

This Old House

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Tom Silva and his crew raise the flag at the 1883 TV project house in Manchester, Massachusetts

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A silver Toyota Camry is shown from a front-three-quarter view, parked on a dark, reflective surface. The background is a surreal landscape featuring tall, conical evergreen trees that resemble Christmas trees, arranged in a perspective that leads the eye into the distance. The sky is a pale, hazy blue. The entire scene is framed within a white border, suggesting a window or a screen.

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TON general contractor Tom Salm and the Manchester project crew joined the Audubon Reg Estate's recently formal dinner on the lawn of Central and shared a meal in honor of the estate's 100th anniversary. The event featured a special program for installing a support beam, installing new stairs, and leveling a lawn. See "Frame Work," p. 84. PHOTOGRAPH BY DAVID DARMACK

NOVEMBER 2001

This month's *Poster* features 14 species of wood used for flooring, and includes information about their benefits and cost. See "Wood Floors," page 113. By SCOTT GOSWAM

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ALCOVE AS A BED, P. 22

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—Don Brubaker, writer



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CONTRIBUTORS



JOE and AMY NEUBERGER ("As Inside Job," p. 74) have been photographing for *This Old House* since the fourth issue, back in 1976. Three years ago the husband-and-wife team got the chance to apply when they're loaned to a home of their own, a 1920s farmhouse-turned-garage in Kingston, Massachusetts. They renovated the house, using floor-to-ceiling and custom floor heating, both of which they had on their minds, and, working weekends, renovated a front porch too. "We send a page. Doing with questions when we see what's in a job," says Amy. "I'm sure he got to say, 'Oh, no, how come these kitchen again?'"

LOUISE JAMES details the seasonal photos of a custom driveway in "Season Drive" (p. 186). "We need to think of their crop of apples as part of a seasonal economy," she says. "I was inspired at how much a well designed drive can add to a home." From her studio home in Swampscott, Mass., which she's helping to renovate "one room at a time," James contributes to numerous art and design magazines, as well as the *New York Times Book Review*.



BART FORD is a picture-hungry photographer. As an architect of this magazine over the years, Of the house he's just disappeared to be shot for "Tucked In" by Douglas, p. 61, and Scottish boy photography says, "It's a fantastic use of space—and beautifully made. It really shows that kind of craftsmanship and attention to detail." Ford's busy schedule of magazine and advertising work keeps him frequently on the road. When he's looking for equipment locations around the world, he lives in Walnut Creek, California.

HOW TO REACH US

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the next few days. It was heartbreaking, and almost a mazing, to see the endless y sights of the very bloodshed happen. In between, making it go to dozens of drop-off points, people were just screaming, howling, slapping, bawling, sobbing, pained, all broken, making more drangles. The week proved that at least on a small scale we could have reacted.

As I munched all this, it became clear to me that maintaining and improving our homes is a way of exerting control over our lives and making an investment in the future. Even in the days immediately after the disaster, in the face of confusion and uncertainty about what lay ahead, several entrepreneurs I have interviewed call to mind homeowners who wanted to discuss plans for emergency preparedness, the kind that would make their homes better places to live for many years to come.

Especially at this time, no one can underestimate the importance of building and the people who do it. Among the heroes of the rebuilding cleanup effort is lower Manhattan's six hundreds of volunteer construction workers from all over the country, the same folks who might have insured your own home from the ravages of time. But instead of making disaster news and nail guns, they're assuring downy backs. Filled with elbow from hand to hand.

It's going to be a long while before we see reconstruction begin at the rate of the changes in the manuscript, all of us are working to rebuild our lives, and each of them will start at home.

As I write this, I am confident in one regard. Six days ago my office windows offered a magnificent view down the road of Microsoft's research campus, culminating in the shimmering twin towers of the World Trade Center. Now, if I could bear to look, I would see only a smoking, incense-scented haze. The megaproject is a symbol of loss, of the thousands of people who died, of the hundreds of innocent personnel who sacrificed their lives to try to save them, of our sense of tragedy. Those not implicated, and we must be them, can learn who for the families and friends of those who are gone.

BY GORDON

I have many opinions about how this attack affects our national well-being, but given the subject matter of *The GAF House* I am also largely aware of the impact of their lives on our feelings about home. Certainly, those of us who live in and around New York have known as acute oppression of our role in home, but the catastrophe happened in our own "backyard." On that Tuesday morning, workers who had made it to their offices anxiously headed back home, many traveling several miles to their homes and some houses and the loved ones they cherished most. But none from *The GAF House* were wanted to receive a ransom note, but one that said "We are sorry about the accident. We are waiting for the steps, and will be working through them soon." The note was sent to all interested parties, and it was a relief to hear that.

Describe your trial and confession, daily life begins to change over

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in their wake, they simply leave mud splatters, memories, where once stood a thriving community.

And they are anything but rare. Every year, flood account for over \$2 billion in property damage. Worse still, they can happen anywhere. In fact, about 25% of all flood insurance claims come from areas that are not even designated high risk.

Floods are a nightmare not just experienced by other people. Yet, in too many cases, we don't have flood insurance because we make the mistake of believing our homeowners' insurance covers flood damage. It doesn't.

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ON
THE
JOB

AT THIS OLD HOUSE



Within Arm's Reach

Skilled as they are, the crew at the TV project house in Menchuette, Massachusetts, would have to work extra hard to haul heavy and unwieldy construction materials to the upper floors. Lucky for them, TOM general contractor Tim Sales has a variable-reach boom lift to carry the 800-plus pieces of lumber and several steel beams to the higher reaches of the job site. Its arm extends 45 feet vertically and 35 feet

BY JORDAN NEED

horizontally and holds up to 3,000 pounds of material. "So far we've picked up more than fifty 24-foot 2x12 rafters and hundreds of sheets of 5-inch plywood, hoisted them as high as thirty feet to the top story and, with the adjustable fork, held them so my guys could drag them off easily and safely in fifteen minutes," says Tim, who also used the machine to

position a one-ton load-bearing steel beam in the back exterior wall. "Without the lift, those tasks would have taken four or five hours each and required ropes, pulleys, jacks, and many men carrying the materials piece by piece."

The large machine can't be rented by laymen, but its expense could factor into a bid for a big renovation. Because

it costs a contractor about

\$650 a week, homeowners

might think it an expendable convenience. But Tim is quick to point out its value on a job as large as the Marchewicz project. "I'll need it for about three months," he says. "But I'd have to hire two more guys for a week, at \$330 each, to do what the machine can do in just one day. It adds up—using the homeowner a whole lot of money—and time."

PHOTOGRAPH BY KOLB SMITH



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ON THE JOB

Padded Attraction

General contracting certainly isn't child's play, but Tom Silva took a cue from the playroom when he softened up the floor of the Manchester project's on-site workshop. To give his feet and back a break, he lined the area with interlocking 2-by-2-foot, 1/2-inch-thick foam-rubber squares, also in these faded stained-ice-shaving colors and in preschool-classroom. Not only do they save strain on his body, they also protect the floor—sad his equipment—should one of his bulky tools fall on the ground. The squares are available at home-improvement department stores for around \$38 for a pack of four. Tom stored out with only rainbow colors but filled in with gray when "he started to look too much like a play-school art project."

Architects aside, there's no doubt the mats deliver multiple benefits on the job. "When you work all day standing up, there's a huge difference between the way you feel on the hard floor and the way you feel on the pads," says Tom. "And on a cold day, it really does add a little warmth to the room."



Restoring historical details in an old home can prove nearly impossible without a visual reference to go by. As the Manchester project team recently discovered, old photographs can be a big help. A former resident loaned the show an album of interior shots taken in 1970, before the extensive

Photographic Memories

remodel nine years later. The photos, used in conjunction with archival material assembled by

architect Stephan Holt, have provided him with valuable

insight into the house's original design. "We're rebuilding the living room wing based on these photographs because the 1883 structure [seen here in the foreground] was torn down in 1979." The prints clued him in to various architectural features he's returning to the interior, including bay windows on the second floor, and a balcony, two columned archways (visible in the background), and an entablature in the entry hall. "We simply couldn't recreate those elements correctly without the photos," says Holt.

In addition to all these pics, his reference library includes several shots, circa 1920, from the local historical society, more homeowner snaps from the 1950s, and a few exterior pictures Holt himself shot over the last 30 years. As a result, he is the first to encourage all homeowners to whip out their Nikons and click away. "Take pride in your house and document it," he says. "Someday your photographs may be invaluable to a preservation architect or historian."



PHOTOGRAPHY: JAMES HARRISON; STYLING: JENNIFER HARRISON



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HOUSE CALLS WITH STEVE

Opening Up

A cramped, worn-out kitchen becomes a spacious and efficient cooking space for two

BY TRAVIS NEIGHOR WARD



B

ruce Chas, M.D., and Peter Schatz knew they were headed for a renovation when they bought their 1908 Single Style house. Before the ceiling on all three floors needed plastering over, plumbing and wiring had to be replaced, and the outdated kitchen needed more than a cosmetic overhaul. But the house had other attributes they wanted: It was big (5,100 square feet and six bedrooms), situated on a tree-lined street with a nice backyard, and within walking distance

of the Yale University Campus in New Haven, Connecticut, where Peter is a professor of economics. "All the houses in the area we liked needed work," says Brude, who was deterred by the condition of the place. So in February 1999 they moved in, and by August were addressing their biggest concern, the same worn kitchen.

The cheap oak veneer cabinets, peeling laminate countertops, pecked-out blue linoleum flooring, and old appliances would go. In their place, the couple, both avid cooks, wanted state-of-the-art appliances and an open layout designed for some foot prep, since they like to make dinner for as many as 10 friends at a time. The existing 140-by-14-foot space was too cramped for their needs—and for the eating area they desired. Also, since they knew they'd be spending much of their time in the kitchen, they wanted a warm and comfortable room that would work stylishly with the rest of the house.

PROBLEM

The kitchen's eating walk-around was very tight. The range sat along the one windowed wall within an L-shaped counter. Just 30 inches from the L, another length of counter held the sink. Thumbing in the space between was a 28-inch deep stove that housed the refrigerator. "It just stuck out in the middle of the room," says Schatz.

What's more, five separate doorways opening off the kitchen to the living rooms,



BEFORE, AFTER The old, outdated kitchen was located in the first separate doorway, not in the remodel, these adjacent spaces were merged for a large, light-filled space, with room for dual four-foot stoves and an eating area.

PHOTOGRAPHS BY KOLIN SMITH

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HOUSE CALLS WITH STEVE

butcher's pantry, mudroom, basement, and laundry room made traffic flow a nightmare. With just two windows and poor overhead lighting, the room was also dark, which made it even more confining.

SOLUTION

The couple turned over their plans with help from a local firm, Comstock White Designers. Steve King and Cyndi Miller suggested removing the space of three adjacent rooms—the butcher's pantry, laundry room, and mudroom—to provide the wide open space the couple needed. Knocking down the one wall that separated these rooms from the kitchen and removing the fridge arch created a total of 330 square feet. "Space has to go in when the first task in the design process," says Tim Old Moore, host Steve Thomas. "Belinda and Peter were lucky to be able to grab three neighboring areas, providing lots of room for their new kitchen."

The new plan called for turning the old work zone into a light-filled eating area framed by five double-hung windows, plus a



BEFORE: Large new windows let in plenty of light around the eating area and provide open views of the backyard.

glass-paned door leading to the backyard. The food prep area would shift to the former laundry and mudroom spaces—where, conversely, plumbing and electrical systems were already in place. A 7-foot-long peninsula would separate the dining area from the work area to the open-plan kitchen. The alcove for the butcher's pantry, now still unused, would hold heavy 5-foot-tall built-in benches for storage.

King and Miller placed the sink in a corner along the wall to the left of the peninsula, and pro-style appliances—a six-burner gas cooktop, dishwasher, and fridge—in the corner perpendicular to that. Double wall cabinets were opposite the sink. In addition to professional appliances, Belinda requested a mother-of-the-sunrise pot filler from the cooktop. "An extra faucet here is handy, so you don't have to lug pots of water," says Miller.

To unify the thoroughly modern kitchen with the rich cherry woodwork and hard oak floors in the dining room, King and Miller chose Shaker-style cabinetry made of cherry, and pale maple floors. "The choice of woods and simple lines of the cabinetry complement

HOUSE CALLS WITH STEVE



AFTER: The neighboring butcher's pantry, laundry room, and mudroom are upstairsover floor space. **AFTER:** Tearing down the wall separating these from the kitchen allowed the owners to create an extra 300 square feet.

what's in the rest of the house without trying to overcompensate," says King. Adds Steve: "And all that wood helps to soften the heavy roughness of the stainless appliances."

FINISHING TOUCHES

The Comstock White team recommended hand-blacked Ultraflex granite countertops for their softer patina. "Polished granite would have looked too glossy. Plus, it would have picked up glare from the over-

head recessed and undercabinet lighting," explains Miller. Because heated granite is porous and prone to staining, the surfaces were coated with a color-enhancing sealer, which should be reapplied usually.

The couple requested two special storage features that are kept under well-designed wraps. A wine rack is concealed in one of the butcher's 12-inch-deep shelves, and a cabinet in the peninsula has hanging files for recipes.

Though the couple had to live through their kitchen makeover for three messy months, it was worth any inconvenience, says Belinda. "We love being in our new kitchen, whether it's to eat breakfast or to cook for friends. It really matches the vision we had."

Then choice of materials couldn't be better, as far as Steve is concerned. "A great thing about wood is that it is a flow. The cherry will get a rich red, and the maple flooring will become more honey-colored. By choosing woods and granite, the couple has stuck to the classic and created a functional, serene, and relaxing kitchen."

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HOUSE CALLS WITH STEVE

IDEAS NOTEBOOK



ITEM: This apron-front stainless steel sink from Just Home Appliance has a single 70-inch-deep, polished steel basin, which accommodates large and tall pots. An included bottom strainer basket, which the raised backplate helps prevent the over-crowding sink.



NOTE: Each shelf of Interiors' 75-inch-tall freestanding stainless steel wire rack measures 18 by 48 inches and supports up to 500 pounds of cookware, canned goods, or other supplies. Swap in additional shelves, bowls, drawers, and baskets to extend its storage capacity even more.

"Professional-style fixtures and surfaces are hard-working, enduring—and look great in a home kitchen."

—Steve Thomas



NOTE: The manual-style pot filler faucet and its detachable Peter's stove can serve as your beverage tray in and from the sink. They come out from Chicago Faucet with an 18-inch double-curved spout that swings for maximum reach and an even-mounted safety handle, up for grab over stove's hot pot.



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SEALING OLD WINDOWS

I'm in love with the old glass in my early 1900s log farmhouse, but the six-paned double-hung windows are very drafty, and the ancient storm windows are worthless. I've priced replacement windows that would be energy efficient and aesthetically pleasing, but I hate to lose the charm of the old latched glass. As a compromise, I've considered replacing the less prominent windows in the back and on the sides, but how would I make the remaining old ones less drafty?

Norm Gammell, York, Pa.

Before you go in all the expense of replacing your windows, why don't you try to improve all your existing ones instead? Most of the best fix through old windows goes out around the perimeter weathering, not through the glass, and if the frames and sash are in good shape, you can install weather stripping and add new storm windows for a lot less than the cost of a new window.

The weather-stripping system I like relies on fuzzy nylon gills—



like the kind you see on the edge of sliding glass doors—that can be slipped over a groove around the entire sash.

You can replace your storm windows, too, with wood-framed models, which would be in keeping with the style of your house, but to be honest, I don't much like them because of all the work that goes into putting them on each fall and swapping them with screened frames each spring. Instead, I'd search for a weatherstripped triple-track storm window with integral storm and screen.

If the work and time are too the price to you, however, and replacement is the only option, you might be able to remove your old panes and put them in a new sash. You won't save any money, but you'll preserve the historic look of your home. Or you could have them welded on the Key-Win project. Glass a new sash with panes of new, mouth-blown "cylinder" glass made in the old way (see "Window on Key West," May 1999, page 118). Keep in mind that this, too, isn't a compromise way to go.

PHOTO: JEFFREY M. HARRIS

ASK NORM

WALL SPLINT

The ball studs in my 1913 bungalow extend from the foundation to a point about four feet above the second floor. In some places, the studs are supported with a horizontal ball plate from which short lengths of studs support the ceiling. I've removed some plaster on these walls where it was badly cracked, particularly in the vicinity of the horizontal plate. I'm willing to replace all the plaster with drywall, but will this be enough to keep the cracks from coming back?

Ken Gammell, Bloomington, Ill.

It sounds a little like you're describing balloon framing, the predecessor to the platform framing we use today. In balloon framing, studs often are unsupported from ceiling to rafters, even in two-story houses. But those "short studs" at your place are a cover. Maybe the original carpenter didn't have lumber long enough to reach all the way to the rafters, or maybe the roof was closed many years ago to create extra headroom. What ever the reason, the joints at the midwall 2x4 plates allow the walls to buckle slightly, and that cracks the plaster. If you find that the upper portions of the walls are tipped outward, being in a structural region to take a load, it could be that the roof loads on the walls are causing bigger problems than you can fix on your own. But if the walls are stable and simply flexing a little bit,

you can prevent a frame-hugging by installing a stiff plywood reinforcement for the wall surface.

Here's how I'd tackle it. After stripping off the existing plaster, double the walls with 5-inch CDX plywood, making sure that each stud extends from floor to ceiling. Glue the plywood to the studs with construction adhesive, then screw it every 6 to 8 inches with 2-inch deck screws. The heads of the screws should not penetrate the face veneer of the plywood (screddriving weakens the connection). Also the plywood is in place, drywall or sheetrock and three-coat plaster can be applied to finish the wall surface.

HOLD IN THE HEAT

Our 1,000-square-foot house (plan 1044) has a large brick fireplace with 36-foot straight-throw flue. It does beautifully—sucks in room air but doesn't really suck the heat out of the house. Winters here are excruciatingly cold.



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light to red, and the brown has little or no lustration, so we're looking for ways to keep more lead in the hair.

There are glass doors on the fireplace now, but I have an idea to build our heat loss even more. There's a hatch in the floor of the fireplace that leads to an ash pit in the basement. When a shut from the ash pit door to the outside, air could flow up to the fireplace, right beneath the fire grate, and we must close the glass doors and enjoy the fire without worrying about being overwhelmed by toxic fumes. What do you think?

JAMES O. THOMAS, MITCHELL, S. INC.

Sounds like you're on the right track. A vented pipe sticking least from your home is a real energy loss. But to get a complete answer, I'll send your question over to The Old Master Plumbing and Heating consultant Richard Tardewey, who says, "Hairs that fall out inside an ash pit or the fireplace are becoming more common. Some building codes actually require new fireplaces to have a screen for 'combustion air' rather than the room, but I'm afraid our old codes will look leniently on an ash dump serving two purposes. Your town building official may okay a metal flue or pipe at least 6 square inches in cross section that opens from the ash pit door to the outside (not a garage), if you can come up with a way to get it and sweep out the ash. Or you can outfit your fireplace with a dedicated vent separate from the ash dump, as well you take more work to cut through the brick."

"Frankly, I think you'll get better results by capping a fireplace more than draws down six feet below the firebox, heats it, and then sends it back out to the room. Then you'll get some convective heat gain in addition to the radiant heat coming through the glass."

"One more thing: Before you spend another dime on the fireplace, hire an insurance contractor to inspect your walls and ceilings up to roof. In your area, that means at least R-19 for the walls and R-30 for the ceiling. There's no sense crying to get more warmth out of a wood fire if the house can't hold in the heat."

DEEP-CLEANED CERAMIC TILE

We recently purchased a house built around 1940 that has its original pink and gray tile in

the bathroom floor and walls. Unfortunately, the tiles look dirty no matter how we clean them. We don't have the money to refit the bathroom, so we're accepting if we could paint the tiles instead. Do you have any suggestions?

MARION DUNNAN, WYOMING, WASH.

Paint just won't stick for long to a tile surface on a floor. TileMaster Joe Parsons says that new tile is a better bet installed over old, which saves the expense of ripping out the old work. But if this isn't in your budget, why not, like another reader at cleaning it?

The basic strategy for tile is to use the gentlest method that works, testing it out on a small, hidden area before you spend it all over. The National Park Service (NPS), which is responsible for maintaining a lot of historic areas and tile floors, recommends first trying water and soap, if that has no effect, using dry commercial scrubbers, nonoxo-based tile cleaners. For more cleaning power, you can work in with a plastic putty scrubber before using. Never use abrasive pads or steel wool.

Ammonia can sometimes lift stubborn stains—wipe it on and then rinse it off—but if the spots are from acid or mildew, the NPS suggests a dilute solution of household bleach and a neutral household detergent, or a 5 to 10 percent solution of TSP (trisodium phosphate) in water. Scrub heavily on old areas with a nonacidic or nylon-bristle brush and rinse thoroughly with water. Don't let the solution stay on the tile for more than a few minutes, as it may damage the glaze.

One thing you should never do is scrub with abrasive cleaners. Even the mildest ones can damage tile's protective glaze. If someone did that to anyone in the last 60 years, you may never get the floors evenly clean. Or it may be that the tile wasn't glazed in the first place, which could mean that the dirt is beyond the reach of any cleaner.

SOURCES FOR OLD DOORHOLDS

My wife and I have been remodeling our house, and we've been trying to find solid brass door knobs that match the original 1940 knobs. If we learn find anything close to the shops, can we have them made?

JOHN LAMBERT, BAZON, N.C.

The best way to find original old-house hardware is to hunt up antique, architectural

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salvage yards, and unique shops whenever you go. I was up in Maine recently and stopped in a couple of antique-furniture shops that happened to have lots of hardware stashed in the back. Try an internet search for suppliers, or look at catalogs that specialize in old-style hardware, or talk to hardware store docks in the kinds of places that have wood floors and tall bars full of long discontinued faucet washers, window pulleys, and other classic fixtures gone. Searching this way is a lot of fun if you're not in a hurry.

Custom-casting new hardware to your specifications can be done, but it won't be cheap. The Old House magazine ran an article about the 140-year-old Gable family in New York City last "Found Brass," June 1998, page 68. That's a list of work that goes into reproducing even the simplest brass pattern. Ahm, finding the right grade, you'll never take a doorknob for granted again.

ROOFING THE WALLS

I have to replace the deteriorated horizontal siding on my house, and because I live in a wooded lot, I'd like to use a low-maintenance material that will blend with the trees. The modern, textured appearance of architectural asphalt roof shingles appeals to me. Will they hold up on vertical 1-by-6s played shiplap?

Tommy Gonzalez, Gloucester, Mass.

I don't see why not. Architectural shingles are a good choice, being more durable than standard asphalt shingles, many carry a Class A fire rating, a bonus in my wooded area. And after all, gabled and

mansard roofs are shingled, and the lower pitch is usually vertical. With roofs, the steeper the better, because water and debris spend less time lingering on the surface. On a wall, the shingles would not add much life by being protected from UV radiation. Finally, be sure to check with the manufacturer to see if the standard warranty will still apply. Whenever a product is used in a nontraditional way, warranty provisions are sometimes suspended.

THE COST OF NEW CONSTRUCTION

I am faced with a choice of whether to build a new house. The site requires significant earth and stone excavation because all of the dirt and sand is the right, so all I need is a concrete foundation. But the question is in getting things as high as \$100 a square foot. That seems outrageous, considering that I can buy an existing house at the same size as the house I am to build. My house design isn't complex and I'm not asking for wild masonry piers in the living room.

Paul Ruiz, Rossmore, Mass.

Permits of more but not a 2,300 square-foot house this amount that they wanted to build on a lake in New Hampshire. It was a nice design but not elaborate, and the materials were slightly above average. The architect estimated construction costs at about \$125 per square foot. The first bid came in at \$175. You don't have to imagine how they bid.

It should come as no surprise that builders tend to price high

ASK NORM

when demand is high. My suggestion is to put out requests for bids—several of them—and by the winter for, even in the fall, when contractors are starting to line up jobs for next season and might be a little hungrier for work. Just be sure everybody is bidding on the same set of specifications, because there's a big difference between getting a job and a job done, between a bottom-line risk and the loss, between big-line grade work and a contract, and between solid-risk work and a risk work.

I've found that detailed specifications are one of the best ways to encourage accurate and reasonable bids. If a builder's not sure what you want, he'll just be bid to keep from getting caught on the short end of the deal, a lot of uncertainty means a lot of padding. And don't hesitate to ask for an explanation, masonry bid should be broken down into a dozen or so major components so you can understand what you're buying.

The other way to keep costs down is to eliminate what you don't need, like granite counters or a three-car garage. As with a car loaded with options, a house filled with extras gets expensive in a hurry. You can only drop costs so far by cutting the caliber of materials such as roofing or siding, however, and you'll pay for poor quality in the long run.

RESTING WINDOW LINTELS

We live in a 90-year old house in the Tidewater area of Virginia, and the steel brackets across the top of the windows and doors in the front are rusting. Though we have painted the exposed portions, they are now rusting so badly that the mortar is peeling out and cracking. A mason said the brackets must be removed and replaced with galvanized steel. This would be a big job—many windows and two garage doors would be involved. Do you have any suggestions for repairing this problem, and can you tell us how to avoid problems in the rest of our retirement?

Joe Blain, Potomac, Va.

The brackets you're referring to are called lintels—check, L-shaped metal angle iron that support the brick and mortar over windows or door openings. The brick and mortar is torn away from them by the weather. Some times water gets behind the brick and

collects on top of the lintel, which then rust, expand, and pop out the mortar.

Replacing the rotted steel with galvanized brackets would certainly slow down the corrosion process, but it would be a huge job, one best handled by a pro. Unless they are structurally sound—of there is more than rust—most—up the following before committing to a big brick job.

Start, remove any loose brick and mortar, and take everything out with a cold chisel and a mallet. Break, scrape and wear brick every bit of rust off the lintel, then break everything clean with the mason's brand, making sure all the mortar is dead or gone. Remove all the old mortar from any bricks you keep out. Bag them with a bricklayer's hammer, scrape them with your cold chisel—whatever it takes.

Now, coat the entire wall with a rust-inhibiting primer followed by a sealer-based, rust-inhibiting paint. While the paint is drying (usually 15-24 hours), lay a bag of type-I masonry cement and dry building sand. You'll need a cold chisel, a bricklayer's hammer, a pointing trowel, a mason's jointer, and a tub of silicone caulk. (Make sure it's the neutral-cure type, silicone with acetic acid is a well-known moaner.)

When the paint is dry, mix up a small batch of the mortar using a 3:1 sand-to-cement ratio. You should add water gradually until the mix is smooth and stiff enough to stay on your trowel.

First, dampen the area you'll be working, so with a wet sponge in a empty water bucket. Then use the trowel to "lean" the sides and bottom of each brick with mortar, and then slide them into place. Fill any voids with extra mortar, and pack it in well with your pointing tool. When the mortar is firm to the touch, smooth the joint with the jointer and dust off any residual mortar crumble with your brush. After the mortar is hard, and the joint between mortar and lintel with a bead of silicone caulk.

To keep the problem from occurring again, check the lintel's joint and the cold lead joints every year, and repair any new cracks that might appear in the mortar. You don't want to give water any opportunity to get behind the brick. ■

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show in Robert's
bathroom suite in
Hollywood Hills, CA.
72 by 42 by 24 in.

Splendor in the Bath

Soaking tubs transform an otherwise ordinary experience

BY JUDY ORSON

K when bath designer Karen Richmoud had only one objective in designing her Versailles, Washington, client's master bath: Make it as tranquil and beautiful as an ikondo set ring. The centerpiece of the scheme became a capacious oval soaking tub marked between a pair of corner windows. "The owners can actually watch eagle nesting while they relax in the bath," says Richmoud, of Neil Kelly Design/Remodelers in Portland, Oregon.

Today, a wave of new soaking tubs—streamlined, freestanding, and in sophisticated sculptural forms and materials—are helping make bathrooms an oasis where they are functional. In effect, bathing is recovering its roots as a leisure activity, rather than merely a way to cleanse the skin. It's a tradition that is Western culture's headiest back to Rome, where doctors of that city would gather in centrally located public baths to exchange ideas. For cy-

tures in Japan, bathing has been a ceremonial experience, too, but with spiritual significance. For the Japanese, quietly sitting, in a hot stone or with family or companions, allows the body and soul to be purged of impurities. In Japanese homes the bath, a room dedicated to bathing, features a deep tub, an adjacent area is equipped with a headshower for actual cleansing.

The contemporary soaking tubs Americans are now discovering are generally deeper than conventional ones, up to 25 inches as opposed to the standard tub's 15 inches. They are larger too—up to 64 feet long and 42 inches wide, some can comfortably accommodate two persons. Styles range from the traditional, such as Robert's ornate cast-iron tub, Savaria Specialty's Victorian-style clawfoot, and Philippe Starck's maple model for Decora, to the ultra-modern, like Ann Sacks' copper Soak tub and Diamond Spa's copper and steel



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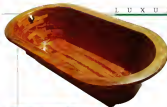
RECORD



EDIT



PLAY



ABOVE: P.F. Cavanaugh's tub (\$21,000, 74 by 31 by 21 in.) is handcrafted of metal used from around Africa and sealed with epoxy resin. **LEFT:** The frame-mounted tub of the Diamond Spa tub (\$4,641, 68 by 36 by 12 in.) helps prevent floor flex during a long warm-water soak.



RIGHT: Robert Kneib's tub for the Four Seasons (\$14,000, 74 by 42 by 21 in.) is made of copper and features a hand-chased exterior to give it 135 pounds. Philippe Starck's white acrylic Eclipse 2 tub (\$7,590, 69 by 33 by 18 in.) from Dornbracht is lighter than most, making it a good choice for homeowners concerned about floor load.



line and version. Others borrow from nature, such as Clough Design's Zen model, of cast and sealed concrete, which resembles a hollowed-out canoe. Both's limestone, shell-shaped Ph. Starck for an Italian firm; and P.F. Cavanaugh's exotic ash-wood beauty. All are complemented by fittings in brushed or polished brass, nickel, copper, chrome, or stainless steel.

Prices begin around \$1,690 for a new shower porcelain or cast-iron model and rise to high as \$35,000 for a handmade Zen. Hardware prices vary by material and type of mounting. Wall- or tub-mounted types and faucet handles start at about \$150, floor-mounted hardware, which includes supply lines and drain-off valves, adds another \$300. Overflow and waste (drain) fittings and pipes run around \$190. Copper and brushed-nickel hardware cost about 40 percent more than chrome or stainless steel. A nickel handshower can be \$200 or more.

The weight of these elegant oases may require reinforcement of the floor, especially on upper floors, and floor will further dictate the ease of having one installed. New models can run from 225 to 2,000 pounds, compared with a conventional tub 60 to 80 pounds. And that's not including the water—most soaking tubs hold between 30 and 50 gallons, at 8.3 pounds per gallon. Says Howard Chisag, a Massachusetts-based contractor, "You'll have cause for concern if your house is framed in wood with standard 2x6 joists." He suggests consulting a structural engineer about ways to bolsters and supports a tub's weight, such as installing timbers to support joists, installing a steel beam beneath the tub (especially if a new stone or tile floor adds to the load), or adding a properly supported concrete subfloor.

Because most freestanding tubs sit away from the wall, wall-mounted or former tub-mounted fixtures may have to be replaced with floor-mounted hardware. In this case, removing previously hidden plumbing becomes necessary. "Everything that once ran through the wall now has to run under the floor, and then out into plain sight," says Richmond. Branding the supply line and drainage pipe from the wall to a newly positioned tub will require tearing into the floor or ceiling and fishing roots in the joist bay. But, warns Chisag, "no matter how short you're on space, try to avoid running plumbing into the joist. It's best to run a parallel."

Two other issues to consider: heating enough water for these voluminous tubs and the logistics of moving one in. A hot-water heater can be installed near the bathroom to augment an existing heater, or a new no-demand heater may be necessary (see "A Tankless Job," June 2006). As for bringing the new addition home, "light ovens and windows can create huge problems," says Richmond. "Sometimes we have piano movers."

Once the installation is complete, the major relaxing portion of the soaking tub isn't remarkable. "A soaking tub transports you to a mental place," says Richmond. "And you only need to stand in line in your bathroom to get there." ■



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A Cut Above

A tree in peril is carefully tottered by winter storms can send it tumbling.

BY RANDY LARKMAN

W

hen the downy white

root rose abruptly stops, the crown of a deliquescent black locust into pieces. One plunger continues, its green leaves whispering a final, frantic whisper. As it hits ground, the branches let loose a cascade of sticks, twigs, and pine. All that remains of the 70-foot tree is a mass of 500,000, New York, home to a 45-foot trunk, leaning like the Tower of Pisa down the steep hill and toward the driveway.

In the emergency silence, Dan Swen, an arborist for TreeTee, explains the tree's awkward fall. The shade of a nearby oak had forced it to reach for light on the opposite driveway. That, in combination with several unusually dry years followed by a couple of very wet ones, had caused the roots to gradually lift out of the soil, the next big storm could have played it across the driveway (on the road below). "There's no question that this tree—lying and on an incline—had to be killed," says Swen.

The chainsaw roars back to life, silencing conversation, and Swen's men quickly carve the tree into manageable chunks. After looking at smaller branches through a chainsaw and using a 12-inch diameter log for cutting, they exchange chainsaws for leaf blowers and clear the chainsaw mess from the driveway. It's less than a mile from the house to the road, but the trees are so close that it would have taken a mile to clear the way, a massive undertaking. The house is reduced to a wide, hairless stump. "We always try to work with and preserve nature," says Swen. "But in the end, because safety takes precedence."

PHOTOGRAPHS BY JOHN CRUICK

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1) To ensure the tree is next to a driveway where a cherry picker can't reach, the crew first dug at the ground—moving off the 1800-pound bucket from the luxury of hanging in a bucket instead of having to sit a ripe banana. The work is done in both ways, as that's the only way to get the crew control of the tree. They will lower it to a flat spot over a ground line a pulley. A 180-pound tree can't hold a 200-pound tree after two-hundred feet of work," explains Dave. Angel has a rope to the tree using a rotating lineless knot. Climbing right, he turns the line over the crown of a higher limb and down to his brother, Gonzalo, who loops it twice around the trunk and holds the end. After Angel drops through the line using a chain saw with a short 18-inch bar, Gonzalo enters the branch to the ground with the rope. Then Angel the line.



2) Gonzalo and crew member Walter Breake take the bucket and branch into the ground 80-horsepower digger. Its rotating section limits the bucket into up to 14 inches in diameter. Instantly shoveling them into mud. Anything bigger would be chopped into shavings. To prevent jakes, the crew always keeps the hole in line with the tree's center line.

3) When Angel is ready to remove the tree's last 10-foot crown, he uses a 10-foot rope to the ground to pull the rope to the ground. He then uses a "knot" to pull the rope around the trunk, hold fast with a rope's knot. About two feet higher, he has a second rope for lowering with a running lineless knot. He uses it through the hole in the trunk, and leaves the remaining trunk at the ground. Gonzalo, who wraps it around the trunk. Once Angel rises off the ground, Gonzalo manipulates the rope so that the multi-limb can be pulled to the ground, saving movement and collapse from harm. Then, to avoid damaging the driveway by falling the trunk whole, Angel cuts it into three 15-foot sections, hanging from the rope for each as it goes to the ground. For safety while he's working, he always places himself to the side—never directly behind or in front—of the cut.



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4) Once Amiel has just the buttresses 18 feet of trunk left, the cherry picker works down, slowly clearing the ground to let the messenger and saws the notch and backcut, angled to leave himself from there. "This is the most dangerous part," says Bower. "If you pull out straight through, such an extreme lean can snap the tree, snapping it up in a flash and causing serious injury." After a quick stop with the spinning saw, Bower is alone back to stabilize the shortened trunk, crisscrossing on the grass.



THE GIVING TREE

Suburban trees killed by storms generally meet one of three fates: the chipper, the landfill, or the fireplace. But a commercial lumbermill with logs containing enough solid, useful wood can fire a conveyor mill from logs lumber analysis, dropping healing fees, labor costs of chipping it into firewood, or the expense of buying lumber retail. After drying, the wood can become flooring, furniture, trim, framing, or other features around the home.

The owners of the black heart in this story, reluctant to see so much wood go to waste, contacted a local woodworker and best bidder, Alvin Oliver, to see if she had any use for the hard and incredibly rot-resistant wood. Oliver jumped at the offer and called sawyer Larry Oliver, wanting to pay him for the solid wood. On Friday day, Oliver showed up with the 1,800-pound portable band saw that has been behind his truck, and meticulously ripped the logs into about 200 board feet of 2-inch-thick planks. "It's not anything between 8 and 20 inches thick," says Oliver.

The deal saved the homeowners from paying to cut the trunk into 16-inch-long logs for \$100,000 (about \$200) and sent Oliver, who turned the boards into, only \$150. "It's not a common thing, I've only done it once or twice," she says. After about two years of seasoning, the wood will be dry enough for her to use. "I have enough now to make chairs and benches for a dozen weddings."



5) Bower leaves off the stump with his chain saw, cutting as close to the ground as possible. Bower's crew would normally use a stump grinder, a 50-horsepower machine with dozens of 10- to 20-inch-long teeth to cut, so Oliver uses the spinning truck and roots to let all 10 stumps below ground. But the homeowners realized that a stump is a living insect to Bower. It's a source of income and an early career. "I'll pay him just \$200 for the lumber," says Bower. "This wood design or design the stump will be right at the lumber for generations," says Bower.



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Class Act

High school students help bring a Queen Anne's back to life

Once destined for demolition (left), Corner Hill was saved when a construction studio also pitched in for a rescue mission. Through a private bid and nonprofit,

W

ith a \$77,000 bid on hand to demolish the boarded-up Queen Anne, Newlin Martin thought he'd made up his mind. Though the 4,000-square-foot brownstone-and-brick house known as Corner Hill had gained the town of Ellingham, Illinois, since 1892, it had suffered from several renovations and years of neglect.

Then, out of the blue, Newlin received an intriguing offer from Jim Zambichien, the construction skills teacher at the local high school. "Instead of hiring a crew, let my students take the place down to an shell as a one-year project to see how a 100-year-old house was made," suggested Zambichien, a 30-year building veteran.

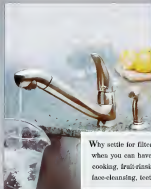
Originally built by wealthy industrialist Calvin Ames, the three-story gabled house had a somewhat checkered past. It had served as a photography college in the early 1900s, as a women's hospital after World War I, as a corporate headquarters in the '30s, as an apartment complex in the '40s, and it was finally sealed shut and abandoned in the '60s. "I couldn't afford the million dollars it would take to refurbish it," says Newlin, who owns a local supermarket and admits that he bought the property for the pains beyond a half-acre lot facing the lot.



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BY KRISTIN BAIRD BATTINI PHOTOGRAPHS BY JUDITH BRONLEY



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discoloring walls and discolored floors by their energy and excited by each discovery of historic detail, he also began to see the potential of his dream as the month "Darius said I was falling in love with the house," he recalls.

At the school year came to a close, the kids finished gutting the house of painting and drywall, revealing the Victorian-era plaster and hardwood walls that lined the entire first floor of bedrooms and bathrooms on the second and third floors, and working down to the main, where water damage was evident. Having opened up a number of walls, Zambichien was so excited that the framing was basically sound. Knowing that Newlin was now emotionally attached to the place but couldn't take on the cost of the school, Zambichien made a second offer: "We'll give you two more years of free labor if you'll save the house."

WORKING In total, 26 students worked on the house over three years, uncovering details like the red oak woodwork on the main floor. (Left) Classroom "chip carving" of the parlor's cherry mantel (right) left in its 1900 position, which retained hand-painted skills master Eric Laidley and students uncovered.

Newlin figured that the students' help would help construction costs. Still, it was not much space for the kids at. When Darius suggested turning it into a bed-and-breakfast, Newlin told him: "If you run it, we'll do it." So they agreed on for another two years with the school.

Newlin and Zambichien's remodeling plan called for a four-floor entry, lobby, kitchen, bathroom, and a handicapped accessible bedroom on one side of the house, and a parlor, dining room, gallery kitchen, and breakfast room on the other. On the second floor they envisioned four bedrooms, each with an own bathroom, plus a laundry room; the Museum would reserve the entire bathroom for their own storage space. The third floor would house a honeymoon suite, two more bedrooms and baths, and a small meeting room.

brick-lined water in tower. He and his wife, Darius, planned to eventually build a smaller house on the site for their own retirement years.

But Zambichien's offer delayed that plan. Newlin was happy to save the rest of demolition while the students set to work. "It wasn't going to cost me anything, and it was a real project for the kids," he says. So he entered into a one-year contract with the school.

In the fall of 1993, with Darius' arrival and a vintage furniture store, Zambichien's class of 13 junior and senior boys began removing junk piled five feet deep in the basement, pulling up carpeting, and tearing down the dry-walled and paneled walls of 13 apartment units (including two units rented or to the house in a 1940s address).

As they worked, the students uncovered hidden treasures: carved cherry and oak mantelpieces, and oak floors and wainscoting, and two period chandeliers stored in the basement. Even the many leveled, beveled glass windows were still remarkably intact.

Over the next six months, Newlin showed up daily during the two-hour class to give the kids encouragement, along with



The summer after the initial year of work, Newlin hired local subcontractors to install aluminum glazing and wiring throughout, replacing the screen boiler with a hot gas furnace and control on condensing. To defray the cost of the students' expenses, Newlin also drew the first of three final artist portraits, inviting local residents to see the work in progress. "In all, more than five thousand people viewed the job site and donated their thousand dollars to the school," Newlin says proudly.

Then fall, a new crew of students joined local subcontractors in gutting Garner Hall together. "The professional builders had to agree to work with the kids, that was a prerequisite for getting the Garner Hall job," says Newlin. While some students perfected their skills drywalling over the plaster and lath, another group tackled the sagging roof in the southeast corner. When sweeping in through a door and chimney flue had run from the third floor to the basement, where the trussing had rotted some eight inches. Removing diagonal members in the basement and raising the corner framing of the house with a hand jack, the kids started to new timber to support the structure. To shore up the barn's dead-end framing, they reinforced rafter studs with steel poles.

Then they focused on the ceiling in the first-floor entryway, which had dropped about five inches. The students leveled it, using a hand jack to raise a 20-foot-long I-beam into place supporting the floor joists. Every day for three weeks, they used two hydraulic jacks (one at each end) to gradually lift it up 1/8 inch at a time as the joists wouldn't crack, until the ceiling was leveled back to an 18-foot height.

As the movement exposed the home's mouth, the third-year students even thought that the stripping of painted and varnished surfaces would reveal red "We used everything—screeps, heat guns, paint knives, dental picks," says Zambichien. "Fortunately, we were able to save 90 percent of the windows." Whatever wooden components could be recovered—mainsheeting, doors, window sashes—were taken down and sent to a local restorer. During the last year results of detailed restoration, finish carpenters hung and planed doors, reassembled the elaborate porceling and molding, and remade the central staircase (see "Bold Spokes").

On the second, stair gables were covered with aluminum siding, the brick and limestone were risk panned, and the rest of the house was painted white. Newlin's sole regret was the cost. He needed donor concerns to match originals, but spent for cast concrete over a masonry and replaced aged asphalt roof shingles with new asphalt. It's once recovered the tower roof with

MAINT Bedrooms on the upper floors were restored and decorated in Victorian style, after the cheap plastering and gyping carpeting of previous renovations (clockwise) had been removed.



curved cedar shingles and hopes to redo the roof with slate.

In May 1997, the couple opened Garner Hall Bed & Breakfast, now a thriving business. A plaque on the porch mentions the building's history and credits the students for their role in saving the structure. "I'm glad we didn't build a new house," says Newlin. "Anyone can do that. By working together as a community, we saved a piece of our town's past." ■

BOLD SPOKES

Woodworker David Young learned the hard way that all spinners are not created equal. A major player in the Camel Hot Rod restoration, he and his son Steve successfully restored much of the house's second detailing, including doors and window casings, head moldings, and door pilasters on the first floor. But new project was quite different in scope: hand-hewing the 72 spinners on the main entrance balcony to the original measurements in one in the 18 surviving ones.

The spinners, fashioned from hard oak growth within six, display an unusual design feature: a 10-inch-wide rectangular block mounted between layers of wood, the equivalent of which is 1/8 inch wide by 1 inch long. To make the new spinners, Young, self-taught in the woodworking traditions of the area's German immigrants, employed the same techniques as a mobile steel artist. But after more than six failed attempts, each ending with one of the 18 spinners being broken, he modified the design. Suspecting that today's less dense white oak was not up to the task of such delicate detailing, he left an extra 1/8 inch on the 1-inch pieces to boost their tensile strength. "It's always an approach to try to duplicate something exactly," says Young. "You don't always happen. Sometimes you have to experiment until something works."

The new balustrade fits the entrance, and across the room, the old oak mantle above the parlor entry door, replicating a former decorative surround. With the old spinners stripped and the new ones stained to match, not even Young can see a ghost of a difference.

—Alamy Lockman





Soft Rock

Easy to shape, soapstone makes countertops, sinks, and floors attractive and durable

BY JEANNE HUBER

Soapstone resists acids in cleaning, yet because of its high heat content, it can be easily shaped into almost any countertop and sink and isn't affected by stains or other acids.

When the time comes to renovate the kitchen of his summer house in Maine, Steve Thomas knows exactly what the countertops and sink will be made of: "Soapstone," says the host of *The Old House*. "It's the perfect material for that rustic, farmhouse look—understated, old and as solid and satisfying as granite. Plus, you can work it yourself, which is very satisfying."

People have been using the stone in houses for over 300 years, not just for its good looks but for its many remarkable and practical characteristics: its durability (soapstone sinks have survived generations of chopping metal with pitch); its high resistance to acids and stains (soapstone won't keep the brown oil stains from countertops and sinks); its chemical resistance (it's immune to stains from acids and alkalis); its natural texture (it's a natural stone); its ease of use (it's easy to work with); and its smooth ability to retain heat. There's such thick skin work a 1/2-inch rock pocket between them can buffer the intense flames of a wood fire as a masonry stove (in Old World

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lower) and radiate heat into a cavity for hours after the fire rages (see "Rage of the Flame," November 2008, page 38).

Songpreet's unorthodox efforts also mean it can be cut and shaped with a variety of wood-working tools—including chains, saws, routers, and circular saws. That, and the fact that this stone holds extremely fine details (there are no knots or grainy grains in there, as with wood), make it a favorite of sculptors and of carpenters like TCM general contractor Tim Siler. He's used songpreet to make countertops, sofas, chairs, and windowills, and even even trimmed an entire kitchen window with it. "Songpreet is unbelievably easy to work," he says. "When carving it, I'm making sure to use carbide-tipped router bits and saw blades. He also suggests wearing a dust mask. "A good vacuum system helps, too," he says. "It's very dusty."

This stone's qualities, including its durability, stem from its primary composition: talc, the fine mineral most people associate with baby powder (talc is the main ingredient in talcum powder). Any rock that's at least half talc qualifies as a soapstone, so, in its commonest form, soapstone goes as far as STEEL is right. "Talc is made up of long, microscopic plates," explains Heather S. Van Gosen, mineral geologist at the U.S. Geological Survey (USGS). "Because the bonds between the plates are very weak, they easily slide past each other, which is what makes soapstone so easy to cut and carve." Talc is one of the oldest known materials, making it the bottom of the



1930: The 150-foot-deep Taishan quarry in the province of Guangdong has been in operation since 1733 and is one of the world's oldest soapstone deposits. It was used to cut a hole in a concrete slab supported by Vermont soapstone, as Philadelphia, Penn., cut

60-point Mohs hardness scale invented in 1812 by German mineralogist Friedrich Mohs. Pure talc rates a 1, meaning it can be scratched by any substance with a higher score, including a fingernail, which rates about 2. (Diamond is 10.) The soapstones best suited to household use have a hardness rating of 2 or 3—due to their higher percentages of magnesium.

Deposits of soapstone, found in scattered locations on every continent, formed more than 400 million years ago when heat and pressure at hot water tracts formed magnesium-rich minerals such as soapstone and delonite into talc and a variety of other silicates, including magnesite. The stone can be found in a range of hues from brownish reds and reds to browns, but the more desirable, magnesium-rich soapstone quarries in Scandinavia, India, and Brazil—in a dark green or mottled flannel gray. (The white flecks and veils that we see some stones are quartz.)

Van Gosen notes that the same geologic forces responsible for creating talc also formed asbestos, and that both minerals may be present in the same deposit. But according to Lance Mead, a Vermont geologist who has studied soapstone extensively, any soapstone suitable for kitchen countertops will not contain the long, fibrous fibers that make asbestos so hazardous. "Soapstone's 'texture' occurs as randomly scattered, needle-like crystals of magnesium and talc—a point that is lacking those fibers," he says.



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that aren't covered by floods and earthquakes, which require separate disaster insurance policies. And although the majority of floods, at least, last years, most homeowners, like the Lavenports, are reluctant to spend the extra money to protect themselves. Nationally, only about one-fourth of all properties in floodplains are insured, according to the Federal Emergency Management Agency (FEMA), outside of floodplains, that number drops drastically—even though FEMA estimates that a majority of the houses demolished last June by Tropical Storm Allison, which swamped 12 states and resulted in more flood insurance claims than any other storm in those cloudbands, were not located in flood zones. Earthquake policies, like the multitude of earthquakes themselves, are even rarer than flood insurance. Yet even in California, where they're relatively common, only about 17 percent of houses are insured. In other earthquake-prone areas (45 U.S. states or territories are at moderate to high risk), that percentage can drop by as much as two-thirds.

Forty-five U.S. states or territories are at moderate to high risk of an earthquake.

—Federal Emergency Management Agency



THE FACTS ON FLOOD INSURANCE

The National Flood Insurance Program, a federal-backed, nonprofit program managed by FEMA, underwrites virtually all flood insurance in this country, most policies are sold through licensed insurance agents. Policies vary, depending on how flood-prone a property is and the design of the house, for instance, one with a basement will cost more to cover than one without.

Policies can start as low as \$100 per year, although they average \$322. The standard deductible is \$1,000. The homeowner will be reimbursed up to the actual cash value of the depreciated house (not including any "average value") or the replacement value of the house, whichever is less—and up to 10 percent of the covered value of detached garages. Usually included are landscaping and additions to the property such as swimming pools and cabildings. (To insure personal property, i.e., the contents of the house, requires additional coverage—and another deductible—under your flood insurance policy.)

Lenders often require homeowners in a floodplain to carry flood insurance. However, not all lenders do—and not all owners take out a mortgage—to homeowners frequently have to decide for themselves whether to buy the policy. For anyone in a floodplain or right near one, the choice is easy: The chances of being victimized by a flood—and the cost of it—are too high to deny. FEMA is the best source for the latest floodplain maps (view from government at FEMA.gov).

26 percent chance of experiencing a flood during the life of a 30-year mortgage, as compared to a 5.2 percent risk of fire. Yet insurance experts say that even homeowners who assume they're safe from flood damage because they're far from a floodplain may be making a mistake. The insurance premiums at such rates can be less than \$10 a month—but a lot when stacked up against the increasing risk of floods in increasingly safe zones. Because of developments, roads and residences have opened forests and open land into overabundant ecosystems. This makes it more likely that runoff from a major storm will cover a neighborhood before flowing out to rivers and oceans.

"In recent years, floods have been occurring in places that were expected to be safe," says FEMA's federal insurance administrator Jo Ann Brown. (Note, however, that while a "flooded" basement may be a disaster for you, it might not be covered under your flood insurance.)

Businesses, though, must understand and would only qualify if the waters also came into an adjacent neighbor's business, or, in a rural area, if they affected two or more farms. Otherwise, such a business owner's insurance covers repairs resulting from a flood on the house, such as a basement leak or burst pipe, so long as the waters or floods damaged a structure.

Given the risks, insurance experts say that flood policies make sense for almost every homeowner. By not buying insurance, people are gambling that whatever water damage they suffer will not be extensive—perhaps requiring only the replacement of some soggy drywall or carpeting in the basement—and, thus, will not ruin the deductible. Those willing to take their chances may be not only the deductible of a devastating flood has their assets and the report a declared a disaster area. But federal aid is extremely limited, mostly covering just a small percentage of the value of a destroyed property, and is usually offered in the form of a loan that has to be repaid with interest.

QUESTIONS ABOUT QUAKE INSURANCE

Even in high-seismic areas, earthquake insurance isn't a no-brainer, mainly because the policies are expensive and the coverage is limited. In San Francisco, for instance, premiums on a \$250,000 home—low end for that city—can run \$1,100 a year (less for newer houses built to the latest earthquake protection codes). And if the premiums don't scare people off, the deductibles and the deductible—about 15 percent of the value of the house—often will. Most policies don't cover such material items as replacing the ground for rebuilding, upgrading the home to



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FLOOD RISKS AND INSURANCE GAMBLERS

FEMA says that homeowners in floodplains face, on average, a



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Disaster Readiness

Experts say that every dollar spent on disaster readiness by communities or individuals can save \$7 in repairs and, in some cases, can trim the premiums on flood and earthquake insurance. Options to insuring a home for disaster preparedness and retrofitting with preventive measures are available at the Institute for Business and Home Safety (www.ibtas.org) and IFMA (www.ifma.org). Here are some recommendations:

- **•TIE THINGS DOWN:** To prepare for high winds and tremors, keep heavy items from falling by bolting shelves, furniture, and large appliances to the walls. Shatterproof latches on cabinet doors will prevent break-ins; bolted placed on bottom, from falling out. Attach items displayed on open shelves with heavy locks or cables.
- **•HOLD ON:** Fit gas burners with flexible connections or a breakaway shut-off device, or install a gas shut-off device.
- **•BATTEN THE HATCHES:** To protect against rain and debris, have quick-latched shutters handy. Or use impact-resistant doors and windows or window security films.
- **•ABUSE THE LIVING SPACE:** If flooding is a concern, having a few feet of unused space for water to flow under the house can make a difference. Options include raising the entire house, moving personal items out of the cellar, or using the lowest part of the house as a garage. For more, go to www.flood.gov/flood/loss047.htm.
- **•STRENGTHEN THE STRUCTURE:** To stand up to earthquakes and hurricanes, have your house inspected by a structural engineer. The inspection may lead to be strengthened, and the house may need to be bolted to it. The house could require additional bracing, or posts and beams may need to be connected with hurricane anchors. (For more, see "Weathering the Storm," May 2001, page 122.)

current earthquake codes, or replacing damaged roofwork and other exterior ornamentation. According to Lisa De Long, an independent insurance consultant in the Bay Area, it's possible to spend tens of thousands of dollars on remodeling your house, only to discover that none of those repairs count toward your deductible. The upshot is that in California, most people have concluded that earthquake insurance is not worth as high price.

California taxpayers lost about \$3.5 billion of the \$4.4 billion in annual earthquake damage across the entire country. Consequently, coverage is quite a bit less expensive in other quake-prone areas. For instance, in Washington State, second in annual monetary losses, the average premium for \$100,000 of coverage is about \$210 a year on a frame house (higher on masonry). And on another large fault line, which runs through parts of Illinois, Kentucky, Tennessee, Missouri, and Arkansas, earthquake policies can run as low as \$30 a year for a \$10,000 home. But deductibles are still high—at least as 20 percent of the house's value—as are the number of exclusions. For these reasons, insurance experts recommend that people who live in areas at risk consult a California price and policy

and examine the coverage to see if it's worth having for the peace of mind, however limited, it can bring. (To find information about earthquakes in your area, search the National Earthquake Information Center's Web site at <http://neic.usgs.gov/>.)

Some people take a creative approach to the earthquake insurance dilemma. Typical are Norma Garcia and her husband, Bert Press, who bought an 1890s Victorian in San Francisco a year ago. Frazzling most night, the couple agreed to plan to put the money into remodeling the house to survive an earthquake without significant damage (see "Disaster Readiness," above). They decided against earthquake coverage, not because the house had withstood earlier quakes, but because it wouldn't replace the very things they loved most about their home: the decorative interior molding, plaster walls, and outside ornaments.

"It made so much more sense to spend on ways to preserve the most important things about the house, rather than one policy that wouldn't protect them or even pay to fix them if they were damaged," says Norma. "Insuring against a disaster is a good idea, but that doesn't mean an insurance policy is always the best way to do it." ■

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TALKING SHOP

Smoothing the Way



The spinning head and eccentric movement of a random-orbit sander removes material faster than a vibrating plate sander and cut down on the sand marks left by disc sanders. Here is the 5-inch pad of this Bostitch sander shown mounted to be replaced with an integral dust filter, at right.

F

or reaching up the sides of delicate crown-moldings, a freshly painted or varnished surface for the removal of finish, there's no substitute for hand sanding. But when it comes to sanding, ergonomics, speed, and reaching work are all in. If you can handle the job, but anyone who's pulled out a sander more than about twice a year for a power sander. There are many ways to combine sandpapers with an electric motor to get the job done. Unlike disc sanders that spin right to left, random-orbit sanders make quick work of the work. And palm size for shop sanders put the extra touch on the job. For surfaces, if used correctly, though, a power sander

can do more than just good-floor sanders and belt sanders on surfaces for leaving a wood surface as rough and rippled as a road-blow sand. "You can wear mixer carpenter Malm. A power sander problem by giving someone to how the sander moves. For dust and random-orbit sanding sander, "It's important not to pass down too hard," he says. Otherwise, the surface will be covered with excessive scratches. Also, he always keeps the tool moving in the direction of the wood's grain. Even after a careful power sanding, more goes back and finishes the job with a good hand sanding. By the time, though, it's not much of a chore.

Four 5-inch-diameter discs spin up with random-orbit action on this 100-pound, variable floor sander made by Chem-Tek Manufacturing. The motion avoids the grinding that disc sanders incur with both-in-drum-type floor sanders. An on-board vacuum system collects dust.



Overlaid from table to table at 10,000 to 15,000 rpm a minute, the longer the head of a Fini detail sander can reach into spaces and larger machines can't. Fini's with interchangeable attachments, this tool can also scrape paint, remove wax, and saw wood.



Well-designed hand-held sanding devices save time—and fingers. Random-orbit head on the Bostitch's (top) quickly removes paint, plastic, or wax. The Bostitch's spring-mounted track (middle) allows the sander to follow the work surface. The Handi-Sander (bottom) holds a 10-inch roll of sandpaper when the paper wears out, removes it, rolls out a length of new paper, and presses it down back to the tool's bottom.



A variable-speed belt sander has a claim at speeds up to 1,000 rpm per minute, gives the belt sander features. According to equipment dealer's right locally, the 140-mph or more from the Milwaukee Electric Tool Corp. has a 10-amp motor and a 10-amp supply cord with a 10-amp dust bag.





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BIRTH OF A GUEST BED



The 25 tops of old-growth southern cypress used to build the alcove-bedded guest room arrived in boards and beams of various lengths, some as long as 16 feet. Right away, the entire shipment had to be planed down to remove surface warping, but that yielded "perfectly quarter-sawn cypress with a light grain and gorgeous, golden-yellow hue," says woodworker Bill Eichenberger. He built the two modular alcove beds at a San Rafael-based shop before assembling them on site, painting the sides with 3-inch-wide tongue-and-groove boards fitted into grooves (8 feet tall) the height of the walls. "To make the room look like it's inside a ship's hull, I used a miter to shape the rim with a 25-inch curve, though with the additional sleep of the collar with they appear to bend over more," Eichenberger says. He used the same planing technique along the ceiling, then treated the alcove opening with tapered pilars and an arched cornice.

In each alcove, the cabinet that houses the bank of storage drawers duplicates on the bed platform, its full frame is 70 inches long by 40 inches wide by 20 inches high, which provides a roughly 16-inch clearance around the built-in platform so the bed can be made up easily. The drawers are separated by a 10-inch-deep sliding shelf and built atop an additional bank of drawers. Behind the shelves, along the foot of each bed, he installed a two-tiered, 16-inch-high by 20-inch-wide cabinet with sliding doors. The top tier has no back, so it functions as a pass-through between the two alcoves, says Eichenberger. "Either that, or a place to play pool-solitaire."

Throughout, these coats of black-oiled tung oil and two coats of wax give the wood a rich finish.

back into the corner of a room, tucked up against a fireplace, as a way to create warmth," says Marianne Fortmiller, director of the Nordic Heritage Museum, in Seattle, Washington. The popularity of alcove beds, often decorated with elaborately carved carvings and handwoven curtains, remained beyond cold weather climates, however. They have long been grand beds for their economical use of space and the privacy and snug comfort they afford. Thomas Jefferson was so taken by them he saw in France that in 1796, when he was redesigning Monticello, he turned Virginia residences, he included one in every bedroom.

With the right space of a ship's cabin in mind, Eichenberger designed one wall of the collar to accommodate a pair of twin-size alcove beds, back-to-back, with a floor-to-ceiling bookcase between them and drawers beneath for blankets and clothing. The room's central support post would be joined with cypress and dowels to resemble a ship's mast, and the window-like wall hatches planned for inside each alcove would be playfully decorated with holes drilled in the pattern of a sailer's sailboats. A floating oak floor, joined with clips rather than nails or glue, would be laid over the concrete subfloor.

To create this vision, the owner enlisted Mark & Co. General Contractors, who in turn brought aboard master woodworker Bill Eichenberger, both of San Rafael. Having long worked with salvaged wood for its eco-friendliness as well as its pattern of age, Eichenberger located a cache of good old-growth southern cypress—recovered from a 19th-century water tower in Louisiana, and from other sources—for the room's exterior. Given its resistance to decay and shrinkage, cypress was a preferred material in the days of wooden ship building, and would still work as an understated space that needed no additional dampers.

Blending ship-carpentry tradition, Eichenberger used as few visible fasteners as possible to assemble the alcoves. The platforms for the beds sit atop boxes that house sliding drawers, hidden screws affix these to the foundation wall and the central sliding unit. Behind and perpendicular to the shelves, along the foot of each bed, Eichenberger installed two pairs of Japanese tongue-and-groove cabinets with sliding doors. The walls and ceilings were parallel with tongue-and-groove boards that fit into notched ribs that had been carved to create the feel of a hull. (See "Birth of a Guest Bed," left)

The work lasted for many months, but in the end, the homeowner realized her wish: a shipshape space room in which guests push off for the land of nod. ■



Inside each alcove, on the foot of the bed, are sliding door cabinets, the upper one has no back partition and serves as a kind of pass-through. Here, the built window-curtain conceals a dressing room.

ILLUSTRATION: ANDY COOPER



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HOMEOWNER'S STEP-BY-STEP PROJECT SERIES HANDBOOK



After smoothing out the top half of a "double" strip of wallpaper, John Dow prepares to unfold the remaining half and press it to the wall. Avoid stretching the paper," he advises. "Otherwise, it will shrink up on the rollers, dry and leave gaps at the seams."

Hanging Wallpaper

BY SCOTT GIBSON

Wallpaper first appeared in the 16th century, in the form of black-and-white hand-blocked prints on paper sheets, and it remains a favorite way to bring color, texture, and personality to a home. Originally a luxury material, it became affordable by the mid-1850s with the advent of machine printing. Since that time, wallpaper designs have been used not only to ornament spaces but also to visually alter them: Bold patterns and deep colors make any room seem more intimate, while light-toned papers with delicate prints convey a feeling of spaciousness.

Whatever effect a homeowner wants for, achieving it demands equal measures of art and engineering, says painting and decorating contractor John Dow. For him, the smooth, seamless look and good adhesion that signify a top-quality installation begin with a properly prepared substrate and end with exacting attention to each room's particular topography. Where walls are out of plumb, for instance, he makes sure to cut and overlap the paper at the corners so that adjacent patterns line up precisely.

Dow's advice to novice wallpaper hangers is to begin with small, easy-to-match patterns painted on durable stock and to avoid spaces with dormers or stairwells. "Try a bathroom that's first partway up the wall or a room with wainscoting," he says. "Work patiently and steadily, and you'll get tight seams and a professional look."

—Leslie Moskowitz

PHOTOGRAPHS BY DAVID SARNAK

A high-angle photograph of a family of four in a room that is under construction. The walls are made of exposed wooden studs, and the floor is dirt. On the left, there are large windows. A man in a blue shirt and dark pants stands near the windows. A woman in a blue shirt and light-colored pants is in the center, holding a young child. Another child is standing in front of her, reaching up. The scene is warm and suggests a family growing together.

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Tools & Tips



1. Pruned stem-banded snail
2. Fleas on a dog's back for better grooming
3. Vinyl-to-stylt adhesive (sponges) for installing levers and securing covers when using vinyl wallpaper
4. Spray-on rubber cement for applying wallpaper to switch and outlet boxes
5. Ballpoint pen holder, nylon line, and 3-inch-wide paint roller
6. Six stickers for making poops
7. Allen wrench set (specially) for removing towel bars in bathrooms prior to painting
8. 2- and 4-foot ladders for drawing phase lines on walls and getting long rods
9. Utility tape for use for plumbing short pieces where seal tape is not available

All the effort of refreshing a wall with new paper will be for naught if the surface it's being applied to isn't clean, dry, and in good repair—which means that any existing paper has to come off first. To determine whether removal will be a breeze or a nightmare, John De Munnis a coach plate and pothole away an edge. Paper stuck to a painted surface will **wall** off easily, but it will be a struggle if it's applied to bare drywall. "It's virtually impossible to remove paper stuck directly to drywall without peeling off parts of the wall," says Gray. If that's the case, he makes an exception on the "remove old paper"

"Hanging the milestone. Once done, you're well on your way to a new level of business success."

planning ahead

- [illegible]

ping solution (soaking the paper if necessary) and plows it off with a 4-inch wide razor scraper. After the existing paper and gesso underbase have been removed, let the fill any gouges, screw holes, or other defects with spackle or joint compound, sand them smooth, and wait overnight for the wall to dry.

Then the dry-grip process the repairs with an oil-based primer under and into it for 48 hours. [It's now plaster and drywall be well grown onto the masonry wall.] Next, a system of cast-in-place waterproofing primer and foam is overlaid. This second primer coat, which Dye calls "acrylic sealer," protects the wall from the water in the wallpaper glue, which also takes up to six weeks to cure under vinyl paper. It will also make stripping an easy task when the room is eventually redecorated.

— **John**

Installation



STEP 5: LAY OUT THE ROOM

*If using wallpaper with a dominant design element, place to center that element on the "focal wall"—typically the wall section people notice first as they enter the room, such as that between two windows. Minimize the width and height of this wall section and highlight its midpoint.

⁴Cut a third strip of paper that is tall. Place the downward-facing short end over the midpoint. Mark the wall of where the leading edge of the paper (the one against which the rest of the strip will hang) falls. Using a 4-fold level as a guide, draw a photo line the height of the wall at that mark (above).

*To estimate the location of each seam around the room, cut two more short pieces of paper and paste them edge-to-edge on the wall. Mark the wall where each leading edge lands; continue marking around the room, pulling up and readjusting the strips.

*Measure the height of the wall at the plumb line and cut the first full-length strip, allowing as much overhang as needed so that the downward design element falls at the midpoint mark. If using solid-color wallpaper, leave 1 inch of overhang at the top and bottom of the strip.



STEP 11. MAKE THE PAPER

*If the paper is not preprinted, tell said the first city's line-down on a 10-foot-long work table and use a 1/2-inch-long point roller to apply to generous, even coat of paste all the way in the paper's margin.

• To give the adhesive a chance to activate, gently fold over both ends of the strip, being careful not to crease the paper, so that they meet in the middle. (You'll find this process is known as "bookbinding.") Make sure the paper's edges are exactly aligned so that no painted surface is exposed. Let stand for 5 to 6 minutes before hanging. (See Step 3.)

*For prepacked paper, loosely roll up a strip with the adhesive side out and immerse it in a trough of cold to lukewarm water (depending on the manufacturer's instructions, just until the paper is thoroughly wet but no longer). Soak the paper as above for 3 to 5 minutes.

TIP: If you later find that a pasted paper has absorbed too much of the adhesive and doesn't have enough thickness to stay on the wall, apply a light second coat of adhesive and rub the paper.



STEP 5: TEST AGAINST VARIANTS AND BODIES

4 When applying paper to walls adjacent to windows and doors, align the leading edge of the strip to overlap the trim. From the paper's inside edge to the corners of the trim, make diagonal cuts with scissors to allow the paper to lay flat on the wall. Remove the bulk of the overlap with scissors. Smooth the paper as in Step 5, then use the smoother to push the paper snugly against the ceiling, the ceiling, and the baseboard. Trim off any remaining overlap.

* To trim around a solution's solid and spray, stroke a series of short cuts from the waste edge of the strip toward the corner where wall and floor meet. These narrow fingers of paper allow the strip to be shaped to the profile of the casing (floor, wall). With narrow putty knife, hold the paper on the wall and trim any waste with a razor knife (floor, ceiling).

TIP Don't avoid seam rollers because they can leave depressions in the paper.





STEP 3: HANG THE FIRST STRIP

Take the bookend strip to the wall, then unfold and apply the top half, aligning one edge with the plumb line in Step 1. For solid paper, overlap setting (or crown molding) by 1 inch. Overlap a patterned paper as needed so that the main design element is centered on the midpoint of the wall section.

First, smooth the edges of the paper with a moist sponge, then brush lightly from the center of the strip to its edges. Next, gently pull (do not push) a smoother across the paper to eliminate wrinkles (note) and anchor the paper to the wall.

Unfold the strip a lower half. Align and smooth it as above, overlapping wallpaper as needed.

Use excess paper with a sharp razor knife held almost parallel to the wall (note). Guide the blade with a finish putty knife to prevent tearing.

Wipe any adhesive off the paper's face with a wet sponge, pushing lightly toward the edges. Then sponge-clean the woodwork and ceiling.

Measure, cut and hang each subsequent strip, shifting them up or down so the wall to align the pattern and to build seams tightly (or no overlap).



STEP 4: WALLPAPER THE CORNERS

*Corners are the only places where strips should overlap slightly. For an inside corner, measure the distance from the corner to the top, middle and bottom of the book-ended strip. Subtract for cut-off plumb walls and 1 inch to the largest of those measurements. Using a level as a straightedge, trim a dry strip to that width, cutting on the side that will meet the corner. Hang the paper so its just-cut edge forms the corner and extends onto the adjacent wall.

*Position the adjoining strip so that its edge meets right into the corner, overlapping the edge of the previous strip. Align the pattern as closely as possible. Mark the wall where the leading edge meets and draw a plumb line at that mark. (Using the line as a guide, hang the strip (note).)

*For outside corners, measure and trim the strip so it wraps over the next wall section by about 1 inch. Hang the next strip as above so that it overlaps the previous piece but leads just short of the corner's edge. This prevents the paper from pulling up if someone brushes against the corner.

STEP 5: HANG HEADERS AND FOOTERS

To hang headers and footers—paper a row and below windows and above doorways—measure, cut and book each strip as you go. To keep these shorter pieces plumb, align each strip's lead edge with a tape-level.

Hang, smooth, and trim as many headers and footers as needed without going past the end of the window or door casing.

Then hang a full-length strip of paper alongside the window or door by butting one edge of a dry, full-width scrap of paper against the top header or footer and marking where its opposite edge meets on the wall. With a level, draw a plumb line on that mark from floor to ceiling. Plumb, book and hang the full-length strip as in Step 3, adjusting it up or down as needed until the pattern matches up. When the pattern aligns, sponge and smooth each piece as in Step 3 and trim off any overlap.



DISAPPEARING-PLATE TRICK

Of the many tricks John Dec uses for a flawless wallpaper job, the one he considers worth to appreciate most is the way he makes switch plates and receptacle covers virtually disappear from view.

First, he removes the plate and roughs up its surface with 100-grit sandpaper, then places it back on the switch without screwing it down, letting a 6-in.-7-in. inch scrap of wallpaper against the plate. Dec removes the paper around until its edges match the pattern in the area around the switch. Then, still holding the scrap piece against the wall, he gradually reduces it with scissors until it overhangs the edge of the plate by about 1 inch. Taking the scrap off the plate, he liberally coats its back with rubber cement spray adhesive. Working quickly before the adhesive has time to set, he places the scrap over the switch plate and adjusts the paper so its pattern matches the one on the wall (1). He's careful not to let the glue get on the wall, as it's impossible to remove.

Next, Dec peels the paper-covered plate off the wall with the help of a putty knife and does the rest of the work at his table. After firmly pressing and smoothing the paper against the plate, Dec makes a diagonal cut into each corner and folds it neatly around to the back of the plate (2).

To make the cut for the switch, Dec carefully pushes the blade of a razor knife into the switch opening as the paper does not lift away from the plate, and makes a series of short sawing cuts around the edge of the opening (3). After making a small X-cut at each screw opening, he removes the plate (4).



materials

PAPER-BACKED FACING



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Wallpaper is available in countless styles, materials, and patterns. Decorative choices range from delicate silks and grasses to sturdy wyls and even wood veneer that can be sanded and finished like solid-wood paneling. Printed papers have either a straight pattern, in which an identical design runs the length of the roll, or a drop pattern in which imagery repeats in a more random manner.

Most of the wallpapers sold in this country are paper-backed vinyls. According to John Dec, these are easier to work with than more delicate and tear-prone plain paper, and generally come preprepared, eliminating the need to roll on starch-based adhesives. "Vinyl is just a little more friendly to hang," Dec says. The downside is that heavy vinyl wallpapers can be difficult to cut, and in corners where the paper needs to overlap, strips have to be bonded together with vinyl-to-vinyl adhesive. Silk, grass, cloth, and textured papers also require careful attention during installation. "You absolutely can't get plaster on their faces," Dec says.

"There's no way to wipe it off!"

PREPARED VINYL

PAPER



EMBOSSED PAPER

PAPER-BACKED VINYL

BURLAP

PAPER-BACKED VINYL

FOR INSTALLATION OF HIGHER-END WALLPAPER, PROTECT YOUR WALL

SITTING AT THE TOP of the chimney at the McCue's home on a morning in late May is a giant steel crane. Moogade the machine on lengths of 2x12 laminated veneer lumber (LVL) and a 2x6-long steel I-beam. "The beam is called a 14-82," says Tom. "That means it's 14 inches deep and weighs 82 pounds per foot. It's strong enough to hold up a house." The plan for the day will leave the I-beam doing just that: replacing the load-bearing wall that currently runs right through what will become the kitchen, and exposing the space into one big room with a panoramic view of the harbor.

The crew has spent weeks preparing for the beam installation. Mike Long of Bellway constructed a solid brick pier at the basement under the porch where the corner end of the beam will rest. A few days before the crane's arrival, Tom and his crew

erected two temporary steel walls parallel to and on each side of the existing bearing wall. Stuffed with stone walls would hold the weight of the floor above, they then set to work demolishing the old wall.

After the debris was cleared away, Tom took his measuring tape and cut an 115-inch slot through all the second-floor joists between the temporary wall with a space for the beam to slide into and be all but invisible behind the finished ceiling. Next he built a platform of 2x6s and plywood between the steel walls and laid a dozen 16-inch lengths of 1-inch steel pipe on top of it. Added the purpose of the pipe, he answers with a smile, "You'll see."

ON A 2x6 steel wall about 10 feet high, Tom laid out two layers of 2x12 LVLs on each side and ran a layer on top, well outside a load-bearing steel beam. Then he cut a 115-inch slot through the center of the beam. Then he cut a 115-inch slot through the center of the beam. Then he cut a 115-inch slot through the center of the beam.



On the day of the lift, Tom and crew prep the I-beam beam for its crucial role. They line up three layers of 2x12 LVLs on each side of the beam and drill a series of holes along their lengths to match the ones already in the steel. Another LVL, drilled to line up with the holes at the top of the beam. The steel wall is now close enough to shroud the load of the second-floor joists, the LVLs' main purpose is to provide a wood-to-wood connection between floor and I-beam. "Anytime you have wood joints resting on steel, there's a chance for a squeaky floor," says Tom. Niara Abou, TOV member carpenter, stops by to lend a hand. "I got

a real kick out of this one of the ordinary stuff," he says.

Once the holes are in, the crew takes apart the beam to lighten the crane's load. "All together, the steel and the LVLs weigh about two tons," says Tom. "The crane can lift that much straight up, but once it's been broken out into four parts, the heaviest single would tip the crane over, right onto the house."

With a roar the crane's steel engine, the I-beam and then the LVLs are hoisted 30 feet in the air, swung over the roof, and set gently on the staging, placed outside at the same level as the original floor. The crew quickly reassembles the beam sandwich, putting out long wavy ribbons of construction adhesive, driving the holes back, and tightening down the nuts with an impact driver, under



115' Steel wall height of 2-in. steel pipe allows the heavy beam to roll with ease through the narrow opening cut in the wall. Niara Abou, TOV member on the beam fills the slot in cut for fit between the post ends.



to the roof's steel mechanics use to change them.

The day before, crew member Chris Latona had cut a 14-by-18-inch hole through the single siding with a reciprocating saw. Now, with the beam positioned like a long, burning iron outside the house's gable end, "all we have to do is get it inside," says Tom. The crew lifts one end of the beam and the crew uses pipe and steel bars to jockey the end-and-end between into position. Then they slide it through the opening and onto the pipes on the temporary floor. Tom and Niara are the ones taking control, prying with flat bars and sliding new pieces of pipe one place under the beam at a time. Half an hour after its casual entrance, the lifting end rests against the permanent wall at the far end of the room, directly above Bellway's brick pier. Tom says

that a 32-ton mechanical hoist pack in the center of the beam, over another beam in the basement floor system, then gives the handle a few cranks while Niara sits along the pipes. "Hold it," Niara says, when the beam rises a half inch and touches the underside of the second-story ceiling. Tom and Niara set up a few rods together 2x6s to hold it up and measure. Permanent steel wall pieces will then be welded into place at the ends—one over the foundation wall, one over the pier—and Niara's crew will attach the joists to the beam with steel hangers and tie down the temporary walls.

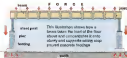
It's been a long day, but in Tom watches the beam on Mauchline's hoist through the new opening at the corner of the house, he says and smiles as he looks. "Nice view," he says.

Taking a Load Off

"Almost any wall can be moved or even removed," says Tom. "All you have to do is find a way to transfer the weight that the wall was carrying." The bearing wall between the McCue's kitchen and family room is a case in point. Each of its 12 transferred the above it that disconnected from the floor below, evenly distributing the load over the length of the wall. When Tom replaced the wall with a beam, the weight of the upper floors could only transfer to the studs below through the beam's flanges. Hence the need for a steel post and temporary pier at the basement. "Basically, all that

weight has to end up in the ground," says Tom.

A beam has to be carefully sized to handle all this weight without bending or flexing excessively. And the supports under each end have to be strong enough to shoulder the heavy loads. Tom relied on a structural engineer to calculate exactly how big the McCue's beams needed to be and how best to hold up the ends, but he added his own margin of safety. "I would say a size as the beam's weight, just in case," he says. "If someone down the road needs to put a big Jacuzzi on the second floor, that beam will have no problem holding everything up."



to project, Manchester

STANDING ON THE SLOPING FLOOR is the second-floor men's bathroom. Tom points an accusing finger at a few newly exposed joists at his feet and the rest 15-inch-deep south cut into the top of each one. Years ago, a plumber chiseled out these joists to accommodate a water line for a toilet on the far side of the room. "It probably took him an hour to make the cuts. And now it's going to take us a day and a lot of money to fix them."

Nothing so drilling a joint robust of strength and contributes to the sagging and bouncing that afflicts the floor of old houses (and more than a few new ones). "A plumber or electrician in a hurry can do an incredible amount of damage to the structure of a house."

To see just how bad things have become in the bathroom, Tom stretches a string horizontally across the room at a set distance from the ceiling. Then the straight reference line, he then measures from the string down to the floor at various points. The low point is at the floor's right over the plumber's cuts. "Just what I figured," he says.

"These notches are just like a hinge point for the joists."

Jim could start a supporting beam in the study on the first floor, beneath the bathroom, or put in new joists from below. But the study's ceiling is finished with old, stained plaster-and-mud peeling and corner molding, warping a beam or joist would destroy the beautiful roomwork. "Instead, we'll do all the work from the floor side," explains Tom. His plan is simple to make—or rather—the old joists with new, straight as an arrow 2x12s, which are, each for each, stiffer



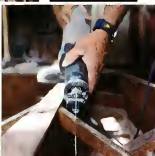
than the seven 2x12s that the joists are made from. "The 12s will not only span the dip in the floor, they'll also make it very solid," he says. "I hate a bouncy floor."

Although he's leveling up the floor system, there's no plan to make it level. It's often impossible to make an old floor perfectly level without affecting existing trim or those threshold heights, so Tom goes for the next-best thing: "If level is out of the question, we go for flat," he says. "No one will notice if a floor is a bit low in one corner of the room, but everyone will see a sag or dip as soon as they walk onto the room."

To start the custom project, Tom and Garrett DeBlasi remove all the board subfloor so they have access to the entire length of each joist. Tom then stretches a fluorescent pink string along the plumber's notches and perpendicular to the joists, tying it to floor-level nails hammered into joists at either end of the room. Under each end of the string, he slides a 2x6 block face down, which pulls the low end and moves it to a constant level. The string will serve as the height reference line to guide Tom's placement of the 12s.

Last of all, he cuts through the 1x4 cross bracing nailed between the joists. Simply sag crossbracing a floor by transferring some of the load from one joist to the next, so he's careful to cut just enough wood for the

UP To find the lowest point of a sagging floor in the men's bath, Tom stretches a string across the room and measures up from the floor vertically over. He runs along the wall over the room to the point. The plumber's notches, which cut without the joists' integrity, are visible at right-angles to the string. Tom will look down at string as he puts up former beams to strengthen the old joists. Then, he'll stretch the beams.



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"WHEN I FIRST WALKED THROUGH, I was surprised that in a house that had three and a half bathrooms," says Tom. "Having a new one that will service the guest room, laundry room, and kids' bedrooms will really make life a lot more fun for me and David." The staircase Tom is building—which will run from what was a closet on the second floor to the first-floor playroom—will improve traffic flow in the house and provide a private access to the guest room. "A staircase is like a dance performance," says Tom. "Due to perfection and complete falls." With stairs, exact calculations and precise cutting and fitting of the component parts are crucial, so Tom spends several minutes taking his measurements (see "Stair Building: 1-2-3," opposite).

The challenge here is that there's not enough horizontal space to fit the number of steps needed to reach the second floor. Tom solves that problem by building a wider, two steps deep, protrusion to fit on the bottom of the stair 90-degree fin at its most extreme. First, he makes a 48 by 62-inch base out of 1/2-inch plywood and 2x12s topped to be twice the height. This platform, the bottom step of the staircase, serves as the base for the next step, a smaller plywood and 2x6 base of the same height that resembles a pin set with a base out of six up.

When this second base is nailed and flush with the edge of the first, Tom can begin laying out the cuts for the stringers—the diagonal support timbers on which each tread and riser will rest. He draws a 1x3 wood strip diagonally across the corner of his steel framing square, making a right angle in which the sides of the 90-degree angle equal the height of the rise and the depth of the tread. Holding the wood strip against a 2x12 that he uses as a template for the stringer 2x12 LVL stringer, Tom marks pencil lines along the outside of the square. "Always make a template," he explains. "I've made a mistake, I'd rather be sure on a \$15 2x12 instead of a \$70 1x3."

After marking one end of the board to rest over a first-floor bathroom wall and tight against the second-floor framing, and the other end to fit against the second stringer,

he sets out the staircase opening; it fits perfectly, held snugly in place against the framing at top and bottom. Tom then uses a level to check the layout line of one stringer, and, at 90°, at right on the stringer. He measures 4 inches up from each end of the template and snaps a disposed chalk line on the studs, parallel to the template. He uses this line as a guide to lay out how to cut 2x12 blocking between the studs to provide a solid railing surface for drywall and for the stair board, the base run that will run parallel to the stringer since the finish treads and nosing are pinned. At a later date, he'll use all similar blocking higher up for the handrail.

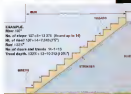
Assured by his rise fit and level that his calculations and measurements are correct, Tom cuts out the template and places it on top of a 2x12 LVL stringer to mark his layout lines. "Don't make a much stronger one than a saw-lumber 2x12," he says. Tom uses a circular saw to make the cut for the 11 steps, stopping each cut where the tread and base have met, then finishes the cut with a hand saw. He takes extra care not to cut past this corner, which would weaken the stringer. This first complete cut is because he got it right. "You want to mark out all the stringers from your pattern," he says. "That way, there's no chance of a

Stair Building: 1-2-3

All stairs are based on two measurements: the distance between floors, called the rise, and the length of the stair spanning, called the run. Armed with these measurements and a calculator, Tom finds the exact size of the stringer for any stairway opening. For comfort and safety, he strives to have stringers that are no more than 12 inches high and leads around 10 inches deep. "Measure Right! That last lesson you learned the you're climbing is leading," he says. "And a head start that 12 inches deep can force you to take a step and a half." (Building codes governing stair dimensions differ among states and even towns. A check with your local building department will avoid grief later on.)

Tom's formula for plotting the perfect stair is simple. "The math is so easy complicated that what you learned in fourth grade," he says. And he used 30-year measurements and your skills, he means. "A quarter-inch variation from the lead at one rise to the next is all it takes to trip someone."

- Measure the distance between floors to find the rise. If the finished floors are not in place, add their thickness at the top and subtract it from the bottom.
- Divide the rise by 6 to get the number of steps (plus a 2 number of steps).
- Divide rise by number of steps to get rise height (rise a number of steps a rise height).
- To find the tread depth, measure the total run, the distance between two points being dropped at each end of the stair opening.
- Subtract rise from the number of steps to get the number of rises and leads you have to cut on the stringer. The number of the top of the stairs sets on the last rise and the finish floor on the second level is the last tread.
- Finally, divide the total run by the number of leads to get the rise of the leads (rise a number of leads a lead depth).



the stringer since the finish treads and nosing are pinned. At a later date, he'll use all similar blocking higher up for the handrail.



minor imperfections compounding and adding up into a hazardous staircase. Once all set—setting on the subfloor like a cut-tooled platform—he makes a 12-inch high of 2x12 blocking on one side of the stringer to keep the stringer from sagging and to keep the stringer from sagging.

"That's less a step the drywall and the drywall down a square the stringer a square of having no work them around a step up," he says. He sets the stringer in the 48-inch-wide raised-top step and squares them in place at the top and bottom with lead lines. To finish the steps, he signs a sheet of 1/2-inch plywood over 1/2-inch deep, stops any cracks, working his way up the stairs, he attaches each one to the stringer with two drywall screws.

Months from now, Tom will be the permanent owner, treads, and skirting board and install a handrail. But for today, his work is finished. At the top he steps and boards down the new staircase as if he is a child on Christmas morning. "Perfect," he says. "After one trip, I could do this with my eyes closed."

117 Tom marks the top of the stringer to the handrail with a handrail. Matched to fit over a post-and-rail on the first floor, the stringer is as sturdy as they could be if they did not attach with metal brackets.



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aninsidejob

How a well-targeted interior restoration project hit each of its marks

For the 12 years that Scott and Nancy Barcelo lived in their modest four-bedroom home in Watertown, Massachusetts, they were drawn to the stately 1900 Colonial Revival next door. Scott especially liked the way its backyard sloped up to the 18th fairway of an adjoining golf course, relieving the property of any view-facing neighbors. Nancy, meanwhile, was enraptured of the house's gracious rooms and 15-foot-high ceilings, glimpses of which she caught each Halloween night when the widowed owner would dole out candy to the Barcelo children, Sam and Emily, now 18 and 12. The result of that percolating 12-year regard (plus the fact that the kids had outgrown their small bedrooms) was that

when their neighbor passed away in 1998, the Barcelos decided to make an offer on her house.

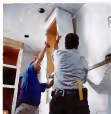
Though delighted to close the deal, the couple knew that their new home needed a major restoration. While structurally sound, its interiors had been blighted by a series of remodels, like the one in the 1960s that introduced a mammoth brick pizza oven to the kitchen. Elsewhere, hardwood floors, baseboards, and other details were obscured by wheeldar ramps, a staircase lift, green paint, and bamboo-print wallpaper. And the fireplace hearths and brick surrounds had deteriorated beyond repair.

To spearhead the restoration, the Barcelos called on Boston-based designer Luden Allers, whom they knew and trusted from the work he had done on their old house. Allers' mission was clear: Reunited the house's village charm in a way that would help temper its grand exterior. "Scott and Nancy wanted their home, which can appear a bit imposing from the outside, to reflect their modest, timely visits. It had to be a place in which all their friends would feel welcome," says Allers. His strategy, then, was to burnish the architectural beauty of the house, as well as make it more livable, by incorporating period-style cabinetry in the kitchen and other main rooms and restoring and enhancing the ornamental plasterwork, fireplace fling, and other decorative details. General contractor F.H. Perry and his team of subcontractors brought their own insights and expertise to Allers' design.



The grandeur of the four-story, 4,470-square-foot Colonial Revival (interior) is forgotten the moment visitors pass through an welcoming front entrance. The year-long restoration aimed at fixing the same sense of warmth and style in the rest of the house.





1. The custom-made cabinets were built in the shop of R.F. McManus Co. Inc. and then shipped in unassembled parts to the Barrio house. Installers Don Courteney (left) and Steve Kanny prepared to hang the upper cabinets first. They measured their layout lines before and cross-checked them with the dimensions from the shop drawings before attaching a tall stud to the wall with 2-inch screws. 2. Next, Courteney and Kanny lifted a cabinet carcass onto the stud and placed (or scribbled) its back edge so that it followed the irregular contour of the plaster wall. The carcass was then secured with 2½-inch drywall screws driven into the studs. The butt hinges on the inset doors had to be adjusted until there was no

even ½-inch reveal between the door and frame. 3. The lower cabinets were put in step a 20-inch-high level base frame made out of 2-inch exterior-grade plywood. Beginning with the corner cabinet, the bases were screwed to the leveling frame and to the wall studs through steel shims (which make the bases straight) and spacers, as well as to each other. After installing the doors and drawers, a toe kick was screwed to the leveling frame, negating the cabinet's own furniture look of the apron. 4. In the adjoining pantry, a doorframe bracked like those used in the main kitchen was hung. As with the doors on the floor-to-ceiling cabinets in the living room and study, the pantry doors have true divided-light doors.



Display areas from the island cabinets in the central kitchen in a way that also contributes to the overall vintage aesthetic.

Like so many modern families, the Barrios tend to congregate in the kitchen. "I'd say eighty percent of our time together is spent in that part of the house, so we wanted it to be as inviting and functional as possible," says Scott. The doors spared the property one major structural change: replacing a load-bearing partition wall between the existing breakfast room and laundry with a steel support beam, secured into the ceiling joists, to create a contiguous, 513-square-foot kitchen-over-living area. Ray McManus, owner of the R.F. McManus Company in Boston, then stepped in to design a new kitchen-cabinet scheme, one that would appear rare-of-the-century but avoid all of every affordable modern convenience. Custom-built, air-installed cabinets promised to stand on both counts. "When these homes were first going up, a wood frame was standard to have a carpenter come in and build the cabinets on site. We achieved a similar, yet appropriate

effect by gluing the cabinet board on measurements of the existing space, taken at the rough framing stage of construction. As a result, the carcasses fit the space almost perfectly, unlike prefab ones that only come in standard sizes, leaving gaps that have to be filled out with different materials during installation," says McManus. The custom-fit, historical look was further enhanced with overlay not doors, scalloped toe kicks, and air-ribbed bronze hardware. To behind the cabinet's vintage facade, the units were equipped with up-to-the-minute features, such as full-extension sliding drawers, roll-out shelves, and leveling storage trays. The materials list included plywood, maple bays, and dovetailed drawers, with doors made of solid poplar and oak around a raised MDF panel. While prefabricated cabinets can often spray-painted, the Barrios' were hand painted by local artist Catherine, the old-fashioned way.

barcelo | replacing ornamental plaster



Though the living room fireplace remained the same, the space was dramatically altered by built-in cabinetry, re-styled furniture and a new fireplace hearth.

Always overall the historic-looking, cabinetry throughout the rest of the house, including floor-to-ceiling units on either side of the chimney breast in the living room, music room, and study. As the designer explains, this sort of dramatic effect is typical of interior projects. "It's inevitable that what you decide to do in one part of the house will impact what you do in another," he says. To help organize the cabinet, the profiles of the rooms' chair rails and wainscoting were incorporated directly into their design. After the units were installed, new plaster moldings cuncting the old were ground around these, and the cracks in the existing moldings were

filled to create a consistent, fresh look in the rest of the house. Given the presence of a plaster core, it was cost-effective to remove lead-lam replaced a length of plaster molding in the first-floor study to make new plumbing and electrical lines up through the joist bay. And in a second-floor bedroom, a new line required to run a plaster cornice within a window bay then to pass to a section of wood molding. Boston Dryden Company completed all of the plaster work. Managed by co-owner Clapton Aaron, the crew used a combination of bench-top and on-site plaster techniques to connect the original moldings with the new ones.



1. William Perrell cut water moldings into the sections of heavy new crown molding for the first-floor study. The existing profile had been shaped with a mulling mold, a curved template cut to the configuration of the existing molding and mounted on a wooden frame (as seen in step 4). The mold was repeatedly dragged over a length of slow-setting gypsum plaster until the existing took a rough form.



would run straight. They were secured with drywall screws drilled through counterbored pilot holes; the holes were filled with plaster. 3. At a corner where the new molding met the old one at an adjacent wall, Perrell and Kelly left a gap of 1 inch or more, so that a sufficient amount of plaster could be packed into the joint. This allowed them to unify the lines of the existing sections with a miter red. 4. Kelly smoothed molding over the key sections in the



Plaster details were the hand-carved with small plaster tools, such as a miter red. 5. Perrell and crewmember Jiang Xu Yang Wu section framing played molding had been installed above the wall cabinets so that the moldings could be screwed in place. Because the wall and ceiling were uneven, they wrapped level chalk lines along the wall and aligned the moldings with those to ensure that they



upside bedrooms in place, rather than of the house. To give the plaster a longer handling time, he added 1/2 per cent of lime putty to the gypsum mix. Using a hawk and trowel, Kelly first keyed the plaster in over wire lath that had been nailed to the framework of the cornice area. By dragging the mold over the plaster, he made 20 x 30 lines. As he pressed the mold over the cornice, he with trowel and levelers, a miter red then used to create the final details.



barcelo tile hearths

Playlike stoner: Paul Clark was surprised to find gnomes, unglazed clay tile at each of the house's four fireplace hearths. "Most of the olive speckle homes from that era would have been covered in painted tile, marble, or some other high-end material," he says. As a result, Clark's goal was not to remove the fireplace when used stone, but rather to restore them to the original spirit of the house. Since each room in a typical turn-of-the-century home would likely have had a specific function and style, he used a variety of contrasting materials on the hearth and brick surrounds. In the music room (left), he went with a mosaic of interlocking hexagonal and square tiles made from terracotta, a natural stone that complements the four-armed mosaic. For a more formal look in the living room (page 96) and study, he did a mosaic of green polished marble. Emmy's second-floor bedroom (not shown) got a cheerful blue ceramic tile. ■

1. In the music room, Clark first chip-jointed the hearth's 4-by-4-inch cavity area with a chip joint. The face of the fireplace's unglazed brick surround was then leveled with cement. Eventually the surround revealed the same kind of terracotta stone he used on the hearth. 2. With the old tile removed and the surface area swept clean, Clark applied latex-modified thin-set mortar with a 5-inch square-notched trowel. Working from the center of the hearth out to the edges, he then set down the tile mosaic, which was cut ahead in 12-inch squares to paper cutting. To create a full-contact bond, he topped the tiles with a rubber float, compressing the thickness of the mortar bed from 3/4 inch to 1/2 inch. 3. Clark cut the perimeter tiles to size with an 8-inch diamond blade wet saw, the joints between the tile and the second floor had to be 1/4 inch wide, compared with the 3/4 inch gap permitted in the tile field. 4. He set down the perimeter tiles and prepared to grout the joints, first rubbing on paper-calling to also seal all the tiles to prevent staining and moisture absorption. The grout was then applied with a rubber float, held parallel to the surface so that the joints were lightly compressed, or rubbed into recessed areas good. After allowing the grout to dry overnight, Clark returned to buff the tiles with a dry towel and apply a final coat of sealer.



PHOTOGRAPH BY JEFF GARDNER

at home with kelsey grammer
vanessa williams and rich fox
david copperfield
jessica simpson
melissa joan hart
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With new windows, siding, and roof shingles, *The Old House's* Timeless Home takes cover from the weather

pushing the envelope

At the *Timeless* show site in Atlanta, the 16 is clicking and buzzing with the sounds of shop vacs and electric drills as general contractor Jason Yovell expertly assembles the latest delivery—a 550-pound cardboard package wrapped in plastic, containing an 11-by-7-foot picture window that will soon grace the living room and afford a panoramic view of the surrounding woods. This recent arrival is just one of the 43 aluminum-clad, double-paned windows scattered about the inside of the house, and Yovell is anxious to get them in. "With all the rain we've had lately, the sooner I can plug all the holes around here, the better," he says.

Without properly installed windows—and siding and roofing—no wood-frame house will last very long. A structural depends on these materials, carefully layered to form an "envelope" that protects its supporting framework and, ultimately, its inhabitants, from the ravages of the weather. Yovell says good workmanship is critical at this stage because water

The layers of materials that envelope the *Timeless* Home protect the wood framing and sheathing (1) from the damaging effects of rain and rot. Plastic housewrap (2) covers the walls, while 30-pound roofing felt overlays the roof (3). At all the vulnerable joints on the roof—the eaves, the valleys, and the corners—the sheeters and shingles—copper (4) and rubberwood waterproofing, cardboard (5) prevent water infiltration. These are covered in turn with a layer of brick veneer (6) at the basement level, fiber-cement shingles (7) for the first floor, and plastic siding on the roof (8).

BY TRAVIS NEIDHORN WALK

will quickly find its way past a poorly built exterior. "And you'll end up spending a lot of money trying to fix the rot, the mold and any other damage that may result."

For architect Jeremiah Eck, who designed the *Timeless* Home for *The Old House* magazine and the Metro Corporation, a building materials supplier, the envelope is as much an aesthetic concern as a functional one. "The materials enhance the character of a house," says Eck. To realize his vision of a contemporary residence cloaked in a mantle of tradition, Eck chose both time-honored and new-made products. This being Atlanta, close to some of the biggest dry docks in the country, brick was the logical choice for covering the basement-level exterior walls. For the first and second floors, Eck specified shingles and board-and-batten siding made of durable fiber cement. And on the roof he chose deep green shingles molded from recycled plastics to look just like slate. "The big question in all house construction today regards the preservation of natural resources," says Eck. "These new materials reflect a classic look, but with up-to-date technology behind it."



Putting on the envelope of the house began as soon as the frames nailed down the last panel of oak and steel studs (OSB) at which building wrap contractor Rex Nelson and his four-son crew then unrolled 3-foot-wide rolls of a translucent, woven-plastic house-wrap and applied it to the raw OSB. According to the manufacturer,

A day later, framing contractor Dennis Schenk Jr. was back on the site, looking over the many different shapes and sizes of windows he would be installing over the next few days. After successfully working through the difficult, multi-stepped framing job just "Shaping Up," *Country* 2001, page 102), he recognized right away that he was in for such a challenge. Rick's surreal design called for casement windows throughout—the kind that crank open on side hinges—but his final plans specified a lot of double hung windows, awnings, and double hung windows, accessed in several places by fixed-light casements. These would all be aluminum-clad—wood frames covered in aluminum with a baked-on enamel finish. Also, because Rick wanted that all of the windows on the first floor had to line up with the first board and that the tops of the windows on each of the other floors be held to the same height, there was no margin for installation error. "By lining up the windows in the over line, which is consistent all the way around the structure, we can make the roof a stronger round shelter piece and create a better feeling for the home," says Rick.

One of the first windows Schenk and eight of his men installed was the big picture window in the living room, which overlooks a terrace below. Before fitting the framed glass into place, they first nailed a strip of black vinyl flashing over the rough sill and down about 8 inches over the face of the housewrap to protect the framing even more from water infiltration. Then, five men made the house swing the 11-foot-long window out through the opening, where they were perched on a scaffolding outside helped an eighth man up and up a wire plate. The crew made several stops on all sides between the framing and the window until it was placed and level, then anchored it in place by fastening 18-inch galvanized roofing nails through the holes in the prefastened vinyl roofing flange that surrounded the aluminum frame. For the final touch, Schenk's crew covered the vinyl flange with the same contractor's tape used on the housewrap. "The tape covers the holes and protects the inside of the window from being exposed to rain," says Schenk.

Once the windows were in, and the 4-inch hand board trim was applied around them and to the corners, siding contractor Marne Stockford could begin nailing up the first course of fiber-cement shingles. Fiber cement, a mix of sand, pulp, sand, water, and Portland cement, is resistant to insects, won't rot or burn, and holds on to paint years longer than wood. And while this product looks like panelboard and is installed in the same manner, it can be as much as 30 percent cheaper than No. 1 blue board, the best grade of red cedar. So naturally, Rick, it presents a few difficulties for installers. Cedar shakes work a quick series of a nailer's body, while fiber cement has to be cut with a circular saw or electric hand saws. "Fiber cement is very dry



the best, makes them too dry and deforms the way they crack around windows and doors and between layers of wood framing, exterior sheathing, and floors. Working their way across the face of the house, with angle brackets and 16-inch galvanized angles, the crew overlapped each course by 2 to 4 inches and taped the seams with 15-inch wide polypropylene contractor's tape. They wrapped right over each of the window openings, then cut an X from corner to corner and tucked in and stapled the resulting flaps inside to cover the sides of the window panes. While attaching the wrap, they reinforced a tape-inducing by hammering 16-inch nails with 1-inch-wide plastic heads. "Without the plastic-capped nails, a big window could pull the wrap off the house," Nelson says. "They provide the extra level of strength needed to secure the wrap."



TIP After nailing down a strip of black vinyl flashing over the bottom of the rough opening, two of Dennis Schenk Jr.'s crew fit a casement window into place. The aluminum clad frame is painted and finished before the entire process of its sheathing (shown) by nailing down and taping the prefastened vinyl flange that comes attached to its exterior.

{thetimelesshome}

when you cut it," Stockford says. "You have to work a little more." Also, it's so hard that many contractors, including Stockford, use a nail gun to drive nails into it.

Before the first shingle could go up, however, Stockford had to install a water table—a horizontal trim detail that directs rain away from the wall (see "A Matter of Detail," page 106).

Running the first course of shingles on the water table, Stockford arranged the 4-, 8-, and 12-inch-wide shingles in a plumb, random way and left a 3-inch gap between them before shoving each one with a roofing nail, 8 inches above the butt. For the next course, he measured 6 inches up from the butt and snapped a chalk line between those two points. Using this line as a guide, Stockford started the second row again. This time, though, he made sure that the vertical joints between the shingles did not line up with the joints in the first course. (Along elsewhere, Stockford says, "could come a leak.")

On the house's gable ends, where Rick wanted board-and-batten siding, fiber cement again fitted the bill. Stockford nailed 12-foot-long joints of the material over the wrapped cladding, then covered the ends and the vertical seams

A worker fits a sheet of fiber-cement shingles up to siding contractor Marne Stockford. Although more durable than traditional wood shingles, fiber cement requires a careful installation technique. "Before the wall gets a lot of rain, you will blow right through," says Jason Shaw.

between the panels with 24-inch-wide battens of fiber cement. "I make sure there's a seam right in the middle of the gable so that one batten strip goes right to the peak," says Stockford. "If you don't do it this way, the strip might not line up and it would look unbalanced."

Meanwhile, masonry subcontractor Torgeson Ekstrom and a crew of four men arrived a bunch of masonry cements, sand, and water in a portable cement mixer as they prepared to lay back over the 10-foot-high basement walls.

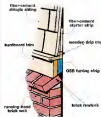
To keep the back corners plumb, Ekstrom's crew had already set up and plumbed 5-foot-long 2x4s vertically at each end of the foundation and squaried a mason's square and level between them. Using this line as a guide to keep each corner perfectly level, two men teams, working from opposite ends of the wall toward the center, started laying the first course of brick on top of the foundation laying. With quick scoops of their trowels, they laid a mortar bed, then pressed the bricks into position, tapped them level with a mallet handle, and shaved off any excess mortar. "It's hard work," Ekstrom admits. "Our four-man crew can lay about 2,500 a day, and there are about 10,000 to be laid here."

So it was for the next 80 courses, until the gray mortar hardened to a solid. Then the masons went back to smooth and pack the joints with an inch



STOCKFORD: THE NEW HOUSEWORKS; SCHOEN: THE NEW HOUSEWORKS; SCHOEN: THE NEW HOUSEWORKS

A Matter of Detail: Water Table



hole and break away the lighter bits of mortar. To make this well, they used a masonry board, the sample pattern in which the middle of every brick is placed directly over the vertical joint below. For on the first course, just beneath the water table, Elyen's crew turned the brick perpendicular to the wall and graded enough mortar underneath to make a sloped cap called a rowlock. "The brick rowlock, combined with the wood portion of the water table, makes the transition between the base and middle of the house, between the ground and the shingles," says Eick. "This transition is just as important as the transition from the middle of

"Our four-man crew can lay about 2,000 bricks a day. And there are about 10,000 to be laid here."

—Alexandra Pustulak, Eick

Masonry subcontractor Freddy Elyen sets up vertical 2x6s at each end of the wall. David A. Young photographed this for each course. After setting about an inch of mortar on top of the previous course, Elyen's crew sets each row of shingles by hand until its top edge is level with the reference course. Although usually fired, these bricks are individually certified to weather models to give them an antique, white-washed look.

the house to the roof with the next lot."

High above the backworkers, Felipe Vela's crew was preparing to put on the roofing. They had already nailed 30-pound roofing felt over the GFI sheathing and flashed the dormers, the valleys, and the base of the chimney with 20-gauge copper, secured with copper nails. "Copper can last a hundred years before you need to do any maintenance," says Eick. "When it weathers and runs from rains to grass, it will give the house a older feeling." At the eaves, copper rivets by Alexander Pustulak nailed down the copper drip edges and covered a 6 by 2 inches of them with self-adhesive waterproofing membrane. "It creates a waterproof seal around any real holes that penetrate it," Yonell explains.

While copper provides the valuable intersections on a roof, most of its surface will be covered with 12 by 18 inch squares of man-made slate. These recycled plastic rectangles

SLATE
and shingles: Ocean-Gentry, Inc. (www.ocean-gentry.com), 10000 S. 10th Ave., Suite 100, Phoenix, AZ 85042; Ocean-Gentry, Inc. (www.ocean-gentry.com), 10000 S. 10th Ave., Suite 100, Phoenix, AZ 85042; Ocean-Gentry, Inc. (www.ocean-gentry.com), 10000 S. 10th Ave., Suite 100, Phoenix, AZ 85042.

Copper drip caps are crimped along their length with a metal block before installation. (Eick) Alexander Pustulak attaches copper flashing along the eaves to cover the gap between the roof sheathing and the fascia board. (Eick) Before roofing, contractor Felipe Vela cuts the 1/2-inch-thick roof shingles into:

the house to the roof with the next lot."

As the roofing crew finishes up, Yonell takes a step back to review the progress they've made since the last few weeks. Next only is the Tumble House sale from the museum, it's beginning to appear a special look. "It's nice to see the state of materials finally coming together," says Yonell. "The house is finally showing its own appeal."





In the area where the plants will grow, digger dices down about a foot and lays a 1/2-inch of peenw grass. Then pushes the peenw across the 200000 down to the area to peak it down. He does this for more than 100000 the last 1/2 inch of gravel. On top of that, he spreads out one inch of boulders' sand to start making the sitting bed for the pavers. To indicate the finish grade for the paver level, he uses shovels drawn (digger makes) 1/2-inch above the ground. Then, he uses the sitting bed of the proper 1/2-inch depth, he measures down 2 inches from the sitting (the thickness of the pavers), places the metal paver horizontally in the field and it sits good, and things a second along the slope, putting off the paver until the order has been made. Once the 1/2 inch of sand is laid, he uses a roller and a roller to lay out the second layer of concrete pavers, according to the number of pavers required provided by the owner's plan.



4. To keep the power ingrown, finger (fingerless) digging under these areas along the periphery and sections 1 into the ground with the 240 gram-mass spade has moved through to prepacked below, then lift the needles between the plates by swinging it to 1 inch of sand covers the circle with a push force and turning the compactor over the plates below, in perpendicular directions (left). The compactor drives the sand into the space of the same time that it pushes the sand underneath. Once fully done, be swept off the excess, but need to come back once a year and top-off the sand.

While Roger's new life in the great city of the University is to be lived with the greatest ease, Chuck DeLoach and his team from Hawthorne Paving make the manufacturing of the only remaining part of a job—the last bit of paving on the street. They dump hot concrete on the driveway, lay out the old surface, up to the edge of the gutter side. They spread the surface evenly. They finish by tamping it down with a steam roller and packing it with a 25-ton roller. The job is done. The street is ready for hot traffic.

[illegible]

T. Burger begins his age-up to grade 10 with the glorifying life with the little boat he sets with equal parts need and contempt to maximize damage and avoid sublimity. Before any holes are dug, the crew approves the centers in the ground (following Anderson's direction so that it can approve the layout). Anderson's design, using trees that are up to 100 feet high, the way the sailing ship, feature, and shape of these twenty plants, a Hindu like anyone chooses children with good hair, while a Hindu Chinese one provides a shock of life. He allows more room for the aprons, which are used for learning, and less for a smaller red cedar's vertical growth. A key aspect of the design is the planting of the trees, which are planted in a way that is not visible. The message is that the trees are in the planting spot, for example, a small tree is visible (which is an ideal for children's design), and of the tree.

Once everybody is satisfied with the layout, Roger and Green place the items. At the end of a couple of days' work, the new project is complete. "It's a lot better than the property he is pleased. Now we've realized the dream—the reimagining of the bridge—that started three years ago with the general book," he says. ■

