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action!

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Tom Jones, left, and crew member Chris Hastings install a sink in one of the two islands in the kitchen of the *This Old House* project in Manchester, Massachusetts. For more on the show, see "Center Stage," page 104.
BY JEFFREY KULL

MAY 2007

features

Homeowner's Handbook: Installing a Toilet

Richard Tinkley puts in a two-piece toilet at the TV show's Manchester project home. BY SCOTT GROSS

Kitchen Confidential

Sound advice on building a beautiful kitchen from a skilled and savvy homeowner. BY JOE CARTER

Smaller, Smarter, Safer

Compact and innovative products for the kitchen or bathroom. BY NANCY LACHMAN

Center Stage

The Manchester kitchen design location to become the show's focal point. BY JEFFREY KULL

Landscaping a Sloped Lot

New retaining walls, decks, and native plants enhance the Timeslot Home project. BY SAM MARTIN

The Powder Room Under the Stairs

Tom takes time to build a powder room for the Manchester house's second half bath. BY ALEXANDRA BARNES

Cooks' Kingdom

A new kitchen and family room turn a summerhouse into a year-round home. BY JONATHAN BENSON

Behind the Scenes at This Old House

We visit the set to see how the producers craft TV's ongoing home improvement series. BY TOM GROSS

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cover

The gang's all here in the Manchester project homes. The team of the *This Old House* TV show team includes, in order: producer Bruce Irving, landscape contractor Peter Clark, painting and taping expert Richard Tinkley, in town, executive producer/producer Russell Mendenhall, general contractor Tom Jones, master carpenter Steve Hastings, lead Steve Thomas, carpenter Steve D'Onofrio. To find out how these guys put the show together, see "Behind the Scenes at This Old House," page 143. PHOTOGRAPH BY JEFFREY KULL

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Figure 1. The effect of the number of trials on the number of correct responses. The number of correct responses increased with the number of trials. The number of correct responses was significantly higher than the number of incorrect responses for all trial numbers.



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GET THE FEELING RIGHT

— *to be* *to be*

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start here

Simple Steps to a Captivating Kitchen

Are you dreaming of a new kitchen? Whether you are in the market for a makeover or a minor re-do, here are some tips to take you from start to a finished finish.

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finish

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Drivell's Directions

First of all, let me say that I love your magazine. Even though a year ago I moved from an old house to a beautiful new apartment, I still read it religiously. In "Hanging Drivell" (December 1, 2002, January/February 2003), I see that the panels are hung horizontally. In my old house, my contractor would hang the drivell vertically. I'm curious now if that was wrong, and what the result is for hanging it one way or the other.

Phonetic Point, Ft. Worth, TX

I was enjoying my first issue of TDM, after receiving a subscription as a Christmas gift, and realized that in your very detailed drivell article there's no mention of drivell adhesive. As a mechanical engineer who's a frequent supervisor for my local Habitat for Humanity chapter, I often use drivell adhesive as a cost-effective way to prevent nail and screw pop. It can be messy and a little time consuming, but it's very worthwhile.

John Lee, Downers Grove, IL

In drivelling as in other trades, personal preferences vary. Drivell can be hung either direction, but an extensive job may require you the setting longer (12- to 24-foot panels) increasingly because a joint up faster and makes lower joints to tape. While drivell adhesive does increase strength and is recommended for curves, colorful ceilings, and when applying panels over existing walls, it is optional for most projects. My drivell contractor Paul Lewis (see, at right), "to me, the benefits usually don't outweigh the mess, fumes, and expense in these real-world cases."

Improvement Online

Unbelievably! That's right in the magazine is online, a free go-to the www.loves.com site for

home-improvement, but I find the content to be focused solely on resources for the TV show, with little or no on the magazine. Could someone come out a little space for you on the Web site?

Wesley Brown, Jr., via Internet

We agree that both the TV show and the magazine discuss in-depth coverage on the Web, to check out our new site, www.loves.com. It's check full of articles, tips, and resources on everything from repairs to remodeling.

Red, White, and Bluepop

I find it hard to believe that to me as this Old House nation that the photograph of the home featured in "Third Time the Charm" (March 2002) showed the American flag hung horizontally. I believe your readers would appreciate information on the proper display of our nation's great symbol.

Wesley Brown, Jr., via Internet



There is one of many letters we've received from readers pointing out our flag-fish. The homeowners—and second-in-command staff—don't properly understand how hanging overlooked that the union, or blue field, should have been in the viewer's left (shown correctly above). With as many folks living Old Glory these days, we could all use a crash up on flag etiquette. For the complete U.S. Flag Code, visit www.loves.com/flagcode.htm.

Remember and Love: The Old House magazine, 100 issues of the American Home, 1971-1980, is a great site at www.loves.com. Please include your full name, address, and phone number when you place your order. Full-text articles will be online for 30 days and may be used in other ways.



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ON THE AT THIS OLD HOUSE JOB



Learning From the Boathouse

SINCE 1930

W

BY DAN SIGLER

When David and Janet McCue set out to restore their home on the shores of Minneapolis Harbor, in Minneapolis, one of the first places they looked for guidance was their own boathouse. For much of its 100-year existence, the small house reflected the style of the main residence. "The goal was always to have an entry point from the water that reflected the larger island sit," explains Stephen Holt, architect for the TCM design project at the McCues. "That was the case until a 1979 renovation dramatically altered the appearance of the main house. Now, in a reversal of roles, the small building is influencing the look of the larger residence, as the project team examines the boathouse's window trim, roof, and siding for hints on how to properly restore the residence." "Ever since the main building was stripped down, the one thing standing that has inspired ideas in our little boathouse," Holt says.

Back in the late 19th century, the boathouse—

which replaced simple, pine board-changing rooms for swimmers—matched the Shingle-style residence, with cedar siding and a gabled roof. "The boathouse was well-sheltered, so the homeowners probably had to use a dory to reach a larger boat further out. At most, the boathouse would have stored a few oars and oarlocks," Holt says. By the 1930s, however, upscale had come to Minneapolis, and the harbor had been designed to accommodate large sailing vessels. The boathouse first accordingly gained a fireplace for winter sailing days and a hip roof and eaves that mirrored the house's Colonial Revival motif.

The current renovation of the McCue House (in which the boat house will get some minor but essential repairs) will restore the harmony between the two structures that has been absent for 23 years. "Right now people pass by and ask who owns the boathouse," says TCM general contractor Tim Silva. "We're going to answer that question."



1908



Today

In the photo, the boathouse has retained the main house, in both the Shingle-style (left) and the Colonial Revival-style (right). Today (center) it's influencing the renovation

May cause
excessive lingering.



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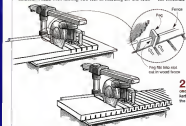
ON
THE
JOB

tom's technique: Cutting Greek Key Molding

This Old House general contractor Tom Silva makes easy work of an intricate pattern.

For the ultimate carpenter, replicating a complicated molding profile like the Greek key pattern found around the Menckens project's ceilings can be a daunting task. But Tom Silva is no slacker: Faced with mulling 135 feet of molding for the sea-

son, he mass-produced it by cutting a repeating kerf on both sides of a wide plank, then sliding the plank into a jig, as shown below. Each strip yields a perfect length of molding, sporting the toothlike pattern. —Mark Powers



1 Tom begins with a 4-foot-wide piece of $\frac{3}{4}$ -inch-thick cedar. He makes a series of parallel $\frac{1}{4}$ -inch-wide, $\frac{1}{4}$ -inch-deep kerfs across the face of the plank using a radial-arm saw fitted with a double blade*. To space the cuts at 1 1/2 inches on-center, he feeds the wood from left to right, sliding the previously cut groove under the jig's fence as a stop at the saw fence (left).

2 Once he has covered one side of the board with kerfs, Tom flips it over and cuts a second set of grooves, staggered between the kerfs on the first side. The alternating cuts form the key pattern along the board's edge.

3 Next, Tom flips the board into $\frac{1}{4}$ -inch-wide strips on a table saw (left). To support the thin strips and make them easier to move, he glues and nails them to lengths of $\frac{1}{2}$ -inch-thick, 3-inch-wide flat molding that has a decorative square edge at the bottom (right).

***DOUBLE-BLADE**
Double blade: two blades set 1/8 inch apart. The blades are mounted together, sometimes with shims between them, to make rectangular grooves. Kerf: slot or notch cut with a saw.
space: 6 straight cuts.
right side cut along the grain.

PHOTO BY TOM SILVA FOR THE NEW YORK TIMES



PHOTO BY TOM SILVA FOR THE NEW YORK TIMES

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HOUSE CALLS WITH STEVE



Great Room With a View

Relocating the heart of a house

For nine years, the owner of this mid-19th-century home over-

looking Boston's North Shore made do with a modest, 90-square-foot kitchen located on the west side of the house. Like most people, the Lovells' first impulse was to expand the existing space. But, says Angela Lovell of their family of five, "We like to hang out in the kitchen. Why have it facing the street when we live on the ocean?"

In a bold move, the Lovells decided to start from scratch and completely relocate the kitchen. "Putting this room where you most want to be seems obvious, but people can feel stuck in their house's original floor plan," says The Old House host Steve Thomas. "By taking plenty of time before jumping into the renovation, the Lovells got a true sense of how they use their home and how important the light and views were to them."

Working with designer Joan Verbridge and architect Rick Reibel, the Lovells exchanged their tiny galley kitchen for a 325-square-foot kitchen/great room. As part of the plan, they also gained a laundry room and brother's pantry, simply by shifting the location of the formal dining room and endowing a significant portion of a wraparound porch. Now corner-to-ceiling windows and stretches of white-painted cabinetry maximize the open, airy sense of a porch. "This is a great example of a sensitive and sensible renovation," says Steve. "The kitchen is open and exposed yet still well appointed, and it's completely modern in function yet historically appropriate. What I like most is that the Lovells didn't overdo anything."



Turning a mid-19th-century summer house (left) into a year-round residence (right) involved combining spaces from a wraparound porch and creating a multifunctional great room (left).

PHOTO: JAMES HARRIS FOR THE OLD HOUSE



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HOUSE CALLS WITH STEVE



A window seat running the length of the dining table provides an extra seat for the dining room as well as extra storage beneath a cushioned seat. A strip of cushioned seating is added by means of a seat on the lower end helps the side of the house keep its parklike appearance.



The new great room's living area is centered on a fireplace (see p. 10). The patterned rug of its master bedroom is the end point of the kitchen island (see p. 10), visually tying together the two sides of this newly created space.



Upper bedrooms were dropped to wall on floor of counter-to-ceiling windows. A new porch, closed off by a pocket door, was added for the two in the upper story. Mixed in with the plan is a new bathroom, which is now featuring a large private and original artwork of the house's three children. Clear glass looks (see p. 10) look true to the period, for more on looks, see page 24.

FLOOR PLANS, BEFORE. Rather than expand their small policy kitchen and no more, the owners decided to start from scratch and rebuild it. After a new great room was incorporated into interior space in a flow for a new great room with working, eating, and sitting areas that full view from the old kitchen is now a dining area for the relaxed formal dining room. A breakfast room, no more, is now every new also designed into the plan.

PHOTOGRAPH BY STEVE

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although the cabinet in the Lowell's kitchen is all new, reflected on crystal knobs, preserve the old-world feel of a period beach house. "It may be a small detail, but the right knobs can make a big impact on the look of a kitchen," says Steve. "In fact, if you want to do a quick makeover of your kitchen, just replace the knobs."

Besides looks, says Steve, "be mindful of the function of a knob. You need to be able to grip it easily. If the shape isn't comfortable, opening a door or drawer can be really frustrating." And before you make the investment (depending on the style, a couple dozen knobs can run upwards of \$100), Steve suggests buying just a few, to gauge the effect on your kitchen.

The examples below are a sampling of the great-looking vintage-style hardware available on the market. Authentic vintage knobs and pulls can be found in specialty stores and flea markets, as well as on the Internet. However, they may not be in perfect condition, and often are available in limited quantities.

Choosing Knobs



The right look can put the finishing touch on any number of cabinet looks.

1. Swirling, ribbed wood. Clarity Hardware
2. Craftsmen lacquered copper square. Allen Hardware
3. Amber diamond crystal. Dettak
4. Black porcelain with chrome center and stem. Beaumont
5. Hand-forged wrought-iron with rust finish. Dettak
6. Iron teardrop-shaped. Restoration Hardware
7. Antiqued brass egg-shaped. Dettak
8. Grackle porcelain glass. Restoration Hardware
9. 1800s blue milk-glass. Restoration Hardware
10. Polished brass Victorian style. Beaumont



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ASK NORM

Sound advice on repairing fascia boards, bricks and countertops

WHEN GUTTERS RUNNETH OVER

A contractor recently installed my house and replaced the gutters. I noticed that the new gutters are smaller than my old ones, but the contractor says they're sufficient. I don't know about that, though, because they overflow in a bad rain. I also noticed that the shingles overhanging the gutter at least 12 inches past the drip edge. Is this part of the problem, what test would I use to trim the shingles back a bit?

Greg in Boston, Massachusetts, KN

Gutters overflow because the system is either undersized or not draining properly. Check the roof staff first. Maybe there's buildup of leaves or a piece of debris, or perhaps a flashing that fell into the downspout during the remodeling that's blocking off water flow. Try prying out debris with a full-size blast from your garden hose.

After that, you can understand gutters on a building. Most often, the reason for an overflow problem is the size and number of downspouts. As a general rule, a downspout needs about 1 square inch of downspout area for every 100 square feet of roof area being drained, so, for example, a 3-by-4-inch downspout can drain 1,200 square feet of roof. Do some quick calculations, and if the downspouts seem inadequate, call your roofer back to increase their size or number.

Here's another thing to check. If the front edge of the gutter is set too low, water could shoot right over it on a heavy rain. Lay a yardstick on your roof so it overhangs the gutter above a downspout. The lowest point of the gutter's roof and across the gap between it and the gutter's front edge. It should be no more than 1/2 inch. Here in New England, we see on the front edge of the gutter 1/2 to 1 inch below the plane of the roof to act as snow sliding off the roof will miss the gutters but water coming off the roof won't.

As for the overhang, normally there's anywhere from 6 to 12 inches of shingle sticking beyond the drip edge, but it isn't down to mere inches. The overhang prevents water from getting under the shingles as a result of capillary action. The only way the overhang would be a problem is if the shingles extended across more than about one-third of the gutter's width. In that case, call your roofer to trim them back with a hand blade utility knife.

PAINTING A WOOD FLOOR

My wife and I are redecorating a small Dutch Colonial built in 1930. The livingroom has strip-oak flooring, but because it gets a lot of traffic, several of the old Dutch have worn off. We'd like to paint the floor either



then put a clear finish on it. What is the best way to do this, and just how durable will painting be?

Jim DeLoane, Bethesda, Md.

Less of people go to all sorts of effort just to get paint off a hardwood floor, so I'm a little surprised that you're headed in the opposite direction. Besides, it seems a shame to cover up all that oak, particularly if it's original to the house. Flooring back there came in longer lengths than you can get these days, and it was probably a higher grade of wood, too. But, if you must have paint, here's what has to be done.

First, sand off all the old finish to prevent adhesion problems. After all the finish is off, but before the final sanding, fill any holes or deep scratches with a solvent-based wood filler that's compatible with the paint you plan to use. (Don't get filler in the seams between the boards because it will just pop out.) Sand the filled areas with the same grit you're using for the final

sanding of the rest of the floor.

Warren Spindler, a technical assistant and inspector at NORMA, The National Oak Flooring Manufacturers' Association, suggests sealing the floor before you paint it so that the next owners of your house won't have to sand so deeply if they want to take the paint off. Painting contractor John Doe agrees that sealing is the thoughtful thing to do and recommends using a mixture of one pound of dewaxed shellac flakes mixed into a half gallon of denatured alcohol. (Regular shellac naturally contains trace amounts of wax that could interfere with paint adhesion.) He says that shellac is compatible with nearly every kind of finish.

Apply one coat of sealer, let it dry thoroughly, then scuff the surface by hand-sanding with 120-grit paper or by lightly scuffing the floor with a buffing machine. Once every speck of standing dust has been vacuumed up, the floor will be ready to paint. Doe recommends that you roll on an oil-based sealer—usually but rough—scuff it with 150-grit when it dries, then add a second coat. Smooth out the rolled-on paint with a brush.

A good-quality floor enamel doesn't require top-coating with a protective finish, but if you've got a lot of work into sanding or fine-sanding the floor, Doe suggests three coats of water-based polyurethane as good insurance against wear. (Oil-based polyurethane turns amber, which will affect any light colors underneath.) I'll also try some non-slip throw rugs in high-traffic areas to minimize wear. (continued on p. 28)



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The *Diffidol* failed to the north of my rafters keeps coming back, even though it's feathered with white oil-based wash linseed. Is there something I can use to keep it off wood?

Mark D. Boyce, Ben Nager, Edna

It isn't a common problem—and quite put *don't* hold on by your neck, particularly on the sides and where gravity is pulling against them. Assuming you've been using an oversized driving shirt, you'll have loose back with a pronounced ring-shaped or oval-shaped hole. Drive them in slightly opposing angles—the top two back pointing slightly downward and the bottom one slightly upward—to improve their resistance to pull-out. Don't use the old and holes, you want the new features to give you solid wind. A 120 or 160 and will work for you to lose. Ed will still suit for a touch.

A cross-sectional diagram of a wall assembly. From left to right, the layers are: exterior air, exterior siding, insulation, and interior wall. Arrows indicate heat flow from the exterior air, through the siding and insulation, into the interior wall, and finally into the interior air. Labels include: 'exterior air', 'exterior siding', 'insulation', 'interior wall', and 'interior air'.

For a totally secure connection, use stainless-steel disk screws about the same length as the nail. The screws' square-drive heads are just 3/8 inch in diameter, so they're not very visible, and the heads even countermask themselves. All you have to do is drill pilot holes. Stainless steel screws aren't cheap—about \$13 per hundred for 3-inch screws—but you can't beat them for the application.

We moved into a new house recently and have a problem with our basement sump pump. It comes on every minute and runs for about six or seven seconds. The pump is located right under our bedroom floor, so likely it's running all night. Can you help me get some sleep?

Thomas R. Kucharski, President, MRCI.

As durable as a sump pump is, it will eventually fail if it runs as often as you describe. There should be a semi-annual be-

ting on the downspout leading out of your ramp pit. That's the check valve, and you'd be amazed at how often it's either lost out or installed backward. When that happens, any water left in the downspout after the pump shuts off will drain right back into the pit, where the pump dutifully tries to pump it out again, thus kicking up the noise. Look for an arrow on the valve—or should point in the outflow direction. If there is no valve, a pump/mixer or a blower can install one on measures.

A faulty float switch that results in an insignificant change in water level can also cause a pump to turn on and off constantly. If that's the cause of your problem, let the manufacturer repair or replace it.

However, if you have waste gushing through the discharge pipe every time the pump kicks on, and the check valve and switch are working properly, the pump is doing exactly what it's supposed to do. That's the good news. The bad news is that too much waste is accumulating beneath the basement slab, a problem that may require a full-blown hydrovac contractor to solve.

You read that movement ceiling lights convert a house into the energy equivalent of a fusion reactor. Well, we have a number of these lights in the cathedral ceiling of our master bedroom, and to the wider they let a lot of cold drafts into the room. We know they're also letting a lot of heat out—the room is really cold on our cool when the lights. Can you suggest a way to insulate the ceiling?

Seppuku, Kawanishi, Katsuo I. Cawley, N.Y.

A standard 75-watt bulb generates about 1,000 Btu or less every hour, so it's not surprising by now most homeowners in the north, most of the mortgage used by an insouciant bulb goes to making heat, not light. Unfortunately, there's no effective way to insulate recessed lighting fixtures in a cathedral ceiling. Even if you could get behind the fixture somehow, that extra insulation might block an circulation in the roof cavity or even create a fire hazard. You could use a lot of money, though, simply by replacing your bulbs.

According to Bill Van Nostrand of Fluorescent Systems, a distributor of energy-efficient products, a 15-watt compact fluorescent bulb puts out about the same amount of light as a 75-watt incandescent bulb, but only 100 lumens less. Multiply that 65-watt savings by the number of fixtures in your ceiling and you'll get an idea of how much energy you'll save. Van Nostrand says to look for fluorescent bulbs with a color temperature of about 2,700 degrees Kelvin. That's close to the color of up incandescent—warmth. Higher will give a bluish look.

The new bulbs will screw right into the existing sockets, last five to seven times longer than incandescents, and are readily available at home centers and hardware stores. Their only drawback is price—\$10 to \$15 per bulb—so try a couple to see if you like them before you make a big investment.

These compact fluorescent bulbs cost so much because each one incorporates the electronic "ballast" that starts the bulb. You can buy nonballasted compact fluorescent bulbs, called FL bulbs, that last as long, use just as much energy, and cost only \$2.50 each, but they require a special recessed fixture with ballast and a pin

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ASK NORM

type base. These bases, which run about \$50 apiece, are completely sealed, so you can forget about those drains.

SAFELY DRIVEWAY SEALING DOWN SOUTH

I know that in northern climates it's necessary to seal asphalt driveways to prevent water from seeping into cracks and freezing in the winter. But what about a driveway in Florida or any other warm climate?

E. Smart, Westmore, FL

That's a little out of my territory, but Jay Warren, of the Asphalt Contractors Association of Florida, says that sealing is just as necessary there, too. Asphalt sealers protect the pavement from cracking and becoming brittle in the harsh sun, and also prevent water from seeping through hairline cracks and resulting in the

base, which can cause deterioration as fast as what frost/thaw cycles can do. Sealing won't help with cracks wider than the width of a pencil lead. First, these need to be cleaned out—try compressed air or a jet of water from your garden hose. When the cracks are dry, use a caulking gun to fill them with asphalt crack filler from the hardware store (see "Black Magic," May 2001, p. 76).

By the way, Warren says that the reason driveways need sealing and roads don't is that driveway paving is typically much thinner, and therefore more likely to let water reach the base.

BABY BRICK REPAIR

My house has brick veneer, sitting on the lower two thirds of the front wall. The top border on the roof of the row is loose. How do I repair them?

Brian Lim, Asst., Denver, CO

The signs probably came loose because water got behind them. This is especially a problem if the bricks aren't pitched away from the house, or if there is no flashing installed between the wood and masonry siding—both which you should read to when you make the repair. The work is straightforward. Just cap any loose bricks first, taking care not to break or damage those that face. Then clean off any material still clinging to the bricks by using a scraper and a wire brush or by gently tapping with a hammer (don't use a mallet's hammer). If there is no flashing under the last course of siding, slide lengths of lead flashing under the wood so that they will cover at least 1/2 in. to 1 in. of the face of the penetrated gable bricks. The width of the flashing you use will depend on how far you can push it up behind the siding; if a window or window won't work, you'll have to get out your saw. Once the flashing is installed, head it up over the way of the bricks so you can do the necessary work.

The bricks' pitch away from the house can be minimal; water will run off even a very slight angle. Blend some mortar mix with water in a plastic bucket, stirring through the mixture with a trowel until blended; then wet the cap bricks and their substrate. (Wait for mild weather to do this—you don't want anything to freeze.) Butter the underside of the bricks with mortar and set them in a trowel using some mortar on the lower side of the brick that is on the front. As you go, slide down the cone from cone to cone to make sure the bricks are all following the same angle, and adjust them as needed with a tap from the inside of your trowel.

ASK NORM

Give me several a few days to set up, then down the cap bricks with two coats of different masonry water-proofing. Finally, and carefully, bend the lead flashing down close to the bricks and you're done.

EDGE PIE FOR LAMINATE COUNTERTOPS

A short, 2-inch-wide piece of plastic laminate has broken off the edge of my kitchen countertop. Any suggestions?

Ann Kinnala, Mountain, Ohio

If you still have the piece that broke off, you can try to reattach it. Spreading new adhesive type adhesive on the back of the piece may reattach the old adhesive, if it's of the same type. Problem is, that's no way to go to tell for sure what type of adhesive was used originally. You'd be better off using a scraper to a point scraper to remove as much old adhesive as possible, then brushing on new contact cement, following the instructions on the can. Carefully press the strip in place—you'll have only one chance—and leave it a game the counter's edge. Problem is, you can't use a J roller for this, because that's about the only way to generate the 30-40 pounds of pressure per square inch needed for proper bonding. Also, the roller's hard rubber won't damage the laminate to a wooden rolling pin might. The tool isn't expensive, you might even be able to borrow one.

If you don't have the missing piece, you'll have to remove all the remaining laminate from the counter's edge up to the next corner or seam before making a repair. This sometimes can be done with a putty knife to remove all old laminate, but I'd worry about over-

removing the adhesive holding the top laminate in place. Use a clothes iron instead. Set it on the lowest steam setting and run it over the edge, using a wet-on cloth to keep from scorching the counter's top and getting a silhouette on the rim. (Forget this step and you'll face the wrath of the wife's cousin. Believe me, I once did.) As the adhesive softens, pry away the last inch with a nail putty knife. Now take a scrap piece to a home center and match it to their sample chip. This could be a struggle. For some reason, home centers display different shades of white. If you find a color that's close, take a nail your way outside into natural light for a final look.

You may be able to order just a strip of the color you want, as a roll to a large counter-top fabrication shop in your area might carry up a strip of the color you're after. Otherwise, you may have to buy a whole sheet—different brands come in different sizes—which is a lot more laminate than you need. Even so, it will be less expensive than replacing an entire countertop.

Plastic laminate can be cut with a table saw or with a \$10 carbide-tipped laminate cutter and straightedge. Cut a strip 1/4 inch wider than the finished width (a trim-mounted router, apply the adhesive—I always use two coats of glue on both countertop and laminate—then press the strip into place with a J roller. Then the strip flush with the top and bottom of the counter using a small square. Filed with—no experience laminate-finishing kit. You can also very effectively and quickly trim laminate with a new, sharp nail-brained file, a makeshift of any good hardware store. Hold the file at an angle so that

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you don't sound old or over-the-top, and never lie back and forth—only push in the evening direction, toward the corners. Otherwise, you'll dull the tile and risk pulling off the laminate. When the new wrap is cut flush to the corners, carefully use the tile to knock off any sharp edges that may have developed.

CEILING-FAN DIRECTION

We recently moved from Boston to Texas. It seems we'll need to run our ceiling fans this summer, and I've heard about running them during the winter to circulate warm air. But I've gotten different advice about which direction they should turn in each season. Can you set things straight?

Steven Maloney, Kalamazoo, Mich.

Richard Tordella, *The Old House* plumbing and heating expert,

says there's no definitive answer for fan direction, even noting fan motor directions, but everyone seems to have an opinion about what works best. When fans blow downward, they create a breeze that makes you feel cooler, which isn't such a good thing in winter. But depending on the shape and size of your room, you can also get a breeze down along the outside walls by angling the fan to draw air upward. Some people think that in the winter, a fan blowing upward helps to blow cooler air near the floor with warmer air rising so that the warm could be used for a fan blowing in the opposite direction. Even if someone with a Ph.D. in fan physics answered the question, it wouldn't matter as much. What really counts is how you feel. Experiment with your fan running different directions and at different speeds, then decide for yourself what makes you most comfortable. For what it's worth, at my house in the winter we set the ceiling fan on its lowest speed, propelling air upward.

VENTING THE ROOF

I live in west central Texas, where summer temperatures stay around 100 degrees much of the time. The attic of my single-story L-shaped house gets unbearably hot, even with two wind-turbine vents near the peak of the main roof. I have some 7-by-10-inch covered soffit vents that I'd like to add, in hopes of cooling the attic—aside for the air-conditioning run up there. Is there a rule for how many vents I'd need? And should the servers fans toward the wall or away from it?

Norman E. Jancovich, San Antonio, Tex.

Turbine vents just aren't all that effective. And a few soffit vents aren't nearly enough. There's a rule of thumb for sizing the vents: Provide 1 square foot of soffit vent for every 300 square feet of attic floor area. But according to Mike Lusk, at the Energy Efficiency and Renewable Energy Clearinghouse, the best approach is simply to determine whether air circulation your house is capable of, and the only way to do that is to install continuous ridge vents and continuous soffit vents. Even gabled roofs don't match the effectiveness of this system, and turbine vents aren't even close. But ventilation alone won't reduce your air-conditioning costs.

Lusk says you're in a climate region where you should have R-38 insulation on the attic floor. Make sure the A/C ducts aren't leaking, either, or the insulation won't be much help. Insulate any loose or leaking duct connections with duct mastic and foil-faced tape. Once they're airtight, insulate them to a level of at least R-32. Be sure to caulk or seal any gaps in the attic floor system, particularly around pipes and



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walls. Finally, you might want to consider angling a foil-faced radiant barrier to the underside of your rafters that reduces the amount of heat radiating into the house in the first place. It will reduce temperatures in the attic, and that will in turn reduce heat gain in your A/C ducts.

Finally, it really doesn't matter which direction vent louvers face, as long as they're protruded from rain. But for a little extra protection, I usually face them toward the wall. This also looks a little better.

BRICK TYPES

What is the difference between bricks with holes and bricks with no holes, and where is each type of brick most appropriate?

Jaime Aronow, Minneapolis, Minn.

Bricks with holes (called cored) through them are referred to as "hollow" or "hollow-core" bricks, and bricks without holes are called "solid." When it comes to building walls, either type is suitable. That goes for core-cored bricks (two layers, or "wythes," of bricks, separated by an airspace) as well as hollow walls (one wythe covering a wood frame wall). Some bricks have three relatively large cores, others have 10 or more relatively smaller cores—either's better in long walls, control area of cutting doesn't sound all present of the brick's surface. The cores enable the brick to vary, or harder, more uniformly during firing, a process that heats the brick to as much as 2,100 degrees. They're also less expensive

to produce, since they use less clay, take less time to heat, and cost less to ship. And if you were a brick mason who picks up his debris of bricks in the course of a workday, which one would you prefer? The lighter one, of course. One other advantage: when mortar oozes slightly into the core, it forms a very strong mechanical connection between the bricks.

Some masons prefer solid bricks for exterior chimney work, the thinking being if water were to get into a hollow-core brick and freeze, it would expand and break the brick. And, of course, solids are best used for any sort of exterior paving work.

Some solid bricks have a "frog," a depression located on one flat surface that serves pretty much the same purpose as cores. Frogs are limited to a specified depth and a specified distance from the face of a brick. They should also be laid lying to face down. ■

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Home, Sweet Bungalow

A wreck of a house undergoes a better-than-new renovation

“W

hat kind of house can you get for \$29,900?” Paula Velosch checked to her husband, Tim, as she was looking through a realtor’s brochure. Paula had just moved their daughter to Rock City, Minnesota, a town of 1,500 about 40 miles north of the couple’s duplex apartment in St. Paul, and she’d connected with the realtor. “It had an ad for this house. Handyman’s special. As in, bring your own hammer and nails.” “We were curious, so we decided to check it out,” she says.

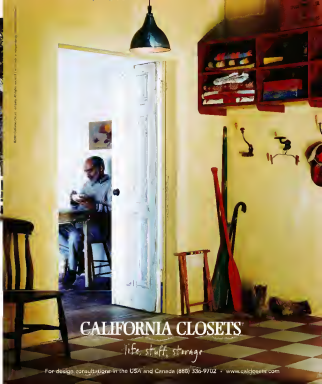
What they found was a two-story, Craftsman-style house, built in 1916, with peeling paint, a sagging roof, dozens of broken windows, and a rear porch that was nearly falling off. There were also back stairs that, which meant that if the current owner didn’t sell the property it would be taxed over to the

Before



Having been marked by insects, the already Craftsman (1916) was missing many of its original details. But a painstaking six-year restoration brought the house back into focus (2012) as a celebration of the fine workmanship of the period.

BY MARGARET NELSON PHOTOGRAPHS BY GRAB HOLDEN



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before

city and the house would be torn down. It was drama, but not beyond repair. "Something about the outside of the place engaged us as we drove up," says Paula. "It had the very, old-fashioned look of my grandmother's house, and Tom thought the architecture was interesting."

Once inside the three-bedroom, 1,367-square-foot bungalow, Paula and Tom fell in love with the big enclosed front porch (they could picture it filled with wicker furniture), the sunny living room with its tall-wood slats, and the pair of decorative columns flanking the archway to the dining room. The kitchen, at the back of the house, was cluttered and tiny, but the small porch behind it allowed room for expansion. Making their way up the



A colorful antiques booth graciously from the dining room to the dining room (see page 100). To reconstruct the damaged antiques booth (see page 100), Tom enlarged the glass doors and half of the windows that long ago had been discarded in the basement. He then depicted the dining room in living it back in its former beauty.

after



steep, dark staircase to the second floor, they found the master bedroom streaming with light. Two small-side bedrooms would be handy for visiting grandchildren, and the only bathroom still had the original fixtures.

Slipping over debris and rubber droppings (the former tenants gave them per the run of the house), Paula, a nurse, and Tom, formerly an electrician who now works as a consultant, focused on the house's potential. The kitchen hadn't been renovated since the 1940s, but "overall the structure was good and the underpinnings were solid," says Paula. "You could tell the house had once been beautiful."

After checking out a variety of books and historical records, Tom and Paula concluded that the house resembled No. 155, a \$1,080 model in the Sears, Roebuck and Co. mail-order home catalog of the era (see "Houses in a Box," page 42). Determined to restore every room as accurately as possible, the couple, who had tackled only minor renovations on previous homes, started studying how to book to prepare themselves. They swung one screen on their first project—reupholstering the sagging roof—within minutes of closing on December 1, 1995. "That was critical," says Paula. "We couldn't begin any of the interior work until that was fixed." They spent most of the month picking the way out of the adjectives, sniffing cotton and king ports in the area, and slating new rafters to the old, undamaged ones.

"It was exhausting in the beginning, but the house wasn't livable," says Paula, recalling how she and Tom commuted daily from their apartment in St. Paul, working on the house from 8 a.m. until 12:30 p.m., when they would head home to showers, change, and upon to their regular jobs. The demanding routine did, however, help their partners clear new projects, getting, evaluating, reviewing, and meeting new day-will in the bedrooms so they could finally move in.



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before



restored a damaged fireplace in the dining room, which now gleams as it did in 1916. And after carefully peeling away multiple layers of wall paper—in almost every room of the house—the couple was able to expose or closely match the original decor. Now there's just one project left: renovating the front porch. "At the moment it's used for storing lumber," says Paula, "but one day it will look welcoming and cozy, like the rest of the house, and be filled with lovely wicker pieces." ■

after



The old staircase (1977) was steep and dangerous. During for a new one, safer, sturdier and nice, the couple moved the top of the staircase back for a more gradual pitch and enlarged a small landing off the living room. Climbing their lovely Sears catalog, they found space for a Craftsman stair and, which Tom called of yellow pine. The new staircase (2001) is typical of the period, although not of the house.

pace, just like those found in the 1916 catalog. He now fashioned maple newelposts and finished the walls with hand-painted, rosewood of the stamped plaster detail that had once decorated the wall. Tom also reconstructed the deck, strip

House in a Box: The Legacy of Sears, Roebuck Homes

The Victorians believe their 1916 Burlington residence Sears, Roebuck's Western Home No. 120, available from 1912 to 1916. Sears and other suppliers, such as Montgomery Ward, Larkin, Searling, and Aladdin, sold nearly 500,000 pre-fabricated houses in the first half of the 20th century. Between 1908 and 1940 Sears alone produced about 100,000 catalog houses in 447 different styles, including Craftsman, Tudor, and Spanish Revival. One had only to choose and order a model from the annual catalog, pick up the parts at the local railroad station, and assemble them using basic carpentry skills and the free-to-manual. Advantages to the houses over the years make their identification today difficult, but the estimated 800,000 Sears and other Sears-American buildings. —Maggie Lockman



\$1,080

The following is a list of the houses in the Sears, Roebuck catalog, available from 1912 to 1916. The houses are listed in the order in which they were introduced. The price of each house is given in parentheses. The houses are listed in the order in which they were introduced. The price of each house is given in parentheses.

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hether a good brush, it doesn't matter how experienced a painter you are," says painting contractor John Doe. "You can't control the paint."

According to Doe, who has painted a number of This Old House projects, the search for a good brush starts with knowing exactly how it will be used. A thick, 4-inch-wide brush with long bristles would be perfect for coating clipboards but useless on narrow window muntins. For windows, Doe chooses a thin, 2-inch-wide brush with a long handle and shorter, more easily controlled bristles. "I'm always trying to strike a balance between precision and productivity," Doe says. "The more you have of one, the less you get of the other."

A brush's performance depends on its bristles, which carry the liquid finish to a surface, distribute it evenly, and smooth out the imperfections. The old rule about never using natural-bristle brushes—meant for oil-based paints—with water-based formulas will hold; natural bristles soak up the water and go limp. But the newer blends of synthetic filaments can handle both types of paint with equal fervor. "More than anything," says Doe, "it's essential to use the best brush money can buy." That said, there are still times—equal jobs where the cleanup would take longer than the work—when a throwaway foam or cheap bristle brush will do.

BY CLAYTON KARPERS REPORTED BY JONAH DOE
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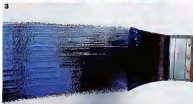
brushwork

painting

1 Before dipping a brush to paint, dip it into water (for water-based painting) or paint thinner (for oil-based painting) to wet the bristles in the tubule (the metal band) and prevent paint from clogging up there. This makes pick-up easier and sends into the brush's life. Squeeze out the excess, then comb out the bristles with a brush comb (sold at paint stores).

2 Dip the bristles in the paint a bit less than halfway, point any dipper up the brush and pull out the surface and will be harder to clean out. To prevent chips, dip both sides of the brush against the inside of the bucket.

3 Start each stroke on a dry surface, work the brush toward any wet edges. Spread full brushloads evenly, using the sides of the bristles. Then lightly drag the ends across the wet coating to feather them. You find "dipping off" across any brush stroke.



cleaning storing



Clean brushes as soon as you're done painting for the day (use water, easy water for water-based brushes, for oil-based coatings, use the solvent specified on the can). Cleaning with solvents: Light. A brush is clean when the solvent or solvent runs clear. Just use it, usually after four coats. Do not leave a brush in solvent—it may destroy the bristles. Spin out excess solvent, comb the bristles with a brush comb (just next to a dry glass then and remove any remaining paint, and then lay the brush flat on its side to dry. Store it in an outdoor keeper or a piece of folded newspaper to preserve its shape.

Cleaning With Solvents

- Solvents are toxic—wear rubber gloves.
- For the first time of your brush, it is fine to reuse old, dirty solvent. (See below for directions on saving solvents.) Use solvent in a half-gallon, working the solvent through all the bristles and up into the handle. Then drain and spin dry. (Transfer this dirty solvent back to its jar.)
- Next, rinse the brush in a half-gallon of clear solvent, drain, and spin dry. Do this at least twice more, reusing the dirty solvent with little in it separate container.
- Water-based exterior paints need a solvent rinse, too, the paint leaves a residue. Oil brushes that soap and water won't remove. Before the final rinse, run clean paint thinner through the bristles. Store this solvent separately.
- To reuse dirty solvent for reuse, let it sit for about a week and the solids will settle out, leaving a decantable liquid that's clean enough for one, two, three, or four rinses (although not for finishing paint). Store the solvent in suitable cans or jars—well labeled—in a cool, safe place.

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To fit into a tight bathroom, the sink console (left) was made to order. Just ahead of time, we were able to source the sink from American Standard (704), Triennial (30591), and Kohler (312.291).



Sink on Legs

A compact console completes a period restoration

BY DAN RIGLER

S

o thorough were Scott and Nancy Burzle in the restoration of their 1900 Colonial Revival in Woburn, Massachusetts, that they worried over the bathroom sink at the converted garage in back turn-of-the-century. Burzle, who had to enter the needs of their teenage son, Sam. And since the bathroom was only 7 by 10 feet, with a sloped ceiling at one end, the sink had to be compact. With the help of general contractor PH Perry

Baldwin, the couple decided a console sink would work best.

The choice made sense historically. "Console sinks hark back to the days before indoor plumbing, when latrines consisted of a pitcher and basin set atop a metal or wooden stand," says Stephanie Witz, certified bath designer and former president of the National Kitchen and Bath Association. Once water was piped into—around 1900—integrating the basin was a small conceptual step



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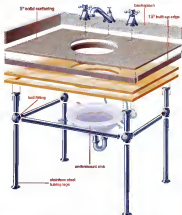
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Today's console sinks can be adapted to any period decor simply by choosing different legs, counter materials, or basins. Many bath fixture manufacturers offer the same in a range of styles and prices, from a rustic-looking round console table in maple for around \$1,000 to an Art Deco model with marble top and beveled nickel legs for \$2,100.

Because the Rencovers had specific requirements, their sink was custom-made. A four-legged stainless steel stand suited the simple bathroom and was appropriate to the house's time period. For the countertop and backsplash, they went with solid surface—a sculptured material as an otherwise old-fashioned bathroom, but one whose durability, ease of maintenance, and design flexibility won out.

The console helps make the cramped space look bigger—a quality that can also be achieved with pedestal and wall-mounted sinks. "An open area under the sink usually expands the surrounding room," says Wile. On the downside, it placed over the vanity, which meant supplementary storage in the form of a medicine cabinet and hutch had to be built in. However, in this period-inspired bathroom, there's no one like you'll see in a modern day life. ■



DECORATIVE SINK COMPONENTS

Though the Rencovers chose 3-inch polished stainless steel legs and industrial-style ball fittings for their stand, there's a wide range of finishes and fixtures to choose from. Tubing options shown here include: (A) 1-inch square with stainless steel, (B) 1-inch round polished stainless steel, and (C) 1-inch round polished brass. Fixtures include: (D) 1-inch polished brass square flange, (E) 1-inch polished brass round flange, (F) 1-inch solid nickel ball fitting, and (G) 1-inch polished nickel ball fitting. Costs depend on material and design complexity. For instance, a two-legged brass stand might be as little as \$600, while a four-legged stand with towel racks and a polished nickel finish could run as much as \$1,000.



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Steam Showers

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Forget the spa. When Patrick Boyle, a real estate executive who lives in a Chicago suburb, needs to unwind, he checks into his state-of-the-art steam shower. "First I turn on the water for a regular shower," Boyle says, "and then I turn on the steam. The feeling is fantastic. After ten minutes, I'm totally relaxed."

The secret of this spa-like experience: a small but powerful electric steam generator that quickly heats water from a dedicated supply line, then sends billows of steam into the shower stall through one or more nozzles located near the floor.

Designers and contractors say that steam showers are catching on. "America is a country of shower-takers," says Dan Roberts, an executive at Mr. Steam, a company that makes home steam showers. "Frigids are in a hurry, and a steam shower gives you a spa experience in a matter of ten min." The number of steam showers installed has soared over the past few years, and their popularity may continue to eclipse the ubiquitous home whirlpool. "If I have a client trying to decide between a whirlpool or a steam shower, I recommend the steam shower," says Alan Halvorsen, the

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architect who designed the interior of the Boyle house. "A bath takes too long to fill." Plus, steam may have health benefits. Several clinical studies have found that heated, humidified air helps relieve congestion and other cold symptoms.

When considering a steam shower, plan for a well-enclosed stall that's completely sealed, so the steam can't escape. "Otherwise it'll peel the wallpaper off the entire top floor of your house," says The Old House planning and listing expert Richard Trethewey. That means a floor-to-ceiling glass door—shower curtains won't do.

Also important is finding an out-of-the-way place for the steam generator, which is the size of a small carry-on suitcase but requires additional space to keep hot pipes away from the framing (which must comply with local building codes) and an enclosure that can be accessed in case a part needs replacing. "Generally they're put in a closet or that above-the-shower area, or down in the basement—the closer the better," says Richard. "To get the most steam, you want to direct and shut a pipe run as you cut from the generator to the shower." The main main distance is 30 feet.

It's possible to retrofit an existing water-only shower to include steam, but only if you're willing to take on a major renovation that would include putting up walls and hiring professionals to install the new plumbing. Steam generators require a dedicated water line, and some

Patrick Boyle's plan: convert July-4th 4½-bath shower into a steam generator with an adjustable temperature setting—water 7, Far Infrared 100, 150, 200, 250, 300, 350, 400, 450, 500, 550, 600, 650, 700, 750, 800, 850, 900, 950, 1000.



PHOTO: BOYLE HOUSE

need a special drain hook-up to accommodate back-flushing, which involves running fairly warm water through the unit after each use. This helps to prevent scaling—the accumulation of calcium and other minerals on the internal surfaces of the generator—and keeps the system working efficiently. Steam showers also usually require 240-volt hard-wiring in order to heat the water rapidly. Steam temperature and duration are regulated inside the shower by a low-voltage wall control similar to a home-hall thermostat.

The good news is that if you're already building or remodeling a bathroom, adding a steam shower probably won't break the budget. The cost of the generator is based on the size of the shower enclosure. A 5½-sq-ft enclosure is usually sufficient for a 5-foot-square ceramic tile shower with a standard 8-foot ceiling; a 30-kw model ("the light-dimming gullywasher," says Richard) could steam up a 10-by-12-foot tiled room. According to Holverson, installing a 5.5-kw unit with all its wiring, switching, and plumbing will cost over \$4,000. But Mr. Stearn's Research says that the average electricity it takes to run such a generator costs pennies. "If you pay 13 cents a kilowatt-hour for power, the same machine, run for 13 minutes, would cost 22 cents," he says.

You could also buy a prefabricated steam-shower unit—in which the steam generator is built into a fiberglass wall—at prices ranging from \$1,000 to \$4,000. Or you could fit a steam nozzle to a conventional fiberglass shower enclosure or a custom-made mosaic, stone, or ceramic tile wall, although either will need to be surfaced with a flaccid-tempered glass door that could run as

much as \$2,000. Also, a shower lined with a natural stone such as marble, which absorbs steam quickly, will require a larger generator than one built of glazed ceramic tile.

In the Boyle house, Holverson went with the rustic look of Swedish stone. "There are no windows in that bathroom," he says, "so we used that as an opportunity to suggest the atmosphere of a natural grotto." He had the standard 12-by-12-inch stone tiles cut down to 6-by-6 inches "to give it more of a custom mosaic look." The effect is enhanced by a rain-head shower fixture, as well as by a custom half-inch frosted glass door that disappears into the stonework.

Boyle says that as much as he enjoys his steam showers, his children and grandchildren like it even more. "Whenever they come to visit, they use it every day. It's like a bath," he says, "except they don't get toenail fungus." ■

Seal the stall well or the steam will "peel the wallpaper off the entire top floor," says Richard Trethewey.

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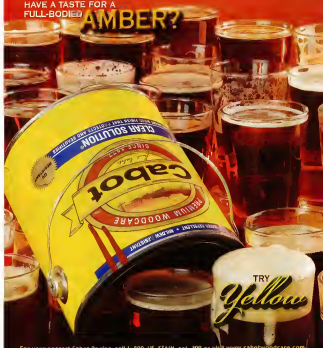
Replacing, repointing, and cleaning

The gritty, scraping sound of a ruck-pointing trowel disrupts the quiet of a cool spring morning as mason Mike McMahon drabs snowy-white mortar between and for colored clayey bricks. McMahon is part of a crew from Charlie Afro Restorations, in Cambridge, Massachusetts, who have come to repair the crumbly masonry on the 1513 Isakauer house in nearby Milton. "There are quite a few loose beds and a lot of cracking in the joints between some of the courses," he says. "That means water could penetrate."

When water finds its way between bricks, seasonal freeze-thaw cycles can cause spalling—a scaling and chipping of the brick surface—and weaken the integrity of the brick-to-mortar bond. McMahon uses a mix each common brick peflines in the bed, before the damage has gone so far that a whole section has to be rebuilt. "Brick will last as long as you take care of it before it gets, flakes, or cracks," he says. The right repair will also save the homeowner some cash. "I can give bricks a clean look with a quarter of the work of building new," says McMahon, as he carefully fills another joint with the creamy mortar. "And I can do it as a quarter of the cost."

BY JORDAN REED PHOTOGRAPH BY DAVID GARMACK

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replacing

▼ After finding evidence of severe damage at the top of the chimney—loose, spalled, and pockmarked bricks that sound hollow when tapped with a tool handle—restoration-company owner Charles Allen removes the affected sections. He taps the joints with a hammer and a brick chisel until the mortar gives and the bricks come free. "It takes a gentle touch," he says, "just enough to remove what's already loose and in bad shape."



▼ Mason Mike McElmorrow taps the replacement courses starting at the crown. He puts down a 3/4-inch mortar bed, lays the two end bricks, and taps them down to pack the mix. He checks for level with a bubble level, then, to guide him as he lays the rest of the course in between, he stretches a string between two wooden blocks that mark over the new corner bricks.



The importance of Lime



When restoration masons blow stonehouse walls about, choosing between a lime mix and a more modern mix, he's not calling Portland cement or picking into numbers. He's deciphering the story of the Portland cement, lime, and sand that, with water, form the lime-based mortar he uses on houses built before the '180s. In some less industrialized areas, up until the early 1900s when cement was available and faster-curing Portland cement mortar allowed lime out of the mix. Lime mortar is softer—it can be scratched with a penknife—and while that's not a good thing, it's also what makes it so important.

However, including lime in a mortar—in the correct proportion to Portland cement—is vital to preserving older brick. "You should have at least twice as much lime," says John Spewick, vice president of the U.S. Heritage Group, a company specializing in matching and blending historic mortars. "If you don't, you run the risk of raking at your brickwork over the next ten or fifteen years." Lime Portland cement can trap moisture if applied over joints with lime, and it can make the mortar stronger than the bricks themselves, causing them to crack when they expand and contract in extreme temperatures. Double the lime and you've got a joint that protects at any cost. "Lime mortar gives with changes in the weather," Spewick says, "it's designed to breathe fluid for the brick."

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repointing

► When the bricks don't need to be replaced, McMorrow repoints. He removes the old mortar with two passes of an angle grinder fitted with a 1/4-inch-thick, diamond blade, holding the tool level and cutting in 1/4 inch. To clear the joint of any remaining loose mortar, which can violate the bond between brick and new filler, he uses a chisel, then hammers away the dust.



► After 45 minutes of drying, repointing can begin. McMorrow loads a trowel with fresh mortar—made with less water than the mix he used to lay bricks—and forces it to match the width of a joint, holding the trowel up to the bricks. He slices the mortar with a tuck pointer and pushes it forcefully into the crevice, repeatedly picking the joint until he has filled past the bricks' face. A few hours later—after the mortar has stiffened a bit—he smooths off the excess with the pointer, then "chicks" the joint lines with a jointer or the rounded end of a tool handle to give them an indented, finished look. A few strokes with a mason's brush remove excess crumbs of mortar.



cleaning

► The roof waiting McMorrow returns to clean the bricks, which are covered with a white haze. He uses the same method he would if were to clean dirt or pollution off the bricks, scrubbing them with a long-handled, plastic-bristled brush dipped in a solution of 1 part muriatic acid to 10 parts water. (Though the solution is too weak to do harm to the roof or any paintings below, he makes sure to wear eye protection.)



the finish

► After a final rinse with the hose, McMorrow paints up, leaving a wonderfully refreshed chimney. "The restoration kind of bridges new materials at the same moment, which is appropriate on a house this age," he says. "We brought it back to life."



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BY MAX ALEXANDER

Keeping It Pure

Water filters protect against a range of hazards, from bacteria to heavy metals

Last year American spent about \$4 billion on water filtration, from \$20 activated-carbon cassettes to whole-house reverse-osmosis purifiers costing thousands of dollars. These systems protect against a wide range of hazardous chemical toxins like benzene and asbestos, E. coli and other biological contaminants, and metals such as arsenic (a known carcinogen) and lead (associated with central nervous system disorders). But safety isn't the only reason home filter use is on the rise—up 64 percent since 1995, according to industry data. “People have gotten used to the literal taste of bottled water,” explains David Knapinski, residential products manager at Ohio filter-maker Keneco. “People are worried or under-risk. Filters can eliminate chlorine odors and off tastes, which means homeowners can get the same quality drink from their taps as from a bottle, for a lot less money in the long run.”

There's not to say that contamination isn't a concern, especially in homes that rely on wells for their water supply. While public water systems, which serve 85 percent of the nation's residents, are tested daily or even hourly for safety, no such protections exist for private wells. They can be subject to seepage from agricultural runoff, pesticides, and naturally occurring contaminants like arsenic and radium.

So whether your motivation is safety or aesthetics, the first step is to have your water tested (see “Tasting the Waters,” page 78). “Take the time to find out what's in your water supply, so you know you're getting a system that can address those issues,” says Cheryl Lapkowski, toxic wastes affairs specialist at NSF International (licensed by the National Sanitation Foundation), which verifies filter claims and assigns product safety. “Also, make sure you get a system with the right capability. It could be too small to treat all of the contaminants.”

Or too large. “Unless you have evidence that are staining your fixtures, you don't really need to filter your water,” says The Old Water Plumbing and Heating expert Richard Timmerney. “In my house, I have an activated-carbon filter under the kitchen sink. It's hooked up to a tap water spigot for the water we use to make and use or drink for the kids. And don't forget to run the water for a few minutes. What good is it to have filtered water and use an outlet made from the lead itself?”

Whether you opt for an on-tap sink or fridge (also called a point-of-use system) or a more advanced whole-house (point-of-entry) setup, the biggest hit to your wallet over time will be the replacement filters. The best way to compare prices is to check the annual cost of filter replacement, based on the manufacturer's claimed life.

Giardia
Pathogens
Arsenic
Mercury
Chromium
Lead

PHOTOGRAPH BY JOHN LAWTON

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problem:
Metals, chemical toxins, some
biological pathogens

solution:
REVERSE-OSMOSIS SYSTEM

Reverse-osmosis systems force water against a semipermeable membrane that lets only water molecules through, leaving potential contaminants as the other side. The result is purified drinking water that's devoid of heavy metals like mercury and lead. Most are installed at the point of use, typically treating water for the kitchen faucet and sometimes bath systems cost from \$500 to \$1,500 installed. The bulky equipment can fit under most sinks, but that may leave much room for the dish detergent. A good option is to install the unit in the basement, if you have one.

Distillation. The process removes a lot of water. In most systems three times as much water, along with removed contaminants, goes down the drain as comes out of the faucet. That could be an issue in regions where water is scarce or expensive.

Reverse-osmosis systems include a spigot around the perimeter to exclude large solids and an activated carbon post filter to remove organic contaminants and improve taste and odor. These filters typically need changing once or twice a year. The membranes don't eventually wear out, too, and needs replacing every two or three years, expect to pay between \$150 and \$180 for a new one.



problem:
Undesirable taste and odor

solution:
ACTIVATED-CARBON FILTER

Activated carbon is a versatile water filtration medium: it absorbs everything from refrigerator gaskets (about \$20) not including expensive filter costs to under-counter units (\$50 to \$100) to whole-house systems (\$500 to \$1,000). It's most often seen in reverse osmosis, so don't add to municipal water supplies to kill harmful bacteria but can leave an unpleasant taste and odor. (Chlorine can also cause dryness, which is why some people install whole-house dechlorinators to treat tap water.) Some carbon filters also absorb potentially harmful chromium by-products called trihalomethanes, including chloroform, as well as pesticides and PCBs.

Carbon filters work on the principle of adsorption, a form of molecular surface interaction with the force of a magnet. The carbon surface is extremely porous; it can hold on to a large number of particles. Eventually, however, the pores fill up, and the filter must be changed. (Because a homeowner can't always tell when the filter is spent, manufacturers offer time frames based on average household water use. Most sophisticated systems have meters that detect a reduction in water flow (signifying a clogged filter) and shut down until the filter is changed.)



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Testing the Water

The first place to go for information on the quality of your water is right in the source: your local water utility. Actually, they'll come to you. Federal law mandates that water suppliers sending 10,000 or more homes send an annual report to all customers. (Quality systems can post it in the newspaper.) This "consumer confidence report" identifies what's in the water where it flows the plant and how it measures up to government safety standards. The document doesn't tell you everything. Contaminants like lead and copper can leach into water from household pipes, especially if your water is acidic. And if you drink pesticides with water, you need find out what's in it yourself. The safest bet is to get your water tested right out at

the tap. Water-filter devices will provide this service, but you can't get an independent assessment from a private laboratory. In search of this kind of National Testing Laboratories, www.natlabs.org. For about \$150, the lab will send you a test kit like the one pictured at left. Within two weeks of receiving the sample, you will receive a detailed analysis. Before this method develops into a standard, why buy the device, and how best to test this. For help choosing a dealer, the Water Quality Association (www.wqa.org), an industry group, can recommend specialists in your area. Look for the NSF certification on products, which guarantees that a filter system lives up to its claims.

problem: Hard water

solution: ION-EXCHANGE WATER SOFTENER

Water that is high in dissolved minerals, particularly calcium and magnesium, causes scaling of pipes and costly buildup from soap residue that dries and seals. Whole-house water softeners—large-scale systems (pictured at the point of entry)—can eliminate these problems, along with water spots on drinking glasses and shower doors and rust stains on fixtures.

Softener systems, which cost from \$100 to \$2,000, employ a process called ion exchange. Sodium cations, which bind to the softener tank using an electrical charge, introduced at the factory after it is the opposite of that emitted by the mineral ions in the water. In a complex molecular trade-off, the mineral ions switch places with the sodium ions on the beads. As the beads become saturated with mineral ions, they shed the "load" periodically by the introduction of a special salt. When the salt enters the tank, it dissolves the mineral sodium and magnesium salts are then flushed from the system. The salt reservoir usually needs refilling every month or two, depending on the hardness of the water, the size of the tank, and the amount of water treated. The process adds some sodium to the softened water. (Sodium chloride with people at low salt diets can lead to potassium chloride system as an alternative, or filter drinking water at the tap.)



problem: Sediment solution: SPUN-WOUND FILTER

A simple type of whole-house water treatment, spun-wound filters are designed to remove sediment, dirt, and oil. Typically at homes using well water, (assuming a clean or white pipe [the material is usually polyethylene], a spun-wound filter traps particles in its fibers. Although such systems can be purchased for less than \$100, \$100-600 setups with at least moderate pumping power (to avoid clogging) are more common. When clogging builds into the house's main supply line, the filter must be changed about every three months. Spun-wound filters can be swapped out but are often paired with a backwash filter system.

problem: Bacteria and viruses solution: ULTRAVIOLET LIGHT

Ultraviolet light uses the microbe and of the light spectrum to zap the DNA of bacteria and viruses, rendering them sterile. It is a relatively effective against local waterborne germs. But if you buy such pathogen-free water in treated municipal water, if you have a well that has passed positive for local coliforms, (UV may be the answer). Because they don't protect against any other contaminants, these filters are always paired with other systems, such as reverse osmosis or a sediment filter. Depending on the amount of water treated, prices can range from a few hundred dollars to as much as \$1,000.



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Sink, stovetop, resistant-to-rust and stains, stainless steel has so many uses that it's ubiquitous around the house. Outside, where long-term durability is paramount, stainless steel fasteners hold roofing and decking down and hold trim and siding up. Inside, where plumbers require rust-free components, stainless steel lines the inside of water tanks, boilers, and valves. But it's in homebuilding kitchens that this metal's virtues shine, on stainless countertops, decorative backsplashes, stylish appliances, and even as cladding for cabinets. "Practically speaking, it's easy to clean, and you don't have to worry about spilling anything on it, even acidic foods," says The Old House host Steve Thomas. "Plus, it looks great."

Stainless steel was introduced in 1913 by Harold Brearley, a British metallurgist looking to improve gun barrels. Eighteen years later, the same alloy substitute was used on the Empire State Building and the top of the Chrysler Building in New York City. Shortly thereafter, the first stainless kitchen sinks went on sale.

Today, such sinks are by far the most popular kitchen fixtures in the country, for obvious reasons. They're tough, forgiving (a dropped glass

balanced against the dark wood floors and orange painted walls, the stainless steel panels covering the appliances, cabinets, and island in this Chicago loft create a sleek yet striking kitchen.

BY JEANNE HUBER PHOTOGRAPH BY JUDITH BROWLEY



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CONSTRUCTING A CUSTOM SINK

1. A sliding blade of stainless steel is rolled onto a roll of the 304 steel plate in Canton, Ohio.

2. At Quent Metal Works, a custom fabricator in Minneapolis, a worker cuts sink flares out of a stainless sheet with a plasma cutter, a tool that uses a hot stream of ionized gas to vaporize steel.

3. After the sides and back of the countertop are bent into shape with a 178-ton metal brake and mounted to a plywood substrate, a stainless sink is stamped and then welded into place.

4. Grinding and polishing the rough weld leaves a seamless connection between sink bowl and countertop.



is more likely to survive landing on steel than on porcelainized cast iron, and impressive to almost anything that will be tossed into them. Most are made in the same way—with a die and hydraulic press—using the same material: a nickel-rich alloy of chrome and iron called 304 stainless, also known as 18-8 for the respective percentages of chrome and nickel it contains. Yet prices range from the affordable to the astronomical: A large-in-bowls sink may run as little as \$30, while a top-of-the-line model can cost \$1,000 or more.

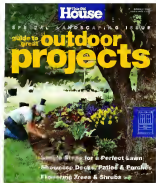
A QUESTION OF THICKNESS

What accounts for some of this difference is how much metal a sink contains. A 48-inch-wide, 32-inch-deep model with three bowls needs more material than a 40-inch-deep single bowl. But the more critical factor is thickness. Some sinks are fabricated with .035-inch-thick 24-gauge steel (a little thinner than a credit card), while others are .075-

inch-thick 16-gauge, more than three times as much metal. (The smaller the gauge number, the thicker the metal.) Typical choices for sinks in homes are 20 or 18 gauge. The other important element in sink cost is how much handwork a project requires. A cheap sink might have none at all, but inexpensive basic single-bowl sinks 20 or even 16-gauge and polishes to get a uniform, easy-to-clean look.

Sink thickness and finish also affect how well a sink performs. A thin-gauge model is noisy, overworking like a tin drum every time a plate is stirred around in it. Even draining pans can cause a loud clunk, as the heated metal expands. Each step up in gauge helps to reduce sink resonance. So does the placement—by the manufacturer—of rubber pads on the sides and bottom of the bowl or the application of a spray-on undercoating, or both. "The thicker the coating, the better," says Alvin Drenberg, of Elroy, a sink manufacturer in Oak Brook, Illinois. (continued on page 78)

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3/4" 1" 1 1/4"

1 1/2" 1 3/4" 2"

2 1/4" 2 1/2" 2 3/4"

3" 3 1/4" 3 1/2"

3 3/4" 4" 4 1/4"

4 1/2" 4 3/4" 5"



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HOMEOWNER'S STEP-BY-STEP PROJECT SERIES HANDBOOK



DETACH HERE

Installing a Toilet

TOH plumbing expert Richard Trethewey's method for putting in a new toilet—or replacing an old one

BY SCOTT GIBSON PHOTOGRAPHS BY DAVID GARNACK

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HOME BASICS

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ACE.

tools & materials



1. 5/8-in. pipe (slope down)
2. PVC primer
3. PVC cement
4. Prepwork brush
5. File
6. Wax rings (with and without integrated rubber gasket)
7. Closet bolts, washers, nut nuts
8. Wire-brush pipe cleaner
9. Tubing cutters
10. Tubing bender
11. Chemical drain supply line
12. Stop valve
13. Sinker
14. Lead-free solder

ALSO HAVE ON HAND

adjustable wrench or open-end wrenches, closet bolt caps, drill driver, hacksaw, jigsaw, hacksaw (for inside pipe cutters), level, pencil, rag, screwdrivers, seal assembly, small brush, 1/8-in. 1/8-in. stainless steel wire, stainless steel washers (for showering), tank bolts with washers and nuts, tape measure, utility knife, toilet bowl and tank

planning ahead

"Removing an old toilet is like installing a new one, in reverse. Just make sure to clean, empty, and dry it first."

—RICHARD TETHEWEY
The Old House Plumbing and Heating expert

"T

he most important connection in any toilet is the one that's hidden between the bowl and the soil pipe," says Richard Tethewey. The component that makes this crucial link is the closet flange, a sturdy collar that routes waste water down the drain and anchors the toilet to the floor. When selecting a flange, keep in mind the following four things:

FIRST, a flange should be made of the same material as the soil pipe it attaches to—that's why they are available in everything from cast iron (a) to copper (b).

SECOND, the center of the flange must be set back from the wall at the distance specified by the toilet's manufacturer—typically 10 to 14 inches, 12 being standard.

If an old soil pipe is roughed in too close to fit a new toilet, the skewed throat of an offset flange (c) provides an extra inch or two of clearance.

THIRD, the flange's collar needs to rest securely on top of the floor. Rigid plastic extensions (d) stacked atop the flange (and each other) can add the necessary height to a flange located below floor level.

FOURTH, the bolts on the flange must line up exactly with the holes in the bowl's base. Some PVC flanges (e) have a steel collar that can be rotated and realigned even after the base has been glued in place.

Once the proper flange is in place, the remaining steps—setting the wax ring, sweating on the stop valve, and bolting together the bowl, tank, and seat—are simple.

installation



STEP 1 Prep the Floor and Soil Pipe

- While working, keep a rag stuffed in the soil pipe opening to block sewer gas and prevent small rodents from falling in.
- Check that the hole in the floor is large enough to accommodate the closet flange up to its collar. If the hole needs to be enlarged, trace around the flange's base with a pencil, then cut away the excess flooring with a jigsaw. Avoid cutting into joists.
- Dry-fit the soil pipe into the closet bend. Place the flange over the soil pipe, then measure the gap between the bottom of the flange's collar and the finish floor (below).
- Remove the soil pipe and use a hand saw to trim it down by the measurement taken in the previous step. Then remove burrs from the cut edge by scraping it with the blade of a utility knife.
- Dry-fit the flange to the soil pipe and the soil pipe to the closet bend to make sure the flange's collar will rest on the floor.

TIP If the soil pipe is already glued into the closet bend, cut the pipe down from the inside out with an inside pipe cutter.



STEP 2 Install the Soil Pipe and Closet Flange

- Wipe PVO primer on the inside of the closet bend and on the outside of one end of the soil pipe. Apply PVO cement to those same surfaces and immediately twist the soil pipe into the closet bend.
- Prime and apply cement to the free end of the soil pipe and the inside of the closet flange. Twist and press the flange onto the soil pipe until the collar is seated on the floor.
- Rotate the collar until its slots are positioned to the right and left of the hole. (The closet bolts, which will be inserted into the slots, must line up parallel to the wall behind the tank.)
- Secure the collar to the floor (above) with stainless steel screws long enough to bite into the subfloor.

TIP When gluing a dual-collar PVC flange, align the bolt slots quickly before the cement sets.

Install the Tank

STEP 5

- Make sure the large-diameter rubber tank-to-bowl (or spud) washer on the outside of the tank's bottom is firmly seated.
- Fit the small-diameter rubber tank washers into the small tank holes from the inside of the tank, then insert the tank bolts.
- Gently lower the tank onto the back of the bowl, guiding the ends of the tank bolts into the holes (above).
- Slip a nylon washer onto each bolt, then hand-thread the nuts.
- Holding each bolt head in place with a screwdriver, hand-tighten the nuts, alternating from end to end and checking repeatedly to make sure the tank is level. Overtightening will crack the porcelain.
- Connect the tank's handle to the flapper chain.





Solder the Stop Valve

- 1** Locate and shut off the bathroom's water-supply valve.
- 2 Clean a small section beneath the supply line, then cut the line with a tubing cutter. Leave enough pipe—about 1 inch—to attach the stop valve and excutcheon. Allow the pipe to drain.
- 3 Remove the valve's handle and stem. (The heat from soldering may damage the stem's plastic washers.)
- 4 Dry the pipe inside and out with a rag. Clean the inside and outside of the pipe and the inside of the valve's inlet using a wire-brush pipe cleaner. Apply a thin coat of flux to both areas.
- 5 Slip the excutcheon over the supply line, followed by the stop valve; the valve's outlet should point upward.
- 6 Heat the supply line-stop valve joint with a propane torch (shown). Once the joint is hot enough to melt the solder, remove the flame and run the solder around the joint. When a drop of solder appears at the bottom, the joint is fixed.
- 7 Slip the joint with a clamp ring to remove excess solder and flux. Allow to cool, then replace the valve's stem and handle.



Set the Toilet Bowl

- 4** Insert the three closet bolts, threaded and up, into the flange's outer slots. Slip a brass washer over each.
- 2 Gently press the wax ring, five-side down, over the flange (shown).
- 3 Lift the toilet bowl over the flange, align the holes in its base with the closet bolts, and lower the bowl onto the ring.
- 4 Without holding or resting, press the bowl down onto the wax ring until the bowl's base rests on the floor (just above). If the floor is uneven, shim the bowl with shims at each hole.
- 5 Slip a nylon washer over each bolt, then hand-tighten the nuts. Tighten the nuts with a wrench one quarter turn at a time, alternating between the two. Stop when the wrench meets firm resistance; over-tightening will crack the bowl.
- 6 Turn a flashlight, aim the closet bolts at a point two-thirds above the top of the nut. Slip the plastic nut covers into place.
- 7 **Tip:** Begin with this step if replacing an existing toilet or a faulty wax seal.

technique

Stopping Leaks

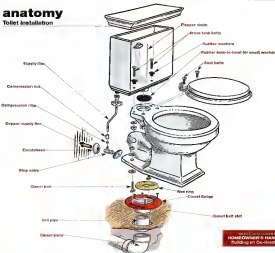
If water shows up where it shouldn't after a half-dozen flushings, Richard Trethewey suggests drying everything off, grabbing a flashlight, and getting on hands and knees. "Leaks can be tricky," he says. "You've just got to put your head down and see what's going on."

Leaks at the end of the supply line or between the tank and bowl can usually be fixed by carefully retightening the appropriate bolts. Water emerging from the area between the base of the toilet and the floor is a more serious problem. The likely culprit is a faulty seal between the bowl and closet flange. The only solution is to pull out the toilet and install a new wax ring. Because water beneath the toilet can severely damage the underlying subfloor and joists, Richard avoids peeling around the toilet's base to make leaks there easier to detect. Another trick he uses to help spot leaks is adding a few drops of food coloring to the tank water (shown). Colored water between the tank and bowl indicates that the tank gasket needs to be refitted; dye inside the bowl means the flapper or overflow tube should be adjusted or replaced.



anatomy

Toilet Installation



Install the Supply Line and Seat Assembly

- 6** Using a tubing bender, curve the supply line to fit between the elongated outlet and the tank-supply fitting. Then hole the pipe, bend-and-up, between these two points and mark it half an inch below the outlet. This will leave enough line to fit inside the outlet.
- 2 Cut the supply line at the mark made above, using a tubing cutter.
- 3 Slip the plastic nut, compression nut, and compression ring on that end onto the supply line. Add a thin coat of Teflon paste to the valve's outlet threads, then seat the line in the outlet, and fit the compression ring.
- 4 Hand-tighten the supply line's plastic nut under the tank. Then tighten the compression nut with a wrench (not shown).
- 5 Position the seat assembly over the bowl, then insert the plastic bolts through the seat back and the bowl's seat holes. Tighten the nuts by hand.
- 6 Turn on the main supply line, open the stop valve, and allow the tank to fill. Flush six times. Check for leaks (see "Stopping Leaks," p. 142).



PHOTO COURTESY OF
HOMEOWNER'S HANDBOOK
Building on Go-Good's Deck

LETTER FROM THIS OLD HOUSE

Talent Search

BY BRUCE IRVING

O

ver the years, most of talented tradespeople, architects, and historical experts have contributed to *This Old House* renovations, and it's been a privilege to feature them on our show. Whether they're there to sweat some copper pipe or comment on the Federal style, they add to the show's growing library of craftsmanship. Tracking down just the right tradespeople for these projects can involve talking to dozens of sources. But it's the part of my job as producer that I like best, because I know that it's the people who make *This Old House* really great.

If we're doing a job right, we're chosen all these talents and dedicated to ways that stay with visitors long after the project is finished. Think of the wallpaper hangers in Westminster who used a new razor blade for every cut to make so as not to rip the paper, or the Nantucket roofers who hand cut and nailed cedar shingles to form an elaborate diamond pattern. Then, in Baltimore, there were the electricians who labeled every wire to the breaker box and the plumbers who clogged every shutoff valve so that homeowner Dick Myle could make repairs without wondering what leads where. This year it's the painters in Manchester who sand, measure, and wipe between every coat on the way to a lustrous finish.

So where do they come from, these gnomes of the home front? Admittedly, we're lucky at TOH because we're often approached by specialists eager to share their expertise. We met John Deo, who is now our painting and finishes pro, when he called one day in 1995 to ask if we wanted to see a historic wayway he'd just restored. We did, and here he is seven years and five projects later meticulously stripping and repainting the McClellan's portraits in Manchester.

More often, though, we rely on the community of good people to travel in the same circles, finding the best general contractors—like Tom Silva—means also finding the best subcontractors, a rule that we've borrowed from countless trades (and something homeowners can take advantage of). In addition, quality products attract quality installers. After we discovered Bruce Bondbury's period style wallpaper during our Salem project in 1993, we used it in renovations from Massachusetts to California, and as every local supplier we encountered another gifted hanger. The condition is simple: The places that distribute the best materials attract the best subs—or at least make a point to know their names so that they can ensure that those materials are installed to the highest standards.

At the end of the day, the most valuable tool I have is positive word of mouth; it's how we have flourished always been awarded. The people who show up on *This Old House* really deserve. They don't have to. Because excellent craftsmanship speaks for itself—and good news travels fast. ■

Bruce Irving, producer of the TV show, says the key to finding the experts who appear on This Old House is really quite simple.



PHOTOGRAPH BY KIMBRA CLINEFF

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kitchen confidential

A savvy homeowner's secrets for creating a stylish kitchen and saving money while doing it

Our old kitchen simply couldn't be saved. Dark oak cabinets and stained-plate doors from an early-'80s remodel were out of sync with the 1960s-era multilevel that my wife, Kathy, and I bought eight years ago. The refrigerator, the dishwasher, and the electric range (which occasionally emitted sparks) were old or failing, and the discolor vinyl flooring could only be cleaned with 30 minutes of scrubbing on hands and knees. Worse, the 11-by-16-foot room was too small, and the only natural light coming into the space was through three small windows facing a tree-shaded front yard. This room needed much more than just a fresh coat of paint.

So, as part of a major overhaul of our house, we decided to gut the kitchen and the adjacent eating area and start from scratch. To give us more space and more natural light, we annexed a breezeway and added on a 60-square-foot bump-out lined with windows. New cabinets and appliances completed the kitchen's journey into the 21st century.

Since we'd remodeled kitchens in all three of our previous houses, I acted as general contractor. And because I had spent a number of years as a cabinetmaker, I also built the cabinets. The money we saved by doing those things ourselves allowed us to invest in top-of-the-line materials, appliances, fixtures, and storage games and end up with a great-looking, great-working kitchen. On the following pages you'll find out how we accomplished each step along the way and what we learned on the job.

BY JOE CARTER



BEFORE The old kitchen, with its dark cabinets and mottled colored vinyl floors, was small and outdated. To brighten and expand the room, the author and his wife, Kathy, added a bump-out lined with cement windows. The early maple-veneer cabinets and white-marble countertops reflect the light. A pendant gave the couple the vintage '60s feel they love.



BEFORE



AFTER



a new design

Designing the kitchen was a collaborative effort between my wife and me and our architect, Michael Stein. We knew from the beginning that we wanted to keep the U-shaped layout from the old space. One leg served as a staging area for meals as well as a buffer between kids coming at the table and the parent cooking in the kitchen. Still, the kitchen needed to be bigger and better. The solution: Bring out the exterior wall and give five feet along 13½ feet of length and turn the breezeway between garage and kitchen into an open-enclosed, 23-foot-tall tower with a wall of windows. This gave the kitchen and the breakfast area (which was moved into the tower) an extra 72 square feet of breakfast room. The counter space grew from 17½ running feet to 24½, and we gained six new windows in the kitchen workspace above.

The sink moved east with the bump-out, extending windows, doors, and vent lines was a small price to pay to maximize the sink's hallowed position beneath the windows. A new prep-area 36-inch cooking with four burners and a grill replaced the old electric range. Along the kitchen's back wall, now 14 feet long compared with the original 11, went double ovens, as well as the refrigerator, a side-by-side model that maximizes the space needed for door-swinging into the walkway. One popular space we retained, even though we had room for it, was a fixed island in the center of the U. Instead, a 30-by-34-inch butcher block-topped cruet gave us that additional workspace but could be rolled out of the way to keep the space open feeling we wanted. We installed an electric outlet in the floor, so that an appliance was needed on the wall.

RUNNING THE SHOW

Serving as your own general contractor is not a job for everyone or a realistic goal. With an example just 10 miles north, we decided to hire a general contractor to run the show. At our house, I hired a builder on a fixed-fee, materials contract and paid him and his crew for the job. I provided a punch sheet, and the two of us agreed on a bid time limit. He also used my account at a lumberyard where I'd secured a discount for materials. So, if you're experienced and have the time to check in at least once a day to review progress, this is a good way to save a contractor's 20 percent or more charge on fees and materials. Here are some

general tips if you're considering going this route:

- Find your rules through the recommendations of friends, neighbors, and colleagues.
- Check with your local water, sewer, and gas utility to find out if you need special licenses to take on the job. Even then, make sure you are licensed and bonded, have liability insurance, and provide their employees workers' comp.
- Have your bid sheet, along with a bid sheet detailing the work and materials so that there will be no confusion as to what needs to be done.
- Sign a formal contract with your builder or subcontractor.

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material matters

Starting from a mental picture of your kitchen to a materials list takes a lot of legwork. After coming up with a general idea of what we wanted our kitchen to look like, my wife and I began thumbing through magazines and doing our own homework as well as watching *This Old House* and the odd renovation show on TV. Then we took trips to kitchen-and-bath specialty stores and home-improvement centers to see and feel materials firsthand. To find a suitable wood for the cabinets, I checked the Yellow Pages and the Internet to see who sold hardwood-veneer plywoods in my area. When I found a place and went to visit, I was immediately drawn to the curly maple and its unusual, rippling grain. After I'd made my decision, the dealer recommended that I order my veneer laid up in medium-density fiberboard (MDF) for the doors and side panels and on plywood for the shelves. The cost was a steep \$225 per 4 by 8 foot sheet, but worth it.

Further visits revealed that the best countertop for the modern look we wanted was Cocatox, a composite of marble, granite, and acrylic known in the trade as a solid-surface material. At \$110 to \$135 per linear foot installed, it's pricier than thin plastic laminates (which sell for \$50 to \$70). But it's also durable and repairable—scratches can be sanded out—and not as expensive as granite (up to \$200 a foot). Polished or peccat concrete also had its allure for counters, but it came at too hefty a price—\$135 or up.

As for fixing stains, I fell in love with the richness and grain of American cherry. Meanwhile, in an Internet search, Kirby had found a backdrop tile. For the door and drawer handles we went with a simple, stainless-rod D-shaped handle to match the appliances and because we didn't want to steal the spotlight from the star of the show—the curly maple.



1. Stainless steel for the appliances
2. Curly-maple veneer
3. Plated glass for the upper-cabinet doors
4. American cherry 4-inch-wide flooring
5. Rough-cut maple tie made out of recycled beer bottles for the backsplash
6. Stainless steel door and drawer handles
7. Curly-maple veneer for the cabinets

the cabinets

There are a variety of ways to outfit a kitchen with quality cabinets and still save money. Going to a retail store is one way. However, if you get a price quote that's too high, try shopping down from custom-sized units to stock ones. Or think about getting custom-stock cabinets. With these, you purchase a run of stock units, plus one or two custom-built cabinets to make the fit just right. It's also possible to buy inexpensive stock boxes from one company and order custom doors and drawers from another. Look for plywood boxes and MDF or solid wood doors and drawers from Avera. Perforate board, which can sag, warp, and become puffy from contact with water. And whether you get a face-frame or frameless cabinet, check the construction. Are the joints right? Were screws or staples used? Is the finish smooth and consistent?

If you have some woodworking skills, consider building at least the simple boxes. Your savings could help finance the necessary tools, like a table saw, chop saw, router, and belt and orbital sanders. Or, like us, you could use the facilities at a local woodworker's club. A handy shop or a company that specializes in making doors and drawers from solid wood could also make the pretty parts.

I made both boxes and doors, and spent about \$6,000 on materials for 395 running feet of cabinetry. I paid similar custom stock costs from a decent manufacturer at \$13,000. All-custom cabinets would have cost me an astonishing \$43,000. By designing my own I was able to add some modern touches (the simple flat-front cabinets). To create size and style over the years, I installed a cabinet from the ceiling using two hollow stainless steel posts (see photo at left). (I'd seen something similar at a friend's house.) Adding upswing doors afforded one-handed access to dishes. I lined the doors with a fluted glass—a product made with rounded parallel grooves (see number 3 in the photo above)—that echoes the horizontal tile mosaic of the backdrop.



Stainless-steel post supports upper flat-front cabinets. Hollow stainless steel posts are used to attach the cabinet to the ceiling and ceiling.

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smart storage

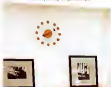
One of my pet peeves in a kitchen is not having enough over-the-sink storage. The key to my renovation was to install plenty of base-cabinet drawers, which the young, old, and short can easily access. After a determined search, Karley and I found that the kitchen-storage industry creates plenty of solutions to maximize the efficiency of both drawer and door cabinets. With the help of a few kitchen and bath catalogs, we met all our storage needs and more. Instead of a walk-in pantry (we didn't want to carve out a place for it), we opted for two floor-to-ceiling, 34-inch-wide cabinets that pull out of the wall to reveal 16-inch-deep horizontal racks (see photo below left). The base cabinet cabinet is outfitted with a double-decker carousel. Another base and pot slide out shelves that created a mini-pantry next to the cooking area (see photo at right). A new front, deep drawer set on slides that can carry 100 pounds, holds pots and pans.

Sometimes, of course, only a door or hinges will do. Cabinets can be equipped with shelves and vertical racks that slide out. Instead of putting the garbage under the sink—and constantly having to ask someone to move—we installed one 24-inch-wide pull-out cabinet to the right of it with two slide-out bins, one for refuse, the other for cans and bottles. On a separate leg are two 12-inch-deep drawers that collect newspapers and paper and plastic bags.

After six months of working evenings, weekends, and days off to get the new kitchen up and running, there is little I'd do differently. I might change a pair of deep drawers into four shallow ones or turn a door on hinges into a slide-out bin. Otherwise, the big sweetest most of time paid off in a quality kitchen for less money. So on the first Saturday after all the parts were in place, we invited a friend over for dinner and flipped some tuna onto the cooking grill. It turned great. There's really nothing like cooking in a brand-new kitchen. ■



A new pull-out pantry (above) keeps spices close at hand. A darker shade of Canyon counter tops sets off the slightly lower cooking area. The cooking and double pull-out areas (above right) have deep, engineered drawers for pots and pans. The cabinet beneath the microwave holds vertical shelves for trays and cookie sheets. Next to the stove, two full-length pull-out pantries (below left) store dry goods.



A breakfast nook sits at the base of an open-cabined, 33-foot-tall tower. The built-in cherry hatch catches the flooring. Both plates and bowls are arranged as a deep drawer to the end of the peninsula for easy access. Upper cabinet doors swing mostly up and out of the way on hydraulic lifts.



smaller smarter safer

Innovative new
products for
the kitchen
and bath

BY NANCY LACKMAN

A range that cooks and cools, faucets that operate with the wave of a hand or the press of a foot pedal, and a washer and dryer in one are just a few ways manufacturers have devised to make contemporary living easier. Safety sells, too: Among the new products highlighted here are a whirlpool bath with removable, germ-reducing jets and a whole-house "circuit breaker" for plumbing that senses when a pipe has sprung a leak and automatically cuts off the water supply. Homeowners are always seeking better ways to solve the age-old problems of too little space and too much hassle; here's how some manufacturers have answered the challenge.



Mini Range, Maxi Power

The stainless steel Fluvite range has the look and power of commercial-style units in a package only 24 inches square. With 8 inches narrower than ordinary residential ranges, and shallow enough to fit flush with standard cabinetry. Available in natural gas and propane models, it has a full-size convection oven and nine burners that pump out up to 14,000 Btu (15,860 Btu in the propane model). Options include nested broiler, convection grates, and a griddle attachment. Fluvite—\$2,150, gas burners; \$2,500, sealed burners.



In-Wall Toilet Tank

The Tectra wall-mounted "tankless" toilet maximizes bathroom space and minimizes flushing noise. The tank and outlet system are installed behind the wall, the bowl can be set as high as 48 inches, 4 inches above standard. Access is through a removable panel hidden behind the flush rimming. Refills are difficult, so the discharge pipe would need to be relocated, and the tank fits only between 5-1/2 inch. Gabe-de: \$450 to \$740 for the toilet. \$50 to \$100 for the flush valve, depending on material and toilet.

smaller



Washer and Dryer in One

If you have a standard 110-volt outlet and a sink, instant, you can hook up this combination washer-dryer. The 100-lb-in high front loader is washable and releases no exhaust—the drying cycle's hot air burns in water evaporation in a special condensing chamber and exits out through the drainage hose. Although the drum holds about 20 percent less laundry than a top loader, it uses only about one-fifth as much water. Equestre—\$1,000—\$1,140 for Energy Star model with more cycle options.

Versatile Sink

Customization possibilities abound with the Zero Gravity sink, which can be wall-mounted, partially or fully inserted into a countertop, or placed a few feet for a console look. Comes in 24-, 36-, and 48-inch square, round, and oval designs. Bowl form also optional. Readings: Bath Collection \$858 to \$1,048.



smarter



A Freezer That Runs Hot and Cold

A refrigerator and electric range is one, the Pointe can keep a dish chilled, then bake it to perfection, thanks to a 24-hour programming capability and a cooling element in place of the heater in your storage drawer. If the above door is left open after the cooling cycle is complete, the oven goes into "keep warm" mode for an hour before reverting to refrigeration. The glass-top stove features run controls whether the range is cooking or cooling. Whirlpool® 30", white, black, or brook enamel, \$1,895, stainless steel available in July.



A Toilet That Flushes Up

Designed to be installed up to 12 feet above or 160 feet away from a home's main sewer line, these gravity-actuated toilets open up new possibilities for basements or sleep-out homes. A self-contained pump below the toilet softens water before discharging it through a pipe only 1/2 inch in diameter. With no vented units with no vent tank and pump are available for installation in tight spaces. Saniway For All Ltd. \$700 to \$1,200.

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Flood Control

Like a circuit breaker for plumbing, the FloLogic System 2000 monitors a home's water flow and cuts off the supply if it exceeds set-level limits. That means no worries about leaks at a vacation home or when you're on a long trip. The device, which gets plumbed into the main water line, has a self-insulated digital control that can be programmed for the maximum length of time water should continuously flow. If the water runs too long, the device releases its built valve into shut-off position. FloLogic Inc., \$455.



Hands-Free Faucet

The first handheld faucet made for restaurants limits the spread of germs from dirty hands and runs down on chips around the faucet handles. Hold your hands in front of the e-Flow's sensor, located at the base of the spout, and it begins 30 seconds of water flow at a preset temperature. The unit runs on four AA batteries or can be hardwired into your home's electrical system. Available in chrome and nickel finishes, with six water choices for the plastic touch-sensitive sensor. Delta (208), chrome, \$445; nickel,



A Cleaner Whirlpool

Most whirlpool tubs are powered by a single motor, which circulates water to the jets through a system of pipes. In the Swedish tub, each jet is powered by its own motor, eliminating the need for pipes—along with the germs that hide in them. As a further safeguard, the jets can be removed and run through the dishwasher for disinfection. Seats, jets, jets, and soaps can be used, unlike in a conventional whirlpool tub. Because neither can be removed away. Swedish \$1,750 to \$4,395, depending on the number of jets and programmable settings.



Feet-Powered Faucet

Podobooks pedal valves can convert any faucet into a hands-free model. A foot-operated mechanism positioned in the under-sink cabinet and connected directly to the water supply turns the faucet on and off and also contains a leak to keep water flowing without foot pressure. The faucet handle still controls temperature. Available in a variety of metallic finishes, white, and bone. Pedal Valve Inc., \$395 to \$445.

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Model shown is factory specified, includes built-in panel and handle.

BY JEFFERSON KOLLE

Long before the crew from *This Old House* joined homeowners David and Janet McCue on the renovation of their house in Manchester, Massachusetts, the couple knew that their kitchen wasn't working. Granted, the appliances cooked, cooled, and washed as they should; all the cabinet drawers and doors opened properly; hot and cold water came out of the tap. The problem with the room was bigger than that—beyond anything that new cabinets and appliances could fix. "Simply put," says David, "the kitchen couldn't have been in a worse location."

When the McCues moved in, a year and a half before work began, the kitchen was off in a wing at one end of the house—the same place it had been since the house was primarily a summer retreat, staffed with servants who prepared all the meals and served the homeowners in a formal dining room. But that lifestyle little resembled the way the

The new multi-story kitchen at the Elm Old House proved itself not only a functional, but also a beautiful, a spacious, and a quiet place to eat. As well as a spacious eating area, the new kitchen at the Elm Old House proved itself not only a functional, but also a beautiful, a spacious, and a quiet place to eat. As well as a spacious eating area, the new kitchen at the Elm Old House proved itself not only a functional, but also a beautiful, a spacious, and a quiet place to eat.

CENTER STAGE

A kitchen moves out of the wings and into the spotlight



Check out
www.thisoldhouse.com
 for more about the kitchen at
 the Manchester project.

MOVING THE KITCHEN

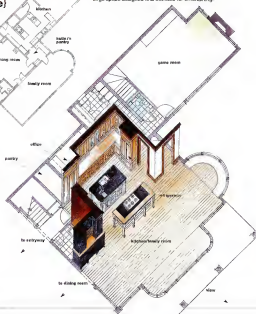
ILLUSTRATIONS BY TIMOTHY CLAFFERY

The renovation plan for the Manchester project took a late-'70s kitchen that was relegated to a separate wing (left) and moved it to the center of this house (right), creating a large space designed and outfitted for entertaining.

(before)



(after)



current homeowners live. "Cooking and socializing is a family event for us," says David. "The first thing we want was to be removed from the place where everything has happened."

The couple decided that the better location for their kitchen would be the family room, where they were already spending most of their time. The long, bright room, which looks out on spectacular views of Manchester Harbor and its outer islands, offered an ideal spot for both large gatherings with friends and everyday family dinner. By stealing some extra space for a bathroom and cloakroom from a rarely used formal dining room behind the family room, they could create a large, centrally located kitchen that could accommodate the visitors who inevitably congregate around the cooking. "We entertain a lot, people in over for dinner two or three times each week," says David. "And what we're asking is that no matter how big, small, good, or bad a kitchen is, everyone will roll out and enjoy it."

Making the Move

Moving a room or changing its function is not always an obvious solution to an unfavorable floor plan. "We tried to let the existing floor plan lock our thinking about the placement of rooms in a house," says TDW host Steve Thomas. "But just because a space was a dining room doesn't mean it can't become a kitchen."

Reconfiguring the family-room floor plan came first. With little time to wait for a final design, TDW general contractor Tim Sileo and crew spent weeks sawing and removing walls, raising ceilings, and adding doors and windows to get the most out of the space (see "Raising the Ceiling," right)—even before they knew how the enlarged room would be laid out. When the rough carpentry was complete, the family-room kitchen and family room was a boggle, says T-shaped space, 37 feet long and 31 feet wide at its deepest point.

Meanwhile, as Tim brainstormed, the McCans planned. They filled six pages on a yellow legal pad with notes on how the family preferred to breakfast, lunch, and dinner, the kind of food they liked, how they cooked, and how they entertained guests. "This is our ideal major kitchen design," says Janet. "Don't forget to give a fair amount about what works for us and what doesn't."

Over the course of many months, working with kitchen designer Ted Goodnow, the McCans translated their notes into a succession of layouts, experimenting with several arrangements of cabinet banks, islands, pantries, sinks, and counters. They tapped out the designs on the floor with masking tape, cardboard boxes, sawhorses, and, once, a full-size mock-up made from plywood. Finally, the couple settled on an arrangement they'd liked from the beginning, one which divides the kitchen into three groups of cab-

RAISING THE CEILING

Sharing two adjacent rooms—in this case, dining room and a spacious family room—into a single kitchen/family room required structural work for the couple. In this case, just knocking down a few partition walls. First, Tim Sileo and crew replaced a 20-foot bearing wall, which was smack in the middle of the new kitchen, with a steel cold-rolled beam (see "Frame Work," November 2001, page 14). Then they added 100 square feet of floor space, and lots of natural light, by replacing the south exterior wall with a beam and knocking out a curved top of windows and sliding doors.

Still, David McCann felt that the room's ceiling—just shy of 8 feet high—was too low, but raising it without affecting the rooms above it became proved difficult. "There was talk of lowering the family-room floor, which would have been a major undertaking," says Tim. "Another idea was to raise the floor in the bedrooms above, but that would have meant stepping up into those rooms." Both prospects would have been time-consuming and expensive, and would have left other rooms access off.

Tim came up with still another plan: to raise 2 inches off the bottom of the original 2x10 joists holding up the second floor and add a 2x10 laminated wood joist (SJO) board to each joist to boost them up. "And on every fourth joist, we made a flitch beam, just to be sure the support for the floor above would be stiff enough," he says. The beam consisted of a 1x6x8 flitch, 71/2-inch-wide steel plate between the original joists and the new SJO, carriage bolts and construction adhesive held the assembly together.

Because of the rigidity of the SJOs and the steel, the resulting double-2x10 joists are even stronger than the 2x10s they replaced, meaning Tim has gained stiffness in the floor above, as well as extra welcome height in the kitchen ceiling. "Ten inches of headroom doesn't sound like much," Tim says. "But it makes a huge difference in the way the room feels."



In order to raise headroom, TGD general contractor Tim Sileo cut back the ceiling joists. Sileo then cut back the ceiling joists (left) and installed the new beam (right), and jacks raised every fourth one with steel plates (above).

ners that define three distinct working scenes. Architect Stephen Holt took their designs and incorporated it into his plans.

The Final Plan

At the back of the kitchen, furthest from the windows, is what David calls the "back bar," an L-shaped bank of upper and lower mahogany cabinets with 18 doors and 14 drawers. "The back bar is all about storage. It's for putting things away, not cooking or drinking," says David. "Standing at this counter requires you to have your back to the stove and the rest of the restaurant on sweeping projects." To the left, a 6-by-5-foot pantry provides extra storage space. Behind the kitchen, the remainder of the old dining room has become a house office. A small door, sliding up and down between the bar's upper and lower cabinets with the help of lead counterweights, provides a pass-through to the office and a view of the driveway car float.

In front of this L-shaped counter is an island with a 35 by 100-

"We've realized that no matter how big, small, good, or bad a kitchen is, everyone still ends up there."

—DAVID MIDDLE, HOMEOWNER

cent granite countertop, two sinks, two dishwashers, and some cabinets. "We'll use this as the prep and clean-up area," says Peter. Four feet from the island, and close to the corner of the room, is a second, smaller island. "People have said that having two islands seems redundant," says David. "But there's a method to our madness." Set in the middle of an 8-foot-long granite counter is a no-burner prep-top cooktop. "This is where the action will be," he says. "Standing at the stove, looking out toward the family room and the barbie, the cook has both the double wall ovens and the refrigerator just steps away. And there's a small pot sink right behind him."

"On top," Jason reminds him. "David and I both love to cook, and we want it to be participatory every day for everyone. We're thinking of this island as a combination of cooking

area and bar counter." To highlight this dual purpose, the granite has a 36-inch-wide mahogany counter banding three sides. "We plan to surround the island with stools for family and guests,"

are painstaking, but it's the final one, where the counter will butt against the refrigerator partition, that's the critical, make-or-break-it cut. If he makes a mistake, he will have ruined a several-thousand-dollar piece of mahogany. "This is definitely a case of 'measure ten times, cut once,'" he says.

Using a straightedge as a guide, Peter again scores the layout line with his utility knife, sliding through the finish and its back into the wood. "Scoring the cut line reduces the chance that the surface will chip when I make the cut." His jig saw is set to a 9-degree angle so that when he turns the cut with a sanding block, he'll only have to touch up the leading edge.

Peter starts the jig saw and scores the side into the wood. The saw's bare shatters briefly on the counter like a hammer head, until he bears down on the handle, cutting a hole's width away from his line. Thirty seconds later, the cut is finished. He turns the saw off. After a few passes with a sanding block, he tips the huge slab of mahogany into place and methodically sands every corner and every cut edge. Then he brags back against the wood and looks at the counter he's finished laboring. "Perfect," he says, smiling.

A CRAFTSMAN'S DEFINING MOMENT

Steve Rydberg, the lead installer on the kitchen island to the left, the McGraw-Hill house, faces a daunting task: fitting a 14-foot-long, L-shaped countertop made of solid Rhode Island mahogany into the narrow corner at a bank of cabinets. The countertop sits on four pedestals; the highly figured, reddish-orange wood gleams through a thick layer of varnish. Once in place, with the area around it finished, it will butt against metal-panel partitions: the pantry wall at one end, the refrigerator at the other. "The cuts

For cabinet installer Steve Rydberg, making a critical cut on a piece of mahogany worth thousands of dollars is a sure-shot deal.



He gathers his layout tools—tape measure, framing square, nothing black and pencil—and sets them gently on the mahogany with no sliver of Zen-like precision. He scans meticulously for the release from the rest of the house—staircase, seats, shouted conversations, and the din of job-site radios all heard in different rooms and cell areas. Peter sharpens his pencil with a utility knife, then runs a tape measure along the back wall. "We only get one chance with this," he says.

He scribbles and scores the final cut lines—where the rounding marks the pantry and where it fits into the opening for the pass-through in the office—then slowly takes his jig saw to the wood. This solo

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INDICATIONS AND USAGE: *Alleviate rhinitis.* CLARINEX Tablets 5 mg are indicated for the relief of the allergic rhinitis symptoms of allergic hay fever (seasonal and perennial) and year-round rhinitis in patients 12 years of age and older. *Alleviate itchy watery eyes.* CLARINEX Tablets are indicated for the symptomatic relief of itchy watery eyes in patients with allergic conjunctivitis in patients 12 years of age and older. **CONTRAINDICATIONS:** CLARINEX Tablets 5 mg contraindicated in patients who are hypersensitive to the medication or to any of the ingredients or to lorazepam.

PRECAUTIONS: *Cardiovascular Effects:* Significant impairment of ventricular function has been observed in patients with congestive heart failure who received 10 mg in 12 months only or more and 4.7 mg daily in 12 months only or more administered in the oral dose up to 40 mg/day in some patients. *Respiratory and Circulatory Effects:* Significant respiratory and circulatory depression was observed in patients receiving 10 mg in 12 months only or more and 4.7 mg daily in 12 months only or more administered in the oral dose up to 40 mg/day in some patients. *Central Nervous System Effects:* Significant impairment of judgment and coordination was observed in patients receiving 10 mg in 12 months only or more and 4.7 mg daily in 12 months only or more administered in the oral dose up to 40 mg/day in some patients. *Other Effects:* Significant impairment of judgment and coordination was observed in patients receiving 10 mg in 12 months only or more and 4.7 mg daily in 12 months only or more administered in the oral dose up to 40 mg/day in some patients. *Other Effects:* Significant impairment of judgment and coordination was observed in patients receiving 10 mg in 12 months only or more and 4.7 mg daily in 12 months only or more administered in the oral dose up to 40 mg/day in some patients.

ADVERSE REACTIONS: In multiple dose, placebo-controlled trials of chronic rhinitis, the most commonly reported adverse reactions were dry mouth, headache, drowsiness, and fatigue. In multiple dose, placebo-controlled trials of chronic conjunctivitis, the most commonly reported adverse reactions were dry mouth, headache, drowsiness, and fatigue. In multiple dose, placebo-controlled trials of chronic rhinitis, the most commonly reported adverse reactions were dry mouth, headache, drowsiness, and fatigue. In multiple dose, placebo-controlled trials of chronic conjunctivitis, the most commonly reported adverse reactions were dry mouth, headache, drowsiness, and fatigue.

DRUG INTERACTIONS: CLARINEX Tablets 5 mg should be used with caution in patients who are taking other drugs that may cause drowsiness or impairment of judgment and coordination. CLARINEX Tablets 5 mg should be used with caution in patients who are taking other drugs that may cause drowsiness or impairment of judgment and coordination. CLARINEX Tablets 5 mg should be used with caution in patients who are taking other drugs that may cause drowsiness or impairment of judgment and coordination. CLARINEX Tablets 5 mg should be used with caution in patients who are taking other drugs that may cause drowsiness or impairment of judgment and coordination.

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ADVERSE REACTIONS: *Alleviate Rhinitis:* In multiple dose, placebo-controlled trials, the most commonly reported adverse reactions were dry mouth, headache, drowsiness, and fatigue. In multiple dose, placebo-controlled trials of chronic conjunctivitis, the most commonly reported adverse reactions were dry mouth, headache, drowsiness, and fatigue. In multiple dose, placebo-controlled trials of chronic rhinitis, the most commonly reported adverse reactions were dry mouth, headache, drowsiness, and fatigue. In multiple dose, placebo-controlled trials of chronic conjunctivitis, the most commonly reported adverse reactions were dry mouth, headache, drowsiness, and fatigue.

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Adverse Reactions	CLARINEX Tablets 5 mg (n=1,000)	Placebo (n=1,000)
Pharyngitis	4.7%	2.2%
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Headache	3.1%	1.6%
Fatigue	2.7%	1.2%
Drowsiness	2.4%	1.1%
Dizziness	1.1%	1.0%

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about Tom Silver and construction crew. Tom Silver is a construction worker who is shown in the photo. The photo shows a construction worker in a hard hat and safety vest, working on a construction site. The worker is standing on a wooden platform, possibly a scaffolding or a temporary structure, and is looking down at something in his hands. The background shows a construction site with various materials and equipment.

less array of components—upper cabinets, lower cabinets, countertops, islands, doors, and doors—and tucked them in the family room so that the construction crew could begin leveling and shimming and then screwing everything together.

David and Janet stood against the back wall of the kitchen, watching in amazement as the buzz of people around them "It's like a party," said David. "In the new, new" Janet said, looking at her son in his

Retaining walls, decks, and native plants give the finishing touch to our Timeless Home

LANDSCAPING a sloped lot

BY SAM MARTIN

WHEN LANDSCAPE PROJECT MANAGER ANNE WILFER first set foot on the steep, wooded Atlanta lot of *The Old House* magazine's Timeless Home one rainy Sunday last October, as the house was nearing completion, she quickly got an idea of how challenging the job ahead of her would be. "The place was a narrow road slide," she says. "Besides the fact that the land dipped into a streambed along one side of the property, there wasn't anything behind the house to keep an embankment from eventually sliding into the dining room." Immediately she knew the property would

require several retaining walls, as well as heavy native plantings with substantial root systems to anchor the soil. Getting from one side of the house to the other would require stone steps built into the hillside, as well as steps added to the basement-level deck. "Basically, we were hired to landscape a big hill," says Wilfer.

But because Atlanta sits in the foothills of the Appalachian Mountains, steep lots are nothing new for Wilfer and the Gainesville, Georgia, group she represents, The Jaeger Company. Many people are rejecting the long commutes and excessive traffic that come with a house in the faster-suburban and choosing smaller, hillier properties in the older downtown neighborhoods. But the convenience of proximity comes at a price: "Anytime you landscape a sloped lot, it's going to cost more," says

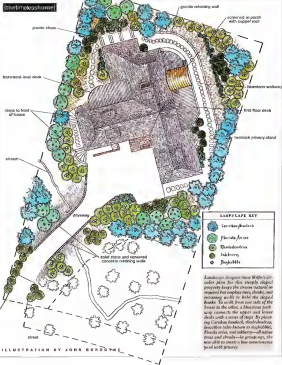
The Old House landscape contractor Roger Cook. "Moving earth means renting equipment, and in terms of cost per square foot, building walls is one of the most expensive things you can do." At the Timeless Home (a joint project of *TOH* and the Mosco Corporation), where Wilfer worked with crews to install three retaining walls, a stone pathway around the house, upper and lower decks, granite steps on one side of the house, and native, low-maintenance plantings with a drip irrigation system, the cost was roughly \$70,000.

(continued on page 146)

PHOTOGRAPHS BY JEFF VAN HORNE AND BURT WELLSFORD



Remember the Timeless Home's lot? Anne Wilfer and her crew worked from the street to the back of the house. Landscape project manager Anne Wilfer had employed retaining walls built on both sides of the driveway to anchor the soil, create a path, and the wall was covered in native plants in the driveway.



Landscape designer John Burgess's plan for this steeply sloped property keeps the stream natural, as required, but employs trees, shrubs, and retaining walls to hold the sloped banks. To walk from one side of the house to the other, a beautiful path way connects the upper and lower decks with a series of steps. By planting Caribbean hemlock, rhododendron, flowering yucca, hibiscus, and jungle lily, the stream is not only a beautiful sight, but also a source of water and shade—in groups, the trees are able to create a low-maintenance yard with privacy.



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Cardinalis leucotis (CWT), with legs, 40 each root balls, were planted to shield the back of the house from neighbors. The first saplings were placed in a row (CWT), where they will grow in about 30 feet.

Plantings

Before getting any plants in the ground, Wilke's first concern was to spot clear all the waterways that run across the front of the property. "To prevent erosion, Georgia law states that you can't landscape anything within 13 feet of a stream," she says. Her second concern was to select native plants that would not only thrive with minimal care on the shady, wooded property but also help support the oak-hickories behind the rear deck and to the side of the house. Shrubs such as *Rhododendron*, dogwoods (*Kousa*), *Amelanchier*, and *Juniper* will fit that description. "The plants we chose have an extensive root network that creates a nice hold for a bank," Wilke explains. "Dogwood is particularly a really good plant for streambank stabilization."

Wilke's next goal was to create a natural screen of trees that would be dense enough year-round to shield the house from the neighbors. For that she hired landscape architect Mike Sutherland to plant Carolina hemlock, an evergreen tree that thrives in Zone 7, which just barely covers the Atlanta area. "They normally like cooler temperatures, but they'll do well in the shade," says Sutherland. "In about 25 years, these 8-foot saplings will be 30 or 40 feet tall."

To plant each of them in the sloped ground, Sutherland and his crew from the Atlanta-based company Haherland Garden first dug a hole twice as big as and as the tree's 40-inch root ball, to ensure it is with a rich topsoil mixed with sand, which allows for better drainage. "Most trees do better overwatering rather than lack of it," says Sutherland. Once the tree was in the ground, the crew stamped down the soil mixture around it to get out any air pockets.

SUNNY SUBSTITUTES

The plants listed on this wooded hillside for all natives in the shade and are adaptable to many parts of the country. However, if you are landscaping a sunny slope, with no shelter, you'll be planting your trees in full sun, here are some alternatives that are hardy enough for most climates.

—Doreen von Dreyer

IN PLACE OF	SUBSTITUTE	ZONE
Bogholms	Many shrubs (Aster) as a groundcover is an evergreen with white flowers, long fragrant white flowers from midsummer to fall.	4-9
Florida native	Many shrubs (Aster) as a groundcover is an evergreen with white flowers, long fragrant white flowers from midsummer to fall.	2-9
Juniper	Many shrubs (Aster) as a groundcover is an evergreen with white flowers, long fragrant white flowers from midsummer to fall.	4-9
Rhododendron	Many shrubs (Aster) as a groundcover is an evergreen with white flowers, long fragrant white flowers from midsummer to fall.	4-9
Hamamelis	Many shrubs (Aster) as a groundcover is an evergreen with white flowers, long fragrant white flowers from midsummer to fall.	4-9

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Decks

One advantage to having a steep lot is that it can offer spectacular views, and there is no better way to enjoy a view than with an outdoor deck. "It's always nice to sit up on a platform and look out over the edge," says Rogers. Building a deck on a sloped lot is much different from putting one on a flat lot, he says. "You have to install longer, heavier joists from the house to the framing—requiring cross-bracing for extra support and latticework to hide the exposed underside—and a strong railing, but it's a worthy project. "With a deck you can turn an unusable slope into a usable space, provided it is engineered properly," Rogers says.

At the project house in Atlanta, where there aren't easy views but the main range starts at about 60 degrees from the rest of the plot, architect Jonnisch Ek designed a screened-in porch along with an upper and a lower deck to take advantage of the mild climate and the terrain. "Because of the sloped site, we were able to extend the interior space out into the landscape on two levels," he says. The lower-level deck is made with a composite decking material that is 45 percent wood and 55 percent high-density polyethylene (HDPE), a plastic recycled from used milk jugs. The upper deck is topped with 100 percent plastic decking. Both products can be cut and screwed to place like wood, but don't require the staining, painting, or splinty need for wood. "In fact, because they're plastic, they won't even take a stain," says decking subcontractor David Minner. Expect to pay about \$5 a linear foot for the composite and \$4 a foot for the all-plastic decking (versus \$1 a foot for redwood and less than \$1 for pressure-treated southern pine or oak).

Now when it rains on the Atlanta hillside, Wilke isn't worried that the land or the house will wash away. She has created a low-maintenance yard that needs little care other than regular watering. "And there's no lawn—I like that." ■



The basement-level deck (bottom left) is made with a plastic composite material, while the first-floor deck (above, and below right) is made with 100 percent plastic decking. Architect Jonnisch Ek's choice helps to keep the natural rainfall around in place.



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THE BOLD LOOK OF KOHLER.

the powder room under the stairs

BY ALEXANDRA BARDON

Creating an island sink, and supporting it with some clever framing, gave just enough head room for this tiny bath.

REPORTER BY MARK POBORSKI
PHOTOGRAPH BY DAVID ORNAGE

Finding room for an extra bath is a challenge many homeowners face. But when the only space available is the triangular cubby under a staircase, the challenge becomes how to make it usable for anyone who walks upright.

This dilemma recently presented itself at the TV show's project house in Manchester, Massachusetts, when the homeowners—eager to add a ground-floor half bath for guests—found the only space available was 15 square feet under the staircase. The only problem: There wasn't enough standing headroom.

So Tom Silva, general contractor for *This Old House*, devised an ingenious solution: raise the ceiling height by cutting into the underside of the stringers, the lumber that

(continued on page 146)

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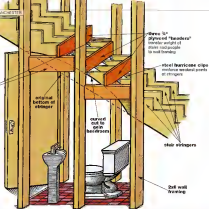
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The Trimmed-Down Staircase

Cutting curves into the underside of the stair stringers required reinforcing the staircase with plywood "headers" and steel hurricane clips.

2x6 ledger boards support plywood "headers" on both sides of stair.



Cutting the Curve for the Ceiling



Before nailing the four stringers, Tom also marks their undersides at a set distance from the point where they meet the room's short back wall. Then, using a length of 1/2-inch plywood bent in a smooth curve, he traces the arc of the bathroom ceiling onto the stringer. After nailing along this line with a finger, Tom traces the waste piece, signs it with each mark on the other stringers and uses it as a template to lay out the remaining three cuts.

Supporting the Staircase



Above the cuts, Tom supports the stringers with 1/2-inch plywood "headers" placed behind the finish room. Each header is supported in turn by the wall framing on both sides of the stair. To keep these details organized, he uses 1/2-inch of each stringer's width cut before he glues and nails the header in place. The header's ends are either notched into the studs or rest on ledger boards also notched into the studs.

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Finishing the Ceiling

supports the staircase, and strengthen the area with some decorative framing.

Trying to discover a half bath under a staircase is not a new idea, and many creative methods for gaining the necessary headroom have been used over the years. Proper arches or S-shaped floor joists (as several Marchers and homes have a staircase built room with a canted floor). But rearranging the joists would have been an expensive and time-consuming proposition. Modifying the steel framing while it was exposed and accessible made a lot more sense.

The new cut-a-way beam lightly—any cut into a stronger severely compromises its strength. He shared them up with plywood and “braces,” which transfer the weight load onto the subfloor, and reinforced the weakest points with steel hurricane clips.

In the end, his efforts gained a precious 6 1/2 inches of headroom, for a total height of 6 1/2 feet in front of the stairs. “It’s a clever way to make up for the lack of space,” says Tom. “And the curved ceiling looks pretty nice, too.” ■

Steel Reinforcement



Tom bevels the bottom edge of the plywood in order to leave more of the stringer intact. Then he bridges these narrow, vulnerable spots from below with hurricane clips.



A single sheet of 5/8-inch plywood, glued and nailed to the stringer's curved underside, ties all the framing together. Later, the plywood will be covered with blueboard and plaster, the same finish that covers the walls, leaving a smooth, paintable ceiling surface for this compact room.

PHOTO: BOB LEE

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PHOTO: The house's original, tiny kitchen barely had room for a single cook. The main Massachusetts house and Tim Boyd ran both back to the ground now kitchen and still have room for guests and family members. It was built around the island as in the family room beyond.



BY JONATHAN HIRSH
PHOTOGRAPHS BY ANDRÉ CARABONNELI, JEFFREY DE MAIR, RICHARD J. SMITH

A showcase kitchen and a family-room addition transform this riverside home

cooks' kingdom

Beyond the clatter and gables of Tim and Seane Boyd's 1955 Shingle Style house lies a beautiful stretch of the Connecticut River. Depending on the season, the view might include pleasure boats heading south to Long Island Sound, a raptor laboring with a large, fluffy chickadee, or one of the bald eagles that fly downriver each winter to fish in open water.

Tim first saw the view one day three years ago. "I found the house by accident," he says. "One morning on the way to a meeting, I happened to take a different road and saw a notice putting up an open house sign. Once I looked out at the river, I thought, 'Wow, this is special.'" After a rushed tour of the neglected but exquisite house and a quick walk down a stairway to the river's edge, Tim was ready to jump the six months of planning, loan, loan, and then the house had devolved to choosing their old house.

When Seane saw the property, she agreed. And it wasn't just the view. The house had a powerful presence. Built as a summer retreat for a large family, it had a commanding great room with a massive fireplace fireplace on either end and a covered porch along its length on the river side. Upstairs, there were half a dozen little bedrooms. These details perfectly suited the Boyds, who love to entertain. "We are each one of five siblings," Seane says. "Everyone pre-

before



original floor plan



altered floor plan



They selected materials for the kitchen that instantly gave the room a sense of age. For the floor, they picked reclaimed limestone tiles made from 400-year-old French flagstones. On the perimeter counters they used black granite. "Originally, we wanted slate," Tim remembers. "We thought it would look warm and go well with the antique limestone on the floor." Then they came across local Aberdeen Black granite, which has a sparse finish with the old finish and look of soapstone or slate, but with granite's resistance to scratching and staining. Above the counters, as a splash, they used ceramic tile with a crackle glaze.

KITCHEN PREVIEW

Most people don't look at blueprints or perspective renderings and realize how well the space will work once it's built. Tim and Elissa Engel found a way to make that process less abstract. When their architect had developed a rough layout for their kitchen, they went with Mike to the Wallingford, Connecticut, showroom of Delta, an appliance-distribution company, to mock it up full-size using a clever system called Prototype. Prototype is the slipper-enclosed staple Mike of Mark Simon of Connecticut Architects. The floor of a large, open area of the showroom has been laid in a checkerboard of one-foot-square black and white tiles. Nearby are a variety of dummy cabinets and real appliances on small carts. When Tim and Elissa simulated their kitchen, they found that several passages seemed narrow, one end of the kitchen was cramped, and the island was too long. Canopus modified the mock set of pieces to address these concerns, and the Engels got problems based on reality instead of guesswork.



STYLING: JESSICA BROWN PHOTO: RUSTY TOLMAN/REUTERS

on here on holidays, and in the summer we always have teenagers on the weekends."

But the kitchen was a problem. It was a tiny triangle wedged between the great room and the back screen. With little more than slots for windows, it had neither natural light nor a great view. And according to the Engels' architect, Philippe Canopus, it was "a nightmare of 1990s Formica and vinyl floors."

In addition to bringing more light into the kitchen and widening the view, the Engels wanted to enlarge a substantially built

A 33-foot-long great room with two fireplaces was the dominant feature of the 1983 house, but the cramped, outdated kitchen was unusable. A doorway from the new kitchen directly to the great room, instead of through the old pantry, opens up the floor plan.

the most beautiful. And then there were the appliances. With 26 years in the appliance business, Tim was going to need quite a lot of room to feature his favorites in his new kitchen.

Designing in the spirit of the house

Increasing the size of the kitchen and adding a family room meant substantially changing the house. But Canopus and the Engels loved the spirit of the century-old place and were determined to make the new spaces reflect the character of the old ones. "From day one," Canopus says, "we all agreed that the way to work with this house was to continue the original architect's thought processes."

"An architect will give you something interesting in terms of light, space, and shape."

—TIM ENGEL, CO-OWNER



The family-swinging kitchen floor also was made from antique French flagstones. A black-and-white tile and granite cooking island at the island was a good idea.

The cabinets, too, were intended to reflect that aura of the century surroundings. For the one wall with floor-to-ceiling cabinets, Campos used glass-front doors and a household mirror cabinet to evoke the sort of butlers' cupboards would have made use over 100 years ago.

The island was essential to the Bayle's kitchen. After all, it houses four appliances, a sink, several cabinets, and a pair of bookcases, as well as providing ample workspace and a place to eat a quick meal. For the island's countertop, contractor Dave DeLoreau found a source for recycled winey chestnut—timber that would have been locally harvested and used for building houses or barns before the arrival of the chestnut blight just after 1900.

Sun room

In these previous houses, one of the Bayle's favorite rooms was a glassed-in porch near the kitchen, where they ate breakfast and read the morning paper. Although unheated, it got so much sun that it was comfortable on all but the coldest days. In their new house, Jason says, with its small windows, deep eaves, and a hill rising to the southwest just behind it, "I felt like we were living in a cave." On the river side of the kitchen, there was just one narrow window—"more like a gapport than a window," Campos remembers—but if you went right up to it and looked out, you realized the river could have the best view in the house.

With all this in mind, Campos designed an addition that would house a dining and sitting area off the river side of the enlarged kitchen. He filled the walls with tall windows and glass doors and gave the room a bayed shape that increases the view angles and opens the view to the outdoors. The gapport is now a panorama.

The main faces of the house, and Tim Bayle swore that even with all this glass and a big window on the opposite side of the kitchen, it might not be sunny enough. When the room was framed and sheathed, he decided it needed skylights. DeLoreau used four narrow skylights designed to be dropped in between rafters in a carriage. Once installed, they made an interesting pattern in the ceiling and dramatically increased the level of light inside.

A place for everything

Until recently Tim and DeLo, the northern-dweller for Viking ranges and appliances, and the Bayle's kitchen is

The 4-by-4-ft. first-party, fixed seat single pointed shelves, or baskets, in a corner of the kitchen and window up for some of the storage space taken by the kitchen's new appliances.



something of a puzzle to Viking. Along with a floor-to-ceiling range with six burners, a griddle, and two ovens, the kitchen boasts a separate warming drawer, a small refrigerator, a refrigerator, two dishwashers, a wine cooler, an ice maker, and a stove hood with almost as many controls as a 747 cockpit.

In any kitchen, making the appliances and other elements work can be a puzzle, but in the Bayle's kitchen, with six ranges after five years, the job was a grand master-level chess match. The Bayle brought in kitchen designer Anna Marston to help with the job. Tim had one

major kitchen requirement: the year and had observed that the ones that looked best and functioned most smoothly were invariably collaborations between an architect and a kitchen designer. "An architect will give you something interesting in terms of light, space, and design," he says, "and the kitchen designer will know what good uses are possible and how to make everything fit."

One problem was that the Bayle had to sacrifice quite a bit of cabinet room to fit in all their appliances. But Campos found an odd bit of space, about 4M by 4 ft., between the kitchen and the back door that was just right for a walk-in pantry. Twelve or so rows of cabinets worth of storage. Compared with the few materials and appliances in the kitchen, the Bayle's pantry is almost startlingly simple: just plank shelves supported on ledger strips and painted white. The key was good pantry. According to Campos, "The best walk-in space and the most storage space makes the best pantry."

A Christmas climbing

A new kitchen, like a new car, ought to be broken in slowly, but the Bayle didn't have that luxury. Scott's family was planning to come for Christmas dinner, and when she called her father in October and said it didn't look like the work would be finished, his response was palpable. So the race was on. The day before guests were due, contractors were still working on details like running water and refrigeration. But the job was finished in time for guests.

"We had winter people for Christmas dinner," Tim says, "and the preparation was part of the fun. People came through and stood or sat in the island as we cooked. They'd be staring or poking or just talking. It was great. That was our vision of the space—in context while preparing a meal—and it worked out wonderfully." ■



A variety of home values the lower kitchen cabinets. Cabinets at the junction of the 4-by-4-ft. first-party, fixed seat single pointed shelves, or baskets, in a corner of the kitchen and window up for some of the storage space taken by the kitchen's new appliances.

The 4-by-4-ft. first-party, fixed seat single pointed shelves, or baskets, in a corner of the kitchen and window up for some of the storage space taken by the kitchen's new appliances.



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With the camera rolling, *This Old House* regulars (left to right) Steve Thomas, Roger Cook, Norm Abram, and Bob Vila gather round to discuss the merits of hot tubbing.

behind the scenes at **THIS OLD HOUSE**

An inside look at America's most popular home-improvement show

You join Steve Thomas as the witty, honest, refreshingly enthusiastic host of *This Old House*. But on this rare November afternoon on the set of T.O.H.'s current project in Marshfield, Massachusetts, Steve is being called on to muster even more enthusiasm than usual as he struggles to deliver his lines with enough fire to satisfy Russell Morash, the show's notoriously mooring director and creative producer.

The scene they're tackling is tricky, to say the least. As cameraman Steve "Dino" DiChiro cracks the action, Steve Thomas is supposed to duck under a lattice of scaffolding outside and make his way into the rear of the house, where he'll gaze out a picture window at the perfect view of Marshfield's harbor and the Atlantic wharves beyond. Then, with camera still rolling, Steve will proceed to guide viewers through two deluxe-stone mazes, down a couple of steps, and onto the stone patio, a stonefield littered with soft stone scaffolding. It's a lot of territory to cover in one segment, both literally and figuratively. Even if Steve and Dino make it to their final mark without tripping, the least that will be to square an acquaintance—by saying that word five times fast—in a loud, jagged-free discourse to about eight-and-a-half-dozen culling surfaces.

Although Steve is the one in front of the camera, most eyes are on Russ. Decked out in worn khakis, a ball cap rapped-down over his wheat hair, the director looks classically New England crafty, with an airbrush to match. Staring down his spectacles at a handheld video monitor linked to Dino's digital Betacam, Russ isn't happy, and he lets Steve know it. "When you're looking at this view, you're seeing like post-it looking at it, but you're not really seeing it," Russ barks, pressing for a heightened scene of drama. "And damn it, since all we're going to see of the stone room is the top of the scaffolding, I need you to make me see when you say, 'This is the biggest stone of the house!'"

See the one-hour TV special "Behind the Scenes at This Old House," which airs on public television starting April 20.

BY TOM RUSSO PHOTOGRAPHS BY KIMBRA OLINOFF



Steve and Tom talk over to director Russ Morash (in green) and producer Bruce Baumgardner.



Helping up Jim MacFarland (left) and Steve (center) back down the main stairs "Dino" DiChiro, Russ, and Steve (right) are on set.



Shooting and looking toward Richard Rothman (left) and Russ (right).



Steve and Roger (right) Steve is on set. Russ and Steve are on set. Steve is on set. Steve is on set.



Steve and Roger (right) Steve is on set. Russ and Steve are on set. Steve is on set. Steve is on set.

Life in the teeming jungle



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"People always say, 'You really seem like friends.' I tell them, 'Well, it's because we are friends.'"
—Tom Hanks

In 1979, in 30 minutes of information-packed, real-life restoration drama. Here is it that, after 23 years and more than 500 episodes, the show continues to attract such a huge audience, despite competition from more than a dozen home fix 'n' program? In fact out, we posted the crew on filming day at the job site.

As we quickly discovered, Hanks' approach is

Some rolls with it, and soon delivers a take that Hanks enjoys. The crew of seven designers, and TOM's most typical living shows through. Over the course of the show, the designer picks up a woman who's talking to him, then introduces him as a "master painter." The worker says he will do anything to get a nail from his dad, a true master with 40 years of experience working a nail. Call it fix 'n' fix, then game and says, "Remember, this, the whole world is watching—your father is particular."

At the end of the day, it's his great mystery why Hanks is looking. After all, TOM is America's oldest and most popular home improvement show, in which some 1 million viewers tune in each week. What they get, and here comes over once the show first aired

anything but heads off. Trained as a theater director at Boston University before starting his production career with WGBH, he naturally (and deftly) understands just what he wants people to say in front of his camera, and just how he wants them to say it. This is true not only for TOM homeowners and guest contractors but also for the show's regulars: adventure guide Steve, self-proclaimed master carpenter Bruce Alton, general contractor/field marshal Tom Silva, good-humored plumbing and heating expert Richard Trevelyan, and rugged landscape contractor Roger Cook.

The Menards method is a novel thing to witness firsthand. Working without a written script (in a comfortable retreat of gowns, gowns, and makeup artists), Hanks and his producers, Bruce Irving,

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Good Neighbor Teacher
Joseph H. Meyer

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back our head, pulling words out of their heads and popping them straight into the mouths of their cast members. It's almost like an improv theater troupe.

Tim's directing style demands a certain upbeat gleaminess from Steve, Norm, and the crew. But it's also apparent that everyone settles along at the full awareness that Ross knows what he's doing. The son of a carpenter, Ross conceived the idea of *TOH* while remodeling his own home back in 1978. Besides, the show is his baby, the master of 13 Removs, and the undisputed leader of the pack of home-improvement shows, a place that *This Old House* created.

Taking time out from a segment on gardens and landscaping, Norm offers his view of what Ross is getting at. "He always tries to make us speak in a language that all the viewers can understand." Richard echoes that sentiment, explaining that Ross's main challenge is to take a bunch of questions—broadly included—and make them more concise than they normally would be. "We'll start out with a scene, and then Ross explains it can't be the message is clear," Richard says. "Some days he comes it out of us, other days, he brings it out of us." He says that viewers on filming days routinely comment on the sketched-out nature of the crew. "They want to know, 'How the heck do you guys do it, without storyboards, without scripts?'"

Ross's own take is a bit different. "We do have a written outline with some dialogue, but then we release the hell out of each scene," he says. "We go over every line until we're comfortable with it. That's our script. But it looks like we have no script, then we've achieved our mission—to sound like we're having a casual conversation."

It helps that the crew and "show guys" are thoroughly at ease with one another. Tim Selvi says, "When I do speaking engagements around the country, people always say, 'We see you on the roadside as you guys have—very really seem like friends.' I tell them, 'Well, it's because we are friends.'"

"On squabbling brothers who are constantly teasing and teasing each other," says Steve, with a mischievous chuckle.

Cameo in person: Tim's straight-faced brother Dick once told Roger



much prefer working without a script; it keeps things spontaneous."

—RICH THOMAS

with cohost Tim D'Onofrio, left, and Richard Thomas

that the garden he'd finished planting was one foot over the neighbor's property line. "Of course, it wasn't," Roger says. "But for a while, the Selvi really had me running in circles."

That brotherly bond is evidently evident in a scene the crew shoots a week later, when Norm goes Dick on teasing out a window, before they can roll up their sleeves, though, Norm has to provide a segue for a segment that was shot earlier at Louisa May Alcott's family home in Concord. The thinking is that as Norm strolls down the hill, he should make some casual reference to what a timeless classic *Little Women* is. But caring Norm, at 47, Alcott built a sword—and everyone knows it. Watching on a monitor in Norm's square, quick-witted Bruce freshens his line. "Oh, what a th—y book!" Then Ross claims it's worth an alternative. "What a ripping yarn! I couldn't get it down!" For a moment, the laughter in the room appears louder than the constant sawing and hammering. Unintended, it's a moment in the group's collective craftsmanship that dispels all the kidding around and makes Dick and Norm turn the window from a hole-in-the-drywall to a major moment piece, framed with hermitically drilled, right-firing wing.

And while all this is going on, Steve can be spotted through a distant window giving Tim a hand with some wooden columns being fixed onto the house's porch. There's no one on him, he's prying on because he wants to.

Clearly, whatever materials are required to make the show viewer-friendly and informative, a significant portion of what Steve and the guys deliver isn't really acting at all. Their passion for their projects, and for their tight-knit work environment, is really genuine. "Hey, fixing up a house—changing it, improving it—that's something everybody finds fascinating," Steve says. "It doesn't go any better than this." ■



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"At the end of the day, the show is about stuff that makes you feel good: building things, restoring things."

—ROGER LIVING
(left with Ross Macdonald)



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Resilient Flooring—durable, forgiving, easy to install and maintain—has long been lauded for its practicality, but not always for its looks. Indeed, it's been called the flooring industry's equivalent of orthopedic shoes: easy on the feet, if not on the eyes. "A lot of people associate it with the drab, gray stuff that covered up their hardwood floors," says TGH show host Steve Thomas. These days, they'd be wrong. From venerable linoleum to top-selling vinyl to vanguard versions of cork, rubber and leather, today's "soft" flooring comes in an amazing array of colors, patterns, and sizes. Yet these newer resilient flooring materials remain as affordable, simple to care for, robust, and useful as their hunky forefathers—they just look a whole lot better doing it.



Photo courtesy of TGH

soft flooring

BY DAN BIGLERICO
 PHOTOGRAPHY BY DAVID HAMBLEY

In 1960s vinyl was flooring that the word, *planks* of the real thing are printed on the flexible surface and imprinted with a protective layer of TPU. A vinyl plank floor doesn't trap dirt between its boards or show a falling glass.



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linoleum

Pure of natural ingredients, linoleum gets high marks for environmentalists, and its linseed-oil base gives it natural antibacterial properties. But because it is porous, it needs an occasional oil or wax to seal.

COMMON APPLICATIONS: Kitchens, bathrooms

STANDARD SIZES: 12"x12", 12"x15", and 18"x18" 5/8-in.-thick sheets

COST: \$4 to \$7 per square foot

PICTURED: Brown leaf, multi-color sheet, black tile, ivory tile

cork

Cork shows the natural appeal of wood. But is softer underfoot and less resilient under against cuts and nails. Like bamboo, it must be treated with a protective wax.

COMMON APPLICATIONS: Bathrooms, living rooms, exercise rooms, music rooms

STANDARD SIZES: 12"x12" and 12"x36" planks

COST: \$5 to \$6 per square foot

PICTURED: From top: floating floor planks, vinylized tile, redwood planks, tile

rubber

Rubber is exceptionally hard-wearing, even against spilled household chemicals like bleach. But most textures offer repetitive slip resistance, though they are harder to keep clean than oil- or oil-free surfaces.

COMMON APPLICATIONS: Utility rooms, game rooms, workshops

STANDARD SIZES: 12"x12" and 18"x36" tiles

COST: \$3 to \$7 per square foot

PICTURED: From top: vinylized tile, hammered tile, rubber tile

leather

THE **House** **MAGAZINE**

Warm, luxurious, and evocative, leather floors develop a rich patina over time, although they don't stand up to high moisture or direct sunlight.

COMMON APPLICATIONS: Corridors, dens, home theaters

SIZES: 12"x12", 18"x18", and 24"x36" tiles

COST: \$25 per square foot

PICTURED: (clockwise from top left) crocodile-textured tile, blue-green tile, pitch-brown tile

vinyl

With the right choices of any resistant products, vinyl also has the widest price range. Low-end tiles tend to have a limited life span because of their thin protective wear layers.

COMMON APPLICATIONS: Bathrooms, bedrooms, living rooms, workshops

STANDARD SIZES: 12"x12", 12"x15", and 18"x18" 1/8-in.-thick tiles; 12"x12", 12"x15", and 18"x18" 1/4-in.-thick sheets

COST: \$2 to \$5 per square foot

PICTURED: From top: speckled tile, slate tile, trucking pavement, vinyl tile

The Sky's the Limit

ILLUSTRATIONS BY JOHN DUBOIS



Because it is easy to install and offers a vast array of design options, resilient flooring is perfect for homeowners with little building skills and a creative bent. Most patterns rely on a few simple shapes. Alternating squares of different colors, for instance, can be laid in checkerboard fashion or in a diagonal (pencil), which creates a sense of elongation in

right angles. Key squares (see next) add fun to a different color, but a number of manufacturers block 12 by 12-inch tiles with their corners clipped to create corresponding 3-by-3-inch beams. For an additional cost, dealers will also custom-cut tiles to any shape, such as the diamonds and those beams needed for large-foot tanning.

Blocks (see next) It is easiest, of course, to lay tiles or sheets in a solid color, in which case inset borders, such as the ones shown above, can add a custom touch.

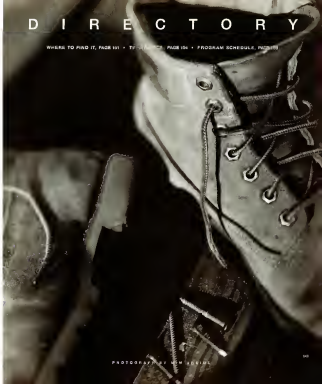
Stripes In this vinyl-floored entrance, the owner combined a key square pattern with a simple four-strip border for a classic look.



PHOTO COURTESY OF MARCO FLOOR CARE

DIRECTORY

WHERE TO FIND IT, PAGE 101 • TOP 10 MATERIALS, PAGE 104 • PROGRAM SCHEDULE, PAGE 105



PHOTOGRAPH BY NEM JOURNAL



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NEW EPISODES: Manchester, MA
Public Television

CLASSIC EPISODES: Watertown, MA
Comcast Television

FAVORITE EPISODES
HGTV

ON THE JOB pp. 14-16

"Learning From the Best House," page 14—Architect: Stephen Kohn, F&K, AIA, Manchester, MA; 778-325-1281.

HOUSE CALLS WITH STEVE pp. 20-24

Designer: Joan Verbridge, Saunders & Verbridge, Beverly, MA; 978-825-1741, www.svdesign.com. Architect: Rick Bellini, Bellini Frank Erickson Architects, Lexington, MA; 781-562-3313. Vase and stool: Studio Llop, Providence, RI; 401-623-2262. Glass knobs, page 21—(front) Greer City Hardware, 809-550-1047, www.greerhardware.com. Cabinet knobs, page 24—(1) #H0905/FVSTN-C; Lacey Hardware, 836-542-1789, www.laceyhardware.com. (2) Craftsman knob in copper #1237, John Meunier, 800-799-6735, www.craftsmen.com. (3) Old Towner knob in amber, Emerald, 800-346-2791, www.emeraldproducts.com. (4) PA10-12, Bosterman, San Francisco, CA; 415-864-3886, www.bosterman.com. (5) Baroque knob in rose, Emerald. (6) Iron Flower knob, Restoration Hardware, 888-243-8730, www.restorationhardware.com. (7) Egg knob in oak-colored lacquer, Emerald. (8) Crackle porcelain knob, Restoration Hardware. (9) Glass knob in milk blue, Restoration Hardware. (10) #B04-14, Bosterman.

ASK NORM pp. 26-32

Downward shifter: Shiller, Inc., 866-339-2933. Stainless steel fasteners: Contractor Depot, St. George Island, FL; 877-368-1513, www.contractordepot.com. Soap pump: Ziegler Pump Co., Louisville, KY; 508-928-7167, www.ziegler.com. Case: part Restoration Hardware. Fluorescent system: Eas, ME; 466-612-5646, www.glowingsystems.com. Linoleum sink: Jess J. Goodrich Co., Belleville, IL; 618-232-1781, www.bellgoodrich.com. Our thanks to: John W. De Piazzi & Decorating, Concord, MA; 978-369-1897, www.jwdpinteriors.com. Daniel Hainesworth, R.A., Richardson/Hainesworth Architects, New York, NY; 718-796-2813.

WHERE TO FIND IT

TALKING SHOP: TIRE TIGHT BRUSH pp. 44-46

Operator: 2½-inch black Chené broade, #C5-75, J.R. Edwards Brushes & Rollers, Kankakee, IL; 815-713-3743, www.jrbush.com. "Brush Boss," page 45—Natural bristles (from left) 2-inch white Chené broade, #C2-9811, J.R. Edwards Brushes & Rollers; 2½-inch black Chené broade, #C2-9810, J.R. Edwards Brushes & Rollers, 400-343-3433. 2½-inch angled oak brush with Chené bristles/bush broade, #PTC06A22, The Painter's Tradecraft Ltd., a private label of J.R. Edwards Brushes & Rollers. Synthetic filament (from page 25) nylon angled oak brush, #PTF0A25, The Painter's Tradecraft Ltd. 2½-inch nylon broade, #CNH225, J.R. Edwards Brushes & Rollers. 2½-inch angled oak broade, #C2C06E #12323, Parly Corporation, Portland, OR; 503-286-8337, www.parlycorp.com. "John Deh Must-Have Brush" all from Parly Corp.

BY DESIGN: SINK ON LONG pp. 50-52

Ground contractor: F.H. Perry Builders, Hingham, MA; 508-284-3863. Drainer: Lucan Affair, Lucan Affair Design Inc., Boston, MA; 617-337-6446. Metal fabrication: Lory Kubik, Brass Works, Woburn, MA; 800-242-1279, www.brassworksusa.com. Sinks, page 50—(top to bottom) Sonnet, American Standard, Piscataway, NJ; 800-524-1997, www.americanstandard.com. Transcendent Jetra, InSink-Erator, Mooresville, NC; 800-756-2452. Lotus Pond, Kohler, Kohler, WI; 800-436-8337, www.kohler.com.

LUXURIOUS: STEAM SHOWER pp. 56-58

Bathroom design: Anna Hultstrom, architect, Chicago, IL; 312-953-2198. Steam generator: Mr. Steam, Johnson Lifestyle Group, Long Island City, NY; 718-837-4390. Tilted Saucer Skirt, Ann Seckel Tile & Stone, 800-278-9453, www.seckel.com. Steam generator and custom shower: Kohler, Kohler, WI; 800-364-5377.

www.kohler.com. Modular steam shower: Tyko, Belvidere, Illinois, 708-430-4411-7549, www.belvidere.com. Fiberglass shower surround: Aqua Glass Corporation, Alameda, CA; 731-432-2381, www.aquaglass.com.

MPKEMP: BRICK TRUCKS pp. 60-62

Chimney restoration: Charlie Alton Restoration Inc., Cambridge, MA; 617-661-7431; www.charliealton.com. Our thanks to: John Speech, U.S. Fire and Alarm Company, Chicago, IL; 773-286-2106, www.usfirealarm.com.

TECHNOLOGY: KEEPING IT PURE pp. 66-72

Reverse osmosis: Duroflow Water Systems Plus Vix, Kalamazoo, Newbury, OH; 888-544-9253, www.kalamazoo.com. Activated carbon: Hydro-Care GAC Cartridges, Clark Corporation, Windsor, WI; 800-735-3318, www.clackcorp.com. Ultraviolet: Tera UVB Series, Pure Inc., Valencia, CA; 661-274-5588, www.kydventuresystems.com. Space-saving: All America Fibers Inc., Great City, TX; 409-543-5606. Water systems: Kenmore model 30, installed by Aquatica Inc., West Orange, NJ; 800-890-9222. Water heating: PlumbingSupply Group, Chico, CA; www.plumbingsupply.com. Our thanks to: Matthew Kubik, master plumber, and, Frost & Sullivan, 468-372-2876, www.frost.com. The Good Water Co., Wichita, KS; 316-263-3391, www.goodwaterco.com.

MATERIALS: STAINLESS STEEL pp. 74-76

Flashed custom work: Quik Metal Works Ltd., Vancouver, BC, Canada; 604-233-7777, www.quikmetal.com. Re-rail kitchen—Designer: James Tigerman, Tigerman/Phonetic Art & Design, Chicago, IL; 312-837-8308. Steel work: Stainless Steel Kitchens, Elkhart, IN; 219-268-8090, www.stainlesssteelkitchens.com. Stainless samples: Kinco Metals USA Inc., Edison, NJ; 800-326-7900, in New Jersey, 732-546-5830, www.ramcoinc.com. Quilted Quik Metal Works Ltd. Pressed The Reiche Group Inc.,

Apogee, FL, 800-875-9444, www.richard.com.

Our thanks to Catherine Hendrix, Alex McCoy, Alie Scott, Dave Tucci and Doug Rockledge, The Rockledge Group Inc.; Bruce Kettler and Linda Miron, Remix Metals.

HOMEOWNER'S HANDBOOK: INSTALLING A TOILET

pp. 61-67

Flagler: P&M Plumbing Supply Company of New York Inc., New York, NY, 212 674 0943, www.flaglerplumbing.com. Plumbing Supply Group, Chino, CA, www.plumbing-supply.com. Flagler estate: Stone Supply & Tool, Stoneville Plugs, Inc. and Stone Plumbing Supply Group. Toilet bowl and tank: Morrison Toilet and Supply Design from Kohler, Kohler, WI, 800-434-4337, www.kohler.com. Wax rings: Fluidmaster, San Juan Capistrano, CA, 949 728-2806, www.fluidmaster.com.

KITCHEN CONFIDENTIAL

pp. 20-27

Windows: Ironside Windows and Doors, 800 663 8673, www.ironside.com. Island shopping blocks: Canine Technology, John Bann & Co., 217-367 7791, www.jbannco.com. Appliances: Cooktop, wall oven, exhaust hood, Thermador, 800-436-8326, www.thermador.com. Dishwashers: Bosch, 800-544-2594, www.boschusa.com. Refrigerators: Amana Appliances, 800-813 0304, www.amanacorp.com. Microwave: Sharp Electronics Corp., 800-237 4277, www.sharpusa.com. Countertops: Depot: Corian Tumbled Glass and Onyx, 800-938-9838, www.corian.com. Granite: Italiana/Ventura, Kitchen & Bath Showroom, Norwalk, CT, 203-750-0181. Backsplash: Oceanoide Granite, 761-829-8800, www.granite.com. Flooring: Lumber Liquidators, 877-643-1347, www.lumberliquidators.com. Engineered lumber: Carly maple MDO, cherry plywood, Atlanta Plywood, 800-873-2759, www.atlantaplywood.com. Candy maple veneer and edge banding: Boulder Plywood, 617-666 1393, www.boulderplywood.com. Sinks: Blanco America, 800-451-5752, www.blancoamerica.com. Faucet: Lefaylux Plus, Grohe America, 800-512-7711, www.

groheamerica.com. Cabinet accessories & hardware: Hable America Co., 800-423-1531, www.hableusa.com.

Architect: Scott Thross Architects, 269 831 9953. General contractor: Judd Kowalsky, 269-327-7319. Plumbing: Dave Finch, 269 916 3646. Exhaust: Timber Vg, 269-838-9662. HVAC: ET Heating & Air Conditioning, 269-437 8465. Flooring: Cruz Hardwood Floors, 203-736-5377. Tile: Zila Products, 263-977-4333. Painting: Cornell Singsco, 203-347 7043.

OWNER'S MANUAL: SMALLER, SMARTER, SAFER

pp. 26-122

Sink: Zero Spans, Hastings Bath Collection, Freeport, NY, 800 351 8035. Trunkless toilet: Terner, Cohen, Niche pro Corp., TN, 800 722-7217, www.enpro.com.

Foot-powered faucet: Tulaheville, Pella Wilson Inc., Luling, LA, 800-431 3644. Refrigerator range: Polaris, Whirlpool, Breco Harbor, NJ, 800-253-1301, www.whirlpoolcorp.com. Pipeline whirlpool trade: Sargent, Copestake, TX, 972-945 2283, www.sargent.com. Shower faucet & flange: Delta Faucet Co., Indianapolis, IN, 217-816 1612, www.deltacorp.com. Space-saver range: Frigidaire, Cleveland, TN, 800-533-7794, www.frigidaireusa.com. Water shut-off valve: FloLogix Systems, 2000, Theaqua Plastics Inc., Houston, TX, 800 279-2792, www.flologix.com. Flush-up toilet: Swillo, Stanton For All Ltd., Guelph, ON, Canada, 800 363 5874, www.swillo.com. Single-use water/dryer: Equinox, Houston, TX, 800-833-1355, www.equinoxappliances.com.

TV PROJECT/MANHATTAN: CENTER STAGE

pp. 104-111

Granite countertop: Stoneworks, Fountains, MA, 888-278-4308. Kitchen design and cabinet: Woodwork or Corp., Westport, MA, 800-733 6343. Sink and fixtures: Kohler, Kohler, WI, 800-456-4337, www.kohler.com. Tile contractor: Joe Ferrante, Ferrante Tile, Medford, MA, 781 396 6327.

Backsplash: Jeff Pratt & Lannon Cottage Tile, The Showroom, Westport, MA, 817 936 1706, www.theshowroom.com. Flooring contractor: Pat Hawk, Hawk Hardwood Floors, Lexington, MA, 781 662-3339. Countertop: The Granite, Los Angeles, CA, 800-636-8226.

THE TIMELESS HOME: LANDSCAPING & SLOPED LOT

pp. 112-120

Landscape design: The Jager Company, Greenville, GA, 770 334 6408. Civil engineer: Terry Brown, M&C Engineering Inc., Woodstock, GA, 478-443-9459. Landscape contractor: Miles Sutherland, Hibernian Gardens, Atlanta, GA, 404 933-4782. Architect: Jeremiah Eck, Jeremiah Eck Architects Inc., Kansas, MO, 617-367-9696. Builder: Jason Towell, Metropolitan Design & Construction, Roswell, GA, 770-482 4241.

Site work: Springer's Construction, Decaturville, GA, 770-475 0524. Masonry contractor: Motion Firm, Service South Inc., Atlanta, GA, 404 847-9225. Decking contractor: Oakline Construction, Cantonville, GA, 770 363-8196. Copper and sanitation: Metro Contractor Services, d/b/a Quality Industries, Norcross, GA, 770-446 7925.

Copper: Copper Development Association, New York, NY, 212 351 7180, www.copper.org. Brick: Normandy/7th Century Collection, Total Brick Inc., Atlanta, GA, 770 619 4308.

Lighting: Thomas Lighting, Louisville, KY, 502 893-6630, www.thomaslighting.com. Decking material: Caroline Korman and U.S. Plastic Lumber, Chicago, IL, 847-733 2546, www.caroline-product.com. Porch furniture: Lloyd's Products, Menasha, WI, 906 863-4451, www.lloydsproducts.com. Brick: Ramona Tile and Chain by Haysco, branch by McQuinn and Haysco, through Loggia Gardens, 800 892 4836.

THE POWDER ROOM UNDER THE STAIRS

pp. 122-126

Sink, toilet, and fixtures: Kohler, Kohler, WI, 800-456 4337, www.kohler.com. Floor tile: Cherokee Stone Tallow State,

The Showroom, Westport, MA, 817-936-1706, www.theshowroom.com.

COOKS' KINGDOM

pp. 126-133

Architect: Philippe Canyon, Architect, AIA, Brookfield, CT, 203 483 0448. Builder: DeLong Construction Corp., Cheshire, CT, 860-326-5375.

Kitchen design: Atlantic Classic Interiors, New York, NY, 212 938-9388. Sinks and fixture: Kohler, Kohler, WI, 800-456-4337, www.kohler.com.

Appliance: Viking, 813-845-444, www.vikingcorp.com. Cabinets: Wood Mode, American Cabinet Kitchens, New York, NY, 212-616 9306, www.woodmode.com. Granite floor and granite tile: Pano Ceramics, New York, NY, 212 644-2743, www.panoceramics.com.

Granite countertop: New England Stone, Milford, CT, 800 239 7846, www.newenglandstone.com.

Windows and doors: Trill, New London, CT, 860 437 8970, www.trill.com. Warm chocolate countertop: General Woodcraft, New London, CT, 860-444-2663.

POSTER: SOFT FLOORING

pp. 143-146

Opening page (front): Sargwood, Devon, www.dcvco.com. (back): Jorgensen, Amesbury, 800-265-4368. (front): Trill, New London, CT, 860-437-8970.

Back: (1) Winco 3406 Agassiz, Parbo Lumber Inc., Madison, IA, 940 842-7935, www.thomaslumber.com. (2) Dual 630 Black, Parbo. (3) Dual 684 Berry, Parbo. (4) P900 Lumber Park, Natural Cork Inc., Augusta, GA, 800-494 2675, www.naturalcork.com. (5) P900 Maple Plank, Natural Cork Inc. (6) LS 10 Lake, Winco, 800-437 2675, www.wincoinc.com. (7) Tile 43, Coconope Cork, River Edge, NJ, 201-916 7915. (8) Weathered Empire 739 Tile, Johnsons, 800 599 8936, www.johnsonscork.com. (9) Harvested Meteor 735 Tile, Johnsons. (10) Sun River 061, Rachel Kettler Tile, Peas, Tennessee, TN, 606 633 3151, www.rachelkettlertile.com. (11) Sandstone 3436, Blacklock Lumber Inc., Knoxville, Tennessee, 800 663 6337.

www.blacklocklumber.com. (12) Long 3660, Blacklock Lumber Inc. (13) Park Brown PT 12 Tile, Edelman Lumber, New Milford, CT, 800-836 4339, www.edelmanlumber.com. (14) Back Backwater Paper, Chelmsford, New York, NY, 203 966-2032. (15) 3436 Alouca Stone, Amesbury. (16) Gaudin Parosian in Madison, NJ, 800 649 3059, www.alouca.com. (17) MO-46 Colorado Clay, Coaglomer, Marlborough, NJ, 800 274-3246, www.coaglomer.com.

Back page: Roman Marble, Arden. Our thanks to Arden's Floor Covering.

Illustration of all featured tiles: New York, NY, 212 242-8893, www.arenmarble.com.

SAVE THIS OLD HOUSE

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Our thanks to Sam Woolley Cochrane for the images from the book *A Father and a Craftsman on the Coastline Square*.

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