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BY NANCY E. BERRY Leasing a piece of the past in the C & O Canal National Historical Park.

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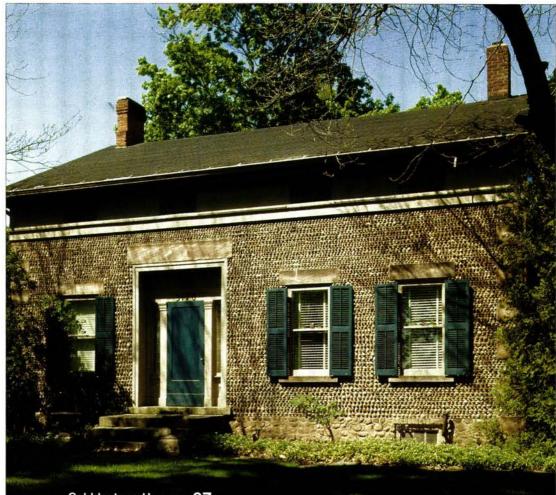
> BY WILLIAM T. COX JR. Jacks that will give you a lift.



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ON THE COVER: The 1840s' Jacob Keller House in Newark, New York, exemplifies the unique charm of American cobblestone houses.

PHOTO BY; ANDY OLENICK





Online www.oldhousejournal.com



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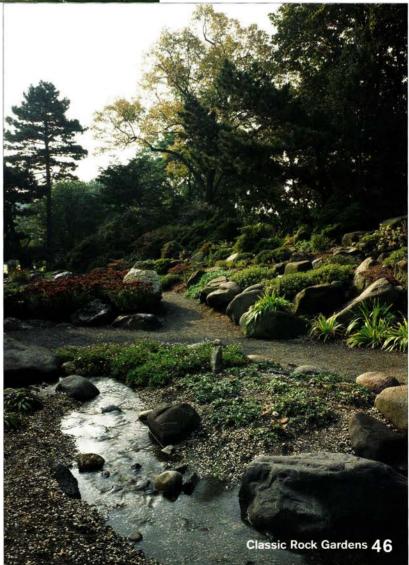
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Reviewing the Rs

everal years ago I met some folks at an old-house fair across the country. After saving their pennies, they had bought their first old house and were enthusiastically working on various parts of the building, from the porches to the wallpaper. They had many tales to share about their house, and showed my colleagues a stack of loving photos of their living and dining rooms. Then they paused to ask a question that had clearly been on their minds for some time: "Do we have to strip off all the paint?"

Their question caught me off-guard, and left me speechless for a momenthowever not because I didn't have a reply for them. The answer was a simple No. They did not have to strip off all of the paint-or any of the paint. In fact, I explained to them, there was every reason to do nothing at all to the building if it was in good original condition. What surprised me was that these folks had jumped to the conclusion that because period building restoration sometimes involves removing later finishes, such as paint over varnished wood, they assumed that owning an old house automatically demanded stripping all the paint.

It became clear that they were unfamiliar with the different levels of activity recognized by the Secretary of the Interiors Standards for the Treatment of Historic Properties. These guidelines fill an entire booklet, but four of the most important definitions-including what are sometimes called "The Rs"-can be summarized as follows:

Restoration is defined as the act or process of accurately depicting the form, features, and character of a property as it appeared at a particular period of time by means of the removal of features from other periods in its history and reconstruction of missing features from the restoration period.

Rehabilitation is defined as the act or process of making possible a compatible use for a property through repair, alterations, and additions while preserving those portions or features which convey its historical, cultural, or architectural values.

Reconstruction is defined as the act or process of depicting, by means of new construction, the form, features, and detailing of a nonsurviving site, landscape, building, structure, or object, for the purpose of replicating its appearance.

Preservation is defined as the act or process of applying measures necessary to sustain the existing form, integrity, and materials of an existing property.

The Standards and Guidelines are one of the fundamental documents of the preservation movement, and an essential, useful guide for all historic building owners, managers, contractors, and architects. To obtain a copy contact your local Government Printing Office.

Golor Rock

James Noel Smith



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STRIP TIP

AFTER READING YOUR ARTICLE ON CHEMICAL strippers, I thought I'd put in my two cents worth. I used a product sold through "infomercials" to strip doorknobs and backplates on painted bedroom doors. Since I didn't want to strip the wood, I taped around the backplates before I applied the stripper. It took only about three minutes to work, plus another 10 or 15 to wipe off and neutralize the stripper. The doorset looks beautiful, and the best part was being able to leave it in place.

I enjoy all the tips and resources in your magazine and appreciate the hard work and expense the homeowners in the articles have made in their restorations. I wish more people would take an interest in reviving neighborhoods within city limits. Within the past two weeks, a Gothic Revival apartment building, complete with widow's walk, and a turreted Victorian across the street from it, were torn down. It was heartbreaking. The Victorian had within the past three years been painted and given a new roof. What a waste!

> KIMBERLY VARVORINES Akron, Ohio

Waste is indeed the word. Building restoration not only saves our heritage, but preserves and recycles materials and energy that would otherwise be lost. — Eds.

A DOG'S LIFE

I THOROUGHLY ENJOYED YOUR APRIL ISSUE, especially the article by Tony Seideman. What a wonderful story about saving and enjoying not only an old house, but also an old dog. I would have done the same if in the same situation. When Gypsy's day comes, may she go happily.

> VICTORIA REYNOLDS Windham, Maine

SINK DESIGN

I read with interest your article on sinks in the May/June 2001 issue. I looked for a vintage sink to put in my 1926 bungalow and couldn't find one...so I designed my own. I purchased a wall mount sink and furniture legs. Here's the finished product.

> NANCY MILLER HOUCK Westfield, N.Y.



SUDS 'N' SINKS

THE JUNE ISSUE IS PACKED with information that my husband and I are already using as we prepare to move into our new old house, a 1936 brick Tudor cottage. The issue does raise a couple of concerns, though.

The first is about Ivory soap. In her article on reviving woodwork, Marylee MacDonald recommends using Ivory Liquid soap suds for gentle cleaning. Word is out among knitters that Proctor & Gamble has changed the Ivory formulation, and the new product—which we use



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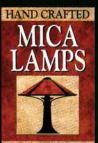


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THE MICA LAMP COMPANY Authentic Designs c.1900 Made in the U.S.A. to remove some but not all of the sticky lanolin from new yarn—now strips the wool too severely. Is Ivory still safe for my woodwork?

The second is a nagging problem for those of us who own modest homes dating from the 1920s to the 1950s. Why are your articles on kitchens generally aimed at those who own large, high-end homes with elaborate kitchens? After opening with a glorious shot of a '50s kitchen, your article on kitchen sinks and backsplashes gives attention almost exclusively to very expensive stone, slate, and ceramic treatment totally inappropriate for small homes of the early to mid-20th century. One small illustration of a linoleum counter treatment just isn't enough. Not all of us want to live in High Victorian style, nor do we want to cater to

the ridiculous trend toward overdone "updated" kitchens in old houses.

JACKIE CHAMBERS St. Louis, Mo.

Monica Collins, specialist for fabric and home care products at Proctor & Gamble, says that while Ivory Liquid was reformulated last spring, it is still recommended for fine fabrics and should be gentle enough to use on both woolens and woodwork.

We agree with you that inexpensive countertop materials have gotten shortshrift of late, and we'll try to address that in the near future.

However, you may be jumping to conclusions about small kitchens. By contemporary standards, almost any pre-1950s kitchen is small, and these are exactly the kitchens you see in OHJ. — Eds.



Exhibition & Conference

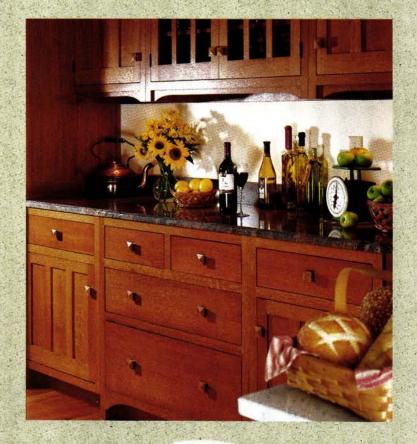
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MARK SEPTEMBER 6 TO 8 ON YOUR CALENDAR for the next edition of Restoration & Renovation, coming this time to the historic city of New Orleans. This season's theme is "Neighborhoods and Downtowns: Revitalization through Preservation." Produced by Restore Media, the venue includes hundreds of exhibitors and dozens of educational conference sessions. Now in its eighth year, Restoration & Renovation is a showcase for the largest assemblage of products, services, and expertise for the traditional and historical marketplace and is the only trade show dedicated to the preservation and rehabilitation of building exteriors, interiors, landscapes, and streetscapes. For more information on the show call (800) 982-6247 or e-mail show@egiexhib.com.



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Standing on the site of an 1828 house toppled by a flood, this sandstone house was built in the 1840s to house the keeper of Lock 6 on the Chesapeake & Ohio Canal in Potomac, Maryland. Today the C&O Canal is a National Historical Park where lock houses are being opened to renters who will help preserve them.

Lock, Stock, and Barrel by Nancy E. Berry

HERE ARE NO BAD DAYS HERE," says David Drupa, sitting with his wife Jill, their black Lab, Eddy, and two Siamese cats in the cozy living room of Lock House 4. David is referring to the 150-year-old stone cottage that they rent in the sleepy C & O Canal National Historical Park in Maryland.

It's no wonder days are good. The couple, who are expecting their first baby, are stewards of a setting straight out of the pages of Thoreau's *Walden*—a rustic house surrounded by calm waters, old oaks, sandy paths, wild strawberries, and carpets of blue violets and sweet William.

David and Jill know this park intimately. They spent time biking and camping along the canal as children and later while courting. When they learned about the Park's leasing program, they saw the perfect opportunity to move out of suburbia and into nature. "It's like living in the ultimate clubhouse," says David, who takes full advantage of his home's recreational surroundings. With the canal just a stone's throw from his front door, David ice skates in winter, kayaks in summer, and bikes the towpath in autumn and spring.

This bucolic setting is a far cry from the canal's industrious beginnings. The 185-mile waterway, which stretches from the nation's capital to Cumberland, Maryland, was constructed between 1828 and 1850 to open a trade route to the West. As the canal was excavated, cottages built of locally quarried sandstone sprung up along-

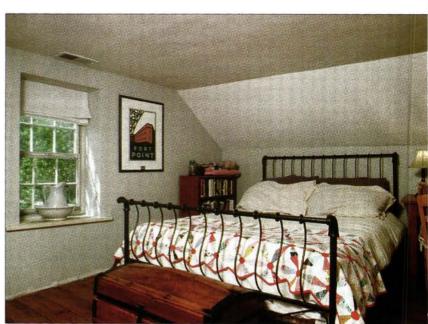




Above: David and Jill Drupa play with Stinky their Siamese cat. The couple is expecting their first baby. Left: With the canal right outside their front door, they enjoy kayaking with family and friends during Maryland's warm summer months.

Right: David and his friend, Rob Dibble, place support posts on the porch as David's brother Andrew looks on. Far Right: The couple's full-size bed just fits the tiny master bedroom upstairs. David and Jill wake each morning to the view of the canal's calm waters from their bedroom window.











Far Left: Stinky checks out the joggers along the towpath. Center: David and Jill patched and painted the original plaster walls in the living room. Left: The house's 18" window stools are perfect spots for Jill's plants.

LEASING PROGRAM:

All the houses in the Park are listed on the National Register of Historic Places. More properties will be available for lease later this year. For information on the leasing program call (301) 714-2220 or write Branch of Cultural Resources, C & O Canal National Historical Park, P.O. Box 4, Sharpsburg, MD 21782.

STONE COTTAGE

OWNERS: David and Jill Drupa LOCATION: POTOMAC, Maryland ON-GOING PROJECT: Raising their family OF INTEREST: Located in the C & O National Historical Park side to house the lock keepers. In 1924, after struggling for years with debt, flooding, and competition from the Baltimore & Ohio Railroad, the canal was shut down for good. The lock houses were abandoned and of the 76 original structures built, only half are still standing. In 1971 President Nixon designated the canal a National Historical Park.

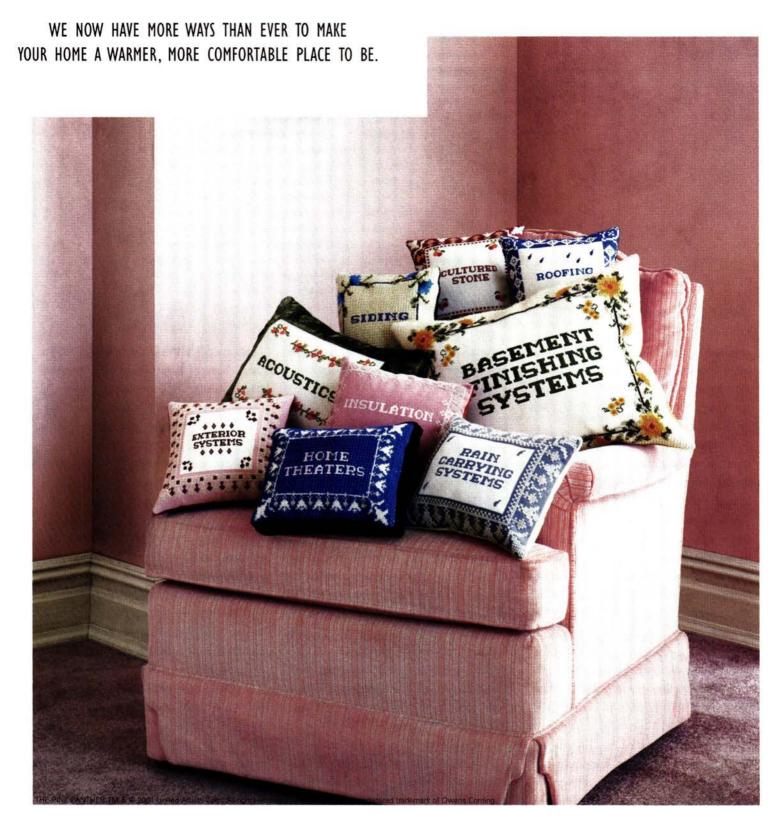
In 1997 the Park Service began its version of military lend-lease in an effort to save its surviving lock houses from falling into further decay. In exchange for a 10year lease (in some cases up to 60 years), renters agree to restore and maintain the property with their own funds according to standards set by the Park Service. The money that goes into the restoration is deducted from the rent each month.

David and Jill quickly realized that just winning the lease would be a major

project. In July 1999, they read about a Sunday open house at the four-room structure. When they arrived, architects were sitting by the canal sketching elaborate renovation plans. "We knew we had competition," says Jill.

The lock house hadn't been occupied since the 1930s, and the Park Service made the only updates in the 1970s: golden shag carpeting, vinyl flooring, plywood cabinets, and faux paneling. "The place looked like a college dorm," says David. Although the décor was past its prime, the house was structurally sound and had electricity and running water—services not found in many houses in the program.

Seeing past the unfortunate makeover, Jill and David submitted their restoration proposal—along with 50 other would-be renters. "Many applicants had grand schemes of how they would improve the existing



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OLD HOUSE LIVING

On any given day, runners and cyclists zoom down the canal's sandy towpath.



house, but our mantra was Keep It Simple," says David. "The lock house was designed as a basic shelter for a lock keeper and the house should be restored with that in mind." David researched the original lock house construction to be able to replicate the 1840s interior as closely as possible.

Their thoughtful proposal included an itemized list of repairs and restoration work, along with photos of the couple camping along the canal during a 1996 flood. Although it took the Park Service five months to make a decision, the couple's enthusiasm paid off. Sonny Sanders, the Park's historical architect, liked David and Jill's "keep it simple" philosophy and the fact that they weren't put off by potential flooding. They were given six months to begin the work before they moved in and started paying rent.

The couple—novices at do-it-yourself restoration—discovered several unexpected extras (the Mushroom Factor) when it came to restoring the house. When they began removing the 1970s "improvements," David and Jill uncovered termite nests the size of manholes in the living room and kitchen, corroded plumbing in the basement, out-of-date wiring behind the makeshift walls, and crumbling plaster in the entryway.

Not shaken by parental I-told-yousos, Jill and David called in reinforcements. Friends and professionals helped install spruce flooring, a new heating system (replacing the '70s baseboard heating), and kitchen cabinetry.

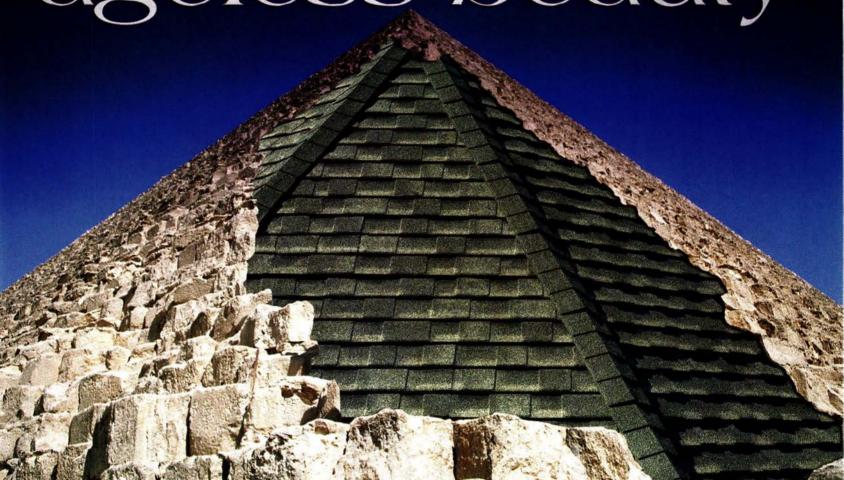
Months into the restoration, the couple learned Jill was pregnant. The news, although a pleasant surprise, offered yet another challenge: to finish the nursery. "Everything in an old house is off-square," says David, who had a tough time handcutting baseboard that would sit flush along the original floors in the baby's room. After buying a compound miter saw, he was able to quickly cut trim for every room in the house-a worthwhile investment, he says, considering the new time constraints the couple face. Projects still on their horizon include replacing support posts and railings on the porch and regrading areas around the house that have poor drainage. The 1996 flood washed away all the topsoil, creating virtual riverbeds in the front yard when it rains.

Unlike residents of urban communities, where neighbors can hear each other's conversations across alleyways, the Drupas have surrounded themselves with a different kind of society—wildlife. Now in the house one full year, David and Jill are becoming much more than weekend naturalists. "I knew it was spring when the bullfrogs began to croak," David says. "Every day I'm forced to see something different; I notice a fallen tree in the woods or a dam that a beaver has just built." On any given day the couple might spy osprey, deer, and skinks (small lizards). "The cats eat the skinks when they get in the house," says Jill. "I find the tails all over the place."

The human variety of woodland society comes in the way of outdoor enthusiasts. Just a few hundred feet down the canal, Olympic hopefuls row in full force toward Georgetown; cyclists whiz by on the sandy towpath; and an artist sets up his canvas across the waterway to paint the lock house. A marathon runner knocks on the door and asks if she can fill her water bottle using their garden hose. Jill and David don't mind the weekend traffic. They know that once the first frost hits, the canal will again be still.

With their baby due in just weeks, life is good. Although David occasionally likens his wife to Eva Gabor from the 1960s television sitcom "Green Acres"—when she reacts to the wolf spiders living in the basement for instance—Jill has no regrets. Just like Thoreau, they plan to "skim off" lessons from nature to teach their child about ecology and conservation. "We have the best of all worlds," she says. "We're close to a world-class city, we live in a historically rich house, and we are surrounded by wildlife." Even if it is just a rental, can life get better than this?

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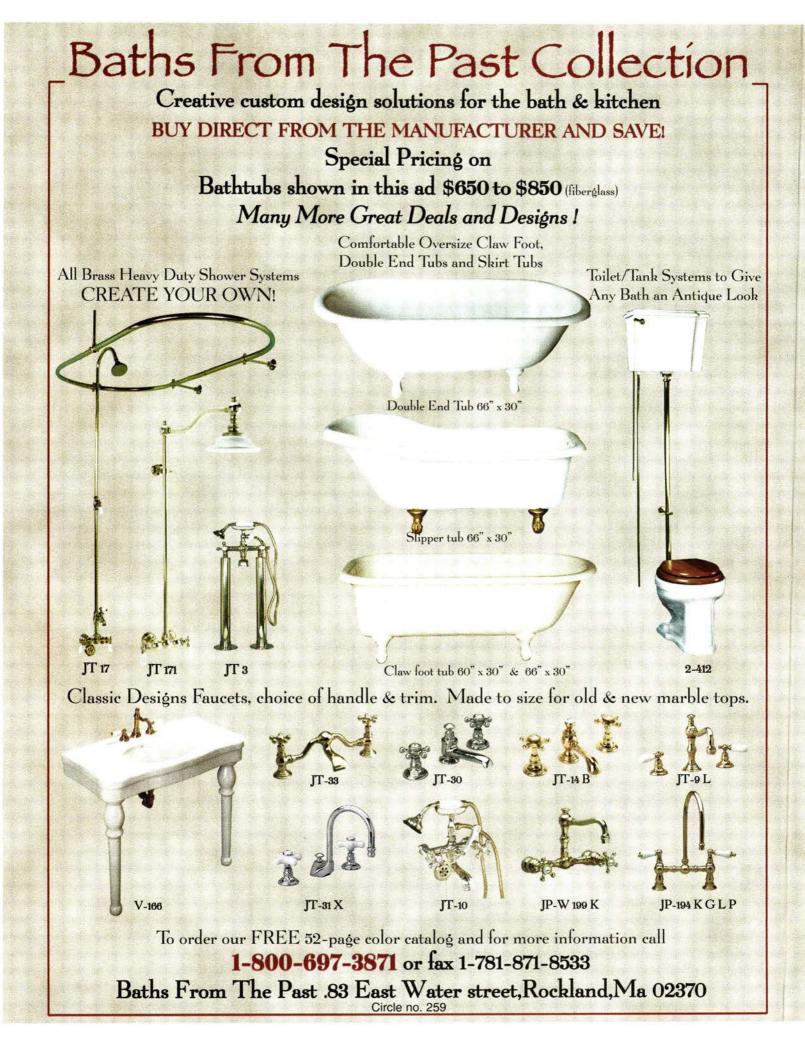
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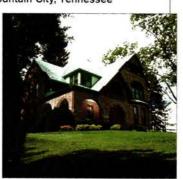
through American summers since the 1880s, when Nikola Tesla and George Westinghouse received the first patents. Most of today's models sport strictly utilitarian designs and, like modern houses, don't seem built to last. Early fans, however, had distinctive personalities, from the flat pancakes made by General Electric until 1908 to the '30s Singer Ribbonaire, which looked more like an electric cake mixer than a fan.

Given this diversity, it's not surprising that fans have their own fans the 600-member Antique Fan Collectors Association (AFCA).

One fan fan is David Rouse, a board member and webmaster for the club. "Peo-

B&B FOCUS Prospect Hill B&B Inn, Mountain City, Tennessee

ho would guess that NASCAR fans mix well with lace valances trimmed in yellow bows? Yet Bob and Judy Hotchkiss are so confident that their inn will be full for late February's Winston Cup Race in nearby Bristol, Tennessee, that they raise their rates. In their highland setting in the state's southeast corner, they're also busy during fall leaf-peeping, winter skiing, spring wildflower hiking, and summer fishing. Bob, a former attorney, and Judy, a journalist, bought the 1889 eclectic brick Queen Anne five years ago. They furnished the dining room ca. 1910, to honor the Rambo family who lived there from that year until the late 1980s. Each guestroom has a



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A Fine Shine

A FEW PORCH-LIGHT BASICS: 1) At Halloween, you didn't trick-or-treat at houses without them. 2) As you bid good night to your first date, Dad was sure to switch it on. From the first fire left burning outside a cave entrance, porch lights have given homeowners a sense of safety and visitors a warm welcome. In the mid-to late 1800s, oil and kerosene lanterns gave way to gaslight sconces. From 1900 to the teens, fixtures were equipped for both gas and electric power. Once electricity was commonplace, we attached lights to the porch ceilinghence all those white, mothluring globes. Today porch-light styles range from gaslight to early electric, like this Beaux Arts cast iron Cascadia, popular from 1915 through the '20s. With the flame shade shown here, it retails for \$176. Contact Rejuvenation Lamp & Fixture Co., (888) 401-1900, www.rejuvenation.com

ple just wanting a single fan that's appropriate for a 1930s or '40s house can find an affordable one pretty easily," he says, "but some of them can cost thousands of dollars." Rouse has traded his way up to a few fans from the period between 1890 and 1910, when

Cool Exhibit

This summer, the Atlanta History Center looks at the lengths Southerners have taken to beat the region's heat. The exhibit, "Keepin' Cool," journeys back to the days before modern conveniences to discover the architectural tricks-overhanging rooflines, capacious porches, elliptical dogtrots, high ceilings, large windows, sleeping porches, and adjustable louvers-that help keep buildings and occupants cool during the South's oppressive summer months. The exhibit will also examine electricity and technology's impact south of the Mason-Dixie line. The first Atlanta residence to install central air conditioning was the 1928 Swan House-today a house museum situated on the history center grounds. The Atlanta History Center is located at 130 West Paces Ferry Road, Atlanta, Ga, For more information call (404) 814-4000 or visit the Web site at www.AtlantaHistoryCenter.com.

cast-iron fans sported ornate castings, brass trim, and gold leafing.

Early fans didn't all rely on electricity. As early as the 18th century you could buy wind-up fans. In the 1880s, factories with mill wheels sometimes used them to run belt-driven fans, and in the 1890s, Edison made a batterypowered model. Early in the 20th century, homes without electricity could use fans powered by alcohol, oil, or kerosene. These heated air in a piston that turned blades on a crankshaft.

If you checked into the right hotel in 1918 with a nickel in your pocket, you could enjoy a half-hour of cool air from a GE coin-operated fan. Another fan, made by Peerless, was kick started like a motorcycle.

During the 1920s and '30s Americans were entranced by airplanes, and manufacturers produced fans shaped like plane bodies, complete with tail and wings. Most of these were installed in factories. A few lacked wings, and today's collectors call these torpedo fans.

Some fans were made especially for use in cars, trains, or telephone booths. Bankers favored vertical-axis fans; set on top of a vertical motor, the blades were held horizontally and were less apt to blow paper money around. (In pre-air conditioning days, paper-



These are a few of Dave Rouse's favorite fans. Some were costly, others grime-covered bargains.

weights were more than decorative.)

Anyone needing a reminder that air conditioning has improved the quality of life in many ways need only consider the parlor fan from the Cincinnati Victor company. According to fan collector Steve Cunningham, these pedestal fans with pink-tinted lights on each side were invariably found in funeral homes. Sitting at the head of a casket, the lights would give the corpse a more pleasant skin tone and the fan would keep flies away.

Most oscillating fans moved from side to side, but some could rotate 360 degrees. One oscillator, the Lollipop, gets its name from a round brass disk that forces the cage to one side before being flipped over to reverse the motion.



From Left: The "spider web" fan warms rather than cools; the Art Deco Emerson Silver Swan; an 1898 GE "pancake"; a 1950s Vornado fan-table combo; a richly detailed 1898 Emerson tripod.



At the beginning of the 20th century, electrical currents and outlets hadn't yet been standardized, and homebuilders installed many if not most of these fans. As a result they were luxury items, says fan historian Loren Haroldson. Some could cost up to seven weeks' pay—today about \$2,700.

By the time electrical standards were set in the 1920s, steel had become more widely available and manufacturers turned their attention to mass producing simple fans (today's collectors call them "commons") that were inexpensive and ran well. In the '30s, however, when the first air conditioners began appearing on the scene, they made an effort to compete by producing models with an Art Deco

Some could cost up to seven weeks' pay-today about flair. The elegant Emerson Silver Swan was the first curved-bladed electric fan. Even more eye-catching is the Robbins & Meyers "Peacock," with its fantailshaped cage.

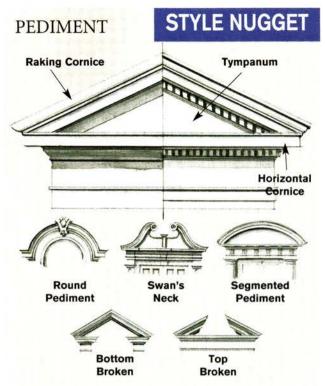
Most of these fans had open cages that would never be tolerated in our safety-conscious society. Even Ralph Nader would have approved of the Ribbonaire, however. It had no cage at all but its

blades were made of ribbon, so it was safe at any speed.

The Depression put such decorative and cutting-edge designs out of financial reach for most consumers. Companies began producing cheaply made "drug store" fans, which eventually dominated the market. They held sway until foreign competitors edged them out in the 1960s. Today only one U.S. company, Vornado in Andover, Kansas, manufacturers desktop fans. Among its current line—testifying to old fans' enduring popularity—is a blast from the past, an Art Deco-style Vornado Silver Swan.

-VICTORIA CHAO AND KATHLEEN FISHER

Visit the AFCA at www.fancollectors.org. For information on their museum at the Vornado headquarters call (800) 297-0883.



The ROMANS USED THE TRIANGULAR pediment as pure decoration for doors, windows, and niches; the Greeks, to showcase sculpture. Not surprisingly, they're most often seen on classically styled houses, such as Colonial Revival, Georgian, Greek Revival, or Italianate, but also show up on Queen Annes or even bungalows. Sometimes the top point of the triangle is missing, in which case you have a broken pediment (if the sides, or raking cornices, are straight) or a swan's neck (if they're curved). In other cases, the bottom, or horizontal cornice, may be broken.

Out of the Ordinarie

stablished in 1634, St. Mary's is a city of many firsts-the first capital of Maryland, the first English-speaking Roman Catholic settlement, and the first town in the New World laid out on baroque principles. Although the city was abandoned in 1695-when the seat of government moved to Annapolis-archaeologists continue to discover "firsts" here. Today a living museum and archaeological field school, St. Mary's City recently "restored" the area's first "ordinarie"-a combination inn and tavern-on its original site. If you think your home restoration project seems daunting, read on.

This past spring, interpretive artisans from Massachusetts's Plimoth Plantation reconstructed the 1667 structure-originally built by William Smith-relying solely on archaeological evidence, historical documents, and 17th-century English structures.

Archaeologist and research director Henry Miller discovered the charred remains of the building's 20' x 30' timber foundation just 8" beneath the topsoil along with melted glass, wrought iron nails, and clay tiles.

Deciphering the site's archaeological record revealed that Smith's ordinarie, which was lost in the late 1600s in a fire, consisted of two structures with clapboard sides, plastered walls, and glazed windows. Interior post poles that were found indicate a 10' x 10' inglenook. Uncommon in 17th-century Chesapeake buildings, the inglenook was more common in the



Courtesy of Plimoth Plantation The purlins are placed in the roof frame with wooden pegs.

north of England, from where Smith may have emigrated. This 17th-century example is the first discovered in Maryland.

Other artifacts revealed improvements. The ordinarie's third proprietor, a Dutch innkeeper, added tin-glazed tile, including 5" square delft wall tiles, and red bricks (of Dutch origin).

Six artisans spent five months at Plimoth Plantation replicating the carpentry, joinery, and ironwork using



Artisans from Plimoth Plantation raise the frame of the ordinarie at St. Mary's City, Maryland.

authentic materials. They chose rotresistant white oak and locust for the post-and-ground framing. Wrought iron door hinges and approximately 4,000 nails were hand forged for the project.

A study in contrasts, like many old houses, "the original structure was competently built although its later additions were cheaply framed yet incorporated expensive finishing materials," says Miller.

Historic St. Mary's City is two hours from Washington, DC, off route 5 in Southern Maryland. For information call (800) 762-1634.

Today's Classic Homes



◄ HE THIRD SEASON OF "Today's Classic Homes" is gearing up to air this fall on PBS. Old-House Journal-co-producer of the show-took a behind-the-scenes look recently at the star of the show, the Kelnepa House, the 1924 riverfront estate in Jacksonville, Florida. The first episode will discuss the house's Mediterranean Revival style (typically a mixture of Mission Revival, Italian Villa style, and Spanish Colonial Revival), and explain how to identify this style of architecture, which fea-



Host Mitch McDaniel discusses the project with producer John Kennison.

tures barrel tile roofs, overhanging eaves, stone brackets, cast stone or coquina block and stucco, arched doorways, courtyards, and interior columns. Over the season, the show will document the house's restoration, including repairing

> the tile roof and securing the structural framing.

Master Craft

T F YOU APPRECIATE AMERICA'S L heritage of old houses and the craftspersons that restore and maintain them, celebrate Independence Day in the nation's capital at the Smithsonian Folklife Festival's "The Masters of the Building Arts." Over 50 artisans from around the countryincluding adobe builders, timber framers, marble masons, coppersmiths, and ornamental blacksmiths-will convene on the



Smithsonian Folklife Festiv Architectural blacksmith Patrick Cardine, at his forge in Chantilly, Virginia, will attend the festival.

National Mall in Washington, DC, to share their trade techniques through presentations, demonstrations, and hands-on educational activities. Festival-goers can participate in stained glass making, decorating with mosaics, and brick making. Daily discussions include such topics as the Washington Monument restoration and National Cathedral stone preservation. The festival, which is free, runs June 27 to July 1 and July 4 to July 8. For more information call (202) 357-2700.

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Actively promoted by 1945 as making "the view part of the room," picture windows became the central architectural feature of the new one-storey houses of the 1950s, appearing with equal frequency in Ranch houses (top), expanded "Colonials" (middle), and compact "ranchettes" (bottom).

ALL DE CO

Picture This by Neal Vogel

SPRING OF 1962 FOUND my parents moving into their brand new three-bedroom Ranch house (I arrived a few months later). Out front the house featured a large picture window, about 60" square, flanked by casement windows with oversized diamond panes. From the time I could chin-up on the window stool, until the year we moved out, that living room window presented the best picture of the outside world, the place to watch a summer storm or winter blizzard, to see who was coming home or just driving by. It was also the best view indoors, where seasonal kitsch, from glowing plastic pumpkins to sparkling aluminum Christmas trees, cycled in and out of display. Large and lucid, my window was one of thousands that gazed across the mid-20th century landscape, but where did these picture windows come from?

Picture Prehistory

THE ANCESTORS OF PICTURE WINDOWS date to the mid-19th century and are closely linked to the development of window glass itself. London's Crystal Palace of 1851—the quintessential glass structure of the Industrial Revolution—not only enclosed a world's fair in glass, but also exhibited the largest sheet of plate glass made up to that point. It was no small achievement. Until the 1920s, plate glass used for oversized windows was produced entirely by the casting method. Workers would pour molten glass onto cast-iron casting tables from large regenerative pots, then roll, anneal, grind, and polish the slab into a finished sheet. The process was slow and labor intensive, making plate glass an expensive commodity.

Not surprisingly, plate glass saw very limited residential use in the 1800s. According to Warren Scoville in Revolution in Glass Making, only "Some of the wealthiest people in Boston had begun to use polished plate glass instead of sheet glass in their front windows before 1850." By 1870, plate glass sheets as large as 84" x 60" were possible, but the domestic output was less than one percent. Thanks to American ingenuity (and protective U.S. tariffs) the domestic production of plate glass rose steadily to 82 percent by 1890. In 1897 the Marsh Plate Glass Co. of Floreffe, Pennsylvania, developed a continuous lehr (oven) for annealing plate glass, reducing the carefully controlled cooling time from three days to three hours.

Stylistically, oversized windows grew in popularity in the 1890s and were known as "cottage" or simply "front" windows. Cottage windows invariably featured a transom above and were rarely larger than 48" x 68" (including the transom). Cultural changes in the early 20th century, as well as innovations like central heating, led to flowing, open floor plans and ever-larger windows in the home. The horizontal emphasis of Prairie School architecture, championed by Frank Lloyd Wright, More than mere icons of mid-20th century residential architecture, picture windows embody the triumph of glass panels over solid walls.



A single mammoth pane bookended by sidelights became the perfect wide-screen view of suburbia-just right for a budding architectural historian in his parents' newly purchased ranch.

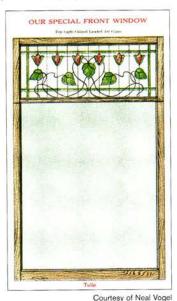




James C. Massey

called for wide windows, not tall windows.

Plate glass was not only superior to standard window glass in size and strength, but also provided the best clarity. In super-sizes and thicknesses it made possible the innovative glass curtain walls of Mies's Farnsworth house (above left) and the glass house of Philip Johnson (top right).



Popular by the 1890s, cottage or front windows topped a large light with a stained glass or decorativemuntin transom. While Wright used decorative ribbon windows or art glass in most of his Prairie School houses, more vernacular and eclectic versions incorporated oversized windows of plate glass. To meet the market, sash-and-blind companies promptly rotated their cottage windows on their sides for better architectural proportions. The transom became a casement or double-hung sash paired with a mate for natural ventilation. These new oversized windows, mimicking commercial Chicago windows, were known as "landscape" sash for a spell. The center sash was still rarely larger than 48" square, but the overall window assembly now had a predominately horizontal axis, spanning 8' or even wider.

Gains in Glass

THANKS TO HENRY FORD, BY 1922 engineers had developed a semi-continuous method of rolling plate glass for automobile windshields that was soon adopted by Pittsburgh Plate Glass Co. and Libby-Owens-Ford Glass Co. As a result, the price of plate glass plummeted in comparison to the price of standard window glass, and though it remained the costlier material, more affordable plate class contributed to the growing popularity of picture windows. By the 1930s, plate glass 127" x 286" could be produced up to 1¼" thick. American Window Glass Co. of Pittsburgh Photo courtesy of HABS

offered a plate glass alternative for oversized windows dubbed "Crystal Sheet," a special 39-ounce (per square foot) glass, ¾" thick. Nevertheless, picture windows were usually glazed with ¾", ¾" or ¾" plate glass, while larger windows required thicker glass for stability.

Chicago's Century of Progress International Exposition of 1933 unveiled George Fred Keck's ultra-modern House of Tomorrow and Crystal House emphasizing the use of glass throughout the home. The term "picture window" was coined a few years later and best captures the role of the oversized window. A solarhome innovator, Keck introduced thermal pane windows in 1935, but thermal pane picture windows are not commonly found on all classes of residential work until the 1960s.

Meanwhile, architectural movements like De Stijl and the International Style were evolving in Europe where picture windows soon morphed into picture walls, better known as glass curtain walls. Large picture windows on Walter Gropius's house (1925) in Dessau, Germany, were the precursors of enormous picture windows that appear on his home (1937) in Lincoln, Massachusetts. Huge sliding windows on Mies van der Rohe's Tugendhat house (1930) in Brno, Czechoslovakia, were precursors of glass curtain walls on his Farnsworth House (1950) in Plano, Illinois. Designed in 1946, the Farnsworth House was freely adapted by Philip

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After 1900, some millworks companies turned their cottage windows into landscape sash by shifting the emphasis from vertical to horizontal--a clever repositioning in both senses of the word.

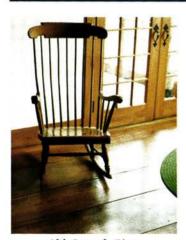
Johnson for his own glass house (1949) in New Canaan, Connecticut. The glass box proved elegant but lacked privacy. The Farnsworth House was actually designed without eaves, operable windows, or air conditioning, making it an unbearable "hotbox" during five months of the year.

While architectural innovators pushed glass to extremes, mainstream America developed a love affair with sprawling 'burbs and sprawling Ranch houses during the post-World War II boom. Picture windows were increasingly ganged together on back elevations as pseudo curtain walls for everyday houses. The September 1947 cover of *Architectural Forum* features a New England "solar" house by Carl Koch with three large pictures windows framing a corner. According to the feature story, "the owners were not particularly enthusiastic about contemporary architecture but could not build a Cape Cod to supply the light and air desired." An advertisement in the same issue promotes Anderson Windowall saying "These windows that are walls... these walls that are windows are the perfect expression of a design trend that has been accepted universally by progressive architects and designers."

Well into the 1950s, picture windows even found a home in the pre-industrial-age styling of Colonial and Tudor Revival houses, where they were often employed as the centerpiece of a bay window. The picture window's major role, however, came as a prominent front window hung on the vast majority of houses of the 1960s and 1970s. Today in the 21st century, a growing interest in cathedral ceilings and "great" rooms, along with the availability of more efficient thermal-pane (even triple-pane) windows, has rejuvenated interest in oversized windows and walls of glass. Picture windows are being installed once again—for watching a summer storm, a winter blizzard, or simply to bring in light and nature.

Neal Vogel is a restoration consultant and principal of Restoric, LLC, in Evanston, Ill. (restoric@earthlink.net).

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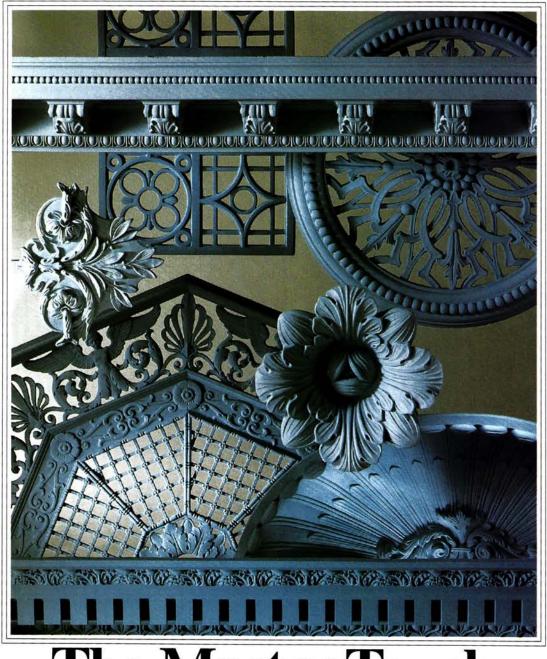
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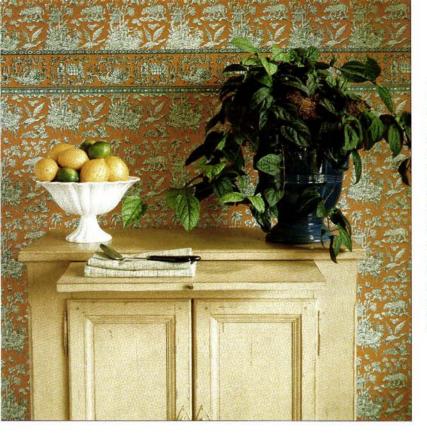
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subtle to match any décor. With the unico Gystem, you'll enjoy the superior performance of quiet, draft-free cooling and heating all year long. To see how the unico Gystem can aid your classic home's renovation, visit our website at www.unicosystem.com and check out the sections on Older Homes and case studies. Or call us at 1-800-521-0896. The Unico System



THE LURE OF THE EAST

In the 17th century, no royal abode in Europe was complete without a Chinese room, often reserved for the prince's mistress. Chinoiserie-or European crafters' interpretation of Chinese design in furniture, porcelains, and fabricwas especially popular in Germany. In the 18th century, it found its way into garden design, as seen in pavilions and pagodas. More relevant to American tastes was its brief revival in wallpaper and other interior décor in the 1930s. Now Motif Designs is bringing back these fanciful, informal motifs in wallpaper and fabric patterns. The paper pattern shown here, L'Empereur, is \$30 a roll. For more information call (800) 431-2424. Circle no. 5 on the resource card.





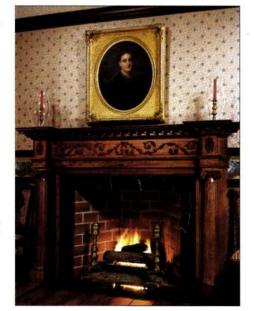


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But maybe it will be a bit more pleasurable with the Big Ben Art Deco clock radio, set to your favorite oldies station. No digital display to blink "12:00" when the power goes off! The black and white face has numerals just like the ones you learned in grade school, and the black matte case has rounded corners and a raised bezel. You can choose an alarm mode, and there's a snooze button should you need it. The clock radio is 6" tall, 10" wide, and 3" deep. It's available through L.L. Bean catalogs and at Restoration Hardware Stores for a suggested retail price of \$59. Circle no. 6 on the resource card.

DO YOUR HEARTH GOOD

Does your fireplace have a poker face? Then make even your bellows seem antebellum with this copy of a Federal-style mantel found at Auburn Plantation, a National Historic Landmark in Natchez, Mississippi. The mantel's classical columns support an entablature adorned with a leafy scroll that recalls earlier Georgian design. Available in poplar, oak, cherry, and mahogany, it's shown here in cherry and retails for \$4,500. Contact Mantels of Yesteryear, (706) 492-5534 or visit www.mantelsofyesteryear.com. Circle no. 7 on the resource card.









house and have been



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Wondering how to protect your horseless carriage from the elements and still be architecturally correct? Evolving from the carriage house and barn, the first "real" garages appeared in the 1910s. Although these structures were utilitarian, their doors were often complicated swinging, folding, or sliding mechanisms. Today, Designer Doors creates garage doors that both complement the architecture of vintage homes and roll up easily with an automatic opener. This traditional set features barn door details and true divided lights and sells from \$2,700 to \$4,200 installed. To see other styles contact Designer Doors at (800) 241-0525 or visit www.designerdoors.com. Circle no. 8 on the resource card.



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NO SHEET?

The whippoorwill is singing and there's a full moon on the meadow. You throw open the window to a fresh country breeze and settle down between line-dried sheets... In real life, you may have to leave on the central air to drown out the thrum of trucks on the Interstate. Still, crisp fresh linens have always done a lot to improve a sweltering summer night. Here in cool spring green are Campobello, with a rose trellis pattern, and Juneau, embroidered with dots and scattered roses and edged in scallops. Both are 100 percent cotton percale from Italy. You can have pink or blue as well. Campobello sheets are priced \$70 to \$110, and Juneau \$90 to \$170. For a catalog, contact Schweitzerlinen at (800) 554-6367, in New York at (212) 249-8361, or browse online at www.schweitzerlinen.com. Circle no. 10 on the resource card.



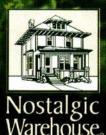


TUDOR DÉCOR

Named for the royal family that ruled England from 1485 to 1558, the Tudor architectural style became popular in the United States in the late 1800s and took off in the 1920s and '30s. Tudor designs have some elaborate featuresgabled roofs, extensive half-timber work, and chimney treatments-but their doors are simple board-andbatten types that reflect the earlier medieval period. To make your own castle complete, here's International Wood Products' Tudor door with Gothic top and cherry finish from the Estate Collection. The door retails from \$3.500 to \$5,000 depending on size and options. For more information call (800) 877-9482 ex. PR 10-225. Circle no. 11 on the resource card.

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OLD HOUSE MECHANIC

Light Talk on Heavy Jacks by William T. Cox Jr.

B EING A CARPENTER FOR SLIGHTLY over 35 years, I've been under a few old houses as you can imagine. Of course, not all old houses require remedial structural support. When floors get out-oflevel, however, or stairways roll from side to side, that's when it's handy to know something about jacks.

Bell-bottom screw jacks (house jacks) Screw jacks operate on the same principle as a threaded nut and screw, which gives them impressive lifting power-up to 24 tons in large models. Iron and steel screw jacks have been used since at least the early 19th century for leveling and moving buildings, and are still made today. Their construction is simple, and their operation gradual and positive (there is little chance they will slip). You operate a screw jack by turning the head with a bar to rotate the screw out of the threaded base, similar to a capstan winch. More sophisticated versions use a ratcheted lever. Screw jacks should be clearly labeled with their sustaining capacity-the maximum load in tons they are designed to sustain.

Ratchet jacks Widely used in the past in mines, shipyards, utilities, and on railroads, ratchet jacks employ a rack-and-lever mechanism much like an automobile bumper jack. Most ratchet jacks have two lifting points: a central cap and a lower, off-center "toe" for lifting where there is very low clearance. Ratchet jacks are also manufactured in two distinct types. General-purpose jacks ratchet the load up. Then, when you shift the reversing lever, they ratchet the load down. These jacks are built to hold round lever bars, and, because they can gradually lower the load, are designed for general use. Quick-release jacks also ratchet the load up, but when the reversing is tripped they immediately drop the load. For this reason, railroad jacks are *designed only for railroad use*. These jacks are easily identified because they are built to accept a square lever bar.

Hydraulic jacks The bottle jack (whiskey jack), invented about 150 years ago, made life much easier for the house carpenter. Hydraulic jacks depend upon the movement of oil (originally water) to lift loads. They are compact, which makes them well suited for working in tight places. They also have excellent lifting capacities (2 to 55 tons is common for heavy duty units). The hydraulic hand jacks made today can be used at any angle-far superior to the old bottle jack. The modern toe-jack eliminates the need to dig underneath floor joists. All of the hydraulic jacks made today should have a screw top for fine adjustment, and be clearly labeled with their maximum safe load rating.

Post jacks Lighter-duty cousins of house jacks, post jacks are two metal pipes sleeved one into another, then topped with *continued on next page* Top: Low-profile, compact, and amazingly versatile, the solid plunger hydraulic jack is the all-around workhorse of heavy lifting. Above: Screw jacks, among the longest-running designs, support a threaded shaft with a flared cast-iron base.

Photos courtesy of Simplex

a manual screw. Post jacks can be permanently left in place, then periodically adjusted to slowly raise an area of a house. A post jack can also be used as a temporary support when replacing a porch column.

Supporting tools and materials Generally, a jacking project requires more than jacks. A rotating laser level is very useful under a house, clearly shining a level line. A roll of nylon string still makes a good line level, though, and it won't run down any batteries.

Take a drop light fitted with a roughservice bulb, and buy a bundle of #4 undercoat cedar shingles for shimming. You'll also need various sizes of concrete pier blocks, wooden blocks, and ¼" or %" metal plates. Don't forget help either. Another set of eyes and hands are essential to help check the work for accuracy and for safety while you jack.

Unracking a doorway that has settled out of square is a likely old-house problem and a jacking job within the scope of seasoned restorers. Start by mapping out the problems inside the house. Level across the top of door jambs (not the top of the casing) to measure how much it has moved and which side needs raising. Get out your old marbles, place them on the floor, and see which way they roll. If you have the use of a builder's level, survey the entire house. Make a plan of attack.

Each project is different, but a typical set-up starts with placing a pier block solidly under the floor joist supporting the doorway's king stud. Make sure the block is level in both directions. If you're working over soft earth, first dig a hole about one cubic foot in volume, fill with concrete, then let cure. When your footing is ready, place the hydraulic jack or post jack on the block (or a metal plate) to keep the bottom from burrowing into the ground. Use another metal plate on top as a bearing surface so the jack doesn't push a hole through the joist or flooring. Make sure everything is dead-plumb to avoid "kickout" of the jack. When everything is ready, gradually start raising the jack, paying careful attention to the "call-outs" from the person who is monitoring the results inside the house. You may have to jack, block, adjust the jacks' screw tops, and then jack again before everything in the set-up is tight enough to raise the floor joist. Remember to work slowly. This way you can listen for the sounds of movement that may indicate problems, and avoid sudden shocks to the surrounding lumber. Your goal should only be to take enough sag out of the floor joist to improve the doorway and allow you to add a support post (or leave the jacking post in place). If the project is more complicated, consult an experienced contractor or structural engineer.

Raising a complete house This is the ultimate jacking project and, of course, one best left to professionals. They'll have all kinds of jacks, timber for cribbing, and experience. Companies that specialize in this work are called structural movers, and are usually listed in the Yellow Pages. Be sure to check prices in your area and always get references and multiple bids.

Ratchet jacks (shown here) use a round lever bar and are common in heavy industry. Railroad jacks, which use a square lever bar are quickrelease jacks and designed only for railroad use.



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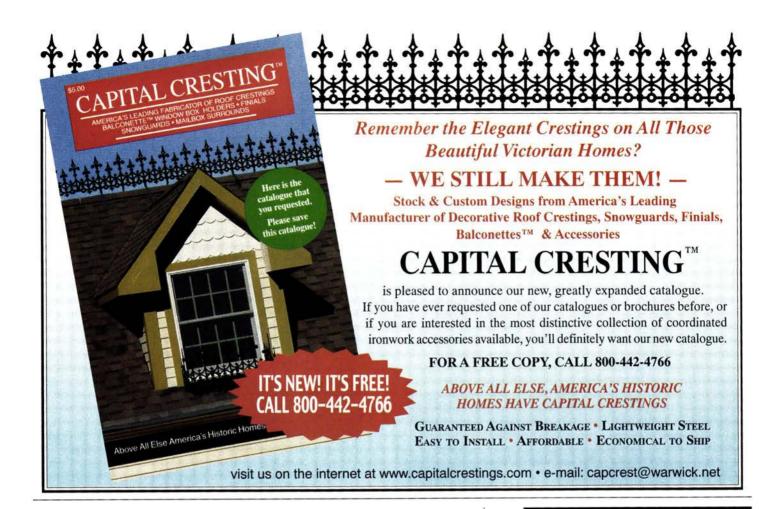
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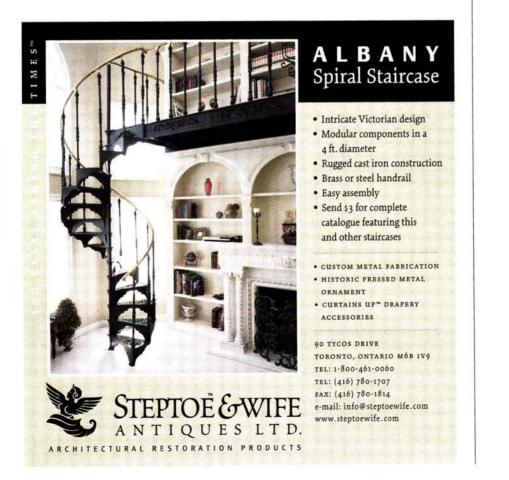
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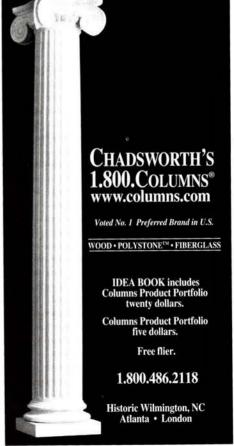
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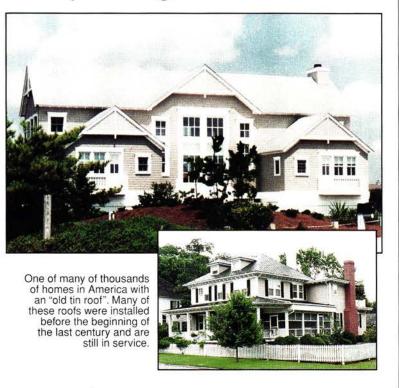
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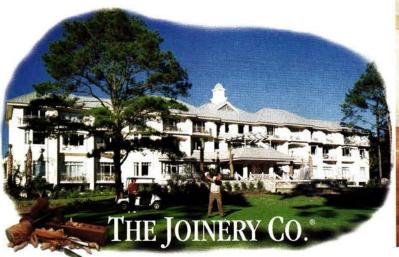
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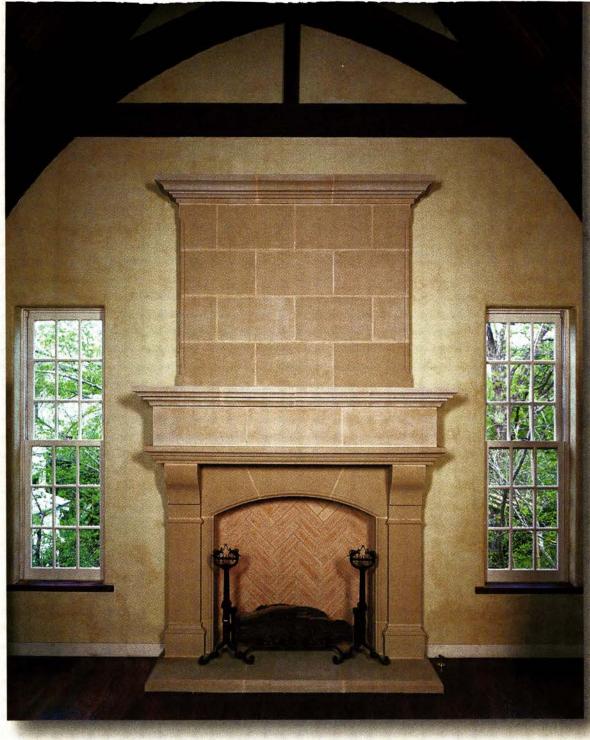
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old house this season, changing out the storm windows and raising some strategic sashes, take a minute to look for evidence of the secret life of screens."

-page 58

July/August 2001

"The rock gardening craze reached a peak in the 1920s and '30s. It was a way to display both wealth and intimate knowledge of rare and recalcitrant little species." "It takes time and patience to contour new mortar to blend with original materials and workmanship, but after the construction dust has settled, it comes as a welcome break to relax with the finishing touches."

-page 52

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RocksofAges

These gardens

can be ephemeral, even when you keep your stones from rolling.



UPPOSE has left house la rocky an lament can't gro

UPPOSE MOTHER NATURE has left you with an oldhouse landscape that is rocky and steep. You might lament the fact that you can't grow a lawn, or you

could rejoice in the opportunity to tackle rock gardening, considered the pinnacle of botanical sophistication.

Simply put, rock gardening uses rocks and plants that normally grow in rocky ground as the chief landscape elements. If you live in a gingerbread Queen Anne, by rights a rock garden would be philosophically out of joint, since these naturalistic tableaus were a reaction against Victorian artifice. However, if your house is aesthetically linked to its site— as is the case with Arts & Crafts houses and even the mock-vernacular English Revival styles—then rock gardens, which reached their zenith in the post-Victorian decades of the early 20th century, can be an ideal fit.

Like most things horticultural, the passion

By Kathleen Fisher

for rock gardens came to America from England, where it had been jump-started by the mid-19thcentury zeal for treks to the Alps. Those peaks, long regarded as foreboding, were suddenly embraced as meccas of yodeling and edelweiss.

While some outstanding rock gardens had been created in the United States by the late 1880s, the craze reached a peak of its own in the 1920s and '30s. It was a way to display both wealth—the Olmsteds and other landscape architects of national stature included ambitious rock gardens in their designs—and intimate knowledge of rare and recalcitrant little species from the highest elevations of far-flung regions.

Neither people nor plants require a pedigree for rock gardening, however. The hobby is open to the most impecunious landowner and to ditchside native plants. Nevertheless, designing an appropriate display area can still daunt spatially challenged flatlanders.

As A. J. Downing warned in 1841, introducing rocks "on a tame and sandy level...nine



Far left: The rock garden of Smith College, still growing good after more than a century. Left: Stonecrop, the Cold Spring, New York, garden of Garden Conservancy founder Frank Cabot.

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Jim Gip

As a rule, round boulders are a bad choice for rock gardens because you can't stack them to create pockets for plants. At the Brooklyn Botanic Garden, however, boulders unearthed during construction have been skillfully used to landscape a stream. In the 1920s and '30s, everyone who was anyone had to have a rock garden, and designs by nationally famous landscape architects weren't immune. Below: The garden of industrialist J. Pierpont Morgan.



Clockwise from far right top: Rockweld, which got a jump on the craze in the 1880s; a garden designed by Nathaniel Barrett, later redesigned by Fletcher Steele at Naumkeag in Massachusetts; Roscrana, first designed by Jens Jensen in Glencoe, Illinois; Rusty Rocks, in the Olmsteddesigned community of Roland Park in Baltimore.

times in ten, is more likely to give rise to emotions of the ridiculous, than those of the sublime or picturesque." While rock garden fervor was fueled by calls for a more natural look for homes and landscapes, there remained confusion between this urbane trend and the surreal rockeries first heaped together by ancient Greeks.

"A pretentious pile of rickety rocks propped with cobblestones, and a few sickly, sun-baked plants straggling over them in a meaningless manner—this would seem to be the prevailing idea of a rock garden in too many American dooryards," lamented



nature writer Neltje Blanchan in 1926.

FIRST TO THROW STONES

BY THE TIME THE AMERICAN ROCK Gardening Society formed in 1934, the hobby was so prevalent that it became a useful scapegoat. At the group's 50th anniversary celebration, member Frank Cabot noted that residents near Prairie du Chien, Wisconsin, blamed rock garden mania for the disappearance of local landmark Fort Crawford, the stone-walled site of many Indianpioneer battles. A Marquette University Medical School pathology professor maintained

Smithsonian Institution, Archives of American Gardens

that rock garden water features were triggering an increase in malaria. Never mind that stagnant water, where disease-bearing mosquitoes breed, is an anathema to nearly all plants, let alone the fussbudgets that most rock gardeners were cultivating.

Rock gardeners tend to relish their reputation as fanatic collectors. French Canadian boatmen working for early plant explorer Thomas Nuttall called him "Le Fou" (the crazy one) because he would continue to prowl for plants when Indians were giving chase. "Clearly a kindred spirit," Cabot called him. Nuttall was curator of

Rock Solid

F YOU DON'T FEEL UP TO THE CHALLENGE of alpines you can still have a rock garden. In arid regions, rock gardeners often specialize in cacti and succulents, sometimes grown in pure sand. Southern rock gardeners may grow native woodland denizens, such as ferns or wild gingers. Gourmet cooks can cultivate an herbal rockery. Others have planted entire rock gardens with dwarf conifers. Small bulbs of all types feel at home among rocks.

It wasn't the plant choices but the design of early rock gardens that inspired scorn among writers of the time. In 1920, English author Reginald Farrar famously described most of them as either an "almond-pudding" (with upright rocks), a "dog's grave" (with flat rocks), or a "devil's lapful" (with square-faced boulders scattered willy-nilly). "The chaotic hideousness of the results," said Farrar, "is something to be remembered with shudders ever after." The rock garden, he and others agreed, should be an accurate reflection of nature—whether gorge or mountaintop—and to that end should be out of view of the house.

For most of us, who can see every corner of our property (and five or six neighbors') from the bedroom window, this isn't practical. Today's determined rock gardeners ignore many other design strictures. Where the terrain is flat they may tuck their campanulas and dianthuses between the flagstones of a patio. If drainage is poor and rocks entirely lacking, they may create raised beds of tufa or timbers.

Yet let's say you'd like a rather traditional-looking rock garden outside your 1920s Tudor. Farrar's advice to let nature be your guide still holds. Take a walk on the nearest mountain, through a park, or along a stream where stones can be found. Take photographs and study them to get a feel for how nature builds a rockery. Observe plants, which may be tightly packed in a high crevice, but scattered sparsely on a lower plateau where rain has washed their seeds.

A natural-looking place for a rock garden is a mound or slope, areas otherwise difficult to landscape. If you lack an incline, you can create your own mini-quarry by excavating a gorge and lining both sides with rocks.

Pick rocks native to your area; they will cost less and look more as though they belong in your garden. Most rock gardeners prefer hard sandstone or limestone. Soluble limestone can turn the soil alkaline and inhospitable for rhododendrons, heathers, and other acid-loving plants. Your goal is a timeworn look, and hard rocks like granite (which will make soil more acidic) take longer to weather; for the same reason, avoid newly quarried stone. Choose angular rocks rather than boulders, which are harder to arrange naturally (although a skilled designer can use boulders of varying sizes to create a dry or wet stream). Use the same type of rock throughout the garden.

Rocks just small enough for one person to carry eliminate the need for hiring professional help and look good as well. Even smaller rocks can be stacked or placed side by side to look like one big outcropping. All rocks should connect visually, to create the illusion that they're the exposed part of a huge underground formation. If the rock is stratified, the



Catrionia Tudor Erler



Ken Druse

There are rock gardens appropriate to all climates. Top: A natural slope, such as this one in La Jolla, California, is the obvious place to create one. Above: If your landscape is flat, you can bring in earth to create mounds, as seen here at the arid Denver Botanic Garden.

lines should all be at the same angle. Make the rock stable by positioning it broad side down and preferably burying a quarter to a third of it. Rocks should be sloped slightly backwards, so that water will run toward plants. Avoid overhangs that will block rainwater. (See drawings on page 49.)

Begin at the lower part of the slope and work up. If you have rocks delivered, get them dumped at the top of the slope—it's a lot easier to move them down than up.

Position the rocks unevenly, grouped closely in some places and wide apart in others, where you can create large drifts of plants. Then be generous with good soil, well amended with organic matter. If you do grow alpines, you shouldn't have to fertilize them, but you will need to give them excellent drainage and extensive root room: To survive in poor soil, they put down roots determined to find China.

NARGS

For \$20, you can join the North American Rock Garden Society (NARGS) and receive *Rock Garden Quarterly*; participate in its seed exchange; borrow books, slides, or tapes; and buy rock gardening books at a discount. One is their memberwritten *A Rock Garden Handbook for Beginners*, which is \$5. Detailed advice about rock gardening, written by Thomas Everett, is available at www.nargs.org. For questions about membership, contact NARGS at (914) 762-2948, P.O. Box 67, Millwood, NY 10546, or e-mail nargs@advinc.com. the Harvard Botanical Garden from 1822 to 1835, when he answered the call of the wildflower in Oregon. Botanist Asa Gray, who blazed a more intellectual sort of trail, picked up the reins in 1842. Thanks to the legacy of such men and plant explorer Charles Sprague Sargent, first director of its Arnold Arboretum—Harvard is credited with building America's first rockery in the 1870s.

While that garden is long gone, you can still see the one Smith College built in 1898 on its Northhampton, Massachusetts, campus, a home to some 2,000 alpine, dwarf, and woodland plants. The Olmsted firm designed Smith College's master plan, and the Olmsted name is linked to other

> famous rock gardens of the late 19th and early 20th centuries. That's not because father or sons spent time on their knees popping gentians between granite outcroppings, but simply because landscapes of the time, whether new or established, had to have rock gardens. Talented Brits—often graduates of the Royal Botanic Garden at Kew—were apt to do the actual planting. Kew alum Edward Canning

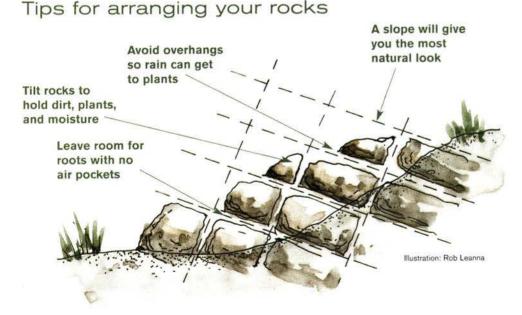


Some impressive gardens have

been created in guarries, but it

would be hard to top Butchart

Christine Star



was head gardener at Smith, for instance.

An exception was General Stephen Minot Weld, who created Rockweld, Amercia's first grand private rock garden, in Dedham, Massachusetts, in the 1880s. Weld, who became a Civil War general at age 24, was close friends with both Sprague and Olmsted, but is believed to have designed his own gardens on 52 acres of rock outcroppings. He did take advantage of Sprague's hunting expeditions to collect unusual species, the list of which fills 34 pages. The property is now home to Endicott House, owned by MIT, and while the site is still impressive, decades of gypsy moths, deer, and expected mortality have left few original plantings. "We have some cyclamen the size of a fingernail, and we guard it carefully," says curator Andy Turkott.

KEW GOOD MEN

KEW GRADUATE MONTAGUE FREE came to the Brooklyn Botanic Garden (BBG) as head plantsman in 1914. Working with glacial boulders unearthed at BBG, he carved out the first permanent display of rock gardening for the unwashed masses. Some apparently couldn't resist a little collecting of their own from the BBG stock, he wrote later.

In the 1930s yet another émigré from Kew, Thomas Everett, designed a two-third-acre rock garden in a rockless valley across town at the New York Botanical Garden (NYBG). He wrote extensively about rock gardens in the NYBG's *Illustrated Encyclopedia of Horticulture*, and you can still get his advice free on the North American Rock Garden Society's Web site.

An abandoned quarry makes a dramatic setting for a rock garden, and the most famous has to be the one Jenny Butchart began on Vancouver Island in 1904, after her husband was done harvesting sand and shale to make portland cement. Although Butchart Gardens now covers 50 acres, it's the original sunken rock garden that draws the most oohs and aahs from tourists.

Keeping an old house on its feet can be child's play compared to keeping a garden at its prime, and it's miraculous when any private landscape survives for the next generation to admire. House museum gardens sometimes get a help-



ing hand. Examples include the Harkness estate in Waterford, Connecticut (whose rock garden was designed by landscape architect Beatrix Jones Farrand), and The Fells in New Hampshire, the John Hay estate being restored by the Garden Conservancy (an organization founded by John Cabot). Statesman Hay bought The Fells in 1883 and his son Clarence landscaped the rocky terrain, culminating with the alpine garden in the late 1920s. He and his (surprise!) Kew-trained

gardener spent 10 years planting 600 plant varieties on three-fourths of an acre.

If you go to The Fells, don't expect to see an exact replica of Hay's creation. "The garden is much shadier today than it was then," says Bill Noble, director of preservation projects for the Garden Conservancy. Like any plants, alpines are subject to crowding out by more aggressive species. "They're also more challenging plants, and most of them are just more short lived." the state above.

Ken Druse



How *to* Detail Traditional Decorative

Mortar as Ornament

By Jacob Arndt photos by skot weidemann

HENEVER BUILDERS have the opportunity to embellish some ordinary architectural detail, it seems they experiment with it.

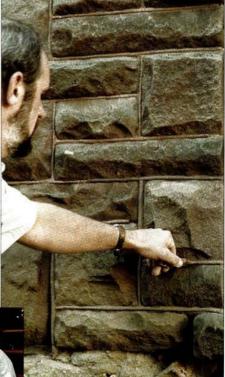
Masonry, particularly the mortar between brick and stone units, provides an ideal medium for such decorative effects. Historically, masons have manipulated mortar joints to add texture, relief, and color to create a neat appearance on rough stone, or to add definition to flat surfaces. For example, the crisp lines on rough-hewn stone foundations add just the right visual counterpoint at ground level, providing the play of shadow lines on the way up the elevation.

Two projects from last summer reaffirmed my appreciation for this traditional practice. Both the historic landmarks we worked on were built around the turn of the 20th century and required recreating the decorative mortar accents I'll describe here. Usually a decorative mortar profile involves color as well, so restoration also calls on mixing pigments to blend with the original mortar. It takes time and patience to contour new mortar to blend with original materials and workmanship, but after the construction dust has settled, it comes as a welcome break to relax with the finishing touches.

The Projecting Torus Joint

THE RAISED BEAD OF A TORUS JOINT—a projecting round or squared line—is typically used on stone units with a rough face. This mortar technique visually evens out the irregularities of rough stone units where they meet at the head and bed joints, giving the whole surface a neat and clean appearance. The torus joint has a dramatic effect on the look of the building and gives very satisfying results.

To reproduce this profile we first make the tool to form the joint. Using the same gauge copper sold for flashing, cut a section of sheet metal about 3" wide and perhaps 7" long. Choosing an intact piece of the original mortar profile from the building, reproduce that rounded form in





Above: Strike the setting mortar with a specialized tool to form the ropelike torus profile, keeping the horizontal bed joints continuous. Left: It's easy to make a joint-strike tool to reproduce a historic torus using copper flashing and common hand tools.

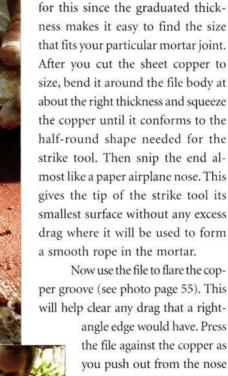
Making a Strike Tool

Start with a rectangle of sheet copper about 3" x 7", then form one end into the half-round of the torus. Use a well-preserved sample of the original joint (foreground) as your guide.





Above: Perfect your torus-making technique by working the strike tool in a test batch of stiff mortar: then adjust tool or mortar mix if necessary. Right: When repointing small areas, it's practical to simply mix mortar on the mortar board adding cements and pigments.



gives the tip of the strike tool its smallest surface without any excess drag where it will be used to form Now use the file to flare the copper groove (see photo page 55). This will help clear any drag that a right-

the sheet copper, only in the nega-

tive. A tapered file comes in handy

the file against the copper as you push out from the nose of the piece to give it a slight flare. Finally, polish the inner surface of the tool with fine sandpaper until it is smooth. Your strike tool is ready to contour the mortar joint.

After making the copper strike tool and preparing a small batch of mortar, practice using the tool on the mortar board until you develop a feel for how to form the smooth ropelike profile (see photo this page). Begin with a relatively stiff mortar, fat with lime, and slide a wet copper strike tool across the mortar, working patiently. Keep a coffee can of water nearby to wet the strike tool.

When you are ready to dress a real joint, baptize it as usual with water from a brush and wait for the sheen to disappear. Next push enough mortar into the joint to make it bulge out from the surface about 1/2" or more. Then, with a wet copper strike tool, begin forming the torus by just moving the tool along the joint to press it into the rough shape.

After you have shaped the joint into the basic form, begin gently sliding the tool to smooth out and straighten the ridges. A rudimentary torus will start to take shape. At this point it helps to keep the strike tool wet, but not so much as to make the joint sag.

With practice, you will master making a smooth, ropelike form to outline the stone or brick bed joint. Then you will be ready to make the head joints. Practice forming a neat looking intersection where the bed joint meets the head joint by making the vertical dive into the horizontal and disappear into it. The horizontal or bed joint should be continuous.

After striking the form you



Above: Squeeze the copper around a bolt, screwdriver, or other object to obtain a halfround shape. A rattail file provides a handy form for a range of diameters, allowing you to exactly match your particular torus.



Left: Trim the tip with tin snips to reduce the surface area at the nose that forms the mortar. Above: Then trim back the adjacent metal. At this point, the strike tool begins to look like a paper airplane.

Below: Returning to the file, flare the groove in the copper to reduce drag. Then polish the inside of the tool with fine sandpaper. The finished tool should look like the one on the left.



MAKING MORTAR

U ntil portland cement became common after 1900, brick and stone mortar was limerich and relatively soft. A simple way to test mortar is to scratch into a sound joint with a trowel blade. You will be able to cut a line if it is lime-based. Portland cement-rich mortar, however, will yield nothing but a white trace on the surface where the blade traveled.

The ingredients we use to approximate traditional lime mortar are white portland cement, hydrated mason's lime, and sand combined in a ratio of around 1:1:7 (one part cement, to one part lime, to seven parts sand). It is necessary to use some portland cement because modern lime is too weak to hold a proper joint. (Specialty suppliers now offer traditional lime that does not require introducing any portland cement, but I have not used these products extensively enough on my own projects to comment here.)

Since sand significantly affects the overall look of the mortar, be sure to choose sand that is close in characteristics to the original. Use a magnifying glass to inspect a handful of the original mortar and note whether the sand grains are round or sharp, as well as the colors of the various stone particles. Fortunately, early materials were usually sourced nearby and it is usually not too difficult to find a good match. You may need to wash the sand if it comes from a stream or lake bed, or sift it through a screen to obtain the right grade. Compatible sand not only is a better visual blend with original mortar, it is similar in workability, making it less difficult to get the right look in contour and color.

Measuring Mortar Ingredients

To quickly and accurately measure all mortar ingredients without a lot

of extra paraphernalia on the site, use this low-tech method. Take a quantity of sand needed for a batch and form it into a square cake of uniform depth. Start with three trowelsful on a mortarboard. Make the cake a few inches deep, then divide it with the trowel blade into four equal sections. Scoop out one quarter-section and fill it with equal amounts of white portland cement and lime. Then add a little extra lime to make the batch on the rich or "fat" side. This extra lime makes the mortar hang together better while striking the smooth ropelike profile to create a torus joint.



To mix colors, experiment with pigment and remember that in the first week the mortar will look darker than the final cured color. To produce brown, mix black and red mortar pigments; for buff, mix white, yellow, and red; for straw color, yellow and white; for orange, yellow and red.



To measure pigments, divide the cake into smaller equal parts. As long as the sand is caked to a relatively even depth, you can segment it until you get to the desired ratio. For example, if your mortar-color testing samples call for a 1:32 ratio of pigment to sand, then divide the sand into 16 equal segments and scoop % of a %th segment out and fill the void with your pigment.



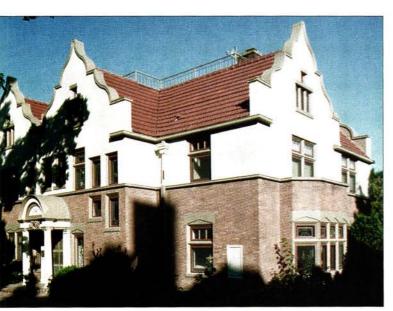
Small batches of mortar are convenient to mix on the mortarboard right next to your work. To ensure consistent color, thoroughly combine all dry ingredientscement, lime, sand, and pigment-before adding water. Keep track of proportions and measurements so that you maintain consistent mortar qualities from batch to batch.

Making Buttered Mortar Joints

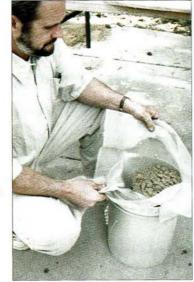
It pays to set up a bench for mixing pigment proportions right next to the work. Keep several buckets of water on the scaffold for soaking materials and baptizing work.







Above: Using color and extraordinary thinness, butter joints make the mortar all but disappear into the brickwork-an effect widely popular in the late 19th and early 20th centuries for buildings like this 1926 Dutch Colonial house. Left: To obtain the fine aggregate needed to match butter joints, screen all sand through a fine mesh.



will have excess mortar on both sides of the projecting joint. Carefully slice away this excess with the side of your trowel to produce a clean margin. Then leave the joint alone for about one hour. When you come back, lightly brush the torus with a fine paint brush to just clean off any residual mortar and close up small fissures and gaps. As always, so that the joint will cure properly, keep it moist by broadcasting water on it periodically for several days.

For a square-profile joint, use the same lime-rich batch of mortar described above and point the joint so that the mortar protrudes beyond the surface of the stone or brick units. Then gently rest a level against a course of projecting mortar and slice a clean horizontal line along the top and bottom of the mortar, leaving a 3/8" joint. Dress the mortar line by pressing the level to it, making it flat and smooth with the help of a concrete finishing trowel blade. Then repair any distortions in the line by following up with the same level procedure to slice a clean line. After an hour or so come back to the joint and clean up any small bits of residual mortar with a fine brush. Then lightly mist the joint with water. Cure the joint for a few days by keeping it moist.

The Buttered Mortar Joint

ALMOST THE EXACT OPPOSITE of the projecting torus joint, the "buttered" joint is a decorative mortar joint that was used to minimize the evidence of mortar. So called because the mortar can be as thin as 1/4", the technique was often used in late Victorian and early 20th-century buildings to enhance the brick or stone color-frequently with matching mortar pigments-and give the elevation a more uniform, solid appearance. Though they may be inconspicuous, buttered joints are tricky to handle because the thin, fine mortar creates suction on the bricks or stone and, consequently, a brief positioning time.

The first step is to prepare sand and pigment to color-match the existing material (see Making Mortar, page 55). Much as you did with the torus joint, screen the sand through a fine mesh to remove any particles that will interfere with placing the brick as thinly as required. Even small aggregates will prevent the close placement required for these joints.

As you measure pigments, remember that a century ago job-site construction practices were not generally supervised by architects overlooking every aspect with precision measuring devices. If you examine



Left: For buttered joint repairs, use a relatively soupy mortar, rather than one with a stiff consistency. As you work, keep new bricks soaking nearby.

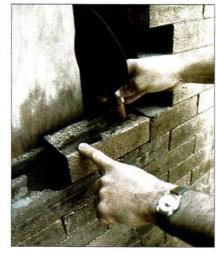
a period building closely with a practiced eye, you can see slight inconsistencies. Perhaps you'll notice where the mortar was applied in the direct sun one day, or that the mortar batch for one area of the building is slightly lighter than in another area. There's an art to practical masonry restoration/preservation that picks up where science leaves off.

Traditionally the buttered mortar joint was poured onto the bed course to receive the next elevation. In repair work, though, there typically is not enough space for manipulating buckets, or pouring is too sloppy to risk soiling the areas being reworked, so you have to work creatively with trowels and novel tools (see photos, page 56-57).

Suction, however, is the main problem you will have to deal with in making these extremely narrow joints. To prevent all of the mortar moisture from being wicked away into the surrounding brick, soak the brick before laying it up and keep the bedding wet before placing the mortar.

Mix the mortar with enough water to produce the consistency of pourable pancake batter. Then, apply the mortar to the bed joint in a ¼" thick smear and set the brick as soon as you have buttered the joint. With a tight string line in place, set the

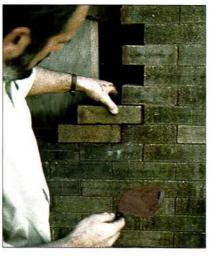




brick in a fairly exact position on your first move because these joints don't provide the flex to readjust.

When you have laid up a few bricks to the line, strike the arris or margin of the brick with a thin jointing tool to create a slight shadow line. Later, when the repair is complete, remember that it is very important to cure these joints. Keep them moist by periodically washing after the mortar has set. Then step back and enjoy the beauty produced by finessing some traditional mortar details.

Jacob Arndt is the principal at Northwestern Masonry & Stone (527 Mulberry St., Lake Mills, WI 53551; 608-238-0202).



SUPPLIERS

KREMER PIGMENTS INC. 228 Elizabeth St. New York, NY 10012 (800) 995-5501 Lime-fast masonry pigments. Circle 12 on resource card.

SOLOMON GRIND-CHEM SERVICE, INC. P.O. Box 8288 Springfield, IL 62791 Lime-fast masonry pigments. Circle 13 on resource card.

VIRGINIA LIME WORKS P.O. Box 516 Monroe, VA 24574 Masons lime Circle 14 on resource card.

Above: After moistening the bed, "butter" it with a trowelful of mortar evenly laid the same thinness as the original. Far left: Set the brick or stone in final position as soon as it is laid up; the fine mortar makes adjustments difficult. Left: Butter joints are extremely thin, making repairs quick, closetolerance work. The finishing touch is striking the joint in a pencil-thin shadow line.

MARSHALLTOWN TROWEL COMPANY 104 South 8th Ave. Marshalltown, IA 50158 (800) 987-6935 Masonry trowels and hand tools Circle 15 on resource card.

STANLEY/GOLDBLATT (800)-STANLEY Masonry trowels and hand tools Circle 16 on resource card.

BON TOOL CO. 4430 Gibsonia Rd. Gibsonia, PA 15044 (800) 444-7060 Masonry trowels and hand tools Circle 17 on resource card.

THE SECRET LIFE OF Screen Doors

HOUSE JOURNAL . JULY AUGUST 2001



WIRE WINDOW AND DOOR SCREEN AND WIR WIRDOW Fight with the Color

HAT WOULD SUMMER BE WITHout screens? As inconspicuous as they are ubiquitous, screened doors, windows, and porches are the faithful workhorses of warm-weather liv-

ing, letting cooling breezes indoors while keeping insects out. It's easy to assume that woven-wire screens-decidedly low-tech, even when made of modern fiberglass and carbon filament-have always been strictly functional and unsensational, but nothing could be further from the truth. Though the material itself has been used for millennia-and for surprising purposes-the widespread application of screens goes back barely a century to an era of national concern about epidemic disease. As you move around your old house this season, changing out the storm windows and raising some strategic sashes, take a minute to look for evidence of the secret life of screens.

The Source of Screens

WIRE IS AN ANCIENT CONSUMER COMMODITY. The earliest civilizations were tediously drawing thin-gauge wire by hand from precious metals for use in jewelry and garments. Hand-woven threads of base metals appear in armor, sieves, nets, pins, and wool cards for home, military, and agricultural applications. By the 15th century, mechanization in Germany and England had boosted wire production, and looms originally geared for linen and carpets were altered to weave wire. While the British prohibitions kept colonial Americans from developing an ironworking industry, by 1800 wire mills were well-established in Connecticut, replacing horsehair and cheesecloth as the standard screening for household use. When the southern consumer base for sieves collapsed after the Civil War, manufacturers turned their sights to an emergBy Elaine Eff

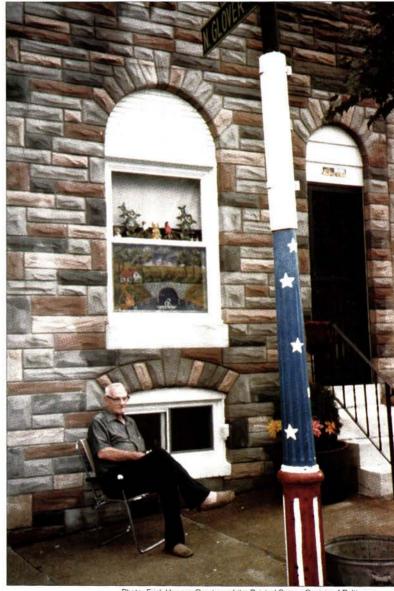


Photo: Erick Hoopes Courtesy of the Painted Screen Society of Baltin Above: Baltimore, Maryland's, inner-city neighborhoods sport works of art on wire. Top: A mid-1800s hardware catalog advertisement for landscape painted screens (the Warshaw Collection of Business Americana Smithsonian Institution) Left: Screens became a necessity in American households in the early 20th century as airborne diseases were attributed to flying insects.

SUPPLIERS

MCNICHOLS CO. P.O. BOX 30300, TAMPA, FL 33630 (800) 237-3820. Circle 25 on resource card, HANOVER WIRE CLOTH/STAR BRAND SCREENING 500 F. Middle St. P.O. Box 473, Hanover, PA 17331 Circle 26 on resource card. WALSH SCREEN AND WINDOW 555 F Third St Mt. Vernon, NY 10553 (914) 668-7811 Circle 27 on resource card. PFEIFFER WIRE PRODUCTS PO Box 1700 Tuscaloosa, AL 35403 Circle 28 on resource card



Charles Steck

ing market: window screening.

Each year, the populations of American cities were devastated by losses attributed to poisoned air of unknown origins. As early as 1830, a New Haven, Connecticut, doctor suggested a connection between the deaths and flying insects. He recommended wire gauze windows for protection, but his advice fell on deaf ears. Southerners especially resisted the use of window coverings, preferring instead to blame strangers, exotic plants and goods, and poor sanitation for their summer onslaught. The well-to-do fled to higher ground to escape the inexplicable "vapors" or "the miasma." Not until 1903, when a Georgia plantation owner screened his rural home in a well-publicized move, did the average homeowner accept the possible pro-

Polyester

Meshlike fibers

manufactured

to function as

both insect

screens and

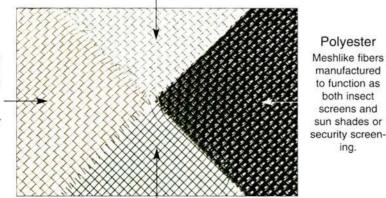
sun shades or

ina

Aluminum

Inexpensive, light, and durable except in salt air. Aluminum is conspicuous but clearly mid-20th century.

Bronze Expensive but traditional and strong. Bronze stands up to weather, especially near the ocean.



Galvanized Steel Affordable and traditional, galvanized steel offers good strength and durability (slightly reduced by salt air).

phylactic benefits of screens. It was one year before Walter Reed linked yellow fever to the Aedes aegypti mosquito during the construction of the Panama Canal. Mosquitoes and flies, once believed to purify the air, sparked the creation of a new industry.

Mass-Produced Mesh

SCREEN DOORS AND WINDOWS COULD only be practical if the materials were affordable, and machine-made wire cloth was generally available in the United States by the 1870s. Since early iron or steel-wire screens would quickly rust to pieces if left bare, it was imperative to coat them with paint, typically black or green. From this necessity it was only a short step to decorative painting (see Scenic Screens, page 61). Weatherresistant wire, such as copper and bronze, was also available at this time, but screens made from these nonferrous metals were beyond the pocketbooks of most homeowners. Galvanized steel was rust-resistant and inexpensive but not widely embraced for wire mesh until after 1900.

By the first years of the 20th century, though, screens had come into their own as the primary defense in the war against insect-borne disease," no longer a luxury but a necessity of modern life," according to Sears, Roebuck advertisements. One manufacturer suggested that "In a well-screened house there is more health than in many a doctor's visit." Manufacturers turned out patented screens of every design-expandable, hinged, sliding, and spring framed-finished in every class of wood, from rosewood and mahogany to the humblest pine, often painted in imitation of these



To rescreen, tack the mesh working from the middle of each side. Though bronze tacks can be hard to find, stick to the same metal as the mesh to avoid galvanic corrosion.



Thin screen bead mouldings (sold at good lumberyards) cover the tacks. Make quick miters by placing one bead over another (supported by scrap), then saw through both strips at once.

same exotic woods. Hardware suppliers sold wire cloth in multiple meshes and sizes up to 48" wide. Screenmaking companies flourished with models that expanded into open sashes, curved metal frames for tower windows, sliding screens that rode on tracks, and rolling screens that disappeared into a spool.

One house-building critic observed that "Every opening in a building, regardless of its shape, size or arrangement, is now successfully screened at a minimum cost." As luck would have it, the crusade to control flies and mosquitoes took hold at the same time that experts promoted outdoor sleeping for good health. The resulting mania for sleeping porches would have been impossible without nearly continuous walls of screening to keep them bug-free. Extensive screens soon protected sunrooms and front porches as well. It was a new, vital role for a prosaic material once suited for nothing more important than a sieve.

Elaine Eff directs the Cultural Conservation Program of the Maryland Historical Trust. She is presently completing the definitive study on painted screens for publication.

SCENIC SCREENS

SOON AFTER THE FIRST SQUARES OF WIRE mesh were stretched and framed, enterprising artists saw them as a novel kind of canvas and the art of screen painting was born. Screen painting became fashionable in the 18th century when wealthy Europeans began to decorate woven wire window coverings with monochromatic scenes. As early as 1729, Englishman John Brown advertised decorative "painted wire blinds" on his tradesman's card. Floral and romantic landscape scenes seem to have dominated this once elite art form, along with images from history.

While original painted screens from the 19th century are rare today, they can still be found in museums and private homes on both sides of the Atlantic. Victorians, who liked to embellish every surface, didn't spare their windows. The demand was so strong that custom work was partially replaced by stencils. By 1872 one manufacturer had devised a machine for printing continuous rolls of landscapes to fit windows of any width or length. Popular hardware catalogs from the 1870s promoted "Wire Window and Door Screens Made and Put Up to Order [in] Landscapes, Fancy Figures and Plain Colors." When U. S. Senator Justin Morrill renovated his Gothic Revival house in rural Strafford, Vermont, in 1859, he added idyllic landscapes in shades of black and grey that remain in the windows today. Not surprisingly, once mass production created a ready supply of woven wire at an affordable price, the market for landscape screens suffered a classic case of overexposure. As the 19th century waned, vendors and decorators deemed painted screens better suited to saloons and steered homeowners back to unadorned wire mesh.

The craft and beauty of painted screens did not end with the Victorian era, however. Today Baltimore, Maryland's, old residential sections still sport window and door screens in colorful pastoral landscapes, much as they have since 1913 when an enterprising Bohemian butcher, William Oktavec, first painted a screen to advertise his produce and meats. His neighbors immediately grasped a benefit beyond art; they could see out, but passersby could not see in. Soon, painted screens by the thousands became a trademark of these working class enclaves, a tradition that continues today.

Oktavec's greeting-card and calendar images—red-roofed bungalows, winding paths, and swan-filled ponds—were far more colorful than the black-and-white scenery rendered by his 18th- and 19thcentury counterparts. Contemporary Bal-



Baltimore's painted-screen folk art can still be seen on the city's rowhouses.

timoreans embraced the eye-catching art as homegrown artists filled entire blocks with identical studies of idealized landscapes. Baltimore periodically revives its painted screens—unique in America and the world as folk art, designed, created, and consumed within a single community. The screens endure as evidence of a good idea—even if the residents who've replaced Oktavec's neighbors have forgotten when and why it came to be.

Be they small and attached, or large and integral, porches from the mid-19th century embody a wealth of time-tested construction details that enable complex features, such as these elegant railings and balusters, to stand up for generations.

Detailing Early Por (PART II)

Lasting Construction Techniques for 19

All photos Jeff Weiner except where noted.

By Douglass C. Reed

VER THE COURSE OF 30 YEARS of studying and restoring buildings, I have come to the conclusion that the art of porch construction reached its peak in the early-to-mid 19th century. Few porches built before 1800 survive to this day in original condition, in part because 18th-century construction practices were not well adapted to building a structure so exposed to the weather. By the same token, many porches built later than 1860—and many more from the 20th century—have suffered severe deterioration because the materials or the construction are not of lasting quality.

ngs and Roofs

By the 1850s, however, carpenters and builders had worked out a system of construction details that limited water intrusion and promoted the longevity of critical porch features. In addition, they were still using a variety of old-growth woods The strongest railing and baluster connections are made with joinery. This new sawn-board baluster sits in a groove under the upper railing; toenails secure it at the bottom.

e

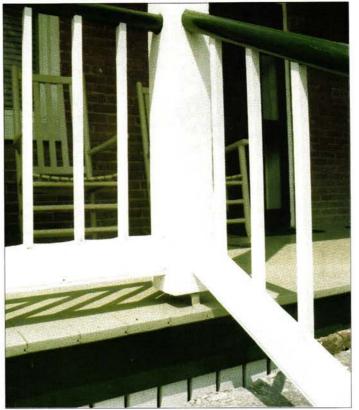


selected for durability, rather than mass-produced lumber shipped from a distant mill. It is this combination of thoughtful construction and the most durable materials that has kept many an early 19thcentury porch intact for 150 years. Using these details and materials, plus some newer ideas to augment the longevity of today's lumber, is the way we obtain the maximum life for porches.

Railings and Balusters

PRIOR TO THE LATE 19TH CENTURY, porch railings were matters of complex technology and features lavished with the best quality workmanship. Railings are composed of two horizontal elements: a top or handrail, and a bottom or footrail. They were commonly made from poplar, pine, or walnut. Today we almost always use walnut when we are forced to replicate an earlier rail.

To attach these horizontal rails to the building, carpenters tenoned them on the ends, then let them into mortises in the posts and fastened them in place with wood pins. Exposed to the weather, mortise-and-tenon joints such as these can be vulnerable to moisture and rot, so they had to be diligently maintained. However, since so many of them survive intact, they are time-tested proof of a strong, durable method of installing railings to posts—a method I encourage all of us to use. The worst



Left: A traditional, lasting detail for spindle balusters is to support them on a foot rail beveled in one or two directions so that it sheds water like a roof. Note the iron holding the post above the deck.

method is butt-joining and toe-nailing rails to a post. Besides being weak, it exposes the end grain of the rails to water when the joints open up.

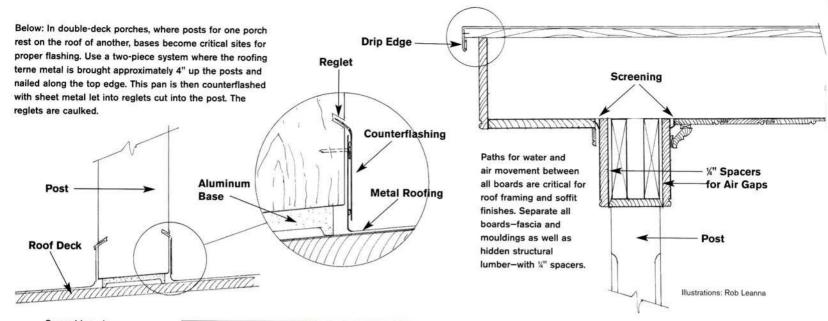
The balusters placed between the railings were usually poplar, northeastern white pine, or other types of pines in different sections of the country. Today, we use the scraps of durable woods left from the cuttings of the bands, flooring, and box post boards. We cut the balusters to fit the style and size required by the particular building, but with an eye to the type and quality of wood used, and to finishing the wood to a good clean surface. To secure flat, pattern-sawn balusters, we mortise the top rail so the top of the baluster can slip up into the bottom of the handrail. Then we toe-in the bottom of the baluster to the beveled bottom rail.

Upper Structure

IN OUR RESTORATIONS AND reconstructions, we pay just as much attention to the soffits and fascias at the top of the porch as we do all the lower parts. We use cypress, Spanish cedar, mahogany and, on occasion, black walnut, for all exterior facing fascias and for all soffits. We will use pines or poplar for the interior face of the beams. As with the floor framing and finish band boards, we separate all laminated boards in the frame and fascias with ¹/₄"

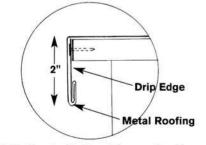


Above: It's easy to see the wood pins that still hold the tenons of these handrails snugly in the post mortises after 150 years.



Spaced boards are as effective for ventilation as metal louvers and far more attractive. Note the subtle appearance of spaced fascias and moulding (right) and soffit boards (below).





Add drip-edge flashing at the eave line, then combine with roof metal in a returned hem.



water-resistant wood shims to allow water to drain and air to flow.

The roof is critical protection for a porch. If you install a cheap, 10-year guaranteed roof, you will have a cheap, 10-year porch. Prior to the advent of inexpensive terne-metal roofs that could be installed weathertight at a low pitch, porch roofs were almost always steeply pitched shed type roofs where wood shingles could adequately shed water. Only the well-to-do could afford the rare metal roof that permitted more flexibility in design, such as incorporating hidden gutters. When terne metal became common in the mid-19th century, it acted as a catalyst for the change from simple to complex porch designs giving us the rich variety of porches we enjoy today.

The best roof for most porches with shallow slopes, hidden gutters, and multiple angles is a terne-metal roof system. Both standing-seam and flat-solder seam roofing systems were used. However, the pitch should have a fall of 3" per running foot or you should not consider a standing seam roof. You can use a flat solder-seam roof at any pitch, and it can have a life of 50 to 80 years if correctly installed and properly maintained.

For maximum longevity, all roofing must drain properly and be flashed properly. In the 19th century, a terne-metal roof would have been turned up the wall surface at least 4" and let into a mortar joint or shoved up under a piece of siding. Today, I suggest that you specify proper flashing methods, such as those in the 19th century, and stay away from the far more common practice of fastening the roofing to the surface of the wall with masonry nails, then caulking the joints with tubes and tubes of sealant. If you rely on caulk to keep water from entering a roof, you will only obtain a two- to five-year seal at best.

As with any structure, if the gutters are installed correctly, then kept cleaned and painted, the porch will be better protected and the gutters will last for 30 to 50 years. I always recommend galvanized steel half-round gutters with plain round downspouts. (Use corrugated downspouts for strength in regions that see a lot of ice.) Where possible, use one size larger than needed to reduce the chances it will clog. For example, if the local rainfall and size of your porch roof suggest a 4" gutter, upgrade to 5". Do the same for downspouts.

When it comes to assembling porches, decades of literature has advocated backpriming—that is, the practice of fully coating all sides of a board with paint before assembly. We have been tracking the performance of porches with backpriming and have concluded that it only hastens deterioration by trapping moisture inside the wood. Backpriming was never employed prior to the first half of the 20th century, and I suggest you do not backprime any porch part prior to installation. However we do prime the tongues and grooves of flooring boards prior to installation. In addition, we wax the end grain of vulnerable components like railing ends and boards whose ends are close to the deck or ground and otherwise unprotected.

Naturally, the long-term health of a porch is directly affected by the maintenance it receives. I suggest using a wax-impregnated water-repellant system. We melt 1 ounce of paraffin sealing wax and pour it into a gallon can. Next we add 3 cups of an exterior spar varnish, and then we fill the can with mineral spirits to make a gallon of water repellant-all for a fraction of the price of commercial repellants. We liberally soak all end cuts of elements, such as railings, post bottoms and the ends of floor boards, prior to installation and after they have been cut to size. Prior to painting, we soak again all joints and exposed and vulnerable areas. After the soaked wood has dried for at least three days, we apply a good primer and two finish coats of oil-based paint on all exposed wood components. Then every two years we encourage a spot touch-up anywhere paint is beginning to separate and peel, especially on the flooring ends. By following through with these intermediate touchups we can extend the repainting cycle of the total porch to every five or seven years.

Good details can truly enable a porch to last for decades, along with much lower maintenance costs. Following generations-old construction techniques, and using a few new tricks to compensate for the poorer quality of our environment, you can restore an old porch-or build a new one-for about 10 to 15 percent more than "low bid" dollars. Demand excellence. It is a price worth paying.

Douglass C. Reed is a Historic Structures Consultant. Contact him at Preservation Associates, Inc. (449 N. Prospect St., Hagerstown, MD 21740; 301-791-7780;DCraigReed@aol.com).



for allowing air to circulate under porch roofs.

Left: The floors in second storey porches must also serve as roofs. Below: Thin spacers are easy to see behind this deck fascia.



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Cobblestone

when our strs ENCOUNTER cobblestone builtings while driving through upper New York State—or elsewhere along the extensive "cobblestone belt"—they often leave as puzzled as they are dazzled. Where did these elegant examples of folk architecture come from?

The art of building with cobblestones may have migrated to western New York with English stonemasons who came to work on the Erie Canal in the 1810s. When completed in 1825, the Erie Canal connected the Great Lakes to the Atlantic Ocean, transforming the remote western wilderness into prosperous farmland. In its wake, frontier farmers rushed to build houses worthy of their new affluence.

Jacob Keller House (1845-1847) Newark, N.Y.

An example of a Greek Revival house with polished cobblestones from Lake Ontario. Smaller cobblestones were used on the façade while larger, more irregular field cobbles were placed on the other walls.

OUISES [1825-1865]

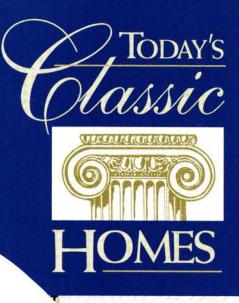
Although there was an abundance of finiber, well as stone quarries and brick kins, some chose a d ferent building material—the ubiquitous ice-washed, glaciated, field stones that littered their fields. These has to be collected before the soil could be tilled anyway, the farmers reasoned. Why not use them for new houses? O barns? Or schools? Or churches? Or all of these?

Historians believe the first eabblestone house. New York was built sometime after 1825, probably Wayne or Monroe County, Today, according to Willia Lattin of the Cobblestone Society, there are as many 900 surviving cobblestone structures in New York alon perhaps 1,200 in the United States. Once it appeare cobblestone construction followed the westward flow settlers from New York to southern Michigan, as far we as Beloit in southern Wisconsin, and into Ontari Canada, almost 850 not-quite-continuous miles follow ing the glacial belt that extends along the southern ed of the Great Lakes.

The cobblestone "fad" evolved through a series stages during its 40-year period of popularity. At first, th walls were made of field stones, which were random sized but often large (about the size of a man's hand) ar

Cobblestone

ELI GALLUP HOUSE (1834-1837) SPENCERPORT, N.Y. A Federal-style cobblestone house with Greek Revival details. The house was most likely buil by Eric Canal masons in need of work.



Season Three: Mediterranean Revival

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Mediterranean Revival season begins Fall 2001. Check your local cable guide for PBS station, dates and times.

Note: All photos are "before".

HOUSE HOW-TO

140 Careful surface preparation will take longer than the actual painting, but it makes the finished job better looking and longer lasting

BASICS

Prep Steps for Exterior Paint on Old Houses

By Gordon Bock

HOMAS EDISON RIGHTLY noted that "Genius is 10 percent inspiration and 90 percent perspiration." Had he been talking about wood exteriors on old houses, he might have recast his insight as "Painting is 10 percent application and 90 percent preparation." Meticulous surface preparation is the key to a long-lasting and good-looking paint joband the bulk of the work, especially when it comes to painting weathered wood. Following these steps, however, will give you a well-prepared surface that makes the final paint coats not only more durable, but also easier to apply and better looking to boot.

ASSESS THE CONDITIONS

Before you break out any tools, carefully inspect the existing paint job to determine which areas are sound and which areas are failing and in need of further attention before repainting. You cannot simply paint over failing paint; the problems will only re-occur. More-

Alison Shaw

OLD-HOUSE BASICS

Primer anchors topcoat to wood, and evens the surface.

Topcoat bubbles up on unsanded weathered wood when moisture travels down the fibers.

 Image: With State State

All photos these pages: Steve Jordan



Above Left: Aptly named alligatored paint is usually the result of excess paint, all of which will have to be removed. Above Right: This paint is failing between coats, because of poor preparation or incompatible paint types or brands.

over, failing paint is likely to be symptomatic of larger problems in the building, such as roof leaks or excessive moisture. As you survey the surface, look for these telltale conditions:

SUPPLIERS

SAVOGRAN 259 Lenox St. P.O. Box 130 Norwood, MA 02062-0130 (800) 225-9872 TSP and other cleaners, prep materials. Circle 18 on resource card. UNITED GILSONITE LABORATORIES (UGL) P.O. Box 70 Scranton, PA 18501-0070 (800) 272-3235 MEX and other cleaners, primers and prep materials. WILLIAM ZINNSER & CO. 173 Belmont Dr. Somerset, NJ 08875-1285 (732) 469-8100 Jomax cleaner, primers, and other prep materials Circle 19 on resource card.

Paint peeling down to bare wood Total peeling is often the result of water vapor that bubbles the paint off the surface as it tries to migrate out of the wood. The causes are typically either 1) excessive moisture within the building (due to poor ventilation in bathrooms, for example, or water in the walls from faulty gutters and roofs) or 2) multiple paint coats (built up so that they form a barrier to the migrating water vapor). You must

correct the excessive moisture condition, remove all the paint down to bare wood, or both, before you can repaint.

Paint peeling between coats This

is usually the result of poor preparation—typically lack of cleaning or sanding—before the last paint job, or incompatible paint coats (a clash of chemistries between different paint types or brands). Here you will have to remove as much of the failing and poorly bonded paint as possible (see Bandage Test, page 78).

Cracking and alligatoring Typically the cause here is excessive paint. The only solution is to remove all the paint; otherwise the problems will only reappear.

Bleeding and stains Some woods notably western red cedar, cypress, and redwood— contain extractives (tannins and other compounds) that contribute both color and decay-preventive qualities. Since many of these extractives are water-soluble, they can leach out of the wood to bleed and stain the paint coats, especially when the wood is new. Before repainting, first identify and control any excessive moisture sources within the building (leaks, etc.) or outside the building (roof runoff or rain splashback, for example). Stain-blocking primers may also help.

Chalking and frosting When weathering or aging exposes individual pigment grains to the point that they become fine dust, this "chalking" surface creates an unstable substrate for a new coat of paint. A similar condition is "frosting," where calcium carbonate pigment extenders leach out of the paint. To prevent a new paint coat from peeling, scrub the chalking or frosting surface thoroughly with detergent solution, then prime with an oil-based primer.

WASH THE SURFACE

YOU CANNOT PAINT OVER DIRT, chalking, and other surface soils. Besides adding bumps and specks that make a smooth finish impossible to obtain, dirt







Above: What looks like dirt is often mildew, which will grow through new paint if not killed. Left: Paint peeling down to bare wood often signals excess moisture, from leaks or paint coats forming a barrier to vapor.

OLD-HOUSE BASICS



A sander is an essential tool for paint preparation, not only to help remove old paint coats but also to correct surface imperfections.



If wood is spongy or riddled with splitting, brush on a consolidant to strengthen it and bond epoxy fillers.

will prevent the paint from anchoring to a stable surface, leaving it to inevitably peel between coats. For simple accumulations of dirt, scrub the surface from the bottom of the house up to avoid streaks. Use a sponge or soft brush made for cars and boats and a solution of warm water and hard-surface cleaner such as TSP, Spic 'n' Span, or a nonphosphate alternative. For problem surfaces, such as chalking paint, scrub with a stiff bristle brush. Then rinse the surface thoroughly to remove any cleaner residue.

What appears to be dirt may in fact be mildew, an even more pernicious problem. Mildew is a living microscopic fungus. If it is not killed first, it will actually grow through a new coat of paint and discolor the same area again in a short time. To deal with mildew, scrub the surface with a brush and a solution of ½ cup household laundry bleach (5 percent hypochlorite solution) in 2 to 3 quarts of warm water. (Note: Do not mix bleach with ammonia or any cleaners containing ammonia.)

CORRECT DEFECTS

ALONG WITH MAKING APPROPRIATE Carpentry repairs to the various wood components (such as replacing damaged clapboards), be sure to address all the small surface imperfections. These are possible points of water entry that will affect both the performance and appearance of the final paint job. Set nail heads, prime, then cover with paintable exterior grade putty or epoxy filler. For deep splits and checks in window sills, wait until the wood is completely dry, treat with epoxy consolidant if necessary, then fill with epoxy filler. Scrape off loose paint and feather-edge the transitions between sound layers by sanding into the upper layers with 120to 200-grit sandpaper.



You can repair severely damaged wood, with deep gouges or even missing chunks, by filling it with epoxy fillers.

SAND DOWN TO BRIGHT WOOD

OMITTING THIS STEP IS the chief reason why some new paint jobs begin to peel after little more than a year. The grey, slightly soft surface of weathered wood is actually a mat of cellulose fibers, the last stages of wood losing its integrity. When you paint without sanding, you are sandwiching this thin,

OLD-HOUSE BASICS



Steve Jordan

porous layer of material between the paint film and the sounder wood. As soon as any moisture enters this sandwich (either from breaks in the paint film or as moisture migrating out of the wood), it gets wicked up all along the fiber mat, breaking any paint bond and starting peeling. Sanding to bright, sound wood eliminates this mat and lets the paint bond directly to a stable surface.

USE A PRE-PREP

ANY WOOD THAT IS WEATHERED on the surface, or still intact but porous and dried out from decades of service, is worth treating with a homemade preprep. The time-honored prep that OHJ has recommended for years is a blend of boiled (not raw) linseed oil and turpentine, mixed roughly 50:50 according to your preference; if the wood is thirsty use more linseed oil. Brush the prep on any exposed wood, particularly end-grain and weathered areas, reapplying multiple times anywhere the wood "drinks up" the mix. Then allow to dry 24 hours before proceeding with



Charles Steck

Left: Wood that is dried out from long-term exposure can benefit from pre-prepping with a mix of linseed oil and turpentine. Above: If you don't sand down to bright wood, you'll be painting on top of soft cellulose fibers that will absorb moisture and break the paint bond.

regular oil-based primer. This traditional painter's prep is not only remarkably effective at putting integrity back in wood, but it also improves the adhesion of the primer, increases the coverage of the prime and topcoats, and improves the looks of the final job.

PRIME AWAY

Once you have prepared a clean, stable wood surface you are ready to prime. Primers are paintlike coatings that form an intermediate laver between wood (or, with different formulations, metal or masonry) and the topcoats that protect all the underlying materials from the weather. Composed of different proportions of pigment and vehicle (liquids) than topcoat paints, primers are designed to give the topcoat better adhesion while improving the paintability of the surface. Used alone, primers do not have the durability to protect wood from the elements. They must be covered by a topcoat.

Moreover, the topcoat must be applied within two weeks of the prime coat, otherwise soaplike compounds

BANDAGE TEST

HOW CAN YOU TELL if a seemingly sound paint surface should be repainted or scraped off? The timehonored trick is to do a bandage test. Take an adhesive bandage out of the medicine cabinet and apply one flap to the area you want to test. (Choose a clean area, and burnish the bandage with your thumbnail for good adhesion.) Then rip the bandage off. If it pulls paint with it, you have a surface that is only marginally anchored to the next paint coat or the wood, and a new paint coat won't last long. If the bandage comes away clean, however, the paint is well anchored and will make a good paint surface.

will form on the surface of the prime and set the stage for possible intercoat peeling. If more than two weeks elapses between priming and topcoating, you must wash the prime coat with a detergent solution to remove these compounds.

Choosing the right primer is equally as important as applying it correctly. To avoid possible peeling problems, primer and topcoat should be compatible films-that is, products formulated to work together. For this reason, it is always prudent to use a primer from the same manufacturer as the topcoat, or a primer recommended by the manufacturer. For the varied and problematic paint surface conditions that are a fact of life on old houses (weathered wood, aged paint), most manufacturers still recommend an oil-based primer for both oil-based and waterbased ("latex") topcoats. 12

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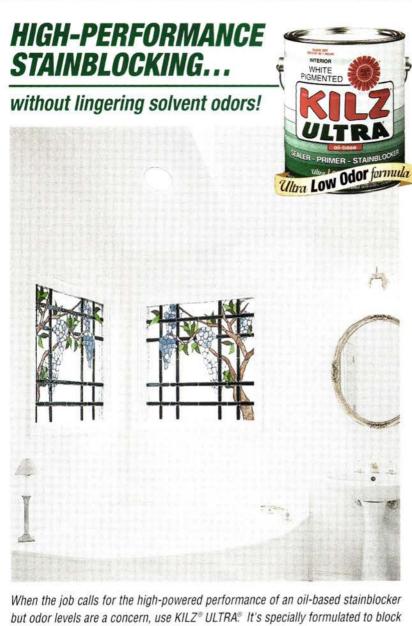


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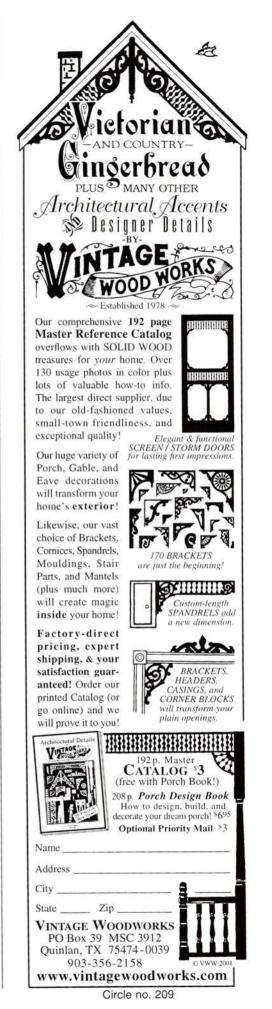
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HOUSE ADVISOR

ASSORTED STYLES

I'm trying to learn more about the architectural style and age of my house here in northern Michigan. I feel the house was built between 1896 and 1911. The front porch was enclosed, probably in the 1930s. Any ideas?

> —Wesley J. Dilworth Boyne City, Mich.

THE DECADES SURROUNDing the turn of the 20th cen-

tury were a period when even professional architects-and certainly whimsical regional builders-borrowed freely from a mix of styles. Your house would seem to epitomize this eclectic trend—one right in step with the dates you mention. The gambrel roof that covers the main body of the house was widely seen at the time in both late Shingle style houses and the upcoming Dutch Colonial Revival style. The small windows in both the main and dormer gables are a cameo pattern typical of Colonial Revival houses-also in vogue during these years. Putting a later stamp on the house are the "ribbons" of three or four vertically oriented windows in the first storey, a pattern which typifies many post-1900 homes. While the windows undoubtedly came from a stock supplier, those geometric muntin patterns show some nods toward the fledgling Prairie style as wellnot surprising for a house in the Midwest. The deep broad eaveline above the porch shows a further hint of Prairie style, one





A gambrel roof, cameo windows, and especially the one-storey tower bespeak a Heinz-variety style.

that ties in nicely with your presumed dates of its enclosure.

The big question is the inspiration for that round tower in the front façade corner. Generally, towers are associated with late Victorian styles, typically either Queen Anne (likely to be wood clad) or Richardsonian Romanesque (which is more likely to be rough masonry than your painted brick). On either, however, you'll usually find the tower with a conical roof, rather than this truncated version.

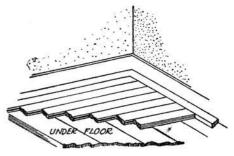
SUPERFLUOUS FLOORING

The rooms in our 1890s Queen Anne have clearly had a variety of wood floors over the years. One of them is made of narrow oak strips about 1" wide. Might this be the original floor?

> —Mike Jackson Terra Haute, Ind.

REFLOORING WAS AS COMMON an improvement practice a century ago as it is today, and by 1900 there were many manufactured products marketed for just this purpose. The flooring you describe sounds like it could be a prefab flooring roughly %" thick that came glued to a canvas backer, often in sections about 2' wide. For installation, the flooring was rolled out then cut and nailed in place. A way to confirm such a retrofit is to look for raised shoe mouldings at baseboards or different floor levels at doorway thresholds.

The principle was also popular for more decorative upgrades called "wood carpets". These bore elaborate patterns and wood colors meant to simulate more expensive floors with parquet fields and decorative borders.



Look for raised shoe mouldings to confirm a reflooring.

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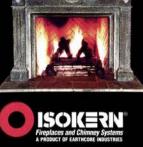


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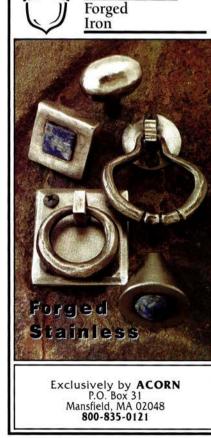
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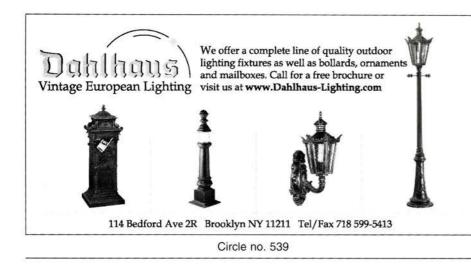


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Preserving Designed and Natural Landscapes

The height of summer seems like a good time to review books about the history of spaces outside our old houses.

RESERVATION IS ABOUT PEOPLE AS much as the built world, and if you enjoy profiles like OHJ's "Who They Were" series, you'll want to get your hands on *Pioneers of American Landscape Design* by Charles Birnbaum and Robin Karson. Birnbaum is coordinator of the National Park Service's Historic Landscape Initiative, and Karson is executive director of the Library of American Landscape History. They and several dozen contributing writers and researchers have put together 160 capsule biographies of people who've helped shape our country's landscape, illustrated with 450 plans and drawings.

As a rule, biographies aren't my first choice of recreational reading, but this book is packaged so well it's hard to put down. The historic photographs are well chosen for piquing curiosity about the text, whether magnificent formal gardens at the George Eastman House in Rochester, New York; a monument like the Statue of Liberty; a natural landscape such as Acadia National Park in Maine; the pastoral view from the Elmdendorf Horse Farm in Kentucky; a residential landscape in Duluth, Minnesota; or pictures of people, such as Robert Ludlow Fowler Jr. mowing his Katonah, New York, lawn in his suit.

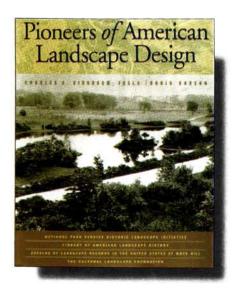
The book began with a 1989 coffee-

shop conversation where Birnbaum and two other landscape historians bemoaned the fact that, besides Frederick Law Olmsted, the names of American landscape designers are almost completely unknown. For example, many people may know that Pierre Charles L'Enfant laid out the nation's capital. They may not have heard of Benjamin Banneker, grandson of a white indentured servant who freed two black slaves and married one of them. (His mother found his father the same way.) Thomas Jefferson chose Banneker to work with L'Enfant and geographer Andrew Ellicott in part because he thought Banneker's pleasant demeanor would help subdue the hottempered Frenchman.

Banneker was not a landscape architect but a surveyor and astronomer. Many of those in the book also shaped the national landscape through other fields—writing, teaching, conservation, or horticulture. Lester Rowntree—born Gertrude Ellen Lester traveled the backcountry of California on a burro to document its native plants. Genevieve Gillette helped preserve two seashores and 30 parks in Michigan.

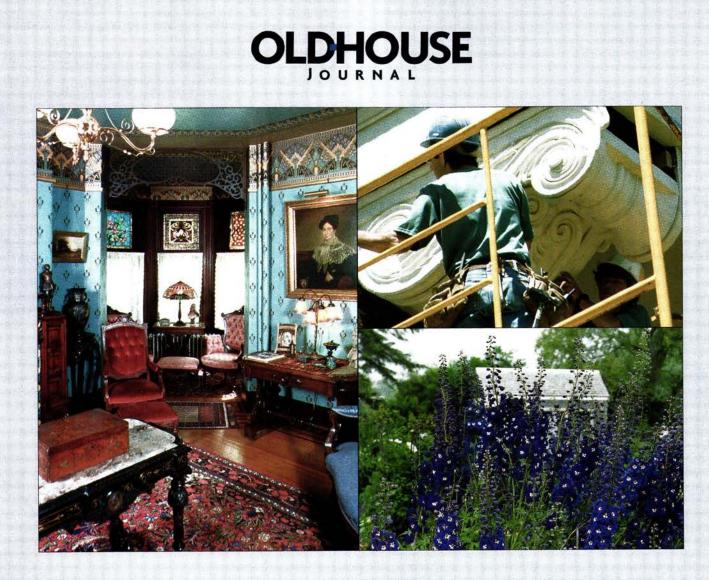
Landscape architects are stereotyped as focussing on the "built environment" at the expense of the "cultural environment" our natural landscapes—so this book gains a lot of extra credit for including pioneers of preserving that heritage.

> The book is well balanced geographicontinued on page 92



PIONEERS OF AMERICAN LANDSCAPE DESIGN

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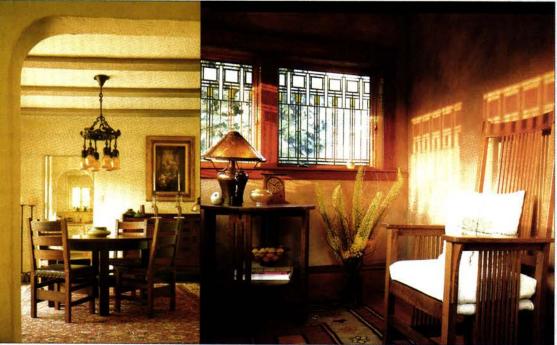
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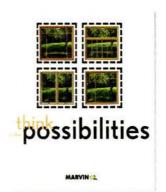
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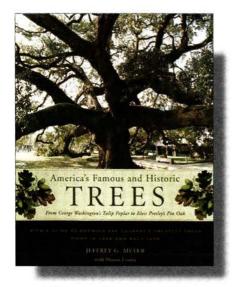
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AMERICA'S FAMOUS AND HISTORIC TREES

JEFFREY G. MEYER WITH SHARON LINNEA Houghton Mifflin Company, 2001 www.hmco.com Hardbound, 129 pages, \$30



cally, and you're bound to read about a park system, a cemetery, or a planned community that you know well. I enjoyed reading about Sidney and Herbert Hare, who did so much work in the Kansas City area where I used to live, along with Olmsted protégé George Edward Kessler. The latter's influence also touched Denver, Dallas, Cincinnati, Indianapolis, and many other cities.

This book is so valuable it seems niggling to bring up any criticisms, although I have a couple. There are 150 color plates reproduced, but all of them seem to be photos that appear in black and white elsewhere. Why not more black-and-white images to take their places? The back of the book contains a helpful list of public sites designed or preserved by many of the practitioners, but no cross index. If you forget who designed the Tara set for *Gone With the Wind* (answer: Frances Yoch), it's difficult to find the information again. Including such an index, however, would have made the already almost 500-page book impossibly hefty.

Each entry ends with a short bibliography, so that if you find these people as fascinating as I did, you can go to the library and learn more about them.

A BOOK WHOSE CENTRAL AIM is to honor antique natural wonders is *America's Famous* ⇐ Historic Trees. The author is Jeffrey G. Meyer (with Sharon Linnea), project director of a program by the same name run by the American Forests organization. He and his staff have collected seeds from more than a thousand trees associated with a historical person or event and grown them in a Florida nursery for sale to the public.

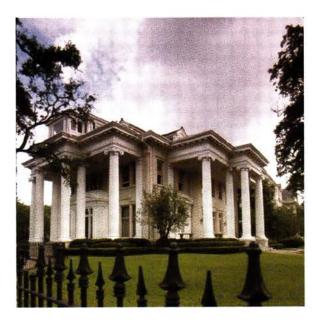
The book tells the tales of 17 of them, ranging in history from the Indian Marker Pecan of the 1600s (bent to the ground so long ago to mark a campsite, it recently died) to the Moon Sycamore, whose seeds were carried on the Apollo 14 lunar expedition of 1971. In addition to color photos of each tree, you'll find historic black-and-white drawings and photographs.

Meyer and Linnea are superb storytellers. They draw us in with the tragic tale behind the first playing of "Taps" at Berkeley Plantation in Virginia (birthplace of President William Henry Harrison and origin of a historic sycamore) and the goose-bumpy legend of a pin oak branch that fell as Elvis Presley's coffin was carried out of Graceland.

The book gives information on visiting the tree sites, and growing their descendants. Most useful of all, each entry explains how you can propagate the species, growing new ones from seeds or cuttings to honor your own tree heritage.—KATHLEEN FISHER









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Ithough East Coast in ambience and temperament, St. Louis has long been hailed as "The Gateway to the West"—symbolized in its famous modernist arch. From its 18th-century beginning as a fur-trading settlement, the city gained economic momentum as it rode the Industrial Revolution's giddy boom right into the Gilded Age. By the 1880s, manufacturing magnates, importers, and financiers had studded the city with opulent mansions in a variety of styles monuments to their considerable success and substantial egos.

Today recognized more for beer and baseball than buildings, St. Louis still holds a rich historic housing stock, testament to its bountiful past. So whether you visit to take in America's favorite pastime or tour the brewery that produces America's favorite elixir, don't miss the grand mansions, historic landmarks, and upscale enclaves that gave St. Louis "world-class city" stature over a century ago.

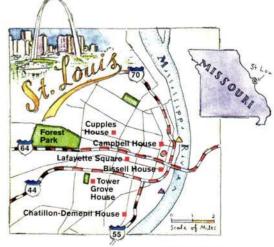
Go West

Founded by Frenchmen Auguste Chouteau and Pierre Laclede in 1764, St. Louis grew in commercial importance and population due to its access to river transportation. In 1801 Lewis and Clark launched their famed expedition across the Louisiana Purchase territory from the nearby confluence of the Mississippi and Missouri rivers. Later, St. Louis outfitted the west-bound wagons of pioneers seeking their "manifest destiny."

To fulfill America's quest for expansion, Capt. Lewis Bissell left his native Connecticut to serve President Thomas Jefferson in the new territory as the commander of Fort Clark—today Peoria, Illinois. In the 1820s Bissell built what is now the oldest extant house in St. Louis, a brick mansion in the early Classical Revival style popular in America at the time. Marked for demolition in the 1950s to make way for an interstate highway, the house was saved by preservation-minded citizens who took action to reroute the highway, an effort that led to the Courtesy of the Cupples House

Vintage mansions and Victorian enclaves form the core of this midwestern city's legacy

BY CARLA PATTON



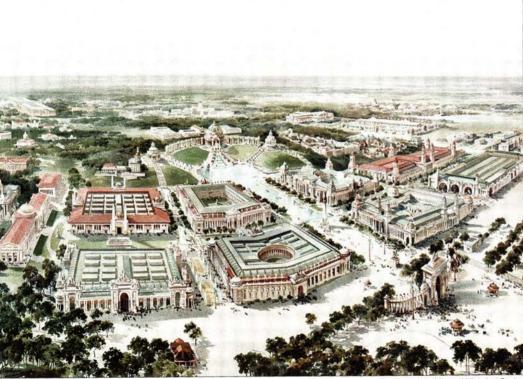
James Noel Smith

HISTORIC PLACES



Right: The Cupples House Grand Hall runs the full length of the main floor and is walled with carved oak paneling.

Courtesy of the Cupples House



Courtesy of the Missouri Historical Society



Courtesy of the Chatillon-Demenil House

formation of the Landmarks Association of St. Louis. Now in private hands, the Bissell Mansion operates as a dinner theater.

Prosperity and Property

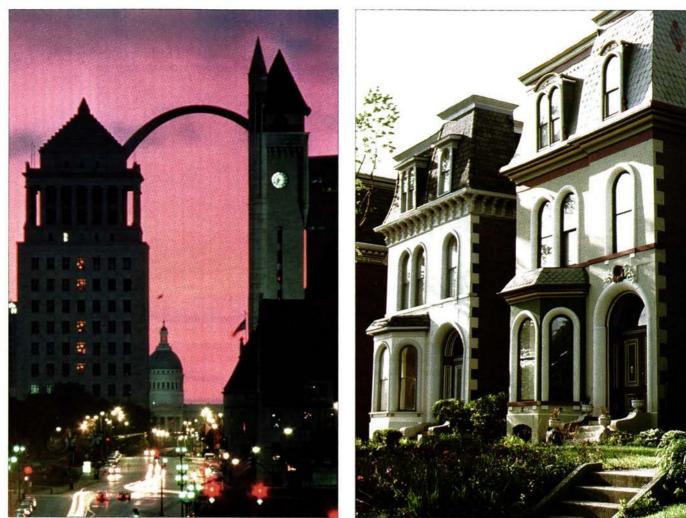
As the city continued to grow, some movers and shakers located their grand residences a short distance away from town as summer retreats. Tower Grove House and the Chatillon-Demenil House—each now well within the city limits—were country estates at the time of the Civil War.

In 1849 hardware magnate Henry Shaw commissioned St. Louis architect George Barnett to design an Italian Renaissance Palazzostyle villa (subsequently named for its distinctive tower) west of downtown. Shaw, an avid horticulturist and scholar, eventually opened a school and public gardens on his land. A substantial part of the property is now home to the Missouri Botanical Garden and Tower Grove Park. The Tower Grove House, today a house museum, has been restored to its former Victorian splendor.

The Chatillon-Demenil House site was originally common ground purchased from the city in 1848 by Odile Delor Lux, a wealthy widow. She and her second husband, Henri Chatillon, built a farmhouse and later sold the property to French physician Nicholas Demenil and his aristocratic wife, Emilie Chouteau. In 1861 the Demenils hired English architect Henry Pitcher to redesign the house into a plantation-style manor with Neoclassical elements. Elaborate wrought iron railings accent the exterior, while firstfloor window bars recall Civil War days when the Demenils feared retribution from local Unionists for their pro-Confederacy views. The landmarks association purchased the Chatillon-Demenil House in 1964, plucking yet another historic house from the jaws of highway expansion. Notable as one of the few surviving examples of Neoclassical architecture in St. Louis, the restored house is now open to the public year round as a museum.

The Samuel Cupples House on the St.

Above: Few buildings remain at the site of the 1904 St. Louis World's Fair at Forest Park. Many of the structures were constructed of plaster of Paris and dismantled after the fair. Among those still standing is the St. Louis Art Museum. Right: The Chatillon-Demenil House, built in 1846 as a farmhouse, was transformed into a Neoclassical mansion in 1861.



Courtesy of the St. Louis Convention & Visitors Commission

Lisa Johnston

Louis University campus in midtown is an imposing Richardson Romanesque Revival structure that was originally home to Samuel Cupples, a successful woodenware manufacturer. The Gilded Age lives on in its 42 rooms with their 22 fireplaces, Tiffany stainedglass windows, and elaborate woodwork. Designed in 1888 by Thomas Annan, the mansion is constructed of purple Colorado sandstone and pink Missouri granite replete with towers and gargoyles.

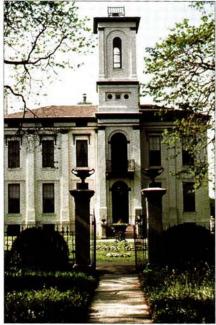
During the Victorian era, the Cupples House stood amid a row of stately mansions now long lost. The university purchased the house in the 1940s and recently restored it to serve as a museum and art center.

Exclusive Enclaves

More evidence of the city's opulent age lies in its collection of "private places." A subcategory of neighborhoods, these gated private streets with highly restrictive rules and covenants are a St. Louis invention and St. Louis still has more private places than any other city in the country. Lucas Place was the city's first private street. By 1860 its developer, James H. Lucas, had established a street lined with the residences of well-heeled citizens. A city-maintained park built on land donated by Lucas set downtown Lucas Place apart from the nearby hustle and bustle of commercial activity.

The idea caught on and a number of early developers would use quasi-public spaces to shield private places from their surrounding neighborhoods. This plan met with varying success, however, as the city grew. By the early 1880s Lucas heirs had succumbed to pressure from city hall to allow encroaching commercial development. Within a decade Lucas Place was merely an extension of Locust Street. As the city expanded westward, the elite relocated to the newly fashionable Central West End. Left: In 1947, architect Eero Saarinen won the competition for the Jefferson National Expansion Memorial with his design of a 630-foot arch. The Gateway Arch is framed by the St. Louis Union Station (right), built in 1894, and the Civil Courts Building (left), built in the 1920s. Above: St. Louis's posh Lafayette Square has several examples of Second Empirestyle townhouses. Distinguished by mansard roofs and characteristic roundtopped windows, the style was all the rage in 1870s St. Louis.

HISTORIC PLACES





Courtesy of the St. Louis Convention & Visitors Commission

Left: The Tower Grove House was built in 1849 for businessman Henry Shaw. Today its grounds are the site of the Missouri Botanical Garden. Above: A bird's eye view of the Mississippi River and downtown St. Louis.

Jack Jennings

The Campbell House, built in 1851, is the only surviving example of the showplace residences of the former Lucas Place. Irishborn banker Robert Campbell and his wife Virginia acquired their mansion in 1854. The Campbells had 13 children but only three sons survived to adulthood. The youngest son died at age 30, and the two remaining brothers lived reclusively in the family home well into the 20th century. The house, with almost all the original furnishings, fixtures, and decoration intact, is now a museum. Extensive restoration work is underway.

Lafayette Square, another genteel private place with 19th-century roots, grew around the city's first park. A "suburban" alternative south of Lucas Place, Lafayette Square was inundated with wealthy families. Here they built French-inspired mansions featuring mansard roofs and Victorian embellishments. An 1896 tornado caused considerable damage on the square, but the moneyed residents quickly rebuilt, some replacing their homes with Romanesque mansions. The area gradually slid into decline until individual restoration began in the 1960s.

Not far from Lafayette Square is Soulard, the original French neighborhood in St. Louis. Listed on the National Register of Historic Places, Soulard began as a predominantly working-class immigrant neighborhood. Red brick row houses dating from the first half of the 19th century, some with New Orleansstyle ironwork, define its architectural character. The restored houses, historic Soulard Farmers' Market, cafes, clubs, and shops create a lively atmosphere for a leisurely stroll.

Among the best known private places in St. Louis are Portland Place and Westmoreland Place in the Central West End. The socially prominent moved here around the time of the 1904 World's Fair held in Forest Park. These elegant, tree-lined streets, as well as Lindell Boulevard bordering the park, express the full spectrum of residential architecture: Neoclassical houses mix eclectically with Tudors, Beaux Arts chateaux, and the occasional exotic house with Egyptian precedents.

Insular and exclusive, these private places helped preserve many fine buildings, giving today's visitors a chance to step back into St. Louis's opulent and often ostentatious past.

Carla Patton is an editor at St. Louis Homes and Lifestyles *magazine*.

Historic Lodging

Lodging in historic homes is available, though most inns are located about an hour's drive from St. Louis. In town, architecturally significant accommodations include:

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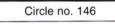
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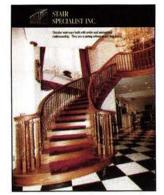






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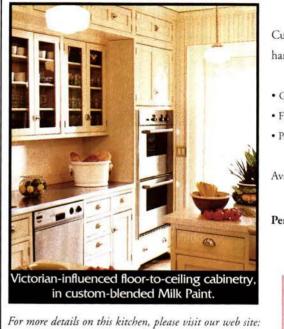
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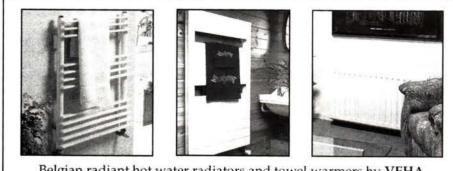
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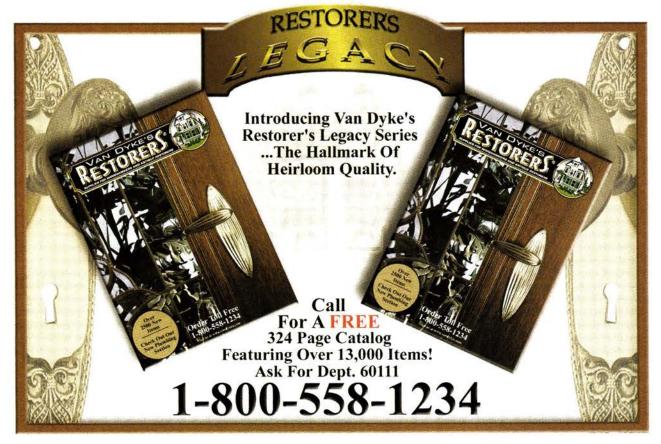
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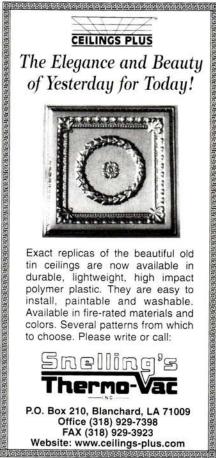
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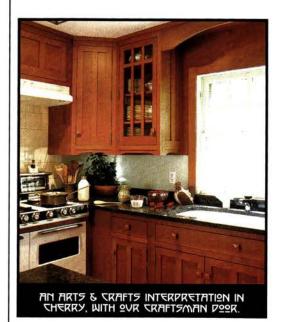
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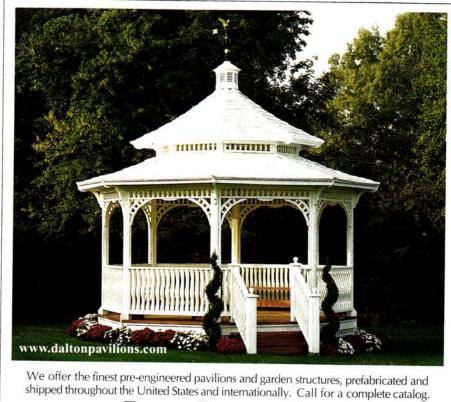
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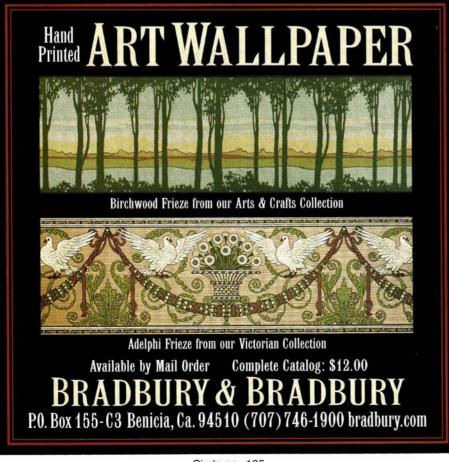
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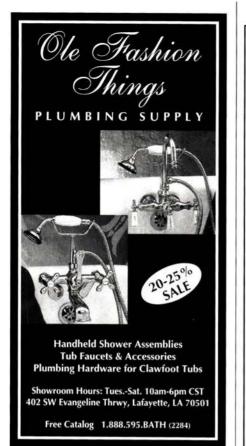
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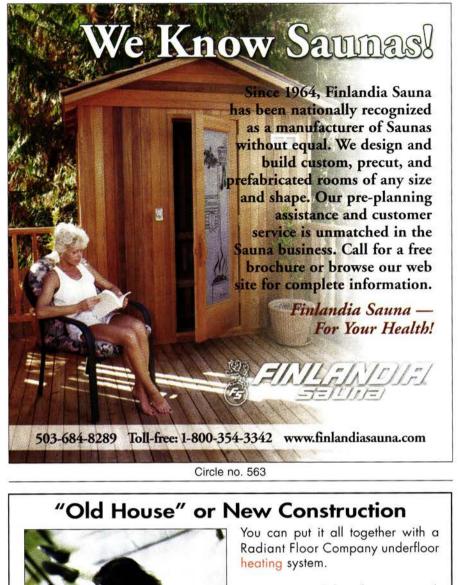
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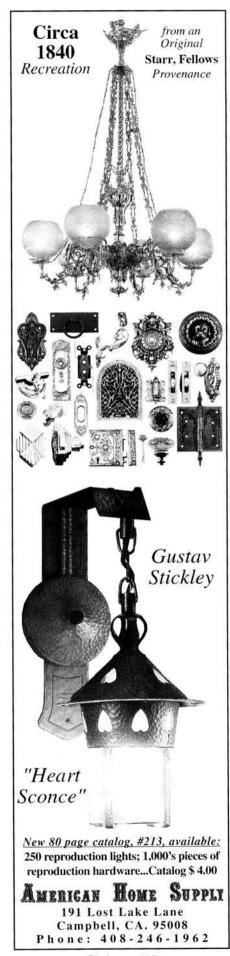
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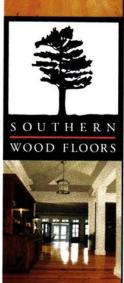


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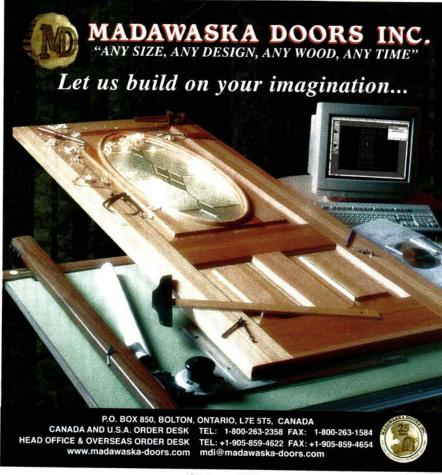


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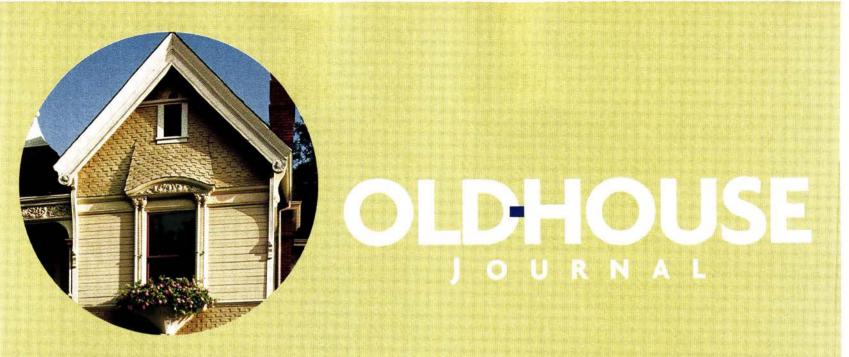


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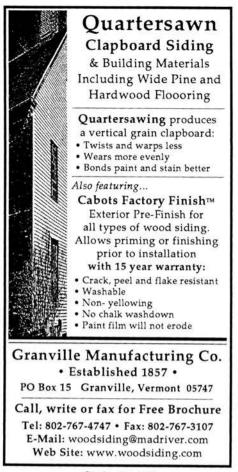


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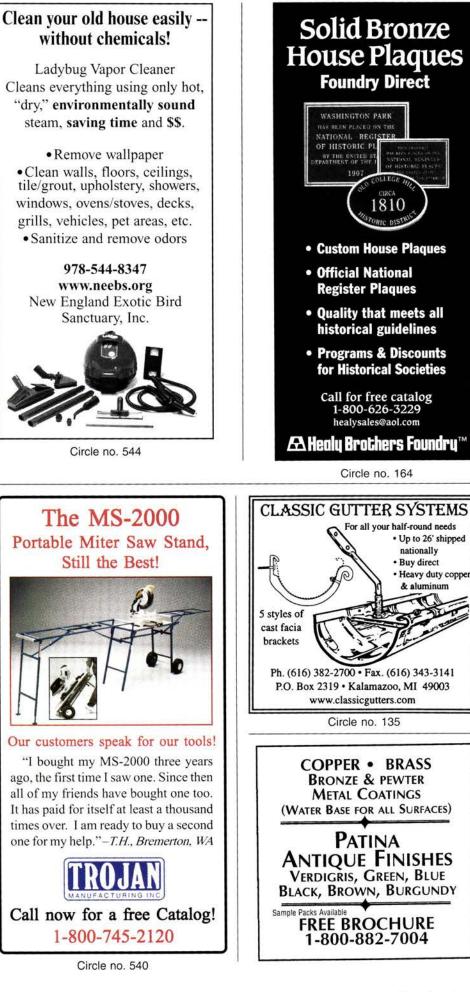
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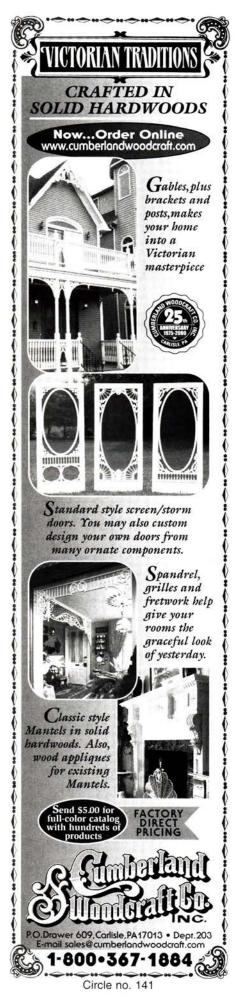


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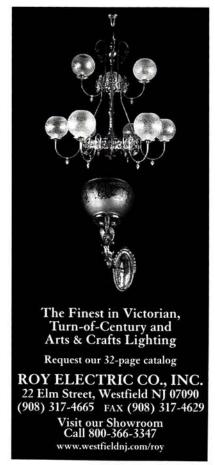
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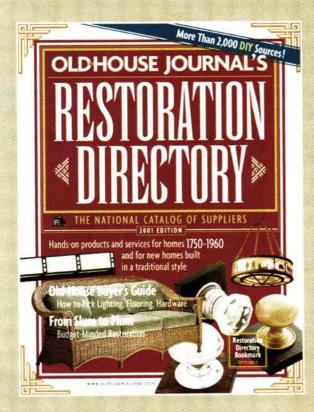
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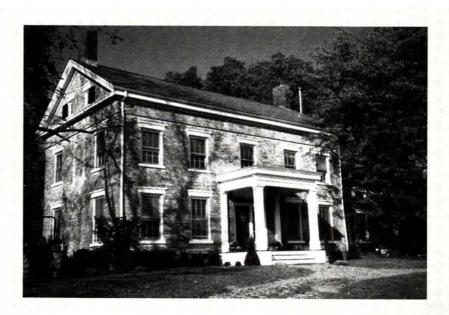


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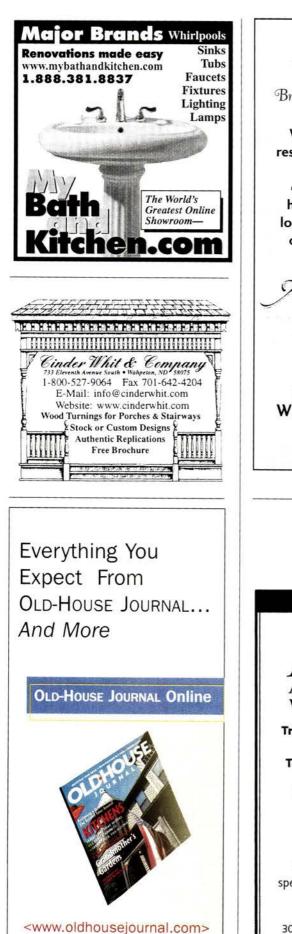


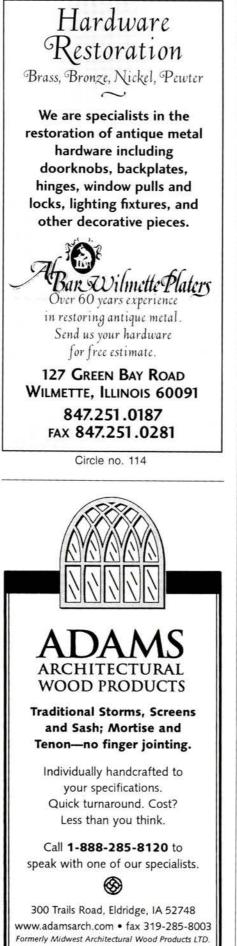
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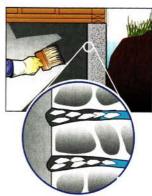
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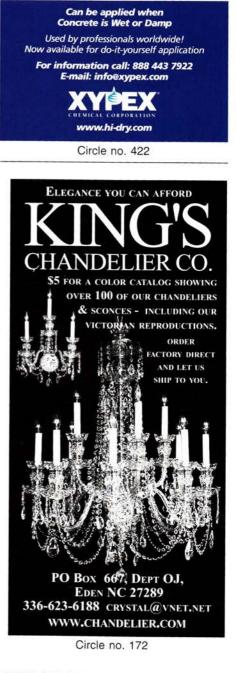


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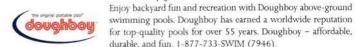
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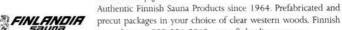
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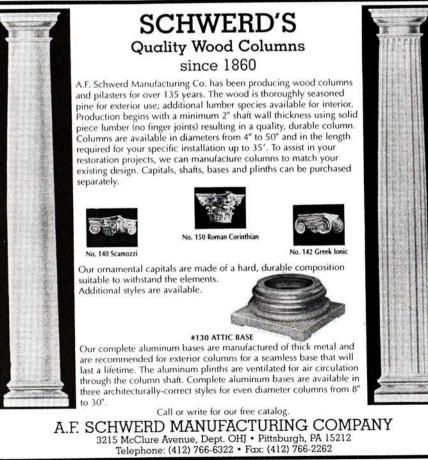
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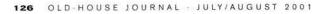


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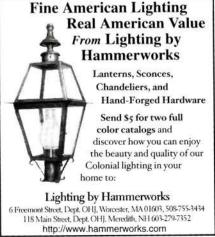


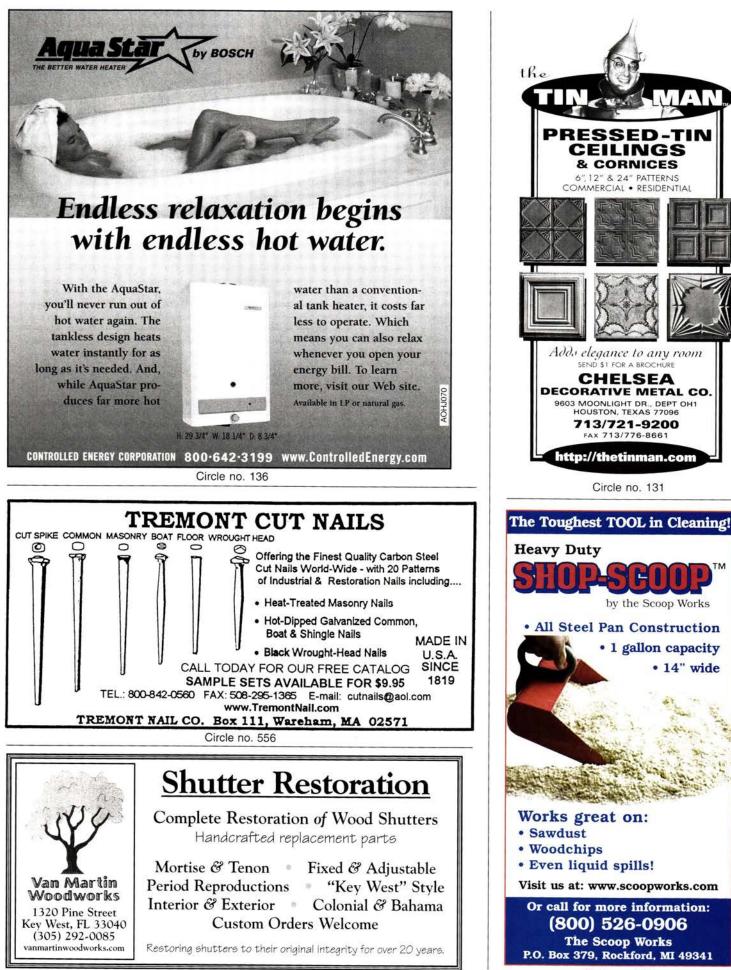
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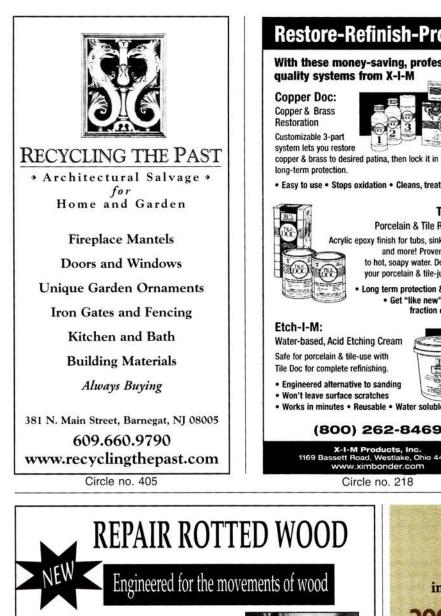
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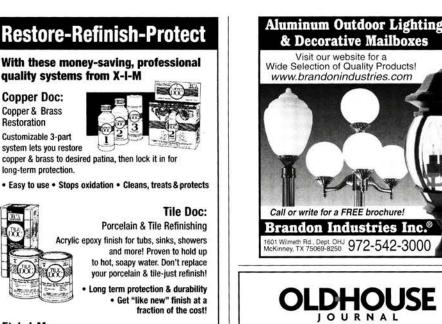
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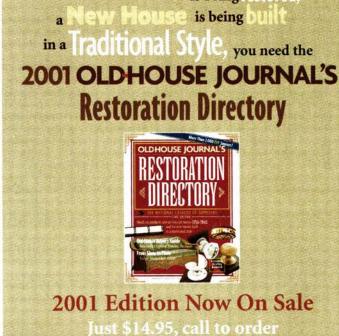
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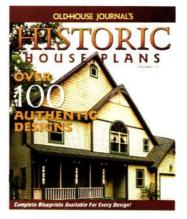
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REMUDDLING Opinion



FORE!

A game of miniature golf can make a summer evening complete. Imagine whacking a golf ball through one of the openings in this turret or the arched appendage leading to the side yard. Has this Galveston, Texas, house seen a round of puttering? Narrow side windows and a fish-scale gable suggest that it started as a Folk Victorian early in the 1900s, in which case we would have expected a small but welcoming front porch. Or the original structure may have been as simple as the photo at right, which represents a post-railroad house form sometimes called "National Folk." Either way, the building is now following its own course.



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