

JANUARY/FEBRUARY 2001

This Old House

NOW & THEN

How 5 Favorite TV Projects Have Changed

BELMONT 2001



**The Future
of Building:**
Predictions from
the Show Team

**3 Generations
Remake Their
Dream Home**



\$3.99US \$4.99CAN



WE ARE AN ENSEMBLE CAST OF 14.

AFTER OUR FINAL BOW,
WE UNDERGO A QUIET CLEANSING,
GENTLY MASSAGED IN OUR
SPACIOUS STEAM ROOM.

NOW WE ARE READY FOR
THE SPOTLIGHT AGAIN.



Introducing the new Dishwasher Series from KitchenAid.

Now designed to hold 14 place settings, these new dishwashers have 24% more usable space. With an upper rack that adjusts, you can load up to 11-inch plates on both the top and bottom racks. No other dishwasher is more accommodating. In fact it's the only dishwasher recommended by The House of Wedgwood & Co., the makers of fine tableware. To learn more about the new Dishwasher Series, and to view the entire KitchenAid® line, visit www.kitchenaiddishwashers.com, or call 1.800.422.1230.



FOR THE WAY IT'S MADE.®

IT'S NOT THE View SO MUCH AS THE Vision.



Beyond expected. Where possibilities are wide open. Trex® Easy Care Decking®. No sealing. No splinters. No knots. That

awesome view can be yours. Call 1-800-827-TREX ext. 345 for a book of inspiration.



Trex
THE DECK OF A Lifetime

VISIT OUR ONLINE SOURCE AT
www.ELLEDECOR.COM



JANUARY/FEBRUARY 2001

Get the lowdown on future
building techniques on Steve
Thomas, Scott Adams,
Richard Turkewitz, Tim
Scho, and SuperCook play
progression. See "Think
ing Ahead," page 60
By ALICIA BARNES

features

First-Class Upgrades

The windows, walls, and ceilings of the Charleston TV project get worked over. By JENNIFER KELLY

60

Thinking Ahead

The TV show's brain trust weighs in on the future of home construction. By ALICIA BARNES

86

Our Blue Heaven

An ill in the family cottage renovation in Gloucester, New York. By NICHOLAS GRAY

72

Homeowner's Handbook: Hanging a Door

Tom Silva does a plumb job putting up a prehung door. By CHARLIE WARELL

81

Look At Them Now

We catch up with five former HGTV project houses and show you how they've changed. By JOE CARTER

88

The Kindest Cuts

Trimming rules and tools to keep your trees and shrubs in good shape. By JEFF COLE

96

Poster: Clamps

These indispensable items let you get a grip, wherever the task. By JONAH BROW

101



HOT BY GRAY, P. 72



THINKING AHEAD, P. 86



HOMEOWNERS' HANDBOOK, P. 81

cover

After the TV show wrapped work on Bala 1907 Single Side Street in Bala, Massachusetts in 1993, carpenter Scott and painter Edward made some improvements all their own. This month we revisit the Bala house and four other on the HGTV website to see how they've changed over the years. See "Look At Them Now," p. 88. PHOTOGRAPH BY KELLY A. KELLY. INTER PHOTOGRAPH COURTESY OF HGTV.



Escape to a better place. The Sony WEGA™ Flat Screen TV. Wanna go? sony.com/ve

25 Years
WEGA

Introducing the redesigned Tacoma. With an available 188-horsepower engine and the highest ground clearance in its class.* Rang on.

THINK YOURS TOUGH ENOUGH?  **TOYOTA**



*Source: MotorIntelligence's published data. Source: Kelley Blue Book's KBB.com. See Kelley Blue Book's website for more information. ©2005 Toyota Motor Sales, U.S.A., Inc. Really Big. Big it for those who love you.



STAGE ON ICE, P. 38

"If you perform timely snow removal you won't have to deal with ice."

—Roger Cook, T.O. St. Landscaping contractor



departments

- Outtakes** Norm and Steve meet some international T.O.H. fans **14**
House Calls With Steve An expert rock builds a kitchen for four pros **18**
Ask Norm Robert cabinet making, concrete floor corrections, and paint pointers **28**
T.O.H. Letter Steve talks about what drives investors in home renovation **59**

columns

- Transformer** **Homecoming Queen** **32**
A talented Victorian and its owner return to their roots. BY JOHN MARCHELL
By Design **A Cozy Corner** **36**
An inglenook is just made for friends close. BY JOE CARTER
Equipment **Clean Air Acts** **40**
Energy-recovery ventilators replace bad air with good. BY ZACHARY GAULDER
Locations **Water Worlds** **42**
A bath in a garden brings outdoor nature life into the home. BY JORDAN BELL
Materials **Floor in a Flash** **46**
Prefinished plywood goes down fast—and lasts. BY MARK ALLENBERG
Toolbox Shop **Plowder Play** **50**
These tools make snow and ice removal a snap. BY JORDAN BELL
Finances **Spend Now, Save Later** **52**
Investing more up front can pay off in lower future costs. BY ANNE KAVOUEY
Utilities **Out, Damned Spot** **54**
How to remove a stain from a stone countertop. BY LOREN JARVIS

TOP OF TUBS, P. 32



TEACOT GREEN, P. 32

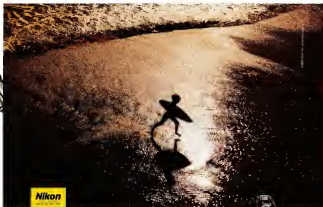
plus

Contributors 48 Letters 58 Directory 60F Where to Find It 60B
 Classics Progress Guide 118 TV Listings 119B Snow Ties Old House 120B

COVER BY FOR ME: JEFFREY LEE / JEFFREY LEE

KEEP OUT OF REACH OF CHILDREN

(WE WOULDN'T WANT THEM TO TAKE A BETTER SHOT THAN YOU)



Nikon

In an effort to deliver better pictures with ease, could it be we've taken things too far? With the technology and features of a Nikon Z6, the Z6 gives you the tools to challenge yourself if you're looking adventurous. And yet it has a built-in flash, automatic focus and automatic exposure, so it's a comfort. Lightweight body. Which means remarkable shots. No matter what your skill level. Don't let it fall into the wrong hands.



The new Z6S

HOUSE CALLS WITH STEVE

Chef's Choice

For an exacting practitioner of the culinary arts, a well-organized kitchen is the recipe for success

W

ith a degree from the prestigious Culinary Institute of America and nine years' staff experience serving recipes at a national food and wine magazine, the owner of this kitchen in suburban New Jersey had precise ideas about what she wanted when she and her husband undertook its remodeling. Not only had she learned many secrets of food preparation, but she also knew what makes such a space run smoothly.

Part of an ambitious reworking of their 40-year-old Colonial-style home, the kitchen was, not surprisingly, the wife's top priority. Unlike most of her neighbors in their affluent suburb, though, the husband no longer has a high-platoned status-ambition. Nor did she have in mind a gathering place for parties or family feasts; she wanted a bright, attractive room that would function efficiently. "Everything she wanted is what a good cook demands," says The CM House host Jane Thompson, "and that includes a gas cooking-and-electric oven. Gas offers more flexibility, and electricity, in contrast, makes for a constant compromise."

PROBLEM

The history of this kitchen is a familiar one: Cramped, and filled out with heavy-pine cabinets, it had not been touched since the 1960s. The wife made do in the cramped space for a year. "One of the things you learn as a chef is how to cook just about anywhere," she says.

With list items specific to her level of expertise included professional-quality appliances and plenty of counter space near the double wall ovens and the cooking top, "so I could swing around with a hot pot and have a place to put it down right away." Because she entertains often, the cook also wanted a warming drawer. "It helps immensely with timing," she says. "You can keep a dish warm and moist in there for up to two hours."

Exactly how to expand the room to meet all these needs, though, remained the conundrum. They didn't want to bring out, nor did they want to steal space from an adjacent study, which they loved, or from the dining room. The wife also envisioned a separate, sunny breakfast area.



BEFORE, STEVE: Dark cabinetry suggested the feeling of gloom in the old kitchen. Today, by contrast, materials in the new space create a light, cheerful ambience.

BY ROBA MURPHY



PHOTOGRAPHS BY FRANKLIN

PHOTOGRAPHY



The Discover® Card is accepted at 100,000+ new locations every day including **Crate&Barrel**

HOUSE CALLS WITH STEVE

where her family—the couple has two children—would feel comfortable. “I didn’t want people eating in the kitchen,” she says.

“We’re starting to see a trend away from the all-inclusive great room kitchen,” Steve adds. “We are going back to the kitchen-as-workshop—even when it’s styled vacantly and aesthetically with the breakfast or dining room, as this one turned out to be.”

SOLUTION

Middletown, New Jersey-based architect Nick Benley had remodeled the couple's previous home, and the couple knew him to be a listener. “Nick allows you to be involved in the process,” says the wife. “When he digs strongly about something, I like to hear—and vice versa. He respects my opinion, too.”

Right up front, Benley came up with a solution for expanding the bad-sin footprint. Across a stony powder room, garage, and broom closet that occupied a 25-square-foot area adjacent to a small laundry, he relocated the laundry to a door on the far side of the living room and moved the storage room to a space near the laundry. This reconfigure freed up 65 square feet of air—enough to add a lucky 45-by-60-inch island, designed by Joan Picono, a certified kitchen designer with European Country Kitchens in nearby Fort Hills. The island provided extra counter space, plus ample room all around it to ease traffic flow. The next, though, has no overhang to accommodate



One convenient feature of the kitchen is the island sink, used for food prep and making drinks.

stools. Despite the entrance of both Benley and Picono, this one-time test kitchen pro wouldn't budge. “I didn't want a kitchen that children would bang out on,” she says.

FINISHING TOUCHES

Knowing how much use the new pro-style cooktop would get, Benley played it up as outside weather of the island, into the stainless-steel-lined hood, which Picono designed with its most large fan vent, could be easily sealed to the outdoors. “For efficiency in drawing off odors, you need a powerful fan and a cooking location that affords the shortest possible duct run,” says Steve.

Countertops were made from durable but-ter-ize granite. Comparable in price to granite, pizza's natural color is more forgiving of stains and scratches. “It's kind of like stone-washed jeans,” Picono says. “It acquiesces a beautiful pizza every time.”

Because the island's vast expanse of left counter space obscured by shadow, the owner asked Picono for a combination of recessed, hanging, and undercabinet fixtures to target every task. “You want the light in front of you and over your work surface, not behind your head,” she says. Lighting for the cooktop is tucked inside the hood.

In order to satisfy the wife's longing for a warming drawer, the couple had to clean the slate at installing a wire rack, which the husband would have loved. But he can always hope. One day they'd still like to add one. ■



BEFORE: In the new kitchen, the footprint expanded from 167 to 232 square feet, affording plenty of room for a work island. Although Benley had them replaced, the windows remained in the same location, so did the primary sink.



The Discover® Card is accepted at 100 million merchants. www.discover.com



HOUSE CALLS WITH STEVE

IDEAS NOTEBOOK

"Kitchen appliances in drawers offer the opportunity to create several smaller work triangles instead of a single large one."

—Steve Thomas



top drawers



In the New Jersey kitchen (above), the washing drawer is placed next to the wall stove. It keeps dishes hot between helpings as well as when the cook prepares recipes in sequence.



1 Two dishwasher drawers—each with an adjustable rack—operate separately, so water pressure can be adjusted to match the wash cycle to the load. Clean dishes can be stored in the drawers, too.

2 Pair is refrigerative with a freezer, or double up on one or the other. Combined, the drawers measure 34 by 27 by 24 inches. 3 The washing drawer comes in 24-, 27-, and 30-inch widths. An automatic on/off control and timer means that foods stay warm for up to four hours at temps ranging from 140 to 215 degrees.

Is it America's best laminate floor?



Well, 98% of people who own it say it is.

Maybe it's because Wilsonart Flooring is made by a world class leader in high pressure decorative laminate and meets incredibly strict quality control standards. Maybe it's because flooring retailers (the folks who know floors best) say it's the #1 brand for quality and design. Or maybe it's simply because Wilsonart Flooring looks great, is incredibly durable and easy to maintain. You decide.

Wilsonart Flooring
WILSONART
LANTANA, FLORIDA

Visit www.wilsonart.com

Or call 1-800-710-8846 ext. 1671 for more information

FOUR SADDLES,

NO SORES.

IT'S SOFT AS BUTTER AND TOUGH AS NAILS. THAT'S THE RIDDED LUXURY
YOU ONLY GET WITH PREMIUM, FULL-GRAIN LEATHER. THE LOOK, THE
FEEL, EVEN THE SMELL. THE KING RANCH SADDLE SHOP IS FAMOUS FOR IT.
BEYOND LONG, THE KING RANCH F-150 SUPERCREW WILL BE, TOO.



KING RANCH F-150 SUPERCREW

FRONT AND REAR CAPTAIN'S CHAIRS WITH LEATHER-COVERED CONSOLES | AVAILABLE 6.0L EXTENDER
5-SPD. 5.0L CRANKER | AVAILABLE POWER MOONROOF | 3 LIMITED EDITION 3-TONE PAINT SCHEMES

For more info, call 1-800-FORD. Offer valid www.fordvehicles.com

ASK NORM

Help for sagging gutters, uneven grout, and flaking brick

GARBETS' WORTH SAYING

I am in the process of renovating the kitchen in my house, a 1940 Royal Berry Villa-designed Cape. His houses are garbets right after in the Boston area. We're keeping the original panel, solid wood cabinets, which were custom-built on site, but we wonder if there's a way to improve their looks a little, clean them up. They've been stained, but there appears to be no other type of finish on them. Any suggestions?

Dean Pomeroy, Braintree, Mass.

You did the right thing by saving your cabinets. Walnut is a classic wood for furniture, but you won't see it used in kitchens very often, at least because it's so expensive. On the other hand, it is the necessary finish for walnut, so I suppose that's why you don't see any gloss. While oil finishes are more used in fine furniture than the hand-knobs life of kitchen cabinets, I think you're better off going with the type of finish because it's more traditional for walnut. Try cleaning the wood whenever necessary with a very-fine sandpaper, and then rub on a coat of tung oil, a thin hand-colored finish finished with varnish. Just don't use household cleaners mixed in water. They are too harsh for the wood.



GARAGE FLOOR CRUMBLE

I have a single-car detached garage that I'd like to convert into a workshop. The structure dates to 1920, looks sound, and has a brand-new roof, but the concrete floor is crumbling badly. Can I pour a new slab over the old one or will I have to tear down the building and start over?

James Thomas-Cummins, Minneapolis, Minn.

It would be a shame to send all those new shingles to a landfill, so I'd try to save the building. A garage that's been around since '20 won't be perfect, but if the structure is sound—the walls are fairly plumb and you can sight down the roof edge without getting inside—the foundation is probably in decent shape, and that's quite an asset.

You have a couple of alternatives for fixing the floor. If the crumbling is superficial, you can pour a self-leveling topping composed over it. These toppings can be as thin as 3-inch and don't have to be troweled smooth. Within 12 hours, the surface will be hard enough to walk on, and within a few days, you'll be able to park a truck on it.

If the crumbling and cracking go deeper than 3-inch, you

could pour a new concrete slab over the old one. It will need to be 20 to 4 inches thick, so keep in mind that you'll lose some headroom and probably have to relocate and reposition all the doors. For an overlay slab like this, you'll want to stretch a 3-inch-thick strip of fiberglas to the garage walls before the concrete is poured. The fiberglas, often used in sidewalk joints, provides a measure of cushioning so the new slab can move a bit, and, in those cases where the wall framing rests on the old slab, it serves as a barrier so the wood won't be buried in concrete, which will happen soon. To get a good bond between the slabs, clean the old one thoroughly with a wire brush, vacuum, and just before the pour, dampen the surface with water and apply a concrete bonding agent.

Your last resort would be to rent a polisher, break up and haul away the old slab, then have a concrete contractor to pour a new one. He should put a polystyrene vapor barrier on the ground, cover it with a inch or two of sand (so the concrete will cure on schedule), and use sand-mesh reinforcement. A mix with a compressive strength of at least 3,500 to 4,000 psi should be sufficient. For your money choice, I'd recommend using an unadorned concrete, which does a better job than applying a coat of staining. Learning was her.

FLAKY CHIMNEY BRICK

After only 30 years, the surface of my brick chimney is flaking off in spots. The existing damage isn't severe enough to warrant repair, but I'd like to prevent it from getting worse. A chimney sweep said he to install a chimney cap and to spray the brick with a commercial-grade sealer, but I'm not thinking about covering it with stucco instead. What do you think?

Steve Basso, Newsmen, Mo.

Your brick is spalling, which means that moisture is being absorbed by the porous brick, freezing, and causing portions of the face to pop off. Well-maintained stucco might prevent water from reaching the brick, but it would only cover up the problem if moisture is working its way from the inside out.

For starters, I'd take your chimney's address and install a chimney cap to keep rain and snow from getting to the flue. It will be a lot cheaper than stucco, too. I also think that you should have the chimney inspected by a mason. He'll take a close look at the mortar joints as well as the brick, and let you know what kind of condition they're in. If the mortar is cracked and crumbling, it will have to be checked out and replaced with new (see "Chimney Fix up," November/December 1995, p. 47).



If you drink a lot of music, the Silver Cornet Band plays on in you.

JACK DANIEL'S SILVER CORNET BAND WAS STARTED BY JACK DANIEL HIMSELF. BUT IT TOOK A WHILE TO CATCH ON.

The instruments were secondhand, the musicians virtually unnamed. But soon they were playing saloon openings and political rallies. The original band is a distant memory now, but we still do one thing as we did back in those days. And that's mellow Jack Daniel's through hard maple charcoal. One up, we believe, and you'll know why we always will.

JACK DANIEL'S TENNESSEE WHISKY

Your friends at Jack Daniel's remind you to drink responsibly.

Visit us at www.jackdaniels.com

© 1995 Jack Daniel's Distillery, Inc. All rights reserved. Jack Daniel's is a registered trademark of Jack Daniel's Distillery, Inc. All other trademarks are the property of their respective owners. Jack Daniel's is a registered trademark of Jack Daniel's Distillery, Inc. All other trademarks are the property of their respective owners.



ASK NORM

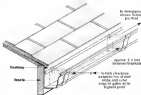
Another possible source of moisture could be your heating system. The exhaust gases of high-efficiency gas-fired burners contain a lot of acidic water vapor, which, if carried through an unsealed chimney, can cause spalling and rotting indoors. Your chimney can deteriorate if this is the source of your problem when it's chocking the chimney. If it is, installing a special metal flue liner (AL299C stainless steel) should do the trick.

After you take these steps, the spalling should stop. Then you can cover your brick with masonry if you want. Just keep in mind that it will need a fair amount of maintenance in your Midwestern climate and may look out of place with the rest of the neighborhood. You can also apply a sealer to the brick, but don't expect a miracle cure. I find sealing one of my chimneys to stop a seepage problem, and it didn't help. And mason Larry Sidwica, who works with *The Old House* contractor Tom Silva, tells me that you'll have to reapply it every five years or so in order to maintain its effectiveness.

FIGHTING GUTTER RATS

Over the years, the aluminum gutters on my garage have sagged so much that the spot where the downspout connects is at least at the lowest point. The gutters are made of 16-foot lengths, soldered together, and are held to the roof with straps that fit up under the first course of shingles. Minnesota snow and ice probably contribute to this problem. What's the best way to get my gutters draining in the right direction again?

Mark Fennell, Ames, Minn.



You may have a bigger problem than Minnesota winters (at this point!) if your gutters are a sign that your roof is sagging. Any number of things could cause this—rot in the rafters, improper rafter spans, a sinking foundation, or a rotting rafter. Get up on a ladder and sight along the edge of your roof in the snow. You'll be able to clearly see whether the roof is sagging. If it is, call a contractor to diagnose and correct the underlying problem.

If your roof is straight, it's a high of what. All you have to do is remove and reposition the gutters. But that task won't be all that easy because your gutters hang from straps latched to the roof sheathing; you'll have to pry off the first course of shingles to get at the straps. With careful roof weather for this chore, it will be easier to break the sealing straps that hold the courses in place.

Once you've taken the gutters off, establish where the highest spot should be. If it has two downslopes, the high spot should be approximately midway between them. If it only has one downslope, the high spot will be at the opposite end. At this point, you want the outermost edge of the gutter to be flush with the edge of the roof pitch. In other words, if you

see a straightedge on the roof so it sticks out past the eave, it shouldn't touch the gutters. If it did, every snow pile that slid off the roof would slide into the gutters.

Gutters should pitch at least 1 inch every 16 feet. To get the right pitch, start at the gutter's high spot and use a level to draw a line 4 feet long on the fascia (the board that covers the ends of the rafters). At the end closest to the downslope, make a mark 1 inch below the line, then draw a new line between the mark and the high spot. This shows the slope your gutters should follow.

You'll find this job will go a lot faster if instead of using straps you hang the gutters from brackets. Screw them to the fascia along the pitch line at every other raft, then just drop the gutters into place. With straps, it's always a struggle to hold the gutters in proper relation to the pitch line as you try to screw them to the roof. Finally, you'll need to anchor the outer lip of the gutter back to the fascia, either with a bracket strap or a gutter screw and ferrule. With the amount of snow and ice you probably get, the traditional gutter-strap-and-ferrule strap may not be strong enough to hold.

By the way, that staff holding your gutter lengths together is probably a heavy-gauge section, aluminum can't be soiled. You'll need to touch up the surface because the stress of moving gutters around will probably pop a couple of screws. Follow the instructions on the outlet package for application.

SHROUDED ON A HOT RADIANT-HEATING ROOF

I've read a number of recommendations about using foil or some other heat-reflective material on the underside of a roof deck to keep the attic cooler. I'm concerned that reflecting the heat upward will make the asphalt shingles hotter and reduce their life expectancy. Should I be?

Fred Whelan, Sausalito, N.C.

Radiant barriers—those under-the-roof foils that keep a house cooler by reflecting the sun's heat—were pioneered to protect garages like you're. According to the Florida Solar Energy Center, radiant barriers do increase shingle temperatures, but only by 2 to 3 degrees Fahrenheit. She also use made to take the heat to the warmer parts of the country, where a roof can approach 170 degrees in the summer, so the additional heat load caused by a radiant barrier is hardly significant, particularly if the roof deck is properly ventilated with soffit vents at the eaves and ridge vents at the peak. More to the point, adding a radiant barrier might not be quite effective in your relatively mild climate. The barrier you gain from reflecting the heat away on the summer will be lost in the winter, when you want to capture the sun's heat. Check with your state energy department and see what they recommend.

DIGITAL WITH A DIFFERENCE™



LIFESTYLE™
HOME THEATER SYSTEM
GIVE YOU
5-CHANNEL SURROUND
FROM ANY SOURCE

Most conventional digital systems will only give you 10 independent stereo channels, only 5-channel surround. But Bose's new 5.1 channel system delivers the 5-channel surround experience from any source—5.1 encoded DVD, say. With 10 speakers, even single-channel TV shows. And only Bose's patented speaker design is sound, the technology that makes the performance natural, elegant and simple. The wonder Audio called Bose. "The most natural of the century."

To learn which system is best for your needs, or to find a dealer near you, call 1-800-451-BOSE ext. 900.
Hear The Difference Today.

BOSE
Better sound through science.

www.bose.com/5023

Small ad. Big ideas.



possibilities

Our ad may be small, but it carries a big offer: a free copy of our full color brochure. In it you'll find all kinds of ways to improve the look, style and energy efficiency of your home with top quality wood windows and doors from Marvin. So come get the possibilities. Call for your free copy today.

For a free brochure, call 1-800-246-7544

Or Circle 100 on Reader Service

MARVIN
WINDOWS & DOORS
Made in the U.S.A.

©1999 Marvin

ASK NORM

GOING BACK TO WOOD SHINGLES

I'm the fifth generation to live at my family's 1944 Victorian farmhouse. I know that it's originally had a wood shingle roof, and that replacing the existing asphalt shingles with wood would be historically accurate. But I'm interested in longer-lasting materials. What do you think of using slate on this house?

CLARENCE WILK, BARTLE GREEN, MISS

Slate certainly is a great material and would easily last for another 4 or 5 generations of Wilkses. But it's also expensive, not to mention heavy, which is bad on a roof that wasn't designed to bear it.

Have you considered built-up asphalt or fiberglass shingles? They are sometimes

terrible, and of spaced boards or a special asphalt made called Cedar Shakelets. Famine them with wood-sheathed sag shingles, and I wouldn't put on a wood roof in this time.

Cedar shingles don't have the longevity of slate (18 to 25 years is average), but if you take care of them—have a roofer sweep or blow off debris twice a year and spray on a water-repellent wood preservative every five years—your grandkids could be the ones who pay for the roof too!

RAIL GROUP

We recently had ceramic tile installed behind our bathroom vanity. The tile is fine, but the grout has high spots and low spots. Is there anything we can do to correct this? It looks terrible.

KIM, CLINTON, SAINT JAMES, MISS

The grout that fills the gaps between tile is like icing on a cake—it can make everything else look bad if it's done poorly. This particular problem is a good example of what can happen if you don't inspect a job when the contractor is through. If the two of you had been watching them, you could have pointed out the problem and had him fix them a lot faster. Now you've got to clean after him.

If you aren't able to get him to make repairs, here's how you can make them. According to a letter to Joe Penner, long-time colleague of *THIS* *HOME* columnist Tom Silva, the best way to remove the high spots is with grout. If the two of you had been watching them, you could have pointed out the problem and had him fix them a lot faster. Now you've got to clean after him.

As for the low spots, you should be able to touch them up with fresh grout. Dump the grout with water, then use your finger or a sponge to spread grout over the low spots. Wet sponges clean in the sand, then wipe any excess off the tiles. Finally, seal the area with whatever product you put on originally. I wouldn't be suggesting this if the product had been in place for years—the color difference between old and new would be too obvious—but because your job was completed recently, this remedy shouldn't be a problem. With any luck, your kitchen will



ASK NORM

you with some extra grout after the original seal job. If not, try to find out which brand and color of grout he used so that the repair will match.

MAKE YOUR OWN WHITEWASH

Years ago, when I lived on a ranch in Montana, an old-timer gave me a recipe for making whitewash. Every spring we'd mix up a batch in a 5-gallon bucket, brush it on the bushes, and paint all the fence posts, sheds, and anything else that needed to look alive and fresh. It was very inexpensive—less than 75 cents per gallon. Now I'd like to make some again, but I no longer have the recipe. Can you help?

SHILA CORNIN, WESTMINSTER, COLOR

Whitewash was popular in an era when people had more time than money, but still wanted something to spruce up fences and outbuildings. I don't know much more about it, except that Tom Sawyer had pretty good luck with the stuff. But it turns out that Barry Newman, a plant craftsman who is working on the show's current project, is a great fan of whitewash, so I asked him to answer your question.

"Whitewash is a masonry product made of lime (usually limestone) and water. The material is fine, resistant and strong, and when applied to masonry surfaces, it bonds to form a tough, weather-resistant coating. Each additional layer added over the years increases its protective ability. But whitewash is also brittle and doesn't deal with wood movement. That's why other such masonry or masonry-related products are in preference. Still, for example, makes the surface harder, which causes (pink) peeling and it does flake. Because of its high pH, whitewash is toxic to mold and mildew. But whitewash's highly alkaline nature also means that the wet mix will burn skin. Always wear eye protection and rubber gloves when mixing or applying it. And keep a bottle of vinegar nearby as a clean-up solution and emergency antidote."

"First, coat your hands and face with petroleum jelly, and put on goggles, gloves, and clothing to cover as much skin as possible. Then, in a garbage pail, mix 50 pounds of hydrated lime with 6 gallons of water. Cover the mixture with a thin film of water, put on the lid, and let it sit overnight. The next day, you'll have creamy lime putty. Water down the putty in the consistency of half and half, and you'll have whitewash."

"Before you do the surface you're working on, clean and treat all joints (whitewash won't stick to it). The surface has to be damp, too,

or else the whitewash will turn to dust. Apply the mix in an even, lapping figure-8 pattern, using a wide masonry brush of latigo bristles, a vegetable fiber. Wait 30 to 60 minutes between coats, and apply a new one as soon as the moisture doesn't seep out, you don't want the surface to dry out. Three or four coats is usually sufficient. Once the shore has let the best out, you can burnish the surface by rubbing a clean, dry brush in circular pattern. Burnish in south and southeast the surface and makes a even more water resistant, but don't do this and fence posts this way may be overkill. Just stay on a fresh coat of whitewash every year to keep them looking good."

Shila Cornin is also known for her book "The Art of the Garden" (1999, Random House). She lives in Westchester, New York. She is a professional landscape architect and a professional photographer. Published letters will be selected for publication and may be edited for clarity.



street, where Paul made and down-staged through metal themselves to work progress. (20) The story between the first and second floor and inside the house. Original to the house, they, and the hallway, only had to be changed and moved. Because the doorway is so lovely, the designers also moved the front door to provide an unobstructed view from the expanded living room (20/21)

including replacement of the heating, plumbing, and electrical systems, getting of most of the original lock and plaster walls, an expansion of the master bedroom, and the design and installation of new built-in and a kitchen. Plus stripping every door, window, and bit of trim. Extensive work included the reconstruction of a cozy, L-shaped porch and removal of asbestos shingles to expose the original shingles and discolored siding. After the restoration of the outside, Paul pointed it to coral and ponds built, a combo that results the colorful Victorian houses in the area by a waterfront resort of Cape May.

Even though the job was daunting, Paul tackled it with little help beyond that provided by family members and friends. He'd begun having his car in a bad, spending Saturdays working a retail car park in the neighborhood. As a teenager, he picked up a detailed skills in mechanical school, and then, after the Army, he signed on with a contractor who specialized in building new churches. Over the course of 24 years, he progressed from laborer to superintendent. In 1978, he went out on his own. "By then, I knew all my trades," he says.

Because he was working with a limited budget, Paul suggested having himself out as a contractor as he could operate a full year of 10- to 12-hour days to the project. To help delivery costs, Chris continued working full time as a pediatric nurse. The couple also saved out their old house during the winter, and moved into her parents' place while they were in Florida. What saved them,



though, was a 2006 Rehabilitation Mortgage loan from the Department of Housing and Urban Development (HUD), which is given to people who restore homes they intend to live in. The approved lender assigns a contractor to each project and a budget is drawn up. Paul and Chris received \$98,000, \$33,000 went to the mortgage and \$65,000 to contractors, allocated by task. For the roof, for example, "they gave me \$3,000," Paul says. "Of course, kids were closer to \$15,000."

The roof was made of shingles over wood planking that had rotted in places, resulting in a few amounts of water damage inside the house. "I had no-one else when my mother still lived here and stuck wood shingles under the shingles to try to keep the water out," Paul recalls, "but it didn't help. I finally put up drop ceilings to hide the mess. I knew that that was too much in cost—and without doing patch the holes in the planking with plywood and put up dormer steel shingles for the light pine."

While he waited for the order to stock, Paul began gutting out the left and plaster walls. The cause of the deterioration has exceeded his expectations—resulting in 16 tons of plastic, which he piled in the backyard. "Originally I planned to just cut out the exterior walls, to I could rebuild," he says. "But once I started, ends began to fall out by themselves, including most of the cornice. I had to put up all new corners and another three or four have



Audrey, anyone?

Introducing Audrey® The First Smart Home Assistant from 3com.

It's like when your mother-in-law asks, "What's that?" You say, "That's why we invented Audrey. Audrey is a voice-activated assistant. You get a real you can find by searching, talking or typing a date, address, phone book and calendar. And a new way to access personalized data on Facebook with the Audrey's data. Audrey syncs with most computer devices and gives you the ability to search your kitchen. To learn more about Audrey the new family of high-tech products and for a listing of stores that work with Audrey go to 3com.com. Copyright © 2010 3com Corporation. All rights reserved. 3com and Audrey are registered trademarks, and the Audrey logo is a trademark of 3com, Inc.

3com
Simply one for two

something to attach the drywall to. I had to rebuild two walls downstairs because the studs were just hanging there."

Paul had hoped for a remodel of the 9 by 11-foot shed that had been added to the back of the house in 1929 to accommodate a bathroom. As he dug the trench for a new concrete-block footer, he realized he could extend the shed up to the second floor, which would give him enough space to enlarge the master bedroom and add a 4-foot-deep walk-in closet along its back wall. "I had an allowance of \$4,000 for picking up the shed and putting in a new floor. I found I could put up both floors for that much."

By the time the bump-out was completed, the roofer had finished his work. Confident that no more water would seep in, Paul ran nearly 1,000 feet of wiring throughout the house. Because of local building codes, he had an outside electrician to hook up a required outdoor meter, but otherwise he did all the work himself, including making connections in the basement panel box.

Enlisting the help—of all kinds—of his sons is how (thanks to Paul's daughter from his first marriage, he inherited an \$8,000 Ben gas furnace and a 38-ton air conditioning unit, then squared the ductwork with my cover he could find. "The house wasn't built for doors," he explains. After putting inspections on the wing



Work on the exterior was time-consuming and involved, but the payoff is splendid. *above, right:* The kitchen, once a merely, is both cozy and efficient; it also showcases Chris's collection of fishing pike (below, left). *below:* When another carpenter, Paul stripped and painted windows and doors on a pile of lumber in the yard.

and plumbing, he stapled up Thermax foam, which comprised the first insulation, the house had been at an overly 100-year life. Then he called again on his son-in-law, plan some furniture, in overall over a hundred 4 by 12-foot sheets of drywall—in one weekend.

As the spackle dried, he commenced the exterior work. "I was just going to paint over the asbestos siding, which my parents got up when I was in the Army," Paul says. "Then I remembered what was underneath." That siding had revealed cedar clapboards. The roofer was clad in cedar shakes or fish scale and dented the pike. After removing the asbestos shingles, Paul gauged the hundreds of nail holes left behind, pulled out the thousands of staples that had held a house wrap, and tumbled as much paint as possible with a power washer and a scraper. Inspired by a house they had seen in the Jersey Shore, Paul and Chris chose an exterior paint in a color called Caribbean Coral. For the gable and an accent screen, they mixed the coral with white in a seven-to-three ratio and came up with a tint they called peach. "I worried what the neighbors would think," Paul admits. "So I painted the back of the house first, and called everybody over to see if they hated it. They loved it, so we went ahead."

Meanwhile, when she had the time, Chris switched from her son's air-furnace unit what she calls "my hot air unit," a propane-powered air heater while installing 16 layers of lead-containing paint from all the interior trim, windows, and doors.

As it turned out, the part of the house that needed the most repair was the barn that required Chris's dense fix the place. The staves are original, as is the pine balustrade. "I guess I do have a lot of common sense," Paul adds. With the tough work now behind them, he and Chris can keep adding to the mansion—and enjoy the fruits of their labor. ■



Five o'clock
happens twice a day.
How often are
you inspired to see
the first one?

Can a window really be impressive? We think so. In fact, Andersen® windows have helped us see life in a new way for almost 100 years. Rooms whose windows have an beautiful clear glass actually don't exist.

Instead, it's the way you see the world. And a unique window design that helps you see it. Like the part of the Perma Shield® System, our way of building, backing and servicing our products. All of which should ensure you'll always feel good about your windows. No matter what time of day you look through them. To learn more call 1-800-426-4263, ext. 2250.

Worryproof. Timeproof. Andersen Windows®

www.andersenwindows.com





Widely separated benches also surround the fireplace in the Phelps' inglenook (above). Panels of beveled glass windows reflect ambient light from an adjacent room and hall. The wooden shelf atop the fireplace is used for storage.

A Cozy Corner

Fireside benches give shape to an age-old tradition—the inglenook

In a shaggy Arts and Crafts-style dwelling in Pasadena, California, the Cady and Lew Phelps purchased in 1986 had changed little in the 76 years since its construction. They were lucky. No one had tampered with any of the details of the house, which had been designed by Frederick Lawruson, an architect who had garnered considerable fame in the area. The living room boasted shoulder-height wainscoting, beveled-glass windows, exposed beams, and a massive 9-foot-wide fireplace flanked on one side by a built-in L-shaped bench. In buying their small gem of California-style architecture, the Phelps also acquired a cozy old piece of architectural history: an inglenook.

The inglenook—a recessed alcove with built-in seating framing the fireplace—evolved in a picturesque fashion: a central, open fire pit dug into the dirt floor at the center of an all-purpose living space used for cooking, socializing, and sleeping. By the 13th century, the fire had been set apart

as a permanent wall enclosure called a fire room, one which people called the hearth. In the 19th century, however, the hearth was no longer warm. According to Bob Thorne, an architect based in Berkeley, California, who often incorporates inglenooks in his house designs, the narrow chimney also contained small separate fireboxes that projected into and heated adjacent rooms.

Over the centuries, as fire rooms disappeared in use to become the fireplaces we know today, benches began to be built on along side the hearth, and the inglenook was born. Nowadays, of course, most of us live our lives with modern conveniences, but Thorne says, an inglenook still serves an important purpose: "It's the best way to create an intimate space where people can have close conversation while enjoying a fire."

The Phelps' inglenook both subscribes to and departs from standard designs. A type of "divanette corner," Thorne boasts one, rather than the usual two, built-in benches, and, unlike most traditional examples, it is not screened off from the rest of the room

by a partial wall. Walling in the ends of the benches helps to retain the feeling of being in a room, rather than a room-and-a-half. Ideally, straight or L-shaped benches are placed as close to the fireplace and hearth as possible, so that anyone seated there can view the dancing flames and glowing embers, as well as look to the westward of the fire.

With a big and cozy, the Phelps' corner bench provides ample storage for the board games, but it could also conceal a cache of fireworks, rats, or other pests, even holiday decorations. While there is no inglenook bench as usually paired, as they are here, those adjacent to the chimney may be combined with shelves, cupboards, and lighting. When Cady Phelps visited that, despite an original Craftsman era corner, Thorne, his inglenook was too dark, the recessed light in the ceiling and installed a dresser in the wall.

For her family, the inglenook provides a quiet retreat. "We've kept the TV out of there," Cady explains with a hint of pride. "With the fire burning, it's the perfect place to have a long talk."

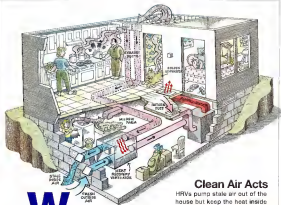
BENCH PRESS

ILLUSTRATION BY NOSTICA PRADO



Like most traditional inglenook seating, Cady and Lew Phelps' bench leans on its L-shape. The length of the long arm is 64 inches, the short arm, 46 inches. The seat is 20 inches deep and, topped with a 25-inch-high cushion, 18 inches high. The bench is built like a box, and its 18, or seat, is attached to the back by a plane hinge. Five 2 by 6-inch studs—three on the long arm, two on the short—support the seat. A piece of 20-inch-wide horizontal fir is placed with the front of the bench, providing the wooden floor sitting. A 10-inch-high wing at the left of the bench is formed of two 20-inch-thick boards glued

together to appear as one. The entire unit, including the paneling behind the bench, is constructed of solid fir. Armrests are secured to the wing with pegs. The paneling matches 8-inch-high wainscoting that wraps the rest of the room. Panels, which are nailed to beveled strips, measure 120 inches wide. A series of 20-inch battens around the corner. The paneling is applied by a horizontal piece of 20-inch fir. All the Phelps', the space between the top of the paneling and the low bench above features beveled glass windows. It could just as easily be filled with bookshelves.



Clean Air Acts

HRVs pump stale air out of the house but keep the heat inside.

When Gary and Linda Hutton moved into their cozy home in the Berkshires, they figured the new, luxury bed & Cape would do away with the biting cold of a winter Massachusetts winter. But as the seasons turned and the thermometers sank, Hutton noticed something wrong. The inside windows were sweating so copiously they could hardly see outdoors, and the air in the house was stuffy. They called in local heating contractors. But Rick Smith on investigation—after riding out a wet basement in the house, Smith concluded that the Huttons—or rather their cooling, heating, and breathing—were the source of all the condensation. In effect, their house had been so tightly insulated it was literally paying for less air.

To dry out the Huttons' soggy interior, Smith suggested that they invest in a "heat-recovery ventilator" or HRV, a device that draws dry, cool air from outside and expels stale, humid air from indoors. Along the way, the ventilator captures up to 80 percent of the heat from the exiting indoor air and transfers it to the incoming flow of outdoor air, saving significant energy on heating costs.

Once, air in a house is a problem in houses. Fresh air is only found its way in through small gaps in walls, foundations, and around doors and windows, replacing the warm air that naturally perked out through the cracks and gaps in the col-

lumn 7-inch round hole. They finished around the HRV in the furnace as supply air. This Cold Weather Alliance project.



PHOTO BY GARY HUTTON

BY ZACHARY GAULIN ILLUSTRATIONS BY RON BARRETT

leg and roof. The old buildings were expensive to heat—and often uncomfortably drafty—but they were well ventilated. Then came the energy crisis of the 1970s, which motivated people to seal their walls with insulation, vapor barriers, and housewrap. "We're now building a lot of Thermex houses—houses that can't breathe," says The GAI House's testing and planning expert Richard Tankersley. Tight houses save on heating and cooling, but they also trap moisture and reduce pollutants—carbon dioxide, dust, pollen, and paint odors, as well as off-gassing from carpets and furniture—and the odors from pets and cooking. People with allergies and respiratory ailments are particularly vulnerable. Unless a house is getting 5 to 12 air changes per day, Richard says, "it's the air-purge cabin syndrome—you're breathing everybody else's bed air." You can, of course, crack open a window or run on a bathroom exhaust fan to encourage the efflux of outside air, but as Richard says, "This works no harder to heat or cool the air in your house, you don't want to lose it."

That's where mechanical ventilators like HRVs come in. About the size of a double kitchen cabinet, with two pairs of ports at each end, these simple devices have two fans—one for bringing in outside air, the other for expelling stale air—two filters, and a temporary "core" of plastic or metal plates that absorb both airflows. The exhaust air warms one side of the plates, which conduct that heat to the incoming stream of fresh air. The ERV, or energy-recovery ventilator, is a close cousin to the HRV that captures both heat and humidity (see illustration, this page) from outdoor airflow. Two if each device connect the ventilator to two openings at the outside of the house, one for exhaust, the other for supply.

In homes with forced-air heating and cooling, the ventilator feeds fresh air to the main system that pre-warms the air of the furnace or boiler, which distributes it as though out of the house. In homes with hot-water or steam heat, the HRV becomes an effect in its own right, distributing both air to bedrooms and living areas and drawing stale air from kitchens and baths into the exhaust system of 3- to 7-inch exhaust ducts. These are nowhere near as powerful as the typical air handlers in forced-air systems, which pump air at between 300 and 3,000 cubic feet per minute (cfm). The energy-savvy fans in an HRV are small and quiet, moving air in and out at a gentle 30 to 200 cfm. And the only maintenance they require is to replace the clean the filters every three months, depending on whether they are carbon or foam.

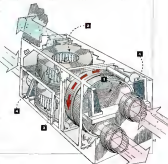
Ultimately, the decision about whether it's worth spending \$1,500 to \$4,000 for an HRV or ERV (including ductwork, labor, and controls) should depend on the outcome of a home's air test conducted by a heating contractor. A test blows air into the house, and a gauge measures how well it holds the pressure. If it holds the pressure right, the house is airtight, and some form of mechanical ventilation may be necessary. If it can't hold the test, in the experience of Bruce Hinder, engineering project manager with Conservancy Service Corp., in Woburn, Massachusetts, "New houses aren't always as tight as people think," he says. "Only a few I've tested are so tight that I would recommend an ERV."

Still, when the test does indicate a problem, or as did in the Huttons' house, an HRV is the smart solution. After they took Smith's advice and had his small's cost in their basement, the wet windows gradually disappeared and the stuffy air disappeared. The increased supply of fresh air also yielded no unexpected bonus. They felt healthier and have become more sensitive to the state of air in other people's houses. "It's almost as if we got paid for when we come home," says Linda Hutton. "We don't care too much (25 to 40 percent humidity is ideal), the Huttons open the HRV in some to prevent with a coma. When the air starts to get stuffy or the humidity creeps higher—such as when they have lots of houseguests—they just run the HRV more frequently or even close it down."

Needless to say, this is no piece of equipment they've come to depend on. "If my ventilator broke down at the same time as my microwave, I'd be the ventilator fan, Linda Hutton says, "And that's trying something, because I am not microwave a lot."

QUICK RECOVERY

"I think that venting air in houses will be so tight that they'll all have energy recovery ventilators," says Richard Tankersley. HRVs, or ERV transfers water vapor as well as heat. That makes it a better choice for use with air conditioning because air is dehumidified before entering the heated interior. Exhaust air is pulled through a thermal wheel (1), made of moisture- and heat-absorbing polypropylene, by the exhaust blower (2). Fresh air is pushed in by the supply blower (3). In the center, the thermal wheel transfers heat and moisture from the exhaust air to the fresh air in the system; the reverse happens. Filters (4) protect the moving parts.



LUXURY

by Jordan Reed

Water Worlds

Built-in aquariums offer constantly changing beauty

at 11 and made it just 11 inches from food to back. Lorie and Philip Green's aquariums are for stay fish-obsessed. Fish need periodic physical contact and a place for fish to explore.

by JORDAN REED

Lorie and Philip Green were both as a Nantucket restaurant when the inspiration for the current family-room aquariums came. But it wasn't the fish. It was the dog that they had there, thinking about how much he was loved. "It was a dog that was home, it was a dog that was home, it was a dog that was home," Lorie said. "We could have a dog that was home, it was a dog that was home, it was a dog that was home." The Greens decided to get a similar fish in the end, in an expensive addition to their Greenwich, Connecticut, home.

The promise of keeping fish close to the house is at least 1,500 a day, the Greens have installed critical ponds for food. By 2000 a day, the Greens were making aquatic creatures in containers, breeding tropical carp.

PHOTOGRAPH BY JOHN KENNEDY



foundation at animal shelter:
\$70

collar, bowl and food:
\$32

shots at the vet:
\$85

your first dog:
priceless

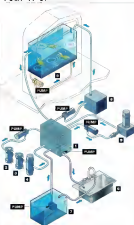
We'll help you take good care of your new best friend. Get 15% off all your visits to participating vets with petcare.com when you join through MasterCard Rewards Online™. For more information, go to mastercard.com

there are some things money can't buy



for everything else there's MasterCard®

PUMP IT UP



Behind the scenes of a built-in aquarium—usually in the basement—is a complicated network of filtration. FPG pipes, pumps, and filters keeps the water clean. Gravity draws water out of the tank and into the intake filter (1), the heart of the system, which contains water-cleaning bacteria and a spongy filter. From there, water is drawn into three separate loops. It's pumped into a series of filters that use polypropylene acetate (2), carbon (3), and ultrafine filter (4) to remove toxins and dirt. A second pump pulls water through a spongy filter (5), which removes organic debris. When it's time for a water change, water is drawn out of the intake filter and into a siphon tank (6). Below new water is added, it picks up salt and other additives in the mixing vat (7) and then returns to the intake filter. Finally, all water is pulled into the sump (8), where it's brought to the proper temperature. Specialty 70 degree filter is referring to the tank. A small pump (9) circulates water through the gravel in the tank to prevent debris from settling there.

In their garden pools, on the first day of glass vessels to showcase fish indoors came into fashion only in the 18th century, in England. Today, it is 10 households have fish tanks, mostly 10-gallon bowls holding goldfish or guppies produced for kids. Parents appreciate the life lessons that aquariums offer, and don't realize that they may actually require human hands. "People who spend time observing fish tanks enjoy a certain level of stress in their lives," says Dr. Alan Beck, director of the Center for the Human-Animal Bond at Purdue University's School of Veterinary Medicine. "The constantly changing scenes helps their attention and is very calming."

But not like the Ganes, however, are another "species" of fish tank. Typically holding 300 gallons, these aquariums—which measure about 4 feet long, 4 feet high, and 2 feet deep—offer lots of viewing space of fish, such as three foot-long tropical sharks and dozens of sea anemones, coral, and other tropical fish swimming in schools. These huge aquariums—like small, clear, white swimming pools—are set into walls and ceilings, and even in hallways and bedrooms, coffee tables, and along the rim of a bathtub. They can be viewed from both sides, and from a flat, air-like appearance, and they're often designed to be seen from two or three sides, allowing visitors to look through their shifting arrays of color to see into the room beyond. High-tech filtration systems are typically hidden in a concrete pump room, often in the basement (see "Pump It Up," left).

The Ganes hired Robert Bray, of House of Pines, in Greenfield, Connecticut, to design and install their tank. And the first question he posed is probably the most important for any customer: whether Lanes and Philip wanted to display freshwater or saltwater fish. Freshwater fish are much easier to care for, and these tanks include the big, beautiful, aggressive Oscar, which grows 20 inches long, and the vibrant, 15 inch cichlid, which is half red and half blue.

"But there's simply more color, drama, and variety with saltwater fish," says Bray. There's the three inch, yellow and orange ray of guppies and the 15-inch shark, which can appear peacefully, with multiple long, thin, fin-like bones and white stripes between fish, and the 15-inch shark, which can appear aggressively, with multiple long, thin, fin-like bones and white stripes between fish, and the 15-inch shark, which can appear peacefully, with multiple long, thin, fin-like bones and white stripes between fish, and the 15-inch shark, which can appear aggressively, with multiple long, thin, fin-like bones and white stripes between fish.



What's also a fact is the floor of the tank. Saltwater tanks can be decorated with live coral, but saltwater plants are difficult to maintain. In freshwater tanks, plants can participate in the tank's ecosystem by oxygenating the water and feeding on organic matter that would harm the fish. Still, growing underwater plants isn't easy, so many people opt for plastic versions.



ILLUSTRATION: KAREN DUNN

Whenever anyone mentions they also, most people want the process to be as easy as fish to their loss in look at and the entire room isn't all but empty of the display. Two many fish, however, will have dinner in the tank. According to Mike Seguy, owner of Living Sea Aquariums, in Park Ridge, Illinois, a tank can have the space for 10 to 15 fish of fish for each 2 gallons of water in a tank. For a 300-gallon tank, that amounts to about 15 live fish of fish per 15-gallon tank. He calculates the total based on the creature's nature size, since some species grow small and fast (like the pufferfish) grow large and slow (like the shark) to 24 inches in a year.

Installing a built-in aquarium calls for consultation with a structural engineer. The typical 300-gallon tank weighs roughly 5,000 pounds, or more than three times the total weight of the largest indoor whirlpool. When it comes to the weight, it's best if the tank is on the first floor," says Richard Genovese, a Greenwich, Connecticut, architect who has worked with living on a tank for 10 installations. "There it's easy to build up the structure from the basement." The Ganes built their 650-gallon system on the concrete slab that supports their new addition, so no extra bolting was necessary. (They positioned that tank at the edge of the room so they could place the filtration system—which is rather noisy—and its support pumps down in the basement under the main part of the house.) For a second floor on any level, Genovese adds beams and posts to bear the weight. Closing up the space next to and above the tank is a complex matter. Standard walls and ceiling can be installed right against the tank, except for a minimum of 18 inches of access above the aquarium.

For the tank itself, Seguy prefers acrylic over glass because the plastic is welded in the corners to form a seamless structure. Glass joints, by contrast, are held together by silicone rubber, which may loosen over time. "Acrylic is essentially bulletproof," says Seguy. "I've heard of tanks falling over during earthquakes and not breaking." And, adds Bray, "it's easier to create man-made shapes using acrylic." The only drawback is that acrylic can scratch, but abrasions buff out easily with a scratch remover. For Acrylic may also be a bit less in the price range of the water, although only if the most pet-friendly eye would notice it.

The price tag for built-in aquariums is high—which may be why most fish lovers choose for standard tanks. A 300-gallon saltwater

swamp, including structural upgrading to the floor and surrounding ceiling, installation of the tank and filtration system, and color fish treatments, costs around \$40,000, says Bray. Get fancy with your fish choice and the price can skyrocket from there—a single, rare, compressed fish sells for \$3,500. Add live coral and the price jumps another \$1,500. A freshwater tank, by contrast, is a relative bargain at about \$10,000 to \$20,000, because it requires less filtration equipment and because most freshwater species are less expensive than their saltwater counterparts.

The Ganes' tank holds a dozen saltwater fish, including a 300-gram angel with a swirling blue crown above its eyes, and yellow and orange lion. "Ganes were at the fish like we did that evening on Narragansett, and they ask me when people see the fish, the tank, and the one," says Lanes. "We've even added the basement pump room to our dream party area." ■



FISH DOCTORS

Keeping an aquarium clean and healthy means about five hours a month in maintenance: scrubbing and adjusting pH, testing levels, and salt content, plus vacuuming, replacing filters, scrubbing tanks, and changing 20 percent of the water. It's about \$100 a month to keep the tank clean by a professional (see "Pump It Up" for the Robert Bray and Mike Seguy tanks). For most fish, it's about \$100 a month to keep the tank clean by a professional (see "Pump It Up" for the Robert Bray and Mike Seguy tanks). For most fish, it's about \$100 a month to keep the tank clean by a professional (see "Pump It Up" for the Robert Bray and Mike Seguy tanks).

The price tag for built-in aquariums is high—which may be why most fish lovers choose for standard tanks. A 300-gallon saltwater

FAVORITE FISH

NAME	TEMPERATURE	SIZE	COLOR	FEEDING	REPRODUCTION
ANGEL	72-78°F	10-12 inches	White and black	10-12 inches	10-12 inches
ANGEL	72-78°F	10-12 inches	White and black	10-12 inches	10-12 inches
ANGEL	72-78°F	10-12 inches	White and black	10-12 inches	10-12 inches
ANGEL	72-78°F	10-12 inches	White and black	10-12 inches	10-12 inches
ANGEL	72-78°F	10-12 inches	White and black	10-12 inches	10-12 inches
ANGEL	72-78°F	10-12 inches	White and black	10-12 inches	10-12 inches
ANGEL	72-78°F	10-12 inches	White and black	10-12 inches	10-12 inches
ANGEL	72-78°F	10-12 inches	White and black	10-12 inches	10-12 inches
ANGEL	72-78°F	10-12 inches	White and black	10-12 inches	10-12 inches
ANGEL	72-78°F	10-12 inches	White and black	10-12 inches	10-12 inches



Floor in a Flash

Prefinished and pretty, engineered wood floors install with no mess

BY MAX ALEXANDER

Using a personally styled, modular, prefabricated floor that has a large, multipurpose surface area.

E

ngineered flooring seems like a ought to be cheaper than solid wood. After all, the tongue-and-groove as go are made from plywood, with only the surface veneer ("wear layer") cut from high-grade maple, oak, cherry, or other hardwood. So consumers are often shocked to discover that the manufactured planks may cost just as much as, or even more than, the solid wood counterparts. Still, homeowners and developers choose engineered products for 40 percent of new wooden floors, especially for remodeling jobs.

What's the appeal? Imagine moving out of the family room for only 12 hours as a contractor or path up the old wall-to-wall carpet, then cuts and assembles prefabricated boards. No sanding, no waiting for multiple coats of polyurethane to dry. The floor is complete as soon as the boards are installed.

And these floors can be laid directly over a concrete slab, with solid wood, a grid of 2x4s covered with plywood or even floor be installed over the studs. This Old House contractor Tom Silva

PHOTOGRAPH BY DAVID CARMACK

WE RAISE OUR MUGS TO THE PEOPLE
WHO ARE AS PASSIONATE ABOUT WHAT THEY DO AS WE ARE ABOUT OUR COFFEE.

SHEILA BRIDGES
DESIGNED
REFINING HARLOW'S BEAUTY

Subtle



Kona Blend

Beautifully balanced with an enticing bouquet.

MILLSTONE

TASTE WHAT'S OUT THERE

MILLSTONE PREMIUM ARABICA COFFEES, 60 MONROE AVENUE, SUITE 100, NEWTON, MA 02459. WWW.MILLSTONE.COM



1 Engineered planks need not be glued to the subfloor, but they must be glued to each other, as shown in this square and groove joint with the joint in front. 2 Glue isn't used to glue the floor over concrete or from insulation. Instead, typically, staples are used to hold the planks down. 3 A 1/4-inch thick veneer of the floor's perimeter allows the wood to expand. 4 Glueless floating floor. 5 Floating floor with a 1/4-inch thick veneer. 6 Floating floor with a 1/4-inch thick veneer. 7 Floating floor with a 1/4-inch thick veneer. 8 Floating floor with a 1/4-inch thick veneer.



"Boats" engineered floors over concrete, gluing the tongue-and-groove joints together, but not securing the boards to the floor. Some products, designed for floors that won't get wet, snap together and require no glue. Not being fastened down means the assembly can shrink and swell without cracking, a 1/4-inch expansion gap around the perimeter is hidden by baseboards or shoe molding. When the substrate is wood, the steps are simply glued to the subfloor. Or, "you can float the floor over a 3/4-inch plastic foam insulation pad that's stapled in place," says Silva. "It makes things easier downstream."

Not surprisingly, the growth of the engineered wood flooring market over the last year is impressive. According to the building boom in the San Francisco Bay Area, the San Francisco Bay Area is built on concrete slabs. The product was created in Europe shortly after World War II and first imported to the United States during the early 1980s by the Hilti-Turkey company Populartex. But growth is steady, and engineered wood flooring's biggest

appeal today is to homeowners who are living in the middle of construction, since it is resistant to warping and swelling. Remodelers may still have to contend with some issues, however, because many of the installation guidelines that manufacturers recommend are for a solid board. This Old House chose engineered floors for the Santa Barbara, Milano, and Whitehouse projects. "It's absolutely amazing, and it was so easy to install," says Jim Wolford, owner of the Santa Barbara home. "Since we were living here during the work, we didn't want to deal with finishing the floors."

Solid wood is a much less profitable product, but the surface never needs to be sanded or the wood was sanded after being installed, and then finished. In fact, engineered wood floors can't quite sit as well as floors that are sanded in place, says Dick Deibel, a third-generation wood floor installer and finisher in Eugene, Ore. The hole depth varies a little on the surface, so contractors will a major level along each edge—drilling a 1/4-inch deep groove that has a vertical gap of an engineered wood floor.

Some kinds of engineered flooring effectively mimic real wood, others are obvious fakes. The key is whether the veneer layer is veneer or a flat cut. To make a pretty cut, the mill has to make the cut in water, then pull it out of the water. The veneer is then sanded in a hole. This gives the wide sheets of veneer the appearance of a plywood, and it gives engineers of flooring the same distinctive wavy, repeating grain pattern that plywood has. This veneer comes from a rougher sheet made directly along the log's length. This veneer looks more like solid wood because it follows the grain, but it has the type of grain that is not natural, but the veneer comes from a sawn rotary-cut product.

Engineered floors are not as durable. Some kinds are so sanded and finished when they become so sanded and worn, when it's time to be replaced. Cheap products may have just a 1/4-inch thick surface veneer. Better products have one that's 1/2 to 3/4 inch thick, which can withstand two sandings, extending the life of the flooring. Solid wood flooring, by comparison, typically offers about 1/4 inch of wear layer above the tongue, enough to endure as many as seven sandings.

Consider, too, which under that top veneer. The tongue-and-groove board should

contain at least three plies at all, five is even better, says Jeff Hocking, a hardwood flooring manufacturer for The Old House. "The more plies, the more stable the floor will be," he says. That's because each layer is glued to the layer above.

And that wood tends to expand and contract as wet as possible as humidity changes, the movement of each ply is minimal when they're glued in opposing directions. This alternating grain pattern makes an engineered floor more stable than a solid wood veneer, the joints in three floors won't open into clear soffits, gaps or dry water weather. The outer core should also be made of real wood such as poplar, rather than a cheaper composite material, to provide a more stable base and a slight spring underfoot like solid wood.

The thinnest engineered wood flooring, just 1/4 inch thick, has little inherent stability and won't be nailed in place. It's an engineered plank that can be glued. Floating floors require a 1/4-inch-thick plank, according to Deibel.

The topmost veneer gets a factory finish, which is typically more durable than painted or polyurethane. Just two years ago, aluminum oxide coatings were introduced. This super-hard powder, which is also used in dental implants, ceramic floor tiles, and as a paper, is added to the urethane coating. "It's difficult, if not impossible, to wear through it," says Thomas Biele of One Piece, an engineered wood flooring manufacturer. At One Piece, seven coats of aluminum oxide finish are applied in less than five minutes, thanks to a spray system that creates light green dust developed in the 1980s. "The light creates a chemical reaction within the finish that dries it in seconds," says Biele.

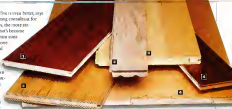
Manufacturers guarantee aluminum oxide finishes for 25 years, versus a likely life of 10 years for three coats of polyurethane. But Hocking has read the fine print. "It means that in 25 years there will still be something there protecting the wood from water," he says. "But no finish protects against scratches and dings."

The best approach to maintaining floor life is to treat it as if it

GRAINY PICTURES

Not all substitutes for solid wood floors are made from plywood. A cheaper alternative, laminate flooring, gets its appearance from a photographic image of wood. Glued to a fiberboard base, the picture is protected on top by a clear finish. The resulting sandwich comes in pre-cut panels.

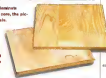
They're installed with glue, much like engineered wood. Floor expert Jeff Hocking says laminate is more scratch-resistant than any wood floor—but once it does scratch, the damage is permanent. Laminate can't be sanded. "I expect plastic laminate floors to last 10 to 15 years," he says. "By then the homeowner gets tired of looking at the scratches and replaces the floor." Hocking says laminate, which costs \$2 to \$5 per square foot (plus \$2 to \$3 per square foot for installation) can be a good choice in laundry rooms or bedrooms because it is highly water-resistant. If the glue is properly applied, the adhesive is what makes the joints watertight. "If it isn't done right, water can get down into the pre-cut joint, and the floor will sag and warp," he says.



1 In five plies offer dimensional stability, but this flooring has only a 1/4-inch surface veneer, which won't be sanded and refinished when it's scratched. 2 Solid sub flooring, by comparison, is a 1/2-inch surface veneer like wood above the tongue and groove, and can be sanded up to seven times. 3 Some engineered flooring comes assembled in a panel for fast installation, but still offers the appearance of narrow floorboards. 4 Planks that are 1/4 inch thick must be nailed in place, while those with a 1/2-inch-thick thickness can be glued. 5 There are ply boards that have a 1/4-inch-thick top layer and a beveled edge where the boards meet.

cannot be sanded, says Silva. That means keeping it clean, so dirt doesn't grind at the surface. "And keep your eye on it," he says. "If the finish seems to be wearing, give it a light sanding to sand up the surface, and then add a fresh coat of polyurethane. I always recommend servicing the finish, not the floor."

Selecting the best engineered wood flooring means paying the high end of the material's price range of \$5 to \$11 per square foot. At installation, about \$2 to \$4 per square foot, and the total price might exceed the installed price of a solid wood floor of the same species. So engineered flooring is probably best only under circumstances that make it more practical than wood. "If it's your current living room and you're going to have a pet, go with prefinished engineered," says Deibel. "If you own living there during the project, though, I'd choose traditional wood, finished in place."



TALKING SHOP

Plower Play

1) Pushing snow instead of lifting and throwing it is easier on the muscles. This electric shovel is rated as the 7.6-point power on the 10-point scale, but it's a side shift through heavy pile-ups.

2) Shoveling steps and walkways is quick work with a little extra power. This 10-point, foot-wide electric power shovel can clear 4 inches of snow off a 1,000-square-foot area in less than half an hour.

3) Knowing as little as possible is almost ideal. But a computer can still under and freeze a solid sheet into impenetrable gloves. The digital programmable shovel made on this long-handle one path for chunks toward and out of the way instead of leaving them behind.

U

When you have to work each morning with a pile of slush along your rear shoulder, you're probably not an expert or experienced. Despite their prowess in the rink, even the four-time Stanley Cup champion New York Rangers have to resort to some tools to help them walkways and driveway safe for pedestrians and drivers. Quickly removing the deposits of a snow's successful keeps slippery paths clear. "If you perform fairly well, snow removal you won't have to deal with it," says The DM Home landscape contractor Roger Cook. Roger begins shoveling after only three inches

worth of flakes have settled—before ice has a chance to form—and he continues to plow himself if the snow keeps coming. "You can do that last three inches, go in, have a hot chocolate, watch a little TV, then go out again." Working in steps with breaks in between prevents overexertion or injury. "There's no ice on top, so it's hard, and now it's warm, especially if it's heavy snow," says Roger. "If you try to take that snow on one big push, you'll choke." Of course, Roger knows better: when the powder is too deep for shovel, he turns at the point of a automatic snow blower to do the work for him.

PHOTO: JORDAN REED

PHOTO: JORDAN REED

ICE MELTERS

Most de-icers are salts—the chloride compounds of sodium, magnesium, potassium, or calcium—which inhibit ice formation by lowering the temperature at which water freezes. When chloride, the salt de-icers use, breaks into ions that block the crystallization of water molecules. Magnesium chloride (MgCl₂) and calcium chloride (CaCl₂) are more effective at lower temperatures than sodium chloride (NaCl), or potassium chloride (KCl), because they generate more ions.

Salts don't freeze again, but will freeze concrete. And at odds to high flows inhibit water absorption in pipes, and MgCl₂ breaks out of pipes more easily than NaCl. But salts are not safe for plants, animals, or the environment. They can be toxic to fish, birds, and insects, and can harm plants, animals, and the environment. They can be toxic to fish, birds, and insects, and can harm plants, animals, and the environment.

4) A little faster than a shovel, a snow blower is a step. This 10-point power shovel is rated 8.0 on the 10-point scale, but it's a side shift through heavy pile-ups.

5) A snow blower is a step. This 10-point power shovel is rated 8.0 on the 10-point scale, but it's a side shift through heavy pile-ups.

6) A snow blower is a step. This 10-point power shovel is rated 8.0 on the 10-point scale, but it's a side shift through heavy pile-ups.

7) A snow blower is a step. This 10-point power shovel is rated 8.0 on the 10-point scale, but it's a side shift through heavy pile-ups.

BY JORDAN REED PHOTOGRAPH BY KOLIN SMITH



Spend Now, Save Later

The smart way to invest in home renovation

As the end of each *The Old House* project, contractors Tim Sloss starts with the homeowners to begin considering their wish list as a game plan. They're generally very excited, and Tim has to bring them down to earth just a little to make some tough love. "People all see things like, 'We'd like to have a granite countertop in the kitchen,'" he says. If they're working with a tight budget, however, Tim counsels them to invest first in high-quality insulation, framing, windows, and heating and cooling systems. Do the basics well, he says, even if it means waiting for less expensive laminate countertops instead of stone veneer.

Take the 1995 Belmont, Massachusetts, project. Tim achieved homeowners Dean and Laura Gullace to postpone renovating the second floor of their 1967 Shingle Style house. Their \$130,000

budget allowed them to use the best materials on just the first floor and exterior stone-clad plaster instead of wallboard, Italian tile laundry-room floor set instead of vinyl. They replaced asbestos siding with long-lasting redwood shingles. Eight years later, the Gullaces are still saving for phase two of the project, but they're happy they took Tim's advice. "The decisions we agonized over, large and small, turned out right," Dean says.

One of the guiding principles of the renovation show is to invest first in a home's infrastructure. "You're the steward of your build right," explains host Steve Thomas. "You don't have to install a fancy kitchen, but you shouldn't shortchange the important hidden components of the home. You can easily add wallpaper or built-in cabinetry a few years after you renovate. Trying to

go back and upgrade the wiring or the plumbing is much harder."

Still, this isn't just a lesson in compromise. It's financial wisdom. Spend on primary materials up front, and your utility and repair costs will be lower. "An efficient heating and cooling plant, well-insulated windows, and extra insulation could save you 20 percent or more each year on your heating and cooling bills," says Tim. There are also savings in future repair costs. "Often, people want to do a cosmetic bathroom makeover," says T.G.M. Heating and Cooling contractor Richard Trifunovic. "They do everything nice on the surface, and then, when they're almost done, the old bath leak or old drain everything they did." Spending on new pipes up front results in long the cheaper choice.

When the *The Old House* crew first presents the "Spend now/save later" message, though, it means homeowners to take a huge leap of faith, says Richard. "You have to invest in stuff you can't see, and you have to wait—sometimes years—to benefit from really. It isn't easy and it isn't an exact science," he says. "We can't guarantee you're going to save. At times, because every house is different. We can say that if you look at the hidden stuff with the same passion that you look at the things that show, you'll save money and aggravation."

Tim contends that you could save thousands of dollars in future repairs if you spend an extra \$1,000 for every 1,000 square feet that you insulate. The extra investment buys 4-inch plywood sheathing on the walls instead of 1/2-inch boards. It also gets you a subd 1/2-inch tongue-and-groove plywood subfloor that's glued and screwed to the joists. Consequently, the screws won't back out, as they might if nailed to a 1/4-inch plywood subfloor. You won't also get insulation for exterior walls, which reduces the noise you hear through them.

Little details can make a big difference, says John Smith, owner of Rock Restoration and author of *Go Time and Go Budget: A Home Renovation Investor's Guide* (Mass Street Books, 1997). "Contractors build typically about 3/4-inch thick and a 1 1/2-inch sheet. But actually you'll see a difference for \$9 a sheet. Another is, the wire mesh on only 3/4-inch, and that 3/4-inch can reduce the life of the slab in your slabs," he says. Similarly, a plastic shower valve may be 1/8-inch deeper than a brass one, but it is 1/8-inch off behind the shower wall, it'll require ripping up and replacing the slab.

Tim suggests installing small ventilation fans can have a big payoff. Prepare for future technology now by installing PVC pipe conduits in the walls while they're put in. "You'll pay a little more for labor," says Tim. "But there will be an expense of bringing two and opening walls later" for additional power or communications lines.

Of course, if you're fitting up your house to sell, a tiny net make sense to invest in high-quality materials that potential buyers can't see. Tim should advise most renovations done from the point of view of resale value, says R. Dwyer Woodson, author of *100 Simple Improvements to Sell Your House Faster* (John Wiley & Sons, 1997). But some remodeling may be more appealing to buyers than extra-thick sheathing. "You must know buyers are quite savvy, he says. They'll be impressed if you document the top-notch materials that he benefit the surface."

And if you're staying put, you'll enjoy the very tangible benefits of a well-built house. "You'll save on utilities and future repairs, but what you're really buying is a house that won't crack in the mud, a floor that won't squeak or buckle, and walls that won't crack." ■

MONEYCLIP

Here's how to focus your decision making process when contemplating a renovation

FLOORING	ROOFING	HEATING/COOLING	WINDOWS
WHAT YOU CARE ABOUT			
Will the floor show footprints? Can I stand on it all afternoon without sore feet? Is it attractive?	What roof shingles will look best on my house?	Control air by seal. Will it be sturdy with existing new equipment?	Mullions or no? Do I clean the panes from inside? Will I have to grind the sashes? Will my energy bills shrink?
WHAT MATTERS MOST			
The subfloor should be made of pine with joists and some loose ends to make floorboards smooth to walk. New subfloor should be 1/2-inch tongue and groove stick that's glued and screwed to the joists. Complete subfloor-and-ventilation for tile, (broken, stone, and vinyl) for. Rebuilding from Virginia Gullace's 1967, June 1999. For solid wood versus engineered wood, see "Floor in a Flash" (page 65).	Make sure asphalt shingles have the Underlayment. Laborers used of asphalt for resistance to tearing, pull up, scrubbing, and shingling the shingles or shingling and UV heat treatment. carefully remove entire surface. Special damage caused by wind, avoid, cover replacement labor costs for the first year only. If you're putting a new roof over an old one, be sure to install new flooring.	Check the "air seal" test with the "air seal" test, which ranges from 10 percent to 100 percent. (A 100-year-old house typically tests at 10.) You don't need top-of-the-line equipment if your house is well insulated. Says Richard Trifunovic, "Putting a 300,000 Ft. furnace blower in a house that is losing only 100,000 Btu/h of heat is like buying a V-8 engine for a Volkswagen."	Complete the three levels of insulation available. Insulated door in North America (insulated, and 1/2-in. R-13). Windows also have insulated mullions (2 to 10) tested by ability to keep the sun's heat out. A high number (10 and up) means a lot of heat goes in. A low number is preferable is not desirable.

UPPER

BY LOUISE JARVIS



Out, Damned Spot

Grime and grease on kitchen countertops need not be permanent

"S

ometimes beauty goes by the wayside. In the case of this 18th-century Tudor house, it was the grease and grime that had been building up for decades, making up the dark, greasy patches of floor and hydrating grease in the holes of a wooden table. The grease was so bad that it had even made its way into the pores of the wood, making it impossible to clean. The grease was so bad that it had even made its way into the pores of the wood, making it impossible to clean. The grease was so bad that it had even made its way into the pores of the wood, making it impossible to clean.

"A single life for the past, but a truly long one for many hours to clean the spot before the new life," he says. The grease was so bad that it had even made its way into the pores of the wood, making it impossible to clean. The grease was so bad that it had even made its way into the pores of the wood, making it impossible to clean. The grease was so bad that it had even made its way into the pores of the wood, making it impossible to clean.

However, who knew how to do this? The answer was in the kitchen. The grease was so bad that it had even made its way into the pores of the wood, making it impossible to clean. The grease was so bad that it had even made its way into the pores of the wood, making it impossible to clean. The grease was so bad that it had even made its way into the pores of the wood, making it impossible to clean.

PHOTOGRAPH BY KATHY SMITH

So Many Choices



One Solution

There's nothing quite so challenging as a kitchen or bath project. Where do you start? Who do you hire? Which products do you use? When will this be over? That's the editors of This Old House to provide the most comprehensive and informative magazine on kitchen and bath remodeling.

Presenting our Kitchen & Bath Guide, a special issue from

This Old House, on newsstands January 8, 2001.

This Old House
MAGAZINE

powered by MASCO





INSTANT COLOR

— Just Add Wood! —

Introducing Minwax® Water-Based Stains in
66 Custom Decorator And Wood-Tone Colors

Now you can bring out wood's natural beauty and highlight its grain

with Minwax's exciting new color stains. Dramatic, custom

decorator looks are easy to achieve, and since these

stains are water-based, they're fast-drying and even faster

to clean up. Wood never had colors this easy or this beautiful.



© 1997 Minwax Company, All rights reserved. ® Minwax is a registered trademark. 070000000000

LETTER FROM THIS OLD HOUSE



The Mothers of Invention

O

ne might think that we at *This Old House* have our heads firmly planted in the past. After all, our mission is to preserve age-old buildings and celebrate the time-honored craftsmanship of the human hand. But there is a present too in what we do. We try to look to the future in order to preserve that past, by incorporating 20th- and 21st-century building technologies into the renovation of 18th- and 19th-century projects.

In the end, our role a half a century will be back in the coming century ("Thinking Ahead," p. 64). It's a subject of personal interest to me, because I've always been intrigued by what it is that drives the adoption of new technologies, especially in a field as conservative as building and renovation. A technological advance can radically change the marketplace and transform the way we live only when it addresses a real and significant need, simply and inexpensively. That is, it has to be straightforward and worth the money. When fax machines cost \$1,800, only businesses had them; but once the price dropped to \$200, many people bought them and home offices proliferated. You'll notice that the house of the future we describe

BY STEVE THOMAS

This Old House host Steve Thomas looks on as we put the new technologies that will have lasting value.

doesn't include every novelty manufacturers produce that would be studied and used by now—such as computers that control the entire house. Many folks don't think that using the computer in the hot tub via the telephone offers an advantage over turning the knob by hand.

Of course, sometimes the impetus for new products comes not from the maker's desire for efficiency and ease but from legislation, as when the technology develops in the standard demand placed. Through federal laws we've acquired low-flow toilets, but the early models were so inefficient that they had to be flushed several times. The industry was forced to come up with something better, and we're just now getting around to conserving water with better mechanicals. I expect that gray water recycling systems and renewable energy alternatives—such as photovoltaic roof tiles or hydrogen fuel cells, which combine hydrogen and oxygen to produce electricity and water—may also take hold soon.

Many of the technologies we've adopted at *This Old House* projects over the last decade—expansion lumber, moisture floor heating, spray foam insulation, and high-R-rated windows—essentially what we have lasting value, and shape the house of tomorrow. Though they might cost more initially, they save money on maintenance and energy costs in the long run, and conserve our natural resources as well. Some might say it's blasphemy to put them on an old house. But as we've seen our use of these products influence the industry, we know it's just good foresight. ■

PHOTOGRAPH BY EOLIN SMITH



FALL TV PROJECT/CHARLESTOWN

FIRST-CLASS UPGRADES

Getting back to the basics of old-house renovation at the T.O.H. show project

BY JEFFERSON KOLLE



After securing the center of a couple of rather bad cracks, Tom Silva uses spreaders and pushers to move plaster that has detached from the lath. He then smooths the repair (top left) with finishing work and drywall mud. After three coats of mud, with a day's drying time and a little sanding in between each, the finish surface is ready for joint.

From the beginning, it was clear that *This Old House*'s fall project—Dan and Heather Beliveau's Charlestown, Massachusetts, row house—was different from some of the renovations the crew had tackled in past seasons. For one thing, the Beliveaus' house was structurally sound when they bought it. For another, most of the heavy work would be confined to a handful of areas. "We had a very workable house," says Tom Silva, T.O.H. general contractor. "Lots of great details. Good floor plan. Quite a few rooms only need a little sprucing up."

That said, the cracked old plaster looked in a, the windows were rattling in their frames, and the upstairs kitchen was cramped by an intruding stairway and bathroom. These are just the sorts of projects—from cursory repairs to total gut jobs—that at some point confront almost every owner of an old house. Given the amount of effort and money that will go into converting this building into two apartments, it made sense to Dan and Tom to fix what they can—particularly the plaster—and replace the items, such as the windows, that were so drabby they were hemorrhaging money. They made their choices on the basis of what is easiest and most cost-efficient in the long run, yet also most respectful of this 19th-century beauty.



In the second-floor living room of the Charlestown project, Tom Silva is going ready to make a long, diagonal plaster crack disappear. He presses the wall surface around the crack with his fingers, making it more slightly. "The plaster has come away from the lath," he says. "You fix a little crack and mud."

Before the days of drywall and joint compound, thin strips of wood lath held up the multiple coats of the wet lime and sand plaster. If a screw loosened, a setting fastener, or loose rebar broke the bond between wood and plaster, it was sag, crack, or fell off in big chunks. The classic, most expensive and time-consuming way to remedy the problem involves ripping off the old, crumbling plaster and starting over with new plaster, which is labor-intensive work. But if the plaster is just cracked and not too crumbling, Tom repairs it in the lath.

After smoothing the crack close to the lath fragments, Tom leaves screws, hand saws, and each plaster mudders, along each side of the fissure. "Make sure they line into the lath," he says. "Forget that not-thinned wall can't weigh through the repair later on." Once the plaster is secure, Tom smooths on a thin coat of joint compound, then presses an 18-inch

Check out
www.thisoldhouse.org
for more on plaster repairs and window
replacement in the Charlestown project
and viewing story's 360-degree virtual
tour of the featured project.

PHOTOGRAPHS BY KOLIN SMITH AND DAVID CANNAGE

PHOTO: T.O.H. AND JEFFERSON KOLLE

On a crisp fall morning, Tom Silva and his brother Dick have started the long task of replacing all the windows on the Charlestown project house. Tom has just done half of one—the second-floor front porch—when he looks out the window. Then, standing on a scaffold, he looks out the old window's cut-out. He looks up, he looks at the task ahead, on top of the old window frame. He looks back down at the task ahead. "It's a lot of work," he says, looking at the heavy cylinder inside. "Makes them dig deeper into the sand."

No task weighs will be needed for this phase of the project. The

ing to be put into the old openings. To make them seem like they're being taken in the 1930s, Tom ordered two over two double hung sash, a standard configuration in mid-20th-century New England. And, in a post, it's using the original black woodwork. But the new windows are made of aluminum. A lot of work is involved in the process. Tom can't find through the house's brick exterior walls, so he uses the adhesive bonding power of spray-on insulating foam, a substance similar to the sealant he



new windows homeowners Dan Belver and his chosen employer can't get any more. Tom and Dick have to get the windows in place. So, they're hard. Dick measures the empty window where the window used to be, then heads off to get some 2x4 filler pieces.

Tom says when he bought the house that something would have to be done with the dusty old windows, which were shed long ago and put. Replacing them may have been a less expensive option, but none many were not original to the house anyway—they were replacements installed in the 1930s. Dan decided to spend some extra money to get new, dual-pane, low-emissivity units incorporating the latest in energy-efficient technology. Now the new wood windows—referred to as weatherproof painted aluminum and double pane filled with argon gas—are stacked everywhere around the house, wrapped in cardboard and tethered with plastic straps, wait-

the time doesn't line up with the porch," Dick says. Returning inside, Tom and Dick finish temporary plywood steps across the window to hold it in place while the foam hardens. Jack uses one of those foam tools the spaces between the window frame



Before taking out the old windows, Dick Silva measures the area with a flat pry bar (above, left). He and Tom try to use as much of the window molding as possible in the new window (above, right). With the new window in place, Tom and Dick use the double-pane, low-emissivity windows as a replacement for the 1930s windows. Once they're placed in the opening with additional 2x4s and sealed from the outside with insulating foam to fill the hole in the exterior frame, Dick steps out onto the scaffolding around the house to help Tom fill the frame, some seal, into place (above, right).



After the foam has cured in the opening long enough for the frame to set, Tom installs the new window sash. Once he replaces the trim, the window will be good to go.

and the wall framing. "I absolutely, positively make sure to use minimal expansion foam," Tom says. "If you spray triple expansion foam around a window, it will push the frame against the wall so tightly that you'll never get the window to open again."

On the outside of the house, Tom pumps busy crawling into the space behind the window casing to seal out water and wind. Where the gap is more than 1/2 inch across, Tom wedges in a single bead of caulk, he shoves in pieces of broken vinyl—flexible lengths of foam

rubbing—and then caulk over them. Once the foam has set, he steps back into place and slides the window closed. All told, it takes about two hours to put in the first new window.

Several days later, after replacing the salvaged molding and painting in the other 30-plus windows, Tom and Dick stand on the street, looking up at the clean glass that fills the back facade. From this angle, the house looks like someone with some glazing—master and sharp. "Nothing like new windows to draw the place up," Tom says. ■

PHOTO: JAMES H. HARRIS

PHOTO: JAMES H. HARRIS

THE HOUSE OF THE FUTURE,
SAY THE EXPERTS FROM THIS OLD HOUSE,
WILL BE EASY TO BUILD, EASY TO MAINTAIN,
AND EASY ON THE ENVIRONMENT

THINKING AHEAD

Each time *This Old House* tackles a renovation project, it stands at a crossroads and carefully looks both ways: To the past, and to the future. Understanding the past helps uncover the skills and secrets of the original builders. Trying to fashion the future helps ensure that project houses have the up-to-date technology demanded in the years to come.

Given the show's success in looking what's new, we asked the experts at *This Old House*—host Steve Thomas, master carpenter Norm Abram, contractor Tom Silva, heating and plumbing consultant Richard Trethewey, and landscape coordinator Roger Cook—to look ahead and describe what homes and home building will be like when the new century approaches middle age.

In truth, the trends that they say are shaping our future—looming shortages of lumber, labor, and land, as well as growing public concerns over clean water and air—are not entirely rosy. But they are all optimistic that these challenges can be overcome, thanks to a combination of ingenuity and our innate human tendency to create comfortable shelter.

DESIGN AND MATERIALS No one at T.O.H. is forecasting space-age jet-set pods peppering the American landscape anytime soon. The houses of the future, they say, will fit in with those already in place, embracing designs that have been popular for more than a century. "Tradition will prevail for a long time," says Norm. "You're not going to see doors or roofs that's already built up and replace it whole sale with all new designs," says Steve. "People are comfortable with what they know. And when they know of the traditional housing styles: Colonial, Queen Anne, and Craftsman, to name a few." What ever their style, these houses will be bigger and use space differently than their predecessors: The National Association of Home Builders (NAHB) expects the average new dwelling to top 2,100 square feet in the next 15 years, nearly double the average size of a century ago. At the same time, lots won't be shrinking—by nearly 2,000 square feet in the last decade alone. As a result, acres and boulevards, previously regarded as fit only for storage, will become living spaces in their own right. "My clients now are building houses with three or four front facades," says Tom.

Even though the homes of the future may not look all that different from the ones we live in today, the materials used to build them certainly will be. According to Norm, good-quality solid lumber, which builders as this century began relied on for nearly 100 years, will be rare harder to come by than it is today, forcing them to use man-made substitutes. He foresees the day when most new construction is

fused with engineered lumber—wood chips and veneers glued up to make studs, rafters, and joists—and clad with an grid wood-kalation such as cellular plastic- or film-covered roofing, and siding. In the view, this is a trend in the right direction. Engineered lumber performs more predictably than solid, and comes from young trees in farmed forests, a somewhat largely free of the rot and insect damage that can plague old-growth forests. Likewise, the use of more durable materials can lower errors and only correct mistakes but also cut down on waste. "As much as I love wood, it's not the best choice for a building material," Nims says. "It just doesn't survive outside on the long run."

BUILDING METHODS "Construction in this country hasn't changed radically for the last 300 years," says Steve Thomas. "We are still building houses stick by stick." But so he and the rest of the TO M crew predict, all that has to change, due to a dearth of a good pool of skilled labor. The short-up—already acute—is going to get worse, they predict. "The enough people are going over the bridge," Tomlinson. "Finding anyone who wants to learn is a problem."

So, says such the shortfall, and keep looking over the water, the industry will move to increasingly toward a new, more stream-lined division of labor. That says, one that will considerably shorten the time it now takes to build a house. In his ideal scenario, a small team in the factory will take a computer drawing from the architect and punch it into a computer. Automated machines will then cut, lay out, and put together separate panels, using exactly the right number of nails, the right amount of glue, the right amount of insulation. "It will all be done perfectly and quickly, with a little waste," he says. These components, wood and plumbing, will be delivered ready to install. "The gaps in the field put set them

in place. "Building a house is a controlled, assembly line environment. It's not a craft," says Tomlinson. "Today, a lot of time is spent waiting for materials to be delivered, or accessories," he says. "In a factory, the product is moved and put together inside a building, where a floor is laid on, covered on, or at in the case."

MECHANICAL SYSTEMS The death of highly skilled workers will also affect the design of mechanical systems in a house. "The various appliances in the kitchen, for example, will appear very like before," he thinks that the appliances of the future will have some common goals that a housewife can pull out and replace when necessary, just like the cartridge in a printer. "Having the dishwasher move from room to room and then around for an hour before he makes he doesn't have the part will be a thing of the past."

Richard says a similar trend in the plumbing area. He says flexible piping in copper or plastic will lower and easier connections, much like today's PEX tubing, will gradually take the place of permanently fixed, and metal pipes that need a soldered connection at every turn, particularly during a remodel. "Plumbing and heating contractors will become more like electricians," says Richard. "They'll put fish tape through existing buildings." With such and better room rules, heating and cooling and even the plumbing can be configured in a series of "home run" systems. The arrangement, in which one supply line or duct departs from the furnace or boiler directly from the room, a master-in-control, fix, expand, and update this traditional branching system.

Energy costs are likely to keep heading up—the Energy Information Administration predicts that by the year 2030, it will be using more oil and natural gas than we can produce—so getting the most

efficiency out of our heating and cooling systems will be given top priority. So will efforts to reduce the amount of pollution they emit. In Germany, houses, and better-built, chimney sweeps go to every house twice a year to do an efficiency and emissions test," Richard says. "And if you don't see this, they sure off the line. Think about it." It's not solving the same thing will happen here in the near term, but says we need to be looking for oil crises. "We have 5 percent of the world's population and use 25 percent of its energy. The American outlook that 'Nobody can tell me what to do' can't last."

Then, what potential technologies, such as photovoltaic cells, could become more widespread, "but I don't think we'll have a large improvement in battery storage systems," says Tom. He and Richard are both intrigued by the potential efficiencies achieved by ground-source heat pumps, which draw heat from the ground in the winter, and send heat from the house back into the ground in the summer. The cost of installing photovoltaic and geothermal systems is now high, but Richard and Tom expect the prices to drop as the technologies improve and installation become hand on with them. "And when fuel prices go up, that changes all the rules," says Richard.

Water is another source where Richard thinks will be become more widely used in the next decade or two. "Water is life," he says. "And we are part of this country where there won't be any." One conservation tactic, he suggests, is to store in cisterns. Simple cisterns that collect rainwater for such things as washing the car and water up the lawn. Another will be the use of recycled grey water, the water that goes down the drain after we shower, clean our clothes or dishes, or brush our teeth. In the future, plumbing systems may route grey water to a holding tank, where it will be used a second time to water lawns, flush toilets, or, with proper filtering, to take more showers.

"We use over about 64 gallons of water per person each day," says Richard. "With recycling, we could easily cut that number in half."

LANDSCAPING The rising cost of water will also play an increasing role in landscaping, according to Roger Cook. "If global warming concerns, there's going to be a complete change in what we plant in certain areas." He knows that there will be cooler lawns, more drought-resistant plants—called xeriscapes—and greater attention to preparing the soil so roots can spread to find water.

Conserving that soil is another one of Roger's concerns. "It takes years and years for nature to make topsoil, and we're using it up faster than it can be created," he says. To replace that human-rich layer so vital to plants, water, he predicts that "at some point, we'll be manufacturing topsoil—100 percent man-made."

Roger considers that robotic and factory-powered machinery will become more widespread, but more of the impossible advancements in his field will come as a result of genetic engineering. "You'll be able to grow anything you want: shrubs that bloom all summer, or that only grow to a certain height, or a rose that blooms, or that only blooms in winter. Imagine lawn grasses that need watering only once a year, don't die back every year, and make their own fertilizer out of the nitrogen in the air. "We're doing in 20 years what Mendel's laws took over 100 years," Roger says. Such work will be ongoing to keep a step ahead of the new pests and diseases. "Last a day when all plants are going to pass through some cultures so they can try any way for a desirable characteristic or resistance to a certain disease," says Roger. The result of this genetic tinkering should be good for the environment because we'll be using less pesticide and herbicides, and raising fewer chemical-spraying machines. "If we can do all that in the next 15 or 20 years, imagine how much we could accomplish." ■

"We're headed to a system in which walls come around and glued, and you just snap them together."

—TOM BOLAN

"We will develop better products that reduce the time of work but have more of its maintenance headaches."

—BOB ADAM

"We're going to have our hands full getting good people to join the construction industry."

—RICHARD TREMPER

"In a world where you expect a package by 10 a.m. the next day, waiting two days for a service call is unacceptable."

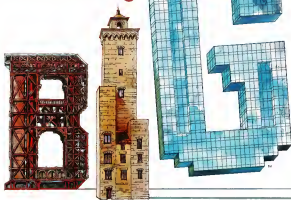
—STEVE THOMAS

"Through genetic engineering of grass seed, we'll be able to get away from all the pesticides and herbicides we now dump on our yards."

—ROGER COOK



Building



with David Macaulay

Author and illustrator of the best-selling
The Way Things Work



Grade: ★★★★★

—*Newsweek*

These terrific programs trumpet the scientific daring-do of the creators without ignoring their equally compelling quixotic foolhardiness.

—*The New York Times*

Breathtaking television as fit for curious children as for adults interested in the world of mammoth man-made creations.

—*The Boston Globe*

A fast-paced and engrossing series, distinguished throughout by Macaulay's enthusiasm and clarity.

—*The Cleveland Plain Dealer*

A miniseries on megastructures
now available on video!

Available wherever videos are sold.
Or call 1.800.949.8670 x111

We sure to
ask about our
Building: Big
Curriculum Kit
for educators, and
the companion
book.

How do they do it?



Bridges



Domes



Skyscrapers



Dams



Tunnels

BUILDING: BIG is a production of the WGBH Science Film and Production Group, Inc. © 1999 WGBH Educational Foundation. All rights reserved. Illustrations © 1999 David Macaulay. Major funding is provided by the National Science Foundation. Additional funding comes from the National Endowment for the Humanities. The Arthur Vining Davis Foundation, the Corporation for Public Broadcasting, and public television sources. Material copyright is provided by the American Society of Civil Engineers or its licensors. For more information on *Building: Big*, visit www.buildingbig.org.



our blue HEAVEN

BY HANRY GIBBS

It was well past dark on a Friday night in June, and there were eight of us, family and friends, gathered on the porch, waiting for my mother to arrive at the vacation home she and my father had owned for 40 years. Her child had been lucky to occupy it in its current state. When they left the summer before, it was a tiny Victorian-style cottage that could sleep four people, provided no-one needed privacy. That little house was still there—but now it had a big new one wrapped around it.

As it happened, it was also my father's 71st birthday. Since arriving at the house in Chatsquis, a western New York, suburb in the month, he had watched the finishing touches being put on and acted as our patriarchal overseer, but he wasn't going to actually spend a night down until my mother arrived as well. The neighbors had stopped by to celebrate the ongoing big moment, including guests, they had used our bedrooms in their basements and were, encouraged our mothers, and sent us pictures of the construction as it progressed through the winter.

My husband Walt and I had been working alongside about a dozen painters,

carpenters, plumbers, and electricians that whole week, trying to get the place ready. Just before noon, the workers had jacked up a year's worth of tools and paraphernalia, because Chatsquis is a summer retreat and the season was about to begin, all work on private houses had to be finished by 12 P.M. sharp. We still had an unthinkable number of details to attend to, some tasks to hang, and signs to post, but tonight was the night when Mom would see it for the first time, and none of us would know if all the hard work had been worth it. "I'm done," said Walt, putting down his tools, and while we both knew we'd be working on this house for years to come, it was time to put away the drill, take a shower, and relax for just one evening.

It was about 5 p.m. when my mother's car pulled up. She is a life-long summer resident of Chatsquis, a psychiatrist and teacher, a great teller. But she was really at a loss for words as she mounted the steps to the porch. She looked down, at the mahogany floor, looking up, at the beautiful knottywood ceiling. She couldn't take it all in, not that night, not with an audience.

At 700 square feet, the original 1888 full-Victorian cottage (above) isn't charming but compact. (clockwise from above) the remodeling and building an addition that more than doubled the living space, the Gibb's family (right), with Nancy at far right, transformed it into a gathering place for four generations to come.



PHOTOGRAPHS BY FRANK WALSH STYLED BY ADRIENNE ARDECK

So we started the birthday celebrations, adding the light of birthday candles to that of the table lamps we had put out because the cordless lighting hadn't yet arrived. My daughter had picked out a cake, and we all sang—to my father, and to their house, our house, 120 years old that summer, but here all over again.

If an old family house is built out of wood and masonry, you can't run up one without detaching the other. And when the house is home to a whole family, multiple generations with various tastes and needs and world views, a major renovation is also means the renovation of some relationships. And if the project involves an HUD cottage in a landmark community, so that even if you get past the building-code enforcement officers you will have the local building-system commission monitoring every squabble, the job can get pretty complicated.

To understand the significance of our restoration, you have to know a little about Chinatown's unique history. Founded in 1874 in a Methodist teachers' mission camp on the shore of Chinatown Lake in western New York, The Chinatown Foundation, in the community is officially called, became a Unesco center for Americans who wished to improve their cultural and spiritual lives through a mission educational program. Even today, about 130,000 people of all ages and religions converge every summer on this 750-acre parcel composed of Victorian-era cottages to attend concerts and lectures, to listen to those a part of spirit's mission or to improve their backhand, or just to sit on their porch and read and drink and watch the pageant roll by.

Many of the cottages were built on old tree platforms, and almost to this day these rooms made out of wood, with a porch or two or five or six. Once was one-and-a-half stories of unadorned clapboard rising on a few corner blocks, with a single bath-room downstairs and three bedrooms upstairs, some of which had enough headroom to be considered lightly habitable in the state of New York. But since a Chinatown summer is meant to be spent outdoors, and the houses were mostly in dormitories, it is easy to let them just live as seasonal living units. And so they have, for that reason, porch, replace the ridge. My parents, my brother Christopher, and I spent every summer in the cottage when I was growing up. It felt right just as it was. But as we finally married, Christopher and I married, and I had two little girls, we saw the house, deprived of its porch condition, and wanted



Mr. Huber puts the block up at Chinatown. The work is done to make the cottage up and built. (Photo courtesy of the Chinatown Foundation.)

talking about shoring it.

Once you actually contemplate a project with a right house, you can get all kinds of wild ideas, some born of necessity, others of fantasy, about what it could become. And, as we eventually learned from a series of architects and engineers and engineers and more friends, the things you want to change are more complex with the things you do not want to change.

The first one our designer, a delightful Chinatown woman named Harold A. Bull, and his partner, Roger Horowitz, sat at the top living room looking at the beams and joists and supports, the walls shared from their house. I remember this shoring at the moment, probably as a beautiful shared point that supported the upstairs landing. Finally I asked them again, and they looked at each other, then at me. "Well," said Harold, "given the way that landing is supported, it's not really clear why it hasn't fallen down." That was when we realized that there might be significant support about.

Our last plan was pretty simple. If we raised the walls to normal 8-foot height in the currently 6-foot height, we could 1) floor and (well), but not the bedrooms, once you could actually stand up in, and a bathroom. But so do that would mean adding a proper foundation to support the added weight, and new walls to support the new larger roof. By building a shell 6 inches out from the original first-floor walls, we could retain much of the old house's character. Once we dug a foundation, it would probably be worth spending the extra money to have an actual basement. And if the project was going to be that big, we thought we might as well bring the whole house up to code, with new wiring and plumbing between the old walls and the new ones.

As the project evolved and expanded, we experienced several crises of conscience. In a sense, anyone who owns an old Chinatown house knows it is not, the house that runs up and down the street, the house that runs up and down the street, the house that runs up and down the street. The eye jumps from porch to porch, table to table, following the evolution from fairly simple "shells" cottages like ours to the more ornate Victorian-era mansions that line the lakefront like a shell of wedding cakes. Our friend Jeffrey Simpson, a former city and suburban architect, put it to us bluntly: "If you all need more space,"

GETTING IT OFF THE GROUND

For general contractor Dave Horowitz and his crew, renovating the Oldhouse's summer home was truly an uplifting experience. The entire structure had to be moved 6 feet below air in order for work to begin. It, and not a foundation with to withstand the weight of the full-size second story that was planned. To prepare for the highest, they first removed 6 feet of below-siding from around the house and the basement's foundation. Then, with help from a special water designed by substructure, the basement, they supported the 20-



feet steel beams beneath the outer shell, poured in the floor joists. From there it was all hydraulic, as the 10-ton jacks positioned beneath the beams lifted the house from its original wood-post foundation in 16-inch increments. Each step of the way, 6-by-6-foot timber shoring was stacked around the jacks to support the house as it went up (and).

As with any job, the early moments were the most critical. Since houses tend to stick in spots. Fortunately, the shoring proved so much complete, in part because it was

so tight, but also because the original rafters had long since disintegrated. A second secret followed that was 10% off, and the structure contained the full height within a single day.

It remained possible to the shoring for the few weeks it took to lay a new foundation, which was dug deep enough to accommodate a full basement (and) before lowering the structure. The foundation inspected the stability of the house (and) to make sure the old house would sit evenly when the hydraulic jacks lowered it back into its new concrete footing.

—DAVE BUCKLE



he said, acknowledging that 700 square feet might be a little cramped for eight people. "Buy a bigger house. Don't alter the essential character of this cottage."

We took this admonition seriously. Like many Chautauqueans, we had grieved at the loss of glorious old cottages on the grounds, sometimes to live or to buy, sometimes to an indifference to history. But the idea of simply finding a bigger house was hard to imagine. First, this was home. My husband and I were married in the chapel behind the house. For all of us, the memories were too dense,

the location too perfect to give up, even if we could have afforded a larger house elsewhere. Initially, we knew that anyone who bought our cottage would have to do a big renovation just to make it safe and habitable. And we knew that no one was likely to be more careful than we would be about preserving what we could in the process of improving and enlarging it.

My husband Wirt, the artist in the group, is the one who helped us make peace with the notion of altering the old cottage. Chautauque houses are glorious and historic, he argued, but they are also

unsafe, living things, walls around and look closely and you can see which rooms were original and what was added in the 1930s, the '50s, the '80s. Very few houses remained unchanged for 125 years. In that sense we were doing what came naturally to earlier generations of Chautauqueans, building upon the past, with an eye toward the future.

But this talk led us with a whole mass of questions to make. All the members of our family had separate opinions, personal taste, economics, and age did matter, though in the end, the answer was the house itself.

For better fortune than if any of us should have prevailed. My brother Christopher, the music history professor, was the most adamant about preserving everything possible—the structure, the wavyglass windows (which hadn't opened in 50 years), the front door. My father was most concerned about, of all things, the color, a lifelong collector of Wedgwood, he consulted the blue and white cottage the jewel of his collection. My mother cried about adding enough space to recreate the bedtime scene from *The Waltons*, with her children and grandchildren coming through the walls. "Good night,



Left: To support a new larger roof over the already second story that still preserves the cottage feel of the structure, the first floor was encapsulated in a shell built 6 inches out from the original walls. The resulting cavity contains diverse plumbing, wiring, and insulation. Bottom left: Before their build a single large path on the addition, Fredlund captured the new structure by creating a large gap with two smaller gables stretching from it. Bottom right: The new wraparound porch is captured by a view of the original exterior.



Goodnight." She all but said we could find a cedar-block holiday inn, as long as it would actually bring us together under the same roof. My son-in-law Helen worried about light and air, would the renovation mean that somehow the reliable quality of summer evenings, the only breezes that made through there, might be lost? Would a new side porch make the living room too dark? And Wirt, the safety fiend, focused on function and efficiency. Could you get out in a fire? Were we using the limited space in the most creative way?

Wirt built a scale model of the proposed new design out of boxes and toothpicks, with a removable roof so we could see the layout of walls and rooms. Helen's sister Yvonne, an architect in the Czech Republic who had studied new Wirt's real estate by phone. She, too, approached what was unique about Chautauque houses, and understood the need to marry form and function in a quiet way. But we were extraordinarily patient with our many ideas and revisions.

There were huge conferences and small ones, lots of phone calls in between, and a summit meeting up in the garage in May 1993. There we worked with the hand architect and economist stance: whether to recreate the structure of the stairs for the width of space

To expand the size of the living room, the archway was moved 1 foot back and rebuilt. The same space is now furnished with reproduction antiques and pale wicker chairs.

it would possibly whether to replace the old wavy glass windows with new ash filled with more costly "contour glass," whether to hold the kitchen cabinets or buy them, whether painting in a new, white back door would enable us to keep the old, narrow front door.

As we struggled to make decisions and achieve consensus as a group, we didn't bring in three different local contractors 500 miles from the nearest town, Dave Trudlund is the 100th success. A longtime Chautauque-area builder, Dave was praised by absolutely everyone we talked to as a man well-suited to handle a technically—and emotionally—complicated project like this. Used to coping with where homeowners, keeping the peace, and easing fears, he gently steered us away from our most stupid ideas and in other times reminded us that if something this big was worth doing, it was worth doing right. Even as we were working our way through the approvals process, Dave was hiring up subcontractors and suppliers and paying to make sure there would be no unexpected delays, we all wanted to get the house ready for the next summer's season.

The construction began on September 13, 1995—the demolition, the digging, the intense process of tearing down part of an old house





rice. The kitchen cabinets were built on-site using recycled material whenever possible. For example, glass panes from an old porch entrance window were reused as the doors of one of the show cabinets. A window from the living room by a pair of glass panels picked alone, the reading light failed kitchen is a mix of old-world and new.



at Fiedland and his team, their enthusiasm and good humor (to build the porch, for instance, they had to shave huge wooden beams to the basement). They worked in snowstorms and they worked in bitter cold, warming themselves in front of improvised heaters. Our painter, Stephen LaTone, painted and primed the exterior cedar in his sleep, so that when he awoke was greeted, the big gray box covered in snow was transformed into a blue and white structure (not before he began to assemble a house). By spring, Wynn was able to spend a marathon weekend installing appliances and helping paint. Dave found ways to use some of the old woodwork to build glass cabinet doors in the kitchen, the original headboard on long again turned into a window for the second-floor landing.

As summer approached, of course, every thing got a little more frantic. The porch posts weren't steady, the weather was uncooperative for the painters, finding unique porcelain door knobs became an obsession. At some point it became clear to me that our team was building a nice house that we had never dreamed of, so meticulous was their work and so high their standards. On the last full day of construction, we brought a cake down to the basement workroom and ate under the watchful gaze of Donna Chernick, the builder in charge when Fiedland wasn't on the premises, told us of a sort of time capsule they had placed in a downtown wall, sealed in plastic, as some of the New York Times that covered Nixon's resignation, which they had discovered during demolition, beamed with another issue from December 31, 1999.

When the rain drove off at five minutes before noon, they left behind a house that would leave my mother speechless and the rest of us filled with gratitude.

As for those things left behind, we need to be real that, having created so much time and money and sweat in this project, it would be only stupid to not and miss a key on the final day. In practice, we all said each other. Let's take our time. Pick the right colors for the window area. Find the perfect old wicker for the porch. Use the best to camp for the first summer. Use out of boxes, well, that's a Chaucerian tradition, too. As a doing things right. And together. ■

HOMEOOWNER'S STEP-BY-STEP PROJECT SERIES HANDBOOK

INSTALLING A PREHUNG DOOR



There's no limit to the styles prehung doors come in or to the types of trim and hardware they can be finished with. "I can't like to have custom made doors delivered to the job site in three weeks," says Tom Silva.

BY CHARLES WARBELL

A door is a precision instrument. It should consistently snap into its latch, clear its jamb by a fraction of an inch, and swing effortlessly on its hinges, but only when you want it to, never by itself. The fine tolerances needed to achieve this kind of performance help explain why the ability to hang a door is considered one of the true measures of carpentry skill. "I started out using little doors that a barman, a chafin, and a sawdriver," says Tom Silva, longtime general contractor for *The Old House*. In those days, he'd have to assemble the jacks, hand-cut the mortises for each hinge leaf, and then carefully plumb each hinge until the door hung and swung as it was supposed to. "It took a good

long time and lots of patience," he says. Door manufacturers began to streamline this process in the early 1980s by factory-mounting doors to their jambs, with hinges installed and aligned, knob and latch holes bored, and door-to-jamb clearances set.

A prehung door does simplify and speed up installation just long as it is made to the right size and swings the right way, but the term "prehung" is really a misnomer. These doors and jambs must still be carefully adjusted to account for any shortcomings in the wall's framing, and properly reinforced to withstand years of use. "It requires accuracy to put one of these in," Tom says. "If it's not installed right, it won't swing well." —Shannon Brady-Made

PHOTOGRAPH BY DAVID GARMAGN

your home address
hgtv.com



Here's **Step#1** for all your home repairs

FROM AMERICA'S MOST TRUSTED NAMES IN DIY

HGTV's tips,
techniques and
step-by-step
how-to right at
your fingertips!

Homeowners: here's the simple answer to "Where do I begin?" For all those routine maintenance jobs and simple improvements around your home, let *Home & Garden Television's Complete Fix-It* walk you through the steps professionals take to handle some of the most common fix-it projects. This top-to-bottom resource is fully illustrated and covers every area of home repair to help you fix it fast, fix it easy, and fix it right. 400 pages. \$29.95.



TIME
LIFE

HGTV
HOME & GARDEN TELEVISION
hgtv.com

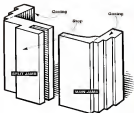
AVAILABLE WHEREVER BOOKS ARE SOLD, OR CALL **1-800-277-8844**

HOMEOWNER'S HANDBOOK

Back when carpenters assembled the jamba around a door piece by piece, they could easily customize their work, make changes, or correct problems. With a prehung door, however, most of the assembly work is done off-site, so a mistake made when you place an order can turn a perfectly good unit into worthless scrap. Here are two steps for avoiding that outcome.

Know your opening. Prehung doors are made to fit rough openings 2 to 2½ inches bigger than the corresponding dimensions of the jamba. The jamba's depth should match the thickness of the wall, including the plaster or drywall. If the opening already exists, check that the trimmers are plumb, parallel, and square to the wall and the header. If they aren't, read "Getting a Perfect Swing" (see next) before you order.

Specify the swing. Your supplier needs to know which way you want the door to swing, but beware of the question, "You want a left-hand or a right-hand door?" Those terms don't always mean the same thing. So rather than answering directly, say instead which side you want the knob to be on when opening the door toward you. Let him figure out what the door's "handedness" is.



Prehung doors swing on a jamb that is "right" into the frame. The door is attached to the jamb, which is installed first. The jamb has a groove under the stop so it can slide over the edge of the main jamb. Typically, both jambs are finished with casings already attached.

"Figuring out which way a door should swing is what confuses most people."

—TOM SILVA

Tools & Hardware



1. Hammer or nail gun: for attaching casing and jamb to rough opening
2. 4-foot level: for checking plumb or level
3. Cordless drill: for fastening hinges
4. Tape measure: for checking dimensions
5. Shims: to perfect jamb frame to both
6. Lockset: to hold door closed
7. Washers: for fine-tuning mortises
8. Phillips-head screwdriver: for removing lockset
9. Utility knife: for trimming shims
10. Reinforced-plastic tie: for plumbing jamb
11. Carpenter's pencil: for marking hinge locations
12. Shims (brake from car-chairs): for adjusting and supporting jamb

A DOOR THAT CAN'T BE REAT

You don't need a plumb tool to bring a door-swing centered show-plumb—but for the precise work of turning a jamb, Tom Silva considers plumb-bobs the more reliable tool. "You can drop it, kick it, and shove it, and it will change work," he says.

To use his bob, Tom splits it once into the jamb, drops the bob on its string to a point just above the floor, and lets the bob settle. Then he simply measures the distance between the string and the jamb. When the distance is the same all along the length of the jamb, the jamb is plumb.

Installation



STEP 1: CHECK THE ROUGH OPENING

- Place a 4-foot level on the floor at the base of the opening (left). If the floor on the hinge side is lower than the latch side, slip a pair of shims (right) under the opening in opposite directions, narrow ends overlapping under the end of the level nearest the hinge jamb. Move the shims together or pull them apart until the level's bubble is centered.
- Trim the shims to the floor with a finish nail. (If the floor on the latch-side jamb is lower, no shims are needed—the latch-jamb doesn't support the door's weight.)
- Check the walls and the trimmers (or studs) using a level or plumb bob. Also, check the trimmers' faces with a framing square to see if they are square to the wall. Finally, check that the trimmers are parallel by measuring between them at the top, bottom, and middle of the opening. If the wall is out of plumb, or the trimmers are out of plumb, out of square, or not parallel, are "fixing a Perfect Swing."



STEP 2: SHIM THE TRIMMER

- On the hinge jamb, measure the distance from the bottom of the jamb to the center of each of the door's three hinges. Mark the hinge locations on the hinge-side trimmer by measuring up from the floor or from the top of the shims on the floor.
- Trim the plumb bob to the top of the hinge-side trimmer, and use a tape measure or ruler to measure the gap between the trimmer and the trimmer at each hinge location. When the gap is the smallest, place an overlapping pair of shims (see STEP 1).
- Adjust the shims until they are about 1/8-inch thick, and lock them in place with a 4d finish nail. Measure the gap between the surface of the shims and the plumb bob using (right).
- Place overlapping pairs of shims at the other two hinge locations. Adjust each pair's thickness until the gap between shims and shims equals the gap at the first pair. Nail each pair in the interior stud out of the wall with a 4d finish nail so they don't protrude past the drywall.



STEP 3: ANCHOR THE JAMB

- Slip a pair of shims between main jamb, on the latch side and the trimmer, near the top of the door opening. When they are just touching the back of the jamb (without putting any pressure on it), nail them to the trimmer with 4d finish nails (left). Nail additional pairs of shims a few inches above the base of the jamb, as well as just above and below the strike plate. (Without these shims, the jamb could bow.)
- On the hinge jamb, remove the outer screw from the top hinge and replace it with one long enough to penetrate the trimmer (right). This prevents the door from sagging and bending.



TIP: If the long screws don't match the ones that came with the hinges, install them behind the hinge leaf.



STEP 3: FIT DOOR INTO OPENING

- Lift the door into the rough opening and push the hinge jamb tight against the shims tucked to the trimmers (sides).
- Tack an 8d finish nail through the face of the hinge-side casing 3 inches below the miter into the trimmer. Hold it level against the face of the casing and adjust the jamb in and out until plumb.
- If the wall is plumb and the casing rests flush against it, backfill finish nails through it at the other two hinge locations.
- If the wall is out of plumb and the casing does not rest against it, shim behind the casing at the hinge locations to make the door plumb. Nail through the casing and shims and into the trimmer. Fill any gaps between the casing and the wall with king, tapered wood shims.

TIP: If you partially open a door, it should stay in whatever position you leave it. If you let it go and it moves in any direction, it's out of plumb.

STEP 4: ATTACH THE SPLIT JAMB

- Starting at the bottom, gently push the edge of the split jamb back into the groove in the edge of the main jamb (see pic). Tap the jamb together using both hands. Nail the casing to the wall on both sides of each miter and about every 18 inches all along the casing.

- To hold the two jambs together, drive 8d finish nails through the stop and into the trimmers, one nail at each hinge location, one each through the shims near the top and the bottom of the jamb jamb, and one each just above and below the miter. Do NOT nail into the head jamb.



STEP 5: ADJUST THE REVEAL

- Check the horizontal gap, or "reveal," between the top of the door and the head jamb. It should be uniform from left to right and 1/4- to 3/8-inch wide (about the thickness of a nickel). If necessary, adjust the reveal by pushing up the head casing. Set the reveal by driving a 1d nail through the face of the latch-side casing and into the trimmer, over the top of the door.
- Check the vertical reveal between door and jamb on the latch side. It should be about the thickness of a nickel and uniform from top to bottom. To adjust it, grab the casing and move the jamb by hand.
- Open and close the door to check that its leading edge, the one that rests against the stop, clears the jamb by a consistent 1/4-inch period.
- Set the reveal by driving 8d finish nails every 18 inches through the latch-side casing and into the trimmer. Make sure the reveal remains consistent as you go.

STEP 6: MOUNT THE LATCH HARDWARE

- Fasten the strike plate to the wall with the finish nails using the screws provided. If the plate is larger than the mortise (it often is), put the plate on the jamb, outline it with a pencil, and chisel to the outline.
- Glue the latch bolt into its bore and fasten its plate into the mortise on the door's edge. Glue the screws provided. If the mortise is too tight, adjust its size in the same way as you did the strike plate.
- Fit the lockset to both plates of the latch bolt, then insert and tighten the connecting screws that hold the knobs together.
- Close the door and let the latch slide into its strike. If the door rattles, bend the crimp on the strike plate slightly toward the stop. If the latch doesn't catch, bend the spring away from the stop.
- Tighten all the screws. The door is hung.



Getting a Perfect Swing

Just as it's easier to build a house on a level foundation, it's simpler to hang a door in an opening that's level, plumb, and square. While there are rare qualities in most old houses (and an unfortunate number of new ones), the fact that an opening is out of order doesn't mean the door has to be. The trick is to adjust either the opening itself or your door-hanging technique.

OUT-OF-PLUMB WALLS When a wall is more than 3/8-inch out of plumb between the top of the opening to the floor, the door should be plumbed independently of the opening, door plumb the hinge and latch jambs with a level or a bob and hold them in place with shims. There will be a gap between the casing and the wall, so cut a piece of wood to fill it. A split jamb can fit over a lock stud built up to 3/8-inch out of plumb. More than that, and you may need to modify the jamb.

OUT-OF-PLUMB OR NON-PARALLEL TRIMMERS

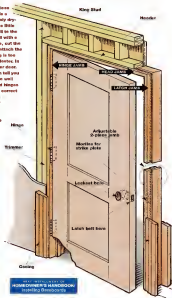
Shims can make up for out-of-plumb trimmers, unless they go so bad that the door doesn't fit. If the fit is a bit too tight across the bottom (and the wall is nearly dry-walled), you may be able to gain 3/8-inch or so with a little pounding. Release the screws that hold the drywall to the trimmers, then ease the trimmer ends into the wall with a shinglebar. Install them back to the sole plate, cut the plate back flush using a reciprocating saw, and reattach the drywall screws. A sledge won't work if the opening is too tight at the top, or if the wall is covered with old plaster. In those cases, release the opening or order a smaller door.

OUT-OF-SQUARE TRIMMERS A framing square can tell you whether the faces of the trimmers are square to the wall surfaces. If they're not, you might end up with uneven hinges or uneven gaps between the door and the jamb. To correct this, cut a blind shim to the standard apparent joint. Slide the third shim back and forth under the other two to change their angle with respect to the trimmers. Note: If you have to do this on the hinge side, double-check that all three sets of shims are plumb before installing the door.

PLANNING AHEAD

After the Door Arrives...

- Measure the height of the head and side jambs. The corresponding clearances in a plumb and square rough opening should be 1/2 to 3/8 inches longer (least case, a door could be installed with as little as 1/4-inch clearance, side to side). Also check that the jamb depth equals the wall's thickness.
- Check that the door will swing in the right direction after it's installed.
- The clearance between the bottom of the door and the finish floor should be 1/2 inch or less. This clearance is set by trimming the ends of the hinge and latch jambs. Just be sure to allow for a threshold or thick carpeting before retrimming these ends.
- Test-fit the lockset in the holes bored in the door. Holes that are too small can be reworked. Holes that are too big will have to be plugged, sanded, and then bored again. If possible, turn this task back to the carpenter who did the work.



REAL-ESTATE PHOTO BY
HOMESOWNERS HANDBOOK
Illustration: Dan Gault



look at them now

This *Old House* magazine revisits five of the TV show's viewers' favorite projects from the last 22 years—and gets a glimpse of how life changes houses



For more than two decades and over 600 televised episodes, *This Old House* has documented the One Great Universal Truth about the places we call home: They're never really finished. As mirrors of our evolving lives, fortunes, and aesthetics, houses grow, reorganize, re-equip, spruce up. One round of renovations often sets the stage for the next. When a marriage is made, a bachelor pad must accommodate a couple's wish for shared and private spaces. When babies are born, bedrooms are added, then playsets. When the office moves home, a functional workspace has to be carved out. And no house looks lived in until the landscaping starts to take root.

Over the years, the show has documented the passion and commitment of over 30 families as they set out to make their houses functional, comfortable, and a pleasure to come home to. But once the tape stops rolling, the story doesn't end—as the five locations here clearly demonstrate.

BY JOE GARTER

dorchester 1979



When *TO H* producer Rose Marshak first glimpsed the dilapidated Second Empire house atop Herring House Hill, he was immediately taken by its rugged exterior and endearing details. Despite the fact that the six-story stand in one of Boston's more neglected areas, Rose knew it was perfect for his show's inaugural project. "Given what was going on in the real-estate world, the house could just as easily have been razed," he says. But he recognized that TV viewers could be captivated by a renovation project that recast a historical relic and showcased the marriage of old-world craftsmanship and the latest building products. Four months and 13 episodes later, the crew, led by a young contractor named Norm Abram, succeeded in bringing the house back to a close resemblance of the 1812 original. (Rose even spotted a single olive in the surrounding area. "You could see people doing a little more painting and tidying up," he says. "We hoped that would happen.")

Soon after the Dorchester restoration was complete, exterior designers were invited to (temporarily) furnish almost every room for a charity show house. Then the house itself was put up for auction during a televised PBS fund-raiser. The eventual owner—who requested anonymity for this story—placed a winning bid of \$33,000.

Fast forward the owner's first move involved dealing with the aftermath of the charity showhouse. With the heavy work, window and door treatments at hand, the interior was pretty barren. "I contacted each of the craftsmen who worked on the house and asked them what they would've done to finish it," she recalls. Since then, she's been gradually but steadily working her way through every room.

TV CREW'S FAVORITE

- Stripped pine, exposed joists and all throughout
- Completely renovated kitchen
- Created a family room
- Added porch and built front of house walk-out with stairs
- Created master suite at second floor added upstairs bathroom
- Installed four zone boiler
- Did basic landscaping

HOMEOWNER FELLOW UP

- Re-tiled and painted interior
- Added more landscaping
- Installed laundry appliances in second floor bathroom
- Re-tiled window with silver double glazing
- Replaced old stone staircase
- Put on new gutters/downspouts
- Replaced windows in 1980
- Installed ring power lock



The initial *TO H* project (1979) had needed architectural finesse, but needed a major exterior facelift. The owner has spent the 22 years since the crew finished gradually decorating each of the rooms inside (over)

with paint and paper, carpet and curtains. "It took me two years to find that wallpaper," she says, pointing toward the floral pattern in the kitchen.

Unwilling to tackle bigger projects, she's also overseen the completion of a third floor apartment, which she occasionally rents to a retiring resident from a nearby college. Outside, she's embraced the property's basic landscaping plan, carefully cultivating the yard to

make the garden area a flower bedded area.

The owner hopes someday to replace the TV show's decidedly ex-Victorian Dutch-door cabinets and antique furniture counterparts in the kitchen. For now, she's content to enjoy all that she's made of the house on the hill.

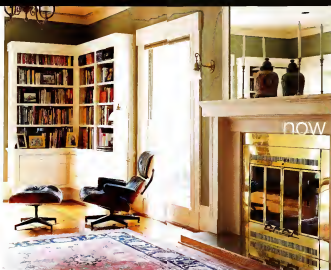
arlington 1982



As the work on Peter O'Toole's 1890s Greek Revival house evolved, the bachelor owner, who was living in Boston, wasn't always around to check on its progress. "I came out one week end, and the back of the house had been torn down." In its place, a two-story addition rose, containing a kitchen, bathroom/breaking area, and powder room on the first floor, and an entrance room/bathroom/bedroom complex on the second. Priced by the show as the "idea house for the '80s," it became a real drag, says Peter, for a single guy with disposable income.

"Arlington was our first hot tub and wine cellar," recalls Peter Morish, who also remembers that the grounds seemed as much a mess as the structure. "The lot was terrible, all bare and rocky. We did a lot of planting to create privacy," he adds. Peter ended up with a spiffy bachelor pad, complete with a renovated (and rarely profitable) rental unit.

The post-show alterations that took place at Peter's house were born of changes in both his personal and professional life. In 1984 he got married. Karen Cohen, moved up two years later they married, and plans for offspring soon mingled with ideas for renovation. Around the same time, he decided to start an at-home management consulting business—and he needed a large work area. "Our first tenant had an obnoxious roommate, so we decided it was time to nuke out the upstairs," says Peter. Much of that space became his home office. The arrival of son Nathan and daughter Leah brought the need for more bedrooms. One was made from the bachelor pad



entrance room, the other from the sizable but unfinished third floor. A place in the yard was made for a garage.

Renovating with an eye toward family gatherings and entrance comforts, Peter and Karen added a neo-classical fireplace in the living room and surrounded it with a period-style mantel that looks like it's always been there. The only giveaway to its newness is on the outside, a tall bump-out on the side of the house that opens on the firebox and that runs the chimney up past the roof.

Peter and Karen are looking ahead to still more changes. Next up are a master bath renovation ("I want to give Karen a big whirlpool," says Peter) and the removal of two stories' worth of unused chimney from an old facade, which will produce a small wall-to-wall addition living space on the first-floor porch and storage space on the second floor. And to ease his use of the basement, Peter really wants to get to a bulkhead outdoor entry—a feature deemed unnecessary in the initial go-around.

STYLING: JANE KATZ; PHOTOGRAPHY: JANE KATZ



Seen from the back in 1982 (top left), the house sported a old porch and addition that had not survived the test of time. With its railing frame and missing foundation, it had to be demolished to make way for a two-story addition that would house a new kitchen and an upstairs work/bed room. The house looked in jeopardy, so after the show wrapped, Karen Cohen and Peter O'Toole (above) added up to the living room (left). They also finished landscaping their postage stamp backyard, putting in a playset for their kids (below). SOURCE: THE POSTAGE PAD



TV CREW & FEND

- Built out a kitchen addition
- Added wine cellar, hot tub, whole-house sound system
- Put in new wiring and plumbing throughout
- Finished or replaced old/bathrooms
- Replaced windows with new double-glazed units
- Replaced moldy gut

HOMEOVER: FOLLOW-UP

- Put in home office
- Finished third floor with one of three bedrooms and one for guest

- Completed backyard landscaping with kids play area
- Added new electrical, heater and radiant boiler when in living room
- Divided and repaired trim work and other no-fuss
- Installed new heating system with radiant floor on in in living room and front porch
- Replaced old air vents with new wood-installed ceiling

belmont1993



"It was just plain ugly," recalls T.O.H. producer Bruce Irving of the 1987 Shingle Style house that Dore and Lauren Gallucci bought back in 1991, "but you could see the beauty underneath." The Galluccis had previously renovated a classic Cambridge triple-decker, and even though the Belmont house posed a much bigger challenge, they were confident about taking it on. Secluded in dull gray asbestos cladding, dotted with weatherworn maple trees, and capped with two layers of aging asphalt roofing, here was the dog of the block, ripe for renovation.

Eager to start, but determined to save money, the Galluccis put in many hours of demolition and other grunt work, and they also researched the Shingle Style to ensure that the materials and colors used would be historically correct. "We fused with the design for a long time," says Dore.

Judging by the results, their efforts paid off. Over the course of six months, Tim Silva and his crew completely overhauled the exterior and kitchen, creating more than the lump of coal into a jewel. "It was awful, but things happened fast," says Dore. "With us the show, we'd still be at it."

After taking the initial tour T.O.H. producer, Dore, even the interior, amazed a crowd of light-minded viewers, and has a few prizes going. "You can see the passion that's going to be required," he says on a tour of the outside, pointing to spots where rain and weather have worn over the also rotting the windows. Not quite satisfied with the way the double-glazed units are working, he's ordered the windows and pulleys to one unit with thinking about doing them off. One door, doors to go.



Inside, Dore is answering Lauren's call for a sewing and project room with a makeover on the second floor. After replacing the cracked walls, it'll be a bright little workshop. For her part, Lauren has taken on the park and garden, with plant rooms. "It was a real fun challenge," says Dore of the post-project condition. Lauren, a longtime gardening enthusiast, has transformed their compact lot into a lush landscape bursting with flowers, shrubs, and vegetables.

Looking against the garage in an enormous triangle of huge maple, evidence of yet another project in the making. "I've a lot of a park car," says Dore. On a top he'd carried the dirt away from a nearby demolition job. He's got the design that would look great with a stone top—something.

THE GREEN & RED

- Replaced asbestos siding with cedar shake underlayment and shingles
- Replaced asphalt roof with cedar shingles
- Distressed light brick doors, white with black glazing
- Red brick porch and garden building
- Rustic brick landing and rear patio
- Stained and varnished interior

- Refinished interior with paint and varnished woodwork
- HOMEOWNER FOLLOW-UP
- Landscaped entire lot
- Developed a way of making hanging window screens so pine that disappear into the house
- Replaced oak deck with brick in second floor. Built a multipurpose garden deck
- Renovated with weights
- Growing up with the house

In early 1998, most of the Gallucci once-grand Shingle Style was topped in asbestos shingles from 1970. Fortunately, however, the original exterior was mostly gone when the months during the house was checked on cedar roof and siding shingles and backed like the old, 1987 mfg. (111). After the TV show moved on, private investors Dore and Lauren Gallucci (2011) kept improving the place with a number of projects, including a total renovation of their yard, putting in cottage-style border plantings that look as home with the cottage of the house (2007).



salem1995

then

When Russ Gurnea and his crew were looking for a project house in the history-laden suburb, they quickly found the perfect specimen in three-story 1734 Federal-style town row of neighborhood—used problems. Kevin and Deborah Gurnea, who lived nearby, also got interested in the place. With two kids, 4-year-old Brandon and 3-year-old Timothy, and more planned, they were drawn to its 6,390 square feet as well as its architecture. Undersold by the amount of work they'd be buying into, the Gurneas closed on the house and teamed up with TO H producer Bruce Irving. "We always want to do as much as we can on a house, but the owners usually have a dollar figure beyond which they truly can't go." At the Salem house, other than remodeling, they left the third floor as it was.

Yet much was done from the basement to the second floor to make the house livable in the 21st century, including extensive insulation and wall repair, and putting in a new kitchen and bath. In the middle of the construction, there was also some controversy. A design for a dormer through the roof in the side of the house was first approved but then denied by the Salem Historic Commission. It was an emotional blow to the Gurneas, but the garage-on-paper quickly became a family room.

Deborah Gurnea came to the Salem-house may party with a special guest, 3-day-old Madison Gurnea. With the crew now departed, the Gurneas sat to work right away creating a third-floor playroom at big as a living room to accommodate their growing family. Almost four years later, Patrick is now, and now they were out. "We had to get busy," says Deborah. One of rooms was perched on the third floor, the Gurneas created bedrooms for three kids and Madison.

There's a race against the clock of that happen-to-garage. Not only did the resulting family room, which will soon morph into a home theater, prove invaluable, it kept the top bedroom from becoming a parking lot. On the little kid of green, the kids play downstairs versions of several sports. And Deb Gurnea is now a mom in the same common-drama house. "It's been fun, a learning process," she says of her work there. "It's a beautiful place these days."



now

TO HIRE'S REVO

- Stripped and repainted every surface, replaced some wallpaper, painted the exterior exterior that floor window mold.
- Added energy efficiency with massive amounts of insulation, exterior siding of its house, and outside of its heating system.
- Installed two and-a-half baths with modern floor heating.
- Installed new kitchen.

- Populated top-level and repaired thousands of square feet of shingles.

HOMESWNER FOLLOW-UP

- Made use of third floor with playroom and two bedrooms.
- Turned old porch back into a full playground.
- Grippable in some of old wallpaper, and replaced.
- Replaced rotting-damaged playhouse.

None and three years after the Gurneas' house (1734) was sold, the house was put on a huge playroom (parent) for Madison, Patrick, and their siblings and created a play area on the backyard (1st and 2nd).



savannah1996

then

After having that the show was covering Savannah for a project house, Mills and Marianne Fleming, now owners of an 1814 historic mansion on Monterey Square, lobbied hard for them to be chosen. "Mills took me out to lunch," says TO H producer Bruce Irving, who selects the houses for the show. "Like most people, he thought he had the best house, and in this case he really did." The Flemings also agreed with the TO H philosophy of preserving historic preservation with modern-day livability, and when they got the nod, they developed a plan that did just that.

Much of the remodeling work focused on the back of the three-level structure, where tenant-erected porches were dismantled to make way for a three-story address. The first floor gained a mudroom, the second, a larger eat-in kitchen plus a powder room, and the third, a master bedroom with a dressing/den area and a walk-in closet.

These improvements made the house function better (a new half bath on the second floor now served just then isn't necessary, but it was the historically accurate restoration of plans, moldings, pine-plank flooring, and other elements that brought back the house's true elegance. "This was one of our favorites, where a house's personality was fully restored," says Bruce. "We were able to make a beautiful place even more beautiful."

"We really couldn't have asked for anything more," says Mills, thrilled with the restoration. The Flemings want to continue to make the house's exterior as authentic as it can be, down to every last detail. After the show left, they brought in local architect Patrick Lott to design a historically correct wall over the family room adjoining the kitchen, one with an arched opening, painted a warm ochre and caliche on two walls, all treated in period-style moldings. "It's so important to us to stick with the house's style," says Mills, "and it doesn't take much

The house's historic facade (left) was in pretty good shape. But the back and the interior needed a lot of work. The Flemings (left), now owners, built on wall storage around with an arch (right).



now

TO HIRE'S REVO

- Removed inappropriate upper-story addition that changed character and created a smaller scale.
- Added two main baths on the second floor, plus two living areas in laundry room.
- Installed a new heating and central air system.
- Lighter color palette.

- Removed inappropriate upper-story addition that changed character and created a smaller scale.
- Added two main baths on the second floor, plus two living areas in laundry room.
- Installed a new heating and central air system.
- Lighter color palette.



more to do it right." The Flemings also had the formal areas of the house (and what was their own 18th-century English Regency or French Rococo antiques, and when they find something they love within their budget, they buy it. "The point is to maintain a unity of the design, doing, and furniture up," says Mills. "They're definitely live up to that pledge, however long it takes."



To get a straight line along the apex of a privacy hedge without the hassle of a ladder, Eric Kampen, an arborist based in Cold Spring, N.Y., stands on a step-ladder's rungs. "They're uncomfortable at first," he says, "but they're not for season's ground. Just put back your arms and work, and you do a great job." Pruning just beyond a branch allows more light growth.

PHOTOGRAPH BY LARRY AND KELLY AND GORD SARAMONSKI



the kindest cuts

Pruning shrubs and trees shapes them up and bolsters their health

Last year Marion and Billy Nixon decided to move from their Decatur, Georgia, home to Needham, Massachusetts, to be near their grandchildren. An illness kept Billy from traveling, so the couple asked their daughter Michelle Recicar to conduct a house hunt on their behalf. After a three-month search, Michelle sent a snapshot of a house she liked: a 1956 ranch. Her parents approved of the choice.

BY JEFF ORR



(s'wün) A Nword and (m)laxm) human response to fruit and blossoms
 home of the Southern garden. Behavior most frequently noted in
 visitors to the homes of Southern Living subscribers across the land.

Experience horticultural highs. Expand your vocabulary.

SUBSCRIBE TODAY. JUST CALL TOLL-FREE 1-800-538-2313



C L A M P S



In the 1930s, one Ralph Blue
 of Pittsburgh, Rhode Island,
 perfected the manufacture of
 the first hand-screw clamp,
 which woodworkers hold in
 high regard for their adjust-
 ability and gentle, non-
 marring touch. The solid sub-
 ject of this hand screw has
 a maximum spread of 10
 inches, a throat depth of
 nearly 2 inches, and can
 grip materials offset by as
 much as 70 degrees.

"You simply can't have enough clamps," declares The Old House contractor Tom Selva. "I've
 always got a ton of them in my van," he says. "But I always wish I had more." The craving for
 clamps is a common affliction among carpenters and woodworkers. That's because clamps are
 a time-saving assistant, exerting a steady, relentless grip in countless job-site and workshop
 planks; extricating from the brassy work of persuading a girder into position to the delicate job of
 gluing together a picture frame. Have a warped piece of decking? Anchor one end of a 4-foot-long
 pipe clamp to a post, then crank the rogue plank into position. Want to trim the bottom of a door?
 Squarer some spring clamps on a straightedge to guide your saw. Need to hold a sheet of
 plywood up a ladder? Tighten an ordinary C-clamp onto it to serve as an auxiliary handle. As Tom
 says, "In this line of work, there aren't many problems that a couple of clamps can't solve."

BY JOHN RINA PHOTOGRAPHS BY BRUCE WELER

Shutterstock.com or iStockphoto.com



Yes, our
hand tools come
with lifetime warranties. And advice.



And help. And expertise.

ACE
BRAND



Shutterstock.com or iStockphoto.com

This right advice can help keep small projects, well, small.



ACE





- ① Versa-Strap® adjustable strap holds a workpiece steady, try to free.
- ② Quick-release clamping with swivel shoe can grip tapered as well as flat.
- ③ Spindles on the shoe allows clamping pressure to be fine-tuned.
- ④ Mold board applies even pressure to each corner of picture frame.
- ⑤ 5-pound stainless frame spans up to 24 inches.
- ⑥ 14-foot retractable strap grips edge-glued flooring in place.
- ⑦ Two-handled frame pulls moldings together, can align both faces.
- ⑧ One clutch permits quick and secure jaw adjustment.
- ⑨ 14-pound, drop-forged frame is suited for loads up to 20,000 pounds.
- ⑩ Center spindle holds side tight to edges.
- ⑪ Try-it-either primer to both or the delicate work of ornamental casting.
- ⑫ Sawed channel frame provides extra lateral correction.
- ⑬ Integral cam tightens the work-padded angle jaws.
- ⑭ Deep-throated jaws collect only lightweight 3/4-inch steel pipe into its clamp.
- ⑮ Remains flat also serves as cutting guide and straightedge.
- ⑯ Rotating jaws and screw-adjusted spring rate clamp three adjacent faces.
- ⑰ Push-button, roller allows fast, one-handed operation for light-duty loads.
- ⑱ Pivoting, load-buff jaw pads can grasp tapered corners.
- ⑲ Cast-iron frame helps when cutting, gluing, and bolting edge joints.
- ⑳ Adjustable, locking jaws with deep-throated jaws help load-bearing tasks.
- ㉑ Lighter-hold plastic jaws open up to 3 inches wide.

CATEGORY:

● Vacuum

● Pipe/Bar

● Spring

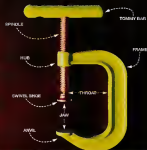
● C-Clamp

● Band/Strap

● Locking

● Edge/Angle

ANATOMY LESSON



RULES OF FORCE

Good clamping is the secret behind strong glue joints.

SQUEEZE THE JAWS: A clamp has to be set precisely at right angles to whatever you're clamping. If not, the workpieces may slide apart or the clamp's jaws may slip.

PREVENT DEFORMATION: Pushing bar clamps into a panel will bow the bar slightly toward the work, introducing a corresponding bow in the piece being glued together. To prevent this, position the clamps close and below the workpieces, or insert blocks or wedges between it and the bar to keep the panel flat.

SPREAD THE PRESSURE: Round contact points exert a concentrated force that can dent the work or drive out glue. Add extra care to use flat or clamps that have a stiff block of wood or felt between the clamp's jaws and the workpieces to provide cushioning and even out the pressure. To keep your pads from getting stuck to the workpiece, separate them with a layer of waxed paper or sample pieces of countertop material.

AVOID EXCESSIVE FORCE: When gluing steel, apply just enough pressure to squeeze out an even bead along the entire—this step. Too much pressure will force out so much glue that the joint will be weakened.

QUICK CLAMPS

Three easy ways to augment a collection



PVC pipe clamp

When joints gluing pressure will suffice, 1/2- or 3/4-inch diameter schedule 40 PVC pipe lengths on a table saw (To prevent the pipe from rotating during the cut, score it first to the pipe wall.) Then crosscut the pipe into sections with a jigsaw or hand saw, and glue them right up both sides of the joint to avoid scratching the work. No need to worry about glue getting on these clamps. Hardly anything sticks to PVC.



Spring wire or clamp

Three simple tools and lines the top and bottom of heavy gauge upholstery springs. Help to glue up major joints in picture frames and trim work. Glue on the line ends to strong joints as they can grip if he used on both sides of the joint. This points will leave small holes, but the longer and sharper the points, the less conspicuous the holes will be.



Spreader wedges

This is a good method for applying pressure on open and irregular shapes found in furniture. Keep four lengths of wood or bar clamps around the piece being glued, and insert a short block between them. Push the block to tight on the corners. When they're sufficiently tight, use the block against the work surface to keep the wedge from moving.

DIRECTORY

WHERE TO FIND IT, PAGE 108 • TV CLASSICS, PAGE 130 • PROGRAM SCHEDULE, PAGE 151



PHOTOGRAPH BY JANE YEDHARD



House Calls With Steve, p. 16 When remodeling this 40-year-old Colonial-style house in New Jersey, the crew at the family specified a top-notch kitchen—complete with professional-quality appliances, a warming drawer, and a central island with a second sink.

OUTTAKES pp. 14-16

Page 14: Not a gas, Powder Power actuated nail gun, model PD45, 17W Ramco/Red Head, Wood Dale, IL, 800-899-7930, www.rw-cm.com

HOUSE CALLS WITH STEVE pp. 16-22

Architect: Nick Smiley, AIA, Morris- town, NJ; 973-633-1161. Kitchen

designer: Joan Puccio, CEO, European Country Kitchens, Fox Hills, NJ, 908-751-1154

Page 22: (clockwise from top left) Refrigerator drawer, 700 BA from Sub-Zero, 800-323-7810, www.subzero.com; Dishwasher drawer: Fisher & Paykel, 800-863-3394, www.fisherpaykel.com; Preference warming drawer: Dacor, 800-793-6093, www.dacor.com; Warming drawer: S Series from Thermador, 800-616-9126, www.thermador.com

ASK NORM pp. 26-31

Brick mason: Lenny Bellomo, Boston, MA, 978-697-6216
Cabinet: Fortified Cabinet Association, Skokie, IL, 847-546-4300, www.fortified.com

Cabinet designer: Cedar Shake & Shingle Cabinetry, Seattle, WA, 888-422-7700, www.cedarshake.com

Radical kitchen: Florida Solar Energy Center, Cocoa, FL, 321-638-1800, www.flnet.usda

Roofing contractors: National Roofing Contractors Association, Rosemead, IL, 800-323-8145, www.nrcanet

Tile contractor: Joe Ferraro, North Reading, MA, 781-396-6337

Fluoridized enamel: Gary Brennan, Parametran Plumbing, Putney, VT, 802-387-6623, www.parametranplumbing.com
Whitewash brushes: Dorco Quality Brushes (DQB), Dorset, MI, 800-722-3637, www.transdore.com

BY DESIGN: A COZY CORNER pp. 38-39

Architect: Bob Shea, Daniel Smith & Associates Architects, Berkeley, CA, 510-526-0910
Cabinet: oakwood cabinets: Ann Wallace, Ann Wallace & Friends, Venice, CA, 310-617-3330

EQUIPMENT: CLEAN AIR ACTS pp. 40-41

Ventilator installers: Ray Erickson, Gale Force Mechanical Corporation, Dublin, MA, 781-253-5400; Bill Rock Insulation, Ventra Ventilation Inc., Larchmont, NY, 914-783-3761

Energy recovery ventilators: Don't go photo made by Camco 800-423-7743, www.camco.com. Use in illustration made by Ventra Ventilation Inc., Residential Products Group, Drummondville, Quebec, Canada, 800-367-3838, www.ventra-ventilation.com

Blow-door testing: Conservation Services Group, Westborough, MA, 800-836-9500, www.csgroup.com

LUXURIOUS WATER WORLDS pp. 42-43

Insulator: Bob Berg, House of Fibers, Greenwich, CT, 203-643-8131
Tank supplier: Mike Blomgren, Truair Acrylic Aquariums, Phoenix, AZ, 602-437-4573, www.truair.com
Our thanks go: Mike Smyth, Living Sea Aquarium, Park Ridge, IL, 847-686-7238, www.livingseaaquarium.com; Richard Gersoff, R S Gersoff Architects, Costa Mesa, CT, 203-625-9460; Don Wang, Aquaria Images, Bannockburn, IL, 815-715-0871; Dr. Alan Beck, Director of the Center for the Human/Animal Bond at Purdue University, www.comparative.medicine.purdue.edu
The American Pet Products Manufacturers Association (APPMMA), 201-332-0030, www.appmma.org

MATERIALS: FLOOR IN A FLASH pp. 44-45

Installer: Jeff Hinkley, Hinkley Hardwood Flooring, Wipole, MA, 888-665-5315, www.hinkleyboards.com
Flooring: Don Dinkel Wood Floors,

Boston, MA, 207-542-7798, www.dondinkel.com
Flooring: Galters, Inc., Johnson City, TN, www.hartmarck.com, 800-842-7816
Bee-Franc Inc., manufacturers of Mopg products, Quebec, Canada, 800-463-1640, www.bee-franc.com
Adornit Natural Floors, manufactured by Sea, Adornit, Annapolis, for sales offices in the U.S. contact: Editha Wood Flooring, Billings, CO, 970-723-0446 or visit www.sea.co

Page 45 (bottom, clockwise from right): Mango Brazilian Cherry Prefinished Hardwood Flooring manufactured by Bee-Franc; Washburn Red Oak Natural by Hinkley-Turkey; Adornit Natural Floors (dark pine) by Sea; Adornit Collection Yosemite Red Oak Natural by Hinkley-Turkey

Page 46 (clockwise from right): Pargo Select Coated Oak and Vermont Maple manufactured by Pargo, 800-337-3746, www.pargo.com
Page 45 (left): Washburn Oak Solid by Hinkley-Turkey; (3) Maple Longstrip available from Hinkley-Turkey; (4) Hinkley Rustic by Hinkley-Turkey; (5) Adornit Natural Floors (dark pine) by Sea; (6) Mango Birch Select & Rustic by Bee-Franc

So Many Choices

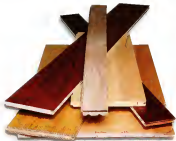


One Solution

There's nothing quite so challenging as a kitchen or bath remodel project. Where do you start? Who do you hire? Which products should you use? When will this be over? Tired of the advice of This Old House to provide the most comprehensive and authoritative magazine on kitchen and bath remodeling. Presenting you: Kitchen & Bath Basics, a special issue from This Old House, as newsstands beginning January 5, 2005.

This Old House
MAGAZINE

in partnership with MFSO



"Floor in a Flash," Hinkley, p. 44: Prefinished engineered wood flooring isn't any cheaper than solid wood, but can be installed more quickly and without the mess of sanding and finishing.

All products available through dion.com, Seattle, WA, 800-454-3341. Our thanks to National Wood Floor Association, St. Louis, MO, 800-422-4556, www.woodfloor.org.

TALKING SHOP: FLOWER PLAY pp. 60-61

Page 59: Score probes, Kinschick 24 with steel probes, model #3643696, Ames True Temper, Parkersburg, WV, 800-624-2654.

Electric shovel, Power Shovel, The Tool Company, Bloomington, MN, 800-335-0141; www.psc.com.

Ice scrapers, model #85D7190, Soldado by Salsco Corporation, Batavia, IL, 800-444-3310; www.salsco.com.

Page 51: Snow blower, Snow Commander, The Tool Company, Bloomington, MN, 800-335-0141; www.tco.com.

Engineered shovels TopConcepts All-Purpose Shovel-Pocket with V-Bar, model #43215900, Ames True Temper, Parkersburg, WV, 800-624-2654.

De-icing and de-icing sprayers, model #64, Sprayer Systems LLC, Urbana, IN, 800-972-6336; www.sprayers.com.

Liquid de-icer sprayer Frost Fighter spray kit, Reilly Industries Inc., Indianapolis, IN, 800-837-9794; www.frostfighter.com.

Sales Calcium chloride, sodium chloride, balling rock salt, Qib, Joe Lorch Products, Melrose Industries, Pomona, CA, 800-828-6156, www.qib.com.

Potassium chloride, GroundWoods Natural Products, Kyrreth Minerals Corporation, Buffalo, N.Y., Canada, 800-635-4323, www.kyrreth.com.

Magnesium chloride, FrostGuard, D&C Salt, Overland Park, KS, 877-462-7238, www.dccsalt.com.

Our thanks to: The New York Rangers organization, www.ny.rangers.com; Civil Rights, and center at University of Minnesota; Jay Scott, assistant chairman at Reilly Industries; Murray Taylor, Director of Engineering and Research, Kyrreth Industries; Association, Springfield, IL, www.qib.org.

Joel Paine and Bob Shindler, executive members, Portland Cement Association; Skokie, IL, www.portcement.org.



"Flower Play" Talking Shop, p. 59: The New York Rangers are ready for a winter storm, here they show off a few of their seasonal equipment. (Left to right) 5 stars Justin Ableson, center, ice scraper, snow blower, sprayer, shovel, de-icing salt, and liquid de-icer spray.

Joe Milazzo, senior vice president, Melrose Industries

UPKEEP: OUT, DAMAGED SPOT pp. 54-57

StoneMaster: Fred Huerter, President of the National Training Center for Stone & Masonry Trades, Longwood, FL, 800-444-7159.

Just rain answer from Out, Inc.; Port Wayne, IN 215-443-1277 www.outinc.com.

Stone-cleaning systems: H&K stone care system, San Francisco, CA, 800-424-2465, www.hankstoncare.com; StoneCenter national, www.stonecenter.com.

For all stone maintenance products, please follow the manufacturer's directions, as the product usage, test and procedures vary. For further reading: The Stone Research Guide for Stone, Tile & Concrete, NTCA, Enterprise, September 2000.

TV PROJECT: FIRST-CLASS UPGRADES pp. 60-66

Architects: John Ferrell and Linda

Nicholson, Nicholson Ferrell Architects, Charlottesville, VA, 617-243-7422. www.downtown.com.

Windows: Poca Wood Windows, www.pocawindows.com.

Hammock: Dea Beltrami, Back Bay Design Consultants, Charlottesville, VA, 617-436-9690.

Historic-plaster consultant: Roy Kinsinger, Patsburg, VT, 802-387-4623; www.preservationplacings.com.

For information on the plaster software Calcut and other materials or to inquire about classes, please visit www.preservationplacings.com.

Special thanks to Society for the Preservation of New England Antiquities 617-227-2956; www.spnea.org.

THINKING AHEAD pp. 68-69

Home building: National Association of Home Builders, Washington, DC, 800-368-3242, www.nahb.com.

Composite wood: Composite Wood Association and Composite Wood Council,

Charlottesville, MD, 801-670-0604, www.cwi.com.

Environmental factors: Environmental Protection Agency, Washington, D.C.; www.epa.gov.

Energy conservation: Energy Information Administration, Washington, D.C.; www.eia.doe.gov.

OUR BLUE HEAVEN pp. 72-80

General contractor: David Friedman, Lakewood, NY, 716-763-0905.

Designer: Harold A. Bull, Jamestown, NY, 716-664-4667.

Engineer: Roger Horowitz, Jamestown, NY, 716-693-1889.

Painter: Stephen LaTone, Painting Unlimited of Jamestown Inc., Jamestown, NY, 716-694-2389.

Heater/radiator: R.L. Hartford & Sons Building, Moving & Remodeling, Chateaugay, NY, 800-726-4831.

For more information, Charlottesville

County Visitor's Bureau, 800-342-4565, www.visitcharlottesville.com; Charlottesville Visitors, 800-836-2779, www.visitcharlottesville.com.

For further reading: Charlottesville: An American Dream, by Jeffrey Simpson, Harry M. Abrams Inc. Publishers, 1999.

THE KINDEST CUTS pp. 58-59

Landscape contractor: Roger Cook, K & R Landscaping, Burlington, MA, 781-373-6304.

Ashford Law: Kimberly, Henry L. Kingsley Tree Service, Cold Spring, NY, 845-242-3721.

POSTER: CLAMPS pp. 101-105

From page: Hand saws, #6656 from Shropshire, 800-777-1861; www.shropshire.com (8) Vacuum bags Vacuum Clamping Co., 919-221-4415 (2) Bar clamping/vibrator: #556



"Clamps," Poster, p. 101: The old ad still holds true: clamp down on your job.

QC from American Tool Companies, Inc. 800-866-5740; www.american-tool.com (1) Bar clamp: #26W from Windsor, 800-431-2832; www.windsor.com (4) Framing clamp: #63188 from Wilson, 800-543-3324; www.wilsoncorp.com (1) Aluminum bar clamp: #1C 900 from Universal Clamp Co., 803-389-3386 (6) Blocking clamp: ProFaction ProPac Floor Systems, 800-907-6722 (7) Cabinet clamp: Poxy #530 from Adjustable Clamp Company, 312-666-0640 (8) Bar clamp: Columbus #212 from Wilson (9) C-clamp: Jozanex #204 from Adjustable Clamp Co. (10) 5 way ratchet clamp: Poxy #325 from Adjustable Clamp Co. (11) Heavy bar clamp/vibrator: #53096 from American Tool Companies, Inc. (12) C-clamp: Jozanex 174 from Adjustable Clamp Co. (13) Gun clamp: 45 inch Mono-Moore from Dulqueix Clamp Works, 315-352-3102 (14) Pipe clamp: #4878 from Wilson (15) Bar clamp/pole guide: #660-3234 from Eagle America Corp., 848-372-7637 (16) Spring clamp: Poxy #361 from Adjustable Clamp Co. (17) Locking curved bar clamp: #53098 from American Tool Companies, Inc. (18) Spring clamp: Poxy #323 (19) Heavy cutting clamp: Record #M6807 from American Tool Companies, Inc. (20) Locking c-clamp: Grip-On 218 from Eagle America Enterprises, Corp., 605-754-5600, www.epa-on.com

(21) Spring clamp: #53130 from American Tool Companies, Inc. (22) Spring clamp: #53130 from American Tool Companies, Inc.

Back page: C-clamp, Hatzivert 160415 from Wilson.



"Our Blue Heaven," p. 72: This 3,338 sq ft cottage in Charlottesville, VA, had only 700 square feet of living space, a renovation more than doubled its footprint—providing room for three generations in galley.

Enjoy Soapstone Warmth



Experience the warmth and coziness of a wood-burning stove. Soapstone is a natural material that retains heat and radiates it out evenly. The heat is gentle and consistent, making it perfect for your home.

Our high efficiency stove warms the room quickly and evenly. The great heat keeps you cozy and comfortable.

FREE CATALOG AND VIDEO

Name _____
Address _____
City/State/Zip _____
Phone (____) _____
E-mail _____

Memorandum Soapstone Co., Inc.
44 Westport Rd., Dept. 8700, Westport, ME 04091
www.memorandumsoapstone.com

Call 1-888-864-8188

Simply Delicious.



Proven, national selection
Full custom flexibility
Proven quality construction.

Pin Quality.

Custom cabinetry on toppling
It's hard to resist.

Beautiful.

Top it all with Genuine
Old Fashioned Milk Paint.
Like frosting on a cake.

Milk Paint.

CROWNPOINT
CABINETRY

Partial pricing
Standardized on-site pricing

851 Clarkstown Road • Clarkstown, NH • 05541
Phone: 800-999-4294 • Fax: 603-279-1208
http://www.crownpoint.com

IF THIS HOUSE could talk, IT WOULD TELL YOU all about the UNICO SYSTEM.



Introducing A Unico Curing & Heating System World Comprehensive Your Home's Architectural Integrity.

Now you can install a high efficiency curing and heating system in your home with no need for venting. The Unico System, flexible, non-toxic, fire and smoke resistant, eliminating the need for venting. Unico can be used in most applications. With the Unico System, you'll enjoy the same performance of your best fire curing and heating all year long.

Unico is a registered trademark of Unico Systems, Inc. 1-800-527-1000 • Visit us on the web at www.unicosystem.com

The Unico System

You Can Save Up To 50% On Home Heating Cost

And never have to buy fuel, wood, oil, gas, kerosene ever again.

REPLACE OLD & INEFFICIENT HEAT

Apex II is a unique new heating system that can save you hundreds of dollars in home heating costs. It can replace or supplement your electric heat, oil or gas furnace, your kerosene heater, and woodburner.

SEASONAL DISCOUNT AVAILABLE NOW

UP TO 50% OFF

Two models to choose from:
PORTABLE 110V OR PERMANENT 220V

Model	Capacity	Price	Weight
1-110V-1100	11,000 BTU	\$1,100	110 lbs.
1-220V-2200	22,000 BTU	\$2,200	220 lbs.

Features:

- Safe, quiet, clean, no fumes
- No venting, no gas, no oil, no kerosene
- No maintenance, no repairs
- No noise, no odor
- No fire, no explosion
- No carbon monoxide
- No smoke, no ash
- No dust, no dirt
- No mess, no clean up
- No need for fuel
- No need for maintenance
- No need for repairs
- No need for noise
- No need for odor
- No need for fire
- No need for explosion
- No need for carbon monoxide
- No need for smoke
- No need for ash
- No need for dust
- No need for dirt
- No need for mess
- No need for clean up
- No need for fuel
- No need for maintenance
- No need for repairs
- No need for noise
- No need for odor
- No need for fire
- No need for explosion
- No need for carbon monoxide
- No need for smoke
- No need for ash
- No need for dust
- No need for dirt
- No need for mess
- No need for clean up

Call 1-800-864-8188

Quartersawn Clapboard Siding

Including White Pine and Hardwood Flooring

Quartersawing produces a natural grain appearance:

- Tensile and compressive strength
- Resists warping, twisting, and splitting
- Resists insect and mold damage

Also features:

- Complete Factory Finish
- Superior Protection for all types of wood siding
- All-in-one product, no finishing prior to installation
- Made in the USA
- 100% Satisfaction Guarantee

Granville Manufacturing Co.
• Established 1887 •
PO Box 15 Granville, Vermont 05745

Call, write or fax for Free Brochure
Tel: 800-967-4747 • Fax: 800-967-4747
E-Mail: woodclap@granville.com
Web Site: www.woodclap.com

DO-IT-YOURSELF Magnetic Window Insulators

100,000 Satisfied Customers Nationwide

Starline Series

Easy to Install

- Eliminates heat loss through windows
- Reduces energy costs
- Resists moisture, mold, and mildew
- No glue, no nails, no mess
- No need for venting
- No need for maintenance
- No need for repairs
- No need for noise
- No need for odor
- No need for fire
- No need for explosion
- No need for carbon monoxide
- No need for smoke
- No need for ash
- No need for dust
- No need for dirt
- No need for mess
- No need for clean up

Call 1-800-864-8188

Pexton® Radiant Heating Systems

Stadler & Vega

Climate Panels®
Delivering floor heating system solutions.

2 Silver Lake, Nevada, NV 89401 • www.stadlervega.com Tel: 702-279-9222

Swim at Home™



**Think Of It As
A Treadmill
For Swimmers!**

Seam or surface against a smooth, curved adjustable to any spread in a square pool means only 2" x 12". Enjoy the fun and convenience of the world's best exercise at home pool—hundreds of hours of swimming, water aerobics and rehabilitation.

Compost urea makes the drains of pool waterproof practical in small spaces. The Defluid Pool™ is simple to maintain, economical to run and easy to install inside or outdoors. New systems include chlorine use for 200

Free Video!
Call 800-233-8340
Ext. 4038

Visit our web site at
www.maff.org.uk/2000
or write to: Andrew Pease, Inc.
200 V. Redwood, 4000 Rd.
Dept. 1820
Dallas, TX 75217



Restore Cracked Plaster Walls & Ceilings

HOW TO USE THE MU-MAX SYSTEM



Make Walls & Ceilings Like New!
SPECIFICATION CHEMICALS, INC.
 8700 W. 11th Avenue, Suite 100
 Denver, CO 80233
 303.751.1111
 www.specchem.com

Baths From The Past Collection
 Fine Quality Victorian & Traditional Plumbing Products

[illegible]

SHUTTERS

Professional window cleaning services
 • All types of glass and mirrors
 • Residential and commercial
 • Free estimates • No job too small



JOHN J. ROBBE
 1-800-450-8821
 1000 N. 1st St., Suite 100
 Raleigh, NC 27601

JOHN J. ROBBE
 1-800-450-8821
 1000 N. 1st St., Suite 100
 Raleigh, NC 27601

Step up to a spiral stair that's right for you.



The best selection, quality, and prices!

Since 1950, The Iron Shop has enjoyed a reputation for outstanding design and fabrication of steel structures. Today, we utilize computer-aided technology throughout our production process, successfully making use-of-the-art transforming work into world quality.

Offering the largest selection, highest quality, and lowest prices in steel structures—we make sure you are the right steel to meet your needs. And our service will work with you in the U.S.

Call for the FREE color Catalog & Price List

1-800-523-7427 Ask for Ext. T01101
or visit our Web site at www.TheBookShop.com

(Mon-Fri) 9:00am-5:00pm (Sat) 10:00am-4:00pm (Sun) 11:00am-3:00pm
 (Mon-Fri) 9:00am-5:00pm (Sat) 10:00am-4:00pm (Sun) 11:00am-3:00pm

THE IRON SHOP

The Leading Manufacturer of Special Mail Kits

[illegible]

Checklist of The Old House episodes, including classic and new episodes, by season and network

Season	Episode	Network	Air Date	Notes
Season 1	1. The Old House	ABC	1971-72	
Season 2	2. The Old House	ABC	1972-73	
Season 3	3. The Old House	ABC	1973-74	
Season 4	4. The Old House	ABC	1974-75	
Season 5	5. The Old House	ABC	1975-76	
Season 6	6. The Old House	ABC	1976-77	
Season 7	7. The Old House	ABC	1977-78	
Season 8	8. The Old House	ABC	1978-79	
Season 9	9. The Old House	ABC	1979-80	
Season 10	10. The Old House	ABC	1980-81	
Season 11	11. The Old House	ABC	1981-82	
Season 12	12. The Old House	ABC	1982-83	
Season 13	13. The Old House	ABC	1983-84	
Season 14	14. The Old House	ABC	1984-85	
Season 15	15. The Old House	ABC	1985-86	
Season 16	16. The Old House	ABC	1986-87	
Season 17	17. The Old House	ABC	1987-88	
Season 18	18. The Old House	ABC	1988-89	
Season 19	19. The Old House	ABC	1989-90	
Season 20	20. The Old House	ABC	1990-91	
Season 21	21. The Old House	ABC	1991-92	
Season 22	22. The Old House	ABC	1992-93	
Season 23	23. The Old House	ABC	1993-94	
Season 24	24. The Old House	ABC	1994-95	
Season 25	25. The Old House	ABC	1995-96	
Season 26	26. The Old House	ABC	1996-97	
Season 27	27. The Old House	ABC	1997-98	
Season 28	28. The Old House	ABC	1998-99	
Season 29	29. The Old House	ABC	1999-00	
Season 30	30. The Old House	ABC	2000-01	
Season 31	31. The Old House	ABC	2001-02	
Season 32	32. The Old House	ABC	2002-03	
Season 33	33. The Old House	ABC	2003-04	
Season 34	34. The Old House	ABC	2004-05	
Season 35	35. The Old House	ABC	2005-06	
Season 36	36. The Old House	ABC	2006-07	
Season 37	37. The Old House	ABC	2007-08	
Season 38	38. The Old House	ABC	2008-09	
Season 39	39. The Old House	ABC	2009-10	
Season 40	40. The Old House	ABC	2010-11	
Season 41	41. The Old House	ABC	2011-12	
Season 42	42. The Old House	ABC	2012-13	
Season 43	43. The Old House	ABC	2013-14	
Season 44	44. The Old House	ABC	2014-15	
Season 45	45. The Old House	ABC	2015-16	
Season 46	46. The Old House	ABC	2016-17	
Season 47	47. The Old House	ABC	2017-18	
Season 48	48. The Old House	ABC	2018-19	
Season 49	49. The Old House	ABC	2019-20	
Season 50	50. The Old House	ABC	2020-21	

Season 51	51. The Old House	ABC	2021-22	
Season 52	52. The Old House	ABC	2022-23	
Season 53	53. The Old House	ABC	2023-24	
Season 54	54. The Old House	ABC	2024-25	
Season 55	55. The Old House	ABC	2025-26	
Season 56	56. The Old House	ABC	2026-27	
Season 57	57. The Old House	ABC	2027-28	
Season 58	58. The Old House	ABC	2028-29	
Season 59	59. The Old House	ABC	2029-30	
Season 60	60. The Old House	ABC	2030-31	
Season 61	61. The Old House	ABC	2031-32	
Season 62	62. The Old House	ABC	2032-33	
Season 63	63. The Old House	ABC	2033-34	
Season 64	64. The Old House	ABC	2034-35	
Season 65	65. The Old House	ABC	2035-36	
Season 66	66. The Old House	ABC	2036-37	
Season 67	67. The Old House	ABC	2037-38	
Season 68	68. The Old House	ABC	2038-39	
Season 69	69. The Old House	ABC	2039-40	
Season 70	70. The Old House	ABC	2040-41	
Season 71	71. The Old House	ABC	2041-42	
Season 72	72. The Old House	ABC	2042-43	
Season 73	73. The Old House	ABC	2043-44	
Season 74	74. The Old House	ABC	2044-45	
Season 75	75. The Old House	ABC	2045-46	
Season 76	76. The Old House	ABC	2046-47	
Season 77	77. The Old House	ABC	2047-48	
Season 78	78. The Old House	ABC	2048-49	
Season 79	79. The Old House	ABC	2049-50	
Season 80	80. The Old House	ABC	2050-51	
Season 81	81. The Old House	ABC	2051-52	
Season 82	82. The Old House	ABC	2052-53	
Season 83	83. The Old House	ABC	2053-54	
Season 84	84. The Old House	ABC	2054-55	
Season 85	85. The Old House	ABC	2055-56	
Season 86	86. The Old House	ABC	2056-57	
Season 87	87. The Old House	ABC	2057-58	
Season 88	88. The Old House	ABC	2058-59	
Season 89	89. The Old House	ABC	2059-60	
Season 90	90. The Old House	ABC	2060-61	
Season 91	91. The Old House	ABC	2061-62	
Season 92	92. The Old House	ABC	2062-63	
Season 93	93. The Old House	ABC	2063-64	
Season 94	94. The Old House	ABC	2064-65	
Season 95	95. The Old House	ABC	2065-66	
Season 96	96. The Old House	ABC	2066-67	
Season 97	97. The Old House	ABC	2067-68	
Season 98	98. The Old House	ABC	2068-69	
Season 99	99. The Old House	ABC	2069-70	
Season 100	100. The Old House	ABC	2070-71	



- 35 designs in 2 1/2" by 10, 1 1/2" by 10 and 1 1/2" by 12
- Steel, White, Brass, Copper, Chrome
- Stainless steel for kitchen backslashes
- 13 Corner styles • Pre-cut metal
- Call for Technical Assistance
- Send \$3 for brochure **800-368-6333**

aa-abbington affiliates inc.
Dept. TCH, 1440 Ulster Ave., 4th Fl., New York, NY 10019
212-692-4444 • Fax: 212-692-4444 • www.aa-abbington.com

We Can Solve Your Paint Removal Problem!

PAINT SHAPER
The Most Effective, Efficient and Safest
Sole-Paint Stripping System Available

- No more hours of paint to be removed
- Removes prepared paints in seconds, instantly.
- Can also be used for paint removal.
- Eliminates the health hazards associated with other removal

SANDER VAC
Dual Sanding
and Vacuum

AMERICAN INVENTION SYSTEM, TOOL (INC., INC.)
1000 E. 10th Avenue, Suite 100, Denver, CO 80202
Phone: (303) 733-1111, Fax: (303) 733-1112



AMERICAN INTERNATIONAL TOOL INC., INC.
 150 E. North Avenue, Suite 100
 Erie, PA 16590-1000 www.AITool.com
 (800) 360-3301 • (814) 833-3301

[illegible]

A. F. SCHWED MANUFACTURING COMPANY
2110 Michoud Avenue, Dept. 203 • Pittsburgh, Pa. 15213
Telephone: (412) 751-2301 • Fax: (412) 751-2342

From the Heart of the South, The TEST for Less 5

ANTIQUE HEART PINE FLOORING

Exposed Beams Dry - Aged - Superior
Heart Pine Slaters are our Specialty

ANTIQUE HEART CYPRESS

Custom Milling • Drums • Polishing • Buffing

AMERICAN HARDWOOD FLOORING

100% Clear Quartersawn
Easy to Install Naildown or Gluedown
Ready for a change? Field of competing?
New! Finished American Hardwood Flooring

Guaranteed Quality Products

For a Free Brochure, call (225) 567-1155
www.albamwoodworks.com

Albany Woodworks

P.O. BOX 729 ALBANY LA 70001



We offer an exquisite selection of bathroom vanity and mirror combinations that are sure to make a designer's difference in your home - all available in over 5000 colors.

FREE CATALOG!
1-800-659-0203
Ask for Dept. 2411
Debitals.com • P.O. Box 88

RENOVATOR'S
Journal of the International Association of Building Restoration Specialists



Anderson **ULTIMATE BED™**
Features wenge veneer, solid wood top

quality undrilled dresser, size tables (optional), lighted handbox (option), and an air mattress featuring dual 15 means controls and a 2" extra-thick foam layer. Sleeping comfort is guaranteed! Wool like mattress top is Quattro pro: antibacterial treated and machine washable. Mattress and undrilled dresser can be purchased separately for use with your existing bed. 30 day home trial. Ship UPS.

ISSN 1000-0712
CN 11-2268/TP

We've built a better water heater, so you can build a better home.

When it comes to efficiency and performance, nothing comes close to Aquatic Instant Hot Water Systems. The instant design means water is heated on demand. It's instant. And, since there's no need to continually heat and reheat water, the Aquatic design conserves energy savings. Manufactured by Bosch, Aquatic water heaters are designed to last a lifetime. And when you're remodeling or building a new home, there's nothing like

Aquatic **BOSCH**

8-1-202 8-1-202 8-1-202

250-642-3150
www.boschusa.com

**Anything
You Can
Glue,
I Can Glue
Better.**



[illegible]

As I See It, #41 in a series
Charles Shoewell
"The One That Got Away"
Polaroid Transfer Photography



THE BOLD LOOK
OF **KOHLER.**

How do you capture a spirit? Look to an Artist Editions lavatory, tile and accessories. The Pheasant™ lavatory is inspired by 19th century illustrations. To revisit and reawaken the mastery of a time gone by. Don't let this one get away. See the Yellow Pages for a KOHLER® Registered Showroom, call 1-800-4-KOHLER, ext. KC1 to order product literature, or visit www.kohlerco.com/pheasant

©1998 by Kohler Co