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Old House

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Distinctive hammer beam arches span the studio ceiling of the 1928 Shaffer House, a Tudor Revival classic designed by Lewis Bowman. Photo by Paul Rocheleau.

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New Traditional Products!

The 2005 edition of *OHJ's* popular *Traditional Products* magazine is now online, with more than 400 period and reproduction items for retro rooms, vintage houses, and new homes built in traditional styles.

New Lights, Camera, Blastoff. . .

The suddenly historic 1950s were a time when lighting fixtures really came into their modern, streamlined prime. Look to the home page for a story about that incandescent age.

New Old-House Journal's New Old House

Old-House Journal's New Old House, the popular new magazine in the Old-House Journal stable, now has its own website.

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Restoration Exchange

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Editor's Page

Castles in the Sand

Hurricane Katrina has left its mark on the Gulf Coast of the United States, with a trail of broken cities and tattered lives the dimensions of which we have yet to fully assess. Katrina's aftermath has also ripped across our country, changing much of how we think about our buildings and ourselves.

As a child I heard tales from relatives about how Hurricane Diane swept through New York and Pennsylvania in 1955. Although I was too young to know, the storm inundated the upper Delaware Valley where my great-grandparents lived, raising the normally waist-deep river up above 60-foot-high bridge decks and washing away buildings along its steep banks. Today, names along the river like Parker's Glen, which once were villages of small houses, are known now only as canoeist campsites.

Just back from weeks of volunteer disaster work in Tupelo, Mississippi, my wife Michele shares tales of folks arriving at her Red Cross shelter, driving up from the coast with next to nothing, escaping from less than nothing. They came to the shelter to get rest, get advice, get medications for lost prescriptions, get in touch again with loved ones, get connected again with life. She described Tupelo as a beautiful city rich with warm, generous people and historic houses. Among the latter is a revered little house-the birthplace of Elvis. It's a building type known through the South as a Shotgun, the kind that fills many of the neighborhoods of New Orleans.

It seems like only yesterday when here at Old-House Journal we were writing about the after-effects of Hurricane Hugo, which toppled trees and tore off roofs all



over historic Charleston, South Carolina, in 1989. Once the storm was gone and the sea had receded, then the real work began. Water is the ultimate enemy of all buildings, and its effects linger long after the liquid itself departs. There's the task of removing soaking-wet possessions from living rooms and basements so that, even if the items themselves cannot be salvaged, they don't add to the

moisture in the building. There's dealing with the results of wood in framing, porches, and floors that, after being saturated for days, swells and buckles out of shape, or in the case of beams, becomes soft and sags.

On radio talk shows and in print I hear people ask the question, "Should New Orleans be rebuilt?" For lovers of old houses, the question is moot. The real issue, perhaps, is remembering that the preservation movement is not focused solely on individual structures that are exceedingly old, architecturally grand, or culturally unique. More than ever, it's about context and indigenous houses in their vernacular element. It's about everyday Bungalows, Capes, Foursquares-and yes, Shotguns-that may not stand out on their own, but when taken together in communities make up an irreplaceable part of our architectural heritage.

Goldarkoel



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How shocked my husband and I were to find *OHJ* referring interested buyers to Navajo rugs made in Mexico and India. Why settle for an imitation when you can have the real thing? New Mexico, Utah, Arizona, and Colorado offer numerous resources for obtaining authentic Navajo rugs: galleries, trading posts, auctions, and pawn shops. If you are patient, you can also commission to have one made for you. This can be appealing for those interested in a specific pattern or size.

An authentic Navajo rug is not simply a textile; it is a timeless piece of art and an excellent investment. By supporting Navajo weavers, not only will you be in possession of a real treasure, you will help ensure that this unique tradition continues.

Paul and Anna Rodriguez Delta, Colorado

Indeed, there are many sources available for authentic Navajo rugs. We featured one of them, David Cook Fine American Art, in the article's resource box on page 46. –Eds.

Sears's Spanish Model

We were thrilled to see that your October issue included the article, "American Houses, Spanish Styles."

In case you were not aware, the "refined example of the Mission Revival" pictured on the bottom left of page 78 is a Sears, Roebuck & Co. catalog home, the Model # 2090 "Alhambra." Its distinctive parapets on the dormers, porch, and stairway roof (right side) are a dead giveaway. For verification, see www.SearsModernHomes.com in the 1915-1920 home styles listing. Sears also offered the "Monterey" and "San Jose"

models in the Mission/Spanish style. This same model is my ancestral home, where we raised our children and now operate a bed and breakfast on our century ranch in western South Dakota (www.bbonline.com/sd/triangleranch/).

Our "Alhambra" was built in 1923 from 1917 blueprints. The materials, including leaded glass, oak cabinets, crystal chandeliers, precut lumber, plumbing, and wiring arrived on two railroad cars out of Oregon, the location of Sears's western sawmill. My great-grandparents also ordered the matching garage/carriage house which stands just south of the house location on a bend in the Bad River. It is a very unusual architectural style for western South Dakota today, much less in 1923, when homesteaders were just happy to find another tar paper shack to add on to theirs.

Through the years, six generations of our family have enjoyed this home. Basically a Foursquare design, it has a formal but open floor plan.

The property was placed on the National Register of Historic Places for its unique style and original state. Through historic preservation loans we have performed a benign restoration over the last 11 years being careful (and creative) so as





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Letters

not to alter the original floor plan, interior, or exterior. Total renovation has taken place on the garage/carriage house, converting the interior into a cozy cabin for guest families while leaving the exterior with the original look. OHJ articles and ads have been invaluable to us in this process, like "Old-House Advisor," June 1998. Lyndy and Kenny Ireland Triangle Ranch Bed & Breakfast Via email

Your article, "American Houses, Spanish Styles," had a photo of a Mission Revival in Lexington, Virginia. Is this not the Sears home model called the "Alhambra"? It looks remarkably like one.

I find your magazine full of wonderful information. Thank

you. Anne Vanov Cincinnati, Ohio



Cementing Ceilings

I have searched your site for a product vaguely mentioned in an article from the October 2005 issue, and I cannot find the product. On page 54, the photo description mentions repairing a ceiling "using a product that bonds a rubber compound to a fiberglass sheet." What is the product and how do I find it? Any guidance you can give me would be most appreciated. Patricia Johnson Via email

There are many such materials on the market. The folks in the article you mentioned used Nu-Wal by Specification Chemicals (800-247-3932), which you may find advertised in OHJ from time to time. Other sources, such as Glidwall (available by special order; call Glidden at 800-454-3336 for information) and Textureglas (distributed by Duron; call 800-72-DURON and ask for "Wallcoverings") are listed in the OHJ article "Under Cover" devoted to the subject from the March/April 2004 issue, or in the OHJ Restoration Directory (available either in print or online).-Eds.

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Annunciator

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SEPTEMBER 25, 2005-JANUARY 22, 2006 INDIANAPOLIS, IN **International Arts & Crafts Exhibition** One of the largest Arts & Crafts exhibitions ever is currently on display at the Indianapolis Museum of Art. The exhibit, which comes courtesy of London's Victoria and Albert Museum, showcases more than 300 objects, including textiles, stained glass, and reconstructed furnished interiors from a movement that spanned the globe. Museum admission is \$14 for adults, \$12 for seniors. For event information, call (317) 923-1331 or visit www.indy.org. Making only two stops in the United States, the exhibit also will appear at the de Young Museum in San Francisco, March 22-June 18.

NOVEMBER 5-6 OMAHA, NE Restore Omaha Conference, Exhibition, and Tour

Meet with craftspeople and watch them demonstrate restoration techniques, or network with owners of historic properties. The conference features more than 50 representatives of products, craftsmen, and associations, and the keynote speaker is OHJ's very own longtime contributor, John Leeke. Tickets are \$15 in advance or \$20 at the door. A tour of Omaha's restored historic buildings and ongoing preservation efforts costs \$5 more. For more information, call (402) 614-0056 or email eventive.marketing@cox.net.

Chicago Hosts the Traditional Building Exhibition and Conference, April 5-8

In the aftermath of Hurricane Katrina, we are all acutely aware of our duty to preserve and protect historic buildings. One of the best places to learn how to do so is the Traditional Building Exhibition and Conference (April 5-8, 2006) on the Navy Pier in Chicago. With more than 75 educational

work-

shops and seminars, the Traditional Building Show offers many opportunities for hands-on learning, such as "Designing and Decorating the Arts & Crafts Home" or a series of programs on the steps that homeowners can take to protect old houses before disaster strikes. The AIA Historic Resources Committee's 2006 Spring Meeting and the Association for Preservation

for Preservation Technology Codes Conference will co-locate with the Traditional Building Show, which will also offer tours of Chicago's unique landmarks and architectural delights.

The show is a rare opportunity for old-house owners, builders, architects, contractors, developers, preservationists, and planners to gather together in a forum that will allow everyone to share ideas and experiences. Two hundred exhibitors of historically accurate products for restoration, preservation, and traditionally inspired new construction make it the must-attend event for those who love old homes and buildings.

To learn more, visit www.traditionalbuilding show.com, call (800) 982-6247, or email info@restore media.com.

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Save Old Houses Caught in Katrina's Wake

With the cleanup of New Orleans and the Gulf Coast gathering steam, the National Trust for Historic Preservation wants to ensure that one of the greatest human tragedies in the nation's history doesn't also become its greatest cultural catastrophe. To that end, the NTHP hopes to raise \$1 million for its National Trust Hurricane Katrina Recovery Fund. Some of the money will be used to lobby Congress to provide tax credits for the rehabilitation of owner-occupied historic houses and to earmark \$60 million for grants to help preserve historic properties in the region. At the state and local level, the NTHP will work with officials to revise building codes for better hurricane protection and to encourage design guidelines for new construction that respects the character of historic areas. The fund will also help pay for experts to be sent to the region to determine which buildings can be saved. For more information about how you can contribute, visit www.nationaltrust.org .

Annunciator

Calendar

NOVEMBER 10-11 MIAMI BEACH, FL New Urban Guild Autumn Workshop Each Guild workshop offers a chance to learn more about the proper detailing of a particular building part. This season's workshop, taught by some of today's best practicing traditional architects, focuses exclusively on doors and windows in a range of styles. To register or get more information, call (786) 276-6000 or visit www.newurbanguild.com.

NOVEMBER 25-26 DECATUR, IL Heritage & Holy

Historic Home Tour This annual tour, now in its 15th year, features six to eight homes decorated for the holidays in the historic district. Homes may be toured in any order and free shuttle service is provided between tour homes. Tickets are \$10 in advance, \$15 on tour days, or \$9 for groups of 10 or more. Call (217) 428-2136 for more information or to order advance tickets.

Books in Brief

Despite its long history and rich collection of outstanding country houses, architectural historians have virtually ignored the chain of suburban towns known as the Philadelphia Main Line. Now, along comes William Morrison's The Main Line: Country Houses of Philadelphia's Storied Suburb, 1870-1930 (Acanthus Press, 2002, \$69), providing a detailed history of the area's houses and the architects who designed them. The book's period photographs, sometimes showing more than one historic iteration of the same house, are particularly effective, offering several glimpses of houses and interiors as originally built. Numerous plans supplement the period photographs to explain the often complex interiors.

Extending west along the former Pennsylvania Railroad line from Overbrook to Paioli, Philadelphia's Main Line gets its name from Pennsylvania's Main Line of Public Works, which predated the railroad. In the 1680s of William Penn's proprietorship, the area was mostly the rural Welsh Tract, and old Welsh names and structures still survive there. After the Civil War, wealthy city people favored the location for their country estates because of the healthful, cooler

summers. By the early 20th century the area served as the year-round residences of these same people, who commuted to the city on the Paoli Local.

Because different generations of the same families populate Morrison's book, readers get the sense that the Main Line is not a place of rapid change. Indeed, Main Line houses suit the traditional Philadelphia character. They are comfortable but not huge, conservative but welldesigned, and rarely pretentious. With few exceptions they've proved to be proper and usable for many generations. A classic example may be Pencoyd in Bala, the Roberts family house of the 1680s. With later additions that included Victorianization and subsequent historically inspired restoration, it suited the family until 1963. Many houses remain private residences today, but few retain their original estate-sized grounds. Although some of the houses were demolished, many



others were adapted for good institutional uses.

By focusing on the architectural significance

of the area's country houses over a 60-year period, Morrison includes the work of a large number of worthy architects, some important and some sadly overlooked. The houses are distributed throughout numerous towns and two counties, but Morrison thoughtfully organizes his book both chronologically and geographically. With an introduction by architect Mark Hewitt, the book includes essays on each era and house.

Publisher Barry Cenower is to be congratulated for making this book the first in a series about the history and architecture of suburban and country houses. Subsequent volumes about houses on Long Island's North Shore and Boston's North Shore are already in print, and more books are in the works. A companion series covering city houses is also underway. To order, visit www.acanthus press.com.

-James C. Massey

Calling All Contestants

The Traditional Building Design Challenge—a new competition from the American Institute of Building Design and Restore Media, LLC—invites architects, designers, and students to compete for the best design for a traditionally inspired single-family home. Participants should submit a portfolio of their work; up to five finalists will be selected to compete on the trade show floor at the Traditional Building Exhibition and Conference in Chicago in April. The competition will include drawing by hand, a live charette with a panel of judges, and prizes awarded before the close of the show on April 8. The grand prize winner will get a contract to



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Ask OH7

Totally Tudor

We're excited about buying my Aunt's 1928 house. She calls it Tudor style, but it's all wood construction with no stonework or stucco. What's your opinion? *Betty Jo Bialofski Madison, Wisconsin*

e'd call it Tudor, too. Though the largest and most elaborate examples of Tudor Revival houses often exhibit stone masonry walls on the first storey, and half-timbering with stucco infill on the second, even these buildings were not strictly duplicating their English models, and this was not the only way these houses were reinterpreted in North America. Wood wall cladding of clapboards, shingles, or combinations of the two, was also common for the average man's Tudor, especially when the house was built from a plan or kit (Sears and Aladdin both sold several models), or if it dates from the 1930s and '40s, when the heyday for high style versions was pretty much over.

What clearly keys your house as Tudor is not the construction but the



Colonial clapboards aside, the steeply pitched roof with flared eaves, front-facing cross gable, and a prominent side chimney mark this house as Tudor Revival.

knowing treatment of some basic design elements. First among them is the steeply pitched roof with a forward-facing cross gable dominating the façade at one side —an asymmetrical plan that is distinctively Tudor. Also characteristic is the placement of the prominent stone chimney on the end of the building and the entrance nicely featured under the flared eaves of the front gable. While the windows appear to be double-hung sashes, rather than the casements often associated with Tudor houses, they are appropriately narrow in the main front-facing gable and customarily grouped in threes elsewhere. Incidentally, the shed dormer, while not historically Tudor like the windows, is also pretty well integrated here.



The natural moss-inhibiting action of metals washing down from copper or zinc flashings is easy to spot on many older roofs.

Booting Roof Moss

I am replacing wood-shingle roofs on several historic buildings after struggling for years with moss. Can you verify whether placing zinc strips under cedar shingles kills moss and lichen growth? Patrick J. McKay, Supervisor Rochester Hills Museum at Van Hoosen Farm Rochester Hills, Michigan

A ccording to the Bryophytes Science Department at Oregon State University, "Zinc strips are usually considered the long-term solution to controlling mosses." The active agent is metallic zinc, which is released with each rain to kill or retard the growth of moss for as much as 15' below the roof. Zinc strips are made for this purpose and sold by roofing specialty companies such as Chicago Metallic (www.chicago-metallic.com). Sometimes called "roof protector strips," they can be installed on existing roofs and are generally considered effective for about a year. Galvanized flashing, though not a lifetime roofing material, often has the same mossinhibiting effect when located across a broad area of roof.

Moss is a simple plant form that, while needing the right conditions to become established, can often be a pernicious problem on wood-shingle roofs. The first line of defense is to keep moisture levels on the roof as low as possible by making sure it is clean of debris, and trimming overhead branches to admit drying sunlight. Methods for dealing with existing moss infestations include removing the plants mechanically with scrapers, or careful power-washing after first killing it with chemical solutions. The trick here is to choose wisely and use mixtures carefully so that they will not negatively

affect nearby building materials or landscape plantings. Products based on potassium salts of fatty acids (sold for algae control at garden stores) are often recommended because the solution is biodegradable, non-staining on most building materials, and not a threat to nearby plants if used cautiously. More traditional herbicide mixes made with zinc sulfate, zinc chloride, copper sulfate, and even bleach (sodium hypochlorite) are still effective but must be used with care due to their potential for environmental sideeffects. For more information, consult the many good university extension websites on the subject, such as Oregon State University's (www. bryophytes. science.oregonstate.edu/page24.htm) or the University of Alaska (www. uaf.edu/coop-ext/publications).

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Plots & Plans

Radiator Cover Redux

Drawings by Robert Leanna

ard for us to envision today, but back in the 1920s and '30s radiator covers were a big, new idea. The thinking on integrating radiators had shifted from the 1910s notion of ornamenting them with cast filigree and colorful paint to concealing them under metal or wood cabinets. The radiator cover shown here is an alternate version of one in the November/December 2003 Plots & Plans and a good option for many houses built in the first half of the 20th century. Like its 2003 cousin, it's built to integrate with the window trim and have openings at bottom and top that are dimensioned in accordance with the day's practices for best heat transfer.

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Conservator

Hot Tips on Water Heaters

Hard to believe that a water heater barely bigger than a breadbox could compete with a 30-gallon cylinder, but tankless types do the job -and more.

oes the prospect of saving 50 to 70 percent in energy costs turn your head? It BY NOELLE LORD certainly turned mine when I started to research replacements for the tradi-

tional, tank-style hot water heater in our 228-year-old home. Saddled with the typical old-house concerns of limited storage space and a basement prone to minor flooding in springtime (as well as worries about big increases in fuel prices), I wondered if there wasn't a better way. Well, I may have found one.

Tankless hot water heaters, also referred to as on-demand hot water heaters, only heat water when you open a tap (hence the on-demand moniker). When the hot water source is closed, the heater shuts off, bringing an end to the energy burn with no costly storage of hot water. Because the initial flow of the water demand triggers the flame on most gas models, there is also no standing pilot light to add to standby energy losses. Whole-house tankless units can provide never-ending hot water to multiple appliances running simultaneously at a rate of up to 8.5 gallons per minute.



Tankless hot water heaters

can be as much

as 50 percent

efficient than a traditional gas

more energy

water heater

enough to fit inside a vanity.

and small

Less Fuel, Less Space

Although these products sound like a new spin on hot water technology, tankless systems have been used for decades in Europe and Asia, where energy resources have always been



Inside a tankless unit, when incoming water triggers a sensor, it is heated to a preset temperature as it passes through the compact heat exchanger (top of photo).

scarce and expensive. Because the water that flows into the unit is heated at precisely the set temperature (plus or minus two degrees) in precisely the quantity desired, there is an unlimited supply of hot water with no recovery time and no inconsistency in water temperature. A dial or digital readout allows nearly exact water temperature control-not only for personal comfort and safety in households with children and

seniors, but to further increase efficient energy use. In contrast, tankstyle heaters are set to heat a mass **How Does a Tankless Water Heater Work?** of water to, say, 120 degrees, 24 hours a day. On top of this, much of the time we turn on the hot water only to cool it by adding The Process:

cold water, further wasting energy resources. Some tankless water heaters even offer remote control features so that you can adjust the water temperature to 140 degrees

to do a load of bleached whites in your laundry or to 100 degrees for a relaxing soak in the tub.

Space-always at a premium in an old houseis another great savings with tankless hot water heaters. The average hot water tank takes up 12 to 18 square feet of space, the volume of a small closet. Tankless units are literally the size of a small suitcase and hang on a wall, freeing up floor space while also protecting the units from inherently damp locations like old basements. They can also be mounted inside a cabinet or even installed on the exterior of a building.



Conservator

There are savings over time too. Where tank-style water heaters have an average life span of seven to 10 years, tankless heaters average 25 years. Tank-style heaters are prone to corrosion and sediment buildup, and although no one I know does it, owner's manuals recommend draining and refilling your tank every 90 days. Hard water scale will build up in tankless units as well, but their built-in alerts and easy component access allow for simple maintenance.

Shopping for Tankless

High quality whole-house and commercial tankless water heaters do cost up to twice as much as tank-style heaters, and you may have to invest in a professional installation. However, if energy costs continue to head skyward, what they save in gas or electricity can make up the difference in two to three years, and you will own the unit up to three times longer.

The choice between gas and electric models it similar to any appliance and usually based on the fuel costs in your region and your preferred energy source. There are electric units available



panels of some makes can send an alert if a component is not functioning properly or customize water temperatures

The control

for specific uses.

For a list of SUPPLIERS. see page 86

The bad rap that you might hear about some tankless heaters is most likely the result of a consumer buying one at a local big-box retailer without doing their homework. Wholehouse units are best left to experienced building and plumbing-heating contractors, who can calculate the proper size based on the number of bathrooms and your consumption lifestyle and then order a professional-grade model. Because larger units also require larger vents as well as gas and water lines, a professional installation will ensure that your new hot water heater is safe, up to current codes, and meets your needs.

monitor the unit.

that require sufficient service at your breaker panel and a 220 outlet for

proper wiring. Gas-fired tankless

heaters are most common and can be installed to vent into a chimney flue, or they can be direct-vented, which

the unit). You would be lucky to find a five-year warrantee on a

tank-style water heater, but with tankless brands you can expect

an average of five years on parts and up to 12 years on the heat

exchanger. Good quality models will feature components that

include stainless steel burners, solid copper heat exchangers, and

built-in self diagnostics or digital controls and readouts that

There are point-of-use models that are perfect for small in-law apartments and remote bathrooms. There are also manufacturers and models that accommodate radiant or hydronic heating systems, as well as plumbing recirculating systems, and can serve as backups for solar water heating. So before you get another cold shower from a hot water tank on its last legs-or feel like you just had one after looking at your fuel bill-check out tankless technology. It's well worth investigating to protect your pocketbook, as well as your impact on the planet. 🏛

Special thanks for technical assistance to Maryke Gillis at Controlled Energy Corporation (Bosch), Robert Kirkpatrick at Rinnai, and Gerry Doucette at Gerry's Heating, Inc. in Gray, Maine.



Tankless water heaters are often installed on a basement wall, where direct venting may be possible. Some makes are also designed for outdoor installation.



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.

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EW OLD HOUSE

Old-House Journal





A LIVE Design Competition New old houses offer a freshness to our country's landscape. They bring back a sense of place to the home and are an important and ever-increasing movement in residential architecture. What is it about old houses that people love so much? Is it the wooden floor boards, wavy glass, pleasing proportions, or warming hearth? They may love the integrity, craftsmanship, and harmony found in antique houses, but

What is it about old houses that people love so much? Is it the wooden floor boards, wavy glass, pleasing proportions, or warming hearth? They may love the integrity, craftsmanship, and harmony found in antique houses, but the reality of restoring old structures for many is a daunting task. New old houses satisfy this insatiable appetite for the past while offering all the amenities of today.

Who May Enter?

Open to designers, architects and design/build builders willing to take on the task of creatively providing solutions presented by a detailed "design program" derived from a fictitious client and building site. The winning design will be marketed nationally in Restore Media's *New-Old House* with plan sales profits shared with the designer.

Where and When?

The LIVE Design Challenge will take place at the Navy Pier in Chicago during the Traditional Building Show exhibit hall hours on April 6-8, 2006. As a participant, you will be busily working for two-days at locations where conference attendees may observe and interact with you. This is a prime opportunity to exhibit your talents to thousands of potential clients.

How to Enter?

To qualify for the Traditional Building Design Challenge you must submit an application and up to 3 portfolios of your work. Portfolio submissions should include renderings, images, or photos of specific projects that reflect your experience and knowledge of the traditionally-inspired movement. To download a Traditional Building Design Challenge application, please visit <u>www.traditionalbuildingshow.com</u> or call 866.566.7840, ext 112 to receive it by fax or email.

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Fine Design



Soak Royally

For the bathroom restoration with no limits, Clawfoot Supply has added a few luxury, hand-cast bronze tubs to their line of reproductions. The Byzantine Royal Dual Bath has a spacious interior big enough for two and is hammered and polished by hand. It holds 70 gallons of water and weighs 585 pounds; cost is \$31,500 (including shipping). Visit their website for more information: www.clawfootsupply.com, or call (877) 682-4192 for a brochure. Circle 10 on the resource card.



Looking for a faucet with modern technology but old-fashioned style to update your 1930s bathroom? The Fairmont two-handle, center-set lavatory faucet from Danze features traditional styling and comes in a variety of finishes. Pictured in chrome, it has a suggested retail price of \$285; see www.danze.com for a store locator. Circle 11 on the resource card.



Sink into Tradition

Soapstone, traditionally used for countertops across New England owing to its durability and local availability, can now grace your old house in the form of a sink. Farmhouse sinks from Tulikivi of Finland, the world's largest quarrier of soapstone, are available in single or double bowl styles. The 32" single sink pictured sells for \$1,400. Call (800) THE-FIRE to find a dealer near you, or visit Tulikivi's website, www.tulikivi.com. Circle 12 on the resource card.

Fine Design



Glass Act

By 1900, leaded glass in floral patterns graced the decorative windows of houses large and small. Today original glass is often missing, and antiques can be hard to find. If you're looking to restore stained glass in your home or just hang a fitting ornament before an old window, check out the offerings from Meyda Tiffany, all hand-crafted using copper foil construction. The Tulips and Fleurs window pictured measures 26" by 14" and retails for \$189.95. See more designs on the company's website at www.Meyda.com, or call (800) 222-4009. Meyda also does custom work and makes transoms and sidelights. Circle 13 on the resource card.



Hearthwarming

Having a hard time finding a screen for your mid-19thcentury, curved-top mantel? This Ornate Firescreen from designer Pamela Worley, with its graceful yet simple lines, could suit a variety of old houses. The substantive screen weighs 40 pounds and comes in a gold finish. Retail price is \$1,200; visit www.pamelaworley.com for more information. Circle 14 on the resource card.



Clever Camouflage

It's sometimes difficult to keep modern fixtures, such as a heating return vent or a recessed light, from sticking out like a sore thumb against the backdrop of an old house. Beaux-Artes can help. It offers medallion covers and grilles in a variety of styles, sizes, and looks (33 finishes; the gold gilt costs extra)-including some recreations of historic Tuttle and Bailey grilles-to complement an array of architectural styles. The Victorian medallion pictured costs \$28; the Louis XIV grille in an 8" by 10" size is \$64. View their line of architectural products at www.beauxartes.com, or call (410) 867-0790 for a catalog. Circle 15 on the resource card.

Outside the Old House

Lead and Soil

The more you know the less it can hurt vou

BY LEE REICH

y friend Linda was understandably enthusiastic about moving. Her "new" home was an older, country house in a bucolic setting where she and her husband could raise homegrown vegetables,

a few chickens, and their new baby, Adam. Two years later, the family was moving again. The reason for the dramatic turnaround was lead, but the source of the problem wasn't interior paint-a common issue in older homes, and one that's been widely publicized for the dangers it poses to children. Linda's lead was in the soil around her house.

Lead can damage almost every organ in the body, and children are most susceptible to its adverse effects because they incorporate the element into their growing bodies. As nearly every old-house owner knows, lead poisoning in children can cause learning disabilities, stunted growth, and even death. What they may not realize is that, like lead in interior finishes, lead in soil may also pose health problems-when kids eat it, for example, or don't wash up well enough after playing outdoors. Fortunately, applying some straightforward methods for evaluating and mitigating



lead-in-soil conditions can go a long way in reducing the potential for problems.

Understanding the Problem

Evidence of old orchards, like the rickety trees here. spotlights one risk factor: lead arsenate, a common early 20th-century pesticide.

At Adam's one-year checkup, Linda's pediatrician discovered elevated lead levels in the boy's blood, prompting him to ask about the age and nature of Linda's house. In testing the building, the high readings near the entrance pointed to the soil outside as the source, and when the soil was tested, it was shown to harbor lead levels of more than 2,000 ppm (parts per million)-much higher than the 10 to 50 ppm found naturally.

Elevated levels of lead in soil stem from decades of the element's use in paints, pesticides, and gasoline. Because lead pretty much stays put in soil, it remains in the ground around some houses despite the fact that lead-containing products have been banned for



Old lead-based paint can leach lead into the surrounding soil via improper removal methods or exposure to the elements over time. The health risks can be considerable-especially to children.



Outside the Old House

if they were built over a previous home site, like the McMansions sprouting nationwide over teardowns of more modest old houses.

Because lead in soil does not tend to migrate, it is important to test each potential problem area separately. For example, if exterior lead paint is one potential source of the problem, take soil samples at varying distances from the house—in the first 3', between 3' and 15', and at 30'. Draw several samples at each distance, combine and mix them (to equalize any variations), then take from this



composited sample the amount needed for testing. If there's evidence of an orchard too, then follow the same procedure around the trees at varying distances as well. It's also a good idea to test the soil's pH, because acidity can influence how much ingested lead reaches the bloodstream. Many private soil testing laboratories, as well as state laboratories (located at state universities), test for lead in soil.

Taking Action

How do you deal with a home that has high levels of lead in surrounding soil? Moving, as Linda did, is one way, but certainly not the only way. The approach you take should factor in the level of contamination and the individuals at risk. Because kids play in soil, homes

Best Ways to Test

Getting accurate soil samples can be a challenge because, even for a modest-sized problem area of 100 square feet, the amount of soil used for a test will only be about two cups' worth—or representative of about .002 percent of the top 6" of the ground. When you think of it this way, it's easy to understand why it's so important to composite the samples you take in each area in order to get accurate results.

A test area should be relatively uniform. Where obvious differences in soil or topography exist, you should subdivide these spots into separate testing areas. To avoid non-representative samples, take a halfdozen specimens from random spots within the designated area. Remove surface debris like compost, sod, or plant residues, then make a hole to sampling depth—for lead you should sample the top inch, then the top 6" of soil, separately—but don't use this first bit of soil for your specimen. Instead, take a slice, uniformly thick from top to bottom, from along the edge of the hole you just made. You could also use a soil probe.

Gather specimens from each test area and depth into a separate clean plastic bucket. Thoroughly mix them together, crumbling the soil while discarding stones, sticks, insects, and other debris. Spread the soil out on a clean baking pan to air dry for a day, then remove two cups for testing. Throughout sample preparation, it's important to avoid contamination from either your hands or dirty utensils. Follow any packing instructions supplied by the testing laboratory, and label the 1" and 6" depth samples from each area—making a note for yourself of their location on your property. with children face the most stringent guidelines. HUD and EPA both allow an uppermost limit of 400 ppm of lead in bare soil where children play, 1,200 ppm otherwise. Emotions run high on the subject of lead contamination, but remember:

There is no automatic relationship between environmental lead levels and those found in children because several mitigating factors—like good nutrition and hand washing—reduce lead's absorption or uptake.

There are a number of approaches you can take for dealing with lead levels above the 400 ppm guideline. For levels between 400 and 1,200 ppm, keeping soil in place or putting some sort of barrier between small, human hands (or clothes) and the soil is a viable safeguard. Establishing a dense lawn, for Building raised vegetable beds filled with clean, uncontaminated soil is one approach to gardening when lead levels are high. As long as deep tillage is avoided, produce remains untainted.
advertisement

Finally a Shine That Lasts

Miracle Polish Ends Struggle With Tarnishing Metals. By D.H. Wagner

AFTER BEFORE

Lately, I have noticed quite a few newspapers and magazines praising a polish formulated by a homemaker. The articles report that Donna Maas grew frustrated with rubbing and scrubbing her silver, brass and other metals only to see them quickly become dull and tarnished

again. Determined to put an end to her constant battle with tarnish, Donna formulated a metal cleaner and it's transforming the industry.

Anita Gold, nationally syndicated columnist and expert on the restoration of antiques calls MAAS (named after its inventor) "The best and most amazing polish in the world." Ms. Gold wrote in her column, "A truly miraculous polish referred to as "miracle polish" that'll turn the most disastrous pieces into the most debright-ful is MAAS Fine Polishing Creme For All Metals, which cleans, restores, preserves and polishes to perfection any brass, copper, chrome, silver, stainless steel, aluminum, gold or any other metal with amazing results - no matter how badly stained, spotted, discolored, flood-damaged, weathered, dirty, dingy, drab, or dull they may be."

Since I had an old brass lamp in desperate need of restoration, this journalist decided to put MAAS to the test. The lamp had been stored in the garage and was in far worse condition than I remembered. I was flabbergasted as I watched the polish wipe away layers and years of tarnish. Never have I used anything so easy. The lamp actually looks better than when I purchased it. Better yet, months later it's still glowing!

The polish worked so effortlessly, I decided to refurbish my mother's antique brass and copper cookware. The badly stained pots and pans developed black spots that had been impossible to remove. MAAS wiped away years of built-up residue even from the most discolored pieces. While polishing, I noticed MAAS applying a shine on the stainless steel sink. WOW! The shine is unbelievable

and although I wash dishes every day, the shine keeps-on-shining. And it's no longer covered with ugly waterspots - water just rolls off the protective finish and down the drain. The **Good Housekeeping Institute** recommends MAAS for restoring heavily tarnished heirlooms stating, "MAAS cleans best and gives lasting results." The Miami Herald says, "Polishing product can renew old silver." And The Chicago Tribune headline sums it all up by proclaiming "One Amazing Polish Is The Best At Everything."

How did a homemaker come up with something the industry's experts couldn't? The reporter in me had to find out.

During our interview Donna explained, "I enjoy the warmth that beautifully polished metals add to a home. However, not the hours it took to keep them tarnish free. The harsh cleaners left my hands dry and burning - one instant silver dip smelled so bad I felt sick. When I read the label, I discovered it contained cancer-causing ingredients. I never realized I was using a dangerous substance on my silverware - I serve food with it! That's when I became determined to find a better way to care for the metals in my home."

And that she did. Her formula developed with a chemist friend, has a mild scent and feels like a hand cream. It's non-flamable, highly concentrated and leaves a deep, rich one-of-a-kind luster beyond anything I've ever seen.

"To my surprise," Donna reveals, "the formula far exceeded my original goal. MAAS completely renovated a sun-damaged fiberglass boat, removed residue from glass fireplace doors, polished up clouded crystal and glass vases, wiped scuffs and stains from linoleum, plastic lawn furniture - it even reconditioned a Plexiglas windshield. The restorations were so remarkable everyone suggested that I sell my on television".



Donna sent samples of her polish to televised shopping channels and both QVC and Home Shopping Network asked Donna to personally appear on TV to demonstrate her product. Within minutes of Donna's first appearance the phones lit up with hundreds waiting on line to place their orders. As soon as viewers saw how effortlessly MAAS removed tarnish, stubborn spots, and stains from the piles of badly oxidized metals on stage - MAAS hit big time. 17,000 viewers called during MAAS' debut and encore performances quickly brought a million dollars in record-breaking sales.

Sheila Oetting in Florida wrote Donna saying, "Thank you, for a wonderful product! Family treasures with 30 years

of tarnish, grime and corrosion are gleaming. I'm so thrilled to see the beauty that had been hidden all those years."

Leona Toppel, was about to throw away a brass chandelier. "No amount of elbow grease could shine it up. With very little effort (a big plus since I suffer from arthritis) MAAS made that chandelier look like new. It's been years and to everyone's surprise it's still glowing."

Boeing and McDonnell Douglas tested and approved the polish for use on jet aircraft. The U.S. Air Force, Army, Navy, Coast Guard and Department of Defense worldwide have ordered MAAS. If every branch of our military is using this polish to pass inspection, imagine what it will do for your home.

"MAAS outperforms every cleaning product I've tried," Donna beams with satisfaction. "So if you're as tired as I was of cleaning metals just to see tarnish reappear a few weeks later, MAAS it!"

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Outside the Old House

example, keeps contaminated soil from being tracked indoors on shoes and also acts as a barrier to small hands. In areas where trees create too much shade and root competition for a solid lawn, you can substitute a thick, shade-loving groundcover like *pachysandra*. You can also lay landscape fabric, topped with wood chips, on the ground to establish a barrier in sun or shade. In flower and shrub beds, maintaining a permanent mulch of leaves, straw, or other organic material is also effective. Avoid any tillage. If elevated lead levels are confined to certain areas—near house walls, for example, from past use of lead paint—you can exclude children from those places with fencing or by planting prickly shrubs.



A soil probe helps facilitate even sampling and makes the testing process easier. Careful sampling is key to identifying whether a problem exists and provides a blueprint for any necessary mitigation.

Lead is not a plant nutrient, so roots take up very little of the metal. The hazard from growing edible plants in lead-rich soil comes from earth that clings to root vegetables or adheres to the leaves of lettuce and leafy greens. Eating vegetables, fruits, or herbs grown in soils with lead levels as high as 1,000 ppm shouldn't present a hazard as long as root vegetables are well-scrubbed or peeled, and leafy vegetables are washed well. Even soil lead levels above 3,000 ppm shouldn't pose a risk for fruits and vegetables that grow tall or that have smooth skins, which limit the chances of holding airborne particles. (Nonetheless, bringing this soil indoors on clothes, shoes, and hands still presents a hazard.) An alternate gardening approach appropriate for any level of lead in soil is to construct raised vegetable beds and fill them with new, uncontaminated soil. Avoid deep tillage, which would bring lead-rich soil to the surface.

Lead can exist in more than one form in the soil, and all forms aren't equally able to find their way into our bloodstreams when ingested. Dr. Rufus Chaney, along with co-workers at the U.S. Department of Agriculture, has developed a method of "deactivating" soil lead. This

bioremediation entails tilling large amounts of compost rich in both iron and phosphorus into the soil. You need about five pounds of compost per square foot, or an 8" depth, plus you must add limestone or wood ashes to make the soil more alkaline. These treatments have reduced lead bioavailability by more than 50 percent and work in soil with lead levels up to 2,000 ppm. Granted, this bioremediation requires a large amount of compost, but the process is a one-time deal. In addition to deactivating the lead, it also creates a very rich soil that, in turn, nourishes dense grass growth that helps keep the soil in place.

Dr. Chaney is exploring the possibility of specially formulating composts for lead remediation. Municipal composts from sewage treatment plants work well because iron is added during processing to separate phosphorus and prevent it from entering waterways; your backyard compost isn't rich enough in iron and phosphorus to effect this level of lead remediation.

One final way to deal with lead in soil is to remove all the surface soil and replace it with a clean layer—what I call the Herculean Approach because it's so labor-intensive. Thankfully, there are many other options to consider before this act of last resort—or moving like Linda did.

Lee Reich, PhD, gardens around an old house in New Paltz, New York, and is the author of Uncommon Fruits for Every Garden (*Timber Press*, 2004) and Weedless Gardening (Workman Publishing, 2001).

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Stair Millwork by the Book

Understanding historic catalog designs helps with buying stylistically appropriate parts.

By Brent Hull

In the 1860s, Hinkle & Co. of Cincinnati offered a page of stair millwork parts, including this selection of octagonal newels, the kind seen in old houses of all ilk from the era. ike boatbuilding, stair building has always been one of the pinnacles of the carpenter's art. Stairs are demanding to build because they must be strong and composed of many precisely dimensioned parts. For example, making the moulded handrail for a wreathed (curved) staircase demands proficiency in solid geometry as well as advanced joinery skills. As is the case with other types of fine interior woodwork, staircases have long been stylistic features in a house. The elegant turned outlines of Colonial balusters, the intricate ornament of Victorian newel posts, and even the simple lines of Arts & Crafts-era staircases are all characteristic of each period. In staircase restoration of any sort, getting these details right is an important part of the job.

Along with porch parts, decorative staircase parts were among the many millwork items mass-produced and sold by catalog by the 1850s (see "Porch Details by the Book," March/April 2004). One

way to help choose the most historically appropriate stair parts today is to study the myriad designs and models available in millwork catalogs of the past—the original source behind vast numbers of staircases still at work in old houses.

STAIRCASE BASICS

Even 150 years ago millwork catalogs were selling tools, and each catalog tried to cover a wide range of tastes to appeal to the greatest number of builders and homeowners. Individual parts were rarely labeled according to a particular style New York, nurseryman Patrick Barry built an Italian Villa mansion in 1855, designed by the famous planbook architect Gervase Wheeler, he set off the entrance hall with a long staircase replete with octagonal newel and balusters.

When Rochester,



Stair brackets are decorative cutouts that are applied under the treads of open string stairs and a popular millwork embellishment in all eras.



Like their newels, the 1860s balusters from Hinkle & Co. run from simple turnings to turned and octagonal patterns, some strikingly similar to the Barry house balusters.



This open string staircase identifies common railing features (easing and ramp) and shows the use of brack-Ramp ets (C and D), a railing swan neck (above ramp), and an angle newel (top of stairs). Easing P

> (which increased the risk of making designs appear passé when fashions changed) and were often popular across many eras. Nonetheless, it's still possible to organize them into four general stylistic groups: Mid-Century, Victorian, Colonial Revival, and Arts & Crafts Inspired. All four eras use basically the same components—newel posts, balusters, and railings—that were configured or created in different ways, depending upon the technological capabilities and tastes of the

time. A grasp of some fundamental stair nomenclature also helps:

Open stringer/closed stringer In an open stringer staircase, the stringers or strings—inclined members that support the steps—are exposed on one side. With closed stringer staircases, they are enclosed (often by walls).

Starting newel/angle newel The newel is the first or main starting post in the staircase—a large, prominent feature usually on the first step. It may also be followed by one or more angle newels where the staircase turns a corner.

Balustrade Balusters are the turned or square-edged vertical spindles rising from each step to support the handrail. In combination, these parts are called the balustrade.

Mid-Century (1850 to 1870) Gothic Revival, Italian, Second Empire

The first wave of mass-produced catalog millwork was made possible not only by advances in machine woodwork production and printing but also railroad shipping. These innovations coincided with the vogue for Italian- and Second Empirestyle houses, as well as the increased attention to the decorative possibilities of halls and staircases, all of which were popularized by the new architectural planbooks.

Newels Newels ranging from plain, turned posts to large, square boxes built up from hardwoods were recommended by



Above: Almost modest in its ornament for a Victorian staircase is this wreathed example with a richly carved newel and straightforward balustrade.

After 1880, millwork made the most of machine power to produce designs ranging from round newels turned in the Eastlake vein (left) to square posts rife with Colonial carvings.







By the 1890s, millwork catalogs offered straight balusters in almost every possible permutation of the woodturners' art, from basic ogee curves to complicated spindles. tastemakers of the 1850s. Turned octagonal newels are very common in houses across all styles by the 1860s and echo the popularity of this geometric form during the era. The design of Italian houses often played off the interplay of circles and straight lines, and hints of this motif show up in staircase millwork, too.

Balusters Often diminutive forms of newels, octagonal or otherwise, they may be embellished with carvings or simply turned.

Railings Railings are moulded, often of black walnut, and designed to mate with newel tops if turned.

Victorian (1870 to 1910) Queen Anne, Eastlake, Stick, Folk Victorian

In the Victorian era, new technology affected staircase design. Increasingly sophisticated power woodworking machinery not only made possible more elaborate carvings and turnings, it also made them less expensive and more widely available.

910) Stick,

Making

balustrades with

was an option in the 1850s but

members other

than spindles

really took off

log parts.

after 1880 with

the profusion of ready-made cata-

Like mantels, Victorian staircases became a place to show off manufacturing ability and money.

Newels Victorian staircases start proudly with an elaborate newel, which is invariably highly detailed. Covered with embellishments—sometimes from a mixed bag of stylistic idioms—the most ornate examples are wonderfully rich with worked turnings and chamfers or applied carvings and rosettes. Newels with deeply turned balls or beaded decoration may show a geometrical influence associated with Eastlake furniture styling.

Balusters Victorian baluster designs span a wide range of turnings, square and tapered supports, and combinations of both. Sometimes the balustrade is not



The early Colonial Revival movement's reverence for pre-industrial woodworking skill produced a vogue for hyperturned twisted balusters, which were, of course, mass-produced.





Generally, there are two balusters to a step, but when the run exceeds 10", three balusters often look better. Steep stairs, such as those shown here, sometimes dictate a single baluster.

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For a related story online, see "Stairs with a Twist." Just click to "The Magazine" section, and go to the alphabetical list of recent features. composed of true balusters but is instead an assemblage of horizontal and vertical members that forms a decorative grille.

Railings Handrails are also more elaborate, with decorative beads and coves along the sides below the basic face moulds. Oak is highly popular, as it is for all woodwork, but yellow pine is also sold.

Colonial Revival (1880 to Present) Georgian Revival, Queen Anne, Shingle

The earliest true Colonial staircases from the pre-revolutionary period are almost exclusively functional. Often steep stairs that run to an attic, they are typically paneled or boxed-in with no balustrade and possibly a few small turnings at the top. The Colonial stairways most admired today are from the Georgian and Federal period (about 1725 to 1820) and based on classical proportions and motifs. As reinvented for the Colonial Revival style, they are ubiquitous to the point of being a cliché but nonetheless admirable for their complexity and enduring popularity.

Newels Compared to Victorian staircases, Colonial Revival newels are relatively simple, often resembling a large baluster. Square newels were also widely sold, especially during the 19th and early 20th century, but here the Colonial influence is readily identified by Georgian/Adam ornaments, such as urnlike turnings on the tops or carved swags and cameos applied to the sides.

Balusters Colonial-influenced balusters are typically turned on a lathe and very thin. (Remember, turning was a favorite woodworking technique for furniture makers of the 18th century.) They use classical shapes for the patterns, and on very high-style homes, there may be more than one style of baluster in a balustrade. By the 1890s, mass production made possible a fashion for the complex turnings of twisted balusters that appeared in many architect-designed houses. Open-string stairs, where the balustrade could be featured to best advantage, often varied baluster patterns and spacing.

Railings The spiral volute that starts many classically inspired staircases goes back at least as far as the Greek Revival designs of Asher Benjamin and is a hallmark of 20th-century Colonial Revival staircases. Equally characteristic are railings that approach a newel in a curve (called a ramp when vertical), a swan neck (a ramp mitered to a short, level length of railing), or an easing (a change in direction from level).

Arts & Crafts Inspired (1900 to 1940) Bungalow, Foursquare, Tudor Revival

Unlike the heyday of the Victorian era in the 1890s, when embellished wood decorated almost every surface of a house, by the turn



Often used in other eras, the parts of a Colonial Revival railing are the volute (top), easing (left), and swan or goose neck (right).



of the 20th century the Arts & Crafts movement was introducing new design ideas and alternate materials, such as tile, metal, and exposed brick on fireplaces. Innovative staircases in landmark Arts & Crafts buildings like Red House (designed for William Morris by his friend Phillip Webb) and the Gamble House (designed by the brothers Greene) left their mark on stair millwork for decades to come.

Newels Like the furniture, most Arts & Crafts staircases are, at first glance, clean, unornamented, and deceptively simple. Ideally, there is no carving or other ornament, and what decoration does exist is meant to appear structural—for example, the workings of mortise-and-tenon joints or other connections. The square-topped newel ringed with a shallow moulding like the brim of a hat is, fittingly, nearly ubiquitous in Foursquare houses.

Balusters Balusters are squareedged and unadorned. Sometimes you see tapered sides, cutouts, or fretwork in wide, flat balusters. Treads might be dominated by a single board baluster as wide as 7", or pairs that alternate between 4"-wide boards and narrow 7/8"-square sticks.

Railings Typically bearing little or no moulding, handrails are very smooth and merely rounded at the upper corners, often looking proto-Modern in the most high-style examples.

Brent Hull is the author of Historic Millwork (John Wiley, 2003) and the principal at Hull Historical Inc. in Fort Worth, Texas; www.hullhistorical.com.



The straight-line styling of Arts & Crafts woodwork, such as these 1927 newels, remained popular for kit and builder-style houses of all kinds long after the bungalow years.

Although the simple, severe surfaces of Arts & Crafts millwork appear limiting, they actually opened up possibilities for creative staircase designs, such as this distinctive stepped railing and floor-to-ceiling newel.



Board balusters with cutout designs are a centuries-old idea revived in the Arts & Crafts movement by Philip Webb's staircase for Red House.

The cordless drill market has always been global, but some foreign makes, such as Metabo from Germany, are only now becoming familiar in the States. D metabo

oday, you'd be hard-pressed to find an old-house owner who doesn't capitalize on the current cornucopia of cordless implements. As I write from my 1778 farm-

house, I sit at my laptop computer attached wirelessly to the Internet with my cordless phone at my side. If I launch into any one task on my long old-house to-do list, I will have a cordless drill nearby. If the drill conks out on me, however, I'll face the challenge of deciding what to buy, given that over just three years, the choice of manufacturers, tool types, battery technologies, and product options can shift dramatically. Because it's easy to get bogged down by too many choices, here's a

The Low Down on OTCLESS By Noelle Lord

> and increased battery capacity, the latest cordless hammer drills like the 24-volt Bosch Bluecore can do work that used to be possible only with a power cord.

With 1/2" chucks

From drivers to hammers, the tool market keeps morphing in its quest for ever more portable power.





Higher voltage, as in the 18-volt Fein Handymaster drill, not only equates to more power but also a heavier duty tool that's necessary for lots of large-scale boring.

short course on the most important points to consider if you'll be shopping for a cordless drill anytime soon.

PRODUCT PRIMER

Before you start crunching numbers for individual tools, it pays to get a handle on the variety of cordless drill types now sold.

Drill/drivers are the most common, all-purpose choice. They are equipped to accept drill bits for boring holes, as well as driver heads for fastening, and are available in models ranging from 9.6 volts to 19.2 volts to support almost any need. A drill/driver's gears are always engaged, so when the tool strains you can squeeze the trigger harder to speed up the motor to increase torque. Or, you can switch to a lower gear (low speed) or adjust the clutch setting if you're doing repetitive fastening.

Some applications need more mechanical advantage, such as driving in hundreds of screws as fast as possible or drilling into masonry. Because so many households now have cordless drills, manufacturers are supplying cordless tools for specialized purposes or repetitive conditions to make our lives easier.

Impact drivers (also called stick drivers) are designed for fastening. Although there are adapters for drilling, they're not practical for this application. Impact drivers have lower voltage and are light and compact but deliver a lot of torque. They are tailor-made for "easy" fastening, such as screwing down deck boards or making and installing cabinets. Their compact size makes them easy to maneuver in tight spaces. The impact action stems from how the tool is engineered to make small turns in rapid succession, allowing it to deliver a lot of torque—sometimes twice as much as a larger tool. Impact drivers usually have the speed control in the trigger, allowing the user to vary the power precisely.

EB1214512V

Today's lightweight cordless tools are ergonomically designed to limit fatigue while providing more control, comfort and safety.

Clutch settings, like the ones on this Ryobi model, regulate torque and are ideal for precision driving applications, such as drilling holes for lag-bolts.

Combo kits contain multiple tools with two batteries and a charger. The kits, which are sweeping the cordless market, allow different tools to use the same battery pack.

Hammer drill/drivers add a percussion action to assist the drill/driver in going through masonry and cement. In the tool's drive train are two gears shaped like poker chips, with teeth that work over each other to create a bouncing, up-anddown action in each stroke. In most products, you can switch the hammer action off at the clutch, thereby turning the tool into

FF SUCKER

RYORI

a regular drill/driver, so that it can be your everyday drill if you have masonry and light concrete work in your mix.

RAOBI

SIZING UP THE SPECS

Comparing the technical specifications for cordless drills can be daunting. It's truly a numbers game with manufacturers constantly working to outdo one another.

Impact drivers are tailor-made for working in tight spaces. Their compact size makes them easy to maneuver yet they still deliver a lot of torque for driving, sometimes twice as much as a larger tool.



Bigger is not always better, and some specs, such as speed and torque, are inversely related to each other. You may be making trade-offs depending on which characteristic is most important to you. Here's a rundown of the most common specs and what they mean in practical terms.

Voltage is one of the most familiar and prominently marketed features associated with cordless tools. In simple terms, volts are the force with which electricity flows from point A to point B, and while voltage is technically only part of the measurement of electrical power (watts), it is often an indication of the tool's brawn. The higher the voltage is, the bigger the battery pack and motor must be, resulting in a heavier (and usually larger) tool. A 12volt or 14.4-volt drill/driver weighs around four pounds, whereas most 18-volters are more than six pounds. Big voltage is necessary if you're doing a lot of wood or timber boring or if you want the extra power to put down 100 decking screws. For tougher or longer jobs, more voltage means the drill doesn't have to work as hard as a lower voltage tool doing the same task. If you're not putting the tool through its paces all day long and body fatigue is a concern, most homeowners (and many contractors) meet their needs very well

RIDGID

Weighing around four pounds, a 12-volt drill/driver is versatile enough to meet most homeowners' needs, provided they're not putting the tool through its paces all

day long.

with 12-volt or 14.4-volt models.

Torque is not marketed as deliberately as voltage, but it's another critical spec to consider. Torque output in cordless tools is measured in inch-pounds and is a number that denotes the amount of force available to produce torsion or rotation-literally twisting. Ample torque is always a good thing because, whether you are boring holes or driving fasteners, you want enough twisting force to get the screw or bit into the material. The catch is each manufacturer rates torque differently. Many go for the highest number, known as 'hard joint' or 'hard case' torque-the amount of torque the tool exerts when it's pushed to its performance limit. Most of us don't use a tool that way. What we're interested in is 'soft joint' or 'soft case'-real-world running

torque, which allows the tool to continue when it encounters resistance.

Speed, or the range of rpms (revolutions per minute), is another useful rating for sizing up the tool's utility. Speed, however, is also an important factor in the torque capacity of a cordless drill or driver. Quality cordless drill/drivers have gearboxes with two (and sometimes three) separate speed ranges that allow the user to gear the tool up or down like a car's transmission for mechanical advantage. Slower speed ranges are around 400 rpm to 500 rpm, providing increased torque for driving large screws or making large holes. Higher speed ranges now reach 1,500 rpm to 2,000 rpm for rapid fastening or drilling. Some specialty products and lower priced drills have a single speed range with the trigger as the only control.

Most drills also have a variable speed

The Better Battery Derby

The most common type of rechargeable battery for cordless tools is made from nickel cadmium components or NiCd (pronounced ni-cad). NiCads offer 1.2 to 2.4 amp/hours of run time. Their biggest drawback, aside from lower run-time, is the environmental hazards they present and the requirement that the nickel cadmium components be recycled.

Nickel metal hydride (NiMH) batteries boast added energy for their weight and can be disposed of with regular refuse. Panasonic and Makita are the primary tool manufacturers who have picked up on this technology, which offers 2.4 to 3.5 amp-hours—nearly double that of most NiCd battery packs.

The wave of the future in battery chemistry is definitely in Lithium-ion, a technology that uses the metal lithium to build cells of high energy density delivering around three volts. Familiar to cell phone users, these lightweight batteries run longer and offer more constant power than older technology that slows and runs down at the end of a charge. One Lithium-ion cell provides two and one-half times the power of a standard NiCd cell. They are also "cool charging" and don't have the overheating issues of traditional batteries. Whether their stability is worth the added expense remains to be seen, but most manufacturers will be introducing this technology over the next 18 months.

Higher quality tools not only have advanced battery packs but sophisticated chargers as well. Often referred to as smart chargers, these devices are built with computer chips that enable the charger to read each cell in the battery pack, charge and equalize them accordingly, and thereby offer longer battery life span. They also cut charging time from a traditional two to three hours down to an hour or less. These selfdiagnostic components delay charging if the battery pack is too hot, have cooling technology running during charging, and stop charging or go into sleep mode once the battery is fully charged.

You want to get the maximum results and use from your battery, and proper care plays a key role. Unless you have a smart charger, don't put a hot battery in your charger or interrupt the charge cycle. Also, be sure to let batteries charge completely. The worst enemy



Lithium-ion battery technology, offered by Milwaukee after nine years of research, provides the power for their 28-volt hammer drill/driver.

of battery life span is high heat or extreme cold, so storing them in a temperature-controlled environment, not a truck or tool shed, will help your batteries keep on charging.



Below: Multiple cells are wired together to make a rechargeable battery. The plates where the electrochemical reaction occurs are spiral-wound and similar for all three battery types.

Positive terminal

Automatic vent mechanism Instead of bulking up on cells, manufacturers now seek more power and performance using batteries built on NiMH or Lithiumion chemistry (top), or smart chargers that monitor battery condition.

feature. The more you squeeze the trigger, the faster the drill spins. Variable speed is usually associated with a break that stops the chuck from turning as soon as you release the trigger. This feature allows you to get a screw or a drill bit started, helps prevent overtorquing (which can break the head off a screw), and is also nice

for delicate work.

Clutch settings limit the maximum amount of torque exerted by the tool. Virtually all cordless drill/drivers now have anywhere from 12 to 25 clutch settings. They assist the user in preventing the drill from driving a screw too far into soft wallboard, mangling a screw's head by turning too fast, or breaking off a soft metal, such as brass, by forcing it through too much resistance.

Manufacturers tout that more settings mean more precise torque control. Professional users, however, often say they rarely use clutch settings and prefer to go by the feel of the tool and their familiarity with the materials. Homeowners will probably want a tool that falls somewhere in the middle. (I would make myself crazy adjusting through 25 settings!)

Chuck capacity indicates the largest diameter bit shaft that a drill's chuck can hold. Smaller (lower voltage) drill/drivers are fitted with 3/8" capacity chucks, while larger tools come standard with 1/2" chucks. Once considered strictly industrial, a modern 1/2" chuck is ideal these days because it can accommodate a greater variety of bit sizes. Many manufacturers have a 'caming chuck' or 'ratcheting chuck' that permits extra tightening of the bit, making it more dependable and stable so it won't skip when working through resistance (using extra torque).

Weight is a hot topic of conversation when shopping for cordless drill/drivers. Although it's primarily a function of total voltage (the higher the voltage, the greater the battery size and weight), higher power components also require more heavy-duty materials and more mass. An 18-volt powerhouse needs a larger and therefore heavier motor to support it; larger chucks (going from 3/8" to 1/2") need more and heavier housings to control the additional torque. The newest battery technology boasts comparable weight to its lower voltage counterparts, but the tool itself must be sturdier, and therefore weighs more, to handle the additional power.

Other components to consider include product housing, switches, bearings and gears, and the motor and transmission. More professional-grade products are designed for tougher conditions and harsher use and usually have a housing that can survive at least a 10' drop test. A dusty environment (and what old house isn't dusty?) will take its toll on switches and motors. Many manufacturers design motor and gear housings to shield them from dust and moisture. Look for tools with heat shields and cooling fans for motors if you're going to be running them for extended hours. A high-powered drill/driver needs a motor that won't burn out from the additional power and a transmission to keep up with the speed. It's worth doing some homework online or talking to the manufacturers' technical

JOHN VAN PELT

support people to find out about the many specifications that are available and how each manufacturer's product differs.

HOW MUCH POWER?

Of course there wouldn't be cordless tools without rechargeable batteries. Battery capacity is measured in ampere-hours (Ah) or, to use a crude analogy, the quantity of electricity that is delivered over a period of time. For example, a car battery rated at 10 Ah can deliver 10 amps for one hour or one amp for 10 hours. In cordless tools, the higher the amp-hour rating is, the longer the tool will run per battery charge. Any battery is actually a pack comprised of multiple cells, each supplying about 1.2 volts of electricity. Weight is a factor of battery size because each one of these cells adds mass. A 12-volt drill has a 10-cell battery; a 24-volt tool has 20 cells-and twice the weight. Depending on the battery technology, most battery capacities run between 2.4 and 3.5 Ah.

No manufacturer is willing to say how long a battery will last or how many times you can charge it because that depends on battery use and care. The average is 1,200 to 1,500 charge-discharge cycles. Some batteries will fail at 500; some will go to 3,000. A high quality tool will probably outlast its batteries, and then you'll need to decide whether to buy more batteries (anywhere from \$25 to \$100 each, depending on the manufacturer) or spend \$80 more and upgrade your entire drill. It's a shame to think we're living in an age of disposable tools. Some manufacturers offer new tools that use older battery technology or one battery for their entire cordless line.

OTHER FEATURES

The warranty says a lot about a product. The longer the warranty, the longer the manufacturer expects the tool to last without developing problems that the company will have to pay for. Many drill/drivers offer only one- to two-year warrantees and some go to three; expect different warrantees for the tool and its battery.

Repairing old houses is demanding enough that you don't need to expend energy on a tool that's hard to position, doesn't adjust easily for settings or changing bits, is difficult to fit into tight spaces, or has switches that aren't in the right places for fingers to maneuver. Assessing the ergonomics or the "hand" of a tool is important. Carefully consider how it fits your grip, balances in your hand, and whether it allows your fingers to reach switches and the battery release easily. A comfortable grip and welldistributed tool weight will make a big difference when you're holding a building part in one hand and trying to maneuver a drill with the other. Visit tool retailers and actually feel different tools with dif-

Cordless Drill Connection		
Manufacturer	Contact	Resource Card
Bosch Tools	www.boschtools.com; (877) 267-2499	Circle #16
Fein Power Tools	www.feinus.com; (800) 441-9878	Circle #17
Hitachi Power Tools	www.hitachi.us/powertools.com; (800) 829-4752	Circle #18
Makita Power Tools	www.makittools.com; (714) 522-8088)	Circle #19
Metabo Corp.	www.metabousa.com; (800) 638-2264	Circle #20
Milwaukee Electric Tools	www.milwaukeetool.com; (800) SAW-DUST	Circle #21
Ridgid	www.ridgid.com; (800) 4-RIDGID	Circle #22
Ryobi	www.ryobitools.com ; (800) 525-2579	Circle #23
Skil Power Tools	www.skil.com; (877) SKIL-999	Circle #24

Makita's lightweight hammer drill/ driver is powered by NiMH batteries. which have twice the amp-hour capacity of many NiCads. A few other manufacturers use the new technology.

ferent components. If possible, run the tool or one that is equivalent. On paper, a drill/driver may have perfect specs for your applications, but you may find it too powerful to control or not versatile enough for different tasks.

I saved price for last because it won't matter if you buy the wrong tool. I prefer to buy the highest quality tool I can afford. Manufacturers making professional-grade tools run more endurance tests, often offer longer-lasting batteries with shorter charging times, and focus on ergonomics for the user's comfort and safety. Ultimately, you want a product that feels good in your hand, is easy to use, and helps you do the best job possible around your old house, whatever that job may be. 🏛

Noelle Lord specializes in restoring building surfaces at Peter Lord Plaster and Paint and writes about the care of historic buildings from her home in Limington, Maine; irestore@adelphia.net.

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Beautiful bathrooms start with colorful sinks, if you can believe the cover of this ca. 1930 American Standard brochure. The era of selling Technicolor bathroom fixtures had begun: their effects would be seen for decades.



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DERS CATALOG.

Horizontal bands of dark color, which were believed to make small rooms appear larger, can still be seen in many a period bath, attesting to the enduring popularity of this design wisdom.

ure white-the color scheme of early 20th century bathrooms-was uniform, blindly bright, and based on the

Victorian-era notion that germs lived in dirt. Logic then dictated that dirt would show up best against a solid white backdrop, so snowy floors, walls, and fixtures made the dreaded filth easier to identify and conquer. Magazines of the day touted the importance of the hospital-white bath, considered a sanitary ideal, and homemakers took pride in making these spaces gleam. Still, it only took a couple of decades before the pull of fashion and a push from modern advertising transformed residential bathrooms into places that were blooming with color. While often garish-looking to 21st-century eyes, these colorful spaces were the height of fashion in their day and are easier to appreciate once you understand how they came to be.

It's hard to pinpoint the exact date things started to change. Bathrooms didn't transform overnight; it took some time for color to take hold across the country. But we do know that as early as 1927, companies like Kohler and Universal Sanitary Manufacturing had begun producing bathroom sinks, tubs, and toilets in vibrant colors; Crane and Standard Sanitary Manufacturing Co. (now American Standard) quickly followed. What drove the trend?"I think it really was the fact that a company the size of



American Standard was able to color match all the pieces. We weren't just making one or the other [a sink or a tub]; we were making all of the components," says Gray Uhl, American Standard's Director of Design. These perfectly matching sets, of course, were instantly appealing to consumers.

Perhaps not so coincidentally, the incidence of color advertising was on the rise too. More color and improved sophistication in print advertisements and mass marketing created demand for all sorts of consumer goods previously not thought about or discussed, bathroom fixtures among them.

For the first time, the bathroom was seen as its own design domain within a house. In their book, *The Bathroom the Kitchen and the Aesthetics of Waste*, Ellen Lupton and J. Abbott Miller explain, "The bathroom, formerly positioned as a kind of hospital-within-the-home, was now being re-absorbed into the fabric of the house,



Rose du Barry was one of nine colors in American Standard's rainbow repertoire, first introduced in 1929.



Earthy tones and complementary accents highlight the Crane fixtures in this ad from the early 1930s.



PHOTO BY LINDA SVENDSEN/ BUNGALOW BATHROOMS





A modern bath (above) exhibited at the Metropolitan Museum of Art in 1929 showcased black Kohler fixtures in all-the-rage Deco-the distinctive lines of which are seen in this lavender and green inset tub (left) from the same year.

subject to the same decorative attention as other rooms."

Once again, popular magazines played a role in spreading the latest thinking. "The stringent norms of the bathroom," note Lupton and Miller, "were called into question, not on the grounds of cleanliness, but on the grounds of style. If the bathroom's cleanliness reflected the housewife's standards of hygiene, then its decoration, or lack of it, reflected her taste." Soon manufacturers launched ad campaigns to sell consumers on the idea that clean and stylish could go hand-inhand. In 1929, an American Standard brochure put it this way, "Those who have always thought of white as the color that best expresses cleanliness will find that Royal Copenhagen blue does it equally well and, in addition, permits color combinations that have greater individuality."

HISTORIC PROPORTIONS

Other factors almost certainly played a role in the color-in-baths phenomenon. The popularity of Art Deco was one-reaching the United States in the late 1920s and bringing waves of bright colors in packag-

ing and posters. The early impact of Hollywood is another, especially Cecil B. DeMille movies, famous for their lavish and lingering bath scenes, which were increasingly seen in fledgling color processes. Remember, too, that the 1920s saw the peak of an unprecedented building boom; what may have started as a strategy to stand apart from competitors in a hot marketplace likely assumed new significance for manufacturers clinging to a lifeline after the Great Depression hit.

By 1930, it seems color in bathrooms was in the promotional spotlight everywhere. "Color has come to the bathroom in its fullest glory and appealing charm and is steadily growing in popularity," heralded the 1929 Home Builders Catalog, a resource book for people planning the construction of their own home. Sanitaryware manufacturers took out full-page ads in architectural forums, selling the idea that the popularity of new housing developments depended upon their use of colorful sinks, tubs, and toilets. "During the past year we have used colored enamelware and vitreous china fixtures exclusively in our bathrooms," professed a Philadelphia architect in one such Kohler ad published in 1930.



Pink was a popular 1930s color choice, especially when combined with black or grey; this 1932 pairing with blue is a bit more unusual.



St. Porchaire Brown (above) and Royal Copenhagen Blue (right) were two shades offered early on by American Standard, whose brochures displayed rich, decorative examples of modern bathrooms.



"These have been accepted with the greatest enthusiasm by an exacting public." Targeting vet another audience-landlords, an American Standard ad from a May 1930 issue of the Saturday Evening Post Magazine boasts a bathroom outfitted with pink fixtures, pale green walls, black floors, and a headline that screams, "Modernize the plumbing-hold your tenants!" Remarkably, the color-in-bathroom trend even reached the floor of the Metropolitan Museum of Art. In a 1929 display, the museum showcased an 'Exhibition of a modern bath and dressing room'-a Deco-inspired onyx, pink, and sable suite designed by the prominent New York architect Ely Jacques Kahn, showcasing black Kohler fixtures outfitted with chrome accessories.

COLORFUL TIMES

Once the public decided to take the plunge into color, they went all the way, often splashing walls, floors, and fixtures with different, vibrant tones. Tiles, paints, curtains—even furniture and throw rugs all appeared in bold hues. The earliest American Standard brochures to sell bathroom essentials in color featured a wheel of complimentary shades behind each one (see facing page), a brilliant marketing ploy to help consumers coordinate floors, walls, and accessories to match. Suggesting four-color combinations like red, black, green, and gold, these palettes were not for the faint of heart.

It's interesting to note the names manufacturers chose to give these early colors. They seem intent on evoking either the exotic (Ming Green, T'Ang Red), the ethereal (Horizon Blue), or the historical (West Point Gray, St. Porchaire Brown), perhaps evidence of just how integral the advertising industry was becoming to manufacturers' marketing techniques.

Sink and toilet brochures also included insights and advice for designing the perfect bath. Ever wonder why so many bathrooms from the 1930s onwards feature a border of black tiles? Maybe this design hint, from the pages of an American Standard brochure, offers a clue: "If you desire the effect of size, horizontal bands of color around the walls will give it



PHOTO BY LINDA SVENDSEN/ BUNGALOW BATHROOMS



Early in the color revolution, brochures featured the nine shades American Standard offered along with a color wheel to coordinate floors, ceilings, draperies, and trim. to you." Another suggestion for enhancing room size was to place the darkest colors on the floor, using lighter ones as you decorated up and around the room.

So what were some of the other color combinations? Well, they ran the gamut from Easter egg aggregations of pastel pink, green, yellow, and blue, to Decoinspired looks positing black with bright pink, blue, or green, to seemingly incongruous match-ups like green and purple.

Then there was the all-out crazy: burgundy and grey, pink and purple, tan with blue and brown. It seems *Anything Goes* was more than just a popular 1930s musical; it was also the new mantra for bathroom décor.

While the popularity of color fixtures continued well into the 1950s, the shades

offered for sale went in and out of fashion. Black is a good example; prominently featured in the sink and tub of that 1929 Metropolitan Museum display, Kohler was no longer offering black fixtures just a decade later. The colors-of-the-moment may have come and gone, but one thing remained a constant: The shift in thinking that brought the first blush of color to lavatories in the late 1920s changed the way we've looked at bathrooms ever since, paving the way for the explosion of colorful, creative, *Anything Goes* designs still in vogue today.

Folks who couldn't commit to colored fixtures could still splash it everywhere else, as the tile in this 1929 house shows. In the late 1920s, color landed like the Marines; it's made a lasting impression ever

since.

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features.

JOURNAL.COM



By Dan Holohan

Thoughts on a 50-year-old

Radiant



Diagrams from the 1950s show how radiant heat provides even temperatures throughout a room (above) and a range of settings suited to various installation locations (ceiling, floor, and wall), which can be adjusted easily (right) by a wall-mounted control.



rowing up in Hicksville, Long Island (don't laugh!), I spent a good part of junior and senior high school sharing a classroom with Billy Joel, now the super-

star 'Piano Man.' That town is not only the site of my single brush with musical fame but, oddly enough, also my connection to the place that introduced American consumers to a revolution in comfort: radiant heating systems.

I clearly remember sitting next to Billy Joel in biology class. We were about 14 years old at the time, and he was singing a brand new Herman's Hermits song while tapping the tune on his desk with the eraser ends of two yellow pencils. He turned to me and proclaimed that he would some day be more famous than Herman was at the time. I smiled and nodded. Even though we were just a couple of suburban kids, anything seemed possible back then.

Billy Joel lived in Levittown, New York, which is right next to Hicksville. Sociologists have written books about Levittown, because the development birthed the first mass-produced homes in America, about 10,000 of them. The houses all looked alike, and everyone who lived there was the same age. There had never been anything like it.

William Levitt built the homes quickly during the days that followed World War II, finishing, on average, one house every two hours using a Henry Ford-like assembly line process. All of the homes were designed to be heated with a new type of system called radiant heat; Levittown was the first development of radiantly heated homes in America.



Levittown, Long Island (above), was the first housing development designed to use radiant heating. A copper company's ad (right) touts the cozy, inviting floors that radiant heat, carried by copper tubing, can provide on a snowy winter day.

Reflections

revolution in heating, then and now.

Brass and Copper IN VOUL DOM RADIANT HEATING

Hydronic radiant heat circulates hot water through a series of pipes embedded in the walls, floors, or ceilings. The ensuing warmth heats a house from its bones on out, avoiding the use of forced-air ducts or old-fashioned radiators. According to converts, the benefits of radiant heating include crisper air, less dust to contend with, and lower operating costs.

My own memories of radiant heat's benefits stem from the time I first laid my 16-year-old body down on a girlfriend's living room floor in Levittown one blustery December day. The north wind rattled



the storm windows, but that floor was so incredibly warm, like lying on the beach in July. I hated having to get up off that floor; it was the best place to be. To this day, I associate radiant heating with all good things: warmth, comfort, and young love.

Radiant for the Masses

Levittown's radiant system used serpentine copper pipes embedded in concrete slab floors to carry the water, which was pumped and heated via a squat boiler that sat in the kitchen right next to the other appliances. William Levitt's Executive Vice President, Irwin "Jal" Jalonack, was responsible for this design. Jalonack started his career as a plumber, then became an HVAC engineer, and he was the one who made the decision to use oil-fired hot water radiant systems in Levittown. He searched long and hard to find those little boilers that would fit in the kitchens. They were made by York-Shipley Company, and the trade dubbed them the "low-Yorks" because they were just a bit taller than a washing machine. Most of those boilers continue to heat Levitt homes to this day, the ones that still use radiant heat. I guess you could say Jal was the man who brought radiant heat to the masses in America. Levittown's goal as a development was to bring affordable, economic-to-maintain houses to the general public, and radiant floor heating helped it succeed.

A similar goal drove Frank Lloyd Wright to use radiant heat in the floors of his Usonian Houses. The last phase of Wright's visionary career, the Usonian House was an affordable home designed for the common man, rather than for wealthy individuals who could afford the personalized services of an architect. Beginning in 1936, Wright designed hundreds of modest homes (averaging 1750 square feet) that attempted to be as efficient as possible using inventive construction methods-often incorporating geometric designs and a centralized kitchen/bath core to help defray building costs. A few of these houses are still lived in by Wright devotees, who meticulously restore the original systems, including radiant heat. Wright's love of radiant heat, which merged a mechanical system with the design, unifying a house and its heating, stemmed from the fact that it aligned with his theories on organic architecture.

In both of these early modern attempts at radiantly heated homes, much of the engineering was experimental. Architects and contractors designed a lot of what they did in those days as they went along. For example, the Levitt homes used no insulation whatsoever under or at the edges of the concrete slab floors. As a result, many homeowners whose radiant systems still work can grow tulips outside in February. They think they have green thumbs, but I know they have some serious heat loss. Levitt also didn't bother with a vapor barrier beneath the slab because that would have added too much expense. As time went by, some of the copper tubing began to leak, and water would soak into the ground rather than rise up through the floor. Consequently, homeowners didn't know when a minor leak occurred, which eventually led to major problems. Both Levitt's and Wright's homes had early copper piping that pushed the envelope right to its limits in this way. If workmen operating on a tight schedule installed the piping with too much play, the pipes could easily break. In fact, the very nature of copper's interaction with concrete made corrosion of the pipes likely to happen eventually, unless a protective barrier was installed-a process that was perfected much later. Once leaks began they were nearly impossible to fix, leading many homeowners with this problem to abandon the systems and install baseboard convectors instead.

Fine-Tuning an Old Idea

Looking back, I realize those old radiant systems were primitive, especially considering the current standards we set for ourselves. Today, many contractors use PEX tubing (made of cross-linked polyethylene) and rubber tubing that can take more stress and strain than metal tubing. We also have simple yet incredibly smart controls that can target and precisely hold the level of comfort in a home.



A diagram for a modern hydronic radiant floor includes plans to heat the garage and driveway as well as the house. Radiant has come a long way since Levittown, but it still wards off winter chills with reassuring warmth.

Keep in mind that back when Levittown was built, radiant heat was still in its infancy. Builders assembled those houses faster than anyone imagined it could be done. The workmanship and materials were crude, and yet those systems lasted for decades—some of them continue to work today. Just imagine how long a modern, properly designed and professionally installed radiant heating system would last.

Radiant heat systems cost more to outfit than forced-air systems, but they also run much more economically. They retain heat better, too. Once the floor warms, it holds the heat and releases it as needed, even after the power goes out. I watched this phenomenon occur often as I grew up in Long Island. Whenever we lost power in an ice storm, those lucky people of Levittown, with their toasty concrete slabs, stayed comfortable on their warmed rocks for days.

That's part of the mystique of radiant heat. It constantly delights you with its economic performance and reliable comfort. And isn't that a big part of what we all want in a home? A place where we can relax and feel cozy? I grew up in Hicksville, next to Levittown. We played on warm floors as children and believed that anything was possible. Some of us became famous rock stars and some of us wound up writing stories about radiant heating. All of us remember its comfort.

If you're new to radiant heat, rest easy. You're not the first to experience it. Not by a long shot.

Dan Holohan has written 14 books about the joys of steam- and hot-water heating. He operates the website HeatingHelp.com and lives in Bethpage, New York.

Special thanks to the Frank Lloyd Wright Building Conservancy. For more information on Usonian Houses, visit their website: www.savewright.org

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Inside the

A look at how architects derived modern interiors from medieval inspiration.

By Gordon Bock

xplore the seasoned suburbs that ring American cities from Teaneck, New Jersey, to Honolulu, and somewhere in developments born in the 1920s and '30s you'll find neighborhoods full of Tudor houses. Even though specific houses might be more accurately termed Elizabethan or Jacobean, the name Tudor has stuck to the bulk of English revival houses built for the mass-transit-oriented lifestyles of the early 20th century. While it's true that architects and homeowners enamored of the British Isles were building American dwellings in the image of the manors of merry old England as early as 1880, the idea really took off after about 1905, spurred by the work of English architects such as C. Harrison Townsend, American books such as The Half-Timber House by Allen W. Jackson, and after 1918, the returning doughboys impressed by the medieval buildings they had seen overseas during World War I.

Medieval may have been the guiding mode for the appearance of the Tudor House exterior, but that perception evaporated upon passing through the front door. These buildings were built for residents with lifestyles that were thoroughly modern and, before 1929 often decidedly upscale, and that is the point for interiors. Although architects worked overtime to make Tudor houses look ancient on the outside, indoors they freely adapted the original feudal spaces and features for a conspicuously machine-age household-that is, a nuclear family cooking and heating with coal, gas, and electricity and commuting to work by car or train. On top of this change was the incorporation of totally novel spaces and functions, from the modern, appliance-driven kitchen replete with breakfast nook, to a first-floor powder room-a progressive notion even for the 1920s -to telephone niches and hidden liquor closets (remember, it was prohibition). Looking at just a few of the characteristics that appeared in countless Tudor interiors across the continent is a good education in where many of these design ideas came from and how they continue to influence and charm us today.



The Great Room

The signature feature of the medieval English castle that gave rise to the 16thcentury Tudor house was the great hall, a large open room at the core of the building that was as much as 40' high. The medieval great hall was a place for working and eating as well as entertaining and sleeping. Fast-forward to the early 20th century, when the staid Victorian parlor became an informal living room (with an average ceiling height of around 9'), and the great hall was suddenly reincarnated.



For the studio living room of the 1928 Shaffer House, architect Lewis Bowman deftly combined iconic features of the Tudor design vocabulary, from arched doorways that open to paneled walls and a vault-like ceiling, to a gallery (center photo) overlooking the entire space.

Architects working the Tudor Revival and sometimes the Spanish Revival modes expanded the living room's proportions dramatically by suddenly raising the ceiling height, creating what was called a "studio living room" if it extended up through two stories. The baronial impact of a sudden expansion of space within the house could be further enhanced by lowering the floor level at the same time, so that guests entered an even larger cavern of a room by descending a few steps. Coves where the walls met the ceiling added to the vaulted-hall impression.



Built in the halftimber style, the Shaffer House in Bronxville, New York, is a masterful combination of influences from modern **English architects** like Edwin Lutyens and C.F.A Voysey, as well as vernacular traditions.

Below: The flattened Tudor arch defines doorways throughout the Smith Pirie House in Lake Forest, Illinois. Unlike the heavy batten front door, which evokes medieval construction, these glass-paned versions are a modern convention.





Above: Intersecting barrel vaults—the Gothic solution to spanning space create a powerful medieval design motif in the entrance hall of West View Farms, also in the American heartland of Lake Forest.



Simple, Open Plans

The picturesque quality of English houses, particularly the lines of thatched roofs and diamond-paned casement windows, caught the fancy of many American builders and designers by the 1910s. Over the centuries, English castles had grown asymmetrically by adding wings, first for servants' dormitories and then for service rooms, such as towers, wine cellars, breweries, and chapels, one at a time. American builders took pains to recreate this picturesque impression on the exterior (albeit with modern materials, such as structural tile walls and imitation half-timbering), but when it came to interiors, they had no qualms about abandoning historical accuracy to create "more convenient and sanitary arrangements of the interior plan," according to a 1910 text.

In contrast to the premeditated look

of centuries of exterior accretions, the interior plan of many Tudor Revival houses could be quite simple. One design for an "ideal small half-timber house" depicted how a central hallway was used efficiently to define the living room from the dining room. The kitchen, projecting off the back for good drafts, was accessed through a small pantry. Compared to the originals, critics noted how "dividing walls are often left out and wide doorways are so placed as to give an unobstructed view from one room to another on the first floor." In fact, an indoor panorama was considered such an asset that tastemakers recommended there be vistas through doorways to "pleasant terminal motifs," such as a staircase, window, or fireplace. A second-floor gallery overlooking the studio living room might provide an even more entertaining prospect of a large, uninterrupted space.



The Van Sweringen Mansion, home to the developers of Shaker Heights, Ohio, was remodeled in 1924 to showcase the potential of the Tudor style. The elaborate full-height paneling, seen here in the dining room, runs throughout the house.



Theatrical Walls

In 1928 Ross Crane, the pince-nez'd, roaring twenties mayen of interior decoration announced, "There are seven current methods of treating walls: 1) masonry, such as stone, brick, or tile; 2) plaster or paint of varying textures; 3) draped walls, or fabrics in panels; 4) woodwork of varying heights and types; 5) applied mouldings; 6) wallpaper; and 7) architectural treatments." He went on to note that while masonry walls were rarely encountered, there was little to surpass plaster or stucco walls that varied in textural effect from smooth to "surfaces similar to the rough, troweled stucco of the typical Italian wall or even cut stone." Gypsum plaster and wire lath, which were just becoming popular alternatives to traditional lime plaster and wood lath, made textured wall finishes that much more cost-effective for builders to produce. A rough, float sand finish was a basic option for a non-smooth plaster wall. From here, the skilled plasterer could manipulate the mortar with trowels, brushes, and even spoons into a variety of mock-medieval finishes with names like stipple, suction, English, Italian, and French.

For some houses, the popularity of textured wall finishes taxed the talent, time, and money available, so the coatings industry rose to fill the gap with a range of products collectively called texture paints. Going by trade names, such as Textone and Craftex, these decorative coatings were brushed on to simulate the textured effect either through the additives they contained or, in one case, an ability to swell into shallow scoops. Leaded glass windows set in oak frames are a conspicuously picturesque and historically authentic touch used in the Peter Lapham Complex, a group of buildings in Philadelphia assembled from 16th-century English originals. Note the massive oak ceiling timbers.

Romantic Wood

Heavy wood and lots of it were a hallmark of the Tudor Revival interior. Wood paneling, although always pricey, was a rich and characteristic treatment, especially in small oak panels or, in the most authentic work, decorated with linenfold carvings. According to guides of the time, "where Early English styles are to be reproduced, wood wainscots should rise higher than the 24" or 36" common for the Colonial style." Beamed ceilings, usually stained a dark oak color, were also advocated as most appropriate for an English cottage living or dining room. Like exterior half-timbering, such beamwork was invariably not truly structural. Nonetheless, architecture books cautioned that the beams' construction should never be simply boxed. Although 20th-century architects may have taken license with the plans of original Tudor houses, they retained the low-raftered ceilings, quaint mantel shelves, and darkly stained woodwork.

The ambiance of heavy wood was reinforced by the applied finishes. For faithful reproductions of English houses, the preferred wood species for interiors were oak, chestnut, or ash treated with a rich, dark stain and a dull wax finish to recreate the patina of woods darkened by centuries. Rooms sometimes contrasted this dark woodwork on trim, wall paneling, and ceiling beams with ivory-colored enamel paint. Ceilings of parge or decorative designs worked out in plaster were recommended as the proper accompaniments for the oak-paneled walls of Tudor or Jacobean interiors.



In Rappaport House (above), Lewis Bowman's entry hall (right) uses a slate floor and timbering on the walls and ceiling, finished with a dark stain and ivory-colored plaster.





IRGINIA SOCIETY/ RON J

Judor Jouches

While what was called the "English cottage interior" was notable for its sandfinished walls and dark-stained trim, the list of other interior features and furnishings, taken either directly from the British Isles or spawned by the creativity of North American designers, was well established and promoted. Ideally, floors were wide oak boards, but slate slabs and old tiles were also appropriate and common, with synthetic, manmade versions advocated for houses built with modest budgets. Fireplaces were typically large openings built in a low Tudor arch and framed in stone or stonelike tile. An overmantel, if present, might be stone or hardwood and richly carved. Bookshelves built of oak were a natural mate for wall panels and designed to match in both height and detailing.

Windows were casements, rather than double-hung sash, and although often glazed to resemble leaded glass, they had modern steel frames and hardware. Furthermore, the windows were not narrow, individual openings but assembled in groups to form broad expanses that admitted plenty of light, almost like a picture window. Architectural hardware shared the medieval heaviness of wood and was wrought iron or a mass-produced steel simulacrum. Strap hinges and thumb latches emphasized the hardware's metalwork with large leaves and plates and were secured with conspicuous wrought-head fasteners. Light fixtures, too, were based upon heavy wrought iron (despite being deftly wired for electricity), using iron hoops and chains for chandeliers.

When it came to accouterments, the perfectionist could take the Tudor interior to its limits, and decorating books showed the way. Tapestries were the recommended wall hangings, and while floors were usually devoid of coverings, subdued oriental rugs were acceptable when animal pelts were not to be had. Shelves or cabinets might hold pewter tankards or candlesticks in brass and copper. Antlers and deer heads mounted to walls also fit the hunting décor and, for the ardent Tudorphile, nothing could beat an old suit of armor.

The Virginia House in Richmond, Virginia, is another building assembled on these shores from original **English materials** and now a museum. The dining room is an excellent example of the use of Jacobean decorative plaster ceilings, as well as tapestries and other antique furnishings.

Old-House Living

HOW

alk into my kitchen by way of the side porch, and you'll pass through an old door frame that makes me smile every

time I see it. It's a plain wooden framenot much to look at, but it's got a special feature: names. There are dozens and dozens of them scrawled into the wood. They start about knee high and rise more than six feet off the ground-higher than I can read, anyway. Most have dates scratched next to them, and little hash marks to show how tall each name-Dan, Katie, Josh, Bryan-once stood.

I don't know these people, except for one. My husband, T.J., added our niece, Emma, to the lineup a few months back, History lunks around every corner...

- WHO DESTROYED THE MAINE? -

OF THE WAR SHIP MAINE MAS

Convinced t

REWARDI Assistant Secretary I

Accident

ucky 6 things to love about old houses

when she stood exactly three feet tall. But that doesn't bother me a bit. In fact, I like not knowing who all these long-grown youngsters are. I can picture them in my mind's eye, standing with heels pressed up against the wall and heads thrown back, serious, hopeful. Waiting anxiously to see if they've added another inchhaven't we all been there? Rubbing it in to their siblings if they had; eating extra helpings of vegetables if they hadn't. T.J. and I are renovating this Victorian house, a blend of Folk and Shingle styles, built in 1898 by a conductor on the Michigan & Southern Railroad for his family- but we don't ever plan to sand that door NILW YOFIK . IOUF

frame down and refinish it. Why would we? The door frame is the natural place in this old house for those measurings, right at the entrance to a warm Victorian-era kitchenwhere swarms of children must once have played. The list of names at our kitchen door symbolizes some of the very best things about living in an old house. Every time I pass it, I reflect on how lucky we are-all of us who own old homes. -Sometimes it helps to remind ourselves why.

THE LENS OF TIME

When you live in an old house and work onit, you gain a new perspective on time. You appreciate how it passes, how much has changed over the decades, and what it can teach us.

After we bought our house, I went to the library and called up microfilm for the Angola Record, the newspaper published in our small town in the late 1800s. I was amazed to read everything from hard-hitting news items like the U.S.S. Maine disaster-the battleship explosion that launched the United States into the Spanish American War and gave birth to

ion of the





the phrase "Remember the *Maine*!"—to coverage of the lively local social scene. Seemingly every time someone from nearby Buffalo visited this rural village, the paper noted it. Reports of dinner parties and purchases of new carriages and farm equipment were also newsworthy back in 1898.

I was ecstatic to find that the paper also ran small items about local construction projects, allowing me to follow the building of our house. The house was constructed over five months during the summer, and when it was done the Record praised it as a "fine new home" for the community. Just imagining the pride the original owners, Frank and Mary Watt, took in those glowing words made me feel honored to be its caretaker

now.

QUALITY MATERIALS

Here's a best kept secret of owning an old home. It's not all about the past; it's about living in the present, too—in the best possible way. Admit it. You've visited a fancy new home in an upscale subdivision, only to find yourself surreptitiously inspecting the baseboards, doorknobs, crown mouldings, and windows with a hint of, well, noblesse oblige. You think about your own heart pine floors and massive oak staircase, your stained glass windows and solid metal hardware, and you feel a bit sorry for people who don't live among materials of such beauty, style, and richness.

Sure, we may pay higher heating bills; maybe our doors are a bit draftier. We usually don't have central air conditioning, and washing those third-floor windows on a big old Victorian can be a real challenge. Still, this is the only way to live, isn't it?

THE COMFORT LEVEL

Four reassuring words you can say about old houses are *you can't mess up*. Well, in extreme instances you can, but in general, working on an old house gives you a certain level of security—a very large safety net, as it were. Old houses were built to last, and if you do your homework and work carefully they are very forgiving of goof-ups.

For example, you can try a cool fauxfinish technique on the parlor walls, and if it doesn't work out, so what? The room's been redecorated 25 times since the house was built, and it's still a willing canvas, so go back and try again. Attempt to find those pocket doors hidden away behind drywall. Try to install a vintage schoolhouse sink. Try to look under the linoleum for hardwood.

When you do hit on the right look for

Mature landscaping adds beauty, plus candio benefits.



your old house, you'll know it. The very walls seem to breathe a sigh of relief.

THE EXERCISE

You don't need to spend money on a gym membership when you own an old home. The fact is, you'll burn approximately 8,000 calories a day on stair-climbing alone. Take our house; it has four separate flights of stairs (not counting the ones outside) for a total of 52 steps. Try running laundry from the washing machine in the basement to the bedrooms on the second floor with that kind of a setup—it's a cardiovascular workout par excellence.

Then there's all the yard work that comes from having mature trees on your property. The five huge maples surrounding our house—each over 100 years old drop enough leaves each fall to provide a feel-the-burn raking marathon for an entire football team, let alone two people. We always lose a few pounds in October.

REVELATIONS

When you own an old house, every project brings a fresh crop of discoveries. You're constantly making little finds—either physical artifacts or eureka moments. (So that's why the wall sounded hollow! There's a doorway under there!) That means you're learning more all the time about the structure in which you live and the people who inhabited it before you.

One day, when T.J. and I cleaned out an old coal bin in the basement, he found a sea-green pottery teapot in perfect condition save for a missing lid. With a little research on the Internet, we learned we had unearthed a "Pour Right Tricolator," popular in the early 20th century.

Now every spring I fill the pot with fresh-cut lilacs, set it on our kitchen table, and as I do, I think about how it came to be there. Was it a wedding gift? A birthday present for the lady of the house? I speculate that, when it was no longer fashionable, someone put the pot in storage in the basement where it dropped into the old cellar, forgotten. However it got there, it's beautiful—and it's part of our home's unique past.

We have made plenty of other finds, too. Digging around in our yard, we found old bottles in yellow and green and amber glass. Intact and lovely, they now sit proudly in our library. A bedroom renovation yielded a perfume box from the 1940s that had fallen—or perhaps been tucked away—behind some crumbling plaster. We've found coins, newspapers, photographs. We've picked up clues, too, by uncovering long-sealed-over doors, about what the floor plan of the house looked like 107 years ago. It's changed a lot since then, and finding these clues helped us figure out how to make the house look as much like it once did as we are able.

These treasures are much more than mementos of a completed project. Each one is a marker, pointing us toward new insights about the house in which we live and the families who have called it home.

THE GHOSTS

Okay, maybe your house doesn't have ethereal occupants, but we believe ours does. We think it's either Mary Watt, wife of the railroad conductor who built our house and the first woman to live here, or Emily, from whom the Watts bought the land. And we're not alone. Ask enough people who live in very old houses, and you're bound to turn up more than a few examples of homes that have, well, guests, as we like to think of them.

One day, a contractor was working on our second floor alone. When we returned, he sheepishly asked us if we'd "ever seen anything strange" in the house.

"Like what?" we asked. "Like a woman's shape in the hallway upstairs," he replied. He'd seen it while he was working—just for a minute. It had crossed the hall and disappeared. We just smiled. Maybe so, we said...maybe so.

Charity Vogel, a writer, journalist, and college instructor who lives in an old Shingle/Folk Victorian in Angola, New York, is currently working on a novel about her house.

A House In the

Exploring the multiple forms of urban dwellings.

By James C. Massey and Shirley Maxwell Photos by James C. Massey

> hen asked, most Americans would probably say they don't think much of cities. They're too crowded, too noisy, too dirty, they would argue, with too much traffic, pollution, and crime.

Cities are filled with too many germs, yet not enough neighborliness. In fact, Americans have felt that way about cities for at least a couple of centuries now. And yet, by choice or necessity, cities are where a lot of Americans live—and the city houses they live in have roots as deep as those of the cities themselves.

Because human beings take up a certain irreducible amount of space, and because space is the most expensive commodity in any city, the question arises: What is the most economical way to squeeze the greatest number of people into the desired locations? The answer—the city house—is not a single type of dwelling,



but one that comes in many sizes, styles, floor plans, and economic levels, with all sharing certain characteristics.

City Living in Context

Historically, cities have always tended to grow where roads, rivers, canals, and sea lanes meet or change character. They are seaports, river ports, railroad hubs, ending points for cattle drives, shipping points for goods entering and leaving the country, and arrival and departure points for people—of whom, needless to say, cities have a great many, most of them occupied with one or more of these diverse activities.

Before the advent of electric trolley and railway lines in the late-19th century, a desirable city location was one within walking distance of one's work. Horse-drawn vehicles—carriages, cabs, or horse trolleys—were an option only for those who could afford them, and even then they had a limited range. Such population density could easily take a turn toward overcrowding when once-popular areas and their elegant houses outlasted their appeal for the middle or upper classes. Then those neighborhoods were sadly prone to become multi-family slums.

Efficient use of space then is the first

Cooke's Row in Georgetown in Washington, D.C., is a good example of the use of double houses. A party wall between the houses leaves each house with a side garden.



The grand Beaux-Arts Belmont Mansion (right) occupies an entire triangular block in Washington, D.C. It was designed by Eugene Sanson and Horace Trumbauer in 1909.
Boston's famed Back Bay is noted for large Victorian row houses, usually separately designed or in small groups, such as these from around 1880. The end of the row at the street corner has the advantage of a second principal façade.



principle of urban building. City houses are almost always constructed on narrow lots, using the least possible amount of expensive street frontage. Houses extend upward, backward, and downward rather than sideways. The typical city house is likely to be no more than two or three bays wide but up to four storeys high, not counting basement and attic.

Secondly, city houses are almost always constructed of stone or brick rather than wood. The disastrous Great London S

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One of the great groups of Italian villas is Philadelphia's Woodland Terrace, an 1861 development of double houses designed by Samuel Sloan, some in stucco, others in stone.

City mansions are formal and stylish, like the 1901 Beaux-Arts Ferguson House in Louisville, now the Filson Club.



Fire of 1666 convinced early American city planners to ban wooden buildings and to require protective firewalls—solid masonry walls reaching from the basement to well above the roofline—between abutting buildings. It was the firewall, in fact, along with the masonry construction, that made



it possible to build safely from lot line to lot line.

The most popular solutions to the urban housing problem have included row houses, double houses, duplexes, urban mansions, and closely spaced freestanding houses. Foremost is the row house.

Row Houses

Everybody recognizes row houses, those long strips of tall, narrow residences lined up like brown-brick soldiers on either side of inner-city streets. Today, somewhat illogically renamed town homes, they most often trail around the edges of cities and towns, frequently miles from any recognizable urban core, and certainly not within walking distance of the jobs and amenities that made row houses such a vital part of America's early urban housing stock.

Row houses were part of a European building tradition that migrated to the New World with English settlers on the East Coast in the 17th century. They formed the residential core of old cities such as Philadelphia, Boston, New York, Providence, Baltimore, and Savannah. Every house, except those on the ends of a row, shared a party wall with each of two neighbors, hopefully with a firewall above the roofline. Sometimes there was a miniscule front yard, but in most cases the house was built almost to the sidewalk, possibly with a small porch or stoop. Nonetheless, many



The Hunter House Museum in Norfolk is a splendid 1894 Romanesque Revival freestanding house in the West Freemason Street Historic District. It is built close to the street but with space enough on the sides for a garden.

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Large cities often have mansions built in the manner of French chateaux. Note the corner partial tower, conical roof, and Gothic details on the dormers and balustrade on this **George Oakley** Totten, Jr., design of 1906 in Washington's Embassy Row.





Double House (Twin House)

Sister dwellings, often mirror image in plan (inset), are designed to appear as a single house.



row houses included a rear yard that could be helpful for all sorts of things, from laundry facilities to chicken coops.

Row houses usually are found in continuous rows, sometimes with identical designs, for entire blocks, but often they form smaller groups—possibly of three or four or 10 or so—before the line is broken by another group. Life within a row house was, and still is, rather rigorously vertical. There were a minimum number of rooms per floor (usually two in the main section of the house) and many floors (often three but sometimes four) in addition to a basement and attic.

In New York row houses, kitchens and other service areas were commonly relegated to the basements of mid-to-late-19thcentury houses. By about 1830, builders began raising the basement ceilings to allow for dining rooms at the front of the space and kitchens at the rear. In Philadelphia, kitchens were more likely to be in a rear wing, beyond a piazza or narrow space in the central section of the house. The piazza served to add air and light to an otherwise dark and airless structure.

Access to the backs of houses posed a problem that was partially solved by long alleys running along the rear line of the lots. These alleys were convenient for deliveries and other services. In addition, sometimes shared, narrow, front-to-rear passageways stole a foot or two of space from each of two adjoining houses, while also providing access to the backs of houses and lots. Basement doors at the front of the house were not necessarily large enough to serve as entries, but in the 19th century, high or English basements did create a real measure of extra living space.

Freestanding two-storey structures were sometimes built at the rear lot line. Called bandboxes in Philadelphia, they contained just one room on each floor and were actually separate little dwellings that had to be reached either through an alley or through one of the shared passageways beside the larger houses in front. The back of the lot was a good place, too, for carriage houses and stables.

The front entrance of the house itself might open to a stair hall running along one side or, in earlier, simpler houses, directly

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into a small parlor with the staircase in a rear corner of the room. By the 1820s stairs were more likely to be open, straight runs, or to turn in dogleg fashion with or without a landing. Early row houses might have staircases that were winders, or narrow corkscrewlike stairs that fit neatly into a corner.

Any time of year, row house dwellers could be thankful that they were not crowded into the hastily erected wooden firetraps that too often served as home to factory workers and other low-income city residents. (Incidentally, the word "tenement" had a far less negative meaning in the 18th and 19th centuries than it has today, as it originally referred to any rented property, not just to Dickensian slum dwellings.)

Although many were built by individ-

ual owners, row houses were especially attractive investments for speculative builders. Not all row house groups were constructed along major streets either. Groups placed on the sides of parklike courts created charming private streetscapes in some cities such as Boston and Philadelphia.

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Over the years, row houses have evolved in layout, interior features, and construction methods—and, of course, architectural styles. From Federal to Greek Revival to Italianate to Renaissance Revival to Romanesque to Colonial Revival, the many surviving row houses tell the story of America's changing architectural tastes from the 18th through the 19th century. The row house's role in the architectural fashion show pretty much ends with the 1920s and



the dominance of the large apartment building, an even more efficient use of city land.

Double House

The double house, or twin house as it's known in Philadelphia, is another venerable urban form. Because its two parts usually have a unified if not identical design, the double house may look at first glance like a large, single mansion, particularly when it is situated on a corner with the two main entrances on different streets. Corner placement tends to result in an L-shaped footprint for the combined houses. More often, however, the two houses are set sideby-side, so that they appear more like a pair of row houses, though they may be wider. The great advantage of the double house is that it allows for much greater design flexibility, as each residence gains windows on three sides rather than two. Each residence also has the benefit of one side yard in addition to any front or rear garden space. There is still a shared party wall. Like the row house, the design of the double house is meant to make the most of a narrow lot. Double houses can be big, small, or inbetween, elaborate or very simple in style, and of any vintage.

City House Spins

The goal of deriving comfortable, flexible, and efficient living space within the confines of a tight lot spawned at least three other significant forms of the urban house that became popular in one or more cities over the last two centuries.

Duplexes are somewhere between a house and a large apartment. Also called a semi-detached house, a duplex consists of two living units (possibly multiple storeys) placed one above the other. It isn't always easy to tell a duplex from a big single house, but if you see two front doors, you can be pretty sure it's a duplex.

Urban mansions are the jewels of city residential areas. Often built on corner lots, they could provide huge, elegant homes with luxurious interior spaces and parklike grounds, particularly if they were situated on corner lots. They flourished from the mid-18th through the early 20th century.





Above: The Federal Revival entrance porch of the Woodrow Wilson House in Washington, D.C., by Waddy B. Wood, 1915, makes distinctive use of a concave porch, smooth stone wall, and arched door with sidelights.

Left: That most urban and urbane of West Coast cities, San Francisco, features many splendid traditional city houses, as this somewhat-French style freestanding example illustrates.

Private parks do much to enhance city life but are too rarely seen. A good middle-class example is the 1870s St. Alban's Place in Philadelphia, where essentially the street was transformed into a private fenced park.

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Closely spaced single family houses could be called the Chevy version of the Urban Mansion. Smaller and usually less costly than a mansion, they were still pretty expensive pieces of city real estate. As they were at least a few feet from the houses on either side, these buildings did allow air (and foot traffic) to move between them and into the backyard. They may also have been slightly less of a fire hazard.

As centers of commerce, industry, culture, and power, cities have always offered opportunities—not just for gainful employment, but for access to universities, museums, libraries, the fine and performing arts, the best restaurants, and a vibrant and infinitely varied social scene. Best of all, cities present a lot of great, still livable, historic places to live. In fact, maybe we all should learn to love a house in the city.



The bay windows of this Georgetown block (left) create a charming urban pattern and provide a welcome addition of light, air, and view to the houses away from the street at a more private second-floor level.



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Adaptable Adhesive

Although gun-able construction adhesives have become essential for working on new and old houses alike, they have traditionally also been a source of solvents that continue to offgas, impacting the environment. Now OSI has come up with an alternative in the form of their Pro-Series SF-550 High-Performance Sub-

Floor & Deck Adhesive. A latexbased product that exceeds the requirements of the California Air Resources Board, the adhesive was developed for general construction needs, from adhering ceramic tile to wood or bridging small irregularities in framing—just the kind of utility that comes in handy when working on existing buildings.

Plus, the latex formulation for deck use allows the adhesive to stick to damp wood while remaining water- and weather-resistant. For more information about the Pro-Series SF 550, visit www.osiproseries.com or call (888) 445-0208. Circle 26 on the resource card.

Up on the Roof Tape V

Standard steel tape measures marked in 12", 16", and 24" increments for joists and studs are an asset in framing carpentry but not particularly helpful when it comes to installing asphalt roofing. To sidestep the issue, Starrett has introduced a tape measure specifically calibrated for laying out roofing. The RT1-25 skips traditional inch marks in favor of two scales: one (in black) at the

5" spacing used for traditional three-tab shingles, and a second (in red) for the 5 1/2" spacing common for dimensional and architectural shingles. The tape also carries bond markings (an oval around the number) to help with laying out the installation both horizontally and vertically. For more information, contact Starrett at www.starrett. com or call (978) 249-3551. Circle 27 on the resource card.



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Old-House Journal:		
(a) Total number of copies:	156,508	147,808
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WASHINGTON, DC—The John Nourse Residence, Circa 1840. This historic property is architecturally significant because it is one of the last surviving early antebellum homes, its curving ogee S shaped facade is formed by the union of convex and concave lines. Located in the downtown development area, which affords a variety of uses. Kathleen Young, Randall Hagner Ltd., 202-491-9171 Cell/202-243-0400 Office. kyoung@hagner.com



ORLANDO, FL—1923 Vanderbilt-style home with 125-ft frontage on Chain-of-Lakes. 3 bedrooms/2 bathrooms, 2152 sq. ft., two-story. Unique original inlaid moldings, hardwood floors, magnificent fireplace. Second floor is artist's studio. Florida fieldstone columns and fishpond; fully treed yard. Convenient to downtown, airport and attractions. In midst of loving restoration by owner of 48 years. Olde Town Brokers Florida Realty Group, Jeannie Clarke, 407-497-0144.



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Historic Properties

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ST. JOSEPH, MO—Jennings-Comstock House, circa 1856. Daughter of property's owner married poet Eugene Field (best remembered for poem, "Lovers Lane"). Listed on the NRHP, last on its street to be restored. 3,000+ sq. ft. In addition to tax credits, qualifies for

up to 25-years of real estate tax abatements. \$75,000 plus restoration. For property



CHELSEA, MA-1886 Queen Anne Victorian on hillside, minutes from downtown Boston. Historic Low Art tile fireplace surrounds, renovated kitchen and baths featured in 3 Boston Globe Magazine stories. New paint, roof shingles, chimneys and fence in last 5 years. 3 bedrooms, 1 1/2 baths, full basement. Oak-shaded garden. Distinctive stained glass in several rooms and hall landing. \$450,000. Dorothy Dolan, Cobblestone RE, 617-240-2407/617-889-5700.



CENTERVILLE, MD-Mount Pleasant. Circa 1799 classic Georgian brick manor house on 2.72 acres w/private tree-lined drive. Meticulously restored w/10' ceilings on first and second floors, 6 fireplaces, original woodwork, mantels and doors, marble bath, 5-zoned HVAC. In-ground pool, original smokehouse, surrounded by farm fields. Convenient to Annapolis, Easton and Historically Wilmington. Registered. \$1,475,000. Skipper Marquess, Coldwell Banker Tred Avon Properties, 410-822-9000.



VICKSBURG, MS-Beautiful Colonial Revival home located on one of Vicksburg's most peaceful and desirable streets. This home features 5 bedrooms, 3 baths, 4900+ sq. ft., 10 fireplaces, beautiful spacious dining room w/curved wall and built-in cabinets with leaded glass doors and adjoining tiled terrace w/wrought iron railing. Listed on the National Register of Historic Places. Pam Beard, BrokerSouth GMAC Real Estate, 601-831-4505



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Historic Properties



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ESSEX COUNTY, VA—Edenetta, circa 1821, restored brick manor home on 262 acres displaying front and back porticos. Exceptional detailed raised plasterwork, 11-foot ceilings and 8 fireplaces as well as modern baths and kitchen. Formal boxwood garden, 2-story kitchen/servant's quarters and 2-car garage complete the offering. Easily accessible to Richmond or Fredericksburg. Janel O'Malley ex151, Robin Marine ex145, Coldwell Banker Carriage House, 800-852-1798



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While the 1960s phrase "space race" referred to America and the Soviet Union, it applies just as well to builders and homeowners of today who strive to maximize the volume of existing houses—sometimes no matter what the consequences. Consider the brick house (top) sprouting what seems to be a second-floor addition over an enclosed side porch. Not only do the shingle siding and horizontal windows differ radically from the main house, the overhanging addition visually upstages its base. Then there's the frame house (above) that shows signs of two expansions. Notes the photog-rapher, "It's enough that they raised the roof using a pitch and siding details different from the original house, but then to exaggerate it with stripes—Yikes!" m

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