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December 2006 Restore Media Publication



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November/December 2006 Volume 34 / Number 6 Established 1973



#### ON THE COVER:

The Hensley Park Historic District in San Jose, California, is home to the priciest old-house real estate in the country, including this turreted Queen Anne. Photo by Christopher P. Ayers.





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Newly updated for 2006, OHJ's famous guide to oldhouse products and services is a down-to-earth resource for neophytes and sophisticates alike. Go to the home page.





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Looking for a wide array of old-house products? From the publisher of *Old-House Journal*, this website, edited for architects, interior designers, and restoration contractors, is also a treasure trove of information for the ardent old-house owner in search of traditional styles and designs.



## Are your priorities in

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### Editor's Page

## Let's Talk!



There's an old axiom in magazine publishing that says something like, when it comes to reader interest, one letter is a response, two letters are feedback, and three are a landslide. Here at Old-House Journal, we editors take this idea literally-so much so that when we get more than one inquiry on a single subject, we know it's time to NATIONAL ARCHIVES ASSOCIATES answer it in some part of the maga-

zine. While no crystal ball, this practice has

helped keep OHJ in step with reader needs for 33 years, and it still rings true today.

Here's an example of how it works. Not long ago, we had an email from a reader who wanted to see an article or two on Greek Revival farmhouses. As it turns out, we were already in the middle of producing just such an architectural style article because we'd had a similar request earlier in the year. OHI's eminent historians, James Massey and Shirley Maxwell, heartily agreed it was a great idea, and you'll be able to read the result in the next issue under the title,"Just Plain Greek."

The "three are a landslide" principle applies in more active ways, too. When OHJ editors are not at their desks pulling together photos and copy for page layouts, we do our best to be out in the field, studying buildings at conferences and tours, visiting ongoing restoration projects, and talking to readers at shows and fairs. North America is a big continent, and every project is different; nonetheless, when we see three or more signs of a trend, we feel compelled to cover it and shed light on the questions that OHJ readers have yet to ask. Such a trend could be as cut-and-dried as the mounting regulations against the use of oil-based paint or as subjective as the growing importance of 1950s architecture.

All well and good, but still no crystal ball. Because 2007 is just around the corner, we thought we'd take the opportunity here to ask about what you've found useful over the past year in OHJ's editorial pages and what you'd like to see more of in the future.

Architectural style surveys: Since the 1980s, we've toured 300 years of residential architecture, style by chronological style, at least twice; should we do it again? Should the articles be longer or have more photos? What subjects would you like to see?

How-to and technical articles: Should we have more step-by-step articles on methods and materials or fewer of them? What subjects would you like to see? Is the information ever "over your head," or should we be getting in deeper with longer articles?

Old-House Living: The OHL stories have been many things since they first appeared in the black-and-white 1970s. Should we make them longer or shorter? Should they focus more on the house or on the people? How are the photos?

Essay: This one-page department, which debuted in 2002, is the closest thing in OHJ to creative writing. Which is your favorite piece to date? Do you like the illustrations?

Send your ideas and comments to OHJ Editorial, 1000 Potomac St., NW, Suite 102, Washington, DC 20007 or via email (OHJeditorial@restoremedia.com). We'll get right to work on your suggestions even before we read three of a kind.

Goldarkoel



Rob Leanna

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### Letters



#### Rethinking Student Labor

Your Essay, "How Crazy People Paint a House," in the July/August 2006 issue, came just in time to save two sides of our little Colonial Revival house from college painters. My husband and I have spent two summers scraping, sanding, and prepping our siding, and we are in the process of completing the second side of the house.

A few weeks ago, after a particularly hot and sticky day of work, my husband suggested we hire someone to finish the painting for us. I objected, saying the painters would never do the job right. The next night I switched positions and suggested that cutting corners on some of the prep work would save time. My husband unequivocally refused but then the following day proposed that it would be okay to let college students finish the north and west sides of the house as long as I restored the windows. (I've been dubbed "the good wood-window witch" by my sister.)

We went back and forth for two weeks and had actually called up a few painters for bids. Then I read your Essay and realized that maybe we aren't so crazy after all. You'll be glad to know that we're back at it, and the college kids have been sent home. Thanks. *Natascha Wiener Minneapolis, Minnesota* 

#### Arts & Crafts Gate

We are avid readers of Old-House Journal and were delighted to find an Arts & Crafts pergola gate that looks just like ours in the September/October 2006 Plots and Plans. We moved into our 1915 Arts & Crafts bungalow in December 1997. Our restoration work started outside by enclosing the yard with a hand-crafted cedar fence and gate in a pattern my husband found in an Arts & Crafts design book. He used a through-mortise on the header section and pinned it with a 11/4" dowel. After almost 10 years, the gate and fence still look wonderful, and we get many compliments on them. Keep up the good work and inspiration! R. Hentges and C. Sochacki Royal Oak, Michigan



#### Serial Scene Watchers

I really enjoyed "Scene-itis," the Essay about movie sets that make your mouth drop, in the September/October 2006 issue. One of my favorite old movies featuring a period-style kitchen is *The Ghost and Mrs. Muir.* The kitchen has a copper—a deep, well-like covered tube for washing clothes and heating water. I belong to a list serve for house restorers, and we often comment on our favorite movies for architectural details. I'll never watch *Psycho* the same way again. *Kathryn Newell Via e-mail* 



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### Annunciator

#### Calendar

#### November 1-3 PITTSBURGH, PA **Old House Fair** Now in its 11th year, the fair

features many vendors showcasing the skills and materials needed to restore old houses. For details call (412) 471-5808.

November 3-4 ST. PETERSBURG, FL **Bungalow House Tour** By day or night, tour 1920s Craftsman-style bungalows. For details email jeff@crafts manhousegallery.com.

#### November 3-5 OMAHA, NE **Restore Omaha Conference** Learn how to fix common old-house problems in hands-on workshops. Email eventive.marketing@cox.net for details.

#### November 3-5 WALTHAM, MA Orchid Sale at Lyman Estate

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November 10-12 GREENSBORO, NC

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December 2, 9, and 16 INDIANAPOLIS, IN Victorian Holiday Tea Discover the Victorian origins of modern holiday traditions while having tea at the Morris-Butler House. Call (316) 636-5409 for tickets.

### Certified to Preserve Old Houses

Forty years after universities first began offering historic preservation classes, higher education is embracing a new trend: non-degree certificate programs that cater to homeowners who return to school, not to change careers, but to understand how best to restore their own old houses. The programs, which also attract professionals such as architects and urban planners, are becoming so common that the National Council for Preservation Education (NCPE) will meet in November to hammer out standards for schools that want to develop a curriculum. One issue that the NCPE will address is what a non-degree certificate program should cover. Eventually, the organization will post approved certificate programs on its website (www.uvm.edu/ histpres/ncpe).

With classes scheduled at night or on weekends, the non-degree programs (which shouldn't be confused with degree-based certificates in historic preservation) offer some of the same historic preservation subjects found at the graduate or undergraduate levels but in smaller bites over a shorter period. Typically, students must take between six and 10 courses to qualify for the certificate depending on the school. "It's not enough for a degree but more than art appreciation on Monday nights," says Vincent Michael, who chairs the NCPE.

Old-house owners often enroll with a particular goal in mind, whether it's learning a new skill, such as restoring old floorboards in a hands-on workshop, or preparing an application for nominating a



In this Drew University workshop, students practice what they've learned about shingling.

historic home to the National Register. Drew University in Madison, New Jersey, offers just such a workshop as well as a course that guides students through the nomination process. Most programs only require that students take a drafting course. Because the classes are offered through continuing education departments, students can sign up without having to apply to the school. What follows is a brief description of some nondegree certificate programs in historic preservation. To find a program nearby, contact local colleges and universities.

**Boston Architectural** College (www.the-bac.edu). The school had the benefit of working with the NCPE to develop a curriculum for its program, which began four years ago and is the only one so far to receive the organization's seal of approval. Students complete six courses, including two electives, to qualify for the certificate. Some recent course offerings included architectural interiors, preservation philosophy and practice, and 19th-century American architecture.

Drew University (www. drew.edu). In this nine-yearold program, which has featured several OHJ authors as instructors, students can sign up either for individual courses that suit their needs or pursue the non-degree certificate, which requires 15 continuing education units (approximately six to eight courses) in specified areas. Courses are offered during the fall, winter, and spring terms over a 10-week period, with one daylong workshop each month that students register for separately.

Goucher College (www. goucher.edu). The school pioneered the non-degree certificate program for historic preservation 12 years ago. Students complete 10 courses, including seminars and workshops, to qualify for the certificate or register for individual courses as needed. Preservation law and historic interiors were among recent course offerings. Classes for the Baltimore-based school are taught mainly in Washington, D.C., at the headquarters for the National Trust for Historic Preservation, which partners with the school.

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### Tile with a Style

Though I am familiar with terra-cotta as a decorative material on commercial buildings, I know nothing about the "brick" in our 1925 bungalow. Do you have any information? *Tomi Fay Forbes Cedarburg, Wisconsin* 

our "brick" may be one of several types of structural clay tile that came on strong in the boom building years of the 1920s. Lightweight and fire-resistant, hard-fired clay (terracotta) became popular in the late-19th century as a material for filling floors and fireproofing columns and partition walls in steel-skeleton buildings. Semi-porous versions of this tile, which were formulated for moderate strength and moisture resistance, were developed later for the housing market. Structural clay tiles were similar to the cement or concrete blocks that burst on the building scene after 1900, but unlike blocks, they had large cells that greatly reduced their dead load.

By the 1920s there were some halfdozen manufacturers, each with proprietary shapes or applications. The inter-



locking tile, for example, was shaped in a T to enhance bonding of walls. Tile cells could be laid either horizontally or vertically, and most products had a scored outside surface to improve bonding of the final finish, typically stucco or brick veneer. Your house may be built of tiles where this scoring was left exposed for its own decorative effect, or it may be one of the specialty tiles

Ask OH7

INSET: NATIONAL ARCHIVES ASSOCIATION

One of two similar buildings in town, this bungalow is built with structural hollow tile, usually hidden under brick or stucco but here left exposed. Such tiles were typically scored (see inset) but occasionally formed with a decorative face.

manufactured with an ornamental surface, such as a rock face, and always intended to be the final appearance.

## The Rap on JAP-A-LAC

A restoration architect that I know is trying to find out about JAP-A-LAC. She remembers her grandmother using this paint, but the company listed on an old can doesn't know what she's talking about. *Sue Maltby Toronto, Ontario* 

AP-A-LAC, the trade name of the Glidden Paint Company, dates to around the turn of the century, and by the 1920s represented a family of three products: varnish, bronzing coatings, and enamels. Marketed to the do-ityourselfer of the era, these durable coatings were recommended for home improvement projects such as refinishing woodwork and appliances or redecorating radiators or furniture. JAP-A-LAC enamel was possibly the most popular product, offered in as many as 22 colors, and built on the reputation of Japanese lacquer as a rich, colorful, shiny finish. The same results can be obtained today with quality enamel paints that are high in pigment content—they're available from good paint or decorating stores and applied with a top-grade brush.



1920s, brochures suggested using JAP-A-LAC for enameling kitchen chairs and tables.



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### Plots & Plans

## Colonial Window Seat

DRAWINGS BY ROBERT LEANNA



ttractive, efficient, and wholly integrated with the house, built-in furniture seemed to be the wave of the future after 1900. Be it a dining room sideboard, a boudoir dresser, or a kitchen breakfast nook, a built-in was typically casework cunningly melded with a wall or stairway so that it eliminated legs and dust-catching voids while freeing up floor space. Though built-ins were pushed to new heights of ingenuity during the Arts & Crafts movement, they go back centuries in ships and medieval farmhouses for wringing utility from tight areas. A good example of a primordial built-in is the window seat—a bench that doubles as a storage bin—such as the 1920s Colonial Revival version presented here.

### Plots & Plans

This particular seat is designed around a window bay, where the walls function as the arms and backrest, and the stool (the inside widow sill) defines its top. Structurally, the seat is basically a rough frame of 2"-square supports that are covered with flat panels held in moulded-edge frames. The actual bench surface shown here is composed of 1 1//"-thick boards backed with blocks so that the seat holds panels for access to the storage compartment. Each panel is fitted with a flush lift or finger hole for raising the panel. However, the bench could also be built as a single piece and hinged at the back like a hatch or, if storage is not an issue, simply fixed in place. In this case the compartment lining would be eliminated as well. Other details, dimensions, and construction are subject to the project and available materials. 🏛







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### Fine Design

#### **Designs on Dishwashers**

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#### **Ornaments of Christmas Past**

Like the Victorian tree decorations that inspired them, Dresden Star ornaments are handmade using vintage materials, such as century-old tinsel, original German glass beads and balls, and rare 19th-century chromolithographs depicting cherubic children or serious Santas. Because no two ornaments are alike, prices vary, ranging between \$69.99 to \$399, depending on the rarity of the material and the amount of labor involved. For more information, call (707) 215-9510 or visit www.victorianornaments.com. Circle 12 on the resource card.



### Fine Design





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#### **Colonial Splendor**

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ex-quis-ite

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2. extrodinarily fine or admirable; consummate

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# Window Wisdom BY ELIZABETH LUNDAY

ne thing I envy about owners of new houses is their freedom to open windows whenever they want, willy-nilly, on a whim, without the aid of a screwdriver, putty knife, or rubber mallet. The windows on my 1920s bungalow are beautiful, multi-paned Prairie-style works of art, but when it comes to opening them, they are ugly. Besides being glued shut with paint, my windows are peeling, cracking, and generally a mess.

I put off the task of restoring my double-hung windows for the first two years that we owned our house until I woke up one Saturday morning with a sudden zest for the job. I envisioned pulling into the driveway and being greeted by smooth, freshly painted window frames. I fantasized about opening windows with ease. I decided to start with the most prominent set of windows in the house, the ones right in the middle of the front porch. My husband, the family carpenter, was out of town, but that didn't stop me from diving right in. How hard could it be?

After a quick run to the hardware store to buy a wire brush and a putty knife, I eagerly applied myself to the umpteen layers of paint weathered like snakeskin across the frame. An hour later, I had banged my thumb raw and scraped a scant 2" square bare. Four hours later, I was covered in dust and had inhaled a lifetime's worth of leadbased paint. My enthusiasm was gone, and my arms, hands, and back ached.

Applying a fresh bandage to my thumb, I noticed my neighbor Murray knee-deep in another renovation project in his driveway. To date Murray has finished his attic, rebricked the fireplace, and added a bathroom to his house.

"Murray," I called, "This is harder than I thought."

"That's because you don't have the right tool," he replied.

I started to ask him what I needed, but Murray was already gone. He reappeared



Essay

minutes later brandishing a heat gun. When he switched it on, I watched transfixed as the paint bubbled and blistered. With a putty knife, Murray scraped off the blistered paint, and it slid away like butter. So began my apprenticeship.

I soon found that using a heat gun was not as easy as it looked. I could only remove small patches of paint until Murray demonstrated how to melt an entire swath and scrape it away with one movement. After cautioning me not to set the house on fire, Murray left me to my own devices, but he returned later to check on my progress and deliver a manly carbide-tipped paint scraper to replace my wimpy putty knife.

The following weekend, after I had removed old caulk and discovered a 3'-long, 1"-wide gap between my window frame and the brick, it was Murray's house I escaped to in a state of panic. His calmness reassured me. "We'll just take a look at that," he said, heading straight for my porch.

After examining the gap, Murray explained that I just needed some moulding. "I've got cove moulding in the back I'm not using," he said. Murray retrieved the moulding, cut it to size, and then used his nail gun to secure it in place. Whenever I would thank him, Murray would just reply, "Oh, we've done so much to our house over the years. You just keep at it and eventually you learn something."

Murray continued to educate me. When I was ready to glaze the windows, he looked at my tub of compound, shook his head, and sent me back to the store for glazing in a tube before showing me how to apply it properly.

A month after I started, I was applying the last coat of paint to my windows. Their broken, divided top lights had been replaced, and the cracks sealed with caulk. Best of all, they opened effortlessly. I hollered for Murray, who was hunched over sawhorses in his driveway.

"What do you think?" I asked, beaming, as he walked up my porch steps.

"Real good," he replied.

As I basked in the glow of my mentor's approval, he added, "Now that you know what to do, the rest of the windows will go quicker."

I wondered if he could sense my spirit oozing through the floor as he headed back to his project. Before he was out of sight, I began circling my house, tallying windows. By the time I was done, I was staggering: There were 30 windows to go. Heaving the heat gun, I gripped my carbide-tipped scraper and turned to face the next cracked and peeling frame. You keep at it, and eventually you learn something.

Elizabeth Lunday lives in the Fairmount Southside historic neighborhood in Fort Worth, Texas, and has written for Planning, Urban Land, and Mental Floss.

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### Outside the Old House

## A Secret Garden Revealed

Careful digging brings a lost camellia garden to light so that it blooms once more.

BY JENNIFER JEWELL

PHOTOS BY BRENNEN WESTFALL

or many gardeners camellias are associated with history, beauty, and refinement. Flowering evergreen shrubs or small trees were idealized in Chinese and Japanese art for centuries, but the first camellias only arrived in the United States in the late 1800s. In the early 20th century, interest in these flowers reached a fevered pitch. While affluent landholders or botanical organizations were among the first to collect and cultivate camellias, some home gardeners also embraced the plant. In Camden, South Carolina, a restored small private garden known



as Duffields boasts a remarkable collection of camellias and an equally remarkable story. Polly and Nick Lampshire purchased Duffields, a circa 1923 brick house, in 1992. At the time, the house was shrouded from view by overgrown shrubbery, large trees felled by Hurricane Hugo's 1989 devastation, and invasive vines such as smilax, ivy, and wisteria. The real estate agent told the Lampshires that the house had once had an extensive camellia garden created by one woman, Helen Harman, who had owned the property from the 1930s to the late '50s—but there was little hope that any of the plants had survived. The lost garden piqued the Lampshires' interest. They purchased the property after falling in love with its well-proportioned eclectic revival house and original pierced brick garden walls, which peeked out from beneath the overgrowth.

A painstakingly restored camelia garden surrounds Duffields, a 1920s house in South Carolina.

A single camellia blossom that was spotted amidst choking vines led to the discovery of hundreds more plants, such as this blooming *Camellia japonica.* 



The Lampshires began exposing those walls in early 1993. Polly was removing ivy from a wall near the back door when she spotted a bright red bloom. "I was amazed to see it and so excited that it might be one of Miss Harman's flowers," she says. It was indeed a camellia on what looked to be an old plant. In an effort to identify the flower, the couple contacted a local garden historian, Sallie B. D. Iselin.

Ironically, Iselin and her husband had considered buying Duffields for their own young family, but the property seemed too much to take on. When the Lampshires hired her to help uncover the hidden garden, Iselin says she knew she was "meant to work in this gar-

#### Outside the Old House

den one way or another." The Lampshires and Iselin spent the first year clearing and cutting back the overgrowth.

Clearing went quickly at first, but then complications arose. The more overgrowth the Lampshires and Iselin removed, the more camellias they discovered. Iselin soon realized that the overgrowth served a protective purpose: It prevented trees felled by Hugo from crushing the remaining camellias and provided them with much needed shade. She had to proceed thoughtfully. She also began to see a pattern emerge. "Most of



Duffields's camellias bloom in an array of

colors, shapes,

shown by these varieties of

Camellia japoni-

Camellia sasanqua (right).

and sizes, as

ca (left), and

the surviving plants were on the north-facing woody slope behind the house," Iselin says.

#### Unraveling a Mystery

From the beginning, the team was baffled by little bits of chicken wire sticking out of the ground on the property's north-facing slope, but they soon had a breakthrough. Wherever they found wire they also found the telltale cinnamon bark of Camellia sasanqua. Because this plant is hardier and more disease-resistant than other camellia varieties, Iselin surmised that Harman used Camellia sasangua stock for grafting her Camellia japonica plants, and that the chicken wire protected the plant roots from voracious moles. From this start, the team developed a system for unveiling the shrouded garden: They followed clues, discovered new surviving plants, and then exposed only their north and east sides. After the plant hardened off or toughened to the elements, the south and west sides were also uncovered. During the first two winters, Iselin spent a great deal of time platting, photographing, and labeling each newly discovered plant, but by the end of the second winter, with still far too many survivors to categorize, she resorted to marking the plants that were not to be disturbed with pink construction tape.

In the backyard, blooming camellias pepper the landscape, creating a charming, colorful, backdrop to the brick patio.

Meanwhile, the Lampshires began to renovate the house in 1993, and soon they came upon a small library of garden books, including many American Camellia Society Yearbooks. The front and end plates of the books were a treasure trove of information, where



Harman had scribbled notes detailing everything from when she had purchased plants and propagated new flowers to her timetable for fertilizing, pruning, and watering her garden. The notes illuminated the extent of Harman's expertise in the region, as well as her connections throughout the camellia world from Florida to California. The notes also helped identify some of the camellia species in Harman's garden that were unearthed more than 50 years after they were first planted.

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### Outside the Old House



**Detailed** notes in the front and back pages of Helen Harman's 1940s American Camellia Yearbooks proved invaluable to the restoration efforts.

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From November through the beginning of April when the flowers bloom, the Lampshire house is full of cut camellias arranged in vases or, more traditionally, only the blossoms floated in a bowl. The garden is featured on local garden tours; for more information, contact Sallie Iselin at charlestongarden@aol.com. 🏛

Jennifer Jewell lives in central Colorado and has written for Colorado Homes & Lifestyles and House & Garden.

Garden Club, even serving as its president from 1947 to 1950. "She was recognized as a camellia expert around South Carolina," says John Lindsay, a local nurseryman who was just 20 when Harman began mentoring him and taught him the art of grafting. "She was meticulous, and had a beautiful eye for design," Lindsay says, noting that Harman laid out all of the property's extensive plantings and paths and maintained them herself with the help of just one other person. Lindsay recalls Harman gardening at all hours and maintaining a precise four-bin system of composting to keep potting materials separate from the lawn, camellia, and azalea cuttings. She drove all over the state to address gardening and horticultural groups, find new plants, and talk to other growers. "The sheer number

At a time when there were few women in horticulture, Harman was a self-taught authority on the subject. She was as generous at dispensing her knowledge as she was with distributing her plants, but then tragedy struck in 1959, when a fire destroyed much of her house. Harman managed to save her library of garden notes, but by late 1960 she had returned to the Northeast, where she later died.

of plants on Miss Harman's property was astonishing," Lindsay recalls.

The pierced brick garden walls-an unusual feature, pictured here behind the front garden's central fountain-were also restored meticulously.





#### An Expert's Life Revealed

To learn more about the garden, the Lampshires and Iselin researched historical archives and city records, and tracked down some of Harman's contemporaries to speak with them. Those efforts, along with information uncovered in the garden itself, revealed much about Harman and the garden. When she bought the house in 1937, she was a single woman from New Jersey and a longtime member of the Camden a a a

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When it comes to illuminating bathrooms of the 1930s and '40s, you can't go wrong with a little Moderne design.

> Central overhead ceiling lights were the basic starting component for lighting bathrooms in the 1930s. Fixtures such as this one, with heavy geometric themes and concentric circles, were common accoutrements.




Lights flanking a mirror cut down on harsh shadows and offered optimum illumination for grooming. The shades here-called turtles because of their resemblance to the crittercould also be mounted facing the wall, and often sat on brackets made of porcelain that featured convenient, built-in electrical outlets.

f you're aiming to beautify a bathroom from the era between the wars, your first stop might be Paris-the 1925 Paris Exposition, that is. That famed exposition introduced Art Deco to the world through a wealth of cutting-edge modernist designs, and it was also the source of the name. Within a few years, Deco crossed the Atlantic to become the design imprimatur for American consumer goods throughout the 1930s. Its influence can be seen in creations as disparate as storefronts and theaters, furniture and packaging, and even such basic household fixtures as bathroom sinks and lights. And if what you specifically seek

are lights, you're in luck. What follows are a half-dozen authentic lighting styles appropriate for 1930s bathrooms, almost all of them available through today's reproduction lighting companies.

Art Deco was considered revolutionary because it turned its back on the vegetable and animal motifs found in traditional designs to embrace angular geometry and the machine age. The style grew out of two popular early 20th-century avant-garde movements: Cubist art and Bauhaus architecture, both of which were defined by sheer, faceted surfaces. When this ultra-modern thinking made the leap from art canvasses and buildings to furniture and industrial items, those angular lines softened to create the distinctive flowing geometric forms that became iconic of the 1930s. Deco's exuberant take on design also came to embody a sense of optimism, something desperately needed by an American public stuck in a downtrodden decade.

### **Ceiling Lights**

The basic light for any bathroom in the early electric era was a central, ceilingmounted fixture, and round ceiling fixtures throwing off bright overhead light were a common sight by the 1930s. Lights designed in repeating circle shapes, with cut motifs of decorative ribs, catered to the decade's fascination with geometric



The popular idea of putting showers or tubs into their own alcove made it necessary to install a second ceiling light in those areas (above). For homeowners who had both space and money, one period advertisement (below) showed the ideal placement for a bathroom ceiling light, mirror lights, and sidelights for maximum illumination.



shapes, and their ceiling-hugging designs kept them unobtrusive and aerodynamic. Shades could be made of both clear glass and milk glass, and the mounting was usually a shiny chrome, or in the case of the old advertisement shown on page 36, "genuine chromium plate."

Another ceiling option was a simple globe set into an Art Deco-influenced base bearing a heavy, repeating geometric pattern full of the chevrons and sunrise themes so closely connected with the style. While the base was ornate, the light was also understated thanks to low-profile dimensions and a pairing with a simple milk glass globe. Original bases were most likely made of brass or chrome, but modern lighting companies offer these light fixtures in a range of finishes, as well as a selection of globes that feature additional geometric details, such as concentric circles ridged into the glass or repeating raised squares.

By the 1930s, the prosaic built-in tub was often elaborated into a high-style, partially enclosed niche or recessed shower compartment. Because these compartments created a cavelike environment and frequently had a lower ceiling than the rest of the bathroom, they called for their own ceiling light. Sometimes these lights were regular ceiling fixtures, but they could also incorporate a heat lamp for "sun-ray" comfort.

### Sidelights

Improved task lighting in bathrooms was of growing interest during the Deco era, and the prime focus was the lavatory mirror used for shaving and make-up. The recommended solution for a shadowless reflection was to mount matching fixtures at either side of the mirror. The iconic Deco-era example is the streamlined tube, which reflected the nation's growing fascination with speed fueled by the early days of commercial passenger flight and the popularity of rail travel.

Streamline styling is related to Deco, but inspired by aerodynamic engineering, it stripped down ornamentation, played up fluid lines, and highlighted industrial materials such as shiny chrome accents. Sometimes polished aluminum, a material borrowed from the nascent airline industry, was used. While streamlined tubes were often enclosed to offer a diffused glow, they also could be open at the top to provide stronger ambient light. Various styles could have accents of concentric bands of chrome and sport elongated, decorative metal finials.

Another memorable sidelight design paid homage to the burgeoning skylines of the day with shades shaped like a building reaching for the sky. Molded of frosted glass and bearing a shade that was completely enclosed, these fixtures radiated a soft glow. The shades were usually three-tiered, often bearing vertical striations on each section-a form that mimics the famous Deco design of the Empire State Building. Original lights were mounted on porcelain brackets and sometimes color-matched to a bathroom's tile work. Porcelain was considered particularly appropriate for use in bathrooms because it was non-porous, easy to clean, and therefore sanitary. Sometimes the brackets also harbored electrical outlets for plugging in the wide array of grooming appliances that were just being marketed.

Fixtures installed above a mirror cast a spotlight on the person looking into it. Often, such mirror lights were the only source of illumination in bathrooms from the era.

Streamlined tubes were often positioned on either side of a mirror but could also be installed horizontally as a single light above a sink. Their aerodynamic design reflected the country's fascination with aviation at the time.





Fan shades were another shape popular for sidelight designs because they exaggerated the chevron pattern so integral to the Deco movement. Often, the fans repeated themselves like ripples formed in water by a skipping stone. Because fans were open at the top and sometimes the bottom, too, they offered the benefits of indirect light via a beam that bounced off of the walls and then onto the person in front of the mirror.

### **Mirror Lights**

Where sidelights were impractical, a single fixture over the mirror became the next best thing for illuminating personal grooming. One popular design was the organic shape of a turtle's shell morphed into a stylized, softly angular, geometric form that was open on the bottom (where the turtle was flat). This design afforded bathers a direct light just above the mirror. Shades were usually made of milk glass and sometimes had black or colored lines decorating their edges. Turtle shades were incredibly popular owing to their versatility. Because they could be installed horizontally with their opening facing the floor or vertically to face the wall, they could also be used as sidelights. This flexibility gave homeowners several decorative options for lighting bathing areas.

A close relative, design-wise, to the turtle shape was a shell-shaped shade that moved way beyond Mother Nature. These shades exaggerated and softened a shell's edges to play on the ideas of streamlining, and the fixtures could be installed above a mirror as either a single light or pair.



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Earthquake forces are complex, but the methods for reinforcing houses can be relatively simple and good for storms, too.

arlier this year, we San Franciscans celebrated (if that is the word) the centennial of the great earthquake and fire of 1906. Along with the hoopla came many stern warnings from seismologists and public health experts about the widespread injury we might see in people and buildings from the next Big One, slated for sometime in the next 30 years or so. They presented big, colored charts showing the location of the damage, the Hayward Fault, which runs down the east side of San Francisco Bay, and suggested that the citizenry was a little too blasé about the whole thing. They are probably right. Just because you don't live on the West Coast, though, doesn't mean that earthquakes-or other powerful natural events-can't affect you.

The reality is there have been earthquakes in almost every U.S. state since North America was first settled. What's more, many of the methods and materials that can strengthen a house to resist earthquake forces are also useful for resisting hurricane or tornado forces. Note, however, the operative word: resist. Buildings cannot be made earthquake-proof, only earthquake-resistant. Because the majority of old houses are built with wood frames, a relatively flexible construction method, they can sway in an earthquake like a palm tree in a stiff breeze. Some flexibility in a house is good, but it can't be allowed to bend so far that it will break or separate

## Working Stiff

into pieces at its seams. That is the point of seismic retrofitting: to strengthen the joints and connections in the building so that it can absorb earthquake forces without coming apart, a process we'll explore here.

### Let Them Eat Quake

There are two kinds of forces in an earthquake: lateral (producing side-to-side movement) and uplift (producing up-anddown movement). Let's imagine that the earth is a rickety card table upon which sits your house in the form of a sheet cake (the foundation), a three-tier wedding cake (the building frame), and a croquembouche (the chimney, represented by a cone-shaped confection of cream puffs cemented together with sugar). If you shake the table violently, like the lateral force in an earthquake, what happens? The sheet cake simply slides back and forth, but the plastic columns supporting the wedding cake tiers fall over, causing the



Lateral forces shake foundations sideways, inflicting the structural equivalent of whiplash on houses.

cake to collapse and the cream puffs to fly all over the room. In the case of uplift forces, the analogy is more like shaking out a tablecloth. The difference is the sheet cake goes up in the air and comes back down, while the other two cakes fall apart in the same ways as before. The lesson is that in an earthquake it's best for a house to be like the sheet cake.

Now that I've backed myself into a metaphorical corner, let me put the situation in simpler terms. To make a woodframe house more earthquake-resistant, you need to prevent it from turning into a parallelogram by tying together all the joints in the frame, and connecting the house to the foundation. Generally, the way to do this is with plywood and specialized metal fasteners. The specifics of how best to install these materials are an ongoing discussion between engineers, building officials, and contractors, and they do not always agree. Nevertheless, the following information, based upon the seismic codes adopted by Los Angeles and other California cites after the 1994 Northridge earthquake, seems to be fairly widely accepted. Be aware, too, that any strengthening will be for naught if the framing is damaged by wood-destroying insects or rot, so be sure to repair these areas before beginning any seismic work.

Retrofitting a house to resist earthquakes begins with having the best possible foundation. Ideally, the foundation is reinforced concrete and shaped like an inverted T with a wide base, called a footing, that spreads the load like snowshoes.



The 1994 Northridge, California, earthquake lasted only 15 seconds but left 25,000 buildings uninhabitable, leading to the latest seismic standards.



FEMA/ ANDREA BOOHER

Unfortunately, few old houses have such a foundation. A foundation of unreinforced concrete (poured without steel reinforcement bars) is okay, but unreinforced brick, stone, or concrete block foundations are not good because they will disintegrate in an earthquake like our proverbial croquembouche. Other types of foundations, such as those comprised of individual piers, built on hillsides, or constructed as garages under the house, are beyond the scope of this article and should be evaluated by an engineer. In general, consulting an engineer is a good idea for any sort of house, particularly those built with balloon framing and cripple walls (more on this later).

If the foundation is acceptable, the first phase is to bolt the mudsill to its perimeter in order to prevent the house from sliding or jumping off in a quake (as well as in a flood or severe storm). In a retrofit, that means renting or buying a rotary hammer and boring holes about  $\frac{1}{46}$ "

larger than the bolt diameter all along the foundation. Anchor bolt location is specified by code, but generally you will be boring holes every 4' to 6' and 12" in from the end of each piece of sill plate. Once you have holes, you can either install anchor bolts (which secure themselves with a mechanical wedge), or anchor the bolts with epoxy (which is considered to work better in poor quality concrete). With epoxy, it is important to first clean each hole free of dust, typically by using a bottle brush and plastic tube fitted to a shop vacuum. Once the bolts are anchored, nuts and large, 3"-square washers, called bearing plates or plate washers, attach the mudsill to the foundation.

In addition to foundation bolts, it is regular practice to install hold-downs (heavy L-shaped brackets) to tie the foundation to the vertical framing members common on corners, the sides of garage doors, and at the ends of plywood shear panels. The bolts for hold-downs should Old houses come off their foundations in quakes or floods because they are un-anchored. Adding bolts through the mudsill keeps the building in place.

be epoxied in place. If there's no access for boring holes in the foundation, the alternative for foundation bolts is to use another group of hardware, various kinds of metal straps called mudsill anchors or anchor plates.

### **Shear Pleasure**

Depending on the house's construction, there may or may not be a cripple wall. This feature is a short wall about 36" high between the foundation and the first-floor framing that is commonly found on late-19th-century houses on the West Coast, especially row houses. The cripple wall is the weakest part of the house, usually relying on nothing more than diagonal bracing to keep it from collapsing into a parallelogram. The way to greatly improve a cripple wall's resistance to lateral forces is



ROB LEANNA

Mudsill anchoring is boring holes in the foundation and installing bolts and hold-downs that connect to the frame.

to reinforce it with shear panels of plywood. Because the mudsill is typically wider than the 2 x 4 uprights, you must add blocking between each stud, as well as at the top and bottom, to which the plywood can be nailed. The blocking is typically pieces of 2 x 4 and needs at least four 10d nails per piece. Pre-drill the holes to keep the nails from splitting the short blocks, and don't use pressure-treated green wood for blocking. For shear panels, plywood is preferred over OSB (orientedstrand board), and the sheets should be five-ply material at a minimum of a 1/2" thick (or 1/32", which is what passes for a 1/2" thickness these days). For optimum strength, the panels should be installed horizontally rather than vertically using the longest piece of plywood possible. At a minimum, house corners should have panels at least 4' long, with more panels spaced out evenly along the length of the cripple wall. In a single-storey house you need to brace at least 50% of the length of



Like popping popcorn, earthquake forces shake a house side to side and up and down, twisting unreinforced walls out of square and rolling over freestanding posts, which are unbraced and therefore structurally weak.





ILLUSTRATION: ROB LEANNA; INSET PHOTOS: SIMPSON STRONG-TIE

each cripple wall, while in a two-storey house you need to cover at least 80% of the length. For instance, in a single-storey house, if the cripple wall is 48' long, you need to cover 24', which could be accomplished with a 4' panel at each end and two 8' panels evenly spaced in between. Contractors tend to cover the entire wall, but whether this practice is good or bad is an ongoing argument. Hold-downs are then installed at the end of each panel.

Shear panels work best when supported by framing on all four edges, and they should be nailed using 8d common nails every 4" along the perimeter and 12" in the field. (Local codes may differ.) As you nail, take care not to break the surface of the plywood. This is a lot of nails, so a nail gun can be extremely handy, though there are those who believe nail guns shouldn't be used. In addition, you will need to bore ventilation holes 2" to 3" in diameter in each stud bay, about 2 1/2" above the mudsill and  $2 \frac{1}{2}$  below the top plate, and a minimum of 6" apart in between. Locate the lower ones so you can visually inspect the mudsill bolts. Obviously, you will also have to cut openings for foundation vents, flues, plumbing pipes, and other penetrations. While you're at it, add straps to tie the shear panels into the floor framing above. These connectors, called shear transfer ties, keep the floor joists from sliding off the top of the cripple wall. If you feel like it, also add joist hangers to attach the floor joists to the rim joist.

### **Keep Your Head**

Having done everything you can in the basement or crawl space to strengthen the structure, the next area typically exposed enough to work on is the attic. Install seismic or hurricane ties to connect the rafters to the top plate and to keep your roof from sailing across

the street during the quake. If you're planning to re-roof, it's a good idea to add plywood or OSB sheathing to increase the shear strength of the roof. Because unreinforced masonry chimneys tend to break off at the roofline first, the added bonus of this measure is that the sheets help stop a masonry chimney from breaking through the roof and into the living space. Studies find that bracing the chimney does very little to prevent failure during a quake. Short of replacing the chimney with a boxed-in metal flue, about all you can do is repoint the old mortar, which has probably deteriorated. If there is no plywood on the roof, you may want to think about adding some to the attic floor around the chimney to prevent it from breaking through the ceiling if the chimney smashes through the roof.

Any other structural retrofitting you want to do between the basement and the roof will require removing either interior or exterior finishes. If the walls are open for some other reason, it's a good time to install hold-downs or strapping to tie the first-floor walls to the cripple walls, or the second-floor walls to the first-floor walls. If the siding is off, you may want to take the opportunity to add plywood shear panels to other outside walls. You might also want to add some connectors, bracing, and shear walls to the porch to keep it from tearing away during a quake.

Much of the damage from earthquakes stems not from the shaking but from the fires afterward. Far more of San Francisco was destroyed by fire in 1906 than was damaged in the quake. Fires are caused mainly by broken gas lines. Make sure all gas appliances are supplied by flexible stainless steel connectors, and strap water heaters to the framing to keep them from falling over. Installing an automatic gas shut-off valve at the meter is also a good idea.

The good news is that the old-growth timber and quality building methods used to construct old houses are likely to make seismically retrofitted old houses far more resistant to damage from an earthquake than newer houses. For a fairly small investment of time and money, you and your house can be ready to ride out the next Big One with minimal damage.

Jane Powell, author of Bungalow Details, writes from Oakland, California, one of the most quake-ready towns in the country.



Unreinforced masonry does not fare well in earthquakes, and the brick chimneys common to many old houses are prime examples. Though there's little to do in the way of retrofitting that will keep chimneys from toppling, adding plywood to roof decks or attic floors can limit damage when they do.



Whether your claw-foot tub is a modern reproduction or an original, Signature Hardware (www.signaturehardware.com) can match a missing tub foot. The company sells an assortment of replacement claw feet for reproduction tubs or can make a bronze cast from an antique tub foot to match the original. Circle 16 on the resource card.



The most difficult vintage plumbing parts to replace are the valve seats and stems for compression faucets. Not only were those parts never standardized, but they also aren't manufactured today. That's where George Taylor Specialities (212-226-5369) can help. This small family-owned business reconstructs vintage faucets by drawing on its supply of thousands of original faucet parts. If none fit, the store has a machine shop on the premises where old parts can be adapted or new ones made to fit any antique faucet. Circle 18 on the resource card.

# SNATURE HARDWARE

Signature Hardware (see website address above) also sells a chain and plug drain that fits both antique and modern clawfoot tubs. Circle 17 on the resource card.

### **Bath Parts** Lost&Found

### These specialized businesses have the gadgets and know-how for keeping vintage bathrooms looking and working like new.

intage bathrooms are charming until something breaks. Then, assuming that you can identify the manufacturer of the broken part-an impressive feat given that decades of use can erase even the most pronounced logosodds are the same company isn't still making that piece today. Because the size and shape of certain plumbing parts (the inner workings of compression faucets come to mind) are often unique to each manufacturer, it may be impossible to substitute, say, a J.L. Mott piece for a part from the same era by American Standard. But before you throw the bathtub out with the broken drain plug, consider the vast online network of dealers that trade in salvaged vintage parts, manufacture reproduction antique parts, or reconstruct old fixtures so that they spray and flush once more. Suddenly, that broken piece, so critical to the look and function of the fixture, won't seem quite as irreplaceable. 🏛

BY CATHERINE SISKOS



Like the fenders on a classic car, the mouldings, color, size, and shape of toilet tank lids are distinctive to each manufacturer and era, such as this rare kidney-shaped lid for a Case toilet, circa 1925. In addition to the Case lid, PlumbingSupply.com (www.plumbingsupply.com) has a large selection of salvaged toilet tank lids from 80 manufacturers, dating from the 1920s to the present. The company says it only sells lids in good condition with any flaws limited to slight scratches or chipping visible only in back. Circle 19 on the resource card.

> Replacing vintage faucet handles with modern reproductions is a tricky business. Even if the handles look similar, they may not fit the valve stem. Sign of the Crab (www.signofthecrab.com) sells porcelain or metal cross handles, as well as levers, that may fit some vintage faucets. Circle 20 on the resource card.



For related stories online, see "Everything for the Kitchen Sink;" "Half Baths & Tiny Toilets;" "New Life for Old Tubs;" "Stem Faucet Clinic;" and "Stems, Seats, and Handles." Just click to "The Magazine" section, and go to the alphabetical list of recent features.

**BATHRODOM MACHINERIES** 



SIGN OF THE CRAB



BATHROOM MACHINERIES

Original toilet pulls made from wood or porcelain are hard to come by and pricey when you find them. One alternative is this porcelain reproduction pull for flushing high tank toilets that were common from the 1870s through the 1910s. Bathroom Machineries (www.deabath.com) sells the pull and other reproduction toilet parts described below. Circle 21 on the resource card.

Ceramic caps (pictured top right) cover ugly bolts at the toilet's base, their shape more a reflection of different eras than manufacturers' designs. In the late-19th and early 20th centuries, the caps were often small and round. By the 1920s and '30s, they were octagonal circles and ovals. Fast-forward to the '40s and '50s, and the caps came in all sorts of odd shapes and sizes. These ceramic reproductions of caps from different eras are often dead ringers for the real thing. Circle 22 on the resource card.



For the purists who want even the inner workings of a toilet to be period appropriate, there are brass and nickel ballcocks, a standardized plumbing part that fits most vintage toilets. Then again, the same is true of modern plastic ballcocks, which work better too, says Bathroom Machineries manager John Vienop. Circle 23 on the resource card.





a good to a

Like creases in a pair of pants, the edge beads finishing off the vertical bars that separate the doors in this pantry dresser add crispness to a traditional piece of cabinetwork, while preventing splintering edges where the doors open and close.

PAUL ROCHELEAU

## Board Carpentry Board Carpentry

BY JOHN LEEKE

imension a board, bevel an edge, or run a bead. These three traditional woodworking techniques were once the basic stock-intrade of every finish carpenter and cabinetmaker, and are the building blocks for all kinds of functional, site-made trim. Though these techniques were all but forgotten during the last century, they are worth knowing again for repairing or re-creating the characteristic features in many old houses built before 1920. With the skills to create boards, beads, and bevels, you can match the appearance of historic finish carpentry, from simple baseboards and door casings to kitchen cabinets and porch skirts, with only a few primary hand tools, a table saw, and a little practice.

### **Dimension a Board**

When you are working on an old house or patching in repairs, inevitably you will find boards of different thicknesses from when the house was built or remodeled in earlier decades or centuries. It is often necessary to match the thickness of these boards for proper appearance, or even just convenience, but the problem is you may not find the thickness you need at today's lumberyards. You could special order machine-planed boards at a millworks, but that takes time and money. If you need just a board or two, the solution is to buy a board that is thicker than what you need and cut it down, a process called dimensioning or "thicknessing" in the lumber trade.





First, select your board, making sure that it is dead flat and not warped, twisted, or cupped. (Here, I was working with a roughsawn board that I salvaged.) Mark out all the defects (splits, knots, and end checks) with a yellow lumber crayon. On this board you can see where wood on the near side of the split has a nice straight grain and is free of defects. Next, lay out the dimensions with a ruler and try square to make the board 1" longer and wider than the finished size you need. Then, roughcut the board to this width and length.





Next, rip the board to the desired thickness on a table saw. Before you start, make sure the blade (a 40-tooth, carbide-tipped rip blade is my preference) is exactly perpendicular to the table and parallel to the fence by running some test cuts. If the board is wider than your blade can rip on one pass, turn the piece over and rip from the other edge, too. If the board is really wide, leave a central ridge to plane off later. Always be sure to use safety guards and hold-downs, and follow the instructions supplied by your saw's manufacturer. (Here, the safety guards are removed to show the proper relationship of the board, blade, and fence.)



### Step 🔞

If necessary, plane off the central ridge with a hand plane. It's easy to do an accurate job because the two ripped surfaces provide a flat guide along both sides. Work with a jack plane or smoothing plane, and set the plane for a very shallow cut that produces thin, papery shavings. Use long strokes that run from one end of the board to the other; press down on the front end of the plane when beginning and on the back end when finishing the stroke off the end of the board. On the last stroke or two, swivel the plane sideways slightly to produce a paring cut that leaves a smoother surface. It's good practice and even fun to develop this traditional carpenter's skill.

Look closely at the battens holding together this open door, and you can see how they are beveled along all exposed edges to soften their visual presence and break any corners that might splinter off during the door's daily use.



### **Bevel an Edge**

A bevel is a narrow surface where two planes meet at any angle other than 90 degrees. Bevels along the edges of a board can have many practical uses. A narrow bevel at a 45-degree angle can ease off a splintery edge, making the board safe to handle, while a bevel across the length of a horizontal exterior trim board can shed water. If you have a stack of boards to shape, you can bevel them on a table saw, but small or single bevels can be made quickly by hand with a sharp plane or even a sanding block.



### Step 🚺

To bevel a board by hand, begin by laying out the bevel. Set your angle on a bevel square, and mark the angle on each end of the board.



### Step 🕗

Next, mark the arris or edge of the bevel from one end of the board to the other. If this line is parallel to the board edge, use a marking gauge.



### Step 🔞

Then form the bevel using a sharp hand plane and the same methods as described for thicknessing. Every few strokes check the layout marks and adjust the angle of the plane. Also, sight down the edge of the board to make sure you are not inadvertently creating a hollow or crown. Check the angle of the bevel with your bevel gauge. As you near the finish marks, slow down and make your last few strokes as deliberate as you can to meet the lines. Some planes have an adjustable guide attachment designed to save layout time, but if you're more experienced, you can cut just one or two bevels more quickly by eyeballing it. If you are not sure you can produce a good bevel on the first try, make a few practice bevels on scrap wood before turning to the actual piece.

### Run a Bead

A bead-and-quirk is a half-round profile and indent typically cut along the edge of a board, such as a shelf cleat or simple door casing, to break sharp corners and add decoration. Traditionally, a finish carpenter might also run a bead at the joint between two boards—in wall paneling, say—so that instead of working hard to make a perfect butt joint (which will open up slightly in dry season anyway), he would leave the joint slightly irregular and dress it up with a bead. You can run a bead with a power router or hand-beading plane, but if you need to make just a bead or two quickly, consider using a scratch stock, which is an ad-hoc woodworking tool.







To form a simple cutter, take a flat-head wood screw and file it flat on opposing edges of the head. Next, drive the screw into the middle of the shoulder, keeping the slot in line with the shoulder. From here, you can adjust the diameter of the bead by turning the screw-cutter in and out. Technically, this kind of simple stock only makes half of the bead's profile, but you can bevel off the other half with a sanding block or a plane.



You can whip up a simple scratch stock out of any chunk of wood and a slotted-head wood screw. The one in this picture took 10 minutes to assemble. To make the body of the scratch stock, cut a notch out of a 1"-thick scrap of hardwood or dense pine, and then round over the shoulder of the notch slightly.





To run a bead, just hook the scratch stock over the edge of the board and draw it toward you several times, keeping it perpendicular to the board face. It's possible to make a better scratch stock by grinding a piece of a saw blade to form the whole profile and fitting it into a slot cut in the stock. If you have a lot of bead to run, consider setting up a router, pictured here on the left.

### The Shrinking 1" Board

The first boards used to build houses in North America were laboriously sawn out of logs by hand, but as early as the 1620s, settlers in Maine were setting up waterpowered sawmills that dramatically lowered the cost of sawn boards for house building. Even in those pre-industrial years, one of the standards of the lumber industry was the sawn board that was a full 1" thick, a convention that was common into the 1800s. By the 1850s, however, 1" thick became known as nominal sizing (meaning it was a rough measurement) for finished boards that actually measured 15/16" thick. By the 1890s, 7/8" thickness was common for 1" boards. In the 1920s, 13/16" and 25/32" had become common standard thicknesses for dressed boards that were planed smooth on one or both sides, and in 1956 the 3/4" board appeared. The point for old-house owners is that the lumber sold at today's yards is not likely to match yesterday's lumber, regardless of what it's called. For this reason I never trust the posted size and always measure the boards I want myself.

Sometimes you can find lumber specially sized for old houses. In New England, many houses from the 19th and early 20th centuries were built with roof boards that were <sup>1</sup>/<sub>6</sub>" thick. Because there's a great need for boards in this dimension to patch rotten spots, regional mills and lumberyards supply <sup>1</sup>/<sub>6</sub>" thick x 12" wide pine boards. Of course, these boards are also good for finish work on my door and window trim, which also happen to be <sup>1</sup>/<sub>6</sub>" thick. Just last week, I was buying some of these "roofer boards," as they are called, and as I was going through a stack of them looking for a few that were nice and straight, one of my carpenter buddies walked by and said, "I see you're loading up on a lot of that nice antique plywood."



When measured, these "one-inch" boards are, from bottom to top, 1" thick (1760s sheathing),  $\frac{1}{6}$ " thick (1890s floorboard), and  $\frac{1}{16}$ " thick (2006 beadboard).



Some carpenter added beads to the vertical board edges when he built this batten door for a mill office. Adding beads was both customary practice and a way to downplay the joints by turning them into a decorative detail.



By the 1800s, if a carpenter didn't want to make a scratch stock, tool manufacturers sold a patented one, such as this adjustable scratch stock that makes beads of many sizes. Repros are available today from specialty suppliers.

John Leeke helps architects and homeowners understand and maintain older buildings. See www.HistoricHomeWorks.com for more information and video clips on woodworking.





Advances in technology are helping to make old houses more energy efficient in an unobtrusive way.

BY DAN HOLOHAN

In Europe. where fuel prices make our costs look cheap, there are tax incentives to use the new breed of solar panels. These systems are ideal for radiant heating, as well as for making hot water for bathing, and may see their day again in this country before long.



our house is old and gorgeous, as are those wonderfully ornate cast-iron radiators, but these days energy prices are anything but old-fashioned. Fortunately, there are new ways to conserve fuel without ruining the classic look of old radiators. Some of these products may involve significant changes to a heating system, but all of them work behind the scenes so that your home keeps its historic appearance. Only your fuel bills will notice the changes.

### **Take Control**

If you have an older hot-water system, it probably once ran on gravity. The hot water rose from the boiler and the cold water sank from the radiators, creating a Ferris wheel of natural convection. Originally,



The latest generation of radiantheating installations, sometimes called dry systems because they eliminate setting lines under a wet bed of concrete, use small-diameter hose snapped into a prefabricated base, such as these thin plywood panels.



Each dry system has its own design, like this header and sleeper scheme, but most are engineered to be installed over an existing subfloor, and to accept a finished floor on top.

these systems were installed before there were circulating pumps to move the water through the pipes. If your house has a gravity system, someone has probably added a circulating pump to it by now. A room thermostat generally starts and stops the circulator, and the boiler runs up to a set temperature limit, usually about 180 degrees Fahrenheit.

Because the pipes and radiators in an old house are large, the heating system contains a lot of water that has to be heated every time the thermostat goes on. That wastes fuel because even after the circulator stops, the radiator pipes are still full of hot water and continue to heat the house. You can solve this problem and save energy by getting an outdoor-air reset control for your system. This control monitors the outside-air temperature and then sets the

boiler water temperature accordingly to produce only the amount of heat needed on that day. The water never gets hotter than necessary.

Having a reset control is like putting your heating system on cruise control: The circulator runs continuously, and the temperature of the water leaving the boiler ramps up and down to match the heat loss of the house perfectly with no more wasted fuel. As for electricity, the circulator is so efficient that the fuel savings will more than offset the cost of the power used.

### **Get Smart**

Does your old house still have its original boiler, or maybe one from the 1970s? If so, now is a good time to think about retiring it. Older homes have radiators sized for a time when open-window ventilation was popular and insulation was uncommon. If vou've insulated and updated your windows, your radiators are most likely larger than they need to be, which means they can warm the house with cooler water, making them well suited for an outdoorair reset control. If you're thinking about buying a new boiler, ask a heating professional about modulating-condensing boilers, also called Mod-Cons. These smart boilers sense how much heat an old house needs and then modulate the fire accordingly. On mild days, the fire is smaller and burns less fuel. The condensing part of the name stems from the fact that smart boilers extract nearly all of the heat from the flue gases, bringing them to their dew point and causing them to condense.

As a result, these boilers don't need chimneys-a plus for an old house. Any

Mod-Con boilers make more efficient use of fuel by modulating the temperature of the boiler flame, while condensing heat from exhaust gases so that they don't need to be vented out a traditional chimney.



### What Is Pex?

PEX is an acronym that loosely stands for polyethylene crosslinked. It's a super-strong yet flexible plastic that more and more heating professionals are using for heating, plumbing, and even sprinkler systems. PEX-aluminum-PEX is a composite pipe that goes together in layers, like a sandwich, giving the pipe more rigidity for areas where that feature is important.

Because pipes made from both materials bend, there are fewer joints to make or, for that matter, to leak. The material has proved to be reliable for nearly the past 40 years, here and in Europe, and with the price of copper and steel currently soaring, plastic has become an even more attractive alternative.

PEX-pipe manufacturers have also devised innovative ways of connecting the plastic pipe to metal fittings and radiators. None of these methods involve an open flame, making for a safer installation in any house, especially an old one, where the heating professional is often working in tight quarters.



modern boiler will extract more heat than the old beast it replaces and probably be smaller, too. But if the new boiler vents through an old chimney, it's unlikely to be compatible, and your contractor will probably recommend installing a stainlesssteel chimney liner. If so, heed the advice because a mismatched boiler and chimney can produce dangerous carbon monoxide. Using the new Mod-Con boilers, which come in gas- and oil-fired models, sidesteps the chimney dilemma because they can be vented out a foundation wall.

### **Try Dry Systems**

Until recently, radiant heating hasn't been an ideal choice because installing a radiant system required major surgery on an old house. Now, however, "dry" radiant systems (so called because no wet concrete or gypcrete is involved) are more akin to an arthroscopic procedure. They're far less invasive and well worth considering if you're renovating or adding a room. Radiant systems save fuel because they warm people without heating the air, like sitting in the sunshine on a cold day.

A number of manufacturers now offer dry radiant systems that take away just a bit of room height, while providing all the comfort and energy-saving benefits of hydronic radiant heating. It's a good option if you're laying a new floor. The dry system consists of a thin plywood layer that supports narrow aluminum tracks. Your finished floor hides the small-diameter PEX plastic tubing (see sidebar at left), which snaps into the aluminum tracks. The aluminum helps transfer warmth from the water that flows through the tubes to heat the surface of the finished floor. Because the required water temperature is much lower than that for radiator heat, you save fuel, and yes, you can mix these systems with traditional radiators as long as each system has its own thermostat.

Another dry radiant method is to heat the floor from below with radiant tubing. Some experts believe the best method is to attach aluminum heat-transfer plates to the underside of the floor and then snap the PEX tubing into the channels on the plates. The idea is to get the maximum heat transfer possible between the water in the tube and the floor for the lowest-possible water temperature and the greatest fuel savings. Dry systems that staple the tubing directly under the floor without using a plate need a higher water temperature, which burns more fuel. Even though the plates add to the cost of installing a dry system, you'll only need to buy them once, and over the long haul they'll more than pay for themselves with fuel savings.

If your old house has steam heat, it's possible to heat some areas with a radiant



system, but you'll need a heat exchanger for your boiler to make the transition from steam to the warm water that is pumped through the tubing. Some re-engineering of the system is involved, so get a heating professional that understands both steam and radiant heating.

### **Go Underground**

Dig deep into the earth and you'll find the temperature is pretty constant. A ground source heat pump can reach down there with pipes and bring up whatever heat it finds to warm the water circulating in the pipes. The pump works especially well with dry radiant heat. To experience the concept of a heat pump, stand near the outdoor exhaust of a window air conditioner. Feel the hot air? That's concentrated heat collected from inside the house.

Window air conditioners wring heat from the air like water from a sponge, and move it from inside to outside using air as the transfer medium. Ground source heat pumps gather the heat from deep in the ground with a similar "sponge" (this one in the form of flowing water) and then squeeze out the heat into a heat exchanger



An outdoor air reset control measures the air temperature outside of the living space via an outdoor sensor. Circuits in the control regulate the temperature of the heating supply water by automatically adjusting boiler functions and cycling.

inside the house. From there, the warm water flows through the radiant floor. Radiant heat thrives on low-temperature water, so you save fuel as a result. Although more expensive to install than conventional boilers, these systems are paying for themselves sooner as fuel prices rise, and proving to be a greener method—in more ways than one—for heating old houses.

### **Think Solar**

Thanks to European engineering, solar heat, which is perfect for radiant systems,

is getting noticed again. Since the 1970s, solar technology has improved tremendously, making the new units so much more efficient. I recently visited a solarequipment manufacturer in Germany where a solar collector was deliberately shaded so that it received only indirect sunlight. The device was still producing an amazing amount of hot water even in the shade, a great feature if the only thing stopping you from going solar is that you don't want to spoil the look of your gorgeous old roof.



Dan Holohan has written 14 books about steam and hot-water heating. He runs the website HeatingHelp. com and lives in B e th p a g e, N e w York.



For related stories online, see "Bronze Beauties, "Care & Feeding of Air Vents," and "Hybrid Hydronics." Just click to "The Magazine" section, and go to the alphabetical list of recent features.

### Old-House Living

A Remuddling Reborn dia classic Mich farmhouse b clues inside to ing and a litt from former

remuddled features of a classic Midwestern farmhouse began with clues inside the building and a little help from former owners.



BY DEMETRA APOSPOROS

John and Laura Lazet spent two decades reversing the remuddled changes to their house.

t's not often that OHJ readers submit their own houses for the Remuddling page, but that's just what John and Laura Lazet did in 1986 shortly after purchasing an 1850s farmhouse in Mason, Michigan. The house, which had lost many original details over the years, appeared in the October 1987 issue with the tag line, "Someday there will be a happy ending to this remuddling story." Two decades later, that someday has arrived-but only after a lot of hard work and some helpful surprises.

When the Lazets began shopping for an old house, they knew they wouldn't find a pristine building, and they expected to work to bring it back to prime condition. Still, they were surprised at how long it took to find a house with enough potential. "We looked at close to 40 properties over a year and a half and saw very few with any original character left," says Laura. In contrast, when they walked into the simple, gable-front-and-wing farmhouse with Italianate ornament, all they could see were the possibilities: a grand foyer and entry hall, a prominent open-string staircase with decorative brackets, and original sash hiding under aluminum storm windows. So they bought it, and set to work.

The house came with a charming name-Walnut Ridge, derived from the wealth of walnut trees on the property in the 1800s-and a long list of projects. The front porch had been remodeled with sliding-glass doors to create second-floor access, the back porch had been removed, and the once narrow clapboard siding had been "updated" with wide aluminum panels. The exterior was so altered that a neighbor told the Lazets he had considered buying the house, burning it down, and starting over.

The interior had been changed substantially, too. Previous owners had sealed off doors, rearranged floor plans, and hidden many period details behind shag carpeting and drop ceilings. There were problems with the wiring, too-which John discovered after Linda got an electrical shock in the face from an ungrounded outlet. "What we found in the walls was scary," John says of the 1930s wiring. With the help of two electrical-engineer friends, he mapped out new circuits, installing them himself over the course of a year. "We were walking around with flashlights for months," says Laura. "I wondered if this place would ever seem homey and inviting."

### Clues to the Past

Slowly, the house began to reveal its former self. Early on, John opened up the pantry, a room that because of a rotten floor joist had been long boarded up and left untouched. While cleaning the built-in flour



John installs ornamental porch brackets that he and Laura re-created from vestiges of originals found inside the 1970s porch posts. When the Lazet house appeared in Remuddling in 1987, it had an inappropiate second-floor porch with sliding-glass doors instead of windows. Today (above), the building is once again historically accurate.

 $U_{\rm eff}^{\rm max}$ 

Site - Marine - Edit

Remuddling-

GONE

TODAY ...

TOMORROW?

HERE



The living room displays 9" moulding that John and Laura had to rebuild for much of the house using a blade (a tool to create moulding) made by a friend to duplicate the original woodwork.





Laura poses with Pat Bartlett, the youngest member of the second family to own the house, beside framed Bartlett memorabilia, including a photo of Pat at age four.

bins, John discovered a pencil sketch of the original house plan drawn on the exterior wall hidden behind the bins. "Someone had a lot of foresight to put the drawing there," says Laura. "It was like leaving a treasure map." Thanks to this remarkable find, John and Laura have been able to restore the house faithful to its original layout.

They also discovered that nearly all of the interior trim came from butternut and walnut trees on the property. In many cases, this insight allowed the Lazets to find matches for missing trim using their own timber, and they even milled new baseboards from a walnut tree in the pasture. The house's wood beams have also shed light on its history. Many beams bear distinctive vertical up-and-down saw marks that likely came from the lone water-driven sawmill operating in Mason around 1850. Pinning down the exact year of construction was more difficult, but old tax records gave Laura a solid window of time: between 1848, when the first owners acquired the property, and 1853, when records show a family living there.

Throughout the restoration, the Lazets kept their eyes peeled for materials suitable for their old house, sometimes getting creative. For the downstairs bathroom, they salvaged marble counters and enameled fixtures from a 1920s landmark hotel in Lansing that was being demolished, and oak wainscoting from a Civil War-era house that met the same fate. On a quest for heat registers, they scoured all of the antiques and salvage stores in Michigan. As a result, each room has a matching set of registers, one of three different designs appearing throughout the house.

The front porch presented prizes of a different kind. Inside a 1970s square post, John found a rotting original split-post support along with a piece of ornamental bracket that became models for re-creating the Italianate details.

During all of this work, the Lazets have found little treasures in unexpected places, among them old bottles, coins, an 1870s Bible, a shoe, and a coat hook that the couple was able to match with more found at a flea market. One enigmatic find—a piece of paper crumpled around a lump of sugar and stuffed into a wall— John believes to be a rat offering, a folk custom he read about in an old *OHJ* article. Rat offerings are sweet bribes with a note asking vermin to move out. The Lazets have kept and documented every discovery, displaying many of them in a shadow box in the sitting room. But the biggest treasure of all may be the relationship they developed with the second family to own the house.

### All in the Family

Shortly after moving in, Laura learned from neighbors that one family, the Bartletts, had owned the house for nearly 70 years beginning in 1906. She tracked them down and at the time found five of the seven Bartlett children still alive and more than willing to share family history. When the Lazets invited them over to see the house, they arrived with an invaluable array of photos and memories. The Bartletts were so pleased to be in their childhood home again that all of them—none under the age of 65—took a slide down the banister for old time's sake.

That first encounter soon grew into a warm relationship. Laura has decorated the walls with images of Bartlett children growing up, quilts and artwork made by their hands, and mementos they have passed on to her, including a doll collection dating from 1910 to 1925. "The Bartletts added so much meaning to the house," says Laura. "We like to say we bought a house but got a family with it." John recalls how many times the Bartletts made an oldhouse discovery more meaningful. "Once, I showed them a 1910s nickel unearthed beneath a floorboard, and they remembered losing it as kids. They told me, 'That was a lot of money back then.""

Pat Bartlett, the youngest child and who at 85 is now the last surviving family member, still visits the Lazets regularly. "They are tremendous," she says. "They have done so much work at the house. It's really rewarding to see." She, too, feels she has gained a family. "The Lazets have adopted me; they have enriched my life."

Despite Walnut Ridge's fairy-tale ending, life there still includes an ambitious list of projects. "We have the kitchen, pantry, and one bedroom left to restore," says Laura. Rest assured, Pat will be over to check out the progress of each room along the way.





When rebuilding the back porch, which had been removed, the Lazets based the dimensions for the space between the door and the window on a Bartlett photo (above) taken around 1910.



A salvaged marble counter, beadboard, and claw-foot tub were used to create a downstairs bathroom (above left); a display case (above right) is filled with a treasure trove of artifacts discovered on the property.

Restoring old houses may be its own reward, but it's also a smart financial move.

### The State of Old-House Real Estate

By Catherine Siskos

Where the Homeowner Tax Credits Are

The 23 states shown offer tax credits to homeowners who restore eligible historic houses. but the value of that credit is restricted in a number of ways. In most states, only 20% to 30% of a project's cost is eligible, and the credit itself is often capped at a dollar amount, usually \$25,000.



ike so many economic realities, the state of old-house real estate has a lot to do with where you live. Property values, tax credits, and even the number of old houses on the market vary substantially from one locale to another. Chances are, too, that your old house is not just a home but also your largest investment, which puts a whole different spin on any home improvements you do. Remodeling a kitchen with period-appropriate details might be a labor of love that either increases the value of the house or comes back to haunt you when you put it up for sale. Although the uncertainty of real estate isn't exclusive to old-house owners,

some questions (such as whether buyers value period details) are. The trends and statistics that follow not only shed light on the perils and payoffs of owning old houses, but can also help you navigate a safer course between the occasional competing demands of protecting your investment while preserving a small slice of history.

### What's It Worth?

As a category, old houses are worth less than new ones. One Texas study of historic houses concluded that for every additional year of age, a house's value drops 1.4%, and according to a 2001 U.S. Census Bureau survey of the nation's owner-occupied single-family homes, old houses, Studies have consistently found that houses in historic districts sell for a premium. This San Jose, California, residence is in Hensley Park, the country's most expensive historic district, where the average price tag for a home is a whopping \$800,000.

defined as those built before 1920, had a median value of \$98,794 compared to \$183,502 for new houses built after 1989.

The Census figures probably exaggerate the difference in property values because they leave out a sizable chunk of old-house real estate, including the post-World War II housing boom. Although factoring in the missing decades of housing stock would narrow the price gap, old houses, on average, would still be worth less than new. Because of their age, old houses generally cost more to maintain, have fewer amenities such as central air conditioning, and compared to today's super-sized McMansions are smaller by at least 400 square feet.

That smaller size, however, doesn't add up to lower energy bills. Even though houses built before 1960 were a third smaller than those built since 1990, they were 23% less energy efficient, according to a 2006 report by Harvard University's Joint Center for Housing Studies. And there is one more truth to consider: More buyers simply prefer new homes, which drives up the prices of those properties.

The picture looks a lot brighter for old houses when they're in historic districts, where many studies have consistently shown that the properties sell for a premium compared to houses of similar size and age that are outside the districts. National historic districts have the most cachet for buyers, possibly because of greater prestige and fewer restrictions compared to local districts, but a location in any historic district—be it local, state, or national—boosted old-house values.

How much of a boost old houses got varied. Because no national study has ever been undertaken, the research so far has been statewide or within cities, with three of the most recent studies taking place in New York City, South Carolina, and Texas. The two state studies found that houses in



Historic property values rose sharply during economic booms in the '80s and '90s but recovered more slowly after recessions in the early '90s and '00s.

historic districts sold for a 5% to 36% premium compared to old houses in nonhistoric districts. New York City looked at house values over the longest period, between 1975 and 2002, and reported that historic properties increased 10% per year in value compared with 9% for houses in non-historic districts.

Overall, the studies suggest that buyers may be attracted to historic districts because the designation acts as a safeguard against teardowns, poorly maintained houses, and overbuilding, and provides some assurance of the neighborhood's quality in the future. Although house prices in historic districts surpassed those in non-historic districts over the long term, the New York study suggests that historic-house prices may be slightly more volatile, rising sharply in a booming economy and recovering more slowly after a recession (see graph above).

Among neighborhoods designated as national historic districts, Hensley Park in San Jose, California, currently ranks as the most expensive in the country, based in part on data from the National Association of Realtors. Prices for the late-19th and early 20th-century houses average about \$800,000 in Hensley Park, according to real estate broker Patrick Crema of Crema Properties. By contrast, the nation's most affordable historic district is Crandall Park in Youngstown, Ohio, where houses (many of them originally built by steel magnates in the 1920s and '30s) cost about \$110,000.

### Measuring Rewards

Whether it's an old house or a new one, you'll get the biggest bang for your remodeling buck—an immediate 102% was the national average return, according to a 2005 study by *Remodeling* magazine—if you redo the bathroom with a few modest improvements, such as ceramic tile floors and standard fixtures. The kitchen is the second best place to invest your money; homeowners recouped an average of 98.5% of the costs there.

Redoing those rooms with periodappropriate details should also enhance the property's value, but real estate experts say the key is moderation. The more money you spend, the harder it will be to turn a profit. Your home improvement project shouldn't be the most expensive one on the block, or as one report by the Remodeling Council put it, "nice, but not too nice."

The kind of period details that you add also matter. While not all buyers will appreciate an expensive antique stove in the kitchen, most will approve of wood cabinets that suit the era of the house. Even more important than adding period details is making sure that none which are original to the house are removed or destroyed. "The closer the restoration is to the original, the better the return and increase in value will be," says Morris Levy a real estate appraiser in Youngstown. "If you take a beautiful historic home and put in an entirely new 2006 kitchen, buyers may be disappointed that you've taken away the original effect."

Most old-house owners tend to do the work themselves, so how much might that sweat equity be worth? One 1991 study by the Federal Reserve Bank of Boston speculated that it was worth about 15% of the cost of materials for the home improvement project, but lenders and buyers aren't likely to recognize your labors by offering you an extra 15% for your house. "Most lenders are skeptical about including the cost of sweat equity," says Nicholas Retsinas, director of Harvard University's Joint Center for Housing Studies, "because there's often a question of the competence of the person doing the sweating."

Your sweat equity does offer value for someone: you. "There is something to be said for working on a home so that you have a better understanding of it," says Retsinas. That experience can pay big dividends when sudden repairs are needed and only you are around to do the job. It also results in homeowners who are better at anticipating problems before they bloom into a full-scale crisis.

There may even be a financial boon for repairing and restoring your old house. Although there isn't a federal tax credit for rehabilitating owner-occupied residences, 23 states (see map on page 62) offer homeowners who restore eligible properties a credit to offset a state income tax liability. That assistance is far from uniform and in some cases too stingy to be worth collecting. Georgia, for instance, offers only a 10%



**Biggest Bang for Your** 

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Homebuyers get the most historic house for their money in Youngstown, Ohio. The house pictured above is in the city's only residential historic district, Crandall Park, where prices average about \$110,000. In Boardman. Ohio, a suburb of Youngstown, the average price of a historic house is nearly double.



Not all home improvement projects are created equal. The chart on the left shows that 90% or more of these remodeling costs are recovered immediately, but only a bathroom with modest changes vields an instant 2% profit.

tax credit for eligible properties in unblighted areas and caps its value at a mere \$5,000 per project.

The best state programs offer at least a 20% tax credit with a cap no lower than \$40,000, says Harry Schwartz, a tax consultant for the National Trust for Historic Preservation. Schwartz ranks Maryland's program in first place, not only for its 20% credit and \$50,000 cap, but also because the state refunds all the unused portion of the credit to the homeowner-the only state to do so. That means that if you qualify for a \$50,000 tax credit and have, say, a \$30,000 state tax liability, Maryland cuts you a check for the \$20,000 difference. Most states only let you apply the remaining credit to offset future tax liabilities for a set number of years, and if you can't use it all in time, you're out of luck. A few states, such as Missouri, permit homeowners to sell the credit to someone with a higher tax burden, but the credit is worth far less (typically only 55 cents for each dollar) to compensate for the federal tax owed on the credit, which the IRS considers income.

No state's tax program is a bottomless pot of gold. Iowa has suspended its program temporarily for lack of funds. Few states guarantee that funding will be there even for homeowners who qualify, and to qualify you'll probably need to spend money hiring an expert who can ensure that the restoration is done properly. Still, to get an idea of how much money might be at stake, Schwartz recommends calculating the amount you would spend on a project and multiplying it by the tax credit in your state, factoring in any caps that might apply. For the specifics of each state's program, visit www.nationaltrust. org/advocacy/case, and under "Take advantage of existing policy tools," click on "state rehabilitation tax credits."

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For related stories online, see "SSS Help for Home Restorations," "All Historic Districts Are Not Created Equal," "New Horizons in Historic Preservation," "Projects That Pay You Back," and "What's Restoration Worth?" Just click to "The Magazine" section, and go to the alphabetical list of recent features.



Prairie School horizontality and Foursquare formality are blended in this 1913 house in the Riverside Historic District of Jacksonville, Florida.

## Moving Toward

The concepts that shaped new houses for the era of automobiles and electricity were a long time coming from many quarters. By JAMES C. MASSEY AND SHIRLEY MAXWELL This Evanston, Illinois, house by architects Tallmadge and Watson, has an array of windows above the recessed entry that is typical of their work.

he Modern movement in American architecture didn't appear overnight. It was many years in the making, decades in fact, coalescing out of the Victorian world of the late-19th century. Like most great ideas, it began as a mere tickle in the backs of a few high-powered brains, a hint



Eben E. Roberts, a little-known Prairie architect, spanned the transition from late Victorian and Foursquare to Oak Park, Illinois, Modernism in this 1900 example.

of dissatisfaction with the state of building design at the time. Why did houses have to be so fussy, these folks wondered? Why did floor plans have to be so inconvenient and confining? Why not admit that lifestyles were changing, that new materials were coming into use, and that people wanted architecture that expressed life as it was becoming, not as it had always been?

Good questions all, but what do they have to do with Modern architecture, that culture-rattling phenomenon that began with the European Bauhaus in the early 20th century and morphed into post-World War II suburban America? For that matter, couldn't the beginnings of Modern be summed up with just three little words: Frank, Lloyd, and Wright? It is certainly true that the talented and charismatic Wright starred in the evolution of Modern architecture in the United States and elsewhere, especially in its formative years. However, there were other players in that scenario as well, sometimes taking larger roles than they have been credited with generally. What is clear is that the line stretching from late-19th-century houses to those of the 1950s and 1960s is neither





Although the front of Frank Lloyd Wright's Winslow House is restrained, the rear has a surprisingly modern octagonal stair tower, rising next to a semicircular, conservatory. The windows in the tower are actually miniature bay windows set back in the Roman-brick masonry.

Architect William Drummond's 1910 house in **River Forest**, Illinois, follows the more pure Prairie style of Wright. This prominent Prairie architect used strong horizontal lines and a crossaxis plan. The formerly open front porch has been closed in with compatible style.



a single, tautly drawn string attached to Wright's coattails nor a disconnected series of random events and personalities.

### **Envisioning New Shelter**

As far back as the 1880s, architects had seen the value of floor plans that allowed easy movement through the house. Modern glassmaking technology had made possible big windows, with their potential for bringing light, air, and the great outdoors into the house. The introduction of domestic electricity, central heating, and plumbed sanitation systems encouraged families to use every part of their houses fully and in new ways. New suburbs with relatively easy access by train to urban areas encouraged a new feeling of ease at home. Added to this, a new ideal stressing man's unity with, rather than his conquest of, nature arose in the post-Civil War years, making a virtue of "organic" houses that seemed to spring like growing things from their sites.Well, yes, you may be thinking, that would be the Arts & Crafts movement. Or, no, wait, wouldn't it be more like Frank Lloyd Wright and the Prairie School? Still, aren't those two entirely different strains?

Let's back up for a moment and consider not what went into the making of early Modern houses, but where they were coming from. It goes without saying that the movement toward Modern architecture was represented in publications aimed specifically at architects. However, we might best begin instead with two of the early Modern era's most influential magazines read by the general public: *The Craftsman* (the print organ of a meteoric furnishings empire led by Gustav Stickley) and *Ladies' Home Journal* (the first magazine to reach one million in circulation).

Though Gustav Stickley was no great shakes as an architect, as his published designs reveal, he was a powerful and unrelenting promoter of the idea of simplicity that lay at the heart of Modernism. *The Craftsman*, an insider magazine modeled on avant-garde European publications such as *The Studio*, had enormous public impact, certainly reaching well beyond its subscriber list, which was not large compared with publishing giants such as Ladies' Home Journal. The Craftsman's philosophy of enlightened homeownership simple, comfortable, functional, suburban family houses set in naturalistic landscapes and decorated in the spare but tasteful Arts & Crafts mode—resonated with the rising American middle class.

The Craftsman's polar opposite perhaps was Ladies' Home Journal, which reached a far wider audience and appealed directly to the presumably female homemaker, as well as the presumably male homebuyer or builder. Under Edward Bok's editorship, Ladies' Home Journal took an active role in raising the level of common house designs by featuring accessible, architect-designed plans that incorporated modern ideas, such as sleeping porches and multiple bathrooms. These plans ranged from generous but forwardthinking houses for upscale suburbanites when the series debuted in 1895, to economical, simple house designs by its end in 1919. Among the latter were several by Frank Lloyd Wright, including "A House in a Prairie Town" in 1901 and "A Fireproof House for \$5,000" in 1907, which was intended to be constructed of concrète.

Most important, though, were the architects who practiced in what they consciously regarded as "modern" architecture as opposed to Beaux Arts, Classical, Colonial, and other revival styles. The Prairie School was the spiritual home of such architects in the early years of the 20th century. Centered in the Midwest, from Minnesota to Iowa but especially in the Chicago area, it was an outgrowth of what was called the Chicago School, led by the architectural giant Louis Sullivan, the father of the Chicago skyscraper. 5

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As Wright's mentor and boss, Sullivan is well recognized for his influence on his young protégé and others. Sullivan was a visionary, and he attracted a bevy of youthful architects eager to learn from the man they called "the master." However, the names of Wright's colleagues in the Chicago School are often less familiar. When they eventually left his office, several of them turned to designing residences they called "prairie houses." Sometimes the Prairie architects practiced alone, sometimes in rapidly shifting partnerships with colleagues, often resulting in a confusing array of architectural firm names.

Several of the initial Prairie School gang had offices in the attic of Chicago's Steinway Hall (an office and theater building), and some of them worked for Wright. While Wright was initially the group's acknowledged leader, a number of his colleagues continued their residential practices after Wright had decamped for Eu-



This handsome Prairie School house with Old English overtones is in Oak Park and was designed in 1905 by W. Fifield, a minor Prairie architect.



NATIONAL ARCHIVES ASSOCIATES

rope to escape a marital scandal. (In fact, Wright left the Prairie School entirely at that time. When he returned to the United States in 1909, it was with a different design focus altogether.)

Wright's associates included Walter Burley Griffin, a Chicago-area native who designed many houses there, in addition to completing a Wright project in Mason City, Iowa, before going to Australia to design the new capital at Canberra. Of equal note is Griffin's wife, Marion Mahoney, now recognized as the most skillful delineator in Wright's office. Mahoney is now also credited with some excellent designs formerly attributed to other architects.

William Gray Purcell and George Grant Elmslie, who practiced as Purcell and Elmslie (and sometimes as Purcell, Feick, and Elmslie), did important work in Minneapolis. Thomas E. Tallmadge and Vernon Watson, the partners in Tallmadge and Watson, worked in the Prairie style around Chicago. William E. Drummond was one of the most important of the Prairie School architects. He sometimes worked in partnership with Louis Guenzell on Chicago-area houses and buildings. Hermann V. von Holst, who worked for Wright at Steinway Hall, took over much of Wright's unfinished work after his European departure. Holst's book on Prairie School houses (Modern American Homes, 1912) was among the earliest devoted to the genre. The firm of Richard E. Schmidt, Garden and Martin is well regarded for Hugh Garden's design of the 1902 Madlener House in Chicago.

The list of relatively minor Prairie architects includes Robert C. Spencer of the firm of Spencer and Powers, Eben E. Roberts, and Lawrence Buck, all of Chicago; and Russell Barr Williamson of Milwaukee. Barry Byrne worked throughout the Midwest designing houses and other buildings. George Maher of Chicago, noted for his distinctively blocky style, was neither Wright's associate nor his pupil, but a thoroughly independent practitioner.

The Prairie seed sprang up in other regions as well. Trost and Trost of El Paso, New Mexico, produced Prairie architecture in Arizona, Texas, and Oklahoma. Henry Klutho, a regionally important early Modernist, took Prairie principles as far south as Jacksonville, Florida. Antonin Nechodoma worked briefly with Wright before moving on to design several Wrightinspired Prairie houses in Puerto Rico, including the Korber House and the Georgetti House in San Juan. Even ready-cut house catalogs of the era included Prairie School designs. In fact, Wright produced some Prairie-style designs for the American Systems Company.

Not all modern architects were Prairie School designers. Louis Curtiss of Kansas City, Missouri, was a pioneer Modernist, important but little known. Modernism of all persuasions tended to move mostly westward from its base in the Midwest, changing to suit the geography. California had a number of different approaches to the topic. Probably the best









Far left: Irving Gill's Modernism developed from Southwest adobes, as clearly shown in his 1916 Dodge House (now demolished) in Los Angeles. S

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Left: Rudolph Schindler's own 1921 house in Los Angeles was built plainly, with concrete and wood, as well as a second-storey pergolaed porch.

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Below: The best-known northern California architect of his time was Bernard Maybeck, who blended early Modern with Greene and Greene influences in this prominent example built in 1917 in Montecito.







This Prairie-influenced house (above) in River Forest has large eaves that overhang on brackets, multiple window groupings, and touches of ornament.

The 1913 Edna Purcell House (right) in Minneapolis was designed by Purcell and Elmslie, perhaps the most talented of the Wright-influenced architects.




Wright's first important commission after leaving Louis Sullivan's office was the 1893 Winslow House in **River Forest**. Even at this early date, Wright's genius and his developing Modernism show in a house that at first glance might pass for a Late Victorian.

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known of the non-Prairie Modernists were Charles and Henry Greene. The Greene brothers carved out a niche with their Japanese-influenced Arts & Crafts houses, of which the 1908 David Gamble House in Pasadena is undoubtedly the most famous. Bernard Maybeck was a pioneer Modernist in the San Francisco Bay area. Among the purest of the simplified modern designs were Irving Gill's pueblo-like Dodge House in Los Angeles and Miltimore House in Pasadena. Rudolph Schindler was an unflinching Modernist whose own home in Los Angeles, now a museum, is a masterpiece of minimalism in basic materials.

## The Characteristics of Early Modern Design

The early Modern house aimed to put new ideas and materials in service of a new lifestyle for a new century. Though realized in different ways by different architects, most examples share these features:

• Flatter, simpler roofs, gable or hipped, without the busy up-and-downness of Victorian designs. The house was broadened and lengthened by large, sheltering eaves as well as overhangs.

 An emphasis on horizontal lines, including ribbon and corner windows and string courses

• Bulky, asymmetrical massing, unified by horizontality; large chimneys

• A ground-hugging quality. Prairie houses generally sit low.

• Flat wall surfaces with relatively little surface ornamentation, except for changes in texture and color

• Exterior decoration is not entirely lacking but is restrained and generally rectilinear. Stained and leaded glass in ornamental patterns  Materials are most likely brick, wood, or wood and stucco, sometimes (in later years especially) cement block with stucco or ornamental blocks, rarely stone.

• Open, free-flowing floor plans. Interiors flow into porte-cocheres, porches, and terraces that extend into gardens.

Axial plans and cross axes.

The Prairie School movement died out suddenly in the face of the Eclectic Revival craze following World War I, its heroes either offstage or preoccupied with other design interests. It appeared then that Modernism had succumbed with it. But after World War II, with a new generation of architects trained in American schools by European teachers from the Bauhaus, Americans saw Modern houses, softened and updated, in a new light. Could the ranch house be a distant relation of the Prairie House after all?



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(b3)Sales thru dealers, counter sales,			
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circulation:	103,824	104,634	
(d) Free distribution by mail:	886	1,414	
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NASHVILLE, TN — 1207 Shelby, circa 1910. Gutted to the studs with all new mechanicals and 2 new gas HVAC systems. Historic stove, stainless appliances, granite countertops. 2600 sq. ft. with 3 bedrooms. 1-car garage, deck, private, fenced-in back. This is a fabulous redo of a classic cottage style home. \$419,900. Karen Hoff, Broker, CRS. Historic and Distinctive Homes, 615-228-3723 ext. 22 or 615-228-4663. www.HistoricTN.com

## Historic Properties



**ST. JOSEPH, MO** — 1887 EJ Eckel designed McKinney House, located in one of America's most famous historic cities. This elaborate Queen Anne features 2-½ stories, 5 bedrooms, 2 baths, 4 fireplaces, new mechanicals & kitchen, finished attic, beautifully landscaped large corner lot, and garage. Robidoux Hill Historic District. 30 minutes from KCI. For more information visit Heritage Action at www.heritageaction.com. Contact Glenn Pataky, 816-390-6566, (glennpmcm@magiccablepc.com). Ad sponsored by St. Joseph Chamber of Commerce (www.saintjoseph.com) and St. Joseph Convention & Visitor's Bureau (www.stjomo.com).



NASHVILLE, TN — 1800 Russell Street, circa 1923. Gorgeous corner lot renovation in Lockeland Springs. 3100 sq.ft. Hardwood floors down, large laundry room with sink, Gourmet kitchen with maple cabinets, granite counters, stainless appliances, double oven, and gas cooktop. 4 bedrooms with custom closets, clawfoot tub and more! \$499,900. Karen Hoff, Broker, CRS. Historic and Distinctive Homes, 615-228-3723 ext. 22 or 615-228-4663. www.HistoricTN.com



MT. VERNON, TX — Magnificent 4 bedroom, 3.5 bath home built in 1904. Almost 4000 sq. ft. of totally updated living area. Spacious kitchen w/new stainless appliances, formal & informal dining, living room, study, parlor, game room, large master suite, 2 fireplaces, pine floors, crown molding, huge treed lot, new 16x32 in-ground pool, fabulous landscaping and more. \$295,000. Glenn Irvin & Co., 903-885-5555. Numerous photos at www.glennirvin.com



NASHVILLE, TN — 1624 Holly Street, circa 1899. Wonderful remodeled 2-Story 2750 sq. ft. Victorian with 4 bedrooms. All wood floors throughout, formal dining room or den; coffee room could be converted to 3rd bath. Beautiful woodwork, floors, trim and doors. Granite countertops in kitchen. Privacy. \$459,900. Karen Hoff, Broker, CRS. Historic and Distinctive Homes, 615-228-3723 ext. 22 or 615-228-4663. www.HistoricTN.com



**BRUNSWICK COUNTY, VA** — 4 hours from DC. 330-acre farm. Three houses including totally renovated antebellum home, numerous barns, 4 horse stalls, 4 paddocks, 3 stocked ponds, 3 creeks, many springs. 240 acres in pastures and hayfields. Good home sites — one overlooking a pond. Near South Hill, VA — a venue for premier bird-dog field trials. \$1,500,000. # 4530, United Country Davenport Realty, 888-333-3972, www.davenport-realty.com



**CHARLOTTE COUNTY, VA** — Circa 1905 two-story wood frame home on 1.3 acres in a very small town that permits some farm animals like horses, chickens, and ducks. 3200 sq.ft. w/3 bedrooms, 2 baths, 2 fireplaces w/gas logs, 2 closed-off fireplaces. Deck overlooking yard w/assorted fruit trees. \$125,000. United Country Davenport Realty, Keysville, Virginia. 888-333-3972. Floor plans & photos for home #4410 at

Floor plans & photos for home #4410 at www.davenport-realty.com



**DINWIDDIE COUNTY, VA** — Discover one of the region's finest and earliest plantation houses! Circa 1710 with circa 1765 addition, "Mansfield" graces the state & national registries. Notorious for having the most pretentious ballroom in the area, "Mansfield" has been home to Atkinsons, Garlands & McIlwaines. Pre-revolutionary splendor! Near the Appomattox River south of Petersburg. \$595,000. Carla Takacs, Swearingen Realty, 804-712-4060. takacsite@swearingenrealty.com or vintagevirginiahomes.com



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## Historic Properties-Cla



**FREDERICKSBURG, VA** — "Braehead" circa 1859. Lee had breakfast here the morning of the battle. Grand Greek Revival with 6,000+ square feet on private 18.88 acres with National Park on three sides. Minutes from DC commuter train. 8 fireplaces. 7 baths. 8 bedrooms. Marbleized woodwork in the public rooms. 11' ceilings. Dave Johnston "The Old House Man®" 804-633-7123 AntiqueProperties.com



SAXE, VA — Circa 1890 Jeremy's Daughters Homestead. 2800 sq. ft. country house with Great Room addition & unfinished bath. Original windows, wood siding and floors. Situated on 1.33 acres with English Boxwood formal garden. Several outbuildings including garden shed, garage, workshop and barn. Central HVAC. Great retirement or starter home. A real value at \$149,000. Max Sempowski, Realtor, Antique Properties. 434-391-4855. www.oldhouseproperties.com

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**OLYMPIA, WA** — Historic Landmark circa 1904, the Olympia Mansion is as history as it is in breathtaking views. Occupying <sup>3</sup>/<sub>4</sub> of an acre this recently rehome overlooks the capitol building, the harbor and the Olympic Mountains. The sq. ft. estate offers 6 bedrooms, 5 baths, new 3 car garage with caretakers loft, b landscaping, year round artesian spring, waterfall and fountain as well as counique features. Offered at \$1,110,000. www.olympiamansion.com. 360-754-03



**STRASBURG, VA** — Shenandoah Valley, 1-½ hrs. to DC. 1867 brick Italianate in National Register historic district. ½-acre double lot with stunning mountain views offers in-town convenience plus near-rural privacy. 3,000+ sq. ft., four bedrooms, two full baths (one on first floor), two parlors, four fireplaces, majestic walnut staircase, walk-in attic and walk-out basement, new metal roof. \$460,000. masmax@shentel.net 540-465-4566.



TAPPAHANNOCK, VA — Sav demolition by HistoricProper Late 1700s Dutch Colonial with moldings, woodwork, wainscot Chippendale staircase. Cross and Bi with H and L hinges. Moved to a divisible lot overlooking a pond. placed on an English basemen it now before renovations begin Hinson or Marjorie Ellena, 888-5 marjorie@historicproperties.com

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## TION

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In espionage, spies sometimes wear disguises to conceal their identities. Old houses, it seems, can resort to similar covert operations. Take, for example, these two double-gabled Victorian houses sitting side by side in the Midwest. One still wears its original clapboard siding with a belt course of decorative shingles, front porch featuring ornamental brackets and spindles, and distinctive sunburst designs in the gables (above). The other reveals little more than a cloak of later siding, leaving almost no trail of architectural features.

Mysteries abound. Is there still a door in what appears to be the front porch? What happened to the upstairs windows—was there a leak involved? While our contributor questions the motive for "making a house resemble a large rabbit," we suspect that, as with international intrigue, the truth may never come out.

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(ISSN 0094-0178) is published bimonthly for \$27 per year by Restore Media, LLC, 1000 Potomac St., NW, Suite 102, 7. Telephone (202) 339-0744. Subscriptions in Canada \$35 per year, payable in U.S. funds. Periodicals postage paid at Washington, entries. Postmaster: Send address changes to OLD-HOUSE JOURNAL, P.O. Box 420235, Palm Coast, FL 32142-0235.