



JUNE 2004

THIS Old House

DECKS

DETAILS MAKE
THE DIFFERENCE

IN-GROUND SPRINKLERS
CEILING FANS
WORK LIGHTS
OUTDOOR FURNITURE

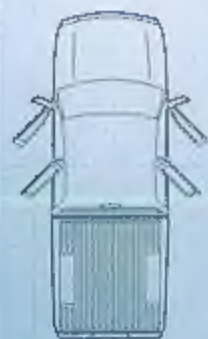
THISOLDHOUSE.COM AOL KEYWORD: THIS OLD HOUSE



"LESS ISN'T MORE. MORE IS MORE."

-A GMC ENGINEER ON ALL THE AMENITIES AND SPACE
IN THE NEW SIERRA CREW CAB

INTRODUCING THE SIERRA 1500 CREW CAB



THE NEW SIERRA CREW CAB DELIVERS MORE AT EVERY LEVEL. IT BOASTS THE POWERFUL VORTEC™ ENGINE AND 1700** LB PAYLOAD CAPACITY OF A GENUINE WORKHORSE. BUT IT'S ALSO A THOROUGHbred. FOUR BIG DOORS OPEN TO ROOM** FOR UP TO SIX ADULTS. ITS ENDLESS ARRAY OF AVAILABLE AMENITIES INCLUDES 6085® AUDIO, XM™ SATELLITE RADIO, DVD PLAYER, ONSTAR AND MORE, MORE COMFORT. MORE CAPABILITY. MORE TRUCK. PROFESSIONAL GRADE ENGINEERING. IT'S NOT MORE THAN YOU NEED. JUST MORE THAN YOU'RE USED TO.

WE ARE PROFESSIONAL GRADE.™ **GMC**

www.gmc.com/sierra



ONSTAR IS AVAILABLE WITH EMERGENCY SERVICES, STOLEN VEHICLE TRACKING, AND REMOTE DOOR UNLOCK.



SIERRA
1500
CREW CAB

**Maximum payload capacity includes weight of vehicle, passengers, cargo and equipment.

**Cargo and load capacity limited by weight and distribution.

**Available in 48 contiguous states. Service fees apply. For more information visit gmc.com/sierra.

An OnStar equipped Sierra includes a three-year basic & sound service plan. Call 1-888-4ONSTAR (1-888-466-7827) or visit onstar.com.

OnStar and the OnStar emblem are registered trademarks of OnStar Corporation.

The XM name and related logos are registered trademarks of the XM Satellite Radio, Inc. ©2004 XM Satellite Radio, Inc. All rights reserved.

Sierra, GMC and GMC logo are registered trademarks of the General Motors Corporation. ©2004 General Motors Corp. All rights reserved.

LIFETIME WARRANTY



RALPH LAUREN

INTERIOR SEMI-GLOSS
PREMIUM QUALITY ACRYLIC LATEX

ISLAND BRIGHTS

INTRODUCING THE ISLAND BRIGHTS COLLECTION.
PREMIUM-QUALITY LATEX PAINT IN A SPECTRUM OF BRILLIANT NEW COLORS.
RLHOME.POLO.COM



COLORS SHOWN: BICYCLE YELLOW (IB20), MAI TAI RED (IB10). CALL 1-800-373-POLO FOR MORE INFORMATION.



YOU



SEE YOUR PICTURES IN EXTRAORDINARY, TRUE-TO-LIFE COLOR.

SEE YOUR PICTURES IN PROFESSIONAL-QUALITY BLACK AND WHITE.

SEE YOUR PICTURES LAST LONGER THAN YOU EVER THOUGHT POSSIBLE.*

SEE YOUR PICTURES TRANSFORM YOUR HOME INTO AN ART GALLERY.

you + hp



THE HP PHOTOSMART 7960 PHOTO PRINTER

Professional-quality prints used to require your own darkroom. Or a PhD in photography. All that has changed. Engineered with HP's breakthrough 8-ink technology, the HP Photosmart 7960 prints stunning black-and-white photos, as well as brilliant color photos that resist fading for generations.* And look every bit as good. Be Photosmart.

Only \$299. To buy now, call 1-877-652-5111
or visit your local retailer or go to www.hp.com/go/bephotosmart.**

*Based on Wilhelm Imaging Research, Inc., using HP Premium Plus photo paper.
All images are simulated. Photosmart is a trademark of the Hewlett-Packard Development Company, L.P. **Estimated U.S. retail price. © 2004 Hewlett-Packard Development Company, L.P.

*See thisoldhouse.com for full terms and conditions of the Best Rates. Guaranteed. Hilton Rewards membership, earning of Points & Miles, and redemption of points are subject to Hilton's Terms and Conditions. ©2004 Hilton Hospitality, Inc.



Needs:
His & hers hairstylists
In-room waterfall
High-definition mirrors

Needs:
Sensible rates
Late-night snacks
No wake-up calls

Everything you need in one place. Within reason of course.

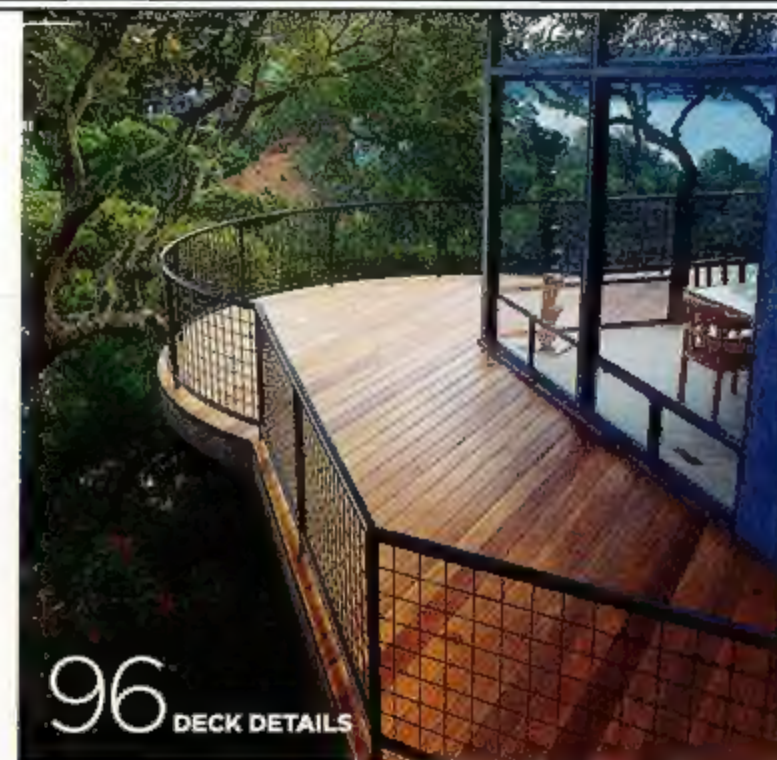
A Hilton Garden Inn® has plush, comfy rooms, a cool, splashy pool, a fridge and microwave in every room, and 24-hour snacks and sundries in our Pavilion Pantry®. It's everything you need to feel relaxed, comfortable and taken care of, at a great price. Our website even features leisure-time ideas from sporting events to local concerts and festivals, and of course Our Best Rates. Guaranteed.*

Book at over 195 great locations at HiltonGardenInn.com, or call 1-877-STAY HGI. **Everything. Right where you need it.®**

The Hilton Family

Hilton Honors
Pursuing Perfection

 **Hilton
Garden Inn®**



FEATURES

- 88 EXTREME MAKEOVER**
A 1940s tract house takes on the fine details of an Arts and Crafts masterpiece
- 96 DECK DETAILS**
A little creativity can add a lot of character
- 102 TV PROJECT HOUSE: UP ON THE ROOF**
Bermuda's limestone roofs withstand hurricanes and collect precious rainwater
- 109 CEILING FANS**
Today's models are marvels of quiet efficiency, available in almost every style imaginable
- 114 GATHERING ROOM**
Doubling the size of a '20s bungalow makes space for friends and family
- 122 LANDSCAPE AGGREGATES**
Crushed stone, shell, and glass add color and texture to gardens, paths, and driveways

VISIT THIS OLD HOUSE ONLINE AT www.thisoldhouse.com or AOL Keyword: This Old House.

ON THE COVER

This multilevel deck incorporates many of the elements that make for a satisfying design: built-in seating, planters, and lighting, plus red cedar boards that run in three directions, subtly defining different areas.

WORK LIGHTS	47
OUTDOOR FURNITURE	56
IN-GROUND SPRINKLERS	79
CEILING FANS	109

COVER PHOTOGRAPH BY PHILIP HARVEY

PHOTOS: (TOP LEFT) JAY GRAMAK; (RIGHT) TIM STREET-PORTER

DEPARTMENTS

DESIGN IDEAS

- 24 HOUSE CALLS**
A flair for mixing colors and materials creates a cheerful kitchen

- 56 LUXURIES**
Stylish outdoor furniture

- 71 FIND!**
Murano glass from the 1950s and '60s; plus Q & A

TOOLS & KNOW-HOW

- 36 ASK THIS OLD HOUSE**
Shingles; dog vs. grass; range support; etc.

- 42 FROM THE GROUND UP**
Wiring for maximum safety and convenience

- 47 TALKING SHOP**
Choosing and using work lights

- 62 UPKEEP**
How to reglaze a window

- 79 HOMEOWNER'S HANDBOOK**
Installing in-ground sprinklers

- 129 NORM'S NOTEBOOK**
Trimming doorjamb; straightening edges; scribing for a tight fit; etc.

IN EVERY ISSUE

THIS MONTH ONLINE	12
LETTERS	14
LETTER FROM TOH	17
ON THE JOB	18
DIRECTORY	134
TOH CLASSICS TV GUIDE	138
ON TELEVISION	139
SAVE THIS OLD HOUSE	154



79 IN-GROUND SPRINKLERS



71 MURANO GLASS



62 REGLAZING A WINDOW

47 WORK LIGHTS

PHOTOS: (CLOCKWISE FROM TOP LEFT) BRIAN SMITH; COURTESY OF HOSS; KUDRA; CLINEFF; NEDELJKO MATURA

FOR MORE INFORMATION, SEE DIRECTORY, PAGE 134

It's all about the drive. And keeping your options wide open. Because this new MAZDA6 Sport Wagon can gobble up a twisty mountain road as easily as it can swallow a weekend's worth of outdoor gear. Its potent 220-hp V6, sport-tuned suspension and 60.5 cu. ft. cargo space deliver a compelling combination of performance and practicality. Proudly reflecting its soul of a sports car heritage. And making it more fun than ever to haul mass.

mazda6 All-new 220-horsepower Sport Wagon



Goes from wagon to sports sedan in one drive.



mazda MAZDA6 s Sport Wagon as shown \$22,995* MazdaUSA.com 800-639-1000

*MSRP excludes \$520 destination, tax, title and license fees. Please remember to properly secure all cargo. ©2004 Mazda North American Operations

This Old House

THIS MONTH ONLINE

www.thisoldhouse.com or America Online Keyword: This Old House



TELEVISION PROGRAMS

Sneak Preview

Be among the first to get a look at our Fall 2004 project house, celebrating our 25th anniversary on the air. Check out behind-the-scenes interviews, live Web cameras, and more!

SPECIAL FEATURES

25 Years of This Old House

Visit the anniversary section of our Web site for trivia quizzes, crew flashbacks, and the latest news of special events celebrating our quarter-century of home improvement.



THE STORE

Join Tommy's Team

Or at least look the part, with an authentic Silva Brothers Construction T-shirt. It's part of our exclusive collection of tees, work shirts, and accessories.

TOOLS AND SERVICES

How Many Btus?

Shopping for a room air-conditioner this season? Use our online calculator to see how much cooling power you really need.

Shortcuts: For links to these pages and more, go to www.thisoldhouse.com/shortcuts

HOW TO REACH US

EDITORIAL OFFICES

- Write to us at *This Old House* magazine, 1185 Avenue of the Americas, 27th Floor, New York, NY 10036.
- Call our Editorial Query Line at 212-522-5015.
- Send us an e-mail at TOH_letters@timeinc.com.

SUBSCRIPTIONS

- To order new or gift subscriptions or make changes to an existing subscription, contact Customer Service at 800-898-7237, e-mail subsvcs@thisoldhouse.customersvc.com, or visit thisoldhouse.com/customerservice.

BACK ISSUES

- To order, call 800-357-4466 or visit thisoldhouse.com/magazines.

WEB SITE

- Visit us at www.thisoldhouse.com or AOL Keyword: **This Old House**.

ADVERTISING RATES

- For rates and information, call 212-522-0910.

ADVERTISER CONTACTS

- To contact our advertisers for product information, visit homeownershelpline.com or call 800-424-0055.

BOOKS

- To order any of the *This Old House* books or for questions about an order, call Customer Service at 800-678-2643.

This Old House

MAGAZINE

EDITORIAL

MANAGING EDITOR David Sloan
DEPUTY MANAGING EDITOR Paul Spring
EXECUTIVE EDITORS Kathryn Keller, Laura Goldstein
DEPUTY EDITOR Thomas Baker
EDITORIAL OPERATIONS DIRECTOR Carolyn Blackmar
SENIOR EDITORS Alexandra Bandon, Sue Miller Perry
ASSOCIATE EDITORS Ryan Robbins, Dan DiCicco
BUILDING AND DESIGN EDITOR Colette Scanlon Ortiz
ASSOCIATE BUILDING AND DESIGN EDITOR Kate Townsend
CONTRIBUTORS Mark Feiner
COPY CHIEF Leslie Morahan
COPY EDITOR Kim Dalton
RESEARCH EDITORS Mark Powers, Amy R. Hughes
EDITORIAL ASSISTANT Scott Schilling
ASSISTANT TO THE MANAGING EDITOR Lalza L. Goyke

ART

ART DIRECTOR Mike Bain
DEPUTY ART DIRECTOR Caroline Bowyer
ASSOCIATE ART DIRECTORS Arianna Squeo, John W. Taylor
PHOTO EDITOR Hilary Clark
ART/PRODUCTION ASSISTANT Robert Hardin

ONLINE

MANAGER Antonella Savero
EDITOR Roseann Henry
MARKETING AND BUSINESS DEVELOPMENT MANAGER Joe Kutchera
PRODUCER Timothy Dahl
ASSOCIATE PRODUCER Kim Hunter
INTERN Tiffany Lee

PRODUCTION AND TECHNOLOGY

DIRECTOR OF PRODUCTION AND TECHNOLOGY Susan Power
PRODUCTION MANAGER Paul Castratano
EDITORIAL PRODUCTION MANAGER Susan Kowal
EDITORIAL PRODUCTION ASSOCIATE Leanda Bonille
TECHNOLOGY MANAGER Robert Mullins

SALES AND MARKETING

PUBLISHER Richard Berenson

MARKETING

ASSISTANT MARKETING DIRECTOR Alison K. Zinckenko
SENIOR MARKETING MANAGER Laura Levine
PROMOTION MANAGER Naomi Eisenstadt
ASSOCIATE MARKETING MANAGER Jason Cavallo
MARKETING COORDINATOR Anne-Carmene Almonord
PROMOTION ART DIRECTOR Carol Hartsell
MARKETING ASSISTANT Lauren Wohl

WESTERN SALES OFFICES

11765 WILSHIRE BOULEVARD, 17TH FLOOR,
 LOS ANGELES, CA 90025
ASSOCIATE PUBLISHER Kate Knox (310-268-7140)
SALES ASSISTANT Mary Infantino (310-268-7456)

2 EMBARCADERO CENTER, SUITE 1900,
 SAN FRANCISCO, CA 94111

SAN FRANCISCO MANAGER Joe Petralio (415-434-5232)
SALES ASSISTANT Elena Villarreal (415-591-5512)

SOUTHEAST SALES OFFICE

3414 PEACHTREE RD. N.E., SUITE 736, ATLANTA, GA 30326
ACCOUNT REPRESENTATIVE Carmen Collins (404-264-4029)
SALES ASSISTANT Nita Roger (404-364-4007)

DETROIT SALES OFFICE

39577 WOODWARD AVENUE, SUITE 200,
 BLOOMFIELD HILLS, MI 48304
DIRECTOR Mary F. Hensley (248-980-7811)
ACCOUNT REPRESENTATIVE Ed Guttedson (248-980-7815)
SALES ASSISTANT Debra Jacott (248-980-7836)

RESOURCES/CLASSIFIED ADVERTISING

MEDIA PEOPLE INC.
RESOURCES Jennifer Izzo (800-719-0767)
CLASSIFIED Heather Roth (800-542-5585)

CONSUMER MARKETING

DIRECTOR Hank Fifield
ASSISTANT CONSUMER MARKETING DIRECTOR Patrick Hainault
FINANCIAL PLANNING MANAGER Eliza Wong
MARKETING MANAGER Adam Feller
MARKETING MANAGER-ONLINE Kristin Rhels
MARKETING ASSISTANT Ken Becker

FINANCE AND ADMINISTRATION

DIRECTOR OF FINANCE AND ADMINISTRATION Suzanne Reinhardt
FINANCE MANAGERS Janet Feeley, Jennifer Luce
FINANCE ASSISTANT Karen Wright

THIS OLD HOUSE VENTURES, INC.

PRESIDENT Eric Thorskissen
GENERAL MANAGER Lori Penn-Danta
SENIOR TELEVISION AND VIDEO DIRECTOR Michael Burton
COMMUNICATIONS DIRECTOR Frederike Brookfield
BUSINESS DEVELOPMENT DIRECTOR Christopher Cantos
LEGAL Shawn Flowers
TELEVISION AND VIDEO DIRECTOR Monica Maenan
ASSISTANT TO THE PRESIDENT Jean Simone

EDITORIAL BOARD, THIS OLD HOUSE

EXECUTIVE PRODUCER/DIRECTOR Russell Morash
SENIOR PRODUCER Bruce Irving
MASTER CARPENTER Norm Abram
GENERAL CONTRACTOR Tom Silva
PLUMBING AND HEATING EXPERT Richard Trethewey
LANDSCAPE CONTRACTOR Roger Cook
HOST Kevin O'Connor



PRESIDENT AND CHIEF EXECUTIVE OFFICER Mark Ford
SENIOR VICE PRESIDENTS James F. Elko, Steven Shure, Victor M. Sauerhoff
DIRECTOR OF EDITORIAL DEVELOPMENT Scott Mowbray

THIS OLD HOUSE (ISSN 1066-2633) IS PUBLISHED TEN TIMES A YEAR BY THIS OLD HOUSE VENTURES, INC. ©2004 THIS OLD HOUSE VENTURES, INC. THIS OLD HOUSE AND THE THIS OLD HOUSE WINDOW LOGO ARE REGISTERED TRADEMARKS OF THIS OLD HOUSE VENTURES, INC. SUBSCRIBERS: IF THE POST OFFICE ALERTS US THAT YOUR MAGAZINE IS UNDELIVERABLE, WE HAVE NO FURTHER OBLIGATION UNLESS WE RECEIVE A CORRECTED ADDRESS WITHIN TWO YEARS.

Electrolux



What would make more sense is an effortless vacuum. The Aptitude.

The Aptitude is ergonomically designed to easily glide under, over and across any surface. So you get a great clean, without great effort.

The Aptitude. Your generation's Electrolux.



Visit electroluxusa.com for retail locations.

©2004 Electrolux Home Care Products Ltd. Printed in U.S.A.

Aptitude. The effortless vacuum.

YOUR DREAM GARAGE STARTS HERE.



GearTrack™ Channels
Get items off the floor.
Reposition with ease.



**Freezerator™ Convertible
Refrigerator/Freezer**
Innovative garage appliance
with a large freezer on the bottom
and a refrigerator on the top.



Gladiator™ Roll Flooring
Renew and protect your floor.

Gladiator™ GarageWorks GearBoxes start at just \$149.99. Call 866-342-4089, or visit GladiatorGW.com to learn more. Join the Team Gladiator™ inner circle for special offers.

®Registered trademark/™Trademark of Whirlpool, U.S.A.
©2004 Whirlpool Corporation. All rights reserved.



IT'S TIME TO RETHINK
THE GARAGE™

[LETTERS]



HIS AND HERS

We always look forward to each new issue of *This Old House*. We recently moved into a 90-year-old Craftsman bungalow and have a lot of renovating ahead of us. It seems as if every new issue of your magazine has an article relevant to a repair job we're going to tackle. Or perhaps it's just that everything in the house has to be repaired! In any case, we just wanted to let you know that we love *This Old House*—it's the one magazine we fight to read first.

AMANDA WONG AND CRAIG GERMAN, BY E-MAIL

FROM THE GROUND UP

I am going to begin building my own home soon and found the timing of your From The Ground Up series of great assistance for an overview. I had been trying to find my back issue covering installation of doors and windows when the April issue arrived with a story in which Tom Silva discusses that very topic.

I have been a viewer of and subscriber to *This Old House* for many years. As an engineer with an eye for the details, I really appreciate how the entire crew do their job, especially Tom and Norm. The quality of their work is evident even to the novice.

BRETT ROBERTSON, BY E-MAIL

THE RIGHT CHOICE IN RUGS

In your article "Oriental Rugs" [April 2004] I was surprised to see no mention of how important it is to avoid buying a carpet made

using child labor. In many of the countries where carpets are handwoven, young children are forced to work (their small fingers are "better" for the intricate knotting), sometimes to support their family's business, sometimes as bonded laborers. Children who spend hours every day at a carpet loom do not get an education, and their hands and eyes may be ruined.

Customers looking to buy an Oriental rug should make sure that it has not been made using children. The Rugmark program (www.rugmark.org) certifies carpets from India, Nepal, and Pakistan that are made without child labor.

DIANA QUICK, BROOKLYN, N.Y.

FRAMING FOR PRESERVATION

In the April Find! column there is a Q & A answer by folk-art specialist David Wheatcroft about the value of a printed fraktur belonging to a reader. What Mr. Wheatcroft told the reader was good, but did not go far enough. I have been a custom framer for close to 30 years and specialize in preservation/conservation framing. The most important thing that the reader needs to do to keep his fraktur from fading is to use conservation glazing when he frames it. If he does not put UV-protective glazing over this piece, the light will destroy the art [even if he uses acid-free mats and backing]. Light is the enemy of art on paper, and any artwork that you want to protect must be framed with conservation glazing.

SUSAN BURKE,
FRAMES & TOYS & THINGS (OH, MY!),
DOUGLASVILLE, GA.

punch list

definition: a list of items incorrectly done or remaining to be finished on a construction job

- In the April 2004 issue, the photo on the feature opener (p. 91) is by Keller & Keller (not Bevan Walker).
- The workers shown on p. 52 of March 2004 should not have been standing on the tops of their ladders, nor should anyone do so at home. We thank the readers who wrote us to express their concern. Watch for an article on working safety in high places in an upcoming issue.

Address mail to: Letters, *This Old House* magazine, 1185 Avenue of the Americas, New York, NY 10036, or e-mail us at TOH_letters@timeinc.com. Please include your full name, address, and daytime phone number. Published letters will be edited for clarity and length and may be used in other media.

PHOTO: KELLER & KELLER

www.thisoldhouse.com



SUNSETS ARE OVERRATED. But a garage like this is a sight to behold. Gladiator™ GarageWorks by Whirlpool Corporation is a fully modular garage solution that is an impressive addition to your home. Each unit is built garage-tough and is designed to put you back in control of your garage. There's everything from tread plate GearBoxes to wall storage options to floor-covering solutions. To design your own custom garage system and find a Gladiator™ GarageWorks dealer near you, call 1-866-342-4089 or log on to GladiatorGW.com.

®Registered trademark/™Trademark of Whirlpool, U.S.A. ©2004 Whirlpool Corporation. All rights reserved.



IT'S TIME TO RETHINK THE GARAGE™

Introducing
DECKSCAPES™
Beautiful decks made easy.

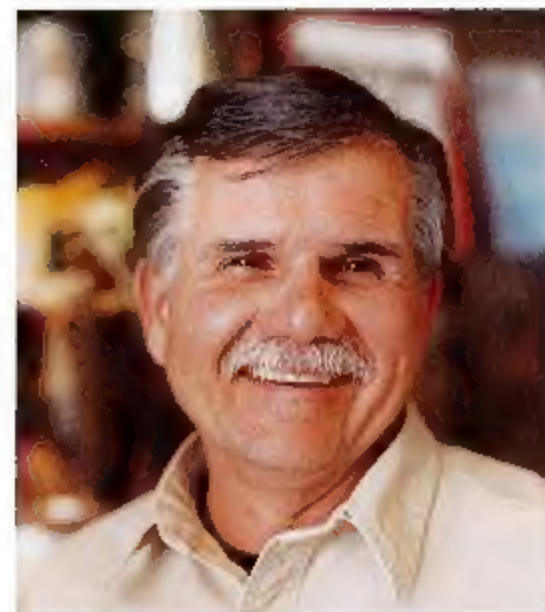


With DeckScapes™ premium deck care products, you can clean, stain, and protect your deck all in the same day. And it will keep looking great year after year. So treat your deck right with DeckScapes, the best deck care system available. Only at your neighborhood Sherwin-Williams store. Ask Sherwin-Williams.



1-800-4-SHERWIN sherwin-williams.com
©2004 The Sherwin-Williams Company

A SENSE OF PLACE BY TOM SILVA



Tom Silva, TOH general contractor

B

ack in January, I went to Bermuda to check out the TV project house. When I got there, they were just about to put in the second-story floor, and I was surprised to see it being poured in concrete instead of framed out of wood.

A concrete second floor may seem strange in a house, but not if you consider the conditions in Bermuda. The island has no domestic wood supply, so lumber is expensive; an 8-foot 2x4 that costs me \$2.60 is as much as \$6.50 there. But local aggregate and sand are abundant; builders only have to import cement to make concrete. And considering the hurricanes that hit Bermuda, a concrete floor ties the walls of a house together nicely to make a very sturdy structure. Wood might rot from groundwater that inevitably wicks up the exterior masonry walls.

So why don't we build houses like this in the Northeast? In a typical autumn, New England gets the same wind and rain as Bermuda. But, of course, Bermuda doesn't have our winter. Houses built Bermuda-style wouldn't stand up to New England's brutal freeze-thaw cycles.

Every region has a unique building style that has evolved to suit its climate and make use of available resources. Older houses in the Southwest have walls of adobe, an abundant local material that performs well in the dry desert heat. In the Deep South, you see a lot of brick houses made from the area's red clay, with

"EVERY REGION HAS A UNIQUE BUILDING STYLE THAT HAS EVOLVED TO SUIT ITS CLIMATE."

long porches and tall windows to keep breezes moving on muggy summer nights. Builders a hundred or so years ago learned what worked—and succeeding generations followed suit.

Sadly, local traditions and climate play little part in building houses today. You see whole developments built by giant construction firms using styles and methods meant for other parts of the country. Not only do these houses look out of place but sometimes they're even constructed wrong for the climate. Take vapor barrier, for instance. In the North it goes on the inside to keep moist heated air out of the wall cavity in the winter; in the South, it goes on the outside to keep humid heat from getting into air-conditioned rooms. I can't tell you how many times I've seen this done incorrectly because the builder didn't think about local conditions.

Admittedly, because *This Old House* is produced in Boston, we primarily show you a Northeastern view of construction. The upside is that this part of the country gets the most extreme weather—summer and winter—so you're learning how to build the strongest house possible. And, hopefully, you're also gaining a healthy respect for the way things are done in your own neck of the woods.

COMING IN THE JULY/AUGUST ISSUE

- Bermuda TV project finale
- Great kitchen ideas
- Planning a shared bath
- Measuring tools
- Creating a cutting garden

ON SALE JUNE 28

PHOTO: PETER ROSE

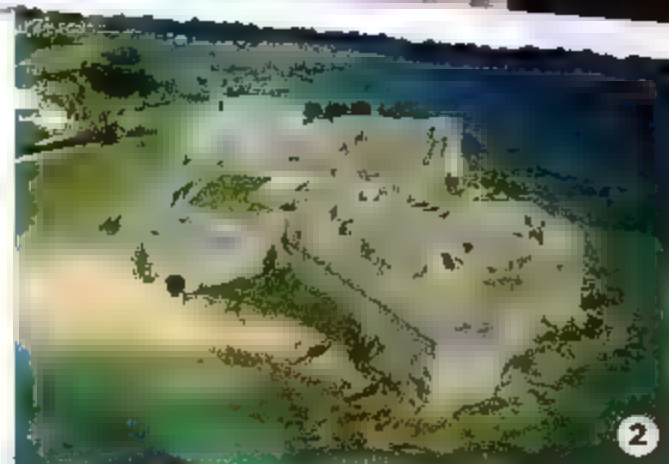
ON THE JOB

Bermuda Shorts

Bermuda—location of the current *TOH* TV project house—is rich in interesting sights. When the guys weren't working, they made a few side trips. Here are some highlights of their island adventures.



Tom Silva, Kevin O'Connor, and Norm Abram raise a glass to the island life.



① DIVINE RESTORATION Norm and Kevin paid a visit to St. Peter's Church—the oldest continuously used Anglican church in the New World. The original wood-framed structure was built back in 1612. A century later, it was replaced by a masonry structure, portions of which still stand today. The exposed ribbed roof framing (inset) bears the mark of its carpenters, many of whom were trained as boatbuilders. "Given how primitive their tools would have been, the level of detail is really remarkable," says Norm.

② FORT REPORT Call it a case of "if you build it, they won't come." The 17th-century Fort St. Catherine is one of more than two

dozen forts on the island, which for centuries was a major British stronghold. No shots were ever fired, however—just the threat of a 400-pound cannonball slamming into their ships' hulls was enough to keep potential invaders at bay.

③ PALM PILOT Many Bermudians wear more than one hat. Kim White, a local attorney, also co-owns a nursery that specializes in palm trees—about 8,000 in total, all of them in pots. According to White, container growing uses less water since only the soil in the pot gets soaked. Plus, it makes for easy transportation, says Roger Cook, who spent an afternoon admiring White's wares. "Just toss the tree in the back of the truck and you're good to go."

PRODUCED BY DAN DICLERICO

www.thisoldhouse.com

PHOTOS (TOP RIGHT) SACHA BLACKBURN; (MIDDLE RIGHT) COURTESY OF THE BERMUDA DEPT. OF TOURISM; (BOTTOM LEFT) CHARLES ANDERSON

For unmatched expertise, Carrier stands alone. As the inventors of air conditioning and innovations like Puron® refrigerant, we have the largest selection and the latest in efficiency and sound reduction. Plus a 10-year limited warranty.* With more homes trusting Carrier than any other brand, our products speak for themselves.

Turn to your local Carrier expert at 1-800-Carrier or www.carrier.com

Carrier

Turn to the Experts.

*On select systems. See dealer for details.

[BEFORE & AFTER]

History Re-Stored

Just off S. Main Street in the artist-filled village of New Hope, Pa., this 18th-century workman's cottage sold for \$8 back in 1930. It wasn't looking much better when Joel Roberts bought it in 2000. But under the helpful eye of the local historic board, he turned it into a charming crafts store (Mechanic Street Mugs, if you're passing through) with living space overhead. Matching six-over-nine, true-divided-light casements replace the street-level bow window. Fiber-cement siding, which looks authentic but resists fire and rot, freshens up the house's exterior.

Have you dramatically altered the look of your home? If so, send before and after snapshots, plus a brief description of the project, to This Old House/DD, 1185 Avenue of the Americas, 27th Floor, New York, NY 10036.



[LESSON LEARNED]



One Sheet to the Wind

BY MICHAEL AMARELLO,
NASHUA, NEW HAMPSHIRE

There it was, a 4x8 sheet of white melamine marked down from \$50 to \$10—just the thing to resurface my workbench. So I grabbed it. As I wheeled it to my station wagon, a gust of wind caught the sheet like a mainsail and launched it right into my taillight. Still wrestling with the wind, I secured the sheet onto the roof rack—but not before snapping the radio antenna. On my way home, a police officer waved me over and issued a ticket for the busted taillight.

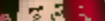
The next day, I set out to find a replacement taillight. I called all the junkyards in the area, but the car was too new. Finally I gave up and called the dealer. They didn't have the taillight or the antenna in stock, but they'd order both for a mere \$85—labor not included.

Ali told, that bargain sheet of melamine cost me a coo. \$235. Since then, whenever I purchase lumber, I pay the \$25 delivery fee. If you ask me, it's a bargain.

Got your own lesson to share? It could be worth \$100 if we publish it. Send it in writing (200 words or less) to: This Old House/DD, 1185 Avenue of the Americas, 27th Floor New York, NY 10036.



That's Entertainment

 A little music can lighten the workload. Bosch's job-site-ready Power Box Multi-Function CD Player/Radio cranks out tunes from the radio, CDs, even MP3s. But more than that, its four GFC outlets will juice up power tools and its onboard chargers will keep your spare batteries and cell phones powered up. And if it takes a tumble, the sturdy steel roll cage absorbs the impact without skipping a beat. Around \$149. For dealers, see www.boschtools.com —Scott Schilling



STRIVE TO BE YOUR BEST

No other ED treatment is proven to work better the first time* than LEVITRA®

LEVITRA is a treatment for erectile dysfunction (ED) that consistently improves erection quality for most men:

- LEVITRA works the first time, time and again
Some men may require additional attempts
- LEVITRA works to improve the quality of
erectile function
- LEVITRA improves duration, hardness, and
the ability to attain an erection
- LEVITRA works fast

It doesn't matter if the challenge is on the field or off—I always strive to be the best. For ED, I found something that works for me, LEVITRA.[®]

—Mike Dixon, NFL Hall of Fame player and coach

¹ Individual results may vary.

Please see adjacent Patient Information for more about
LEVITRA (2.5 mg, 5 mg, 10 mg, and 20 mg) tablets.

WTR
wreathdye.com (ED) **WTR**
Mex taking the lead
Know
Nphs
arost

Ask your doctor if a free sample of LEVITRA might be right for you.

LEVITRA

BS 2027-1

1.855.LEVITRA
WWW.LEVITRA.COM



Patient Information **LEVITRA®** (Luh-VEE-Trah) (vardenafil HCl) Tablets

06589034P

8/03

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

WHAT IMPORTANT INFORMATION SHOULD YOU KNOW ABOUT LEVITRA?

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

- Do not take LEVITRA if you:
 - take any medicines called "nitrates"
 - use recreational drugs called "poppers" like amyl nitrite and butyl nitrite
 - take medicines called alpha-blockers. (See "Who Should Not Take LEVITRA?")

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

WHAT IS LEVITRA?

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

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

LEVITRA does not:

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

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

HOW DOES LEVITRA WORK?

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

WHO CAN TAKE LEVITRA?

Talk to your doctor to decide if LEVITRA is right for you. LEVITRA has been shown to be effective in men over the age of 18 years who have erectile dysfunction, including men with diabetes or who have undergone prostatectomy.

WHO SHOULD NOT TAKE LEVITRA?

- Do not take LEVITRA if you:
 - take any medicines called "nitrates" (See "What important information should you know about LEVITRA?"). Nitrates are commonly used to treat angina. Angina is a symptom of heart disease and can cause pain in your chest, jaw, or down your arm.

Medicines called nitrates include nitroglycerin that is found in tablets, sprays, ointments, patches, or patches. Nitrates can also be found in other medicines such as isosorbide dinitrate or isosorbide mononitrate. Some recreational drugs called "poppers" also contain nitrates, such as amyl nitrate and butyl nitrate. Do not use LEVITRA if you are using these drugs. Ask your doctor or pharmacist if you are not sure if any of your medicines are nitrates.

- Take medicines called "alpha-blockers." Alpha-blockers are sometimes prescribed for prostate problems or high blood pressure. If LEVITRA is taken with alpha-blockers, your blood pressure could suddenly drop to an unsafe level. You could get dizzy and faint.
- You have been told by your healthcare provider to not have sexual activity because of health problems. Sexual activity can put an extra strain on your heart, especially if your heart is already weak from a heart attack or heart disease.

- are allergic to LEVITRA or any of its ingredients. The active ingredient in LEVITRA is called vardenafil. See the end of this leaflet for a complete list of ingredients.

WHAT SHOULD YOU DISCUSS WITH YOUR DOCTOR BEFORE TAKING LEVITRA?

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

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

CAN OTHER MEDICATIONS AFFECT LEVITRA?

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

- medicines called nitrates (See "What important information should you know about LEVITRA?")
- medicines called alpha-blockers. These include Hytrin® (terazosin HCl), Flomax® (tamsulosin HCl), Cardura® (doxazosin mesylate), Minipress® (prazosin HCl) or Itrinol® (alfuzosin HCl)
- medicines that treat abnormal heartbeats. These include quinidine, procainamide, amiodarone and sotalol
- ritonavir (Norvir®) or indinavir sulfate (Crixivan®)
- ketokonazole or itraconazole (such as Itrazol® or Sporanox®)
- erythromycin
- other medicines or treatments for ED

HOW SHOULD YOU TAKE LEVITRA?

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

- If you are older than 65 or have liver problems, your doctor may start you on a lower dose of LEVITRA.

If you are taking certain other medicines your doctor may prescribe a lower starting dose and limit you to one dose of LEVITRA in a 72-hour (3 days) period.

Take 1 LEVITRA tablet about 1 hour (60 minutes) before sexual activity. Some form of sexual stimulation is needed for an erection to happen with LEVITRA. LEVITRA may be taken with or without meals. Do not change your dose or how you take LEVITRA without talking to your doctor. Your doctor may lower your dose or raise your dose, depending on how your body reacts to LEVITRA. If you take too much LEVITRA, call your doctor or emergency room right away.

WHAT ARE THE POSSIBLE SIDE EFFECTS OF LEVITRA?

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

LEVITRA may uncommonly cause:

- an erection that won't go away (priapism). If you get an erection that lasts more than 4 hours, get medical help right away. Priapism must be treated as soon as possible or lasting damage can happen to your penis including the ability to have erections
- vision changes, such as seeing a blue tinge to objects or having difficulty seeing the difference between the colors blue and green. These are not all the side effects of LEVITRA. For more information, ask your doctor or pharmacist.

HOW SHOULD LEVITRA BE STORED?

- Store LEVITRA at room temperature between 59° and 86° F (15° to 30° C).

- Keep LEVITRA and all medicines out of the reach of children.

GENERAL INFORMATION ABOUT LEVITRA.

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

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

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

WHAT ARE THE INGREDIENTS OF LEVITRA?

Active ingredient: vardenafil hydrochloride

Inactive ingredients: microcrystalline cellulose, croscarmellose, colloidal silicon dioxide, magnesium stearate, hypromellose, polyvinylpyrrolidone, glycol, titanium dioxide, yellow ferric oxide, and red ferric oxide.

Norvir (ritonavir) is a trademark of Abbott Laboratories. Crixivan (indinavir sulfate) is a trademark of Merck & Co., Inc. Itrinol (alfuzosin HCl) is a trademark of Johnson & Johnson. Sporanox (itraconazole) is a trademark of Johnson & Johnson. Hytrin (terazosin HCl) is a trademark of Abbott Laboratories. Flomax (tamsulosin HCl) is a trademark of Yamazuchi Pharmaceutical Co., Ltd. Cardura (doxazosin mesylate) is a trademark of Pfizer Inc. Minipress (prazosin HCl) is a trademark of Pfizer Inc. Itrinol (alfuzosin HCl) is a trademark of Sanofi-Synthelabo.

Manufactured and Marketed by:

Bayer HealthCare

Bayer Pharmaceuticals Corporation
 400 Morgan Lane
 West Haven, CT 06515
 Made in Germany

Marketed by:

gsk GlaxoSmithKline

GlaxoSmithKline
 Research Triangle Park
 NC 27709

3P Daily

06589034P 8/03 ©2003 Bayer Pharmaceuticals Corporation
 Printed in U.S.A.

[TOH FLASHBACK: 1999]



Trial by Flier

BY STEVE "DINO" D'ONOFRIO,
 THIS OLD HOUSE CAMERAMAN



My first time shooting for *This Old House* was on the 1999 project in Key West, Florida. I remember thinking, A show about home renovation, how dangerous can it get? So day one, the crew is driving to the site when our director matter-of-factly asks if I'm afraid of heights. "Why do you want to know?" I ask. "No reason," he says. "I was just thinking that this first scene could really use some aerials." Half an hour later I'm getting harnessed into a helicopter by a pilot who's saying stuff like, "Now if the engine cuts out, don't panic, she'll float a while." Next thing I know I'm hurtling through the air at more than 100 mph with a 30-pound camera strapped to my shoulder. Every time the chopper banked, I stared straight down into the Atlantic Ocean.

So much for leisurely house tours. Since then I've ridden on everything from airboats to forklifts, even a nuclear submarine. But I'll never forget that helicopter ride over the Florida Keys. I guess first times are like that.

30 YEARS
 AVERAGE AGE
 OF ALL HOMES
 IN THE UNITED STATES

ILLUSTRATION: CHARLIE POWELL

ON THE JOB

Magical History Tour

Hitting the open road this summer? Why not stay in an elegant historic hotel? The National Trust's *Historic Hotels of America* directory will guide you to some of the country's coolest lodgings, like the Old Tavern at Grafton in Vermont (below), where Ulysses S. Grant and Henry David Thoreau once laid their heads. For more information, visit www.historichotels.org.



Commemorating a Classic

The U.S. Postal Service has issued a new postage stamp commemorating the Chippendale chair. Antiques experts Leigh and Leslie Keno, cohosts of *Fndt!*, were on hand at the recent unveiling. Though furnituremaker Thomas Chippendale was an Englishman, the chair on the stamp is pure stars and stripes. "The curves on the chair back and the crest make a bold, elegant statement," says Leslie. "It's definitely an American classic."



On the Level

We don't mind putting on a suit. Really. But black tie can feel a little stiff. These spirit-level cufflinks will definitely make formal wear more fun. Other tool-inspired motifs include MEN AT WORK signs, a hammer-and-saw set, and folding rulers. Starting at \$45 from www.cufflinks.com.

AMERICA'S NEWEST WAY TO CAULK! (without a caulk gun)



Precision Nozzle Resealable Built-In Smoothing Tool

Introducing Caulk-It from GE, a revolutionary new concept in caulking. The patent pending squeeze tube design means no gun and no mess. It's filled with our multi-purpose latex paintable caulk and equipped with a precision nozzle for those hard to reach places. Use it once – use it again and again. It's resealable.

Nothing could be easier, except throwing away the gun!

GE Advanced Materials
 Sealants & Adhesives

imagination at work



1-866-ASK-GE
 GE Caulk-It Sealants & Adhesives



Mix Mastery

An eclectic blend of colors and materials creates a cheerful family space

BY BARBARA CARLIN PHOTOGRAPHS BY GREY CRAWFORD

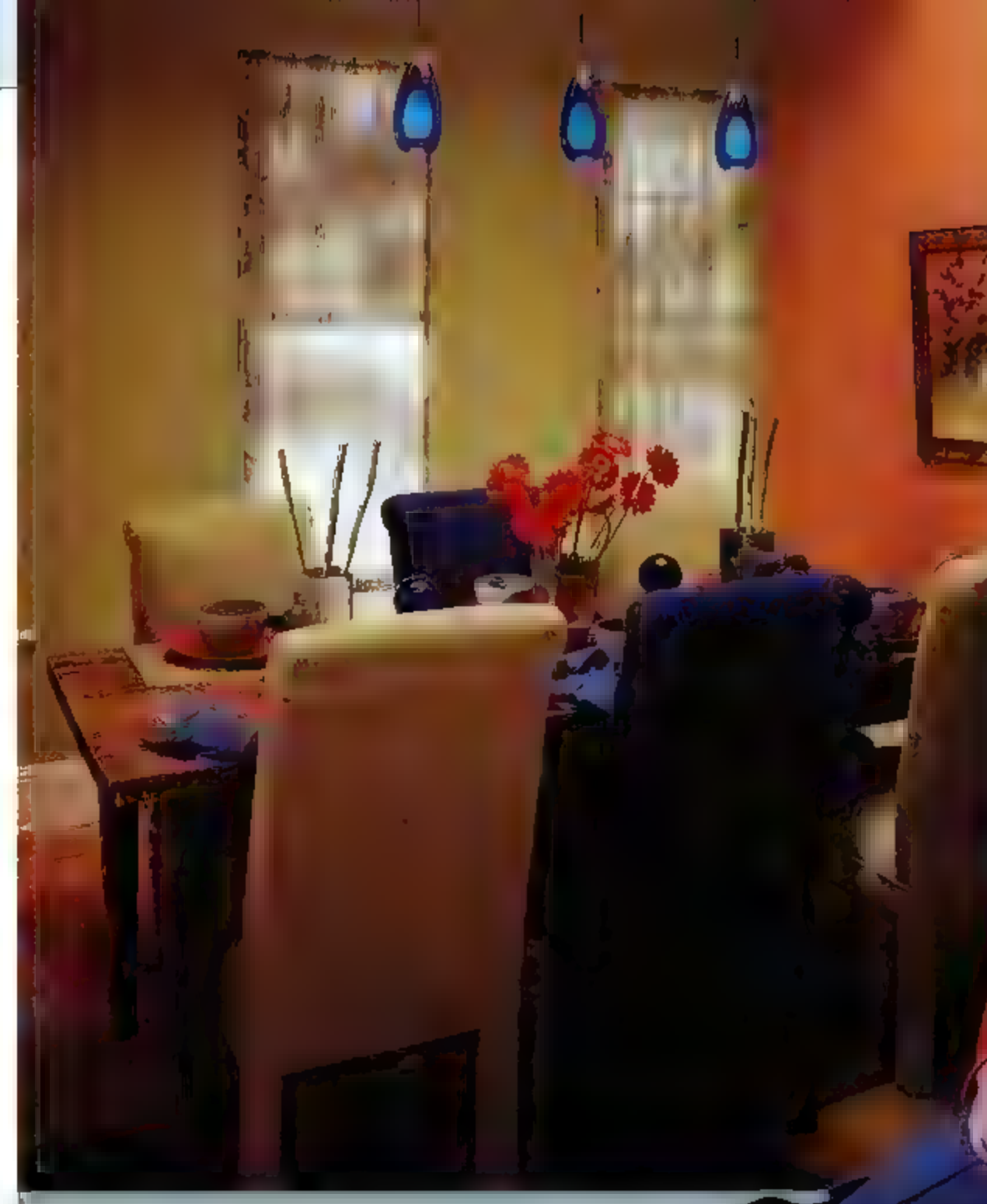
"I love color. I love tile. I love wood. And I love them all together," says designer/contractor Peggy Gilder, whose flair for the dramatic is evident in the remodeled kitchen of her 1928 Spanish Revival home. Nine different shades of ceramic and linoleum tiles brighten the countertops and floor. Handblown glass in the upper cabinet doors and reflective steel panels on the base cabinet doors add more interest and character. Yet the driving force behind the design, says this mother of five, was to create "a comfortable, kid-friendly kitchen where you can spill things."

The old kitchen in Peggy's Pacific Palisades, California, home was not only too dark and drab for her taste but the inefficient layout had a cooktop island "that just about backed into the sink." So she drew up a remodeling plan that called for gutting and reconfiguring the entire space, creating a blank slate where her colorful design sense could have free rein. The result is both bold and inviting. "It's like the new kitchen has a magnetic force field that draws everyone into it," says Peggy. "It's definitely the most used room in the house."

[continued]

Loaded with visual impact, this kitchen teams multicolored flooring with custom glass- and steel-front cabinets. The butcher-block island has a beadboard base and one wrought-iron support leg that doubles as a wine rack.

STYLED BY SUNDAY HENDRICKSON



"Benjamin Moore calls it *Meadow View*."

I call it a *dream* come true."

I had this color in my head. A color so exciting, so inviting, it would be irresistible. To make my vision a reality, I went to my Benjamin Moore® retailer, the only place you can find Benjamin Moore® paint. He listened to my ideas, then gave me some great tips, and



I found it really easy to pull the whole room together. With Benjamin Moore® paint I get quality results every time. And whether I do the painting myself, or have someone do it for me, it gives me the confidence to create a room that expresses the real me. I can't wait to start dreaming about the rest of the house.


Benjamin Moore®
Paints

We make it simple. You make it beautiful.™

For a retailer near you call 1-800-6-PAINT-6 or visit www.benjaminmoore.com

©2004 Benjamin Moore & Co. Aquaverve, Benjamin Moore, crown service and Regal are registered trademarks and the triangle "M" symbol and "We make it simple. You make it beautiful." are trademarks. Licensed to Benjamin Moore & Co.



GRAB LIFE BY THE HORNS



DODGE



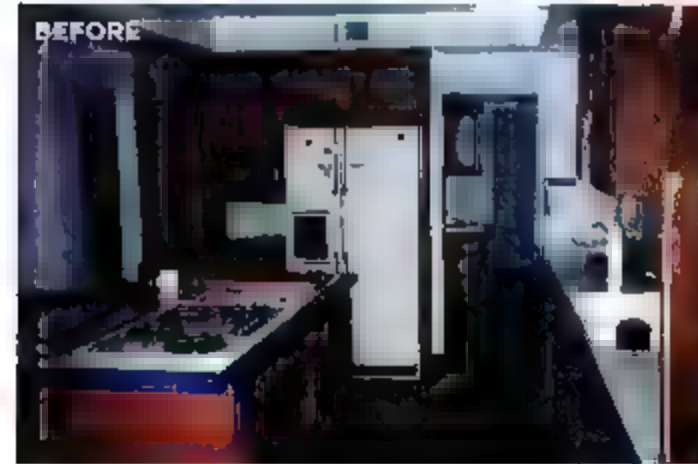
**WE'VE FOUND A BETTER PLACE THAN YOUR GARAGE
FOR YOUR MINIVAN SEATS.**

INTRODUCING THE ALL-NEW 2005 DODGE GRAND CARAVAN, THE ONLY MINIVAN AVAILABLE WITH TWO ROWS OF **STOWnGO™** FOLD-IN-THE-FLOOR SEATING. Plus, Caravan comes with lots of storage so that you'll never have to leave anyone or anything behind. And, an available 60/40 split third-row bench with tailgate seating so that there's plenty of room for any adventure. And now, the lowest-priced minivan in America starts at just \$18,995*. For more info, please visit dodge.com or call 800-4ADODGE.

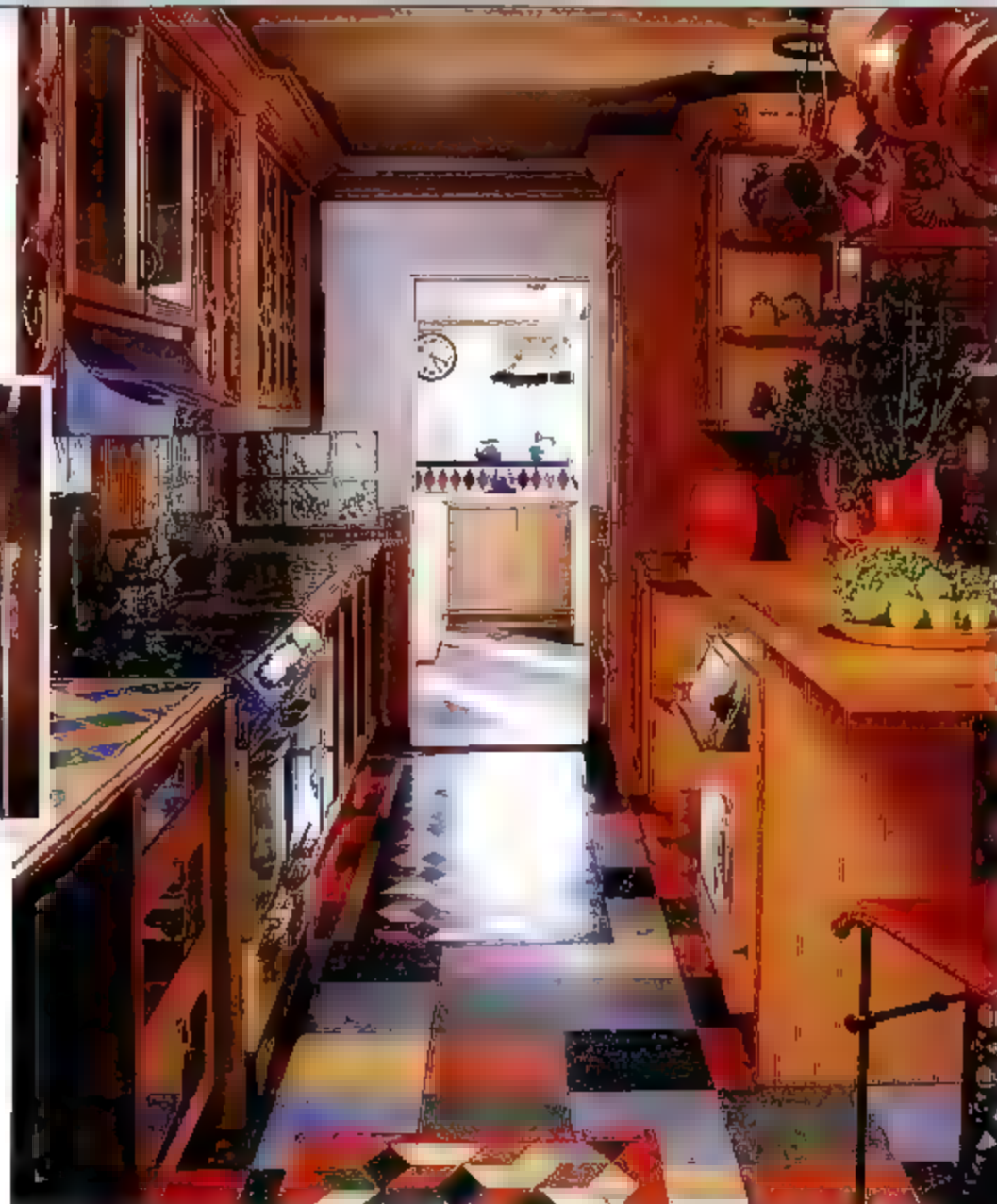
*As shown, \$26,995. MSRP excludes tax.

The Plan

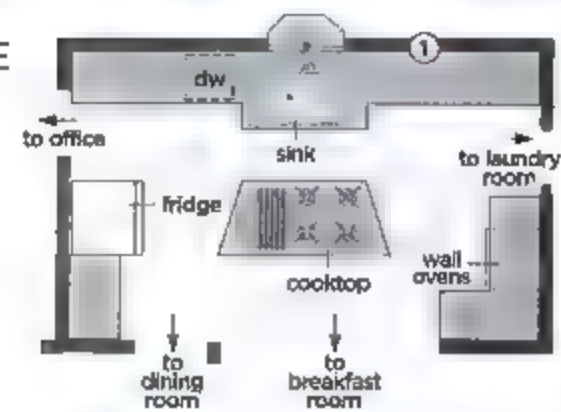
Tweaking the floor plan creates a new kitchen that's lighter, brighter, and a lot more convenient.



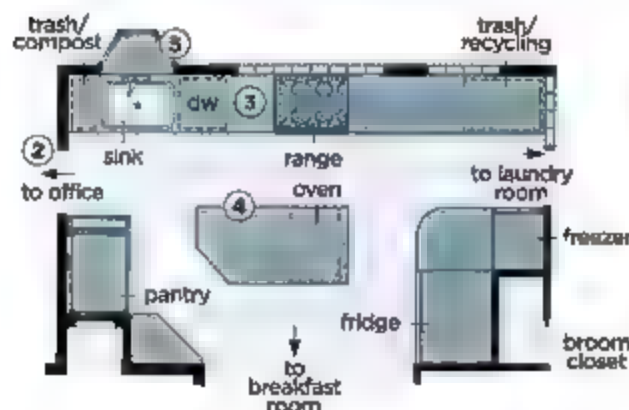
ABOVE: Laminate cabinets were a tired holdover from a 1970s remodel, and there was limited space between the cooktop and the sink. **RIGHT:** The new kitchen features exuberant color and a roomier passageway to the laundry room. The range wall has loads of storage; the island houses an extra gas oven that vents through the floor.



BEFORE



AFTER



WHAT THEY DID

- 1 GUT:** Everything in the existing kitchen was ripped out, but the footprint remained the same.
- 2 MOVE DOORWAYS:** To gain more counter depth along the window wall, the doorway to the office shifted a foot and the door to the laundry room was aligned with it. To create a pantry, the dining room door was walled up (a new one was put in between the breakfast and dining rooms).
- 3 REARRANGE THE SINK WALL:** The sink moved to the other side of the dishwasher which shifted 2 feet to the left. To the left of the sink, a new base cabinet holds a trash/composting center. The range took the place of the old sink base cabinets to the right of it house cooking supplies and a new trash/recycling center.
- 4 IMPROVE WORK FLOW:** Allowing 40 inches of clearance between the island and range makes a wider passageway for kitchen tasks and for traffic to the office and laundry room. The island also creates a more efficient work triangle with the fridge and the range.
- 5 BRING IN MORE LIGHT:** A new, larger greenhouse window with operable sideights was installed over the new sink. A glass-block backsplash adds more natural light.

FLOOR PLANS: JIM WOODRILE





The Details

Recurring colors, patterns, and surfaces unify the kitchen's distinctive features.



① A refurbished gas range from the 1940s with six burners, two ovens, and two broilers plus a vent hood were re-enameled in green, yellow and black to pick up the kitchen's color scheme.

② The countertop tile, set in a diamond pattern, shows off five of the nine colors used in the room. A border of floral tile in similar hues circles the entire kitchen.

③ Adding more pattern to the widely colorful mosaic tile floor are three sections cut in a "tumbling block" quilt pattern that serve visually as runners. A cork underlay makes the surface even more comfortable to stand on.



④ A heavy-duty commercial refrigerator holds plenty of provisions for a large family. Glass doors keep contents visible without having to be opened constantly.

⑤ The clear-finish fir pantry cabinet has perforated steel door fronts inspired by old-fashioned presses to conceal canned goods. Glassware is stored behind the glass-front doors, which were made by setting discs of handblown glass in fir muntins. The crown molding that finishes the cabinets sits 3 inches shy of the ceiling to allow for cove lighting.

For more kitchen design ideas, trends, and products, go to www.thisoldhouse.com or America Online Keyword: This Old House and select Kitchen in the Know-how section.



Important information:

LIPITOR® (atorvastatin calcium) is a prescription drug. It is used with a low-fat diet to lower cholesterol.

LIPITOR is not for everyone. It is not for those with liver problems. And it is not for women who are nursing, pregnant, or may get pregnant. It has not been shown to prevent heart disease or heart attacks.

If you take LIPITOR, tell your doctor if you feel any new muscle pain or weakness. This could be a sign of serious muscle side effects. Tell your doctor about all the medicines you take. This may help avoid serious drug interactions. Your doctor should do blood tests to check your liver function before and during treatment and may adjust your dose. The most common side effects are gas, constipation, stomach pain, and heartburn. They tend to be mild and often go away.

Please see additional important information on next page.

Why not help reduce one of your risk factors for heart disease. Like high cholesterol, for example. You can eat right. You can exercise. But for many people diet and exercise may not be enough. In fact, 2 out of 3 adults with high cholesterol may need medicine. The good news is that adding LIPITOR can help. It can help lower your total cholesterol 29% to 45%*. And it can help lower your bad cholesterol 39% to 60%*. (*The average effect depends on the dose.) Talk to your doctor today. Find out if LIPITOR is right for you. And why it is the most prescribed medicine of its kind. Call us at 1-888-LIPITOR or find us on the web at www.lipitor.com.



LIPITOR® (Atorvastatin Calcium) Tablets

Brief Summary of Prescribing Information

CONTRAINDICATIONS: Active liver disease or unexplained persistent elevations of serum transaminases. Hypersensitivity to any component of the medication. **Pregnancy and Lactation** — Attherosclerosis is a chronic process and discontinuation of lipid-lowering drugs during pregnancy should have little impact on the outcome of long-term therapy of primary hypercholesterolemia. Cholesterol and other products of cholesterol biosynthesis are essential components for fetal development (including synthesis of steroids and cell membranes). Since HMG-CoA reductase inhibitors decrease cholesterol synthesis and possibly the synthesis of other biologically active substances derived from cholesterol, they may cause fetal harm when administered to pregnant women. Therefore, HMG-CoA reductase inhibitors are contraindicated during pregnancy and in nursing mothers. **ATORVASTATIN SHOULD BE ADMINISTERED TO WOMEN OF CHILDBEARING AGE ONLY WHEN SUCH PATIENTS ARE HIGHLY UNLIKELY TO CONCEIVE AND HAVE BEEN INFORMED OF THE POTENTIAL HAZARDS.** If the patient becomes pregnant while taking this drug, therapy should be discontinued and the patient apprised of the potential hazard to the fetus.

WARNINGS: **Liver Dysfunction** — HMG-CoA reductase inhibitors, like some other lipid-lowering therapies, have been associated with biochemical abnormalities of liver function. Persistent elevations (>3 times the upper limit of normal [ULN]) occurring on 2 or more occasions in serum transaminases occurred in 0.7% of patients who received atorvastatin in clinical trials. The incidence of these abnormalities was 0.2%, 0.2%, 0.8%, and 2.3% for 10, 20, 40, and 80 mg, respectively. One patient in clinical trial developed jaundice. Increases in liver function tests (LFT) in other patients were not associated with jaundice or other clinical signs or symptoms. Upon discontinuation, drug interruption, or discontinuation, transaminase levels returned to or near pre-treatment levels without sequelae. Elevation of all patients with persistent LFT elevations continued treatment with a reduced dose of atorvastatin. It is recommended that liver function tests be performed prior to and at 12 weeks following both the initiation of therapy and any elevation of dose, and periodically (eg, occasionally) thereafter. Liver enzyme changes generally occur in the first 3 months of treatment with atorvastatin. Patients who develop increased transaminase levels should be monitored until the abnormalities resolve. Should an increase in ALT or AST of >3 times ULN persist, reduction of dose or withdrawal of atorvastatin is recommended. Atorvastatin should be used with caution in patients who consume substantial quantities of alcohol and/or have a history of liver disease. Active liver disease or unexplained persistent transaminase elevations are contraindications to the use of atorvastatin (see CONTRAINDICATIONS). **Skeletal Muscle** — Rare cases of rhabdomyolysis with acute renal failure secondary to myoglobinuria have been reported with atorvastatin and with other drugs in this class. Uncomplicated myalgia has been reported in atorvastatin-treated patients (see ADVERSE REACTIONS). Myopathy, defined as muscle aches or muscle weakness in conjunction with increases in creatine phosphokinase (CPK) values >10 times ULN, should be considered in any patient with diffuse myalgias, muscle tenderness or weakness, and/or marked elevation of CPK. Patients should be advised to report promptly unexplained muscle pain, tenderness or weakness, particularly if accompanied by malaise or fever. Atorvastatin therapy should be discontinued if markedly elevated CPK levels occur or myopathy is diagnosed or suspected. The risk of myopathy during treatment with drugs in this class is increased with concurrent administration of cyclosporine, fibric acid derivatives, erythromycin, niacin, or certain antifungals. Physicians considering combined therapy with atorvastatin and fibric acid derivatives, erythromycin, immunosuppressive drugs, azole antifungals, or lipid-lowering doses of niacin should carefully weigh the potential benefits and risks and should carefully monitor patients for any signs or symptoms of muscle pain, tenderness, or weakness, particularly during the initial months of therapy and during any periods of upward dosage titration of either drug. Periodic creatine phosphokinase (CPK) determinations may be considered in such situations, but there is no assurance that such monitoring will prevent the occurrence of severe myopathy. Atorvastatin therapy should be temporarily withheld or discontinued in any patient with an acute, serious condition suggestive of a myopathy or having a risk factor predisposing to the development of renal failure secondary to rhabdomyolysis (eg, severe acute infection, hypotension, major surgery, trauma, severe metabolic, endocrine and electrolyte disorders, and uncontrolled seizures).

PRECAUTIONS: **General** — Before instituting therapy with atorvastatin, an attempt should be made to control hypercholesterolemia with appropriate diet, exercise, and weight reduction in those patients, and to treat other underlying medical problems (see INDICATIONS AND USAGE in full prescribing information). **Information for Patients** — Patients should be advised to report promptly unexplained muscle pain, tenderness, or weakness, particularly if accompanied by malaise or fever. **Drug Interactions** — The risk of myopathy during treatment with drugs of this class is increased with concurrent administration of cyclosporine, fibric acid derivatives, niacin (nicotinic acid), erythromycin, azole antifungals (see WARNINGS, Skeletal Muscle). **Atorvastatin** When atorvastatin and Meclizine 7C suspension were coadministered, plasma concentrations of atorvastatin decreased approximately 35%. However, LDL-C reduction was not affected. **Antacids** — Because atorvastatin does not affect the pharmacokinetics of antacids, interactions with other drugs metabolized via the same cytochrome enzymes are not expected. **Concomitant Plasma Concentrations of Atorvastatin** decreased approximately 25% when atorvastatin and simvastatin were coadministered. However, LDL-C reduction was greater when atorvastatin and simvastatin were administered than when either drug was given alone. **Cimetidine** — Atorvastatin plasma concentrations and LDL-C reduction were not altered by cimetidine administration of cimetidine. **Digoxin** — When multiple doses of atorvastatin and digoxin were coadministered, steady-state plasma digoxin concentrations increased by approximately 20%. Patients taking digoxin should be monitored appropriately. **Erythromycin** — In healthy individuals, plasma concentrations of atorvastatin increased approximately 40% with coadministration of atorvastatin and erythromycin, a known inhibitor of cytochrome P450 3A4 (see WARNINGS, Skeletal Muscle). **Drug Interactions:** Coadministration of atorvastatin and oral contraceptives increased AUC values for norethindrone and ethinyl estradiol by approximately 30% and 20%, respectively. These increases should be considered when selecting an oral contraceptive for a woman taking atorvastatin. **Warfarin:** Atorvastatin had no clinically significant effect on prothrombin time when administered to patients receiving chronic warfarin treatment. **Endocrine Function** — HMG-CoA reductase inhibitors interfere with cholesterol synthesis and theoretically might blunt adrenal and/or gonadal steroid production. Clinical studies have shown that atorvastatin does not reduce basal plasma cortisol concentration or impair adrenal reserve. The effects of HMG-CoA reductase inhibitors on male fertility have not been studied in adequate numbers of patients. The effects, if any, on the fertility of female rats in premenopausal women are unknown. Caution should be exercised if an HMG-CoA reductase inhibitor is administered concurrently with drugs that may decrease the levels or activity of endogenous steroid hormones, such as testosterone, estradiol, and progesterone. **CNS Effects:** Brain hemorrhage was seen in a female dog treated for 3 months at 10, 20, and 40 mg/kg/day. Brain hemorrhage and optic nerve vacuolation were seen in another female dog that was sacrificed at mid- and end-point after 1 week of escalating doses up to 200 mg/kg/day. The 120 mg/kg dose resulted in a systemic exposure approximately 18 times the human plasma area under the curve (AUC, 0-24 hours) based on the maximum human dose of 80 mg/day. A single toxic, convulsion was seen in each of 2 male dogs (one treated at 10 mg/kg/day and one at 120 mg/kg/day) in a 1 year study. No CNS lesions have been observed in mice after chronic treatment for up to 2 years at doses up to 400 mg/kg/day or in rats at doses up to 160 mg/kg/day. These doses were 6 to 11 times (mouse) and 8 to 16 times (rat) the human AUC (0-24) based on the maximum recommended human dose of 80 mg/day. CNS vascular lesions, characterized by perivascular hemorrhage, edema, and mononuclear cell infiltration of perivascular spaces, have been observed in dogs treated with other members of this class. A chemically similar drug in this class produced optic nerve degeneration (Wallerian degeneration of retinoganglionic fibers) in clinically normal dogs in a dose-dependent fashion at a dose that produced plasma drug levels about 30 times higher than the mean drug level in humans taking the highest recommended dose. **Carcinogenesis, Mutagenesis, Impairment of Fertility** — In a 2-year carcinogenicity study in rats at dose levels of 10, 30, and 100 mg/kg/day, 2 hard tumors were found in muscle in high-dose females; in one, there was a rhabdomyosarcoma and, in another, there was a fibrosarcoma. These doses represent a plasma AUC (0-24) value of approximately 16 times the mean human plasma drug exposure after an 80 mg oral dose. A 2-year carcinogenicity study in mice given 100, 200, or 400 mg/kg/day resulted in a significant increase in liver adenomas in high-dose males and liver carcinomas in high-dose females. These findings occurred at plasma AUC (0-24) values of approximately 5 times the mean human plasma drug exposure after an 80 mg oral dose. In vitro, atorvastatin was not mutagenic or clastogenic in the following tests with and without metabolic activation: Ames test with *Salmonella typhimurium* and *Escherichia coli*; the HGPRT forward mutation assay in Chinese hamster ovary cells; and the chromosomal aberration assay in Chinese hamster lung cells. Atorvastatin was negative in the in vivo mouse micronucleus test. Studies in rats performed at doses up to 75 mg/kg (15 times the human exposure) produced no changes in fertility. There was aplasia and aspermia in the epididymus of 2 of 10 rats treated with 100 mg/kg/day of atorvastatin for 3 months. 16 times the human AUC of the 80 mg oral dose; testis weights were significantly lower at 70 and 100 mg/kg and epididymal weights were lower at 100 mg/kg. Male rats given 100 mg/kg/day for 11 weeks prior to mating had decreased sperm motility, sperm head concentration, and increased abnormal sperm. Atorvastatin caused no adverse effects on semen parameters, or reproductive organ histopathology in dogs given doses of 10, 40, or 120 mg/kg for two years. **Pregnancy Category X: See CONTRAINDICATIONS.** Safety in pregnant women has not been established. Atorvastatin crosses the rat placenta and reaches a level in fetal liver equivalent to that of maternal plasma. Atorvastatin was not teratogenic in rats at doses up to 300 mg/kg/day or in rabbits at doses up to 100 mg/kg/day. These doses resulted in multiples of about 30 times (rat) or 20 times (rabbit) the human exposure based on surface area (mg/m²). In a study in rats given 20, 100, or 225 mg/kg/day from gestation day 7 through to lactation day 21 (weaning), there was decreased pup survival at birth, neonatal, weaning, and maturity in pups of mothers dosed with 225 mg/kg/day. Body weight was decreased in pups 4 and 12 in pups of mothers dosed at 100 mg/kg/day, pup body weight was decreased at birth and at days 4, 21, and 91 at 225 mg/kg/day. Pup development was delayed (rotarod performance at 100 mg/kg/day and acoustic startle at 225 mg/kg/day, pinnae detachment and eye opening at 225 mg/kg/day). These doses correspond to 8 times (100

mg/kg) and 22 times (225 mg/kg) the human AUC at 80 mg/day. Rare reports of congenital anomalies have been received following intrauterine exposure to HMG-CoA reductase inhibitors. There has been one report of severe congenital bone deformity, tracheo-esophageal fistula, and anal atresia (VACTER association) in a baby born to a woman who took lovastatin with dextropropylamine sulfate during the first trimester of pregnancy. **LIPITOR** should be administered to women at child-bearing potential only when such patients are highly unlikely to conceive and have been informed of the potential hazards. If the woman becomes pregnant while taking **LIPITOR**, it should be discontinued and the patient advised again as to the potential hazards to the fetus. **Nursing Mothers** — Nursing rat pups had plasma and liver drug levels of 50% and 40%, respectively, of that in their mother's milk. Because of the potential for adverse reactions in nursing infants, women taking **LIPITOR** should not breast-feed their **CONTRAINDICATIONS, Pediatric Use** — Safety and effectiveness in patients 10-17 years of age with heterozygous familial hypercholesterolemia have been evaluated in a controlled clinical trial of 6 months duration in adolescents and postmenstrual girls. Patients treated with **LIPITOR** had an adverse experience profile generally similar to that of patients treated with placebo, the most common adverse experience observed in both groups, regardless of causality assessment, were infections. Doses greater than 20 mg have not been studied in this patient population. In this limited (short-term) study, there was no detectable effect on growth or sexual maturation in boys or on menstrual cycle length in girls (see **CLINICAL PHARMACOLOGY**, Clinical Studies section in full prescribing information). **ADVERSE REACTIONS:** Pediatric Patients (ages 10-17 years): and **DOSE AND ADMINISTRATION.** Heterozygous Familial Hypercholesterolemia in Pediatric Patients (10-17 years of age): full prescribing information. Adolescent females should be counseled on appropriate contraceptive methods while on **LIPITOR** therapy (see **CONTRAINDICATIONS** and **PRECAUTIONS**, Pregnancy). **LIPITOR** has not been studied in controlled clinical trials involving pre-pubertal patients or patients younger than 10 years of age. Clinical efficacy with doses up to 80 mg/day for 1 year has been established in an uncontrolled study of patients with heterozygous FH including 8 pediatric patients (see **CLINICAL PHARMACOLOGY**, Clinical Studies, Heterozygous Familial Hypercholesterolemia in full prescribing information). **Variable Use** — The safety and efficacy of atorvastatin, 10-80 mg in the pediatric population >12 years of age) were evaluated in the ACCESS study in this 54-week open-label trial. 358 patients initiated therapy with atorvastatin 10 mg (D) these, 815 were elderly (≥65 years) and 1, 23 were non-elderly. The mean change in LDL-C from baseline after 6 weeks of treatment with atorvastatin 10 mg was -38.2% in the elderly patients versus -34.6% in the non-elderly by group. The rates of discontinuation due to adverse events were similar between the two age groups. There were no differences in clinically relevant laboratory abnormalities between the age groups.

ADVERSE REACTIONS: **LIPITOR** is generally well-tolerated. Adverse reactions have usually been mild and transient. In controlled clinical studies of 2607 patients, <2% of patients were discontinued due to adverse experiences attributable to atorvastatin. The most frequent adverse events thought to be related to atorvastatin were constipation, flatulence, dyspepsia, and abdominal pain. **Clinical Adverse Experiences** — Adverse experiences reported in ≥2% of patients in placebo-controlled clinical studies of atorvastatin, regardless of causality assessment, are shown in the following table:

Adverse Events in Placebo-Controlled Studies (% of Patients)					
BODY SYSTEM Adverse Event	Placebo N = 270	Atorvastatin 10 mg N = 863	Atorvastatin 20 mg N = 38	Atorvastatin 40 mg N = 78	Atorvastatin 80 mg N = 94
BODY AS A WHOLE					
Infection	10.0	10.3	2.8	10.1	7.4
Headache	7.0	8.4	16.7	2.5	6.4
Accidental injury	3.7	4.2	0.0	1.3	3.2
Ru Syndrome	1.9	2.3	0.0	2.5	3.2
Abdominal Pain	8.7	2.8	0.0	3.8	2.1
Back Pain	3.0	2.8	0.0	3.8	1.1
Allergic Reaction	2.6	0.9	2.8	1.3	0.0
Asthma	1.8	2.2	0.0	3.8	0.0
DIGESTIVE SYSTEM					
Constipation	1.9	2.1	0.0	2.5	1.1
Diarrhea	1.5	2.7	0.0	3.8	5.3
Dyspepsia	4.1	2.3	2.8	3	2.1
Flatulence	3.3	2.1	2.8	1.3	1
RESPIRATORY SYSTEM					
Sinusitis	2.6	2.8	0.0	2.5	6.4
Pharyngitis	1.5	2.5	0.0	3	2.1
SKIN AND APPENDAGES					
Rash	0.7	3.8	2.8	3.8	1.1
MUSCULOSKELETAL SYSTEM					
Arthralgia	5	2.0	0.0	5	0.0
Myalgia	1	3.2	5.6	1.3	0.0

The following adverse events were reported, regardless of causality assessment in patients treated with atorvastatin in clinical trials. The events in italics occurred in ≥2% of patients and the events in plain type occurred in <2% of patients.

Body as a Whole: Chest pain, face edema, fever, neck rigidity, melasma, photosensitivity reaction, generalized edema. **Digestive System:** Nausea, gastroenteritis, liver function tests abnormal, colitis, vomiting, gastritis, dry mouth, rectal hemorrhage, esophagitis, eructation, dyspepsia, mouth ulceration, anorexia, increased appetite, stomatitis, biliary pain, cholecystitis, duodenal ulcer, dysphagia, enteritis, melena, gum hemorrhage, stomach ulcer, tooth pain, ulcerative stomatitis, hepatitis, pancreatitis, cholelithiasis, jaundice. **Respiratory System:** Bronchitis, rhinitis, pneumonia, dyspnea, asthma, epistaxis. **Nervous System:** Insomnia, dizziness, paresthesia, somnolence, amnesia, abnormal dreams, libido decreased, emotional lability, incoordination, peripheral neuropathy, lightheadedness, paresthesia, hyperreflexia, depression, hyposthesia, hyperreflexia. **Musculoskeletal System:** Arthralgia, leg cramps, bursitis, arthrosynovitis, myasthenia, tendinous contracture, myositis. **Skin and Appendages:** Pruritus, contact dermatitis, alopecia, dry skin, sweating, acne, urticaria, eczema, seborrhea, skin ulcer. **Urogenital System:** Urinary tract infection, urinary frequency, cystitis, hematuria, impotence, dysuria, urinary retention, nocturia, pyelodivertitis, fibrocystic breast, vaginal hemorrhage, albuminuria, breast enlargement, metrorrhagia, nephritis, urinary incontinence, urinary retention, urinary urgency, abnormal micturition, uterine hemorrhage. **Special Senses:** Amblyopia, tinnitus, dry eyes, refraction disorder, eye hemorrhage, deafness, glaucoma, parosmia, taste loss, taste perversion. **Cardiovascular System:** Palpitation, vasodilation, syncope, migraine, postural hypotension, phlebotomy, arhythmia, angina pectoris, hypertension. **Metabolic and Nutritional Disorders:** Peripheral edema, hypoglycemia, creatine phosphokinase increased, gout, weight gain, hypoglycemia. **Hemic and Lymphatic System:** Eosinophilia, anemia, lymphadenopathy, thrombocytopenia, pliculosis. **Postinfection Reports** — Adverse events associated with **LIPITOR** therapy reported since market introduction, that are not listed above, regardless of causality assessment, include the following: anaphylaxis, angioedema, edema, edema, postural hypotension, phlebotomy, arhythmia, Stevens-Johnson syndrome, and toxic epidermal necrolysis, and rhabdomyolysis. **Pediatric Patients (ages 10-17 years)** In a 26-week controlled study in boys and postmenarcheal girls (>12), the safety and tolerability profile of **LIPITOR** 10 to 20 mg daily was generally similar to that of placebo (see **CLINICAL PHARMACOLOGY**, Clinical Studies section in full prescribing information and **PRECAUTIONS**, Pediatric Use).

OVERDOSE: There is no specific treatment for atorvastatin overdose. In the event of an overdose, the patient should be treated symptomatically, and supportive measures instituted as required. Due to extensive drug binding to plasma proteins, hemodialysis is not expected to significantly enhance atorvastatin clearance.

Please see full prescribing information for additional information about **LIPITOR**.

1% only

©2003 Pfizer Ireland Pharmaceuticals

Manufactured by:
Pfizer Ireland Pharmaceuticals
Dublin, Ireland

Distributed by:
Pfizer Parke-Davis
Division of Pfizer Inc. NY, NY 10017

Rev. 4, August 2003

LP182397A

© 2004 Pfizer Inc.

All rights reserved.

Pfizer U.S. Pharmaceuticals



Andersen
W. HOOBS • OODRS

THANK YOU TO OUR NATIONAL SPONSORS FOR ALL THEIR SUPPORT.

Cashy 21

WMC

Real Estate for the Real World. WE ARE PROFESSIONAL. WE DO.



TOM SILVA
GENERAL
CONTRACTOR



ROGER COOK
LANDSCAPE
CONTRACTOR



**RICHARD
TRETHERWEY**
PLUMBING &
HEATING EXPERT



NORM ABRAM
MASTER CARPENTER

MORE SHINGLES, MORE PROTECTION

My grandparents' house, located in the small mountain town of Index, Washington, has shingle siding with what appears to be double rows of shingles. I'm curious about why the shingles would have been applied in this manner, as it seems to use almost twice the number of shingles as most homes use. My grandparents were very frugal people, so this would have been an unlikely extravagance on their part.

KRIS CARLSON, HAMPTON, VA.

TOM SILVA REPLIES: The shingle style you refer to—called ribbon coursing, or banding—is the same one we used to side the Concord cottage project last year. You get that look by reducing the exposure of every other course to about an inch or two. I like its strong horizontal shadow lines, but ribbon coursing isn't entirely decorative. The reduced exposure means the shingles overlap more, which provides walls with an additional layer of protection from the weather. That might have been what your grandparents were after.

DOG VS. GRASS

Lucy, our 2-year-old Doberman, is a wonderful dog, but by running around in our backyard she's killing what little grass we have. I'd like a nice grass yard but don't know what to do.

DON JOHNS, MILWAUKEE, WISC.

ROGER COOK REPLIES: Dogs will be dogs, and they do love to run. And if a dog is confined to one area particularly if it's chained to a post or to a cable that allows the dog to move back and forth, lawn damage is unavoidable. In this case, forget trying to save the grass. Remove what's there and replace it with a wide swath of mulch or sand, contained with edging. These materials won't hurt a dog's feet, the way gravel or pea stone can, and they can easily be raked back into place as needed. Artificial turf might also work, if the area isn't too large. I've installed it under backyard swingsets; it stands up to toddlers, so maybe it would work with Lucy.

Another approach would be to use one of the porous paving systems designed to help grass withstand driveway and parking-lot traffic. These perforated plastic or



Ribbon coursing, the shingling technique used at the recent TV project house in Concord, Mass., creates distinctive horizontal stripes as it improves the walls' weathertightness.

masonry materials, which are strong enough to support cars and trucks, contain many holes that protect the grass and its roots from damage while allowing water to drain through. Installing these systems requires some excavating, filling (with a good mix of sand, compost, and loam), replanting (with sod plugs), and waiting before the grass is strong enough. But once the lawn is established, it should be able to withstand Lucy. Just be sure to discuss your intentions with the manufacturer first. You don't want to install anything that will cut her feet.

RANGE SUPPORT

We've been looking for a new, more powerful stove, but the ones we're interested in weigh about 400 pounds. Can the 2x10 floor joists in our 10-year-old Cape take this kind of weight?

SHARON DAY, EAST KINGSTON, N.H.

TOM SILVA REPLIES: Based on the age of the house, I'd guess that the floor should be strong enough. But in order to know for sure, I'd need more information: the spacing between the joists, how long they run between



Wide open sky above you.
Endless possibilities before you.

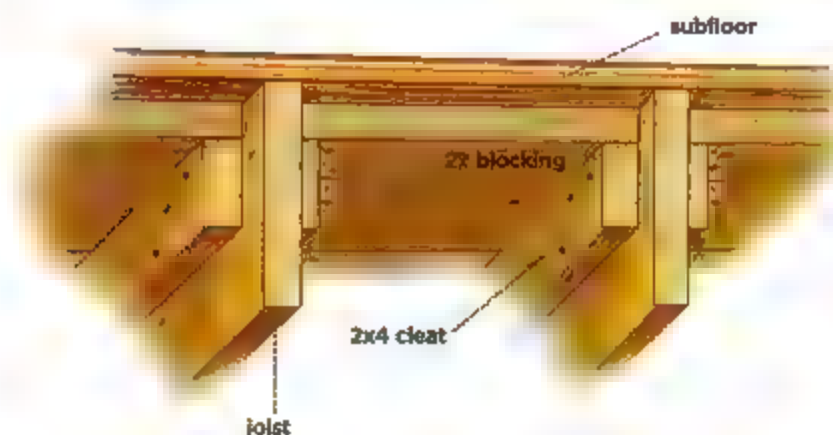
Set your plans in motion with one of the newest members in the Gator™ family: The John Deere Gator Compact Series. If you have projects, it's up for the challenge. It's built to work. It's built to last. And it's built tougher than the task.

NOTHING RUNS LIKE A DEERE™



PHOTOS (LEFT): PETER ROSS (RIGHT): BEVAN WALKER

LOCAL FLOOR REINFORCEMENT



supports (their span), the wood species (assuming they're solid wood, not engineered lumber), and the thickness and type of subfloor.

If you have any doubts, or just don't want to take any chances, it's easy enough to reinforce the floor under the range from the basement. Use some dry 2x8 or 2x10 blocking held flat against the subfloor by 2x4 cleats nailed to the joists. Or, instead of 2x blocking, you could cut plywood strips off the 4-foot edge of a 3/4-inch sheet, then glue them to the bottom of the subfloor before you nail on the cleats.

UNGLUING PVC

I am remodeling my bathroom and have to move the toilet slightly. Is there a process I can use to "unglue" a 3-inch PVC pipe joint that has been in place for 25 years?

TED ATCHLEY, MORIAH, N.Y.

RICHARD TRETHEWEY REPLIES: Soldered joints in copper pipe are easy to reheat and take apart, but there's nothing that will dissolve the solvent bond between mating pieces of PVC. The easiest solution is to cut out the problem joint and replace it with a new fitting, joined to the old pipe with a coupling. If this is absolutely not an option, as seems to be your case, you can try to cut out the pipe stub embedded in the fitting and leave the fitting in place.

This requires a bit of artistry with a hacksaw and chisel. First, using the hacksaw, cut off the pipe flush with the fitting, which you leave in place. Now put the hacksaw blade into a blade holder and slowly make two cuts about a half inch apart through the wall of the pipe inside fitting. Take care not to nick the inside of the fitting. Then, using a sharp chisel, cut a notch out of the pipe being careful not to let the chip fall into the drain. Make additional cuts about every half inch and continue chiseling and catching the chips until the pipe is gone. It's not going to be easy, but if it's the only choice you've got, give it a try.

ILLUSTRATION: AR WOPPOLE

A Whole New Way of Looking at Level & Plumb!

LaserVision® Qube™ System

You won't believe how easy laser leveling has become—or how inexpensive. Whether you are a do-it-yourself beginner, or a seasoned pro, you can do it *all* with this remarkable new tool. Get started with a base and one qube, then simply add more qubes and accessories as you need them.

- ▶ Level, plumb, align or square
- ▶ Modular laser qubes shoot dots, lines or crosses
- ▶ Quick set up, pick a qube, point, and go
- ▶ Qubes can be flipped or rotated to shoot lines on walls, floors or ceilings
- ▶ Professional accuracy and durability
- ▶ Auto-leveling or manual-leveling bases available



Kits start at
about \$100!



STOP PONDING ON CONCRETE

Every time it rains, water settles in a shallow spot in our concrete driveway and forms a puddle that sometimes takes quite a while to evaporate. Is there anything I can do about this?

RICHARD RENNINGER, STERLING, OHIO

TOM SILVA REPLIES: Yes, but there's no perfect solution. The simplest, least time-consuming repair would be to spread a concrete patching compound over the area. You want a bagged mix that can be troweled to a feather edge. Following the instructions on the package, clean the driveway, stir the recommended liquid into the compound, and pour it in place. Then run a straightedge over it to level it with the surrounding surface. The downside of this approach is that there will always be a color difference between the patch and the surrounding concrete. There's no way to say for sure how much of a difference there will be; it will tend to even out somewhat over time.

Another, more difficult approach would be to use a diamond-edged saw blade to cut a 2-foot-square hole through the concrete at the center of the low area and then to dig a dry well at least 3 feet deep beneath it. (The deeper it is, the better.) Line the well with landscape fabric to keep the silt out, then fill with 3/4-inch crushed stone. Place a small metal grate over the well, and fill around the grate with new concrete. Just make sure you can remove the grate so you can clean out any debris that might clog up the stone.

WOOD FLOORS IN KITCHENS?

I'm planning to install prefinished Brazilian cherry flooring in several rooms of my house. It's 3/4 inch thick and comes in 3 1/4-inch-wide strips. Do you think it would be okay in the kitchen too? The kitchen entrance is my main door, so I'm concerned that tracked-in water and grit will be hard on the flooring.

PAUL ANDRUS, BRISTOL, R.I.

TOM SILVA REPLIES: I have 3/4-inch-thick solid oak flooring in my kitchen and it's holding up pretty well. Over the last 18 years, I've had it screened (lightly sanded with a floor buffer) and urethaned three times, and sanded down to bare wood and refinished once.

Screening is easy and relatively inex-

pensive, and staves off the need for a complete refinishing. Pat Hunt, the flooring contractor who's worked on a number of *This Old House* projects, says that periodic screenings are "like getting your teeth cleaned regularly rather than waiting for a root canal."

The factory-applied finishes on prefinished flooring are much more durable than finishes applied in place—you can find products with finish warranties of 25 years or more—but no finish can withstand tracked-in grit for long. "When you walk into the house from outdoors, particularly in the winter, the bottoms of your shoes are like sandpaper," Hunt says. He strongly suggests that you put down nonslip

DRYLOK® Good For More Than Just Basements.

Building Exteriors **Bird Baths** **Basement Walls** **Retaining Walls**

America's #1 Waterproofer is the most versatile!

Wherever water and masonry meet, DRYLOK® waterproofs, protects and beautifies. From swimming pools to birdbaths, to basement walls and building exteriors, DRYLOK has you covered. DRYLOK penetrates the pores of the masonry, expands as it dries to become part of the surface.

*March 2003 DL Laboratories.

For a free brochure and the name of your nearest dealer, call 1-800-272-3235, or visit us at www.ugl.com

Ask THIS OLD HOUSE

throw rugs at high-wear areas, such as in front of the sink and in front of your access door. The rugs will help capture the dirt before it runs the finish.

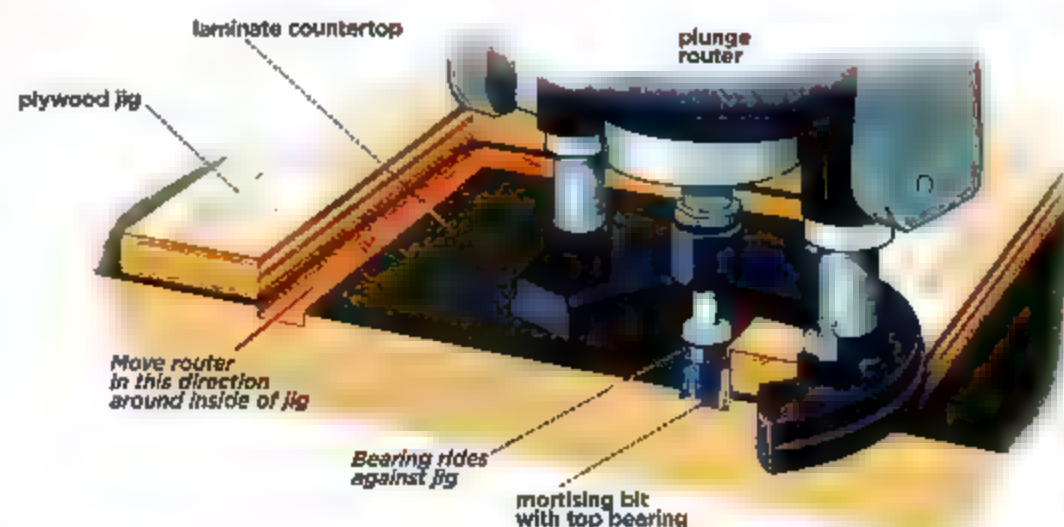
As for your selection of Brazilian cherry, Hunt says it's a very hard and durable wood, but not as stable as more common hardwoods. Let it acclimate in your house until its moisture content reaches 6 to 8 percent. Also check the moisture content of the subfloor; it should be in the 8 to 10 percent range when the flooring goes down. Finally, your installer should leave a 1/2-inch gap around the perimeter of the room for the boards to expand and contract with seasonal changes in humidity. That's good flooring practice regardless of the species being used.

COUNTERTOP REPAIR WITH TILE

Last year, in our kitchen a tea towel caught fire from a lighted candle and partially melted an 8-inch-square area of plastic laminate countertop. I'm hiding the damage with a ceramic tile, but was wondering if I could inset the tile into the countertop for a more finished look.

PEGREEN WARD, MINNEAPOLIS, MINN.

ROUTING A COUNTERTOP FOR AN INSET TILE



TOM SILVA REPLIES: Not a problem. You just need a plunge router and a 1/2-inch hinge-mortising bit with top-mount bearing. With this bit, you can cut a shallow, flat-bottomed trough (called a mortise) about 1/8 inch wider than the tile on every side. You can fill that small gap with adhesive caulk, which will seal out moisture and hold the tile in place. The only limitation to using a router is the size of its base; you can't get

ILLUSTRATION: AK WOPPOLE

any closer to the backsplash than half the base's diameter.

To get a nice, crisp mortise that will match your tile, make a jig out of a piece of 3/4-inch plywood. Just lay the tile on the face of the plywood and mark around its perimeter. Cut along that line with a jig-saw, remove the tile-shaped scrap piece, and you'll have the edge you need to guide the router.

Secure the jig to the counter with hot-melt glue and set the router bit to cut at a depth at least 1/8 inch less than the thickness of the tile; you want the surface of the tile to be higher than the surrounding countertop so you can park a hot pot or pan there without scorching the laminate. (Be careful with really thick tiles, you don't want to cut more than halfway through the underlayment.)

Cut the mortise by first running the router in a clockwise direction around the inside edges of the jig—that gives you the cleanest cut. Then pry the jig off, reset the bit depth, and hog out the rest of the mortise with methodical back-and-forth swipes. If you like the look of the tile once it's glued in place, use the same template to inset matching tiles in other places around the countertop.

MITER ANGLE TABLES

My wife decided that it's time for me to install the crown molding I bought two years ago but have thus far managed to avoid putting up. (After all, these things take time.) Is there any literature that specifies the angles used to set up a compound miter saw to cut crown molding corners?

BOB DOW, CHATHAM, MASS.

NORM ABRAM REPLIES: I guess that excuse you gave her about the wood having to be thoroughly seasoned started to wear thin. Bob, it's ready now.

If I'm not mistaken, the literature

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

Ask This Old House
This Old House Magazine
1185 Avenue of the Americas,
27th Floor
New York, NY 10036

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

www.thisoldhouse.com

you're looking for contains angle tables that will allow you to cut the crown while the piece is lying flat on the saw's table rather than leaning against the saw's fence. First, check your owner's manual for a chart that includes the bevel and miter angle settings to use for standard corner angles: 90 degrees, 270 degrees and the like. But if you don't have a manual, you'll find equivalent resources online, including books and even a downloadable Excel spreadsheet. Just type "compound miter angle" into the search field of your browser. For the tightest joints, use the tables that show the settings for every one-degree change in the corner angle. ■

EXTERIOR • INTERIOR • HARDWARE

Buy the finest
wooden shutters made.

Even if it does mean

**A YEAR OF
DOMESTIC CAVIAR.**



When you consider what solid cedar, historically authentic shutters with hand-forged period hardware from Timberlane® will bring to your home, surely it's worth this kind of sacrifice. Call for a catalog today.



800.250.2221 • TIMBERLANE.COM

**Directions:
Remove cap.
Fill cracks.
Lie on couch.**



GREAT STUFF™ Insulating Foam Sealant is the fast, easy way to fill the holes and cracks where heat and cool air escape. So you and your home will use less energy. Pick up a can anywhere home improvement products are sold and visit www.dowgreatstuff.com



*Trademark of The Dow Chemical Company



Get Wired

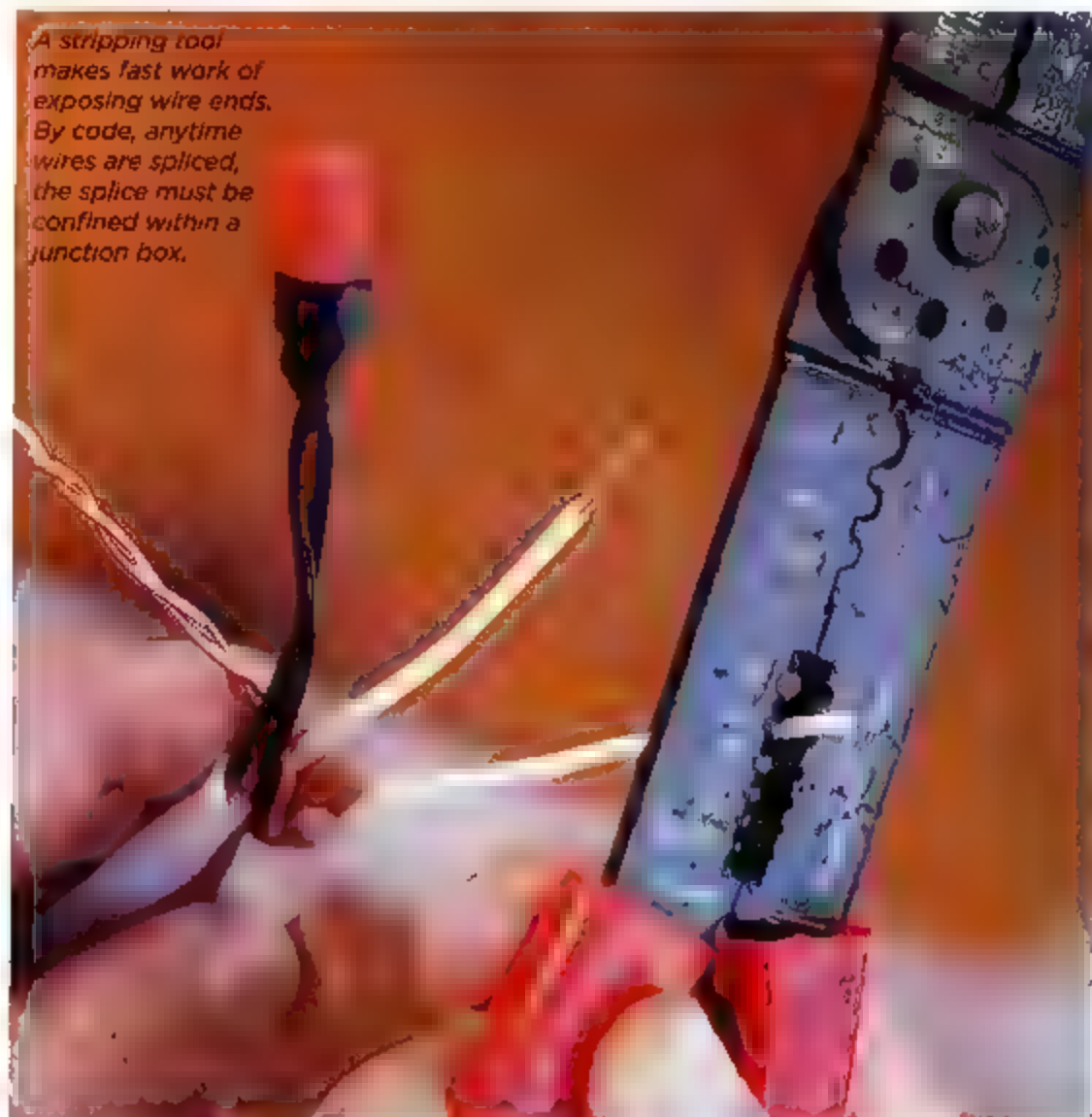
Setting up an electrical system for maximum safety and convenience

BY MAX ALEXANDER

From the Ground Up: 25 Years of Building Experience

In this special year-long series celebrating the 25th anniversary of *This Old House*, we highlight each of the different systems in a house, from the foundation to the roof. You'll learn best building practices from an experienced *TOH* team member and discover some new materials and technologies we've got our eye on. By year's end you'll know how to build the *This Old House* way.

Next Month:
Plumbing
(sixth in the series)



A stripping tool makes fast work of exposing wire ends. By code, anytime wires are spliced, the splice must be confined within a junction box.

Whenver we flip a switch, plug in an appliance, or adjust a reading light, we interact with the electrical system in a house. A good electrician can make those interactions easier in a hundred little ways, so it's best to communicate your needs early—ideally after the house is framed and before the drywall or insulation goes up.

That's when master electrician Allen Gallant, who has wired many *This Old House* TV projects, takes his customers on a job-site walk through, showing where he plans to put switches, lights, and receptacles. "I'll even ask them if they're left-handed or right-handed," he says. "It makes a big difference when you're looking for the light switch." It's easy to make changes at this point in the process, but once the walls are closed in, any second thoughts become far more difficult and expensive to implement.

Once Gallant starts wiring a house, virtually every aspect of his work is controlled by codes, both local and national. These codes are the final word on safe installation practices. Gallant is meticulous in adhering to them, yet he often goes a step further to make his electrical systems even safer and easier to use. On the following pages, you'll see the basics of wiring a house to meet code, along with a look at Gallant's extras.

"A GOOD ELECTRICIAN WILL THINK OF THINGS THE ARCHITECT HASN'T, AND END UP MAKING YOUR LIFE EASIER."

—ALLEN GALLANT

BY THE NUMBERS

Annual kilowatt-hours consumed per household

1979:

8,843

2002:

10,880

TOP FIVE ELECTRICITY GOBBLERS:

ELECTRIC WATER HEATERS (pre-1998)

WINDOW AIR-CONDITIONERS

ELECTRIC WATER HEATERS (post-1998)

BASEBOARD HEATERS

CLOTHES DRYERS

Tons of copper made into electrical wire in the U.S.

1978:

329,000

2002:

600,000

POUNDS OF ELECTRICAL WIRE IN AN AVERAGE HOME:

225

SOURCES:
Edison Electric Institute,
Copper Development
Association,
Seattle City Light

PHOTO: KELLER & KELLER ILLUSTRATION: AN WOPPOLE



When I want great looking protection for our home, I turn to a company I can trust. Benjamin Moore. Their premium exterior paints, available in thousands of colors, go on smoother, with excellent coverage. And with a 25-year warranty, I know this great look will last. Benjamin Moore® exterior



paints can be found only at your local Benjamin Moore® retailer, whose knowledge and expertise will help you complete your project right the first time. And whether I do the painting myself, or have someone do it for me, this is an investment I know will pay off.

"Benjamin Moore calls it *Dunmore Cream*.

I call it *protecting my investment*."

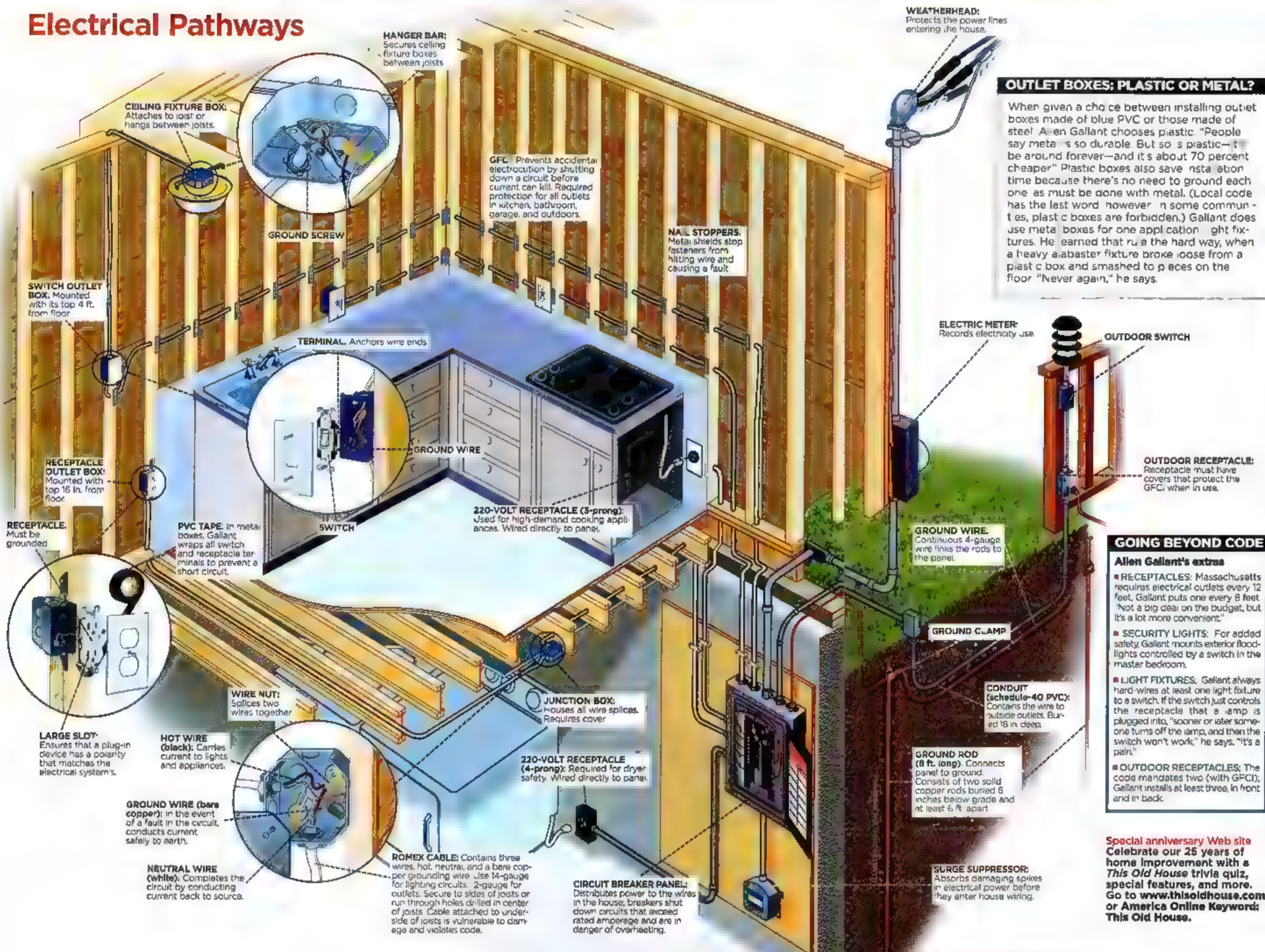
Benjamin Moore®
Paints

We make it simple to protect your home.

For a retailer near you call 1-800-6-PAINT-6 or visit www.benjaminmoore.com

© 2004 Benjamin Moore & Co. Benjamin Moore and Moore are registered trademarks and the triangle "M" symbol is a trademark. Licensed to Benjamin Moore & Co.

Electrical Pathways



OUTLET BOXES: PLASTIC OR METAL?

When given a choice between installing outlet boxes made of blue PVC or those made of steel, Allen Gallant chooses plastic. "People say metal's so durable. But so is plastic—it'll be around forever—and it's about 70 percent cheaper." Plastic boxes also save installation time because there's no need to ground each one as must be done with metal. (Local code has the last word, however: in some communities, plastic boxes are forbidden.) Gallant does use metal boxes for one application: light fixtures. He learned that the hard way, when a heavy plaster fixture broke loose from a plastic box and smashed to pieces on the floor. "Never again," he says.

Worth a Look

Great ideas from TOH project houses

ARC-FAULT CIRCUIT INTERRUPTERS

A conventional circuit breaker can't detect the low-level arcing (a spark-generating short circuit) that can occur on frayed or cut wires. Arc-fault circuit interrupters (AFCIs), installed at the service panel, protect against such dangerous shorts and are now required in new bedroom circuits. Gallant first used them at the TV project in Brierley, Mass.



LOW-VOLTAGE LIGHTS

What a difference a transformer makes. By taking 110-volt household power and stepping it down to 12 volts, it allows most any homeowner to safely install low-voltage lighting fixtures under cabinets, on ceilings, or around gardens and outdoor walkways. Low voltage doesn't mean dim. The tiny xenon bulbs in the accent lights in the kitchen of the Charlestown, Mass. TV project produce an incredibly bright light, and they boast a 10,000-hour life span.



AIRTIGHT RECESSED LIGHTS

Standard recessed lights are stylish space savers, but they leave a hole in your ceiling where air (and heat) can escape. That's why manufacturers have perfected so-called airtight recessed lights, which block air leaks and even allow insulation to be placed on top of the fixture—a big no-no with old-style can lights. Used throughout the Milton TV project, they're now required by code in many applications.



GOING BEYOND CODE

Allen Gallant's extras

- **RECEPTACLES:** Massachusetts requires electrical outlets every 12 feet. Gallant puts one every 8 feet. "Not a big deal on the budget, but it's a lot more convenient."
- **SECURITY LIGHTS:** For added safety, Gallant mounts exterior floodlights controlled by a switch in the master bedroom.
- **LIGHT FIXTURES:** Gallant always hard-wires at least one light fixture to a switch. If the switch just controls the receptacle that a lamp is plugged into, "sooner or later someone turns off the lamp, and then the switch won't work," he says. "It's a pain."
- **OUTDOOR RECEPTACLES:** The code mandates two (with GFCI); Gallant installs at least three, in front and in back.

Special anniversary Web site
Celebrate our 25 years of home improvement with a *This Old House* trivia quiz, special features, and more. Go to www.thisoldhouse.com or America Online Keyword: **This Old House.**

ON THE HORIZON

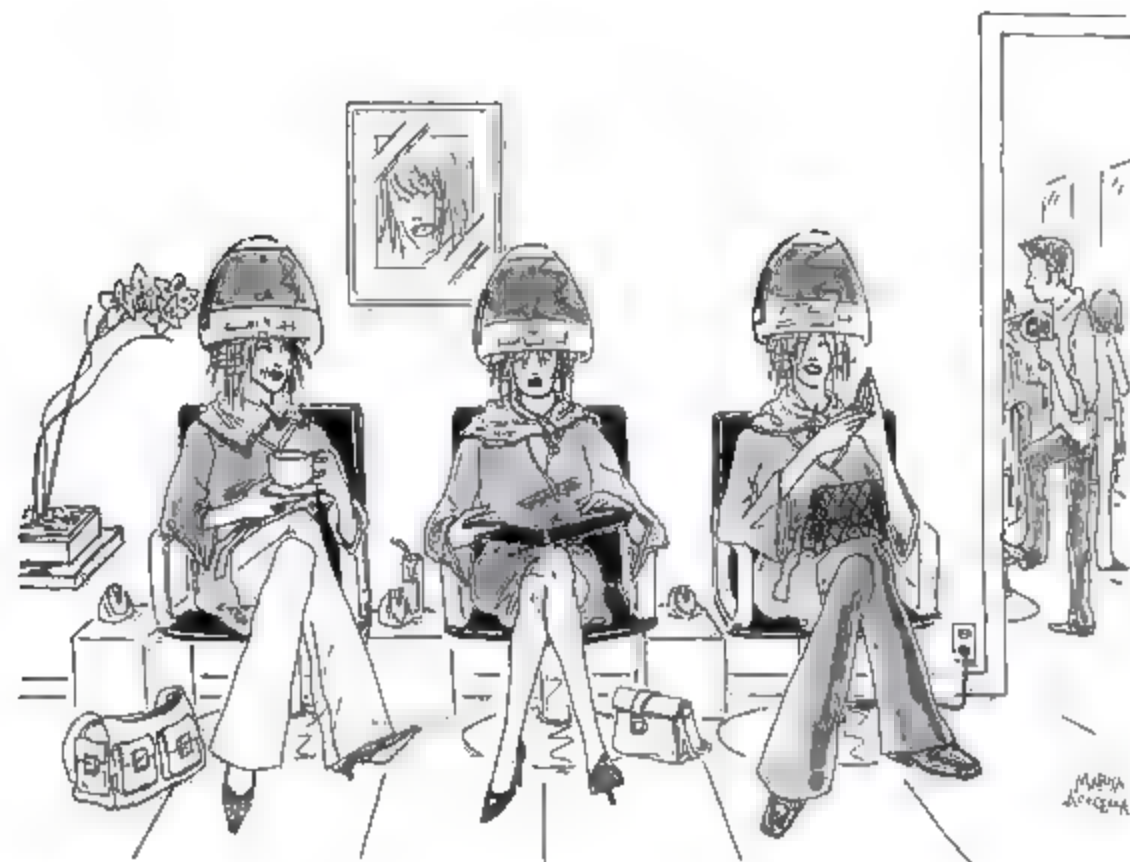
HIGH-TECH ELECTRIC METERS

In the future, your electric meter may be able to sense power outages, detect wiring problems, monitor appliance efficiency, and send reports instantly to the power company. The company can then save you money by notifying you of problems or by remotely shutting down noncritical appliances during peak-rate hours. These are already in use with big industrial and commercial power users.

LED LIGHTBULBS

Light-emitting diodes (LEDs)—now seen primarily in flashlights, traffic signals, and auto taillights—are already saving billions of kilowatt hours of electricity. They use just 10 percent of the power needed for incandescent bulbs of the same brightness and should last for at least 10,000 hours. These wonder bulbs promise to be the next big thing in residential lighting. Gallant can't wait. "They'd be great for a cathedral ceiling because you almost never have to change the bulbs."





"Trane puts its systems through 5 years of wear and tear in just 4 months."

"Sounds a lot like my first marriage."

TRANE TORTURE TESTING. JUST ANOTHER REASON WHY TRANE SYSTEMS ARE SO RELIABLE.

At Trane, our engineers believe that only the strong survive. So they bombard our equipment with five years' worth of extreme weather conditions, from arctic temperatures to tropical heat and humidity. Then they disassemble it and correct any sign of



weakness. No one else goes to these lengths to guarantee your family's comfort. Then again, no one builds a system quite like we do. To learn more about Trane's unrivaled commitment to reliability, visit www.trane.com



WORK LIGHTS

BY JOHN KELSEY PHOTOGRAPHS BY NEDJELJKO MATURA



...they're the brightest, though their intense heat is a risk near construction materials. Fluorescent lights burn cool; the downside is a greenish hue that may skew colors. For any work light, the most important feature is a sturdy case. "Be sure it can survive being thumped by a 2x4," says This Old House general contractor Tom Silva. "A job site is a rough place."



AREA LIGHT

BEST FOR: Best for...
LOOK FOR: Magnets...
SHOWN: With...



Installs in one weekend Lasts a lifetime

When you have a busy life, it helps to have a fence that doesn't require too much of your time. All Veranda™ brand vinyl fences can be installed in as little as one weekend and are maintenance-free. Add a lifetime warranty to that and you have a fence that's practically worry-free. Veranda vinyl fences are the only fence you'll ever need. And it's exclusively available at The Home Depot.



Enduring Products Enduring Beauty





The DELTA Do-It-Yourself

Bring out your inner woodworker.

PICK UP THE DELTA® DO-IT-YOURSELF WOODWORKING KIT TODAY AT LOWE'S.

- ▲ 15 home-enhancing woodworking project plans
- ▲ Step-by-step project instruction on video
- ▲ Shop set-up tips
- ▲ Tool usage & maintenance
- ▲ Plus, much more

Interactive CD
hosted by
Scott Phillips of
"The American Woodshop"



GET YOUR KIT FOR FREE! For a limited time, purchase any DELTA® tool and the Do-It-Yourself Woodworking Kit at Lowe's and receive a rebate for the Kit (a \$19.95 value). Hurry, offer runs 6/1 - 7/31/2004. For more information and the Lowe's nearest you, visit deltamachinery.com/cd.

Currently available at participating Lowe's stores only. Limited supply. Offer only valid in US. The Kit's retail value is \$19.95. Delta is a registered trademark of the Pandair Tools Group. ©Pandair Tools Group 2004. Lowe's is a registered trademark of LE LLC. WOOD is a registered trademark of Merrell Corporation.



Do-It-Yourself Woodworking Kit

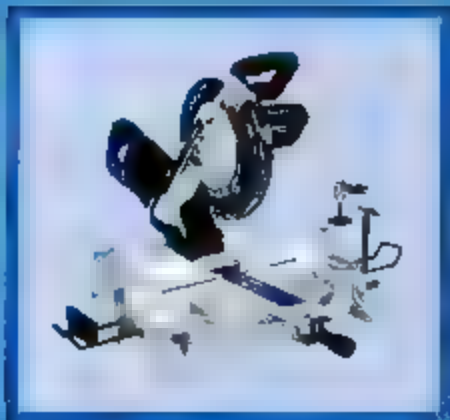
Inside every do-it-yourselfer is

Woodworking projects made easy. . .



Scott Phillips of "The American Woodshop" guides you with step-by-step instructions

2



Learn valuable shop set-up tips including ideas on tool usage and maintenance

3



Build these beautiful bookcases with confidence



DELTA
MACHINERY

a woodworker waiting to get out.

Get started today.

The Kit CD includes working plans for all of the following projects from WOOD® Magazine:

[illegible]

**Organize your music or
give a special gift with
this CD rack.**



Liven up your deck or patio with this charming hexagonal picnic table

**OVER A \$100 VALUE INCLUDED ON AN INTERACTIVE CD.
PICK YOURS UP TODAY AT YOUR LOCAL LOWE'S STORE.**



Fast Food from the Garden! Contest!

Did you know that
all fast food
doesn't come from
a drive-thru?



Figure 6

Figure 6 shows two plots related to the analysis of variance. The top plot displays the mean values of the dependent variable across different levels of the independent variable. The bottom plot shows the standard deviation or error bars for each level.

St. Ignace High School
St. Ignace, Michigan



PSS said it was "pleased" by the findings, but declined comment on whether it would change its information and privacy policies.

The Scots' Complaint by James Macdonald



All-Weather Style

New high-tech frames and fabrics bring living room looks outside

BY KAREN WALDEN
PHOTOGRAPH BY GEOFFREY SOKOL

Even Mother Nature has to be impressed by the latest designs in outdoor furniture. Today's all-weather chairs, sofas, and tables have the looks, comfort, and range of styles to rival their indoor cousins, yet they can stand up to the harshest elements with little or no care. The secret is improved composite materials that mimic the appearance of wicker, rattan, and bamboo, and a new generation of fade-resistant fabrics as rugged as the frames they sit on.

SLEEK & CHIC

Clean lines and a rich, dark finish lend a modern sensibility to the Sienna chaise. The rust-resistant aluminum frame is wrapped by hand with Huiaro, a polyethylene material that is resistant to chlorine, saltwater, and UV rays. Top with all-weather cushions like these in classic cream, or rev up the look with bold stripes from Sunbrella. Henry Hall Designs. \$3,400; 800-767-7738; www.henryhalldesigns.com.

Introducing the **new** Bose® 151® SE speakers

They love to entertain outdoors.

Just like you do.

Whether mingling at a party or working in the yard, people tend to move around outdoors. Unfortunately, the sound from conventional speakers doesn't. That's because the typical stereo image is usually directed to one limited "sweet spot."

Bose® 151® SE speakers, with Stereo Everywhere® speaker performance, solve this problem by dispersing balanced stereo sound over a wider listening area. So listeners can enjoy a consistent Bose quality performance as they move about from deck to pool, from garden to patio.

While the sound stands out, these sleek, contoured speakers blend in with porches, decks and eaves — and can be mounted horizontally or vertically. And like all Bose outdoor speakers, 151 SE speakers are constructed to endure

extreme weather conditions, and are backed by a comprehensive five-year limited warranty.

NEW 151® SE environmental speakers Our premium wall-mounted outdoor speaker complements most home exteriors. It provides powerful, full-range stereo sound — with wide coverage and optimal power handling — on decks, patios or by the pool.

Free Space® 51 environmental speakers Our premium in-ground speaker blends with landscaping and delivers music almost anywhere in your yard. It radiates full-range sound 360°, with deep, rich low frequencies from three independently-tuned acoustic ports.

Attention Bose Lifestyle® system owners: You can easily expand your system outdoors with Bose outdoor speakers and a Lifestyle® stereo amplifier.

To order or find a Bose dealer near you, call **1-888-862-3359**. Or, visit www.bose.com/outdoor.

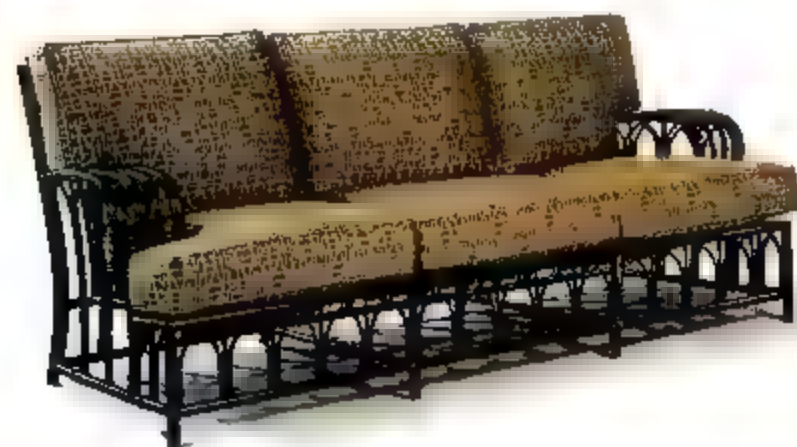
©2004 Bose Corporation. CTA-0201 18

BOSE
Better sound through research®



GRACIOUS SETTEE

The Andalusia love seat is a prime example of outdoor furniture that would be equally at home indoors. The sand-cast aluminum frame has the look of wrought iron, with Spanish-Med terranean detailing. Oversized cushions come in a choice of six all-weather acrylic fabrics. Century Furniture, \$3,040; 800-852-5552; www.centuryfurniture.com.



CUBAN ACCENT

Inspired by a sofa in Ernest Hemingway's Havana home, this 86-inch-long three-seater has the look of rattan. The aluminum frame is finished in black and topped with all-weather cushions. Companion pieces include a lounge chair and an ottoman, in a choice of 150 fabrics. Laneventure, \$2,410; 800-235-3558; www.ernesthemingwaycollection.com.



TROPICAL IMPRESSION

The cast-aluminum Bamboo Reef dining chair perfectly mimics the real stuff, minus the upkeep. With 4-inch-thick button-tufted cushions and roomy dimensions (26 inches wide by 29 inches deep), it's perfect for that laid-back island feeling. The complete collection features 18 pieces in two finishes and 30 fabrics. Tommy Bahama, \$1,600; 800-743-4252; www.tommybahama.com.

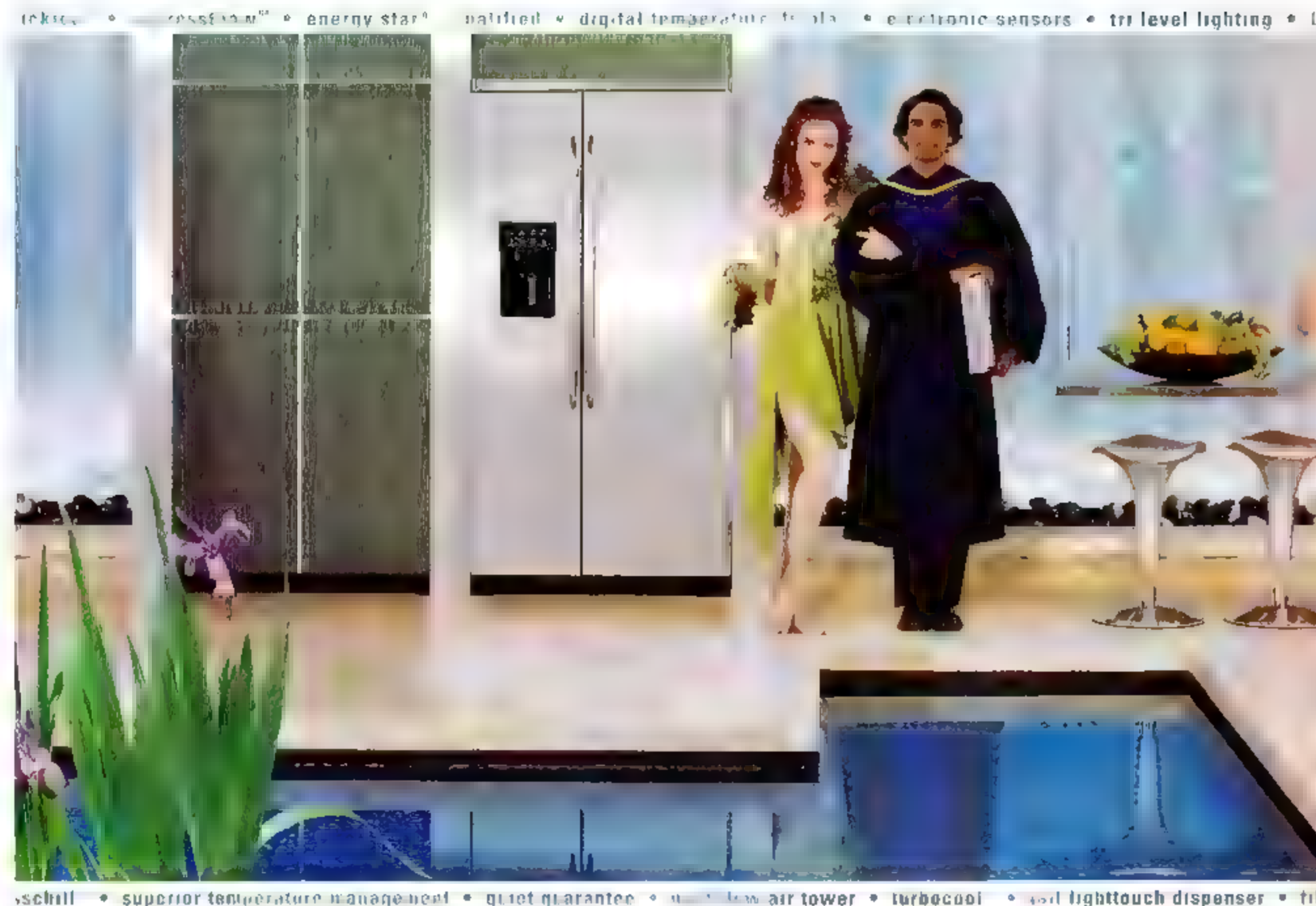


ROCK EASY

Made of extruded aluminum covered in a textured vinyl weave, the Dakota rocker and ottoman have the look of leather. They're part of an 11-piece collection that also includes a sofa, end tables, and a chaise. Vineyard by Brown Jordan, chair, \$390; ottoman, \$225; 205-486-9211; www.brownjordan.com.

For advice on how to restore your older pieces, go to www.thisoldhouse.com or America Online Keyword: This Old House and type "outdoor furniture" in the search box.

Freshness marries genius.



We come to the best of both worlds. The new GE Profile™ side-by-side with ClimateKeeper2™ has two evaporators. So humidity stays ultra-high in the refrigerator and ultra-low in the freezer. Food looks and stays amazingly fresh.

The GE Profile refrigerator also chills wine in minutes, defrosts frozen food and has our patented FrostGuard™ technology that greatly reduces freezer burn. Clearly, this is no ordinary side-by-side. Your food won't be spoiled. But you will be.

GE Profile
GEAppliances.com

imagination at work



SIMPLE ELEGANCE

The unfussy lines and simple details of the cast aluminum Coast Cushion sofa say contemporary. But it doesn't stint on comfort, with thick tailored cushions. (In addition to the bold Cabana stripe, more than 100 fabrics are available.) Companion pieces include a chaise longue, dining and occasional tables, and chairs. \$3,100; 800-743-4252, www.brownjordan.com.



TRIBUTE TO TRADITION

Can't you just imagine sipping lemonade on the veranda? The Hearthside chaise is made of twisted paper wrapped around an aluminum core and finished with latex and polyester to form an impenetrable coating against the elements. A discreet lever on the inside of the arm automatically adjusts the back to any position. Lloyd/Flanders. \$2,000; 888-227-8252, www.lloydflanders.com.



COMFORT ZONE

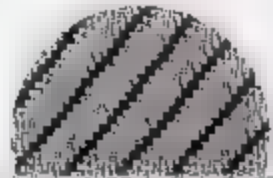
Ergonomically engineered, the Boca overstuffed club chair is just right for sinking into. Six-inch-thick reversible cushions are filled with resilient polyester that will drain quickly after a shower. The woven vinyl "wicker" is rendered in two patterns—cane and herringbone—for visual interest. Whitecraft Inc., chair, \$994; ottoman, \$590; 843-851-4001, www.whitecraftfurniture.com.



WONDER FABRICS

New high-performance fabrics can take a soaking and come out looking fresh. UV-resistant pigment is added to the fibers during the manufacturing process, making the color an integral part of the yarn so it can't be washed out or faded. These "solution-dyed" fabrics, which come in acrylic, olefin, polyester, or a combination, resist stains and mildew and clean up easily with mild soap and water.

The acrylics shown below, from Sunbrella, look as good as any indoor upholstery we've seen. They're priced like it too, starting at about \$30 per yard through decorators and specialty retailers, but at www.outdoorfabrics.com you can find some for as little as \$14 per yard. Solution-dyed olefin and polyester aren't as expensive as acrylic, running about 25 to 35 percent less.



PHOTOS: (FABRIC SAMPLES) GEOFFREY SCHOL



Timeless. Beauty.

It's more than just an addition to your home, it's an addition to your happiness. Available in a wide array of rich natural colors, eon® decks are as beautiful as they are durable. eon decking requires no painting, staining or surface nails and is impervious to weather, stains, mold and mildew. We're so confident in the beauty and durability of our product that we offer a lifetime limited warranty. Best of all, an eon deck can result in significant savings compared to cedar, and is price-competitive with the leading composites. Visit your local eon dealer and find out why **LIFE IS BEAUTIFUL ON AN EON DECK.**

For more information on eon decking, call 1-856-DIAL-EON or visit our website at eonoutdoor.com



EPI

eon®

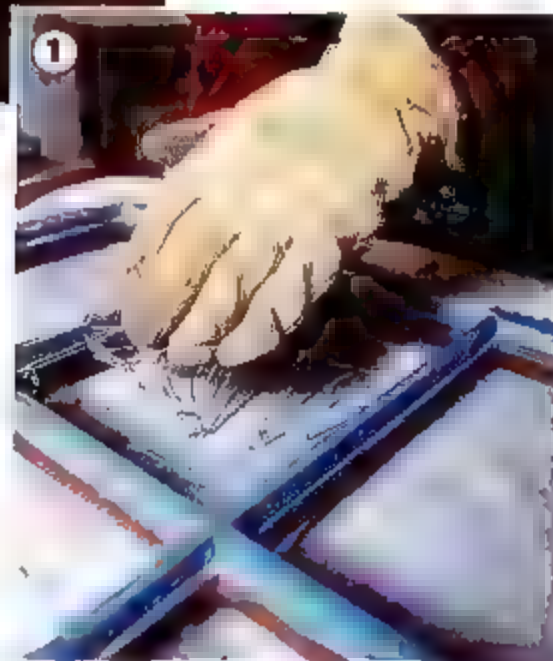
outdoor living



Tom Silva didn't break it, but he knows how to fix it

1. REMOVE THE GLASS

Don gloves and safety glasses and cover the broken pane with a rag. Tap the center of the rag-covered pane with a hammer to loosen the shards. With gloved hands, wiggle free any pieces that remain embedded in the putty. (If the sash is still in the window opening, or the pane has a crack or two but is otherwise intact, it's best to remove the putty first, then the glass.)



Pane Relief

How to reglaze a window

BY MARK POWERS PHOTOGRAPHS BY KINDRA CLINEFF

Crack! An errant baseball, a hurled stone, or a falling branch is all it takes to end the life of a windowpane. And for most modern, double-glazed windows, that means a trip to the local glass shop for repairs. But for old-fashioned, single-glazed wood sash, you can easily replace the pane yourself. It's one of the rare homeowner projects that doesn't require much investment in time, tools, or materials, and the basic skills are quickly mastered. "It just takes some practice to tool the putty," says Tom Silva, *This Old House* general contractor. "You want to end up with neat, crisp creases in the corners and straight runs in between."

The reglazing technique Tom demonstrates on these pages also comes in handy when the old putty itself cracks or falls out but the glass remains intact. (In that case, Tom removes *all* the old putty; it's too far gone to patch.) Whatever the glazing project, he recommends taking out the window sash and laying it flat on a workbench, if possible. "Trying to reglaze a sash that's still in its opening takes longer, and it's far more difficult to do a good job."



WHY PUT JUST ANY FINISH ON YOUR WOOD
WHEN YOU CAN PUT CWF-UV® IN YOUR WOOD?



Only Flood CWF-UV® is fortified with Penetrol®, the industry-renowned formula trusted by professionals for providing unsurpassed penetration. While ordinary clear finishes just sit on the surface, Flood CWF-UV penetrates deep inside the wood pores to lock in beauty and superior protection against both moisture and sun damage. **Guaranteed!**

Flood CWF-UV is guaranteed against water damage, graying from UV, blistering and peeling for **4 years on siding and 2 years on decks.**

To find a dealer near you or for your project assistance, call 1-800-321-3444 or visit www.floodco.com



Do something amazing.™

PREP THE SASH, BED THE GLASS



▲ 2. REMOVE THE OLD PUTTY

Pry out any loose putty with a painter's tool. Gradually soften the putty that's still intact by holding a heat gun about an inch away and moving it back and forth. (Put doubled sheets of aluminum foil on the adjacent panes to keep them from being cracked by the heat.) Use the chiseled point of the tool to rake out the warm putty. Repeat on the remaining sides. (When removing putty from a pane that isn't broken, Tom holds a piece of metal flashing over the glass to dissipate the heat.)



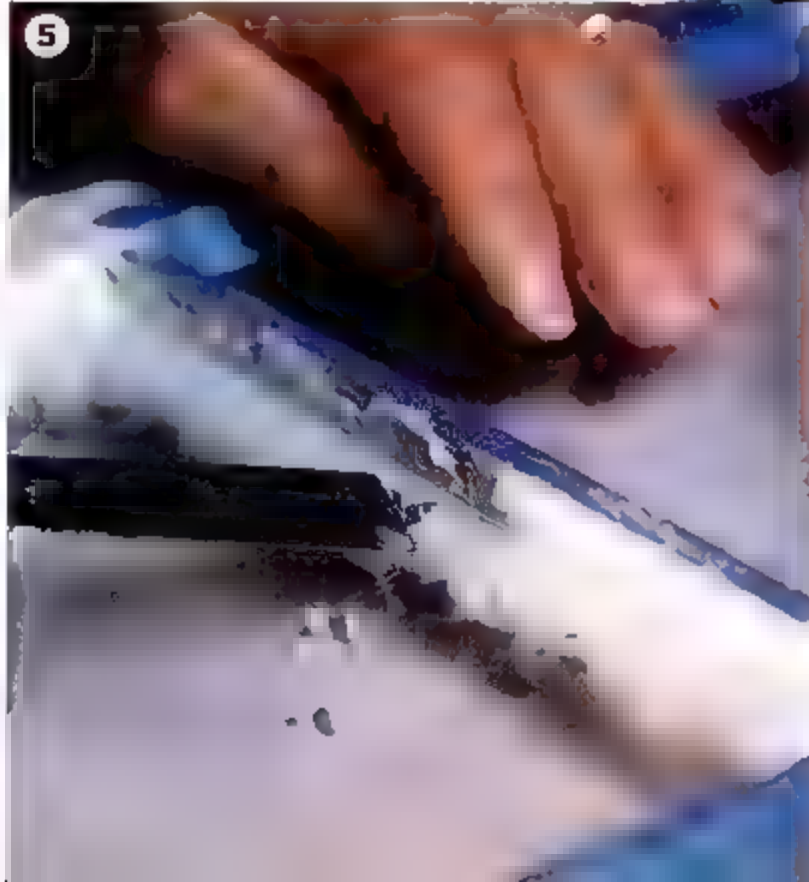
▲ 3. PREP THE RABBETS

Pry the old metal glazing points out of the rabbets, the grooves in the sash where the glass sits. Scrape and sand the rabbets down to bare wood. Brush an exterior primer onto the bare wood so it won't draw the oils out of the putty and shorten its life. When the paint dries, knead a handful of putty until it's warm and malleable, then press it into the rabbets, filling them completely (as shown in the photo). Neatness doesn't matter at this stage.



▲ 4. BED THE GLASS

Wiggle the pane into the putty while applying even pressure with the tips of your fingers. Continue pushing down until the glass is centered in the opening and about 1/8 inch of putty remains between the face of the glass and the rabbet. If any voids show under the glass, pull out the pane, add more putty, and start over.



▲ 5. SET THE POINTS

At the center of each side of the pane, place a glazier's point flat on the glass and fit the tip of the putty knife against the point's raised shoulders. While applying slight downward pressure, gently rock the point from side to side until it's seated in the wood. Repeat on the opposite side and then on the two remaining sides. (For panes 12 inches or longer on a side, space the points evenly 4 to 6 inches apart.) Flip the sash over and scrape off the excess putty that squeezed out the other side.

TOOLS

1/2-inch putty knife: For tooling putty; should be flexible and clean.
5-in-1 painter's tool: For scraping out old putty.
Heat gun: For softening old putty.
1-inch paintbrush: For priming sash.

MATERIALS

Glass: For pane dimensions, measure the opening from top to bottom and side to side, then subtract 1/8 inch from each measurement.
Aluminum foil: Protects undamaged glass from heat.
Glazier's points: Hold glass against sash. Tom uses push-type points with shoulders.
Glazing putty: Seals the edge of the glass against the weather. Tom uses an oil-based product in a can.
Exterior primer: Seals wood against moisture; extends putty life.

AN AMERICAN REVOLUTION



POPULATION: 9

suburban

THE ORIGINAL AND MOST CAPABLE FULL-SIZE SUV™ | ROOM FOR UP TO 9 | AVAILABLE STABILITRAC™ | AVAILABLE ONSTAR, XM SATELLITE RADIO™, AND DVD PLAYER | LARGEST AVAILABLE TOWING CAPACITY IN CLASS*

PUTTY THE OUTSIDE



6. KNEAD

Warm a handful of putty and roll it into a long rope about $\frac{3}{4}$ inch in diameter



7. LAY OUT

Place the rope around the edges of the glass and push it firmly against the exposed rabbets. If one rope isn't enough, roll out more and overlap the ends to form an unbroken ring of putty around the edges of the glass



8. TOOL

Starting in a corner rest the putty knife's blade at about a 45-degree angle to the glass, with its tip on the top edge of the rabbet and one corner on the glass. Flatten the blade against the putty with your index finger and maintain the angle as you pull the knife along one side of the pane. Leave a neat crease in the corner—the illustration below left shows how—then collect the excess putty. For the remaining sides, set the blade tip on the crease and repeat the tooling process. If the knife pulls the putty off the glass, clean the blade and try again.



9. FINE-TUNE

If the underside of the putty can be seen from the other side of the window, the putty is too wide and needs retooling. Set the corner of the blade on the glass a little closer to the rabbet than before and hold the knife handle a bit closer to the glass. Retool as in Step 8. You'll know you've gotten the angle right if the putty's edge lines up with the inside edges of the sash or muntins on the opposite side of the window. Scrape away the excess (as shown in the photo).

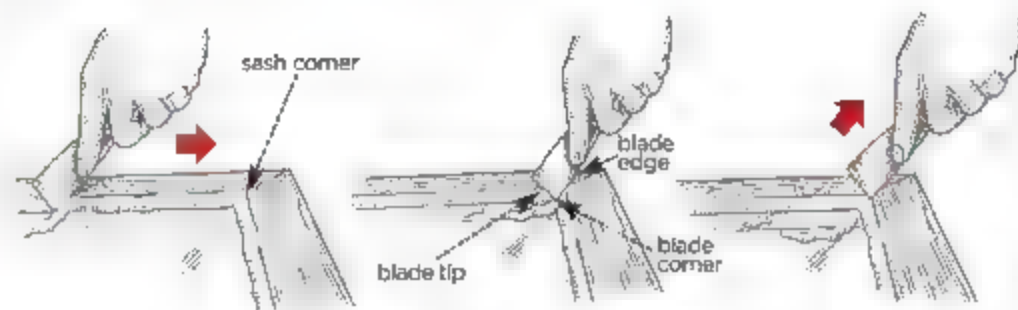
10. PRIME AND PAINT

Wait about seven to ten days for the putty to stiffen up, then clean the oily putty film off the glass with a dry rag. Paint the putty with an oil-based primer overlapping it about $\frac{1}{8}$ inch onto the glass to prevent water from getting behind the putty. After the primer dries, apply a coat of exterior paint. When the paint dries, you can give the pane a thorough scrubbing. ■



HOW TO CREASE THE PUTTY AT THE CORNER

When the blade's leading edge touches the wood, keep both the blade's edge and its tip in contact with the wood while slowly pulling the blade's corner off the glass and up toward the corner of the sash.



For help with all your home-repair projects 24 hours a day, go to www.thisoldhouse.com or America Online Keyword: This Old House and select Repair & Maintenance in the Know-how section.

ILLUSTRATIONS: HARRY BATES

IT CAN CUT A TRUCK IN TWO,
BUT YOU MIGHT WANT TO START
WITH SOMETHING SIMPLER.
LIKE A CAR.



There's never been anything like the Twin Cutter from Craftsman®. It has two sharp blades, which rotate in opposite directions. So it can cut smoothly through almost anything: Wood, Drywall, Iron. Even steel. And with the Twin Cutter, there's no heat to slow you down. Get yours at Sears

SEARS

or Sears Hardware Stores. Or order by phone at

1-800-437-9686 or online only at craftsman.com

CRAFTSMAN

MAKES ANYTHING POSSIBLE™



ThisOldHouse.com
24 hours a day, 7 days a week
Because you never know when the urge to renovate will strike

We know what it's like to get stuck in the middle of a project,
trying to figure out what to do next.
That's what thisoldhouse.com is all about.
We have the information, help, and advice you need. Whenever you need
You'll find step-by-step project instructions,
online videos of the crew at work, and information on the product
It's all online.
Anytime, day or night.

This Old House.com

sneak peek

PREVIEW OUR 25TH-ANNIVERSARY PROJECT ON OUR LIVE WEB CAMS

POWERED BY



Inspired home design
begins when passion
and knowledge meet.

Celebrate the world of
beautiful objects,
combine the old with
the new, and find your
own style.



Highest-rated new weekly television
series on PBS Fall 2003/2004

Please check your local listings or visit
www.find-tv.com



THE SPIRIT OF AMERICAN STYLE
NATIONAL UNDERWRITER





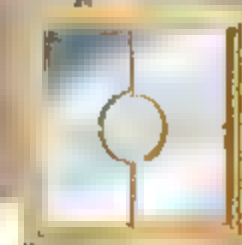
PREVIOUS: WE'D BE
ENERGY CONSCIOUS FROM THE KITCHEN

DECIDED TO TRANSFORM
WALLS INTO WINDOWS

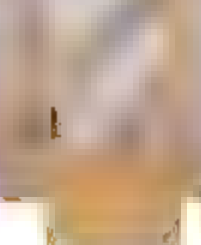
JELD-WEN WINDOWS
GET THE LOOK



Ext. AlternaPlus™



Wood Geometric



Panel Wood Patio Doors



RWP Walnut 435 Q

Remodel your home with JELD-WEN windows and doors. JELD-WEN windows and doors are made with a variety of materials and finishes to match your home's style. JELD-WEN windows and doors are also energy efficient, helping you save money on your energy bills. For more information, visit www.jeld-wen.com.



RELIABILITY for real life™ JELD-WEN WINDOWS & DOORS



ON FURNITURE, FURNISHINGS, STYLE, AND DESIGN

BY LEIGH KENO AND LESLIE KENO

Mid-Century Murano

Venetian glass from the '50s and '60s is a hot collectible today

Ever since we were kids, Leslie and I have been fascinated by the funky shapes and mysterious colors of old glass, the kind that is handmade by blowing through a pipe to turn a hunk of molten silica into an object that is functional, sculptural, or both. Some of the greatest examples of this craft were created in Italy on the Venetian island of Murano after World War II and are highly collectible today.

A MODERNIST REVOLUTION

Murano has been the center of virtuoso glassmaking since the 13th century. But 1950 through 1970 marked a golden era as artists influenced by the Modern Art movement combined new decorative techniques with centuries-old craftsmanship. The vases, bowls, bottles, chandeliers, and figurines they created combined playful forms with vibrant colors and surprising patterns and textures. Today they provide a wonderful splash of color and artistry in any interior setting, and look especially dramatic in a grouping.

A leading Murano glassworks was—and still is—Venini and Co., which pioneered a genre of sculptural glass in the 1920s that set the stage for the postwar revolution. Artistic director Napoleone Martinuzzi, a sculptor by training, created opaque, weighty pieces with textured finishes and tiny bubbles locked inside—a drastic departure from the delicate, trans-



Vintage Murano pieces from Venini and Co. **LEFT:** Occhi vase, with clear glass mosaic "eyes," by Tobia Scarpa, c. 1959-60, sold at auction for \$9,500 in 2000. **BOTTOM LEFT:** Pezzato, or "patched," bowl by Fulvio Bianconi, c. 1955, \$6,000-\$7,000 auction estimate. **BELOW:** Macchie vase, with "spots" of color, by Fulvio Bianconi, c. 1950, \$10,000-\$15,000 auction estimate.

Antiques experts Leslie Keno and Leigh Keno are hosts of *Find!*, a new TV series on PBS celebrating the world of design, style, antiques, and furnishings (for more, see www.find-tv.com). Leigh (at right in photo above) operates his own gallery of American antiques in Manhattan. Leslie is head of the American furniture department at auction house Sotheby's in New York City.

PHOTOS: (CLOCKWISE FROM TOP LEFT) PETER ROSS; COURTESY OF RAGO MODERN AUCTIONS; COURTESY OF WRIGHT/BRIAN FRANZKY PHOTOGRAPHY (2)

RE-CREATE THE LOOK

Today vintage designs are being reissued and reinterpreted by many Murano glassworks. **LEFT:** Fasce sommerso vases by Fulvio Bianconi; \$2,620 and \$2,729. **RIGHT:** Incalmo bottles by Tapio Wirkkala, \$6,210 for five. All for Venini and Co., 866-696-9640, www.venini.com.



PHOTOS, FROM LEFT, COURTESY OF VENINI; COURTESY OF MOSS

parent neoclassical styles most studios had produced since the late 1800s. Venini was the first Murano firm to enlist such outside designers to work alongside master glassblowers, most notably architect Carlo Scarpa, who joined the firm in 1932. He invented new techniques such as *tesserae*, intricate mosaic patterns made with slices of colored glass canes, and *corroso*, a rough finish made by applying sawdust soaked in hydrofluoric acid. Other glassworks soon followed suit, applying equal parts artistry and chemistry to achieve a range of techniques that have become synonymous with the Murano style.

WHAT TO LOOK FOR

After technique, condition is paramount. The slightest nick, chip, or scratch can devalue Murano glass. Note, however, that the pontil, the spot where the glassblower's rod connects to the glass and is broken off, can be rough, polished smooth, or nonexistent. Scrutinize vintage vases for a white undescent sheen inside that means the glass is "sick"—coated with a mineral deposit caused by standing water that is impossible to remove.

Sometimes the name of the artist, studio, model number, or date is acid etched or inscribed on the pontil. But attributing and dating glass is tricky, as signature practices were inconsistent and many mid-century pieces were not marked, or marked only with stick-on labels, leaving open the possibility of forgery or knockoffs. To figure out who made which piece in what year, you need to study reference books,

auction catalogs, old production catalogs, and Web sites. Go to art shows and flea markets, where you can pick up a piece—carefully—and examine it. Don't be afraid to ask the dealer about the artist, the production date, the technique, and the provenance.

Original production series pieces by name designers are easily worth thousands of dollars, with museum-quality works going for more than \$100,000. But there are countless interesting, mass-produced mid-century pieces to be had for a few hundred dollars or less at antique stores, flea markets, and online auction sites.

REISSUED MURANO

By the end of the 1960s, several studios, including Venini, Fratelli Toso, Salviati, AVE, and Seguso, began reproducing and reinterpreting vintage designs. Today you can find these fine reproductions in art galleries, department stores, gift shops, and on the Web. As with original pieces, look for pontil signatures and documentation of authenticity. Serious collectors feel that this new glass, which is handblown on "cleaner" gas furnaces, lacks the playfulness and quirks of original studio pieces made with the old charcoal-heating-and-bellows system. Still, these reproductions honor a venerable tradition and are quite beautiful decorative objects in their own right.

Visit Find! Online For information about the show, or to submit your own items for consideration, go to www.find-tv.com.



Battery included. Butter sold separately.

Whatever it is you're looking for, do it eBay



Business suit. Bathing suit.

Whatever it is you're looking for, do it eBay



Q & A

Curious about
your collectibles?
Our experts have
the answers

ANTIQUE JAPANESE JAR

This porcelain piece is 48 inches high and has been in our family for many years. What can you tell me about it?

EVELYN HOLLISTER BICKNESE, ST. LOUIS, IND.

SUZANNAH YIP REPLIES: This elaborate covered jar with an integral base is a rare example of Japanese Hirado ware. Blue-and-white porcelain was produced at Hirado, a coastal town in southwestern Japan, as early as the 17th century. Judging by its size and the ornate mushroom decoration at the base, this jar was probably made around 1900 as a presentation piece, which would have been bestowed as a gift on a ceremonial occasion. The cranes amid pines painted on the

body of the jar is a common motif in Japanese art and denotes longevity. The lid features a *shishi*, or Chinese lion. Final: lions of this type are found at the entrances to many Japanese shrines. Good Hirado porcelain is hard to find today, and this piece is rare because of its size and decoration. I would estimate its value at \$3,000 to \$5,000.

Suzannah Yip is a specialist in Japanese prints, paintings, and other works of art for Sotheby's London.

GENE AUTRY GUITAR

Do you know what this 1932 Supertone guitar is worth? It's marked "Round-Up" at the head with a Gene Autry signature printed on the body.

JEFF DAVIDSON, BENTON CITY, WASH.

STEVE EVANS REPLIES: This stencil-painted guitar is a classic cowboy guitar—crafted of wood, slightly smaller than full-size, and made for the youth market in the 1930s, '40s, and '50s, at the height of cowboy popularity. The Round-Up model was made for Sears Roebuck, coinciding with Gene Autry's radio show, which premiered in 1932 on WLS out of Chicago. The Gene Autry Round-Up guitar was available from 1932 through 1938. Your guitar appears to have a spruce top with mahogany back and sides, which are quality woods (later cowboy guitars were made of less-expensive birch). The artwork—of a cattle roundup and a cowboy with a lariat—was done by applying orange and brown paint through stencils. A reproduction of Gene Autry's signature is at the bottom of the scene. If it is indeed a fall 1932 model (look for an "F-32" small oval date stamp inside the sound hole), this guitar would be quite a find, representing the first year of production. It would have a value of \$500. A later model would be worth \$150 to \$250.

Steve Evans collects and sells antique guitars in Jacksonville, Arkansas (www.cowboyguitars.com), and is coauthor of *Cowboy Guitars* (Centerstream Publications).

Choose your
Sure Shot.

Z155
4.2x Zoom (37-155mm)



130
3.4x Zoom (38-130mm)



115
3x Zoom (38-115mm)



105
2.6x Zoom (38-105mm)



90
2.3x Zoom (38-90mm)



80
2.1x Zoom (38-80mm)

Canon
KNOW HOW

© 2004 Canon U.S.A., Inc. Canon, Canon Know How, ELPH and Sure Shot are registered trademarks of Canon Inc.

Give a gift that clicks with everyone.



Beautifully designed and incredibly easy to use, the stylish Canon Sure Shot 150u and the ELPH Z3 make gift-giving a snap. The 150u, with its 4x Zoom Lens and Light Guide Zoom Flash with Red-Eye Reduction, gives you maximum versatility in a sleek, elegant and compact

www.sureshotelph.com

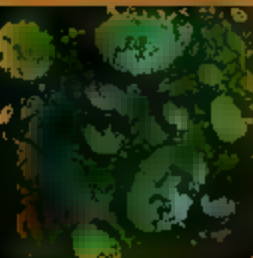
body. The Z3 allows you to choose classic, wide angle or panoramic picture formats. And with its 2.3x zoom and light weight, you can exercise your creativity, not your muscles. Canon's Sure Shot and ELPH cameras are a classic case of give and take. You give, and they'll take

Canon KNOW HOW®

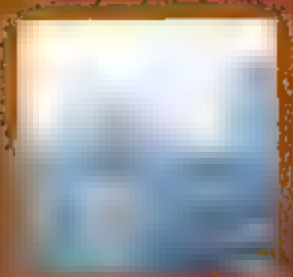
ELPH and SURE SHOT ■ The Perfect Gift

Any siding compromise
one and for all.

Thinking of remodeling
your home? Are you wishing
for a new look and wood
siding?



Resists damage
from cold,
windy climates.



Resists damage
from cold,
windy climates.



Resists damage
from cold,
windy climates.



Resists damage
from cold,
windy climates.

**James Hardie®
Siding Products**

Find
HOME DESIGN STYLE

ON FURNITURE FURNISHINGS, STYLE AND DESIGN

**Q
&
A**



HUNZINGER CHAIR

Our collection of antiques includes this Hunzinger chair, which is dated 1868. What can you tell us about it—and him?

BRAD AND PATRICIA OUELLET, CANTON, MASS.

LEIGH AND LESLIE KENO REPLY: Although George Hunzinger made furniture during the Victorian era, his designs presaged the form as function mechanical aesthetic of the 20th century. Born in Germany in 1835, he emigrated to the United States in 1855. Hunzinger was fascinated by engineering and technology and is best known for devising a side chair with a diagonal brace. The brace connects the crest rail to the side of the seat and continues to form the front leg. Your chair is constructed in this way. It is worth about \$700.

By the time Hunzinger died, in 1898, he held 21 furniture patents, for reclining and folding chairs, convertible beds, platform rockers, extension tables, and more. His work was the subject of a 1997 exhibit at the Brooklyn Museum of Art; the accompanying catalog was published as a book, *The Furniture of George Hunzinger: Invention and Innovation in Nineteenth-Century America*, by Barry R. Harwood. If you're interested, you may be able to find it through an out-of-print bookseller such as www.bookfinder.com.

FIXING VENEER DAMAGE

I inherited this piece and have no plans to sell it. The veneer is missing some pieces, however, and there are stress marks in several places. What should I do to preserve it?

JENNIFER KEEN, MORGANTOWN, PA.

ROBERT HANNA REPLIES: Most scratches, scuffs, and stress marks—vertical lines caused by the wood expanding and contracting over time—just enhance the value and integrity of a piece. That seems to be the case with your Federal style mahogany-veneer sideboard, which appears to



date from 1795-1810. To remove such marks by refinishing might diminish the value considerably. That said, if you have the original pieces of veneer that have fallen off, you may be able to reglue them. Usually use a yellow or white water-based glue that goes on cold, such as Titebond exterior grade. This type of glue dries slowly and results in a strong bond. (It can also be heated to undo the repair at a later date, as is the case with

old animal-hide glues.) Never use epoxy. If you do not have the original pieces, I suggest turning to an experienced furniture conservator. On older pieces of furniture, veneers are hand-cut and thicker than later machine-cut veneers. Only someone skilled at hand-cutting a veneer and refitting it should be engaged for this repair.



Robert Hanna, of Hanna & Hanna Inc., in Fort Defiance, Virginia, specializes in the restoration of Early American, European, and Oriental antique furniture.

SEND US YOUR FINDS!

To submit a question on furniture, furnishings, style, or design, or for an opinion on a find from your home, go to www.find-tv.com or write to: Find!, 1185 Avenue of the Americas, 27th Floor, New York, NY 10036. Include a complete address and daytime telephone number. If you're submitting a photo of an object, please shoot it on a plain white background. (Digital images may be e-mailed as JPEG files.) Published questions will be edited for clarity and length and may be used in other media. Photos and any other materials submitted will not be returned. We regret that due to the volume of mail received, we're not able to reply to unpublished questions.

FOR MORE INFORMATION, SEE DIRECTORY, PAGE 134



TO BE ONE, WE'LL TRAVEL ACROSS OCEANS TO WORK
WE'LL TAKE OUR VACATIONS ON THE ROAD!
AND WE'LL STILL LOVE THE FEELING OF COMING HOME.

No place is more important than your home. So don't let anything compromise it. Ask for James Hardie® siding.

Unlike vinyl siding, James Hardie is thick and solid like wood, yet free of the maintenance problems generally associated

with wood. To learn more, visit www.jameshardie.com or call 1-866-2-HARDIE.

**James Hardie®
Siding Products**

©2004 James Hardie Siding Products, Inc.

Need a beautiful

Survival for your castle?



INSTALLING IN-GROUND SPRINKLERS

Pop-up lawn sprinklers deliver a precise amount of water, then automatically shut off and drop out of sight.

DETACH HERE

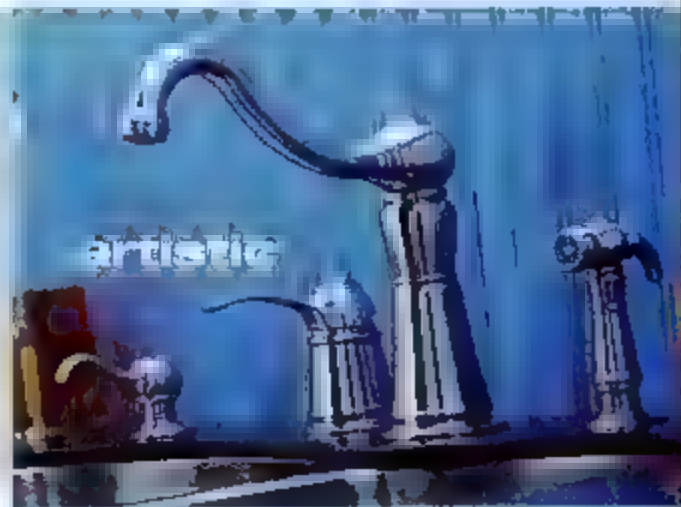
PHOTO: BRAN SMITH



Yellow



You can have faucets that reflect
your personality with a style that's _____.



**More power. More torque.
More jealousy on the job site.**



It's here. A whole new line of over 30 professional-grade power tools from RIDGID® that'll seriously outperform what you're using now. These tools are packed with the features you want. Like Exactline™ laser precision. Motors that last up to five times longer. A dual-port battery charger that gets you to full power in half the time. And the best warranty in the business. Need we say more?

RIDGID

Powerful. Durable. Professional.



Available at The Home Depot®

© 2004 HOMER, LLC. All rights reserved.

BY JOSEPH TRUINI PHOTOGRAPHS BY BRIAN SMITH ILLUSTRATIONS BY GREGORY NEMEC

PROJECT COST: about \$1,000 to \$1,200
PROJECT TIME: 16 to 20 hours

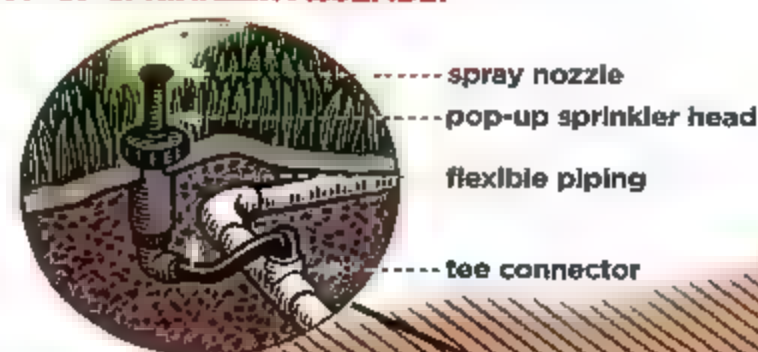
A landscape flush with green grass, healthy trees, and colorful flowers increases a home's curb appeal. Automatic sprinklers are the best way to maintain such a luxuriant setting while minimizing water use. Kits with simple-to-assemble PVC pipes, sold at home centers and hardware stores, make installation a one- or two-weekend job for anyone who is comfortable working with PVC plumbing fixtures.

The installation shown here has several components: pop-up sprinklers on the lawn that drop down to ground level when the water is off; drip-irrigation tubes in plant beds and around trees; a network of underground pipes that connects everything to the water supply; zone valves to regulate the water flow; and a timer to tell the system when to turn on and off and how much water to spray at different times.

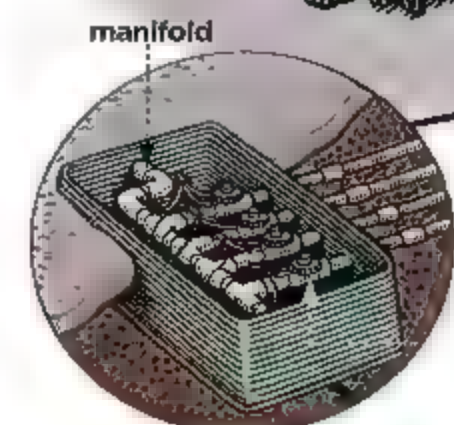
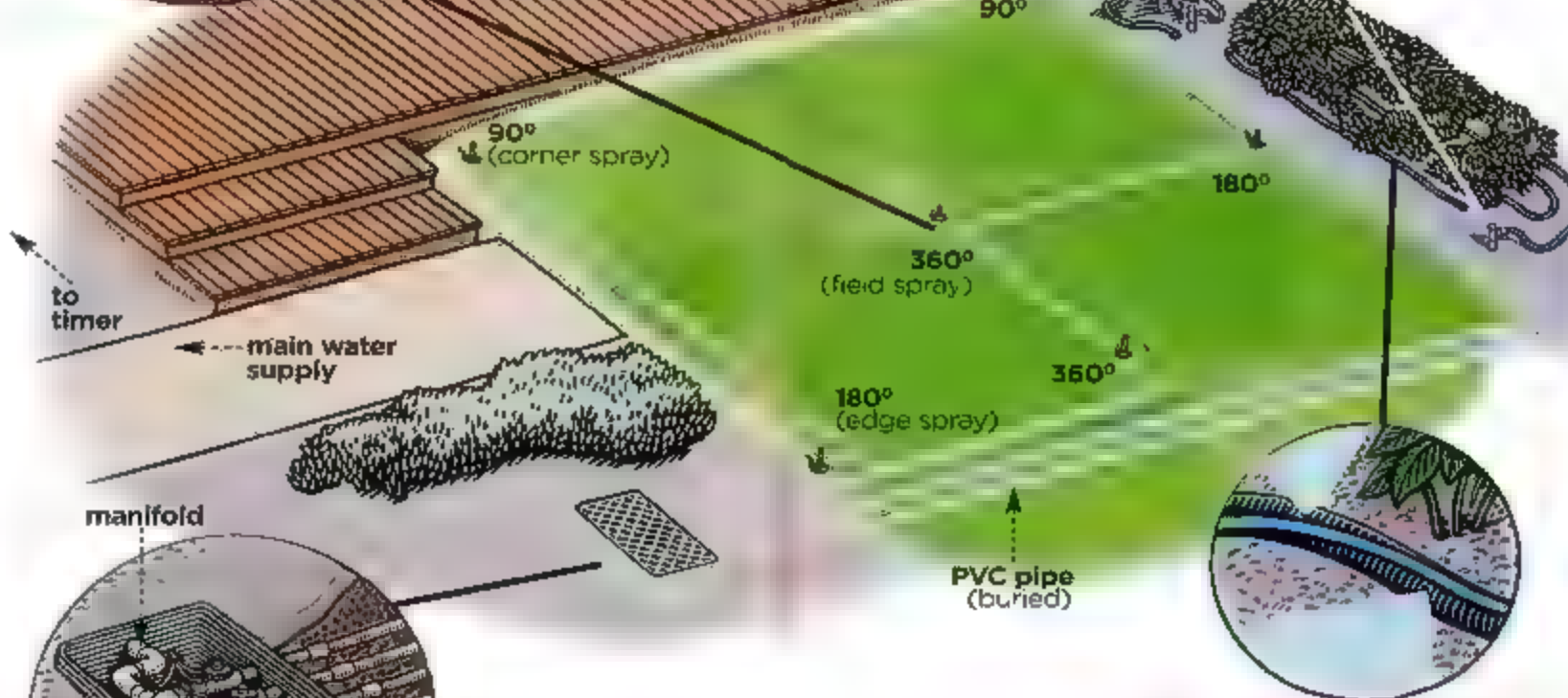
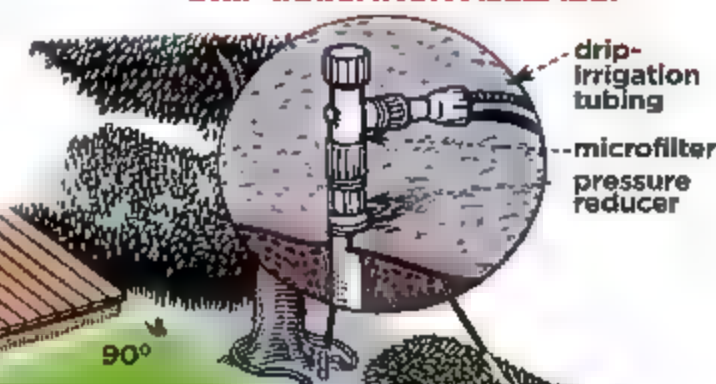
Before you can begin your own project, you need a plan. Many manufacturers will custom-design a system for you that's specific to your yard and region of the country. (See the Directory, page 134, for a list of manufacturers and their contact information.)

The manufacturer will supply instructions on how to check your water pressure—typically, you need at least 30 to 35 psi (pounds per square inch) of pressure and about 10 to 13 gpm (gallons per minute) of water flow to support a sprinkler system. They'll also give you a template so you can sketch your property, including such critical features as the house, water main, trees, fences, and property boundaries. Send them the sketch and they'll return a detailed plan for your landscape—including specific installation instructions—and a list of everything you'll need to buy at the hardware store to put the system together. This will include both the company's own parts (sprinkler heads, valve box, and the like, sometimes packaged as a kit) and the extra plumbing supplies, usually extra PVC pipe and fittings.

POP-UP SPRINKLER ASSEMBLY

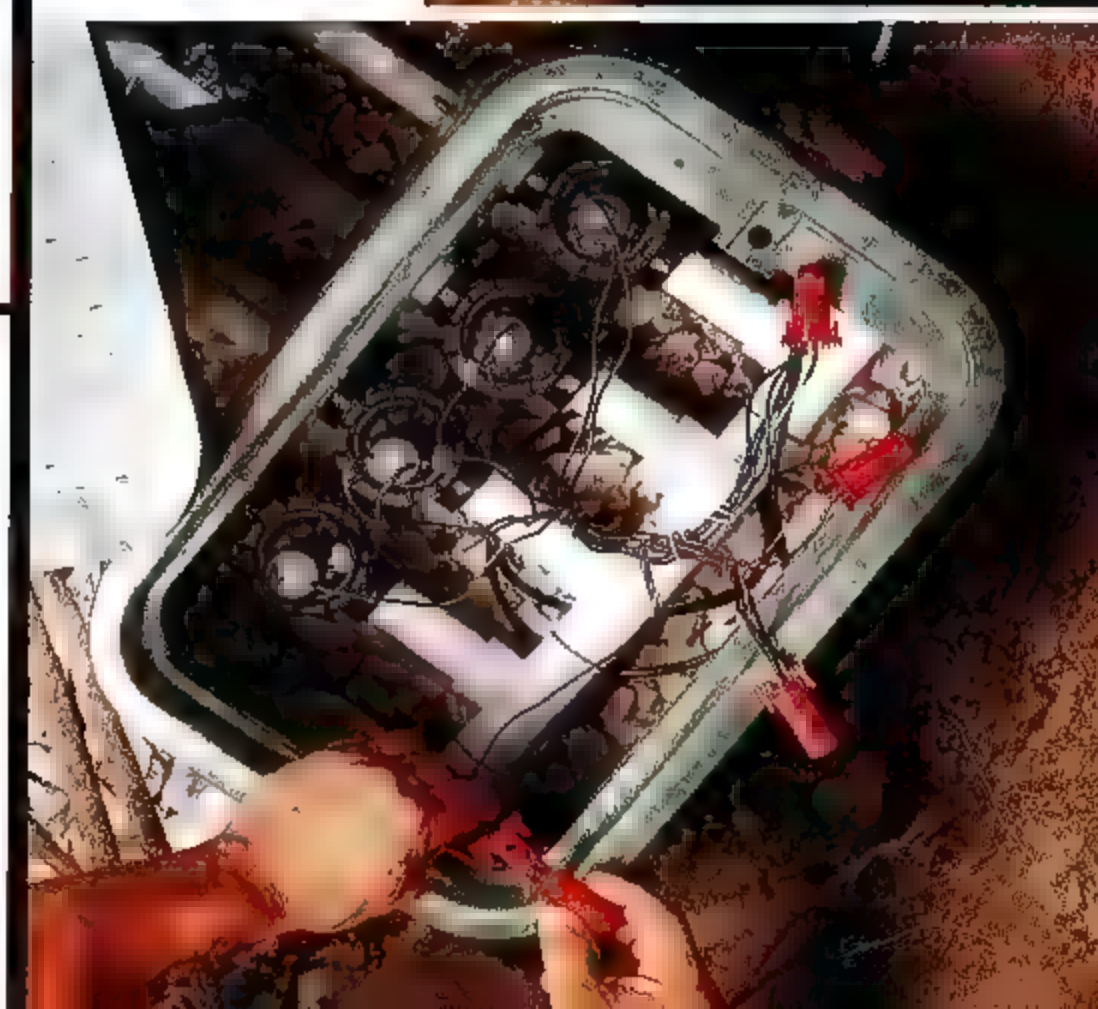


DRIP-IRRIGATION ASSEMBLY



VALVE BOX

WARNING: Check with the local building department to obtain all necessary permits, and contact a one-call center to have the local utilities mark any buried electrical cables, gas lines, or water-supply pipes before you dig.



TOOLS and MATERIALS

1. DRIP-IRRIGATION TUBING
2. PVC PIPE CUTTER
3. MARKER FLAGS (for marking sprinkler locations before trenching)
4. 100-FOOT TAPE MEASURE
5. FLEXIBLE PIPING (connects sprinklers to PVC pipe)
6. 3/4-INCH AND 1-INCH PVC PIPE
7. ASSORTED PVC FITTINGS
8. GROUND STAKES (to secure drip-irrigation tubing)
9. ASSORTED SPRAY NOZZLES
10. POP-UP SPRINKLER
11. PVC CEMENT AND PRIMER
12. TRENCHING SHOVEL (for clearing out trenches)
13. TRENCHING MACHINE (rents for about \$75 a day)



NOT SHOWN

- LARGE ADJUSTABLE PLIERS (for tightening PVC fittings)
- SCREWDRIVERS
- UTILITY KNIFE (to cut drip-irrigation tubing)
- ZONE VALVES
- VALVE BOX
- GRAVEL (for spreading under the valve box)
- BARK MULCH (for covering the drip-irrigation tubing)
- BACKFLOW PREVENTION DEVICE (keeps irrigation water from flowing into home's water supply)

INSTALLING IN-GROUND SPRINKLERS

For an archive of Homeowner's Handbook
From installing landscape lighting to hanging clapboard siding, go to www.thisoldhouse.com or America
Online Keyword: This Old House and select Homeowner's Handbook in the Know-how section.

1 DIG THE TRENCHES

- Locate the pipe for the water source that you'll be tapping into; it might be at the water meter in the basement or buried underground.
- Mark the locations of all the trenches and sprinklers with wooden stakes or plastic flags.
- Then use a gas-powered trenching machine to excavate the trenches to a depth of 4 to 12 inches, depending on the recommendation for your area of the country (LEFT).

TIP: Most rental dealers will drop off and pick up the trenching machine for a small additional charge.



2 MAKE THE WATER CONNECTION

- Turn off the water to the house at the meter.
- Cut into the main water line and splice in a tee fitting with PVC cement and primer. If the line is copper, solder on a copper tee.
- Glue a 90-degree PVC elbow onto a male PVC adapter.
- Thread the adapter into the tee fitting installed on the main water line (LEFT). It's okay to connect PVC to copper here.

TIP: If you are uncomfortable with this step, call in a professional plumber to tap into the main line for you.



3 INSTALL THE ZONE VALVES

- Dig a trench from the main water line to the valve box location, as indicated on your plan. At the end, dig a hole about 18 inches deep and 2 to 3 feet long.
- Line the hole with 2 inches of gravel; then set the valve box into it. The box lid should be flush with the grass.
- Next, following the manufacturer's directions, glue together the manifold and attach the zone valves. Set the manifold in the valve box.
- Run 1-inch schedule 40 PVC pipe from the main water line to a backflow-prevention device and then connect it to the manifold.
- Dig a shallow trench from the valve box to the location for the timer, according to your plan.
- Lay the 24-volt underground wire in the trench and connect it to the wires leading from each valve (LEFT).



4 PLACE THE PIPES IN THE TRENCHES

- Following the plan, lay PVC pipe in all the trenches leading from the valve box (LEFT). If necessary, join pipe sections with couplings and PVC cement.
- Wherever a pipe branches off to a sprinkler head, splice in tee fittings, then attach a short length of flexible piping, which will connect to the sprinkler head.
- Where a pipe connects to drip-irrigation tubing, attach an upturned elbow, a short vertical pipe, and a pressure reducer with a microfilter.

TIP: Save money and avoid extra trips to the home center by buying PVC fittings in multi-piece contractor packs.

5 CONNECT THE PIPE AT THE VALVE BOX

- Use 90-degree elbows to join the PVC water pipes in the trenches to the zone valve pipes protruding from the valve box (LEFT).
- Once the piping is completed, turn on the water to flush any dirt or debris from the system. Turn the water off again to install the sprinklers.

6 INSTALL THE POP-UP SPRINKLERS

- Attach a pop-up sprinkler onto the end of each length of flexible piping (LEFT). Push the barbed fitting all the way into the pipe; no glue or hose clamp is needed.
- Remove the cap from the sprinkler and install the appropriate spray nozzle, as indicated on the plan.
- Backfill the trenches with dirt and bury the sprinklers so that they're flush with the surrounding soil.
- Sprinkle grass seed over the trenches, then lightly rake the seed into the dirt.



7 ROLL OUT THE DRIP-IRRIGATION TUBING

- At flower beds and trees, connect drip-irrigation tubing to the pressure reducer and microfilter coming from the underground PVC pipes.
- Roll out the tubing along the flower bed, keeping it close to the base of the plants (LEFT).
- Keep unwinding the spool back and forth throughout the flower bed, space the tubing 12 inches apart.
- If necessary, join one length of tubing to another with a push-in coupling.
- When you get to the end of the layout, cut the tubing with a utility knife if necessary, flush it with water, fold it over and slip on an end clamp.

TIP: Set the tubing in the sun for a few hours and it will soften and be much easier to install.

8 INSTALL THE GROUND STAKES

- Once all the irrigation tubing is laid out, secure it with plastic ground stakes. Hook each stake over the tubing and press it into the dirt (LEFT).
- Space the stakes about 18 to 24 inches apart.
- Note that it's often necessary to place two stakes very close together and on opposite sides of the tubing to hold it down.
- To prevent the water coming out of the drip-irrigation tubing from evaporating too quickly—and to help hide the tubing—cover the area with bark mulch. Spread it at least 4 inches deep and it will also deter weeds from sprouting.



9 CONNECT THE TIMER WIRES

- Mount the programmable timer on the house wall.
- Strip the insulation from the ends of the 24-volt wires that lead from the zone valves to the timer.
- Attach the wires to the timer terminals, as shown in the manufacturer's instructions (LEFT).
- Hire a licensed electrician to run power to the timer, if necessary.
- Set the timer and run a test to make sure that each zone and all the sprinklers are operating properly.
- Finally, adjust any nozzles that are spraying off course.

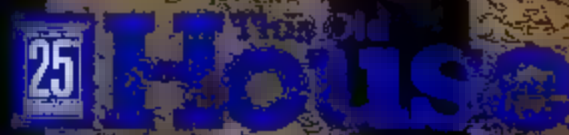


PLEASE DO NOT REMOVE

REAL MEN WEAR SHORTS.

Travel with the *This Old House* team to Bermuda as they help homeowners Delaney and Andrea transform a 200-year-old house into their new family home... "in short order."

Tune in *This Old House* The New This Old House Hour, Thursday 10 PM/9 PM (8-10 PM ET)



Check your local listings or visit www.thisoldhouse.com

THANK YOU TO OUR
NATIONAL
SPONSORS FOR ALL
THEIR SUPPORT.



WE ARE PROFESSIONAL



WATCH FOR
THIS OLD HOUSE



PHOTO: T. M. STREET PORTER

FEATURES

- EXTREME HOME MAKEOVER 88
- DECK DETAILS 96
- TV PROJECT HOUSE: UP ON THE ROOF IN BERMUDA 102
- CEILING FANS: STYLISH AND QUIET 109
- GATHERING ROOM 114
- LANDSCAPE AGGREGATES 122

This hand-built staircase was inspired by the stairs in Pasadena's Gamble House, designed in 1908 by California architects Greene and Greene. See page 88.

EXTREME MAKEOVER

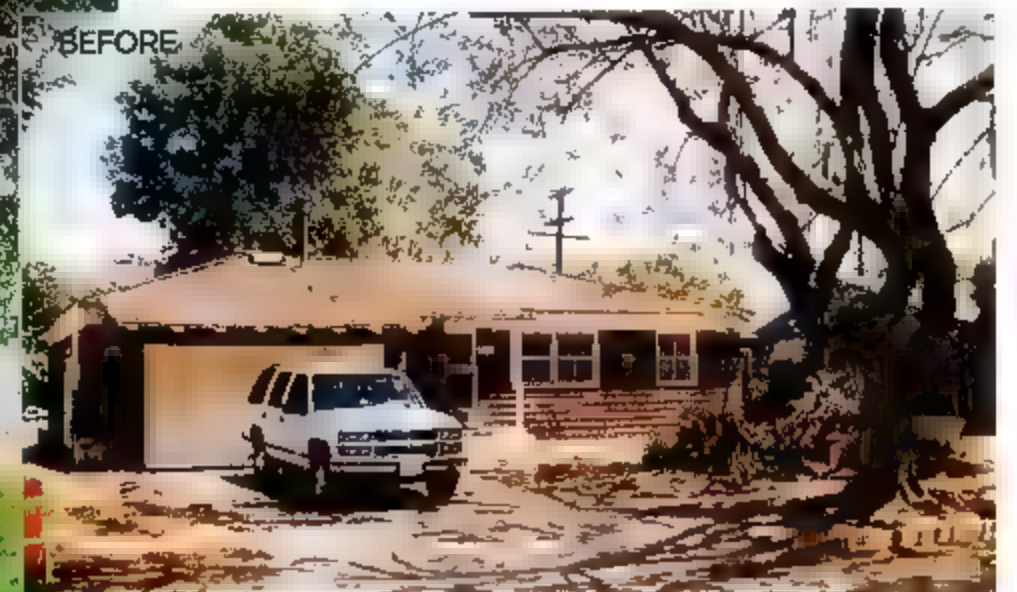
A 1940S TRACT HOUSE
TAKES ON THE FINE
DETAILS OF AN ARTS
AND CRAFTS MASTERPIECE

BY MAX ALEXANDER PHOTOGRAPHS BY TIM STREET-PORTER
STYLED BY SUNDAY HENDRICKSON

It's not unusual for homeowners to sigh with envy when touring a historic house. But weeks after Pat and Jane Qualey walked through Pasadena's 1908 Gamble House, an Arts and Crafts masterpiece by local architects Greene and Greene, they couldn't stop thinking about the details: exposed timber beams, the extensive woodwork, and the cantilevered balconies that blur the line between

[continued]

Remodeled and enlarged, this handsome Craftsman style home bears no resemblance to the 1948 ranch that it once was. (RIGHT)





The focal point of the antiques-filled living room is a cut-stone fireplace. The plaster veneer on the walls and vaulted ceiling was tinted with stucco colorant. Wall paneling, crafted from mahogany plywood with solid mahogany batteas and plate rail, is carried throughout the public rooms of the house.



The elegant bracketed ceiling beams are in fact structural, made of engineered wood boxed in mahogany. They support the second floor.



Decorative fireplace tiles, found in a salvage yard, are handcrafted originals from the early 1900s.

inside and out. It wasn't long before they decided to remodel their own Los Angeles house in a similar spirit. The fact that their house was a tract ranch from the 1940s didn't faze them. "It was absolute naivete," says Pat in hindsight.

What the three-bedroom, one-and-a-half-bath house lacked in architectural detail it made up for in sentiment. Jane grew up there. But the house now seemed too small for the Quaileys and their own two kids. Their remodeling plan called for bumping up and adding a second story with two bedrooms, two baths, and an office. The biggest challenge, says architect Kurt Beckmeyer, was figuring out how to add that upstairs space without sacrificing the cozy look of a bungalow. The solution was a second-floor design that was actually smaller than the existing house's footprint. "Too often additions look like big boxes plunked on top of the walls," says Beckmeyer. "We wanted the second floor to look more integrated." Adding a front porch with broad eaves on the first story and secondary rooflines on the raised roof allowed the house to retain a low profile while adding lots of decorative interest (for more, see "The Exterior Makeover," page 94.)

The couple admired the way rooms in the Gamble House flow naturally and draw the

GREENE AND GREENE STYLE

Interior details crafted from rare woods, Japanese-influenced exposed joinery, and leaded art-glass windows are some of the signature features found in the 60 or so surviving houses designed by early-20th-century architects Charles and Henry Greene. The brothers are famous for their exquisitely crafted bungalows built in and around Pasadena, California, including the Gamble House, below, designed for Procter & Gamble heir David Gamble and his wife, Mary, in 1908. The work of Greene and Greene epitomized the high style of the American Arts and Crafts Movement. No detail was too small

for their painstaking attention, which extended to custom-made furniture, rugs, lighting, and hardware. Such craftsmanship, however, came at a high price—and with a lengthy construction schedule. As a result, the firm's clients dwindled, and after 22 years of operation, Greene and Greene closed, in 1922.

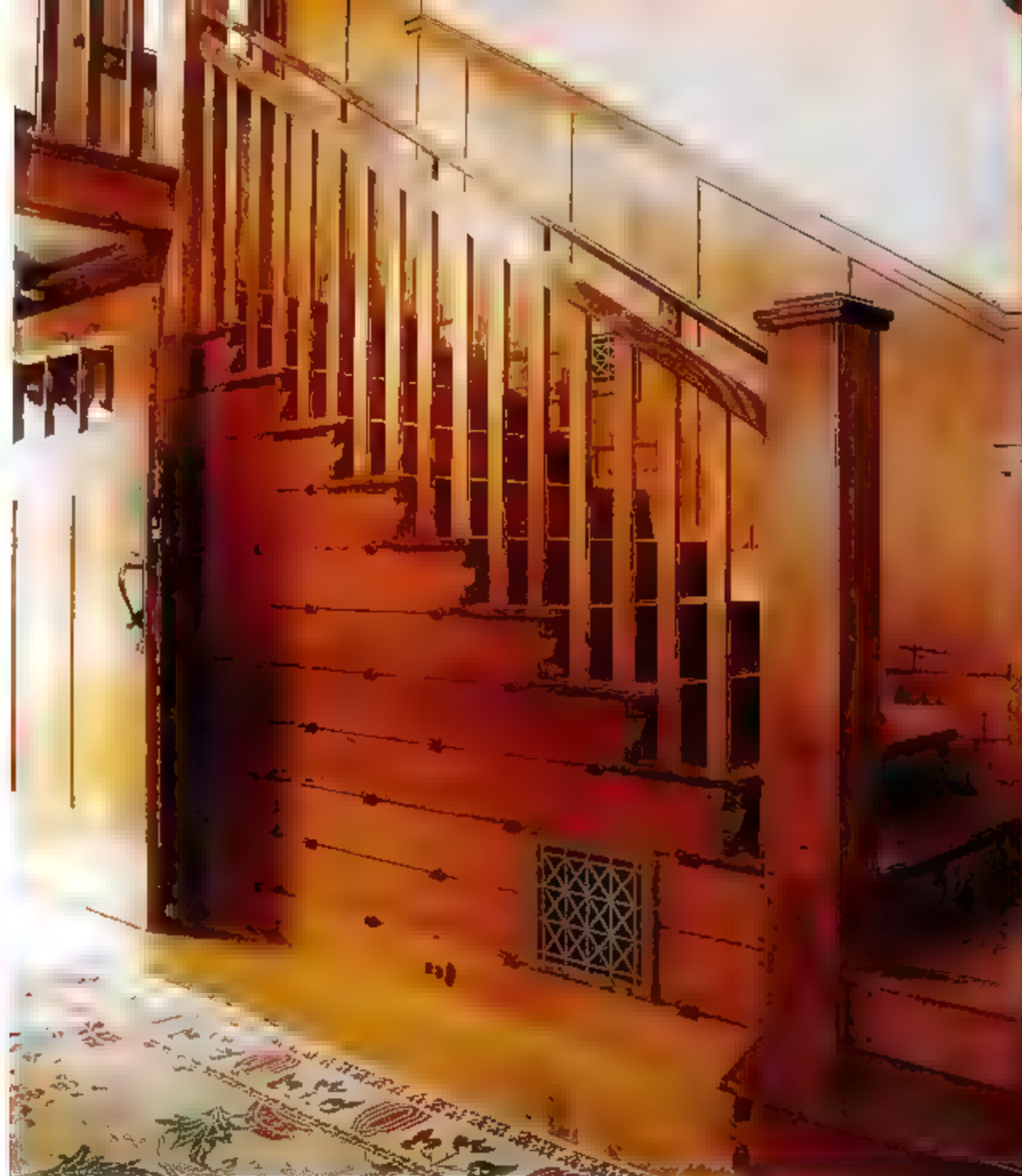
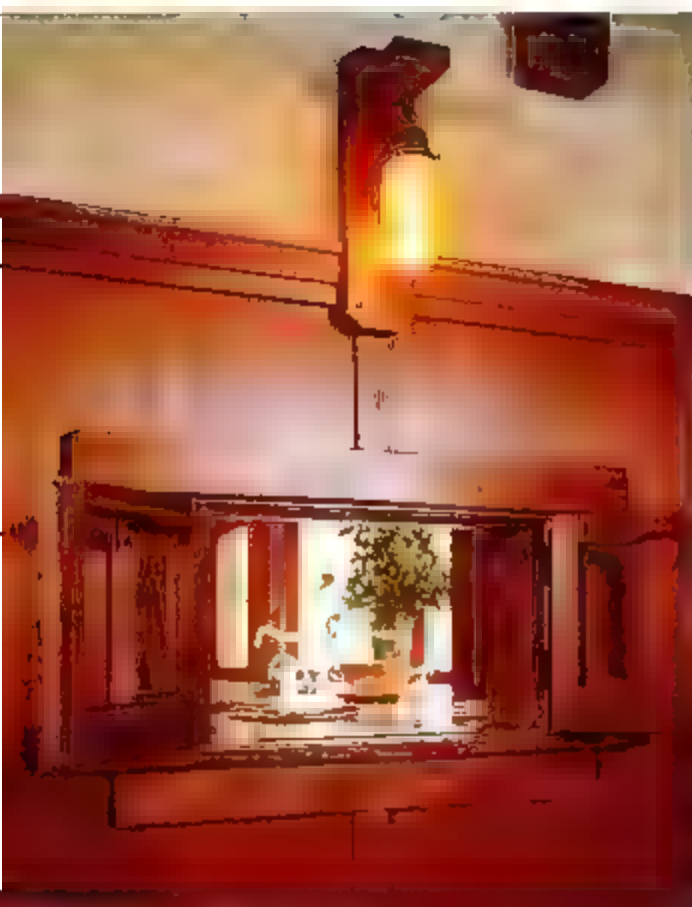
—Amy R. Hughes



The Gamble House, in Pasadena, Calif., is the only Greene and Greene house regularly open to the public.

RIGHT: The half stairs are solid mahogany and feature the same peg-joined risers and lock-notch keys seen at the Gamble House.

BELOW: A pair of glass doors form a pass-through between the dining room and kitchen. The "cloudlift" woodwork detail on the interior of the mahogany frames is a classic Greene and Greene motif.



FROM BRACKETED CEILING BEAMS TO EXPOSED JOINERY, MANY INTERIOR DETAILS WERE BORROWED FROM THE VERNACULAR OF ARCHITECTS GREENE AND GREENE

eye through the house to landscaping features. Adapting that sensibility to the 1,500-square-foot ranch—even with 900 square feet of added living space—turned out to be less difficult than they anticipated. "In the end, we decided not to wrestle with the original floor plan," says Pat, a contractor who worked as a carpenter for many years, and did much of the work himself. "After all, tract homes were designed to be efficient." So while they moved a few walls, bumped out a couple of rooms to make them larger, and added two sets of French doors to bring in more light and views, the basic layout of the living room, dining room, and kitchen didn't change that much.

Not that you'd recognize those old rooms now. Pat lost track of the hours—and late nights—he spent crafting mortise-and-tenon joints for every window and door muntin, setting vintage fireplace tiles in handmade copper frames, and troweling tinted plaster on nearly all the first-floor walls and ceilings. That painstaking detail work culminated in a two-and-a-half-year renovation timetable. But all the effort seems worth it on a hot L.A. day, when Pat and Jane throw open the French doors and catch a cool Pacific breeze. "We have prevailing onshore winds here," says Pat, "and now they run right through the house."

[continued]

For more information on home designs and styles
Go to: www.thisoldhouse.com or America Online Keyword: This Old House and select Design & Planning in the Know-how section.



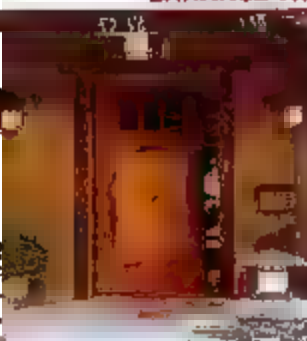
The dining room's imposing wooden ceiling, with its merger of traditional and Asian decor, was inspired by a fixture at the Gamble House. Built-in cabinets with leaded glass doors and French doors lead to the breakfast room. The room is designed with the intention to provide year-round comfort through views and cooling summer breezes. The home's original white oak flooring was refinished and relaid in a traditional chevron pattern.

THE EXTERIOR MAKEOVER

Under the skin of this stunning Craftsman-style home are the bones of a humble ranch house. The homeowners kept the foundation and many of the load-bearing walls of the ranch intact but changed the roofline by adding up. Then they wrapped the front with a porch, switched the siding, and added loads of details—inside and out—that evoke a classic bungalow by architects Greene and Greene. Here are the specifics.

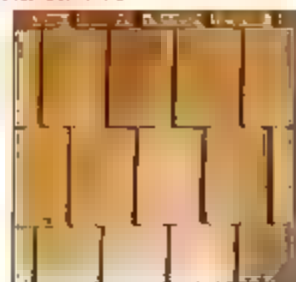
ENHANCE THE ENTRY

A new front door can make a dramatic opening statement. Homeowner Pat Qualey handcrafted his door using two different shades of mahogany panels. Copper wall sconces, a pendant light, and plaster-mounted entry lights are inspired by Arts and Crafts originals and lend warmth both day and night.



SWITCH THE SIDING

Different siding creates a whole new look. Here, 5,000 cedar shingles were trimmed to uniform length and width, hand-sanded to "ease" the edges, then dipped in water-based stain. Articulated gaps between shingles provide a nice contrast to the home's overall horizontal lines.



ADD A PORCH

A front porch is a relatively inexpensive way to add exterior charm. Here, four sets of double columns give a formal rhythm to the facade. A combination of recycled antique paving brick and river rock used in the steps and pilasters was inspired by the Gamble House, where man-made and natural building materials are freely juxtaposed.



CHANGE THE ROOFLINE

Raising the roof and adding secondary rooflines breaks up the mass and adds variety. Here, to retain the low profile characteristic of California bungalows, the second floor was set down into the roof of the first floor, much like a dormer.



CHANGE THE CHIMNEY

An exterior chimney adds rustic charm. Here, a combination of recycled antique paving brick and river rock creates a varied texture that evokes the landscape.



UPGRADE DOORS AND WINDOWS

Doors and windows should be a clue to a house's style. Here, new French doors and window sash were handcrafted in mahogany with divided-light uppers and simple casings that are in keeping with the bungalow style.



CREATE DECORATIVE INTEREST

Broad eaves expose beams—and shield rooms from the sun, funneling breezes through open windows. Stacked horizontal timbers over columns create rustic "capitals." Decorative wood "keys" set in between the timbers recall old-fashioned timber joinery.



What They Did

RECONFIGURED FIRST FLOOR:

Bumping out the kitchen, dining room, and new master suite area added about 400 square feet. The living room moved to make room for a new entry hall and its L-shape allows for a TV alcove at one end.

PUT ON A PORCH: The new porch adds 400 square feet of outdoor living space.

ADDED SECOND STORY: The new 500-square-foot second floor holds two bedrooms, two baths, and an office.

1ST FLOOR
(in blue) = footprint of original house



2ND FLOOR



ILLUSTRATION: RODICA PRATO; FLOOR PLANS: IAN WORSFOLD

DECK DETAILS

A LITTLE CREATIVITY CAN ADD
A LOT OF CHARACTER BY THOMAS J. HAYES

FULLY LOADED

High on a bluff overlooking San Francisco Bay, this multilevel deck incorporates many elements that make for a satisfying design.

BUILT-IN SEATING: The angled banquette, sunk 15 inches below the level of the upper deck, doesn't block the water views from inside the house. Granite provides a weatherproof surface for the central table and the integral end tables on both ends of the banquette.

RAILING: The balusters between the redwood rails are 1/2-inch copper plumbing pipe. Over time, the copper turns a dark bronze that needs no maintenance.

LIGHTING: Low-profile lighting fixtures in the ends of the planters highlight the steps, gooseneck reading lamps provide extra illumination for the seats.

DECKING: Western red cedar boards run in three directions, a subtle way to define different areas of the deck, play off its shape, and direct the eye toward the view.

PLANTERS: A cedar-clad trough filled with geraniums greens up an otherwise barren expanse of wood and does double-duty as the back of the banquette. A copper liner inside the planter protects the wood from the wet soil.

At its simplest, a deck is just a raised rectangular platform with a railing. Plant some posts in the ground, run beams between them, top with boards, and the job is pretty much done. But such bare simplicity, while it may hold down building costs, usually isn't much to look at. Fortunately, there's no limit to the kinds of imaginative design tweaks that make a deck anything but ordinary. Built-in seating, planters, pergolas, and multiple levels are just a few of the ways to entice people to stop and appreciate the surroundings, as the decks on the following pages show. [continued]



THROWING A CURVE

A semicircular seating area projecting off this redwood deck provides a dramatic perch from which to admire Pasadena's hills and bask in the warmth of a gas firepit.

LIGHTING: Solar-cell lanterns mounted atop the posts don't need wires, eliminating the problem of where to hide them.

RAILING: Instead of vertical balusters, horizontal boards of 1 1/2-inch redwood fill the space beneath the cap rail. Where the railing curves, the boards are built up from six 1/4-inch strips bent against the posts and glued together.

BUILT-IN SEATING: The railings form the seat's back, while the curved seat itself is made of tapered boards cut to fit the arc of the semicircle.

PRIVACY: With the next-door neighbors only 10 feet away, this deck desperately needed privacy. An 8-foot-high wall (opposite), made of 1x4 redwood staves, blocks the unwanted view and provides a place for additional built-in seating.

LEVELS AND VIEWS

Like a stair with landings, a deck with different levels gives people an excuse to pause and take in the views. In effect, the levels become cozy "rooms" dividing up what might otherwise be a blank, undifferentiated space. A change in levels also changes the railing height, which adds visual interest and opens up new sight lines as well. (Levels within 18 inches of the ground may not need any railing at all; check your local codes.) For example, in the sunken seating areas shown on pages 96–97 and at left, the lowered railing doesn't interrupt the view from the house.

Of course, where there are different levels, you need steps. But instead of making them like everyday stairs, try reducing the rise to just 6 inches and stretching out the tread to a foot or more. That way, the shallow step can serve as a built-in seat for parties, or as a platform for potted plants.

SEATING

On any deck, a built-in seat is an invitation to lounge awhile. Corners and curves along the railing are natural locations for such seats because, as with a window seat, the views can go both ways: toward the deck as well as out, away from the house. A 15-inch height and 24-inch depth are good starting points for seats with cushions. Note that the height of a railing doesn't have to change if a seat is built against it, so standing on the seat should be discouraged, especially for children.

RAILINGS

Curved or straight, wood or metal, with balusters or without—no other single element does more to define the look of a deck than its railing. But good looks are just part of the equation. Railings are also essential to safety and have a critical impact on views.

The basic code requirements for deck railings are simple. Any deck more than 18 inches above the ground needs a railing at least 36 inches high, with no gap beneath the top rail that's big enough for a 4-inch sphere to pass through. Within those constraints, there's plenty of room for creativity. Curved railings, for instance, add an appealing organic quality to any deck and immediately elevate it above run-of-the-mill. But don't go overboard with curves, warns Gary Marsh, who designed the redwood deck on page 100. "Too many curves makes for undulations, which people perceive as weak. Straight lines provide



substance and strength that relate well to the house."

How the railing is installed also affects the appearance. For instance, all the railings shown here have posts set in from the deck's edge rather than bolted to the outside. That reduces the available space on the deck a bit, but the result is a clean, uninterrupted fascia over the joists. Setting the posts in from the edge also allows them to be anchored more securely to the deck's framing.

The detail that has the biggest impact on the look of a railing is what bridges the space between the posts. As often as not, it's a fortresslike stand of 2-inch-thick balusters that foils the view. Balusters made of metal tubing are a bit less obtrusive, and if dark-colored almost disappear from view. Or you can do away with balusters altogether and use welded wire mesh or sheets of clear safety glass for a virtually transparent effect.

Still another option is to place narrow horizontal rails of wood, metal, or wire cable beneath the top rail. Compared with the stiff verticality of balusters, these rails have a restful, unifying visual texture, rather like the railings on a cruise ship. Going horizontal also means that there's nothing to block the view from oblique angles—balusters form a solid barrier when viewed along their run. Despite these aesthetic advantages, some communities don't allow any horizontal elements under the top rail (or even wire mesh with openings more than 2 inches across), for fear that children might use them like ladder rungs to climb up and over the top. ■

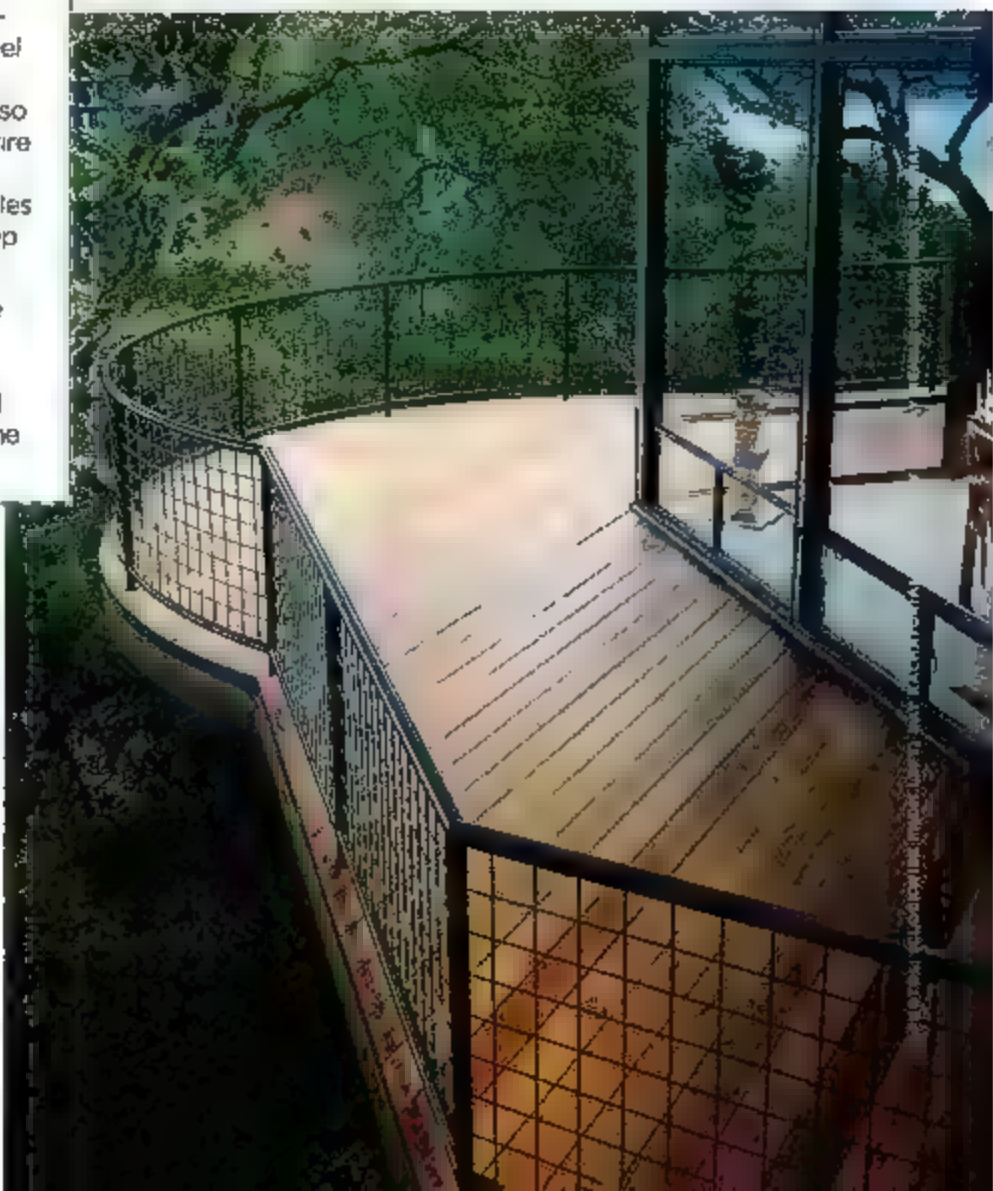
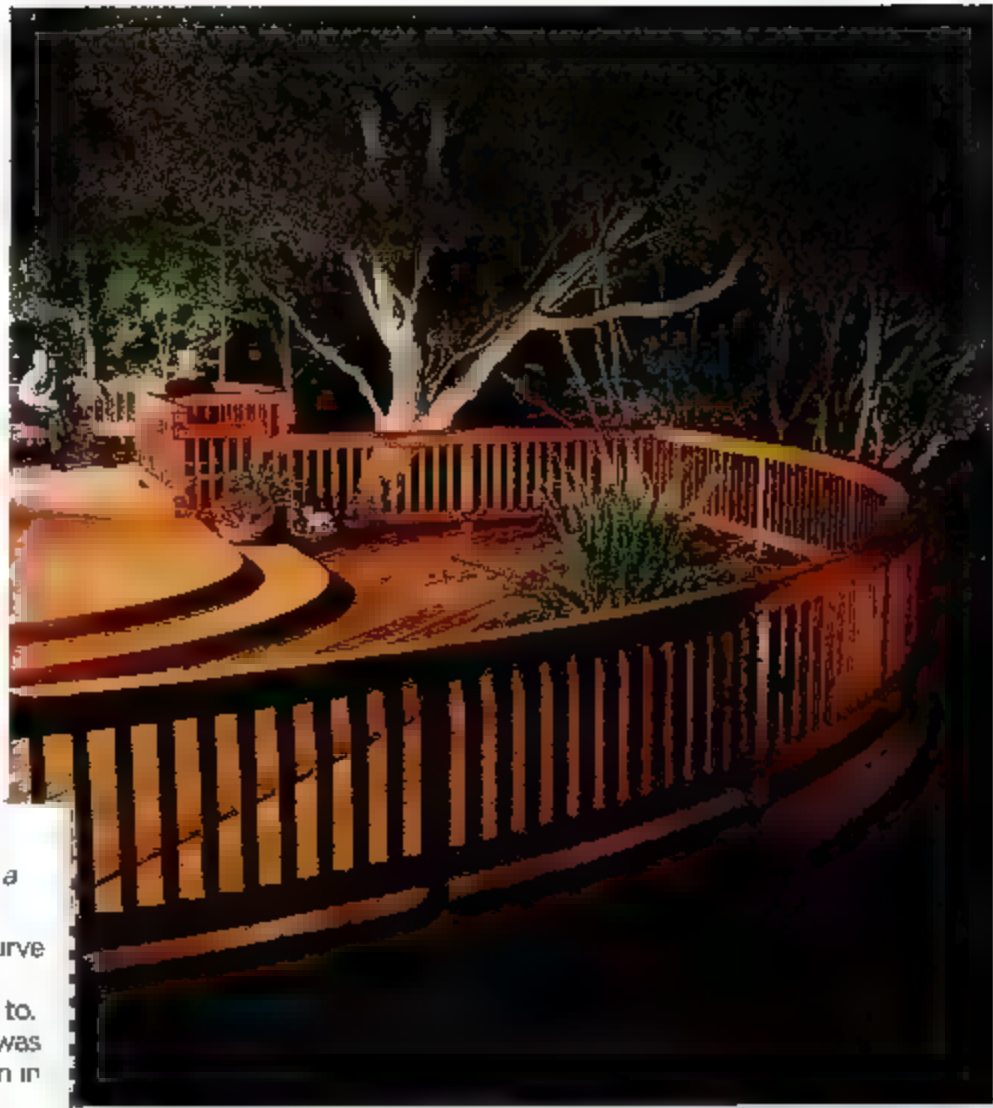
RAILS IN DETAIL

A railing's design and materials give a deck its visual identity.

WOOD: (TOP RIGHT) The grand curve of this redwood deck requires that wood be made to bend, or appear to. In this case, the cap rail's 2x stock was laminated edge-to-edge, then sawn in a curve between the posts.

WOOD AND METAL: (LEFT) Horizontal tubes of 1/2-inch stainless steel form a striking, nearly transparent barrier. The same spare look can also be achieved by running stainless wire cable through holes in the posts. Turnbuckles at the ends of the cables can be adjusted periodically to keep the cables tight.

ALL-METAL: (RIGHT) Welded wire mesh beneath a steel pipe railing almost disappears from view. A powder coat finish over galvanized steel virtually eliminates rust and the need for maintenance.



MADE FOR THE SHADE

The crisscrossing rafters and purlins of a pergola create a welcome patch of dappled shade for this Maryland deck.

PERGOLA: It's made entirely of ipe, a Brazilian hardwood even more rot-resistant than teak. The builder bolted the structure to the deck framing for maximum sturdiness, then cut the decking (also ipe) to fit around each post.

RAILING: Wood frames hold panels of welded wire mesh, which has been powder-coated to prevent rust. The 2-inch mesh doesn't compromise safety or the river view.

For more information about decks, from designing and building them to cleaning and maintaining them, go to www.thisoldhouse.com or America Online. Keyword: This Old House and type "deck" in the search box.

PHOTO: WILCAN P. STEELE STYLED BY MATTHEW MATTELO



TV PROJECT: BERMUDA

ALL IN A ROW

Squared-off pieces of Bermuda limestone, called slates, await installation on the roof at Harbour View, the current TOH TV-project house in Bermuda.

BERMUDA'S LIMESTONE
ROOFS WITHSTAND
HURRICANES AND COLLECT
PRECIOUS RAINWATER

BY ALEXANDRA BANDON
PHOTOGRAPHS BY CHARLES ANDERSON

MAKING THE CUT

The local stone is soft enough that a mason can cut a slate to fit on the spot using just a saw.

ROOF SCULPTURE

A typical Bermudian roof: stepped slates mortared in place and painted white, the better to catch the rain for the fresh water supply.

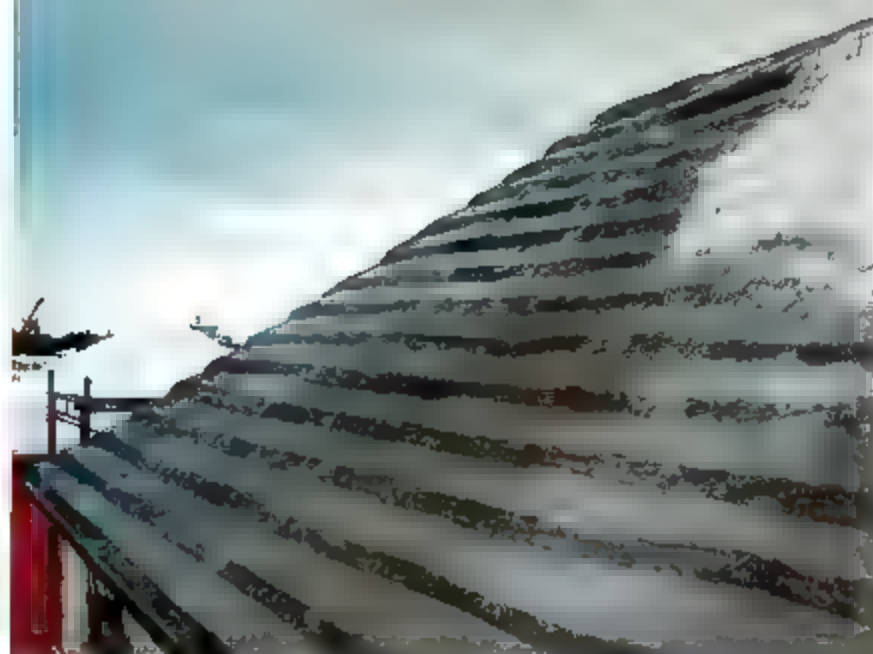
UP ON THE ROOF



TV PROJECT: BERMUDA



LAYING THE SLATES TOH master carpenter Norm Abram hands lead mason Dilton Cann a slate to mortar in place. The roof's hip shape and solid mass help support its weight as much as the wood frame underneath does.



AWAITING PAINT The nearly finished roof at Harbour View—all that's needed is a coat of non-toxic paint, which will make it safer for water collection.

WHITE CAPS While their style has practical roots, the island's traditional roofs give Bermuda an unmistakable architectural unity.



THE CHRISTENING

All new Bermudian roofs receive a traditional "roof wetting" in which a bottle of local rum gets poured on the fresh roof—ostensibly to test watertightness but also to send a bit of disinfectant down to the cistern. Here, Harbour View homeowner Delaey Robinson (center left) congratulates builder Alan Burland (in shorts) while the TOH crew and other well-wishers look on.

The thing about living in paradise is there's always a catch. In the case of Bermuda, where *This Old House* has been filming the renovation of a 200-year-old Georgian house, hurricanes hit the small mid-Atlantic island summer and fall, toppling trees, rattling shuttered windows, and peeling off roofs. Oh, and then there's the absence of any fresh water source on the island. As a result, Bermuda's roofs have evolved over four centuries to do two things: protect houses against gale-force winds and funnel whatever the heavens rain down into large cisterns that feed household taps. By law, every house must collect 80 percent of the water that falls on its roof.

To build a traditional Bermudian roof, masons mortar rectangular slabs, or "slates," of local limestone to each other over a hip-roof frame. Then they apply more mortar over the top and edges of the slates, filling the joints and giving the roof its traditional stepped shape. Along the lower edges of the roof, they sculpt a long concrete trough for a gutter, which directs rainwater to a pipe that filters it and funnels it into a cistern buried alongside the house. Then they give the whole roof structure a thin wash of cement. Finally, to keep rainwater as clean as possible on its way to the cistern, they paint the roofs with special nontoxic paint (a modern replacement for traditional lime wash), which must be reapplied every two to three years.

The result is a strong, nearly self-supporting structure that holds its own against the weather while sending clean water into the tank. It's the best and cheapest way to supply fresh water—up to 30 gallons per person are needed per day—to the 60,000-plus residents of this tiny island nation. It's also what accounts for Bermuda's signature white rooftops, perfectly placed amid the palms and set off by the pastel houses for which the island is famous.

"EVERY BERMUDIAN LOOKS FORWARD TO THE DAY WHEN HE OR SHE CAN CLIMB UP ON A NEW ROOF AND POUR OUT A BOTTLE OF \$50 RUM—IT MEANS CONSTRUCTION IS FINALLY FINISHED!"

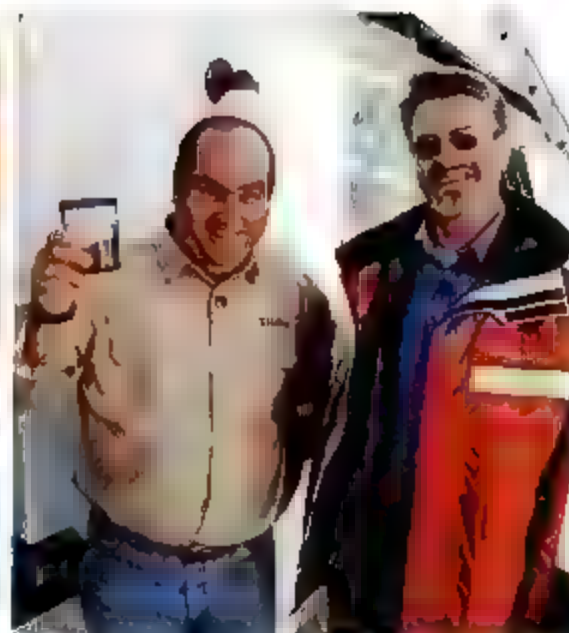
DELAEY ROBINSON, HOMEOWNER



PHOTO: TONY BLACKBURN



TV PROJECT: BERMUDA



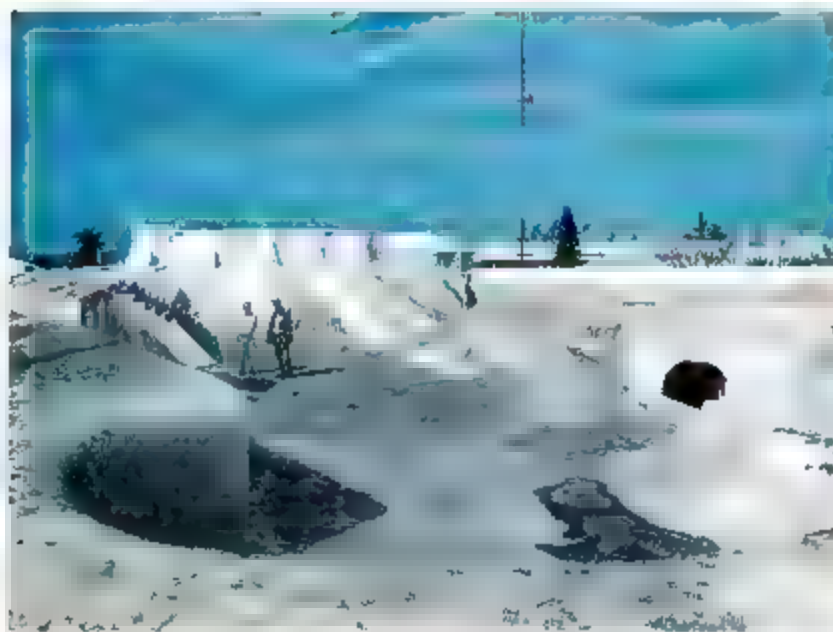
FROM ROOFTOP TO TAP

LEFT: TOH plumbing and heating expert Richard Trethewey gives a Bermuda roof the water-collection test under the watchful eye of government water engineer Keith Claridge. **CENTER:** Roof gutters sculpted from concrete channel rainwater into cisterns. **RIGHT:** Richard and Claridge enjoy a glass of water, pumped up from the cistern.

WATER SOURCES

Rain is the time-honored water supply for native Bermudians (who have a natural resistance to the bits of debris and bacteria that make their way into their cisterns). But rooftop water collection can't meet the needs of the island once tourist season kicks in. At the height of the summer, the island gets as many as 200,000 visitors. So hotels, hospitals, and other commercial operations must find other sources. In the late 1970s, the government started pumping water from "lenses," underground aquifers where rainwater, which has made its way through the ground over the course of two years, rests atop heavier seawater. These lenses are still in use; a plant at a former military fort filters the water with reverse-osmosis technology, then chlorinates it for its journey along 30 miles of pipes to Bermuda's towns.

Still, demand for water is outstripping supply by about 20 percent during peak seasons, so the government has resorted to water rationing. But by the summer of 2005, it hopes to begin desalinization, making seawater potable by removing the salt. The process uses more energy, so it's considerably more expensive. But that's the price of keeping paradise up and running. ■



For a time-lapse movie of the entire Bermuda project go to www.thisoldhouse.com or America Online Keyword: This Old House and click on Television Projects.



SUPPLEMENTAL SOURCES

FAR LEFT: Ft. Prospect, a former military fortification, was turned into a giant water catchment in the 1930s, providing supplemental water until 2000. The government rounded over its edges with concrete so it could funnel rainwater into a large cistern.

LEFT: Today, Ft. Prospect houses a reverse-osmosis treatment plant, where water drawn from 300 underground "lenses," accessed by wells like this one, is purified and held in a million-gallon tank, ready to be pumped to hotels and hospitals.



NEWER OLD IDEAS



THE DOOR WILL MAKE
A GREAT FIRST IMPRESSION
EVEN WHEN YOU DON'T.



24-hour emergency home repair



Accidents are called accidents because they're unpredictable. But that doesn't mean we wait for them to happen before we act. That's why we have emergency contractors ready to come to your home and make repairs anytime day or night. At Liberty Mutual, we're always planning for the unthinkable. So when something does happen, you won't have to fret about a thing.

IT'S MORE THAN INSURANCE. IT'S INSURANCE *in ACTION*

To find a Liberty Mutual representative near you, visit www.libertymutualinsurance.com



© 2003 Liberty Mutual Group



TWENTY-FIVE YEARS OF INNOVATION

CEILING FANS

BY DAN DICLERICO

THE PAST

Twenty-five years ago fans were still stuck in the Victorian era, with brass-finished motors, wood blades, and frosted-glass lights (that's if they weren't all-white "builder's specials" designed to disappear into the ceiling altogether). Mechanically, they weren't all that advanced, either. A fair amount of wobbling was considered normal, and most had only two speeds—on and off. But change was in the air. Over the next decade, improvements both inside and out would give rise to fans that were truly modern.

You might not think it to look at one, but there's a pretty dramatic story behind the electric ceiling fan. Invented in 1882, its early applications were commercial—in city meat markets, for instance, to turn away airborne pests. But fans' breeze-generating abilities soon made them staples in homes. That popularity wouldn't last long, though. By the mid-1900s, with the rise of air-conditioning, ceiling fans came to feel old-fashioned. It took the energy crisis of the 1970s to make them cool again.

And another decade was needed for the fans to become truly stylish. In the 1980s, designers started experimenting with form, using a variety of materials and shapes to give fans a more architectural look. The technology got better too, with motors that self-cool and better-balanced blades. Today's ceiling fans are marvels of quiet efficiency, in just about any style you can imagine.

PHOTO: EBLERBERG/PHOTONICA

www.thisoldhouse.com

CEILING FANS

THE PRESENT

Want metal blades? Wood? How about canvas? Uplights, downlights, or no lights at all? Today's fans are as much about aesthetics as they are about function. Here's just a sampling of what the major manufacturers have to offer.

Modern Fan Company's Stratos, introduced in 1988, was one of the first fans to embrace a **modern aesthetic**. Its blades connect directly to the motor, rather than fastening into the traditional blade irons. Doing away with exposed screws not only makes for a sleek design, it also eliminates rattles.

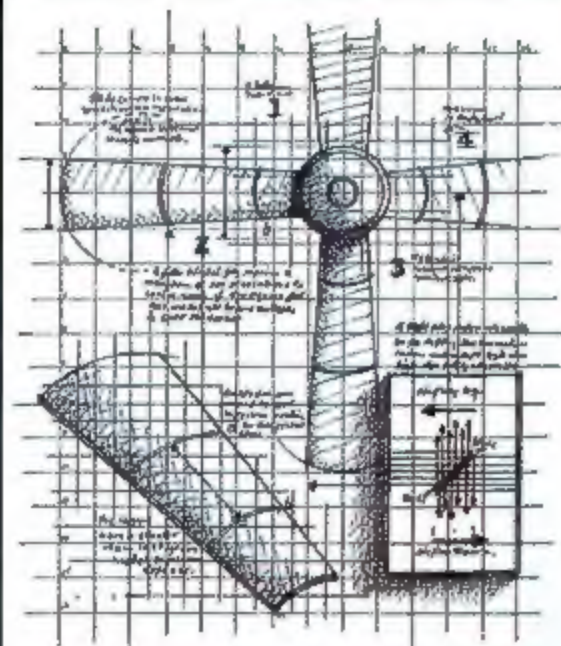
It's called the Enigma, but Jaws might be a more apt name for the **single-bladed** model by Fanimation. Its 30-inch blade slices through air like a fin through water. With an 18-degree pitch, the uniblade still manages to push a lot of air.

The Clairion's blades have **air filters** built in, so as it circulates air, it also reduces odors and allergens.

The **integrated uplighting** on Hunter's Charmaine illuminates a room without glare or strobing.

Island style is hot these days, and Hampton Bay's Tahiti Breeze plays right into the trend—plus it's rated for damp locations (just right for that seaside veranda). Pull chains add to the **tropical charm**, but don't be fooled: The fan is remote-control ready.

Polycarbonate blades and a brushed-nickel housing give Quorum International's Angel the look of **sculpture**. But it's more than just a pretty fan; the blades span a respectable 42 inches, and the cables come in lengths from 6 inches to 6 feet for a variety of ceiling heights.



THE FUTURE

So where do fans go from here? We asked Ron Rezek, founder of the Modern Fan Company, whose designs in the late '80s reinvented the industry, to help us imagine the fan of the future. Here are some of the features he sees on the horizon.

- With their bird's-eye view, ceiling fans will make ideal housings for the home's security devices, including smoke detectors and burglar alarms.
- Fans work by evaporative cooling, so they're really only effective when people are present. Proximity sensors will keep the units whirling only when the room is occupied.
- Outdoor fans are increasingly popular. The next step: built-in insect repellents. Coatings on the bulbs will react with a fan's fluorescent light to produce the repellent.
- Fan lighting will continue to get more sophisticated. In one scenario, fluorescents provide ambient light, while pinpoint LEDs accent a piece of artwork.
- Fans are efficient, but the government wants better. Aerodynamic arched blades, made from lightweight graphite, will push more air using fewer watts, in accordance with the EPA's ever-tightening energy specifications.

INNOVATIONS

Improvements over the past quarter century have focused on making fans more efficient and easier to operate, with quieter motors and better lighting.

LIGHTS
Integrated lighting (as opposed to light kits that attach to the bottom of the motor) makes for sturdier construction and sleeker design. Many fans now feature glare-reducing uplighting as well as energy-efficient fluorescent or halogen bulbs.



REMOTE CONTROL
First it was pull chains, then wall switches, and now remote controls. The most advanced have thermostatic sensors and built-in timers to save on energy costs.



MOTORS AND BLADES
Today's motors are stronger and quieter, and their multiple speeds and reverse settings help circulate heated air in the winter. Four blades used to be the standard; today it's five. Blade spans are wider too—up to 60 inches—and where old fans had blades that sat parallel to the ceiling, now blades tilt at angles as great as 20 degrees. The result is far better movement of air.



ILLUSTRATION: MARIO STASOLLA

25 Years of Change
A special anniversary section of our Web site features the project houses, the technology, and the crew through 25 years of TOH. Go to www.thisoldhouse.com or America Online Keyword: This Old House.

around the house

Advertiser Events, Promotions, Etc.

Join us at the Meet This Old House Tour



This Old House celebrates our 25th anniversary with a "Meet This Old House Tour" this Fall that will

include viewers and readers. Beginning in August, Norm, Tom, Richard, Roger and Kevin will embark on a road trip to Home Depot stores in six markets. We'll be hosting one-day events at each store that will bring you the how-to information you need from the guys you trust most! We'll also have sweepstakes, giveaways, fun challenges and more. Join us! Look for anniversary updates on our web site, including store locations and event dates.



PRODUCT SHOWCASE

John Deere offers a full line of lawn & garden tractors with attachments that can help you create the yard of your dreams.



From the L100 Series starting at \$1499 to the top of the line X Series garden tractors, each John Deere will give you the increased quality, comfort and capabilities you deserve.

John Deere's large network of local dealers provides experts ready to help you choose the right tractor for you and the benefits like at home support in your neighborhood via Ready to Mow™ mobile service. www.JohnDeere.com/Homeowners



Looking for your dream kitchen?
Come see one made.

Join us to celebrate 35 years of making fine custom cabinetry. Experience a rare opportunity to see Plain & Fancy cabinet makers at work. Hear a This Old House editor discuss designing the dream kitchen. Lunch on the lawn is on us.



August 6, 2004, 10am-5pm

Check online at www.plainfancycabinetry.com or call 1-800-447-9006 for details and directions.



Make an impression they'll never forget.

To make a great first impression, add Schlage's Maximum Security Artisan Series handleset to your front door. This will increase the curb appeal of your home as well as increase the security. Complete the look by adding a high-quality door knocker, kick plate and house numbers from Ives by Schlage.



Once you've secured and beautified the exterior of your home, select the style (knob or lever) and Artisan finish for the interior and carry that theme throughout the house.

Let an Artisan Series lockset set your room apart and at the same time, tie it all together.

Schlage is a division of Ingersoll-Rand Security & Safety, known for its leading brands for more than 75 years. For more information about Schlage Lock, call 1-800-847-1864 or visit www.schlage.lock.com.



imagine the tranquil water.
the lush foliage.
the jealous look on your neighbor's face.



Enter for a chance to win
\$100,000
to transform your yard
plus a trip for two to Australia

Enter HGTV's Outdoor Oasis Sweepstakes at HGTV.com

or send in a handwritten postcard with your name, address and telephone number to:
HGTV Outdoor Oasis Sweepstakes • P.O. Box 53313 • Knoxville, TN 37950

Entries must be postmarked by July 1, 2004, and received by July 8, 2004.

YOU SHOULD SEE WHAT'S ON **HGTV!**
HGTV.com

HGTV OUTDOOR OASIS SWEEPSTAKES 2004 OFFICIAL RULES 1. How to Enter: No Purchase Necessary to Enter or Win a Prize. Beginning at 9:00 a.m. Eastern Time ("ET") on June 1, 2004, until 5:00 p.m. ET on July 1, 2004, you may enter the sweepstakes in either of the following ways: (1) online by visiting www.hgtv.com (the "HGTV Web site") and completing the online entry form by providing your name, complete address, phone number and valid e-mail address (with one online entry per person and per e-mail address per day); OR (2) by hand printing your name, complete address and phone number either on a postcard or on a separate piece of paper no larger than 8 1/2" x 11", and mailing the card or paper to HGTV Outdoor Oasis Sweepstakes, P.O. Box 53313, Knoxville, TN 37950 (first one entry per envelope). You may enter by U.S. mail as often as you wish, but all entries must be postmarked by July 1, 2004, and received by July 8, 2004. Mechanically reproduced entries will not be accepted. If an entrant uses multiple e-mail addresses to submit more than one online entry for a given day, only the first online entry for that day will count. These official rules are also available at the HGTV Web site or by sending a self-addressed, stamped envelope to HGTV Outdoor Oasis Sweepstakes — Rules Request, P.O. Box 53445, Knoxville, TN 37950. Scripps Networks, Inc. d/b/a Home & Garden Television ("HGTV") ("Main Sponsor"), all other Sweepstakes Entrants (see list of other Sweepstakes Entrants below), their affiliates, subsidiaries, parent corporations, and their respective officers, directors, shareholders, employees and agents, and any and all Internet servers and access providers are not responsible for any incorrect or inaccurate entry information; human error; technical malfunctions; failures, omissions, interruptions, deletions, or refusal of any telephone network, computer online systems, computer equipment, server providers, or software, including any injury or damage to participant's or any other person's computer relating to or resulting from participation in this sweepstakes; inability to access the HGTV Web site, theft, tampering, destruction, or unauthorized access to, or alteration of, entries; transactions that are processed late or incorrectly or are incomplete or lost due to computer or electronic malfunctions or traffic congestion on the Internet or at any Web site; printing or human errors; or any model entries which are late, lost, incomplete, misdirected, stolen, mutilated, illegible or postage due, or any combination thereof. Proof of mailing is not considered proof of delivery or receipt. All entries become the property of HGTV and will not be returned. When you enter at the HGTV Web site, you may be asked to consent to receiving unsolicited e-mails and reminders for upcoming HGTV promotions and information about HGTV. Consenting to receive such e-mails is optional, does not have to be agreed to in order to be eligible to enter the sweepstakes and does not constitute your consent to receive these e-mails. In the event you do consent to receive these e-mails, the use of such e-mails shall be subject to the privacy policy of HGTV, which is available on the HGTV Web site. 2. Eligibility: This sweepstakes is open only to residents of the U.S. and its territories, possessions and commonwealths (excluding Puerto Rico) who are 18 years of age or older, except employees and their immediate families (spouses, parents, siblings, children and each of their respective spouses) of Scripps Networks, Inc., HGTV, Outback Steakhouse, Inc., The Termini International Company, L.P., Bank of America, Jeep, Johnsonville, Krylon, Sargento Foods, Inc., and other participating sponsors (collectively, the "Sweepstakes Entrants Sponsors"). Online entrants may also receive information from HGTV regarding other promotional offers. Entry materials that have been tampered with or altered are void. All participants and/or entrants release the Sweepstakes Entrants and their agents, advertising and promotion agencies, affiliated companies, sweepstakes partners and prize suppliers, and all of their respective affiliated companies, employees, officers, directors and shareholders, from and against all claims and damages arising in connection with each entrant's participation and/or entry in the sweepstakes and/or their receipt or use of any prize awarded in this sweepstakes. Any and all warranties and guarantees are subject to the respective manufacturer's terms and conditions. This sweepstakes is governed by U.S. law and is subject to all federal, state and local laws. Void where prohibited by law. 3. Prizes: Grand Prize: One (1) Grand Prize Winner will win: (a) \$100,000 in cash; (b) a trip for two (2) to a famous garden in Australia (Approximate Retail Value ("ARV") \$15,000); and (c) one (1) McCormick grilling gift basket (ARV \$150). Total ARV of Grand Prize is \$15,150. The trip portion of Grand Prize will consist of roundtrip coach air transportation for two (2) from gateway airport closest to Grand Prize Winner's residence to Australia, first-class hotel accommodations (double occupancy) in Australia for a total of 8 days/7 nights (4 nights in Sydney and 4 nights in the Outback), admission for two (2) to a famous garden in Australia, dinner on 2 nights, 1 night in Sydney and 1 night in the Outback), an Evening Harbor Lights Cruise, roundtrip coach air transportation for two (2) from Sydney to Ayers Rock, a tour of Ayers Rock, and ground transfers to and from hotels and airports in Australia. Certain blackout dates and other restrictions may apply to trip portion of the Grand Prize. Total ARV of Grand Prize: \$125,150. Weekly Prizes: Four (4) Weekly Prize Winners will each receive one (1) McCormick grilling gift basket (ARV \$150). Total ARV of all Weekly Prizes: \$600. Daily Prizes: Thirty-one (31) Daily Prize Winners will each receive one (1) gift certificate with a face value of \$40 from Outback Steakhouse (ARV \$40). Total ARV of all Daily Prizes: \$1,240. Total ARV of all prizes in the sweepstakes: \$117,140. The specifics of all aforementioned elements of any prizes in the sweepstakes shall be determined solely by HGTV. Some restrictions may apply. The prize winners will be solely responsible for any and all other expenses, taxes and fees associated with their prizes. No substitution, transfer of any prize (or any part of a prize package) or cash alternative permitted, except by the Main Sponsor due to prize unavailability at time of award, in which case a prize of equal or greater value will be awarded. Grand Prize Winner and guest must travel together on dates that are subject to approval by Main Sponsor. Travel must be completed by December 31, 2004. All prizes will be awarded. 4. Drawing and Notification: The Grand Prize Winner, four (4) Weekly Prize Winners, and thirty-one (31) Daily Prize Winners will be selected in a random drawing from among all eligible entries on or about July 12, 2004, by an independent judging organization and will be contacted either in person or by overnight courier and phone within approximately ten (10) days of the drawing. The four (4) Weekly Prize Winners and thirty-one (31) Daily Prize Winners will be selected in weekly and daily random drawings starting on June 8, 2004, and ending on July 9, 2004, from among all eligible entries received by 5:00 p.m. ET on the date immediately prior to the date designated for each applicable drawing. All non-winning entries from daily and weekly drawings will be eligible for subsequent daily and weekly drawings. Winners of the Weekly Prizes and Daily Prizes will be posted on the HGTV Web site. Judges' decisions with respect to the winners and other matters pertaining to the sweepstakes shall be final. Potential Grand Prize Winner will be required to sign an affidavit of eligibility and release of liability and publicity, and return same, properly executed, within ten (10) days of issuance of prize notification. If HGTV is unable to contact a potential prize winner, it may select a potential Grand Prize Winner to complete and return all forms by the specified date or if the potential Grand Prize Winner fails to complete any of the requirements, or if any prize or prize notification is returned as undeliverable, an alternate winner(s) shall be selected. If the Grand Prize Winner's travel companion is under the age of 18 and not the child or guardian of the Grand Prize Winner, written permission from the minor's parents or guardian must be obtained prior to issuance of travel documents. Travel companion (or parent or guardian if companion is under the age of 18) will be required to sign publicly and liability releases, and return same, properly executed, prior to issuance of travel documents. Grand Prize Winner consents to the use of his/her name, photograph, likeness, biography, voice and/or video for advertising and promotional purposes, including online announcements, without additional compensation, except where prohibited by law. The odds of winning depend upon the number of eligible entries received. If, in the judges' opinion, there is any suspected or actual evidence of electronic or non-electronic tampering with any portion of the sweepstakes, or if technical difficulties compromise the integrity of the sweepstakes, the judges reserve the right to terminate the sweepstakes and conduct a random drawing to select a winner. Sweepstakes will be terminated prior to the stated expiration date, notice will be posted on the HGTV Web site. 5. Winner's List: On or about August 11, 2004, you may obtain the names of the prize winners, either by going to the HGTV Web site or by mailing a self-addressed stamped envelope to: HGTV Outdoor Oasis Sweepstakes — Winners' List, P.O. Box 53445, Knoxville, TN 37950. Requests received after September 10, 2004, will not be honored. 6. Main Sponsor: Scripps Networks, Inc. d/b/a Home & Garden Television, 9721 Sherrill Blvd., Knoxville, TN 37932.

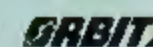
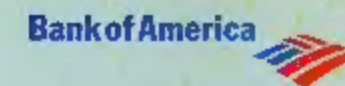


Enter June 1-July 1, 2004

Presented by:



Also sponsored by:



DOUBLING THE SIZE OF A '20S BUNGALOW MAKES SPACE FOR FRIENDS AND FAMILY

GATHERING ROOM



The smallest room in the house is the most popular with party guests. A large, custom-made ottoman provides ample seating and a view of the kitchen. An antique cabinet with stained-glass doors serves as a bar, and a vintage Tiffany-style chandelier hangs from the crimson ceiling.

In the dining room, abstract art and antiques from the '20s and '30s mix successfully. The chandelier is Art Deco, and the table, showcasing a grouping of Roseville pottery, is an antique Stickley.



PROJECT PARTICULARS

REMODELING COST: \$400,000

HOW LONG IT TOOK: 18 months

WHERE WE SPLURGED: "Custom everything to make the new part look old."

WHERE WE SAVED: "We bargain-shopped, buying everything we could ourselves at salvage shops, garage sales, on the Internet, or at overstock auctions."

BIGGEST CHALLENGE: Matching the old pine siding.

HOW THEY SOLVED IT: By trimming hundreds of new pine boards down to the right size.

WHAT WE'D DO DIFFERENTLY: "We spent a lot more time and money redoing things we didn't think all the way through in the beginning. We should have had all the little details figured out up front."



Updating a cozy 1929 bungalow on a small lot is one thing. More than doubling its modest 1,300 square feet while keeping a period feel is quite another. "We knew that at 3,000 square feet the house wouldn't look like a bungalow anymore. So we worked from the broader notion that the house should simply look like it had been built in the 1920s," says homeowner Rick Luisi, who shares the house with partner Erik Wilson. [continued]

BY JEANNIE RALSTON PHOTOGRAPHS BY PAUL BARDAGJY STYLED BY MARY ELLEN GRAF