman Bel Gables. These in turn named everything

WITH JEAN BARCLAY FREUND

Antique experts Leslie Keno and Leigh Keno have built a firm's new. To assist on 1930s collecting, the world of design, style, and furniture (for more, see page 104-105). Leigh and Leigh in photo operate their own gallery of American antiques in Manhattan. Leslie is head of the American furniture department at auction house Sotheby's in New York.

### JUST THE FACTS

**Chrome Cocktail Shaker**  
DATE: Circa 1930s  
MADE IN: Forster Bros.  
VALUE: \$750-\$800  
FEATURES: Chrome-plated  
"serving vessel" vase as  
the dish's feet, decorative  
banding inside and out.



Art Deco style, a sleek, silver-plated "serving vessel" vase as the dish's feet, decorative banding inside and out.





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# HOMEOWNER'S HANDBOOK

STEP-BY-STEP PROJECT SERIES

DETAIL HERE



This easy-to-install adjustable shelving system consists of two vertical shelf standards, six metal brackets, and three 16-inch-long shelves.

## Installing Wall-Mounted Shelves

BY JOSEPH TRUINI PHOTOGRAPHS BY SHAFFER SMITH PHOTOGRAPHY



## HOME IMPROVEMENT KEEPING YOU FROM LOVED ONES?

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Hello

my name is

Hello

my name is

Hello

my name is

Hello

my name is

Hello

my name is

Hello

my name is

IN THE MEANTIME:

1. CUT OUT THESE NAMETAGS
2. GIVE THEM TO LOVED ONES WHOSE NAMES YOU'VE FORGOTTEN

Hello

my name is

Hello

my name is

Hello

my name is

Hello

my name is

Hello

my name is

Hello

my name is

▲ If your loved ones seem hazy, remind them that you're "on your way to Ace Hardware" and "things will be better soon."

# Overview

**W**all-mounted shelves are a great way to store books and display collectibles without sacrificing valuable floor space for bookcases. Here's how to install a three-shelf, \$40 system that uses metal standards that screw directly to wall studs with 2½-inch screws. Brackets that hook into the standards, and shelves that secure to the brackets. These systems are carried by home centers and hardware stores in a variety of sizes and styles—for more on shelves—in everything from glass to hardwood—see "Buyer's Guide," far right.)

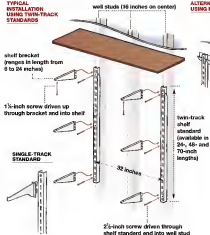
In this case, we chose twin-track standards, which take more weight than the single-track version, have brackets that

screw to the shelving, and allow you to install standards 32 inches on center (every other stud, rather than every stud). However, if you can't align the shelf standards with wall studs in every case, you can use hollow-wall anchors safely by following the guidelines in "Wall Anchors," right.

Still another alternative to screwing shelf standards to individual wall studs is a hanging rail system. This hardware lets you secure a horizontal rail to the studs, then hang vertical standards off it anywhere you like (see illustration, below).

This system is very strong and gives you flexibility, but the bulky hardware at best fits in a laundry room or garage.

## TYPICAL INSTALLATION USING TWIN-TRACK STANDARDS



## ALTERNATIVE INSTALLATION USING HANGING RAIL

# Step by Step: Wall Mounted

**1**



## Mark the locations of the wall studs

- If you have drywall, locate the studs by sliding an electronic sensor along the wall until you hear a beep or see a red line, indicating a stud's edge. Mark this point in pencil (above).
- Slide the stud finder to learn the opposite direction to find the stud's other edge.
- Move over 32 inches and repeat for the second standard.
- If you have wood-lath plaster walls, use a stud sensor with a "metal" setting to pinpoint where the lath is nailed to the stud. If you have masonry blocks, or can't find a stud sensor, punch tiny holes with a finish nail along the wall (over the battenboard is easy to miss) until you hit a stud.

**2**



## Drill pilot holes

- Decide how high you want the standards on the wall, taking into account how often you'll be screwing the shelves and preserving any useful floor space below.
- Hold one of the standards on the wall between the marks for the stud edges. Lightly mark where the top screw hole falls on the stud.
- Bore a 5/16-inch-diameter screw pilot hole at the pencil mark (above).

**4**



## Drive in the bottom screw

- Hold a 4-foot level against the edge of the standard. Adjust the standard until the level reads perfectly (above, below).
- Drive a 3/8-inch-diameter screw pilot hole through the bottom screw hole in the standard.
- Drive a 2½-inch-long full-thread screw through the bottom screw hole (above).
- Put screws through the other screw holes in the standard.

**5**



## Hang the second standard

- Hook a shelf bracket into the same position on both standards. You may need to tap them gently with a hammer to secure them.
- Hold the second standard against the wall, centered on the wall stud 32 inches away. If the shelf will be carrying a heavy load of books, use three standards, spacing them 36 inches apart.
- Lay a 4-foot level across the two brackets, then raise or lower the unsecured standard until it's perfectly level with the first. Mark the top screw-hole location (below).
- Fasten the standard to the wall following Steps 3 and 4.

# Shelves



3

## Hang the first shelf standard

- Hold the shelf standard in place and drive a single 2½-inch-long screw through the top screw hole into the pilot hole (below).
- Be sure the screw is snug, but don't overtighten it; the standard should hang fairly straight down.

**TIP:** Rub candle wax into the screws and they'll go in much faster and easier.



6

## Install the shelves

- Attach the remaining pairs of brackets to the standards.
- Slide the shelves onto the brackets. Measure to make sure each shelf overhangs the brackets evenly on both ends.
- Drill a 3/8-inch-diameter hole up through the front of the bracket at the end mounting hole. Drill about halfway into the underside of the shelf, being careful not to go completely through.
- When firmly holding down on the shelf, drive a 1½-inch (or 1½-inch) threaded wood screw up through the bracket and into the shelf (above).
- Repeat this step to secure the remaining shelves.

# Wall Anchors

**W**hen you can't screw a standard or loaded directly to the studs, the alternative is wall anchors. Shown are the most common types for masonry, drywall, and wood. The anchors in masonry when you try to slide in within a cavity. Which type is best? It's hard to tell. The answer is simple: in how much weight (in pounds) will come.

Anchors are tested, using an international standard, for their "tensile load rating," but you can't use this number directly. It's suggested you divide it by 4 to be safe. So, an anchor with a rating of 100 pounds will safely support 25 pounds. That means you need to multiply 25 (in this case) by the number of anchors you're going to use and compare that to the total weight of the shelves and the items it will hold.

In most cases, it's best to use the largest anchor available for your wall type—shelves designed for displaying photos today might be loaded up with books, tapestries. Here is more information on each anchor, including consumer test ratings.

- 1. EXPANSION ANCHOR** For masonry, 50-140 lb. in solid concrete (less in softer materials).
- 2. PLASTIC FIBER** For masonry and plaster, 50-100 lb. in solid concrete. Best-size pilot hole needed.
- 3. SPIRAL ANCHOR** 17 lb. in ½-inch drywall. Best tapping (no pilot hole).
- 4. SELF-TAPPING TORQUE BOLT** 28-40 lb. in ½-inch drywall.
- 5. PLASTIC TORQUE BOLT** 40 lb. in ½-inch drywall.
- 6. MOLLY BOLT** 40-60 lb. in ½-inch drywall. Plus expand behind drywall as screw tightens.
- 7. TORQUE BOLT** 60-110 lb. in ½-inch drywall. When you force and force expand drywall back as screw tightens. Allow space vertically for holding power. Requires large hole.
- 8. REMOVABLE STRAP TORQUE BOLT** 75-80 lb. in ½-inch drywall. Push wings through pilot hole, then snap up plastic guide to wedge wings tighter to drywall back and stops wing off. Unlike regular toggle bolts, wings don't draw into wall cavity when screw is removed.

**9. REMOVABLE STRAP TORQUE BOLT** (drywall)

# Tools



1. Shelves
2. Shelf standards
3. Shelf brackets
4. 2½-inch level
5. 2½-inch flathead wood screws (for attaching standards to wall studs)
6. 1½-inch flathead wood screws (for securing brackets to shelves)
7. Hammer
8. Phillips screwdriver
9. Tape measure
10. Cordless drill with 3/8-inch diameter drill bit
11. Stud sensor and pencil

For an archive of *Homeowner's Handbook*, trace scanning a link to change a lockset go to [www.thisoldhouse.com](http://www.thisoldhouse.com) or America Online Keyword: This Old House and select "Homeowner's Handbook" at the find-how section.

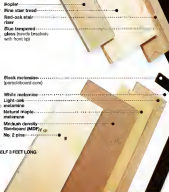
# Buyer's Guide: Shelving

**S**helf standards and brackets accept almost any kind of shelf, so base your choice on both aesthetics and strength. Here's how to deal with strength. First, determine the collective weight of the items to be placed on the shelf. Framed photos, knickknacks, and stuffed animals don't weigh a lot, but books do. The average telephone book weighs over 3 pounds, a standard college dictionary 4 pounds, and a year's worth of *TIME* magazines a robust 10 pounds.

Consult the chart below for how much weight a given shelf material will support. It's based on a 3-foot shelf, supported on both ends; the shelf can support the weight listed without sagging more than 3/8 inch immediately (and another 3/8 inch over time). This deflection is acceptable on a 3-foot shelf, though the eye will notice as little as 1/8 inch. As you can see, hardwoods will support more weight, but you can also increase the thickness of softwood to 1 inch or thicker (pear boards are good for this) or space standards closer together (every 10 inches) to handle a heavier load. Another effective way to increase the strength of a wood shelf is to glue and screw a 1x2 hardwood edge (pl) across its front.

## MAXIMUM RECOMMENDED WEIGHT FOR 3/8-IN.-THICK SHELF 3 FEET LONG

|          |         |
|----------|---------|
| Red Oak  | 300 lb. |
| Pine     | 200 lb. |
| Poplar   | 120 lb. |
| MDF      | 80 lb.  |
| Melamine | 50 lb.  |



# LETTER FROM THIS OLD HOUSE

## Why Not Here?

BY RICHARD TRETHERWEY



TOOE planning and buying expert Richard Tretrewey shows the way European countries have developed energy-efficient products for the home.

**A**t least once a year, I fly off to Europe to attend conferences about building technologies being developed in the Continent. Often I find that Europeans are outpacing Americans in this field. For example, they were the first to use plastic for glazing pipes, and they're constantly refining doors, even efficient ways to heat and cool houses. I always come back thinking I must have a thing or two from our friends across the Atlantic.

The reason Europeans are ahead of us is simple: money. Europe is filled with people. Germany, for example, is very densely populated. In area, it's about the size of New England, New York, and New Jersey combined. But while that nation of 82 million people holds 41 million people, Germany supports a population of 82 million people in more. In Germany, as in much of western Europe, there are no oil reserves and there's very little natural gas. Wood for heating is scarce, and even oak and maple have been mined out. Nearly all the raw materials come from outside markets.

As the same time, the prevailing attitude is that a house is a permanent structure, built not just for yourself but for your children and your grandchildren. It's not meant to be turned over for profit, the Schickel house is the Schickel house for generations, and some owners have mortgages that take a lifetime to pay off. So when they construct a house, they consider not only which materials are readily available but which ones will last the longest and use the fewest natural resources now and in the future ages.

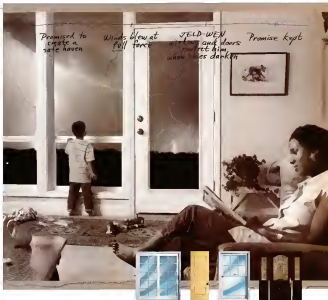
That's why so many of their houses are made from concrete block. It's inexpensive, easy to get, and retains heat in the winter and cold in the summer (just like wood, which can be a challenge when it comes to energy efficiency and cost). On the other hand, Europeans will pay a premium for energy-efficient products. Their cleverly designed concrete windows are not the least expensive out there, but they close as tight as a refrigerator door. Turn the handle to one position and the top lifts or just enough to vent late without creating a security concern, turn it the other way and the window cranks wide open. Compare that to America's double-hung windows, where for challenge has always been how to seal the gap between the two parts.

Meanwhile, the U.S. population is growing, our natural resources are dwindling, and our infrastructure is aging (think Blackout of '03). We don't seem to be doing enough to reverse this trend. Many people don't realize that at the rate the world is consuming gas and oil, we could run out in our children's lifetime. If we thought more about how our cities and houses will survive into the next century, when we can do so conservatively, and while our energy will come from its own 10 years, we might be developing better materials and technologies than the rest of the world. Europe may be the Old World, but it's looking to the future when it comes to houses. ■

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This Old House

**TV Project**

(Concord, Massachusetts)



With TBS' second season of *This Old House*, a fresh look at the school (see page 100), a fresh look at the school (see page 100), a fresh look at the school (see page 100).

HOW DO YOU TURN A  
CRAMPED BARN LOFT  
INTO A COMFY BEDROOM?

# POP THE TOP



BY MAX ALEXANDER  
PHOTOGRAPHS BY REYAN WALKER





Jim points out ideas for new lighting and says that the new design will be a lot better than the old one.

over the new attic floor. "That's good enough for code, but it's not good enough for me. I'd be surprised if we even had an eighth-of-an-inch bounce—just enough to be flexible."

#### ADDING GORMIES

To gain more headroom and light under the gabled eaves of the second story, Cranley has designed two dormers—a small one on the bathroom wall and a larger one with a window in the bedroom wall. The bedroom dormer, which will overhang an eave and porch, is more than 11 feet wide—dominating nearly half of the sloped roofline on that side. It also runs across about 15 square feet of window, gives a French door. "That's a lot of new from an attic bedroom," says Cranley, who adds that the dormer also satisfies the egress requirements of the code.

From the outside, the hip-roofed dormer blends well with the old lines and of the gabled roofed cottage.



Because dormers are not traditional beam elements, Cranley is careful to integrate them with the existing roofline. "Big problems in the design would be too bevel-like," she says. Instead, her hip-roof design gives the dormers a low profile, and also serves as a release. "Connections are often about making trade-offs," says Cranley, "but in this case the hip roofs were the best way to go from both a practical and an aesthetic standpoint."

#### REWORKING THE STAIRS

Stair layout is another major consideration. A straight staircase would have been too steep for Janet's parents, Jacqueline and Len. Luckily, so Cranley designed a double flight with a landing, adding a skylight directly above for maximum illumination. Cranley points out that although skylights can divert from historic houses, this one won't be noticeable on the back of the house. "In this case, getting the light is more important," she says.

Just as important is getting the stairway right. Landings under stair ceilings are common head bangers. In order to meet the code requirement for height between the landing and the ceiling, Janet called in the edge of the first story, Tom and TOM measure the space from above when they use their calculator. After about 10 minutes of number crunching, they arrive at a combination of landing depth, stair rise, and tread run that satisfies all the code requirements while giving the Buckleys a comfortable stairway—including a nice built-in extra wide landing.

"All in a day's work," says Tom, as he quickly works off cuts on the stair run. "But that project really demonstrates why a conversion can be tricky. It's hard to meet code in these tight spaces, but these codes are there for a reason. If the job does properly, you'll have a space you can really live in safely." ■

#### Go behind the scenes of the Second cottage

Watch the work on live Web cams, visit the homeowners and contractors, and get the inside story on the projects used to go from [www.thisoldhouse.com](http://www.thisoldhouse.com) or [PHOTOS: COURTESY OF THE PROJECT; DESIGN: JIM CRANLEY; PHOTOGRAPHY: JIM CRANLEY](http://AmericaOnline Keyword: This Old House</a>.</p>
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Change a few basic features for a fresh, new look

# fireplace face-lift

Some fireplaces are finely crafted showpieces that are natural focal points in a room.

BY JOSH GARBER

Others—particularly in houses built or remodeled after World War II—wear a bland mantel and cheap brickwork. Fortunately, fireplaces are not nearly as permanent as the chimneys they adorn. You can easily transform a drab one with some basic cosmetic changes. You can replace the mantel with one that's more appropriate or interesting for as little as a few hundred dollars. Opting for a total makeover—replacing mantel, hearth, and masonry that surrounds the firebox—typically runs a few thousand dollars. Either way, it's an upgrade that can enrich the look and feel of your entire home

## HISTORIC REPRODUCTION

**BEFORE:** This bland 1940s fireplace sat out of place in a historic New England home.

**AFTER:** A new painted firebox and a mantel with a painted overmantel replicate what fireplaces typically looked like in the early 1930s.

**WHAT WAS DONE:** The whole chimney needed replacing and the firebox was retiled at the same time. The popular mantel, shelf, and overmantel were custom built and painted colonial green. The bricks on the surround and hearth are recycled sidewalk pavers, which give the fireplace an aged look.

**BIGGEST CHALLENGE:** Thick decorative molding around the inner edge of the mantel broke period authenticity, but the chunky woodwork required a larger surround between the firebox and the mantel to meet code.

**COST:** About \$5,000, not including the chimney.



## ARTS AND CRAFTS STYLE



**BEFORE** The bland brick fireplace with a simple mantel and a dark, possibly stone or brick, surround.

**AFTER** The fireplace was renovated to fit the rustic and handcrafted style of the Arts and Crafts era.

**WHAT WAS DONE:** The chimney was given a well-worn look and Craftsman-style decorative tile moldings of painted plaster. A new hearth and surround of ceramic tiles that have a stoneware look were installed, and a new mantel made to match the old function's style.

**BUDGET CHALLENGE:** The stoneware pattern on the chimney visually mimics the look of the stoneware pattern on the fireplace. The chimney is made up of bricks, while the ceramic surround is.

**COST:** About \$5,500



## SALVAGED ANTIQUE



**BEFORE** When a storm dropped an extra foot in their chimney, the homeowners broke through plaster walls in their dining room to discover an old, shabby fireplace with a simple mantel.

**AFTER** An 1800s quarter-sawn oak mantel with a beveled mirror to the over-arched in an arch and Craftsman-style tile surround that suits the period of the house. The stoneware tiles and one-piece surround were new.

**WHAT WAS DONE:** The damaged fireplace was rebuilt and the hearth and surround were installed. Then the antique mantel, needing only minor repairs and cleaning, was installed.

**BUDGET CHALLENGE:** Because it had originally been used with a much smaller surround, the carpenter had to craft and color match a 4-inch return where the mantel meets the surround.

**COST:** \$1,750, including the fireplace.



## Choosing a Mantel

The design of the mantel—the decorative frame around the stone or brick surrounding the fireplace—should harmonize with the style of your house. In a traditional setting, a mantel may have additional woodwork, called an overmantel, above the shelf (see "Anatomy of a Fireplace," right). But if your house was built or remodelled after World War II, the fireplace may have simple brickwork and a simple, plain mantel. That gives you a blank slate to select a look you like—as long as it fits the size of the room. Then you can choose from three replacement options.

### A CUSTOM DESIGN

You'll get the most design flexibility in a wood mantel that's built to your specs—a job that costs anywhere from \$1,000 to \$5,000. There are specialty shops that do the work, or, if you're undertaking a large renovation, your carpenter might be able to do the job. They either work from an architect's drawings or

### ANATOMY OF A FIREPLACE



THOMAS H. HARRIS/STUDIO CITY PHOTOGRAPHY

PHOTOGRAPHY: JAMES HARRIS AND GARY HARRIS

create something that matches the existing woodwork with input from the homeowners, says Stewart Jantz, the Frank expert on *The Old House's* *Madison, Mass.* project. In either case, they'll usually take care of the installation as well.

### A SALVAGED ANTIQUE

If you're not sure if you're going to use an antique mantel in a good way or go, here's how to find your way. Look for mantels of wood or tile. Just some stone mantels that were taken from buildings slated for reuse or reuse. Many have hand-carved details, which can make them \$750 to \$1,000 per the item a bargain. Expect to pay another \$500 to \$1,000 to have someone install it, though, and the labor costs can grow if the work isn't an exact fit for your fireplace.

Other mantels are greatly narrower than what modern fire-

places—and fire codes—require. "Sometimes we can rework an old wood mantel by adding more pieces to make it larger or by ironing the lead or legs a bit to make it smaller," says TCUH general contractor Tom Silva. "But we can't alter it too much because the proportions are important. You're always better off if you can find a mantel that closely fits the opening." To make sure a mantel will fit, shop with the measurements of your firebox in hand.

### A PREPARED MANTEL

If time and budget are a concern, prefabricated mantels are the easiest way to go. Whether wood or masonry, they're available in a wide variety of materials and well-proportioned styles, from traditional to contemporary. Home centers and hardware stores often sell them, starting at about \$100 for a simple painted poplar man-

JOHN, MARY, CAROLINE, JACK, BRIGIDAN & CHARM KILPATRICK  
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# Ask



Andersen 

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## PREFAB CAST STONE



**BEFORE** The petate mantel set on the floor-looking back surround and built-in a throwback to the 1970s.

**AFTER** A new cast-stone mantel bridge architectural style to the house and across the mantel on the walls.

**WHAT WAS DONE** The old mantel was removed. Then a wood overmantel was installed that matches the petate frame surrounding the room. Next the stone pieces for the mantel and surround were installed by a mason. Green concrete tile was used for the surround and part of the hearth.

**BIGGEST CHALLENGE** For some, there's no reason the homeowners wanted the old mantel removed, but that would have meant completely rebuilding the fireplace. So, to avoid the additional stress and expense, it was simply wrapped in cast stone with a tile layer to seamlessly attach the new surround and surround. It also provides additional heating.

**COST** About \$2,500



## EXOTIC TILE



**BEFORE** The fireplace with its narrow shelf and blue-marbled concrete surround was in keeping with the 1930s flavor of the house, but didn't stand out.

**AFTER** Now adorned with Moroccan tiles, the fireplace makes an eye-catching focal point.

**WHAT WAS DONE** Preassembled sheets of mosaic tile were affixed to the old mantel and surround. The tiles were built out with fiberglas and then sealed and finished with edge tile. The arched concrete opening was painted black.

**BIGGEST CHALLENGE** The repeating tile pattern didn't correspond exactly to the width of the fireplace, so a strip of fiberglass tile was installed down the center of the fireplace to fill the gap, which created a more interesting look centered on the shelf and sides.

**COST** About \$4,500



and going up to \$3,000 for a subway or oak one with intricate woodwork. For the widest variety of choices, check the Internet, where dozens of specialty shops sell stock surrounds in a variety of standard sizes. Some will even customize their offerings to fit your needs. They range in size from \$300 to \$5,000, depending on the material, size, and design complexity you choose.

Prefab wood mantels typically arrive in three or four pieces. Some units, called adjacent tile mantels, come as three flat, plain pieces that can be trimmed up to 3 inches and then finished with decorative details such as medallions, plinth blocks, and dentil moldings. A painted wood mantel is the easiest to install. It may need to be shimmed all its plumb and level, then it's fastened to the wall studs with cornerbracket screws. Small gaps around the perimeter can be filled in with caulk and painted. If a wood man-

tel is clear finished, the job is much less forgiving. Since you can't easily penetrate gaps externally, the material may need to be sanded and shaped to fit tightly against the wall, and a big gap may have to be shrouded to compensate for an uneven floor.

When it comes to prefab stone mantels, prices vary considerably. As the high end are imported hand-carved marble and limestone models for \$15,000 to \$20,000. A much less costly option—\$300 to \$3,000—is a caststone mantel, which is molded from portland cement and crushed stone and/or a fine sand. Most can arrive mantel stone in three or four solid pieces (each of which can weigh hundreds of pounds) and are installed with screws or masonry ties. Some companies mold hollow cast-stone mantels from fiberglass-reinforced concrete with a stone-like finish; these units are similar in weight to wood and cost about the same as cast stone. Installing even prefab-

factory mantels is tricky, though, because there's no tolerance for error. Assembling the pieces and securing them to fit properly against uneven walls and floors is best left to a professional.

### Changing the Hearth and Surround

A less-than-inspired hearth and surround can easily be removed and replaced with something more appealing. If you replace your mantel, consider upgrading the face of the surround, too. A formal mantel should

### CONVERTING TO GAS

Many homeowners are switching to gas, for environmental reasons or simple convenience. Installing a gas burner in The Fabrics Store you'll never have to shovel ashes, heat wood, or clean out again. If you choose a vent-free model, it can also save the expense of retubing a chimney that's not working.

Today's gas inserts look more like real fires with yellow flames flaring over black-and-log-like pieces of wood (spaced) sitting above a bed of fake embers or glowing coals set in a metal basket. With gas, though, the fire starts with the touch of a remote control, which also shuts the flame size. Inserts typically cost \$400 to \$7,000 and burn either natural gas or propane, which a plumber brings to the house using flexible copper tubing at an additional cost of a few hundred dollars. You can vent the exhaust up the chimney—the draft of which pulls the most authentic-looking flames—or select a vent-free option, which works with the damper closed and burns more efficiently. (Check local building and fire-safety codes for restrictions on vent-free fireplaces.)

## MAHOGANY BEAUTY

**BEFORE:** Though rare, a polished pine mantel didn't jibe with renovation plans to turn the room into a study with dark wood furniture and built-ins.

**AFTER:** A new mahogany mantel with built-in bookshelves and a decorative granite surround and hearth makes a handsome statement in the new room. A new gas insert (see "Converting to Gas" page 85) almost burning coal.

**WHAT WAS DONE:** The old mantel was removed, the granite hearth and surround were installed, and a new mantel was custom-built to the dimensions of the old one.

**BIGGEST CHALLENGE:** Papered walls and a clean-lined mantel mean this job particularly tricky because there was no way to fit gaps with caulk or patch wall damage with spackle. So only after the hearth and surround were installed did the woodworker take his measurements for the new mantel.

**COST:** About \$3,000, including the gas burner.



have a floral tile or stone surround to match.

Fire codes state that the surround must be 6 to 8 inches thick—depending on the thickness of the mantel—from the fireplace. In addition, the hearth must extend 16 to 20 inches in front of the fireplace, and 9 to 12 inches on either side, depending on the size of the fireplace opening. It must be made of a noncombustible material, whether ceramic tile, stone, cast stone, or even plaster. Stone is a popular option, particularly black Zirconium granite, which looks a lot like traditional slate but doesn't scratch as easily as stone does.

Replacing the surround and hearth—rebuilding materials and removal of the old work—means the project from about \$1,500 for tile to \$3,500 for project stone. If you want to tackle the job yourself, the simplest solution is to first pay off the mantel. Then, leave the existing surround in place (if it's in good condition)

and an new masonry slab as close as it can to a layer of plaster over the existing masonry, slightly overlapping the inside perimeter of the fireplace. (For step-by-step instructions, see *Homeowner's Handbook*, December, 2003.) To remove the old hearth, you can rent a demolition hammer with a chisel to chip away the existing stone or tile and mortar, leaving the concrete base and fireplace floor intact. To make the hearth as flush with the floor, you may have to build up the base with an additional layer of concrete. Then lay the masonry or tile hearth pieces with spacers, spacers, and mortar, as needed. ■

For step-by-step instructions on installing a new mantel, go to [www.ShouldHouse.com](http://www.ShouldHouse.com) or America Online Keyword: The Old House and type "mantel makeover" in the search box.

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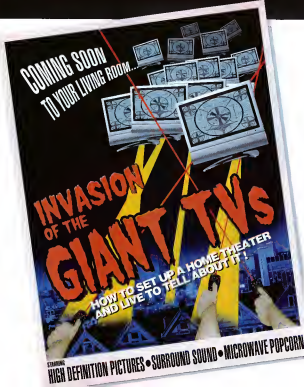
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## Setting Up a Home Theater

The room, the gear,  
the installation—  
here's what you need to know

BY DAVID SEITZ

There are no hard-and-fast rules for what turns a room with a TV into a full-fledged "home theater." At the very least it's a bigger, better picture with bigger, better sound. But it isn't just electronics junkies and lottery winners who are going in for home theater systems. Families who want a more engaging cinema experience—minus the overpriced popcorn—are upgrading as well, thanks to affordable options for nearly every budget.

To set up a home theater in your house, you'll first need to prepare a room, whether it's the basement, the attic, or the

bedroom of a college-bound son or daughter. Then you'll need to acquire the necessary components: TV, receiver, DVD player, speakers. Finally, you'll have to put it all together. Throughout the process, remember that in the end what's important is not sozzly new technology or killer specs but how comfortable and enjoyable your home theater is. And whether there are enough Milk Duds.



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**FAMILY ROOM**

The centerpiece of this cozy room and also a focal fire place, now it's a flat-screen television. The picture was taken during a home theater installation.

**FINISHED BASEMENT**

To construct the sound, including punchy bass, sound-treated walls are needed by some and lots of head-wind noise.

**MULTIPURPOSE ROOM**

Built-in ceiling that houses the television set and other electronic devices. The home theater is built into the open-plan living area.

## Preparing the Room

**W**hile a properly outfitted room, even against-the-line home theater equipment will be lackluster. For those with a million-dollar budget, this means thick concrete walls with no windows, solid-core doors with pinch-of-wonderstopping, and sound-absorbing baffles on the walls and ceiling. But for the rest of us who just want to retrofit a corner of the basement or the kids' room, there are some simple things that can be done to improve any room's acoustics and lighting.

Start with a rectangular room with as few doors and windows as possible. Open floor plans and vaulted ceilings make it more difficult to keep the sound effects as intended the hearing of the neighbor's dog out. If the room is oddly shaped, map out a rectangular (or at least symmetrical) space within it to serve as the home theater.

Next, cover the floor. Bare concrete, wood, and tile reflect sound waves, which can muddy a movie's dialogue and make the sound effects harsh. Try adding carpeting or an area rug and padding the room with upholstered furniture to help absorb excess sound waves. The same goes for walls and windows—a painting, bookshelf, or drapes placed at the sides of the room will absorb unwanted noise. Thick curtains over two doors are doubly smart because you also want your home theater to be dark—too much light increases screen glare and reduces contrast. Keep in mind, however, that wiring at a highly technical or an otherwise dark room will eventually strain your eyes. Installing dimmer switches on lighting fixtures will help you find the happy medium.

For help finding home theater designers and specialists in your area, contact the Custom Electronic Design & Installation Association ([www.cedra.net](http://www.cedra.net)).

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"I spent \$2,342 on violent and suggestive video games."

## Selecting the Components

Once the reins are prepared, you're ready for the next part, the electronics. The six basic components you'll need are a television, a receiver, speakers, a DVD player, wires, and a remote control or two (or three). When you go shopping, take along a familiar DVD with which to audition the equipment—something that will really push it, like *Jurassic Park* or *Independence Day* (in other words, leave *Jaws* out of town). If you can't see or hear the difference, don't pay for it; price alone can be an unreliable guide to quality.



### TVs

There are two things to pay attention to when buying a television: shape and size. To watch movies in their original widescreen format, you'll need a TV with a rectangular-shaped 16:9 aspect ratio rather than the traditional square 4:3. Besides, go for the largest screen you can afford. If there's a probably the best minimum for optimal viewing, the distance between the viewer and the screen should equal about three times the screen size. So a 46-inch TV is best viewed from a distance of 16 feet (5.0 meters). Figure out where the television and seating will be located and calculate screen size accordingly. And remember: Whatever TV you choose, use sum it to make sure it will fit through the door.

► **Carved-in tube.** Surprisingly, old-fashioned CRT sets have among the sharpest pictures—and often the lowest prices (\$650-\$1,200, versus flat-screen CRTs' average of \$1,500 to \$2,500). But paid the curved edges of older models, not most can display the expansive formats of DVDs (although sometimes with slight cropping of the image). Unfortunately the tubes become less long and heavy to make manufacturing with larger than 42 inches practical.

► **Real projection.** So called big screen TVs offer the most screen—up to 60 inches—for the money. They produce near-CRT quality in a much slimmer package while retaining relatively inexpensive (\$1,500 for a 45-inch). The drawback is that the picture may appear obscured when viewed from an angle.

► **Plasma-screen.** These TVs are so light and thin—only 2 to 3 inches deep—you can hang them on the wall. They're also expensive (\$1,500 and up). And while these models are as sharp and bright as CRT displays, heat-rising stages may have a tendency to blur. Also be aware that whenever you watch traditional broadcasts, you'll have to put yourself virtually on each side of the picture (or distort it if you use the screen's function).

► **Front-projection.** If you want virtually unlimited screen size—and have a virtually limitless wallet—this one's for you. Front-projection sets send the picture across the room to a screen, much like a traditional movie projector. Prices range from \$1,000 to well over \$50,000.

A note on HDTV: high-definition television is a type of digital signal that carries a more detailed image and is associated with surround sound information. All of the new televisions on the shelves is HDTV-capable models (though you may need a separate HDTV-decoding tuner, which because of their higher screen resolutions can be viewed from a much closer distance—about half that of a traditional display). The FCC recently decided that all television programming must be broadcast in digital format by 2006.

### Speakers

To reproduce the authentic cinema experience at home, you need not only the most components but also the audio ones—specifically five speakers and one subwoofer. This setup is based on Dolby Digital 5.1 technology, which breaks down audio into six "channels," each intended for a separate speaker: dialogue is one of three front speakers, action sounds to a pair of rear (or "surround") speakers, and low-frequency "end-of-the-world" sounds to the subwoofer. For information on how to position these speakers, see the Backchannel on page 36. Speakers built by the same manufacturer will tend to have a similar timbre and sound good together. Listen to several models and choose the one that sounds the most natural to your ear. A speaker that overcompensates every sound effect can get old over the course of a two-hour movie.



► **Wiring.** Wiring is a good indicator of how loud a speaker can play without distortion, but with enough toppers. Who doesn't want to be seated in an 8-by-10 room? Instead, choose speakers that are closely matched to your room's acoustics and channel wiring. That means that the speakers ought to be fixed by the room's being up close. Don't worry about small differences in wiring; to double return, you need four, not two, lines (the power).

► **Size.** Although some speakers are available in 4-, 6-, 8-, and 10-inch designs, stick with standard 8-inch units. The lower the size rating, the more electricity needed to generate the same volume, which can cause the receiver to overheat. If you happen to fall in love with the sound of a 10-inch or 8-inch speaker, at least make sure that the receiver is compatible.

► **Magnetic shielding.** Speakers located within a few feet of a CRT television should be shielded to prevent their own interfering with the picture. (Other types of TVs are safe.)

### DVD Players

► **The basics of programming.** Options offered by your region or satellite TV provider aren't sufficient. It's vital to know you can always get out to the other side to grab a DVD.

► **Progressive-scan DVD.** It's worth spending a little extra for a DVD player with the feature (\$150 and up). Unlike traditional line-based scan, which paints every other line on the screen and then goes back and fills in the rest, progressive-scan paints them all at once, resulting in a smoother picture. And if

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"I had \$23,000 worth of liposuction."





you don't want an interruption during multiple-disk movies, get a player with a disc changer.

► **Digital video recorder** When rated digital HDAs, such as TiVo and ReplayTV (\$200 and up), with much the personal computers, recording programming from cable or a satellite dish onto a hard drive. Newer models can even burn copies of a movie or television show using an integrated DVD recorder (\$1,000).

► **Videocassette recorder.** Unlike DVDs, VCRs don't have advantages or sound-sound capability, but don't drive the old one out just yet. Discount DVD manufacturers haven't agreed on a universal recording format, videocassette remains the most reliable and convenient medium for recording movies.

► **Video outputs.** For the sharpest picture, choose a player with Component Video (a high green and blue RCA jacks) or S-Video (a round jack with four pinholes) outputs rather than lower-quality Composite Video (one single yellow RCA jack). Just make sure your TV has inputs to match.

## Receivers

How does each sound know where to go? That's the receiver's job. The receiver decodes signals from the inputs (DVD players and the dish-cable receiver) and routes them to the proper outputs (speakers and speakers). Although the differences between them, especially priced models, can be subtle, there are a few important variables to consider.

► **Remotes and sound formats.** It's a common belief a device that is Dolby Digital 5+ compatible—that's the current standard for most DVDs. If you're thinking long-term, take note, consider Dolby Digital Surround EX or Digital Theater System (DTS). Instead of six channels of audio, these formats allow up to the signal into seven or eight channels (for which

you'll need seven or eight speakers), which promises to create an even more realistic listening experience. Instead of choosing between the competing formats, pick a receiver that can process both (\$1,000-45,000).

► **Amplifiers.** While most receivers come bundled with a pre-amp to equalize the audio signal and a power amp to boost it, there computers can also be purchased separately. Stereo power pre- and power amps give you the ability to run truly line-level and upgrade individual speakers and will enable you to generate superior sound, especially at high volumes. But the truth does not add up (\$1,000-\$10,000 per unit).

► **Power.** Whether the amp is integrated or not, make sure you've got a monitor that supplies at least 100 continuous watts (that peak) with per channel (the letters "RMS" should appear next to the ratings label) and has enough outputs to connect all of your speakers.



## Remotes

Remote controls have become surprisingly advanced—you can spend thousands of dollars on a voice-activated remote that will dim the lights, start the movie, and fire up the popcorn maker. If you simply say "please." But there are also less expensive devices that can shut down on coffee table clutter. (Whatever remote you choose, remember that an infrared-keypad or beeper remote will make it easier to operate in low-light situations.)

► **Universal remotes.** These can't pro-

grammed to control hundreds of devices from a variety of manufacturers, so little setup is required—just setting and zap. They're also useful as replacements for lost remotes. But they become obsolete as soon as new gear hits the market (\$20 and up).

► **Learning remotes.** More adaptable are learning remotes (\$20-\$250), which use "copycat" functions from other remotes by reading and mimicking their infrared signals. Most can operate up to 10 separate devices and have the ability to store "memory"—usually command sequences that trigger several functions at the touch of a button.

► **Radio frequency/infrared.** If you're going to stash your equipment in a closed cabinet, opt for a radio frequency-capable (RF) remote rather than a standard infrared (IR) one. IR's waves travel through doors, walls, even floors, and the remote doesn't have to be pointed in any particular direction. If the components you need to control aren't RF-equipped, choose a ready system that allows you to retrofit it equipped with self-adhesive RF receptors.

## Wires

Wireless technology isn't yet refined enough to consistently connect hi-fi/sound sound equipment, so the best bet is you'll need to throw into your mix some wires and cables. The prime mugs here is a wire that with any other components—then it's a deal to over \$1,000—but don't just assume that cheap gold- or silver-plated wires are the way to go. The key is a good cable's ability to transmit the signal it carries from interference—so say the best—without ones you can afford. For video cables, choose those rated at 75 ohms, a necessity for transmitting HDTV signals smoothly. For speaker wire, opt for 16 AWG (gauge) copper-free copper coating intended specifically for audio use. If aesthetics are as big a concern as performance, consider the speaker wire, which is as thin as a credit card, flexible enough to turn corners, and ready to be mounted on walls and ceiling and papered or painted over. (Glossy low-profile interconnects are also being developed.) Regardless of the type of wires you use, when you plug in, make sure that the connections are clean and snug.



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"There are 3 warrants for my arrest. One of them involves smuggling."

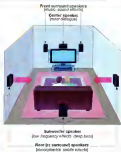
## Setting up the System

The idea is to make your home theater feel as much like the real thing as possible. The display should be front and center, not off to the side so people have to turn their necks, and stay level. Filmmakers typically play to the center seat 10 rows back, or home, the tradition is about three times the diagonal dimension of the screen for traditional TVs and one and a half times for HDTV images. Speakers sound better when they're on stands or mounted on the wall rather than on top bookshelves or cabinets. The three front speakers should form a line with the TV, parallel to the seating area; the two rear speakers should be positioned opposite each other on either side of the listeners, slightly above ear level. It matters less where the subwoofer is placed, but for the best rumbling effect, put it on the floor behind the seating area or against a wall.

When anchoring your gear, make sure there's at least 3 inches between the back of the components and the wall or rear of the



Visible under stress: After this home theater made the movie *The Old House* (next door to Windows Media), it's finished in a variety of facility arrangements.



cabinet to allow for easy installation, servicing, and ventilation. Receiver gear sits the most heat, so they need to go on top of the stack or on their own shelf with at least 2 inches of headroom and a clear path for heat to escape.

Avoid handling wires and cables or placing them near power cords; both practices will increase interference and decrease signal quality. And keep them as short as possible (but never cut them up with a hand saw). Before you run speaker wires down to their final length, test the equipment to make sure everything looks and sounds great. ■

### Watch the show in style and comfort

For a look at seating ideas for your home theater, go to [www.theaterdesign.com](http://www.theaterdesign.com) or [AmericaOnline](http://AmericaOnline). Keyword: **The Old House** and type "theater chair" in the search box.

## All-in-One Systems

If installing all of the components individually seems like too much of a hassle, you can always buy it simple and pick up a home theater-in-a-box (\$250-\$1,000). In one bulky package you have, you'll get almost everything you need for a basic setup—an integrated receiver/DVD player, a couple of sets of speakers (including a subwoofer), even the wires to connect everything. (You provide the TV.) Besides being extremely easy to install—just unplug and plug in—all-in-one systems eliminate the need to figure out whether components from different manufacturers will be compatible. One caveat: You'll have limited upgrading ability. Depending on how integrated the system is, you might have to throw everything out just to get a better DVD player.

Home theaters in a box, like the Lofidelity 15 system from Bose (\$1,599), have almost all the components you need. You just add the TV.



PHOTO: © BOSE CORPORATION

## Identity theft.

It can take your good credit rating.  
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Uncovering the original details in an Arts and Crafts bungalow

# RETURN OF A SOUTHERN BEAUTY



**TOP:** Nearly a century's worth of exterior neglect and truly remarkable on the exterior but hides the home's beautiful Arts and Crafts details.

**ABOVE:** Painted historical yellow with sage and brick-colored trim, the bungalow's exterior was spruced up with an antique leaded glass door, a "Judy" light fixture salvaged from a South Carolina Craftsman house, and two friendly bats. The injured concrete columns are original—they were just cleaned up.

No strangers to monster projects, Kara O'Brien and Paula Rose have been hobbyist house restorers for seven years, turning fixer-uppers into handsome homes and "flipping" them. But when they took on a rundown bungalow in Kirkwood, a section of Atlanta experiencing a revival, they knew no amount of resale profit could make them give it up.

For five years they had walked past the house in their tree-lined neighborhood, thinking it had potential. So when the property went on the market, they took a peek.

Built in 1912, the 4,000-square-foot Arts and Crafts home had five bedrooms—three downstairs and two upstairs. And although it was filthy and neglected, details like five-panel doors and handsome period hardware were still in evidence. Off a central foyer/living room, the smoking parlor contained one of a pair of stained-glass windows in a tulip pattern (the other was MIA), and in the dining room a triple bay contained a larger stained-glass window with a western motif. "When I walked into the dining room, I didn't need to go any farther. Despite all the grunge, the sun came through the 'western window' and I was hooked," Kara recalls.



The dining room's beam-pile columns—refined of many coats of paint—are original to the house, as are the built-in bookcases, china cupboard, plate rack, and one-half of stained glass window that inspired the extensive renovation.

BY LAURA FISHER KAISER

PHOTOGRAPHS BY DEBORAH WHITLAW LLEWELLYN  
STYLED BY BRIAN CARTER



Custom-built cherry cabinets topped with black granite provide a contrast to the original white-pine floor. Shown from three levels of detailing in the kitchen. The island, topped with white marble, sits on a black. Roundback lighting supplements a central chandelier glow.

#### THE BIG COVER-UP

Indeed, every room needed attention. For starters, the master's window had been covered by a toilet sometime in its life. Warped fake-wood paneling begged nearly every wall. Garish orange paint covered the built-in sideboard, plate rack, and other woodwork in the dining room. A somewhat more acceptable color of paint was flaking off the exterior, and some of the dryboards were rotting beneath it. Another the detached rear plumbing had been updated in 40 years. Oddly, the place had acquired two fixtures, back-to-back, with blackwork etching over the cabinets. Most blackwork covered a wall in the living room. "There was a master living, here, and I think he must have had a lot of time on his hands," Kars says.

Unfazed, they suggested the place for \$180,000 and began ordering the changes. Steve Dimpsters likes Paula, a marketing analyst and self-taught designer, draw up the plans that would bring the home back to its 1912 glory. "Our goal was to make this home old again," says Kars, a writer. "And the more we worked on it, the more the house revealed." Not that this was always good news.

#### RETURN TO GLORY

When they peeked off the fake paneling, they discovered not only a bunch of 1970s rock posters still plastered to the walls but the reason someone had covered them up: The walls were in terrible shape

## Project Particulars

**HOMESWIRL:** Paula Kars & Kars Builders  
**TOTAL COST:** \$180,000  
**HOW LONG IT TOOK:** 9 months

**WHERE IT SPUNGES:** The kitchen opened its doors by doing all the work: bathroom drywall, waterproofing, dry-lay water-shielder, and interior design mistakes. This meant an over \$200,000.

**WHAT WOULD GO DIFFERENTLY?** Rebuilding the bathroom recessed shower from 1912 was a bore. The greatest was expensive, dirty, and labor-intensive—it took as long as the endless work.

**FINAL THOUGHT:** After all the repairs, this isn't back to the better of life. In discovering the house's secrets, work was an incredibly satisfying and creative process.



from water damage. Further evidence that the roof was that close to the day when a shinglehouse produced "water or waterfalls all over the house." In the bathroom, a 30-mile-wide beam was eaten through by termites; they replaced it with several beams and veneer lumber (GAL) beams. What's more, the house was underbaked—"It was a miracle that the termites hadn't collapsed," says Kars. So they heated up the cooking pots with more DSL beams.

Not they found glory to support them. A lot of stinger and sandpaper revealed beautiful beam-pine columns in the dining room. Tinted behind three corners of brick in the living room, near a full-size fireplace and a built-in bookcase. In another happy surprise, the master in the smoking parlor (now used as a study) turned out to be a brand correct design with an Arts and Crafts tile surround. As Kars and Paula worked their way through the house, they uncovered boarded-up windows in the loft, two ornate ceiling tiles in some of the rooms in front of the old 17-foot ceilings, stripped paint-covered heavy pine doors, and oak floors of pine and joints of ornate off-angled from window hardware.

And then there were the stained-glass windows. Local glass artist Tim Mize patched the bullet hole in the window panel on site. He then took the half-panel window out of the smoking parlor to create an oval in his shop. Mize also added the carving on several leaded glass windows and a newly installed leaded-glass front door that came from a historic Philadelphia home.

#### LEGACY FINALE

Intrepid spouses Kars, Kars and Paula found in a salvage shop

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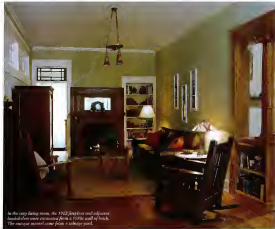
the perfect pair of 106-year-old oak columns to divide the new master bedroom suite—comprising a former sunroom and bathroom—into separate sleeping and sitting areas. Their carpenter, Atlanta-based Patrick Smith, added built-in bookcases underneath, which echo a similar feature in the living room.

Scoring architectural gems was a breeze, however, compared with their quest to restore the sunroom floor on the first-floor guest bathroom and on the porch. They set about mixing bags of portland cement and marble chips, only

## The Plans



The floor plan of the house has been restored nearly to the original, though a quarter new master-bedroom suite was created by knocking down the wall between the sunroom and a first-floor bedroom. And what is now the study was once a smoking parlor, while a new deck replaced a crumbing porch.



In the cozy living room, the 1922 fireplace and adjacent bookshelves were excavated from a 1930s wall of brick. The antique mantel came from a salvage yard.

See how decades' worth of houses transformed. Go to [www.thisoldhouse.com](http://www.thisoldhouse.com) or America Online Keyword: This Old House and select "All House Projects" from the "Services" Programs section.

Photo by Michelle

## GIVE A MING VASE A FIGHTING CHANCE.



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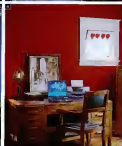
### GET THE FEELING



## TOYOTA

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toyota.com



1) Newly constructed arched doorway divides the sleeping area from the sitting area in the master bedroom. They also include one in the dining area. The room—its soft green and purple color scheme taken from a strong-pink pillow—is decorated with antique finds.

2) In the master bathroom, an antique window found on a salvage yard sits in light from the sun-flooded hallway. The firm has even designed by the homeowners, who designed off-the-shelf built-in vanity counter tops out by a hand stain master. Reproduction faucets and chrome-plated supports from the 1970s can join the period look.

3) An antique bed serves as the focal point in a first-floor guest bedroom, which is painted Williamsburg blue.

4) The study's arched walls were inspired by the half-painted window.

to discover they needed not four bags of chips but 35. After weeks of painting with a diamond-dust grinder—which costs for \$130 a day—they had beautiful board-and-batten floors, but the newly painted house was covered in a fine gray dust.

The rooms that changed the most dramatically were the kitchen, which means modern and vintage elements. They chose Mason-style cabinets in natural cherry to contrast with black granite counters. And they splurged on a cherry-wood double-door dishwasher because, Kari says, she also that you could "wash dishes on top and

store them in the bottom appendix to the last part of us."

They still shake their heads over involved mysteries like the rampant birdwork in the kitchen and living room, and the bull's head in the stained-glass window. There were plenty of redactions, including one they didn't expect. After agreeing to plant grapes along the property's wrought-iron fence, Kari realized that the "wrought" window actually depicts a grapevine. As with so much of the house, it was not quite what it had seemed—but maybe even more charming. ■

## Tell Us Your Story

Did you renovate your house and do most of the work yourself? Or, are you a pro? Tell us about your project. Please send copies of before and after photos, a floor plan (we cannot reuse any materials), and a brief description of the work you did to: **Win 2nd House/SP, 1181 Avenue of the Americas, 27th Floor, New York, NY 10020**. Your renovation is eligible for \$100,000 prize. Home is insured.



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BEST IN HOME TECH

# 20

## OF THE YEAR'S COOLEST TOOLS, GIZMOS, AND GADGETS

BY THOMAS J. BAKER AND SCOTT K. SCHILLING

PHOTOGRAPHS BY MARK VIKER

Those problem-solving engineers are at it again. We went in search of the year's best home-related technologies and found a host of innovations to make our lives easier and more comfortable. Here, on the following pages, are 20 of our favorites.



1

**HUBB'S L**

Laser levels are a dime a dozen. Olive Systems (\$150) is a sliver. Each 17-inch color-coded cube (the green one generates a different-shaped laser beam, while the blue cube is for level and the green cube the level individually or in combination to create, at will, a square, circle and level from an x-axis for cabinet layout. Ultralight, neodymium magnets secure the cubes to one another and to the self-leveling base.

[www.olive.com](http://www.olive.com)



2

**STRAIGHT CUTTER**

The circular saw has many variants. But making long, straight cuts isn't one of them. That's where the 62-inch Straight Cutter from Lumbermate (\$199) comes in. The system consists of a powered blade that attaches to any saw shoe and a 50-inch-long, extruded aluminum guide that fits a rail for the blade is guided to run on. Guide sections can be joined together for longer cuts. Just set the base on the guide rail and push the perfectly straight cut. Leave the base attached to the saw for overhead or angled cuts only. It works from full-depth cuts. Good to know: bases for routers and belt sanders that fit on the same guide rail.

[www.lumbermate.org](http://www.lumbermate.org)



3

**A BETTER HOW-TO**

The battery-powered Auto Mower (\$1,000) is a glutton for punishment. When the mower senses that it's running low on juice, it rolls over to its recharging station and plugs itself in. Two hours later, fully recharged, it's back to work. This mowtop action can keep a 16,000-square-foot lawn in perfect trim. Plus, we like it because it's a dead trigger for the Remco.

[www.automower.com](http://www.automower.com)



## 4 POWER TO THE PORTABLE

Lithium-ion batteries are common in cell phones and laptops, but Dremel is the first to put one of these long-lived batteries in a cordless tool. The 10.5-volt Lithium-Ion Cordless rotary tool (SR) performs as well as the corded version, with the same variable speeds (6,000 to 35,000 rpm) and virtually identical weight (14 ounces). Among the advantages: Lithium-ion cells don't get hot, hold a charge longer, can be recharged more times, and have no "memory effect"—you can save them at any time with no loss of capacity. The downside: The 3-hour charging time is a bit slow. [www.dremel.com](http://www.dremel.com)

## 5 UNDO YOUR MISTAKE, NOT YOUR BACK

A screw can be driven in a tight space. Fast-time, the handle runs out of turning room, you have to lift the tool off the job or back, remove the screw, and start again. The 1.6-inch Reflex Adjustable Wrench (EW) eliminates that frustration. When pressure is taken off the handle, the jaws open slightly so you can reposition the tool. When pressure is reapplied, the jaws tighten too fast. Which and how fast is triggered for faster, easier tightening and removal. [www.craftsmen.com](http://www.craftsmen.com)



## 6 IT'S A WASH

Past mistakes paint over in appealing colors and are great at hiding little defects it will surface. But they are a pain to clear. California Paints' new 3200 Super-Slick Ceramic Interior paint (\$20 per gallon) serves both purposes by incorporating hollow ceramic microspheres into its ultra-fine base. These hard little balls of air not only prevent the absorption of stains and initial abrasion, so marks wipe away without a trace. You don't have to worry about becoming moldy or mildewy either. The paint contains Monobest, an antimicrobial agent that inhibits the growth of these microorganisms. [www.californiapaints.com](http://www.californiapaints.com)



## 7 TWO-BIT WONDER

Good joints are joints strong. But electrically, they're not all that strong. They can't carry the full electrical load of the most demanding woodworker. Unless he's got the MicroBit Duo (EW), he's lost. (\$70) Just press it twice against the work, and two carbon-tipped, dual-point bits bore into the wood at 18,000 rpm. Release pressure, and the bits retract safely behind the brace, leaving no shavings behind. The bit's high speed solution ensures clean cuts, even in perforated and end-grain. [www.electrol.com](http://www.electrol.com)



## 8 HOME AUTOMATION MADE EASY

Forget to close the garage door when you left for work? No sweat. Just log on to your office computer or Web-enabled cell phone or PDA, and HAN's new Web-Land software (\$799) lets you do it remotely. The software gives you Internet access to any house system (such as security, lighting, or air conditioning) that is hooked up to an Internet camera (\$1,800-\$1,999) without an additional subscription fee. [www.han.com](http://www.han.com)

## 9 HIGH-TECH HEATING

Get about a foot thick. The Aqua-Master Q110 (SA 900) compresses air into the air space, heating, water heating, and ventilation in one package. A single boiler (available in gas- or oil-fired versions) supplies domestic hot water and the second bar (found in water- or fuel-fired versions) heats air via the Pelusa de Q110s and still air. The compact, energy-efficient appliance uses less electricity and fuel than three stand-alone devices, and it heats up with air conditioning and recirculates heating systems. [www.rebco.com](http://www.rebco.com)



# The Powerful House

## Making the most of your home's electrical systems

More than ever, the American home is filling up with appliances of all sorts, light fixtures by the dozen, and powerful security, entertainment, computer and communicative systems galore for 21st-century living. We love convenience, so we add the big-screen TV with the surround-sound speakers, and everyone in the family has to be online for work and play. But once things you've engaged in never before, the wires running through our houses may not be up-to-date and able to support our "youngster" lifestyle.

Wiser houses in particular can come up short on simply providing enough electrical power to run everything. In any home, there may be too few, there is more computer, but as way of taking them all in a practical or to each other. In the family room, it would be nice to have seven channels of movie soundtrack, but the walls lack speaker wires. Happily, however, there's a solution for every need, whether a house is 100 years old or still called up in a blueprint. You can find out better and on the following page how to plan for, upgrade and update your home's electrical and wiring systems. For all but a very few homeowners, the work involved requires a licensed electrician or specialists in home computer networks, security and entertainment systems, so be sure to hire proven experience in these areas. Equally important, however, is knowing what your appliances are so you can make choices that make sense for your needs.



## UPPING THE AMPS



Since many homes were built before the start of the 1970s and many of the electrical systems were never upgraded, it's a good idea to check the size of the wires in the underground or even running an electrician's equipment. If the lights don't work a big appliance goes on, your house might need a service upgrade.

To find out more about your electrical service, take a look at your main panel, the box that contains the circuit breakers. For starters, it's a common mistake that the breakers are not labeled with the correct amp rating. You should also check the size of the wires in the underground or even running an electrician's equipment.

If you already have breakers, take a look at the size of the wires, which is typically located at the top of the panel. The number on the breaker—60, 100, 150, 200—indicates the level of service or ampacity of supply. Check labels that haven't

been upgraded are likely to have 60- or 100-amp service, while a house with 150-amp service probably has enough power, unless you're having problems or are experiencing a major expansion. If you already have 200-amp service, you should have more than enough power for your present and future needs.

If it's time to upgrade, hire a licensed electrician who comes with strong recommendations from someone you know, and who can walk you through the entire process. The job may require an electrical permit, and the power company may also have to run new lines between your house and the nearest power pole or transformer. The electrician will also include disconnecting and pulling out the corresponding old-wiring a 200-amp panel, which will be somewhat larger because it has built-in circuit breakers than a 60- or 100-amp unit, and that's the other benefit of upgrading your system. Besides being more power for all your needs, you'll be able to have more on-line circuits—very useful if you're adding a major appliance or more lighting or outlets, or if you're putting in an outdoor. And when it's time to power up your new power, it's much more than a 200-amp service, but you can expect to spend between \$1,500 to \$2,000 to give your home power to spare.

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## WIRED FOR CONVENIENCE

Besides tapping your home's power supply, you can also tap into electrical outlets for low-voltage—dimmer-light fixtures, undercabinet lights, night lights, and more. If you're looking for a more sophisticated lighting solution, you can also tap into your home's main electrical panel. This is a more involved project, but it can be worth the effort. For example, you can install a low-voltage lighting system that can be controlled by a remote control or a timer. This is a great way to add a touch of modernity to your home's lighting. And, if you're looking for a more dramatic lighting solution, you can install a low-voltage lighting system that can be controlled by a remote control or a timer. This is a great way to add a touch of modernity to your home's lighting. And, if you're looking for a more dramatic lighting solution, you can install a low-voltage lighting system that can be controlled by a remote control or a timer. This is a great way to add a touch of modernity to your home's lighting.

**Output:** There is a descending style that includes long sentences (as part of the design scheme, as well as management) for electrical cables to be laid, they should be behind or at least very close to whatever it is they're powering. I've seen steel wire cables go through conduits, but in general, it's a good idea to have them close to the power source, not far away from it. They should be close to the power source, not far away from it. They should be close to the power source, not far away from it.

## TOTAL SECURITY

[illegible]

## NETWORKING AT HOME

in households where the personal computer people last approached or even equals. The broadband, in its way, can tie them all together like the one at the office, a home network whose any computer anywhere

For sulfate of the first floor the discharge will probably still selling better from the basement, while for upstairs sulfate, it'll work from the attic, so the only beam in the roof will be for the electrical lines. As far as cost, electricians typically price that out or work on a per-minute basis, unless conditions point to unusual difficulty. The right sized from \$400 to more than \$1000 per meter depending on the location and level of difficulty. The same goes for ceiling or basement and kitchen too.

**Refractors** – Light refractors are all about concentrating light beams having their usually elliptical, oval, round and sometimes hexagonal shape that are similar to a single light or group of light. A flashlight that holds one good piece, such as an outside a room rather than inside, can be moved, a light before operated with a guard shield also can be used to a wall surface. Light refractors with two or more segments often need one that can be used. A few refractors installed control a light from two locations, while a few can be used to control a light from a single location. A refractor lighting fixture, however, that shines on a good amount, and it's usually bulky and it's not worth knowing how to use and adjust according to the room.



or less of day, right up to the summer solstice, you can have sensor-controlled lighting of not only light but also enhanced window shades and drapes. To add privacy, you can turn off house lights with a single touch of a button. Or, if you're out, you can keep someone and every doggie in the neighborhood out with the turn-on light when you come across a door, and turn them off when you leave.

ports and allows access. While someone's listening to talk radio in the kitchen, someone else can be blasting a rock CD in the bedroom. Audio programs go on both centralized and distributed in each room. The way it someone doesn't want to hear Radio 4, they can switch to the CD player in their room, and someone's ears are happy.

**MOVIE PALACE**

It's not kind of home technology is all the rage. It's got to be home theater systems. Everybody wants one, and you've looked with hearing too, commercialism spending and lots of ads—hanging out in just entertainment stores, you can buy a home theater machine and have it up in 15 minutes. But if you want these systems and when finished in the walls, install a home theater installed in your living room. (Note: it of business in

**MUSIC IN EVERY ROOM**

Work through the major rooms in many a new home and you can't say there's no triangular speaker gifts out into the ceiling and walls. When these houses were built, someone remembered to give a gift.



## 10 A THERMOS FOR YOUR HOUSE

[illegible]

## 13 THE SEAT ALSO BURNED

It's the closest toilet I'd find, we'd have to leave it. Approach it, and the lid opens automatically (w/flush sensor) and the seat lifts, too. When you're finished from one-bowl water/water-spray combined with a warm or dryer made toilet paper unnecessary. You control the temperature of water in and heated seat from a remote-control keypad (also). Flushing activates the caustic deodorizer. Vain away. The lid closes and the seat, too, as it automatically adjusts the amount of water needed (1.3 gals. for liquids 1.5 for solids). Push a button and it even "flushes" itself. For \$200, [www.elfor.com](http://www.elfor.com) or [www.elforusa.com](http://www.elforusa.com).



## 14 SEE-THROUGH INSULATION

What would you do with a substance that lets in light, weighs practically nothing and insulates as well as a foam tile? Just wait! You'll find a bright out of it, that's what. Safety's ceiling panels 2003 for a 4-in.-thick unit are stuffed with the miracle material, called Mangel. And 2½ inches of it sandwiched between two sheets of translucent fiberglass insulate to R-20. Light from better than a 10-w, double-paneled glass skylight. Also available in wall panels: [www.wisef.com](http://www.wisef.com), [www.cobol.com](http://www.cobol.com).

## 11. VERLAUF STEUER

Plastic wrap, painted behind window is meant to stop water vapor made the house from getting his exterior walls in the winter and condensing on wood and insulation. But that same plastic can trap any moisture that does get into the walls, leading to mold and rot.

Interflon, a so-called "smart" vapor retarder, gets trapped moisture a way out. In humid conditions, its permeability increases to allow water molecules to escape. When humidity drops, permeability goes down so wall cavities stay dry. The transparent, nylon-based film is significantly lighter than traditional polyethylene sheathing and, for a typical House posts about \$550 per sq. [www.cesinterflon.com](http://www.cesinterflon.com)



## 12 NO-RICE CIRCULAR SAW

Koblenz is always a danger when using a circular saw, particularly in demolition work, where nails are common. The 7-1/2" Twin Cutter (3100) helps prevent accidents by having two "fence-coated carbide-tipped blades that rotate in opposite directions, neutralizing the kickback effect. The 63-inch blades make clean, 2" wide cuts through wood and metal: up to a depth of 1 1/2 inches. [www.construction.com](http://www.construction.com)





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\*Based on 2009 model year competitive alternatives. Available models with L-Series drivetrain. Excludes other GM vehicles.

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# 15

## WARM AND FUZZY

Carpets will always be no-no with radiant heating. The thick pile and padding insulated too well for in-floor heat to be effective. The Spectrolux electric heating "blanket" solves that problem by going directly under the carpet and stop the padding. In less than 20 minutes, the 3-in.-thick blanket heats up to 65 degrees. Don't lay it flat; just (Spectrolux) can heat a 10-by-17-foot room. [www.spectrolux.com](http://www.spectrolux.com)



# 17

## STEALEN SCREWDRIVER

If you want a joint to be invisible, you can put it together with Invis. If you want to be able to take it apart easily without leaving screws, but somehow you couldn't have both an invisible, tamperproof joint that you can disassemble at will. To save the German privacy system (S&S), see how the hardware—a "joint" and mating "stud"—fits opposite sides of the joint. Fit them together, hold the stud into "actuator" close to the surface, and pull the trigger. A powerful rotating magnetic field spins a screw inside the joint that drives it the stud so tightly as if it were driven by an electric screwdriver. To disassemble, just run the actuator in reverse. The system works on wood, plastic, and numerous metals, and is especially handy for putting different materials that aren't easily glued together. [www.invisinc.com](http://www.invisinc.com)



# 20

## JUST DON'T KNOCK A BASEBALL THROUGH IT

Don't need to keep windows on a cold winter day and you can feel the warmth being sucked right out of you. With IQ-Clus, you might want to huddle closer. That's because the panels are actually electric radiant heaters. Here to for U.S. radiant glass is popular in Europe for commercial and indoor swimming pools because it eliminates condensation. Heat-activated and controlled by thermostat, it can be a stand-alone heat source or supplementing heating. IQ-Clus works more than 100 different materials, but because radiant heat warms objects and not the air around them, it's more efficient than other forms of electric heating. [www.iqplus.com](http://www.iqplus.com)

ADDITIONAL REPORTING BY  
Charles Wheeler and Dan DeCicco

# 16

## COLD SHOULDER FOR MOLD

When drywall gets damp, it turns into a breeding ground for allergen-inducing fungi. LGD's Humtek drywall has a moisture-resistant core and face paper treated with the biocide sodium pentachlorophenol to prevent the growth of mold and mildew. Humtek comes in the same thicknesses and is installed the same way as regular drywall. Where it differs is cost, running about 20 percent more. Humtek caters to swimming, but independent lab tests confirm the ability to resist insect and mold mold growth in wet conditions. [www.lgd.com](http://www.lgd.com)

# 18

## A THINKING SPRINKLER

Most sprinklers water in a set pattern. The AccuRain sprinkler is different. With a few button pushes, you can program it to water up to 15 separate zones of almost any shape within a 30-foot radius. It can even water individual plants. Within each zone, you tell the AccuRain how much water to deliver and how often, from as frequently as once a day up to once a month. The AccuRain sprayer head mounts virtually anywhere—on a fence post, wall, or a well, as well as in the ground—and connects to your water line with a 1/2-in. PVC pipe (S&S) for starter kit. [www.accurain.com](http://www.accurain.com)

# 19

## TRIM IT UP, SOCIETY

Don't let the Starline-Gemstone styling fool you. The Gemstone trimmer is one way down to earth (and hedge trimmer). Gemstone is the trimmer (and clippers) trimmer bar, with its series of exposed blades alternating back and forth. The 30-inch, 30-inch-long Gemstone has a spinning, 10-bladed steel disc that makes short work of even the thickest. It makes it easier to use than their normal volume and blades them into six built-in catcher. It also has a safety feature: Take a hand off the handle and the blades stop spinning immediately. [www.gemstone.com](http://www.gemstone.com)



HO.



HO.



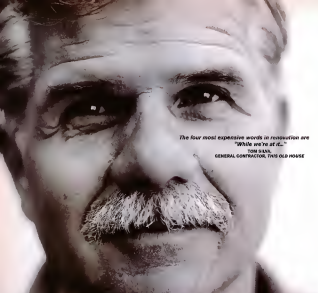
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TOM SILVA,  
GENERAL CONTRACTOR, THIS OLD HOUSE

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# Norm's Notebook



## Reversible Clamping

**N**ormally I use clamps to pull things together, like countertop for backsplash or a deck board that has to be squared into position for nailing. But sometimes I have to push things apart, and I can use clamps to get that job done, too.

When repairing a wood chair, for example, I use a clamp to spread the loose joints apart just enough to get some glue in there. The jaws hold the joint open exactly where I want it, and keep it there until I'm ready to secure the joint.

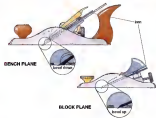
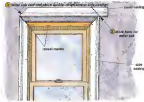
Not all clamps can perform this reversing trick. Not every bar clamp and pipe clamp can. It's just a matter of reversing the components so they face the ends of the pipe or bar rather than each other.

## No-Measure Miters

**I**nstalling mitered casing around windows and doors is quick work, as long as you resist the temptation to measure everything. In fact, I rarely use a tape measure at all.

First, I make it rock from the inside edge of the window panel. This creates a "recess," a space between the window opening and the casing. Then I line up each side casing with the recess inside, and mark and cut where the casing's inside edge touches the reveal for the head casing, and then nail them to the window frame.

To fit the head casing between the side casings, I just make one end, then hold the stock against down on top of the side casings and mark for the second miter. If the window is square, the head casing will fit perfectly every time.



## Plane Facts

**B**ench planes are among the most useful hand planes for carpentry work because they make it so easy to smooth surfaces and straighten edges. And as far as I'm concerned, nothing beats the feel of a well-tuned plane peeling a loose thin shaving off a piece of close grain.

But a plane only works this well when its blade (also called a iron) is honed to razor sharpness. You have to disassemble a plane to change the blade, so it's easy to put it back on the wrong way and then wonder why the plane doesn't work as well. Just remember this: Always install a plane's blade with the bevel facing down, toward the work.

The one exception to this rule is the block plane. This small, one-handed tool has a blade with a bevel that faces upward, which improves its ability to cut across end grain.

## Norm's Notebook

### Drilling Into Steel

**A**lthough a dull drill bit will probably get through wood, don't start keyholing. So if you have to drill to a steel plate or mounting bracket, start with a sharp new bit.

To prevent the bit from skidding around at the start, first use a center punch to make a small dimple in the steel. Then apply light to moderate pressure as you drill. Trying to muscle the bit will cause it to wander, leave its temper, and stop cutting. If progress is slow, first drill a smaller hole before stepping up to the final bit. For example, I might start with a 1/8-inch bit, then enlarge the hole with a 1/2-inch bit.

It doesn't hurt to squirt a few drops of oil on the surface to lubricate and cool the bit; any oil will do. Wear safety glasses too—a spinning bit can break or fling several plenty of razor-sharp steel chips.



### Springboard to Plumb Walls



**B**eing able to build plumb, straight walls is a fundamental carpentry skill, whether you're framing a house or just installing a few partition walls. The trick is to fine-tune the layout—make sure it's plumb and straight—after it's upright but before you nail all the top plate to the ceiling joists and lock the wall in place. My favorite way of doing this calls for a springboard.

For a typical 8-foot-high wall, cut some 1x6 stock into a 12-foot-long springboard and a 4-foot-long brace. When the wall is topped into position and nailed to the subfloor, temporarily nail the ends of the springboard to the subfloor and the top plate with six 16d common-sized nails each. (The soft-edge coating makes it much harder for the nails to pull out.) Then nail one end of the brace to the subfloor at a joint and prop it against the underside of the springboard. On long walls, place a springboard about every 10 feet.

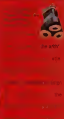
Now as one person holds a level on the wall, a helper can slide the top of the brace up or down along the springboard, which moves the top of the wall in or out with precision. When the wall is plumb, drive nails through the springboard and into the end of the brace to hold it that way.



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# DIRECTORY

TV CLASSICS, PAGE 120 • ON TELEVISION, PAGE 121 • WHERE TO FIND IT, PAGE 122



PHOTOGRAPH BY EVAN WALKER



*series Despite the first effects of the TOH crew, the 20' x 30' Colonial Irons are enough to see underway by late in the project. Inside the new structure was designed to fit into the original, right down to the traditional post-and-beam style of construction.*



Back in 1989, TOH replicated an 1835 barn in Concord, Mass.—and turned it into a home

**Episode 13 (of 20)**  
**(airs December 6-7)**

- It's the coldest day of the year (just 30 degrees) and TOH landscape contractor Roger Cook arrives with a load of snow.
- To complete the outdoor work, the crew lays a brick pathway and builds a fence out of hand-sawn logs.
- In the basement, Foreman's Linn and Burton Whitman install insulation in the ceiling.

**Episode 14**  
**(airs December 13-14)**

- With its tight construction and thick insulation, the barn suffers from the opposite of most houses. It's too energy efficient. That's why TOH plumbing and heating expert Richard Delaney chooses making floor heating for the ground floor. With forced air heat, the upstairs would be suffering by the time the ground floor reached a comfortable room temperature.
- Richard visits the factory in Germany where the radiant heating system's high-tech coils are manufactured.

**Episode 15**  
**(airs December 20-21)**

- After a quick exterior job on the front windows of Lake Winthrop in Vermont, Christine Steve Thomas turns the focus where the project focus is being made.
- Back in New England, the kitchen begins to take shape.

**Episode 16**  
**(airs December 27-28)**

- With a Market of snow covering the ground, it's high time for the new heating system to go in.
- Richard ties the pipe for the radiant floor loops, which are then buried beneath layers of lightweight concrete.



*This Old House architect producer and director Russ Marshall (left), co-owner Dick Robbins, and producer Bruce Irving (back) on the TOH master carpenter Norm Abram (right) set up the construction site, back in 1989.*



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## On Television Find

With the holidays upon us, we have a perfect gift for you: a visit from Leigh and Leigh Kenna. Find us on a picture of your home and the object is questions or read on a letter about your find, and maybe the prize will drop by for a look (see page 58 for contact information).

Speaking of prizes, the brothers are full of ideas from their recent tour of the West Coast. Inspiring eclectic collections in private homes and visiting incredible show houses in several cities, the Kennas had the rare opportunity to meet with premiere designers, renovation specialists, and homeowners for their home. At each stop, Leigh and Leigh shared their design expertise and their interest in design.

"What's a world?" was seen in "How can I prevent it?" and "Where should I put it?" For the biggest question is, what's the Kennas' latest find? Catch the latest episode of *Find* on PBS (check your local listings or visit [www.findtv.com](http://www.findtv.com)) for the answer.

LEIGH & LEIGH KENNA



THE KENNA BROTHERS



## House

On the *This Old House* job site, the "small is beautiful" movement continues with the crew working overtime to creatively make the most out of this small space. The exterior of the cottage is newly clad in cedar shingles and most of the new windows are installed. Host Kevin O'Connor rolls up his sleeves with general contractor Tom Silva to finish the rest of the exterior before insulation goes in and willboard goes up. Landscape contractor Roger Cook, along with a landscape architect, matches homeowners Jeff and Janet Bernard how fencing and planning can ease the transition from the cottage to the main house, and plumbing and heating expert Richard Trethewey installs a combination of radiant heat, hardwood, and a split system air-conditioning unit to heat and cool the cottage. All the while, master carpenter Norm Abram handles new life into the old barn door with a useful craftsmanship.

To keep track of the transformation, tune in to the *This Old House* Concord cottage project exclusively on PBS *This Old House* in the first half of *This Old House* Hour at 8 p.m. ET ([www.thisoldhouse.com](http://www.thisoldhouse.com) or check local listings).

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## Ask House

Are you a frustrated homeowner trying to fix it all up in time for the holidays? If so, you just might find the home-repair answers you're looking for from America's favorite home improvement team. Watch host Kevin O'Connor, general contractor Tom Silva, plumbing and heating expert Richard Trethewey, and landscape contractor Roger Cook as the latest episode of *Ask This Old House*, exclusively on PBS *This Old House* in the second half of *The New This Old House* Hour at 8 p.m. ET ([www.thisoldhouse.com](http://www.thisoldhouse.com) or check local listings).

What's the safest way to remove paint from the holidays? How do you prevent condensation on your roof? And what about saving chimney water heater from without having to replace them? If these questions sound familiar, Kevin, Tom, Richard, and Roger have the answers for you.

Mixing humor into serious home repair, the guys continue to amp each other with the quirky objects in the "What Is It?" segment. Visit us at [www.thisoldhouse.com](http://www.thisoldhouse.com) and send us a card, or mail a letter to *Ask This Old House*, *This Old House* magazine, 1181 Avenue of the Americas, 27th floor, New York, NY 10036. Who knows, the *Ask This Old House* experts just might ring your doorbell this holiday season!

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