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OLD-HOUSE JOURNAL

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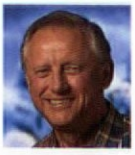

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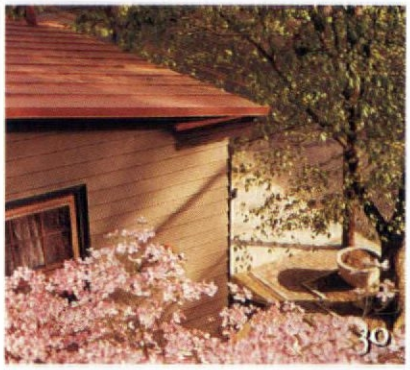

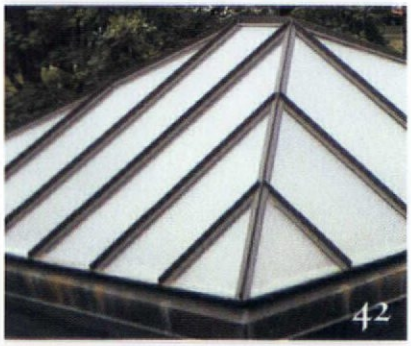

ON THE COVER: *The original standing-seam metal roof still protects this Gothic Revival house in Haddonfield, N.J. Photograph by Christopher Hartlove.*

DEPARTMENTS

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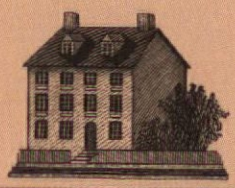

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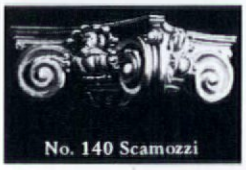
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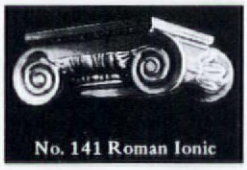
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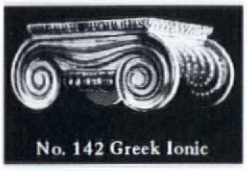
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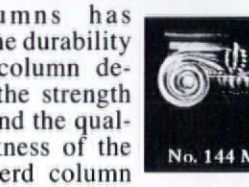
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EDITOR'S PAGE

Dream of a Rarebit Restorer

NOT LONG AGO, I WOKE WITH a start at four o'clock in the morning and sat up in bed, listening to my heart pound in the silent room. I stumbled to the bathroom and looked in the mirror. My eyes were clear, but focussed somewhere beyond the surface of the glass. My complexion and mouth seemed all right (beyond the usual foam at the corners), but I was breathing heavily. My forehead was damp with perspiration, but a check with a thermometer showed I didn't have a fever.

Still, I couldn't shake the haunting memory of the visions that had jolted me from a sound sleep. It seemed I was all alone in an empty old house — I couldn't place the town, yet it was like any town — walking through rooms and long halls lined with crumbling, clashing wallpaper and peeling paint. Every time I saw a tear or a flake, I had a desperate, overwhelming urge to claw the walls clean with my bare hands. I dug in with my fingernails pulling off large chunks at a pass, but as soon as I thought I had a spot finished there was more. Like Russian dolls, under every layer of paper there was another layer, and under that one, another, and another. The harder I worked, the more paper I found as the piles of debris grew deep all around. I swore the strips of failing paint that hung from the ceiling were laughing at me — it was eerie.

As I roamed the house I looked outside, through the cobwebs around a missing window pane here, a broken shutter there. Across the street, I could see people on scaffolds and ladders all over other houses involved in bizarre, meaningless activities. They were ripping out doors and porch posts and trying to replace them with substitutes that didn't match. They were chopping off perfectly good eave brackets and lintels and hiding the scars with ill-fitting patches. They were covering walls — sometimes windows and all — with lengths of strange, colored metal. Not a few were ripping beautiful buildings right to the ground. It was all crazy and weird in a spooky sort of way. I yelled and yelled for them to stop but no one paid attention; they didn't even hear me.

Angst and old houses.

In another part I remember vividly, I was in a kind of store. The clerk behind the counter was cordial and trying to act helpful, but whenever I asked a question he would shake his head. He was calm and wore a pleasant smile, but clearly didn't understand what I was asking. The worst part was I thought what I wanted was right behind him. All he had to do was turn around. Instead, he just shook his head with that sickly pleasant smile, as if not to get me excited. He was humoring me, unsure of what I might do next and hoping I would leave. We were all alone in the store except for the bright lights and aisles of shiny, cheap-looking merchandise. Piped-in music wafted in and out with lyrics that sounded like "They don't make that anymore.....they don't make that anymore....."

That day I went to the doctor. After he probed in my ribs with his fingers and looked in my ears with his little light he said I could dress now and left the room. A few minutes later in his office, he asked me to sit down. "He's found something!" I thought to myself and waited to hear the name for my derangement, but he only smiled at me with a fatherly expression. "There's nothing really wrong with you. Sometimes, when we're tired or anxious about the world or we go to bed on a full stomach, our imaginations run away with us. They to try explain the problems we perceive while we're awake, by working overtime while we're asleep. Is anything bothering you? You're fine. Just try and relax. What do you do in your spare time?"

I thanked the doctor as we shook hands good-bye. He was right, I was worried about something. I heaved a sigh of relief as I left the office. Good thing it had all been only a dream.

Gordon Beck

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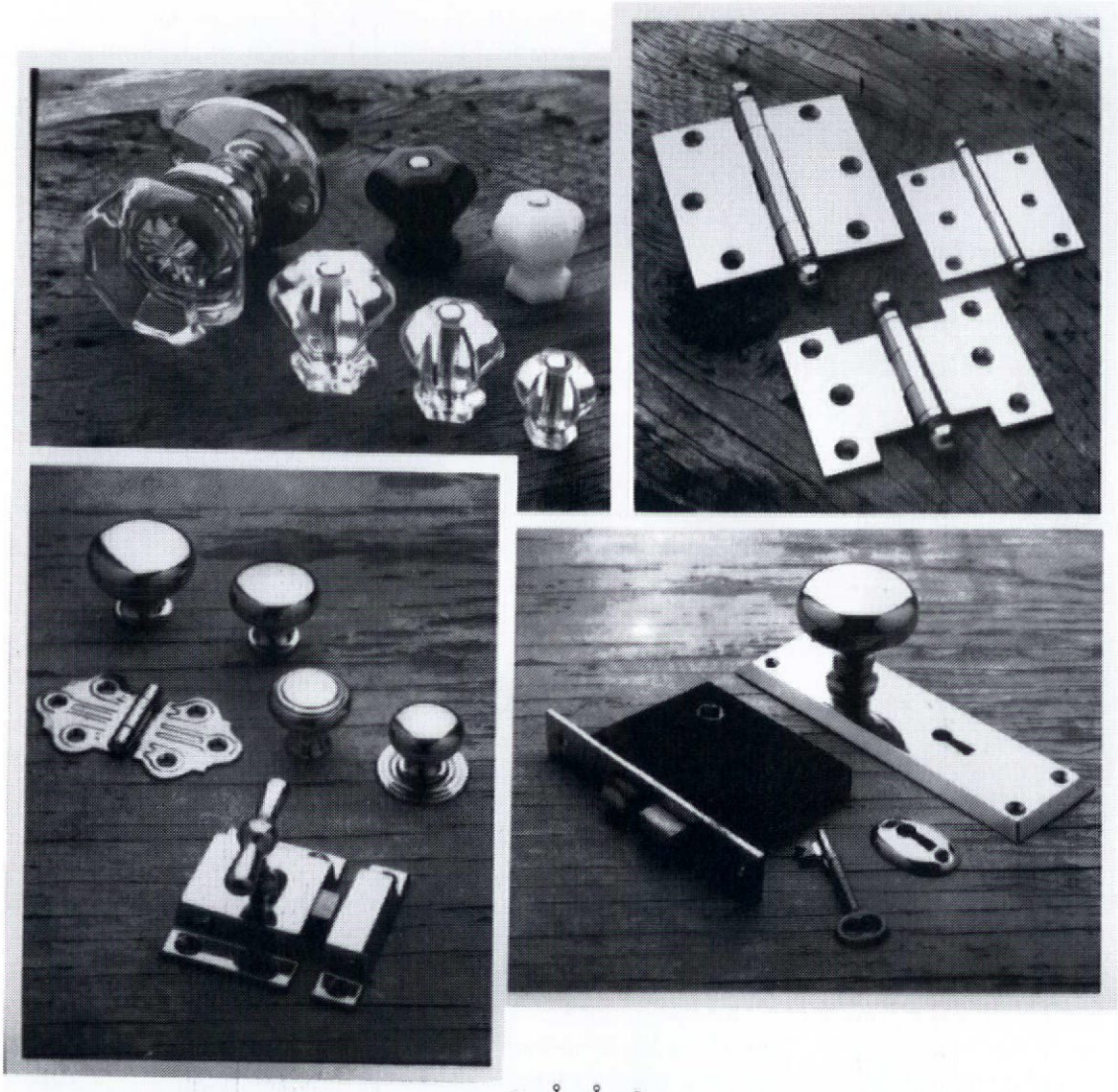

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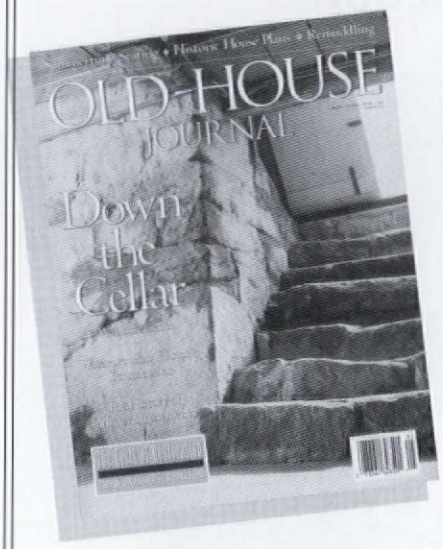


BASEMENT NOSTALGIA

Dear OHJ,

The article in the May/June 1992 issue on "The Modern Basement " was very interesting as a history lesson and as a bit of nostalgia, since I can remember courting in such a knotty pine paneled basement. Of particular interest were the reprints of ads. I have to admit that I enjoy another hobby besides collecting houses, and that is toy train collecting. When I saw the Sunbeam furnace ad with both a basement and a toy train I was overjoyed.

— PAUL E. ROSE
Waterford, Virginia

THE BAUHAUS APPROACH

Dear OHJ,

I enjoyed your article on the "modern" old-house styles of the Art Deco and International Styles [*March/April 1992 OHJ*], but would like to clarify a misconception that was made clear to me only recently during my involvement in the restoration of the family home of Bauhuas school founder, Walter Gropius. In 1988, the Society for the Preservation of New England Antiquities (SPNEA), which owns and operates the house, gathered together a restoration team that included Ati Gropius Johansen, Gropius's daughter, who had grown up in the house. When the project first started, SPNEA staff employed the same restoration approach used for houses of the 17th, 18th, and 19th centuries. This meant basing the restoration on documentation and a thorough understanding of the style associated with the time period. Gropius's daughter recognized immediately that this approach would result in a somewhat contrived appearance to a Bauhaus-inspired house. She therefore offered to give us a crash course in the Bauhaus approach to design, much as her father would have done had he been alive.

Over the next few months, we learned that the Bauhaus school never intended to create a style. The school taught an approach, which was based on solving design problems with efficiency and simplicity. The result was a dramatic new appearance for both the interior and exterior of buildings. As soon as this "look" became known, however, practitioners who embraced it termed it a style, thereby condemning it to convention and conformity. Standard architectural features like ribbon windows, glass block, and flat roofs came to define the Modern Movement, displacing the philosophy that had created it. The true Bauhaus-designed houses were not built with a style in mind, but with an approach to solving the problems associated with a neighborhood, a piece of land, and the tastes and needs of the occupants. Although the philosophy was international, as soon as it became a "style" it was fossilized and no longer was able to solve the design problems of the Modern Era, as had been intended.

Also, the photograph printed in the article as the home of Walter Gropius was actually the home of Marcel Breuer, his student, colleague, and neighbor. The Gropius House is located in Lincoln, Massachusetts, and is open to the public.

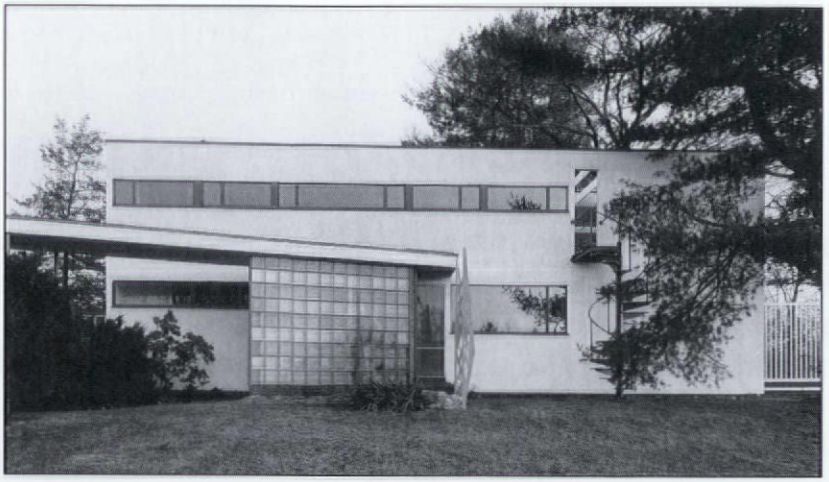
— PETER GITTLEMAN
Manager of Property Interpretation
SPNEA

WHERE'S TERRY'S TOOLS?

Dear OHJ,

Frank Terry's story [*"A Painter's Story," March/April 1992 OHJ*] is wonderful. As a side note, it would be nice to see a description of his favorite tools and techniques for removing paint.

— CHUCK LUDEKE
Rockford, Ill.



The Walter Gropius house in Lincoln, Massachusetts looks deceptively simple, but every part of its design is functional.

Four Myths About Glass. And One Window That Shatters Them.

People believe all kinds of things about window glass. It's expensive. It wastes energy. It makes rooms feel like iceboxes in winter and hothouses in summer.

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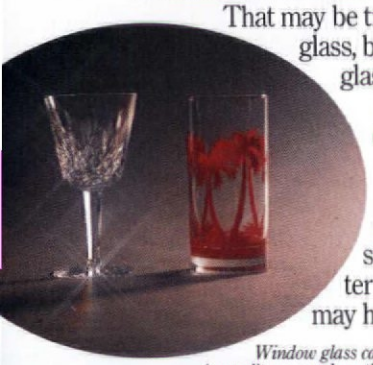

Window glass can differ in quality as much as these glasses do.

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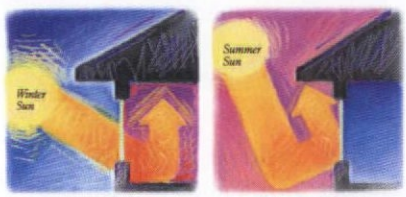

The sun's heat stays in when it's cold. *The sun's heat stays out when it's hot.*

2. Insulating Glass Works Like Insulation.

Wrong. Two panes of glass with an airspace in between does, but Andersen takes that technology further.

Besides that insulating air space, Andersen glass has a transparent coating that controls the flow of radiant heat.

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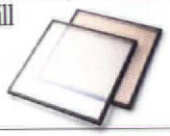

4. The More Efficient The Glass, The More Efficient The Window.

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LETTERS

MYSTERY SOLVED

Dear OHJ,

In regard to the "Mystery Metal" question posed by Linda Novak [*"Ask OHJ," January/February 1992 OHJ*], the exact identification of this metal and finish could be fairly easily established through research of the design traced to a manufacturer. Each builders' hardware manufacturer carried specific designs in ornamental goods that were available only in certain years.

After reviewing the options based on the Homestead era, an educated guess points to either an oxidized bronze with highpoints polished or a dark statuary bronze with high points polished. The company may be determined through trademarks or names on the lock case front, requiring removing from the door mortise. Current search services or books, such as the one I've written, *Antique Builders' Hardware: Knobs and Accessories,* or Leonard Blumin's *Victorian Decorative Art,* can assist in locating the company design and other particulars.

— MAUD L. EASTWOOD
Woodinville, Wash.

Horizontal bands of windows and rounded corners of this Albuquerque, New Mexico house typify the Streamline Moderne style.

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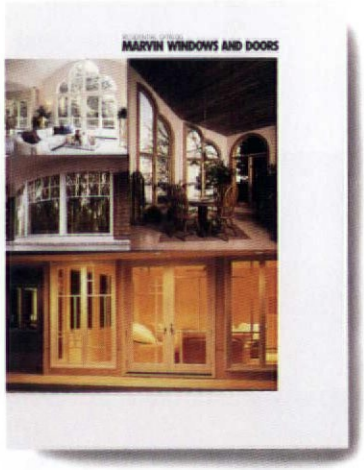

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LETTERS

house on page 60 in the March/April 1992 issue. We had heard that our house, constructed in 1937, was built from plans shown in a *Ladies' Home Journal* of that vintage and wonder if any of your readers would have any information in that regard.

Thanks again for the nice surprise!

—DALE & JENNIFER ALVERSON
Albuquerque, N. M.

"If, from all this, you think every building in Cripple Creek is being turned into a casino, you're right!" comments Karen Morrison in Colorado.

PRESERVATION — CRIPPLE CREEK STYLE

Dear OHJ,

We live in a very small Victorian mining town in the heart of the Colorado Rockies (pop. 250). Six miles away from us is the slightly larger mining town of Cripple Creek (pop. 500). A year and a half ago, Colorado voters passed legislation to allow limited gambling in three towns in the state. One reason for instituting gambling was to preserve the historic buildings in these and other towns. October 1, 1991 was opening day. For about a year now, demolition and construction had been a way of life for Cripple Creek. Unfortunately, many old buildings have been torn down and replaced by all new construction. Cripple Creek is now in danger of losing their historic designation because of all the new construction. We call it "Historic Preservation — Cripple Creek Style" and think it is regrettable what is being done to this historic town in the name of greed.

— KAREN S. MORRISON
Victor, Colo.

UNDERGROUND WATER UPDATE

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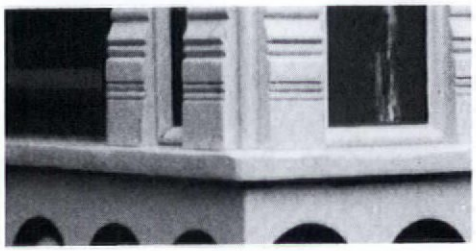

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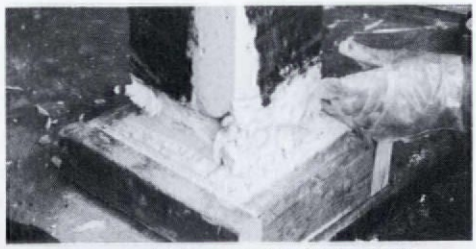
10" rotted bottoms of these load-bearing columns...



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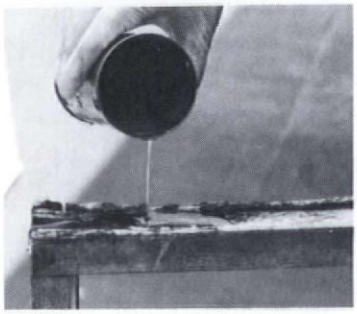

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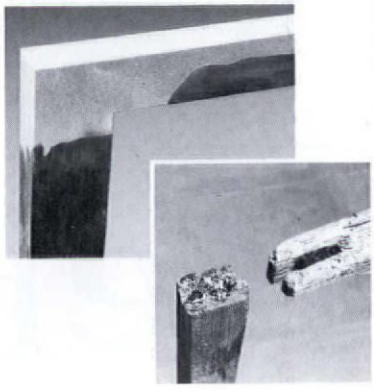

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LETTERS

dential waterproofing, the two in the May/June 1992 issue are good, but I should like to offer a few improvements. With reference to John Leeke's article "Water in the Cellar," the illustrations on page 37 show impervious layers below the underground water flow. While this may be appropriate in New England and other places where bedrock is near the surface of the ground, it is not a fair representation of those areas where "aquifers" lie deep underground. Sometimes those aquifers are confined (i.e., impervious layers lie above and below them), and thus are separated from ground water that is topped by a water table, such as shown in Mr. Leeke's drawing. Incidentally, at the upper drawing the water table should be labeled either "perched" or "apparent."

In my experience, both as a land developer and a waterproofing consultant, the ground water (subsurface water) that penetrates foundations rarely comes from aquifers, or their little brothers "aquitards." Instead, most of it comes from roof and yard runoff that he correctly describes in the text. A disagreement I have with Mr. Leeke is the advice and drawings on pages 38 and 39 regarding a clay layer installed below finish grade. While it is true that such a device prevents percolation after the initial inflitration of roof runoff or ground soaking, it also prevents the evaporation of subsurface water lying along the foundation that may have gotten there via subsurface flows from elsewhere, such as neighboring properties. If we don't precisely know where basement penetrations arrive from (which is often the case), we need to tailor our curative measures to suit both known and unknown conditions.

Turning to D. Jameson Gibson, Jr.'s article "Waterproofing Historic Foundations," on page 44 his drawing shows the backfill mostly consisting of gravel. While this channels any water that penetrates the backfill down to the lower drain tile system, it is usually unnecessary for the following reasons: gravel hydrologically attracts runoff containing soil fines that may ultimately clog the overlying geotextile filter fabric, and the extra flow may unnecessarily overwork any sump pump that's been installed as part of the outlet system. A better

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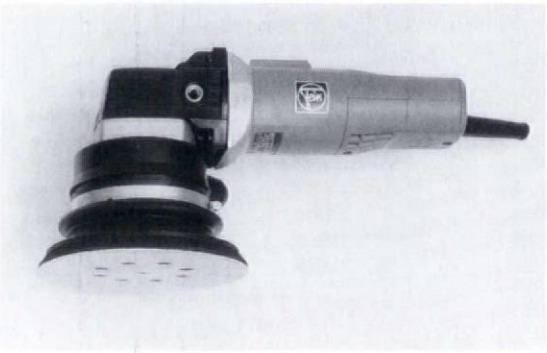

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LETTERS

solution is to turn surface flows away from the foundation using a tamped and sloped backfill as he shows, but that contains topsoil or mulch in only the top couple of inches. The rest of the backfill all the way down to the footing should consist of local loam that contains no more than a small percentage of clay, and none of the clay should be of the expansive or sensitive type. The only times I recommend a gravel backfill would be in water-saturated soil conditions, such as a foundation built in muck that doesn't drain naturally, where the surrounding soils are expansive, or where there is an intermittently high water table.

— ALVIN SACKS
Bethesda, Maryland

FINE WORK DESERVES FINE PRICES

Dear OHJ,

Restoration, along with any new building crafts, should be respected, well rewarded, and a tribute to the construction industry. Mr. Terry [*"A Painter's Story," March/April 1992 OHJ*] has no concept of this. His clients should have been educated carefully as to what was involved in restoring the exterior of these beautiful old houses and should have been informed what they could expect to pay for it. This type of painting is obviously more labor intensive than new work, demanding knowledge and skill. People who want fine work should pay fine prices. Those who want "Rolls Royce quality" for the "blue light special" prices should:

(1) Do it themselves and expect a disaster, unless they are prepared to spend the money, time, and effort to become a skilled craftsperson.

(2) Sell the old home and move into something more in line with their miserly and unappreciative tastes.

My advice to all restoration artisans, based on years of restoration, remodeling, new construction and business experience, is to set your standards high and strive for the best and create a demand for your skills, expertise and reliability. Restoration contractors are not "handymen" or "temporary service" workers!

— RAYMOND C. SUITER
Honolulu, Hawaii

ASK OHJ

TURN-OF-THE-CENTURY STYLE

Q WE ARE CURIOUS ABOUT THE style of the older home in the enclosed picture, which was built in 1914 by my grandparents. It could have been copied from my grandfather's parents home in Wellsville, Missouri (no longer standing). There is a stained glass window in the front hall stairway that does not show in the picture. There is also a stained glass window in the dining room, and the center attic window was fancy glass, too. The front porch floor is poured concrete. The house was out of the family for 33 years with just one other owner. In August of '89 my cousin and I bought it (we are two of the five granddaughters of the family).

—HELEN PHIPPS
Champaign, Ill.

The hexagonal tower, grouped windows, and asymmetrical plan of this house are from the 19th century, but the concrete block foundation is a tip-off to it's 20th century construction.

A THE POSSIBILITY THAT YOUR house was copied from an earlier building is an interesting idea because the photo shows stylistic and construction details from both sides of the century mark. The basic broad, asymmetrical massing is typical of many large houses from the 1880s and '90s, as is the prominent front-facing gable with palladianlike attic window, hexagonal tower, and large bay window. These elements were stock features of the Queen Anne and Shingle styles, which were in vogue until just after 1900. Placing three windows in a group, the same way as those in the second storey, is a pet Shingle device, as is using an eccentric little window like the lone diamond on the first floor.

The big departure from the either the Shingle or Queen Anne styles is the continuous, uniform clapboard siding. Queen Annes often went out of their way to create wall textures by mixing types of cladding, and Shingle style houses, of course, were generally swathed roof to foundation in shingles. One explanation for the straightforward clapboard treatment is the influence of the Colonial Revival, which was gaining new popularity about the time the house was built. Another telltale early 20th century feature is the decorative concrete block in the porch foundation. Use of this man-made building material was widespread by 1908, and didn't peter out until the '30s.

BULKHEAD BLUES

Q THE COVER PHOTO IN THE May/June issue gave me hope that I would finally discover the answer to my old stone cellar hatchway problem. My 1831 house with its granite foundation and stone-surfaced, dirt-floor cellar is dry enough, though dampish in the summer. Proper guttering and grading have gained this. My problem is with the paint adhesion on the topside of the exterior hatchway doors (there is another door at the bottom of the hatchway). Is there any solution to the problem of the paint peeling off every year because of moisture coming up from underneath?

—TERRY MORROW
Sherman, Conn.

A CELLAR BULKHEADS AND HATCHways receive a lot of stress from water inside and outside the house, and are often prone to paint problems and wood decay. To give them a fighting chance for survival, keep moisture sources (such as roof runoff and damp cellars) in check, and pay attention to maintenance in the following areas:

• Let the wood dry thoroughly before attempting to repaint moisture-affected parts. Sand down to bright wood first, then apply a water repellant before proceeding with prime and finish coats.

• Make sure there is adequate flashing or runoff protection at the top of the doors. Many old bulkheads lack such a feature, and the exposed end grain at the top of simple batten doors is in a natural position to wick up water and start deterioration.

• Backpaint the inside faces of the doors and other wooden parts of the bulkhead. This will inhibit moisture movement through the wood as it tries to leave the cellar.

• Make sure the doorway at the

Historical Buildings Available For Removal

The historic complex known as the Edgewood Farm, dating from the late 19th Century to the early 20th Century, consists of 22 buildings including a mansion, tenant houses, tobacco barns and sheds.

The complex as a whole has been determined to be eligible for listing in the National Register of Historic Places. Individual buildings may not possess historical significance.

These structures are located in Southside Virginia near the town of Clover, Virginia in Halifax County and are being offered for relocation, restoration and preservation. Structures must be removed from the present Site.

Proposals will be accepted between June 15 and September 12, 1992.

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ASK OHJ

bottom of the bulkhead is in good, airtight condition. Such doorways are a barrier to moisture movement between the cellar and the outside doors, and are worth adding if not already present.

WITNESS MARKS

Q THIS PIECE OF WEATHERBOARD came from a house my wife and I are restoring in Chestertown, Maryland. The three curved, parallel cuts on the back of this piece were found frequently as we removed siding to insulate the house, mostly on the backside, sometimes on the front, always near an end. When we removed some partitions inside the house to straighten some sagging flooring we found the same cuts on studs and on floor joists. Can you tell me what these marks might mean? To the best of our knowledge, the house was built in the latter half of the 19th century.

—DOUGLAS C. PYLE
Preston, Maryland

A c. 1924 timber scribe.

A SYSTEMS OF SYMBOLS, NUMBERS, and hash marks scratched or incised into wood have long been used in carpentry. In timber framing, Roman numerals frequently identified the ends of mating members. In more routine work, it was good practice for a carpenter to mark the waste side of a line so that when sawing or chiseling was performed, it served as a reminder to cut from this side. (Sawing on the opposite, good side of the line throws off the dimensions of the cut by the kerf of the saw blade.) Instructions like these were sometimes called "witness marks" and were often distinctive so as not to be confused with a random scratch. One tool designed for marking rough lumber legibly was the timber scribe, which might have both a point for scratching and u-shaped knife for cutting an unmistakable vein. The marks on the lumber in your house appear to be from such a tool, except employed to indicate the good side of the line.

General-interest questions will be answered in print. The Editors can't promise to respond to all questions personally, but we try. Send your questions to: Questions Editor, Old-House Journal, 2 Main Street, Gloucester, MA 01930.

RESTORER'S NOTEBOOK

FINIAL FIX

DECORATIVE HINGE PINS with finial tops are often found broken or missing. However, a convincing replacement can be made by taking a 20d common nail, sawing off the point, and cementing the wooden finial from a child's U.S. flag stick. When the finished product is painted, you can't tell the difference.

— KEVIN CULLEN
Danville, Ill.

NICKEL TRICK

WHEN I INSTALLED A NEW BATHroom in our 101 year old Queen Anne using period fixtures, we settled on ancient Fuller ball faucets for the sink. The old nickel plating on the faucets was nicked and abraded, revealing the brass underneath, and money was short for a real refinishing. However, I discovered that I was able to "replate" the damaged spots using a propane torch, plumber's solder, and an old glove. First, I disassembled the faucets (heat degrades the rubber internal parts), fluxed the areas to be treated, and heated them with the torch. Once hot, I just touched the solder to the flaws in the nickel until a bit melted, and then immediately wiped off any excess with the old glove. The solder left behind covered the exposed brass and counterfeited the old nickel finish beautifully.

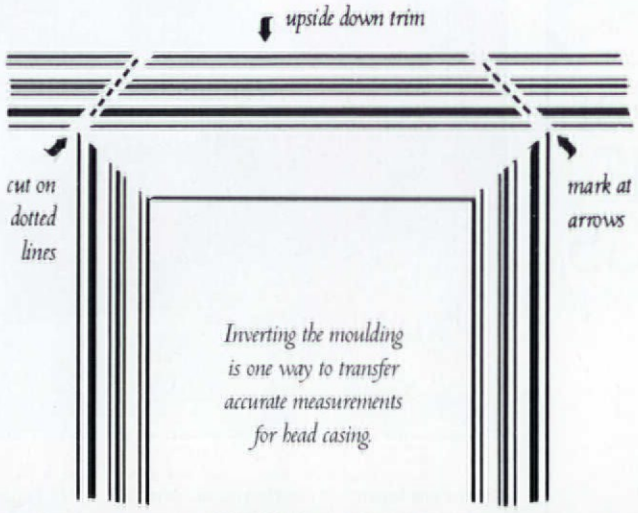
This process cost only pennies and involved less than an hour's work. Needless to say, one should only use solder and flux that have been approved for use with drinking-water supply systems that are lead-free. While originally conceived as a stop-gap solution, the results of this solder-plating have been so pleasing I'm not going to bother with the real thing.

— THADDEUS S. AUSTIN
Saint Paul, Minn.

PACKING PADS

WHENEVER I RUN ACROSS A NICE, solid block of Styrofoam packing (the kind that usually comes with a large appliance), I hang on to it for the next time I've got floor work. These blocks make comfortable, insulated, body-conforming pads for sitting or kneeling on a hard surface — particularly concrete.

— PETER BYRNE
Long Beach, Calif.



Inverting the moulding is one way to transfer accurate measurements for head casing.

FITS LIKE A GLOVE

YOU CAN USUALLY TRUST THE ACCUracy of rulers, but rarely the angles of walls and door frames in old houses. When trimming out an old door or window with mitered mouldings, I find it's better to fit the head casing rather than measure with a ruler. Here's my technique:

After determining the correct height of the trim flanking the opening, make a 45 degree cut at the top of each piece and nail them in place, making sure each is plumb. Then, instead of measuring between these pieces for the length of the head trim, balance an uncut piece of casing upside down on top of the already installed trim. Mark this piece where it touches each side trim miter, and use these marks to make the final 45 degree cuts. Using this method, the head casing will always fit snugly without trial, error, or wood putty.

— BETH HOSTUTLER
Portsmouth, N.H.

FRENCH POLISHING

TO GIVE FINISHED FURNITURE AND woodwork a long-lasting shine, I'm fond of a version of French polishing. Here's how:

Soak a thick cotton cloth in boiled linseed oil and wring out well. Very quickly, touch the cloth in a container of well-stirred shellac (or sprinkle on about ½ teaspoon). Rub the surface of the woodwork hard and in a circular motion, finishing up with a push off an edge. Remoisten the cloth with drops of oil and shellac as needed.

Boiled linseed oil, which darkens over time, can be replaced by mineral oil. The mixture may be applied once a year (as I try to do) or several times in quick succession. Allow two to four hours drying time between coats. This oil-and-shellac polish works best on oil-finished or shellacked surfaces, and will give a glow that others will never know.

— DENISE LARSON
Bath, Maine

Tough Plants for Tough Times

by Felder Rushing and Susan Haltom

THERE'S NO QUESTION THAT, after half a century or so of benign neglect, gardening is "in" again with ordinary folks. Nowadays, though, how a garden fits into one's lifestyle may be as important as historical accuracy.

Susan and I are just gardeners who are trying to get as much from our landscapes as our busy lives allow, and with as little effort as possible. My tiny cottage garden is chock full of wildflowers and "passalong" plants (gleaned from old plantings across the South) arranged around walks and winding paths. Hers is sweeping, bold masses of old roses, heirloom perennials, and sweet reseeding annuals. Both are certainly low-maintenance in their use of tough old plants.

For the most part, Victorians (who seemed to rebel against everything natural) considered any plant grown before them to be old-fashioned. If it wasn't unusual or exotic, it simply wouldn't do — unless, of course, it was bedded out in a quirky or overblown design. In *Green Thoughts*, Eleanor Pereni wrote that "What the Victorians called 'old-fashioned' flowers were really housewives' flowers, grown continuously and in defiance or ignorance of fashion." Many of those flowers had been brought to America by settlers who needed a shred of memory from the old country. Others were useful as medicine, or for making strange new foods more palatable.

Well before then, new and exciting fruits and flowers were being brought out of the woods or from faraway lands. From when Columbus took peppers and other New World species back to Europe, to when they were reintroduced here by pioneers, the plants cultivated up to the mid-1800s were partly responsible for making us the society we were.

Canna is the quintessential hardy garden flower in the South.

Early 1800s Perennials

- Purple coneflower (*Echinaceae*)
- Mints (*Mentha sp.*)
- Stonecrop (*Sedum*)
- Artemesia
- Soapwart (*Saponaria*)
- Yarrow (*Achillea*)
- Garlic
- Four O'clocks (*Mirabilis*)
- Canna
- Phlox
- Spiderwart (*Tradescantia*)
- Coreopsis
- Daylily (*Memerocallis*)
- Iris
- Daffodils (*Narcissus*)
- Asters
- Peonies
- Lilies

Selected Annuals

(*used since colonial days and still popular*)

- Bachelor buttons (*Gomphrena*)
- Cockscomb and Prince's Feather (*Celosia*)
- Cosmos
- Zinnia
- Johnny jumpups
- Larkspur
- Poppies

Many of these plants are historically appropriate in any style garden we can conjure up. For one, they have been widely grown for a long time. For another, they are still useful or beautiful — and with little care. The majority of real gardeners only a century ago lived a hand-to-mouth existence and didn't have the time or resources to study the latest cultivars. Two examples:

•*Saponaria*, called "bouncing bet" or "soapwart," was one of the earliest herbs brought by English settlers. The roots and leaves were used for making a soapy lather for washing hair and clothes and to remove grease stains from textiles. Fields of naturalized soapwart often mark the site of long-gone mills.

• Roses are as typical of old gardens as any plant. On one weekend rose hunt, Texan Bill Welch, author of *Perennial Garden Color*, convinced us that when we rooted a piece of an old rose (found in a Natchez cemetery and flowering for over a hundred years without human care) we were getting a "living antique." Four of the toughest roses still found in old Southern gardens include Louis Philippe, The Fairy, Cecile Brunner, and Lady Banks.

Many native beauties are available through mail order houses or specialty nurseries. Here's hoping, though, that we can also identify those local tough survivors from great-grandmother's garden. They are tried and true, and create a sense of place that's difficult to achieve otherwise.

Photography by Felder Rushing

WHO THEY WERE

Royal Barry Wills

by Jeff Wilkinson

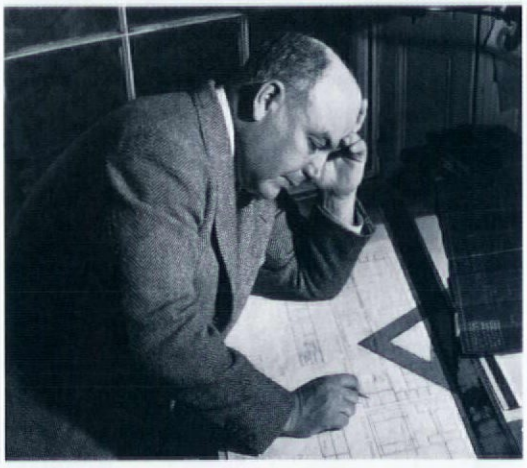
"We keep building traditional New England homes because people like them so much. And, if they're kept simple the way they were intended to be, they're almost as modern as Modern." This 1960 quote sums up the philosophy and approach of Royal Barry Wills who, more than any other architect, brought the traditional New England Cape Cod house into the 20th century.

Wills was born in Melrose, Massachusetts on August 21, 1895, the son of George Augustin and Mabel Grace (Barry) Wills. After attending public school, he went on to pursue a degree in architecture at the Massachusetts Institute of Technology, working summers in the building trades, and graduating in 1918.

In 1919 Wills began his architecture career with the Turner Construction Company in Boston, a firm that concentrated on commercial work. Though it was solid training, Wills's interests lay in residential design, and he looked for a way to establish his own practice out of "sheer boredom with concrete surfaces." He was drawn to the small house, particularly the Cape Cod cottages, saltboxes, and garrison houses found throughout his native New England. He hit upon the novel scheme of providing house designs to a Boston newspaper to attract prospective building trade advertisers. In return, all reader inquiries regarding architecture were directed to Wills. The arrangement paid off and in 1925 Wills opened his own office on Beacon Street.

The same economic rigor that shaped the original Cape Cod helped form Wills's new version — one that now had to accommodate bathrooms, closets, heating ducts, and a refrigerator. In his designs, the formal dining room often became an alcove-extension of the living room and an eating nook was added to the kitchen, thereby alleviating the need for a rarely used chamber. Wills never lost sight of the essence and charm of his prototypes, though. Generous chimneys and fireplaces were typical in his houses, and landscaping often included picket fences, hollyhocks, and lilacs.

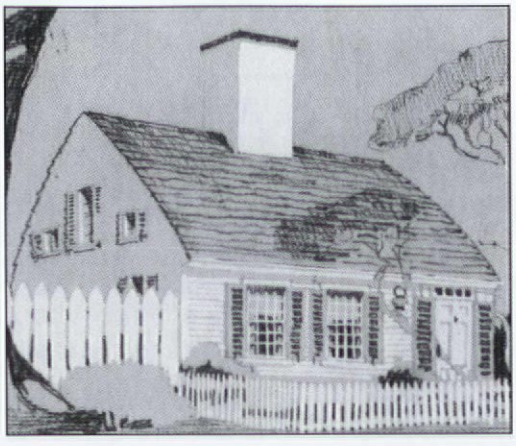
During the 1930s, Wills's designs began to attract national attention. In 1932 he received a gold medal from President Hoover for his winning entry in the Better Homes in America Small House Competition. His original submission was a prestigious-looking building, but at the last moment he threw in plans for a small home (designed as a wedding gift) "just for good luck."



Royal Barry Wills, about the year 1949

Wills was also the author of numerous magazine articles and eight books, among them Houses for Good Living (1940). His writing was often brightened by his Yankee humor and cartoons. One Wills anecdote tells of a client who ordered house plans five years before he needed them "in case anything happens to you in the meantime."

By the 1950s Royal Barry Wills Associates was one of the most popular firms in America, always sticking to the motto No Stock Plans. Though renowned for small, Colonial-type houses, they also produced modern and high-end designs. Royal Barry Wills continued designing up to January 10, 1962, when he passed away. The firm continues with Richard Wills, one of his two sons, and Jessica Wills, his granddaughter, both practicing architects.



A Wills sketch for a modern-day New England vernacular house.

Photo by Robert J. Keller, courtesy of Royal Barry Wills Associates, Inc.

MAKING SENSE OF Metal Roofs

By Gordon Bock

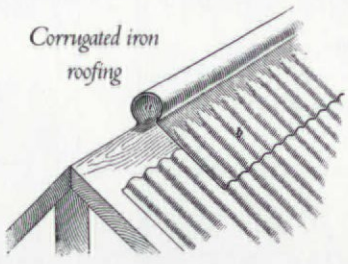
METAL IS AN ANCIENT BUILDING MATERIAL. CUSTOM FABRICATED roofs made of traditional, patrician metals such as lead, zinc, and copper have long been the finishing touch on majestic houses and public buildings. By the late 18th century, these roofs were seen in the well-established cities of North America. However, they were made from hand-worked materials (often imported) and very expensive. For the average man's house, metal roofing had to wait until the mass production techniques of the industrial revolution made it affordable. After 1850, greatly reduced costs, wide distribution by railroad, and new types of metal roofs brought the advantages of durability, light weight, and ease of installation to all levels of the population. These new building materials, manufactured in standardized sizes and designs, became the most "democratic" and popular types of metal roofs, and are the ones old-house owners are likely to see.

SHEET METAL ROOFS

•••

CORRUGATED IRON

THE FIRST MAJOR ADVANCE IN SHEET iron roofs was the corrugation process, patented in England in 1829. Corrugating added rigidity and integral support to sheet iron and made it possible to build roofs with lighter framing members spaced further apart. About this time, J.C. Loudon's *Encyclopedia of Cottage, Farm and Villa Architecture* recommended corrugated iron for large cottages, shops, and sheds, with the note that they should be covered with ivy "to moderate the effect of changes in exterior temperature." Corrugated iron roofs were designed as early as 1834 in the U.S. , and these first black (bare) iron roofs had to be protected with paint or pitch. Galvanized corrugated iron, available by 1852, greatly increased its durability and popularity.



Corrugated iron roofing

Corrugated iron was practical and economical and tended to be the roof of simple houses, farm buildings, and utilitarian structures. It is installed simply by nailing sheets (typically 2' wide and 5' to 10' long) to roof boards or naked rafters so that they overlap at seams by 4" and corrugations drain with the roof slope. Plain sheet metal for valleys and specialized caps for ridges and hips completed the job. Steel has replaced iron for corrugated roofing in modern times, but the material is still widely used and available.

RAISED SEAM ROOFS

THE MOST COMMON WAY TO LAY SHEET metal roofs, particularly with iron and copper, was with a seam that was raised in some manner above the surrounding surface. There are various methods — batten seam, double seam, roll seam, and standing seam among them — but all rely on the height of the joint and its fabrication, rather than a watertight seal, to keep rain out. In early raised seam roofs (such as those made from black iron), individual plates of sheet metal were locked end-to-end in lap joints to make the lengths of roofing between raised seams. It wasn't until around the Civil War, however, that tinplate roofs (where individual plates were soldered together to make long runs of metal) were used regularly. After 1870, tinplate was manufactured in longer and longer lengths until continuous rolls capable of covering a full square (100 square feet) were standard by the turn of the 20th century.

Standing seam roofs (where the edges of sheets are bent up at right angles, then butted together and capped with a metal strip) have probably seen the widest use. Their distinctive vertical lines are a familiar sight on houses with large, flat expanses of roof broken by a minimum of valleys. They are particularly widespread in rural areas or where the ability to shed snow is important, but are poorly adapted to low-pitch roofs. Similar in appearance, but closer in construction to corrugated roofing, is V-crimped roofing. These are metals sheets manufactured

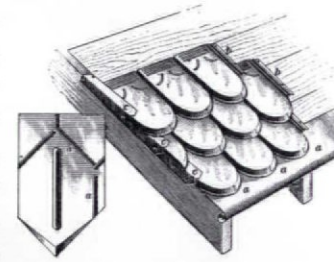
with three to five ridges running lengthwise that add rigidity and create a quasi-raised seam at edges when lapped.

DECORATIVE METAL ROOFS

•••

METAL SHINGLES

SOME EARLY EXAMPLES OF METAL SHINGLES where manufactured by cutting sheet metal by hand. One notable example is the tin-coated iron shingles that Thomas Jefferson imported from Wales for installation on Monticello's grand dome around 1800. However, the product did not really take off until after the mid 1870s when machine-pressed shingles made from black (uncoated) sheet iron were first manufactured. They were followed on the market by galvanized iron, copper, bronze, and zinc shingles in the 1880s and continued to be produced on a large scale until the metal-manufacturing demands of World War II preempted the necessary machinery and raw materials.



The ubiquitous standing-seam roof (above), here in Haddonfield, N.J. Two styles of decorative metal shingles (left): Gothic and hexagonal.

Decorative metal shingles were made possible by the improved mass production techniques available in the mid-19th century. Almost all were shaped and embossed, often mimicking wood, slate, or terra cotta at costs the average person could afford. Strictly decorative patterns — of which there were many — satisfied the late-19th century taste for elaborate and eye-catching surfaces on houses. Different designs often took their names from the outline, such as Gothic, diamond,

Photograph by Christopher Hartlove

Roof Metal

Before you set out to restore, replace or maintain metal roofs, you've got to understand what they are made of.

Sheet Iron: The mass production of sheet iron requires passing bars between rollers in a mill, a process first perfected in the United States in 1794. Plain sheet iron was put to use for roofing shortly thereafter, and had to be coated with paint to prevent rusting. Throughout the 19th century, advances in corrugating, galvanizing stamping, and plating made it possible to produce a variety of roofing materials from sheet iron. After 1900, iron began to be replaced by sheet steel for most of these products.

Tin and Tinplate: Tin is a soft, durable, silvery metal that, in its pure form, is not commonly used in architecture. As a coating for iron (and later, steel) roofing, though, tin has a history that predates the colonization of North America. Tinplate roofs were built in French Canada in the 17th and 18th centuries. Early 19th century tinplate roofs were built with iron rectangles, roughly one foot square, that were dipped in moulten tin and installed so that the joints could be soldered in a flat, watertight seam. By the 1930s, tinplate was also manufactured with the electroplating process.

Terne or Terneplate: Lead alone refuses to alloy with iron, so around 1825 a lead-tin alloy was developed for coating sheet iron or sheet steel. Better grades of terne contain 15% to 20% tin, and today terne-coated stainless steel is also available. Terneplate looks very similar to tinplate, and is often (wrongly) called by that name.

Copper: Because it is strong, very resistant to corrosion, and easily rolled into sheets, copper has been an ideal roofing metal since the 18th century. Always initially expensive, copper roofs made of sheet metal (which are even lighter than wood shingles) were not uncommon on imposing buildings by the 1830s. Towards the end of the century copper tiles and shingles were being used extensively.

Zinc and Galvanized Iron: Zinc is a bluish-white metal that quickly develops a protective oxide. Sheet metal roofing of pure zinc was imported for use in North America by the 1820s, and has been used sporadically to this day. Zinc's greatest role, however, has been as the protective coating used for galvanizing iron, first patented in 1837 using the "hot-dip" process. By the mid-19th century, galvanized sheet iron was being manufactured into corrugated roofing, and shortly thereafter, shingles and tiles that were broadly popular for many types of buildings.

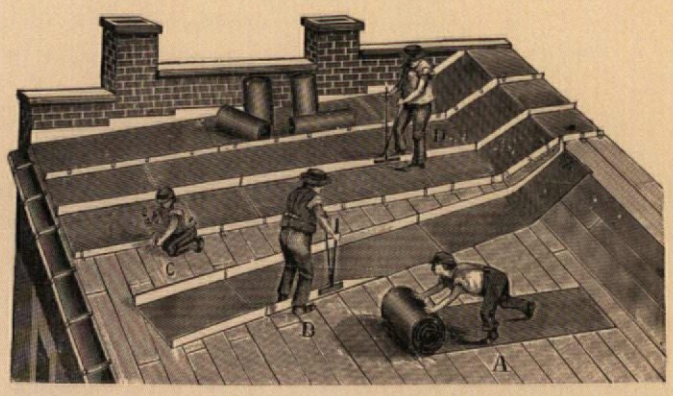
Lead: Used in Europe since the 1500s, lead roofs were installed on some Federal buildings in colonial America by joining individual pieces with lead burning (a form of soldering) to create watertight seams. Historically, most lead has been limited to low-pitched roofs due to its weight. Lead-coated copper was developed in the 1930s.

Aluminum: Until the electrolytic process was discovered in 1886, aluminum was so difficult to separate from bauxite that it was considered a precious metal. Aluminum roofing was tried in 1896, sold regularly by the late 1920s, and has grown steadily in importance since then.

Monel: One of the "white metals," monel is a corrosion-resistant alloy of nickel and copper developed in 1905. It was a state-of-the-art material in the 1920s and '30s and used occasionally on institutional roofs until the nickel shortages during WW II stunted its production. It has been essentially supplanted by stainless steel, which is less expensive.

Stainless Steel: Also a "white metal," stainless steel is chromium-nickel steel, which was developed between 1903 and 1912. Outstanding corrosion resistance makes stainless steel well-suited for roofing, and its cost is offset by durability.

Laying a standing-seam roof by (a) unrolling the metal, (b) turning up the edges, (c) nailing the cleats, (d) capping and clamping edges.



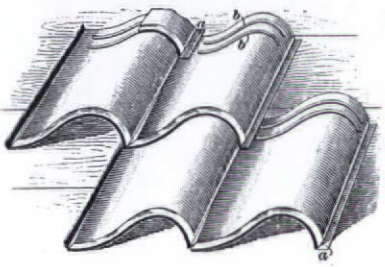
This c. 1900 Shingle-influenced house in Nyack, N.Y. still sports its original roof of "Queen Anne" metal-shingles.

and hexagonal. Most had edges connived to interlock and prevent windlift and raised designs helped maintain rigidity in the shingle. Metal shingles were laid up much like traditional shingles, either individually or in in sheets of four, and did not require a skilled craftsman to be installed, which added to their popularity.

METAL TILE

METAL TILE THAT APES THE CONSTRUCtion and appearance of ceramic roof tile was available by 1880. Copper was possibly the most popular metal for tile because of the similarity between verdigris and terra cotta and its ability to take a deeply contoured shape, but galvanized iron was also used.

The appeal of metal tile depended in part upon the fashion for Mediterranean-style roofs, and was most extensively used from the turn of the century through the early 1900s. Tiles that imitated the barrel shape of Spanish clay tiles were favorites, but other pseudo-historical models such as "Old English" and specialized varieties for conical tower roofs were also sold. Metal tiles were installed one at a time or in clusters using nails and detail caps similar to the real thing.



(left) Spanish-style metal tile. (right) Corrugated metal roofing on a North Carolina homestead.

SUPPLIERS LIST

Berridge Manufacturing Co.
1720 Maury Street, Dept. OHJ
Houston, TX 77026
(713) 223-4971
Decorative metal shingles, tiles.

Calbar, Inc.
2626 N. Martha St., Dept OHJ
Philadelphia, PA 19125
(215) 739 9141
Terne metal paint.

Classic Products, Inc.
299 Staunton St., P.O. Box 701, Dept. OHJ
Piqua, OH 45356
(800) 543-8938
Specialty metal roofing systems.

Follansbee Steel
P.O. Box 610, Dept. OHJ
Follansbee, WV 26037
(304) 527-1260
Terne and terne-coated stainless steel roofing materials, terne roof paint.

Metal Sales Mfg. Corp.
999 Park Place, Dept. OHJ
New Albany, IN 47150
(812) 944-1879
Stile brand decorative steel tile, other metal roofing materials.

W.F. Norman Corporation
P.O. Box 323, 214 N. Cedar, Dept. OHJ
Nevada, MO 64772
(800) 641-4038
Decorative metal roof shingles.

Roofmaster Products Company
P.O. Box 63309, Dept. OHJ
Los Angeles, CA 90063
(800) 421-6174
Tools and materials for all types of roofs.

Resource Conservation Technology, Inc.
2633 North Calvert St., Dept. OHJ
Baltimore, MD 21218
(301) 366-1146
Acrylic roof coating systems.

Tegola USA
3807 Inwood Landing, Dept. OHJ
Orlando, FL 32812
(800) 545-4140
Decorative copper-coated asphalt shingles.

Zappone Manufacturing
N. 2928 Pittsburg, Dept. OHJ
Spokane, WA 99207
(509) 483-6408
Copper roofing shingles and accessories.

Photograph (bottom) J. Randall Cotton

half-round metal GUTTERS

by John Leeke

BRING UP GUTTERS AND MANY RENOVATORS WILL SAY THEY'RE MORE TROUBLE THAN THEY'RE worth. They pull them off the house, haul them to the dump, and say good riddance. It's true gutters are not inexpensive to buy, and afterwards they are a chore to keep clean and in good repair. Then why go to the trouble to install and maintain a gutter system?

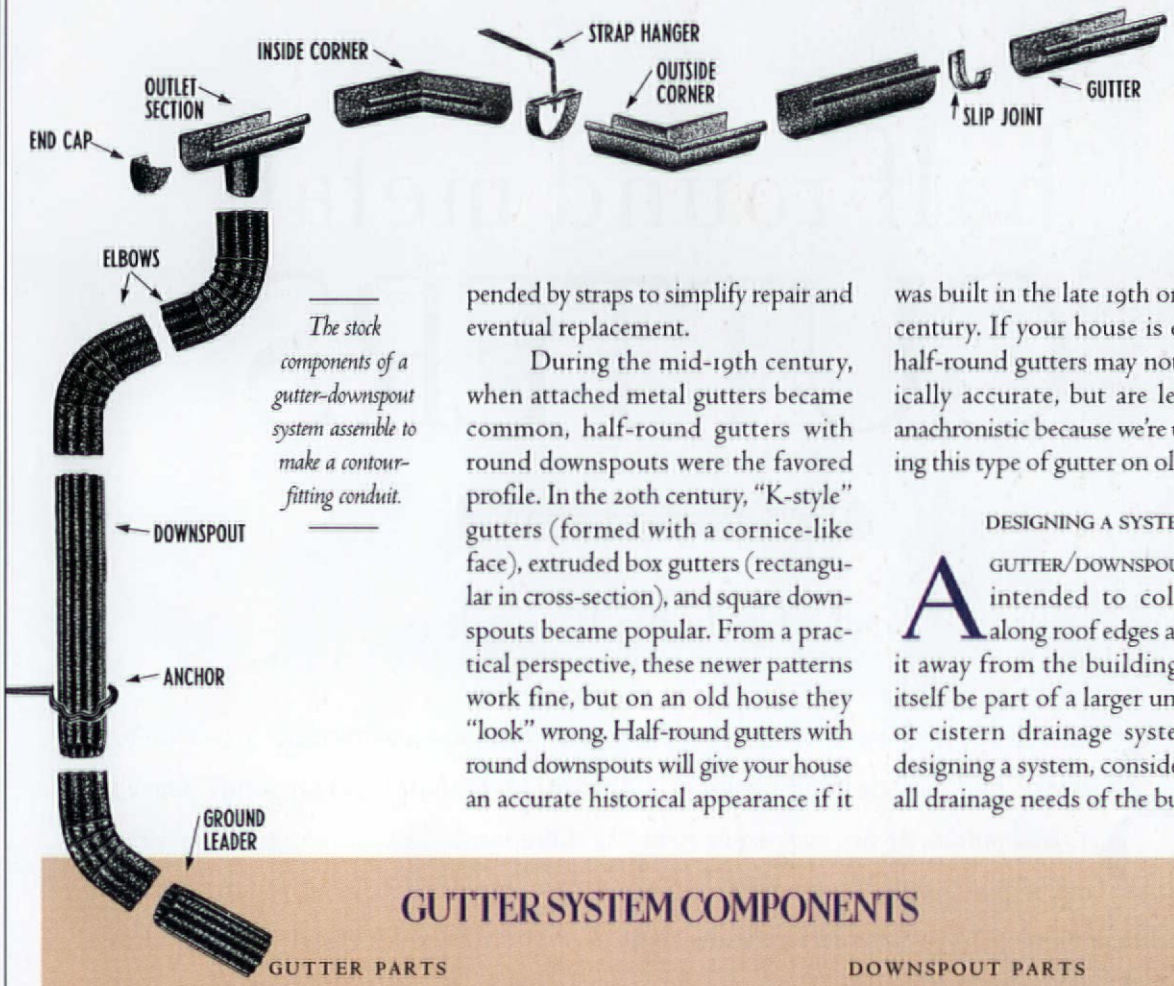
The answer is, to prevent serious water damage. At one house I worked on, the gutters were removed because they were three storeys up and always choked with leaves. Only four years later, however, the foundation wall had cracked and buckled more than four inches into the cellar due to moisture buildup and frost heaving in the soil outside. This major structural damage was a direct result of the gutter removal, and the cost of the foundation repairs was far greater than several decades of routine gutter maintenance.

THE LOOK OF GUTTERS

STRENGTH, EASE OF INSTALLATION, AND APPEARance make half-round metal hung gutters the style of choice for many old houses. More than once, I have seen light-gauge aluminum and plastic gutters mangled by ice dams and falling branches. But galvanized steel or copper half-round gutters have the strength to stand up to the great weight of freezing ice and snow, and their semicircular design allows ice to expand out of the trough without deforming the metal. With metal gutters, a complete gutter-and-downspout system can be assembled from stock parts, an "erector set" approach that makes it easy to tailor the installation. Gutter systems have an aesthetic as well as a practical impact. Many old houses were constructed with hidden systems such as built-in gutters, or systems that were an integral part of the architecture such as those that form the crown moulding of the cornice. In other cases, gutters were simply omitted so they wouldn't interfere with the design of the exterior. I usually restore or rebuild integral gutters to preserve the historic character of the house. However, I consider attached gutters a sacrificial element with a life of 10 to 50 years, depending upon their construction and maintenance. The sole purpose of an attached gutter is the practical matter of drainage. Half-round hanging gutters fall into this prosaic category because they are loosely sus-

The top braces of pump jacks (opposite) make a handy ledge for hanging gutter.

Photographs by John Leeke



The stock components of a gutter-downspout system assemble to make a contour-fitting conduit.

pended by straps to simplify repair and eventual replacement.

During the mid-19th century, when attached metal gutters became common, half-round gutters with round downspouts were the favored profile. In the 20th century, "K-style" gutters (formed with a cornice-like face), extruded box gutters (rectangular in cross-section), and square downspouts became popular. From a practical perspective, these newer patterns work fine, but on an old house they "look" wrong. Half-round gutters with round downspouts will give your house an accurate historical appearance if it was built in the late 19th or early 20th century. If your house is even older, half-round gutters may not be historically accurate, but are less visually anachronistic because we're used to seeing this type of gutter on older houses.

DESIGNING A SYSTEM

A GUTTER/DOWNSPOUT SYSTEM IS intended to collect water along roof edges and channel it away from the building, and may itself be part of a larger underground or cistern drainage system. When designing a system, consider the overall drainage needs of the building and

GUTTER SYSTEM COMPONENTS

GUTTER PARTS

Gutter (also **eaves trough**) — Half-round gutter is formed with a rolled bead at the front edge that adds strength. Gutter is sold in 10' lengths.

Joints — Gutter components are joined using either a simple overlap or a slip-joint connector.

Corners — Prefabricated outside and inside corner components are much faster to use than making up corners on site. Some corners have integral slip joints.

Hangers — Strap hangers are easy to obtain and may last longer than threaded post hangers because they flex slightly when the gutter moves. Twisted wire hangers are cheap, but that's their only advantage. Threaded-post hangers speed installation when it comes time to adjust the pitch of the gutter.

Threaded-post hanger

Ends — These barriers terminate the trough of the gutter.

Outlets — These are open-ended sleeves that you can solder into the gutter for attaching downspouts. Outlet sections have the sleeve already mounted in a short section of gutter.

DOWNSPOUT PARTS

Downspout (also **leader** or **conductor**) — Corrugated downspout has flutes that expand with freezing water and protect it from bursting. Plain round downspout is acceptable where freezing isn't a concern. Downspout is sold in 10' lengths.

Elbows — Stock angles can be combined to meet almost any situation .

Elbow

Anchors — These devices hold the downspout to the building. Hinged anchors permit removal of the downspout for maintenance.

Fasteners — The slim profile of wallboard-pattern power screws makes them less likely to split old, dry wood. Buy tempered, high-strength steel screws in hot-dip galvanized or stainless-steel versions. For fastening metal to metal, use ⅜" #10 self-tapping pan-head sheet metal screws. Pop rivets are very handy fasteners and leave a relatively smooth surface. Watch out for copper-plated steel pop rivets. I've seen them used on a copper system where they began to rust within three years.

the surrounding landscape. I usually summarize these needs on a plan of the property that includes house location, roof layout, trees, and changes in ground level.

To plan a gutter system, I draw a sketch of each side of the house that will have a gutter. For my early jobs I made sketches of the actual components so I could visualize how they fit together. The schematics I sketch today are quicker, but they still show which components go where — a big help when making an accurate parts order.

Where are gutters needed? Some typical situations:

➢ Houses with extensive woodwork, architectural details, and exposed wood sash, all of which are prone to water damage.

➢ Masonry houses with exposed mortar joints, which can suffer from freeze-thaw cycles made worse by standing water.

➢ The north and east sides of the house where moisture is not readily dried by sun.

➢ Roof valleys where large volumes of draining water are concentrated at one spot.

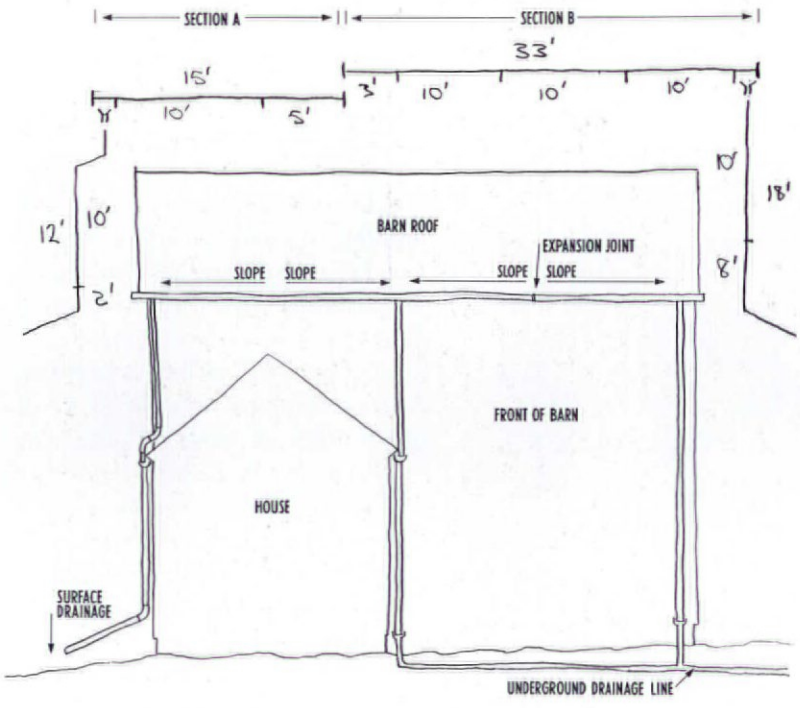
➢ Entranceways where people must pause before entering or leaving a building.

➢ Porches — exposed house parts that need as much moisture protection as possible.

Capacity is a consideration. The sheet-metal industry has calculated tables for precision sizing of gutter installations by roof area and expected rainfall. However, most systems are installed according to general rules-of-thumb developed by tradespeople. Here in New England, 4" gutters can serve a roof that is 10' from eave to peak, 5" gutters up to 25', and 6" gutters up to 40". In New Orleans where rainfall can be severe, I have seen gutters up to 10" across on 20-30' roofs. Check with your local suppliers or roof and gutter contractors to learn what is common practice and sizing in your area.

As for metal types, galvanized steel is strong, resists ice-dam damage, and is

The top schematic drawing of a gutter run is little more than a line with dimensions; the representational sketch below it shows a building and a realistic view of the system.



TECHNIQUES

Installing Hangers

HANGER DESIGNS VARY FROM manufacturer to manufacturer, and each may have specific installation requirements. Here's how to apply a common type of strap hanger to a length of gutter:

1) Lay the cross-brace end of the hanger across the gutter, hooking it over the back edge. Then bend the lower strap down and around the the front bead (figure 1). The strap will grip the front bead snugly. Continue bending the lower strap around the gutter, forming it to the contour.

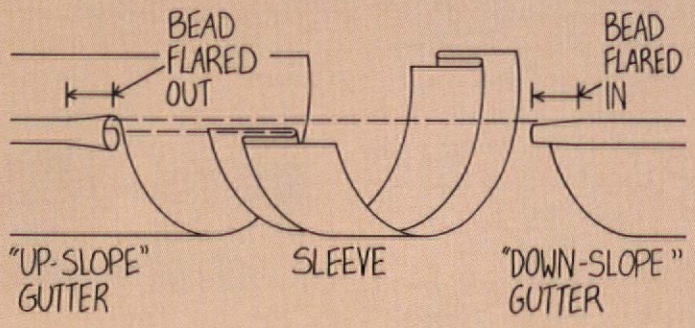
figure 1

figure 2

2) Work the end of the strap up through the slot at the back of the cross brace. Grip it with a pair of pliers and pull the strap through the slot, tightening the strap around the gutter. Bend the end of the strap over, locking the hanger onto the gutter (figure 2). It is best to leave the hanging straps down and parallel with the length of gutter so they don't get in the way when handling the gutters up onto the scaffolding.

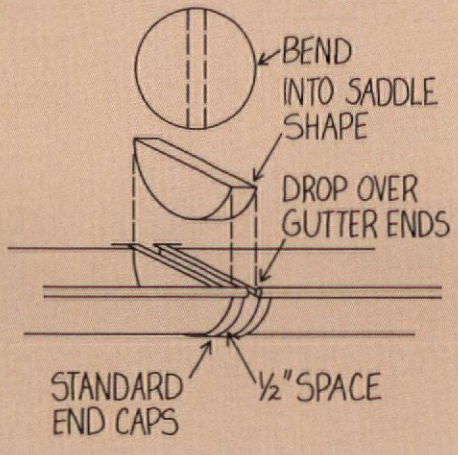
Gutter Slip Joints

A SLIP JOINT IS A SLEEVE OR CUFF OF SHEET METAL THAT IS FOLDED AND CURVED to form a coupling for gutter lengths. As the gutter ends slide into the sleeve, they overlap within the sleeve, forming a joint. To begin a slip joint, determine which length of gutter is "upstream" and which is "downsteam." Then slide the sleeve on the end of the upstream gutter length with the front edge of the sleeve tucked right up under the gutter's bead. Next, allow for the beads to overlap. To do this, unroll the last inch of the bead slightly with a pair of needlenose pliers, thereby increasing its circumference. Then, coil up the last inch of the bead on the downstream length of gutter, thereby decreasing its circumference. Last, slide the downstream gutter into the sleeve. Engage the beads first and then seat both gutters in the sleeve.



Expansion Joints

THESE CONNECTORS RELIEVE stresses caused by thermal expansion and contraction of the metal. This repeated movement can loosen fasteners and even distort and crack components. Use expansion joints on gutter runs over 40' or where the system is subject to excessive stress or constricted movement. Hip roof gutter systems benefit from expansion joints as the system can be continuous along three or four sides of the building.



moderate in cost. Aluminum is light and easy to cut and work during installation. Copper is durable, especially lead-coated copper, which is more resistant to acid rain and the tannic acid in oak tree debris and cedar shingles. Stainless steel is so tough it seems fit to last forever (judging by costs, it should). All parts of the system — including fasteners — must be of the same metal to avoid galvanic action that causes corrosion.

Gutter pitch, too, must be taken into account. I shoot for a drop of 1" in every 10' of run, depending upon how free the installation is of sags or dips. Pitch also depends upon the position of downspouts (multiple spouts may make pitch less critical) and the length the run (a continuous 40' gutter might show an unappealing drop). Pitch, then, usually becomes a matter of balancing appearance and good drainage.

Last, a word about channeling water between roof levels. Don't let downspouts pour directly on the roofing of a lower level. The concentration of water will wear that spot out before the rest of the roofing needs replacement. Upper level conductors should always pour into lower level conductors or continue directly to the ground.

PREPARATION AND PREASSEMBLY

A GOOD TIME TO SCHEDULE A gutter project is when roof repairs are planned. Scaffolding may already be in place and roofing removed, which will simplify anchoring hangers (particulary on rigid shingle roofs). Before beginning a gutter installation, complete all maintenance and painting on cornices, exterior trim, and woodwork that will be attachment points for gutters or downspouts. At the same time order the system parts. Extras are essential for test pieces, especially if you have not done gutter work before and are planning to fabricate or modify components. Order at least one surplus part of every item, and two or three

Drawings by Lisa Sparks

extra for gutter hangers and downspout anchors. Leftovers will come in handy for future repairs.

Typically, local suppliers will not stock a complete set of components for every width of gutter they carry. You may have to compromise on size and metal to find the range of components you need, or plan well ahead and make sure you order enough parts the first time. Buy all of your gutter system components from one supplier or manufacturer. If you must order from more than one source, obtain samples first to ensure parts will fit.

While you may be able to handle planning and preparation by yourself, preassembling and hanging system sections longer than 10' will go more quickly with a helper, and very long sections may require a crew of three. Begin work by completely assembling each section of gutter and downspout on the ground where it's far easier to do a better job of cutting and fitting — hanging the gutter while standing on a scaffold or ladder is complicated enough. For a workbench, use a long ladder stretched across sawhorses, or a flat stretch of pavement. Even if you want a gutter to fit a curved roofline, a truly flat surface will provide an accurate reference.

After preassembly, clean all joints on the inside of gutters with a sheet-metal cleaner fluid. Spray or brush on the cleaner and wipe off. Repeat two or three times with a clean paper towel each time to remove oils left over from manufacturing. Wait to caulk until after the gutter has been hung.

Gutter components of galvanized steel assemble reliably with self-tapping sheet metal screws and a battery drill.

WORKING WITH SHEET METAL

Downspout saws easily with a power saber saw and 4" 32 tpi (teeth per inch) blade in a single pass. If you have only short saw blades, saw through one of the ridges, then stop and insert the blade into the resulting slot and continue cutting around the circumference of the downspout. Of course, you can always cut downspout with a hand hacksaw and a 32 tpi blade. Saw gutter from the bottom side with a saber saw — it's difficult with a hacksaw.

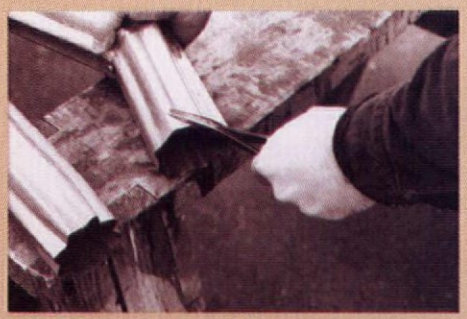
For further fitting, sheet metal cuts easily if you have the right tools. Tinner's snips are scissorslike implements made in a variety of designs, each for a specific operation (for instance, left-hand cutting, right-hand cutting, and circular or intricate patterns). "Aircraft" shears are the modern, high-leverage alternatives to tin snips. There are also many specialty tools for cutting out small openings or trimming the edge of a sheet.

File burrs off fresh metal edges with a round metal file. The few moments this takes will save many cuts and scratches on your hands. Wear safety glasses or goggles to guard your eyes from metal slivers, and leather work gloves to protect your hands.

Joints between lengths of gutter

TECHNIQUES

Joining Downspout Sections



Expand downspout ends by flattening the flutes with pliers. Mating ends (like the piece at left) are crimped with the reverse process.

DOWNSPOUTS AND ELBOWS are joined by tapering the end of an upper length and expanding the end of a lower length so that they slide together. To taper an end, grip the left side of a corrugation flute, keeping the pliers in line with the axis of the downspout. Then twist the pliers to the right, bending the metal to make the flute deeper. Do the same on the right side of the flute, twisting to the left. Repeat at each flute around the gutter. The result is a slightly smaller circumference.

Expand the mating end by gripping across each flute on a diagonal. Twist the pliers slightly each way to flatten out the flute. Grip the same flute on the opposite diagonal and twist again. Repeat at each flute. Fit the two lengths together and fasten the joint with three screws or rivets (to permit disassembly), spaced evenly around the circumference.

figure 1

figure 2

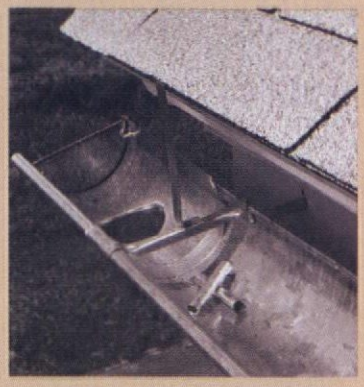


figure 3

figure 4

figure 4

Hanging Gutter

BEFORE INSTALLING STRAP-TYPE HANGERS, POSITION THE GUTTER AT THE PROPER pitch with a few pieces of blocking and tapered shingles. (Threaded post hangers are less demanding about slope at this stage.) If you are handling more than one gutter section, fit the slip joints together but do not fasten them until the gutter is hung and adjusted. The following steps describe using strap hangers on an asphalt shingle roof:

1) Attach the hangers by carefully loosening a shingle and bending it back. In cool weather soften the shingle with a hot-air gun. Check the pitch of the gutter with a level and make any adjustments.

2) Bend the straps upright and mark where they pass the edge of the roofing. Then bend each strap to match the slope of the roof, lift the shingle, and lay the strap underneath.

3) Last, secure the strap with screws (figure 1). Straighten out any dips or increase the pitch and then fasten any gutter joints that are still loose. Reclean the joints and apply a sealant such as Sikaflex polyurethane to each (figure 2). Smooth the sealant with a popsicle stick soaked in soapy water.

4) Once hanging is complete, check to make sure the gutter drains completely by pouring a bucket of water into the system from the high end. If the asphalt shingles are not laying flat, tack them down with roofing cement from a caulking gun. If winds are known to create a swinging gutter problem, make up ferrules of rolled sheet metal in various lengths (scraps of gutter bead work well). Install these between the fascia board and the gutter at strategic spots using long screws (figure 3).

Fabricating Downspout Elbows

MAKING YOUR OWN ELBOWS PROVIDES SPECIAL ANGLES YOU CAN'T GET AS STOCK parts. Forming an elbow on the end of a downspout also eliminates one joint and saves the purchase of one component.

1) First, solder the seam so that it will not open. Next, lay out the slot with a marker or soft pencil and clamp the downspout in a vice. Tighten lightly to avoid crushing, and steady the piece with a free hand.

2) Form flanges by making two ½" long cuts and two ¼" long cuts. Bend out the flanges on the top side of the downspout with a pair of pliers (figure 4). With a flat-blade screwdriver, "shoehorn" the metal just slightly. Then, bend the elbow to the correct angle with hand pressure.

3) Fasten the elbow in position with a ⅜" #10 stainless steel self-tapping pan-head sheet-metal screw. Use a ballpeen hammer to lightly tap the flanges down against the contoured surface underneath (figure 5). Take out the screw, apply flux, replace the screw, and solder the joint.

4) Solder the joint, making sure the solder flows between the flanges and the metal underneath. Wire brush the joint to clean it, and scrub the elbow inside and out with a bristle brush and soda water (½ pound baking soda mixed in a bucket of water) to neutralize the remaining acid flux and prevent corrosion of the zinc coating.

and other parts can be fastened with screws and sealant or soldered. After seeing some soldered galvanized steel gutters fail, I prefer to fasten them with screws and seal the joints to make them watertight, but soldering copper gutters seems to be more successful. However, it is a worthwhile precaution to solder the first 12" of the seam at both ends of downspout sections to keep it from popping open when the end is crimped. Where freezing weather is expected, it is often pays to solder the entire length to keep expanding ice from splitting the seam open.

For soldering, use 50:50 lead:tin solid-core wire solder (bar solder is more economical if you plan to use large quantities). Acid flux is best on galvanized steel because it cuts through surface oils, but rosin flux will work if the metal is precleaned. The ideal heat tool is a stove-heated metalworker's copper or high-wattage electric iron; a copper adapter on a propane torch is less effective. Sheet metal heated directly by an open flame doesn't work because it contaminates the surface and prevents a good bond. To solder, first flux the cold surface, then lay the hot soldering copper on the joint. As the metal heats, begin to feed in a little solder and, as it is drawn into the joint, slowly move the copper along. Avoid big globs of solder (the sign of a cold, poorly adhered joint) and wipe off extra flux once the metal has cooled.

Contributing Editor John Leeke is a consultant and contractor who helps homeowners, contractors, and architects work with early buildings: RR 1, Box 2947, Sanford, ME 04073; (207) 324-9597

TECHNIQUES

Fabricating Hinged Ground Leaders

figure 1

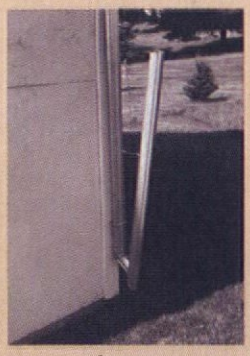


figure 2

THE BIGGEST NUISANCE WITH A GUTTER/DOWNspout system is removing the ground leaders to mow the lawn. I developed the hinged ground leader to avoid this problem. To make a hinged ground leader, start with a 5' section of downspout and a 45-degree elbow (figure 1). Downspout profiles vary from one manufacturer to the next, so it pays to iron out details on a practice piece first (I still do).

1) Solder the seam of the downspout, then mark and cut the top slot. For a 3"-diameter downspout, the slot should be about 1 ¾" wide and 4" long. With a pair of pliers, form the side cheeks into a flat surface. If the cheeks stand above the top of the downspout, trim them down.

2) Cut ½" off the lower end of the elbow at an angle. Install the elbow on the downspout so that the lower end is high enough to support the ground leader at a good pitch and clear the mower as it passes below.

3) Preassemble the joint and drill all four holes at once with a long twist bit. Insert a bolt and try to operate the hinge. If it binds, redrill the holes in a different position to allow freer movement. To get the ground leader to swing up close to the downspout, you may need to trim the end of the leader or elbow. Once you have the hinge working correctly, thread in a ¼" x 3 ½" bolt and screw on the nut. Swing the ground leader up vertically and add a hook and eye about halfway up (figure 2). Add oil to the bolt threads so they aren't frozen when you want to take the joint apart for maintenance.

Suppliers List

BENJAMIN OBDYKE, INC.
John Fitch Industrial Park,
Dept OHJ
Warminster, PA 18974
(800) 523-5261
Half-round metal gutters in galvanized steel, copper, and aluminum

COPPER SALES, INC.
1405 North Highway 169,
Dept OHJ
Minneapolis, MN 55441
(800) 426-7737
Copper gutters and related products.

SOUTH SIDE ROOFING & COMPANY, INC.
290 Hanley Industrial Court,
Dept. OHJ
Saint Louis, MO 63144
(314) 968-4800
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Skylights

The design and upkeep of old-fashioned rooftop windows • by J. Randall Cotton

Skylights were once common to humble row-houses, comfortable apartment buildings, and imposing townhouses alike. Now the these 19th- and early 20th-century amenities are an endangered architectural species, lost to lack of maintenance, covered or painted over. Artificial lighting, fans, and air conditioning now provide the light and ventilation skylights once supplied for free.

No modern acrylic "bubble" skylight can complement the character of an old house the way a classic skylight can. Old-house owners can save traditional skylights through simple, routine inspections and maintenance. If your old skylight is beyond repair, rest assured there are still tradespeople who can fabricate a replacement in the traditional manner.

Historically, skylights did double duty, supplying both light and ventilation where other methods were impractical. Two areas were prime candidates: stairways and bathrooms.

Stairs and hallways, often located away from windows at the center of the house or apartment building, were a hazard if poorly illuminated. This was particularly true in urban row-houses, where common walls prevented the use of side windows. A skylight introduced into the ceiling at the top stair landing provided a solution. If the staircase was open, natural light could filter down to the first floor. In more ostentatious houses, stair-landing skylights were enlivened by ceiling panels or domes of stained glass.

During the mid-1800s, when fresh air became an elixir for good health and a near mania, cupolas (also called lanterns, monitors, or exhausting caps) were placed over stairways. These elements helped create convection currents through the building and eventually became distinguishing architectural features, particularly for the Italianate style. Later in the same century, vented skylights replaced cupolas. Venting hot air through skylights not only alleviated summertime heat, but was recommended, even during the colder months, as a means of replacing "foul" stale air with healthy, fresh air.

Bathrooms needed privacy as well as light and ventilation, so vented skylights were often a preferred alternative to windows. Skylights had the added advantage of efficiently dissipating the hot, humid air generated by showers and baths.

HOW THEY WERE MADE

The earliest skylights were wood-framed in much the same manner as sash windows. However, these rooftop elements were particularly susceptible to the effects of sun, wind, rain, and snow, and were soon being replaced by metal-framed skylights. An industrialized America could provide both the raw materials and the means of fabricating metal skylights at an affordable cost, leading an 1867 builders' guide to note that skylights "are now usually made of metal." The common choices for framing members were galvanized iron, copper and, after the turn of the century, aluminum (see, page 45).

Skylights could be made on the building site, but were most often fabricated at a local sheet-metal shop that also made metal ductwork, gutters, flashing, or cornices. Skylights produced in these shops (still the best bet for obtaining a traditional skylight) were usually custom-made. By the turn of this century, however, skylights were increasingly mass-produced in factories such as the National Ventilating Company of New York, the Chattanooga Roofing and Foundry Co., or the Linck Sheet Metal Works of Philadelphia. Standardized models could be delivered either ready-to-install or knocked-down for assembly on site. In 1910, a 3 x 4 hipped skylight with ribbed glass could be had for $13.50; adding a "tubular ventilator" brought the price to $16.50.

To carve out a market niche, each manufacturer would promote special features: the Anti-Pluvius Puttyless skylight, the Cibulus Cushion skylight, or the Patent Leveled Galvanized skylight. Despite the high-tech gimmicks, most skylights for domestic use shared the same essential technology, and came in a handful of basic shapes: flat, shed, gable, hip, or pyramidal (see Skylight Glossary, on p. 45). Flat skylights were primarily used on sloped roofs, the others on flat roofs. Arches, domes, vaults, saw-tooth, and other complex skylight shapes were installed in commercial, industrial, or public buildings, but not domestic buildings. The acrylic "bubble" skylight is, of course, a modern invention.

Several types of glass were used in traditional skylights in clear or, if privacy was needed, translucent forms. Ordinary window glass was not appropriate because it was easily shattered by hail, heavy snows, falling objects, or fruit dropped from overhanging trees. Many building codes still require skylights to use safety glass, which can be wire, tempered, corrugated, or laminated glass. Skylight glass was sometimes further protected by exterior wire screens that kept debris and insects out of vents and openings.

Older skylights often provided ventilation through a louvre or ventilating cap. Louvres (many incorporating moveable slats) were installed in the gabled ends of double-pitched skylights. Metal ventilators were placed in the ridge of gabled or hipped skylights. Sometimes a ventilator with a 90-degree bend in its neck protruded from the side of a skylight. Such ventilators were topped by cone-shaped rain caps that were surrounded by a ring-shaped wind baffle. Later, metal ventilators might be fitted with electric fans to help draw out the air.

Glazed sections of skylights could also be hinged or pivoted for ventilation. The opening mechanisms for domestic skylights were almost always manually operated, although large, industrial skylights were often opened by electric drives. The simplest mechanism was a rod that pushed and pulled the hinged section open and shut. More sophisticated, but still common, was a rack-and-pinion or gearbox mechanism that was turned either by a detachable pole and crank, or an "end-

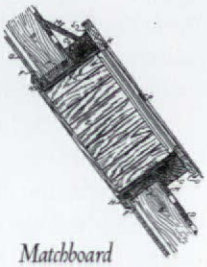
Restored skylights at the Frank Lloyd Wright home and studio in Oak Park, Illinois.

Photograph by Catherine Goulet

less" (looped) hand chain.

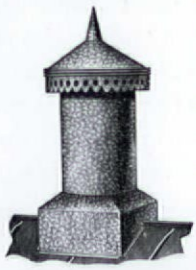
Inspecting and Maintaining Older Skylights

REGULAR, CLOSE-UP INSPECTIONS AND routine maintenance will do much to prolong the useful lives of older skylights, and should be included in any annual or semi-annual survey of gutters and roofs.



Matchboard sheathing in a wood-frame skylight.

Some trouble signs may be detected from inside the house. In older homes, there will be a framed-out opening between the ceiling and the underside of the skylight that is finished with lath and plaster or with tongue-and-groove matchboard sheathing. Inspect the condition of this finish material. White stains on matchboards, or soft or crumbling plaster (especially on the uphill side of the roof), indicate skylight leaks that allow water to find its way behind the finish. If present, a closer inspection from the outside will be needed. Manual vent mechanisms are usually trouble-free. If their operation is stiff or balky, though, lubricate gears, chains, cams, hinges, and other moving parts or bearings with a penetrating product such as WD-40.



A typical ridge ventilator from 1910.

To be really meaningful, a skylight inspection should be done from the outside. Fortunately, many skylights are located on flat or nearly flat roofs covered with roll or built-up roofing. With care, these can usually be walked on; however, you may want lay down boards to distribute your weight. Also, avoid stepping on bubbles in built-up roofs; if they are broken or popped, water can enter through the cracks. Inspecting skylights from the outside is roof work that can be dangerous, so use prudent safety precautions and proper support.

SKYLIGHT CHECKLIST

♦ CURBS — Unlike modern skylight "self-flashed" units, almost all older skylights were set atop curbs. In addition to keeping out water, curbs helped prevent snow from covering the skylight. Most curbs were six to eight inches high and framed using 2'x 6' or 2'x 8' lumber (less often they were constructed of masonry). The curbs were then flashed and counterflashed with sheets of copper, lead, galvanized iron, or aluminum. Check this metal flashing carefully for broken seams and joints that can allow water to enter.

On flat, built-up roofs, skylight curbs were often detailed like parapet walls using asphalt flashing. Cracks and tears in this type of joint can be temporarily repaired by using membrane patches and roofing cement. However, these repairs are usually good for only a couple of years. Normally, skylight curbs should be reflashed by experienced roofers whenever roofs are replaced.

Make sure the uphill curb of the skylight is clear of debris such as leaves, branches, and muck. These accumulations can trap moisture and accelerate the deterioration of the flashing.

♦ WEEP HOLES — An inherent skylight problem is condensation where moisture from warm indoor air condenses on the cold surface of skylight glass. As condensation accumulates, drips form and gravitate to the lowest points of the skylight frame where they can cause rot and rust. Older skylights of good design corrected this problem by incorporating small condensation gutters around the inside edges of the framing bars. These gutters were often integral parts of the rafter bars and formed or extruded as part of the same piece of metal. Water that collected in condensation gutters would escape to the outside through weep holes which were usually located at the lowest points of the frames at the base of the glass.

Making sure these weep holes are in working order is one of the easiest and most beneficial maintenance chores. Clean out the holes with a stiff wire, awl, or other sharp object. From the inside, also inspect and clean out the condensation gutters.

Skylight Glass

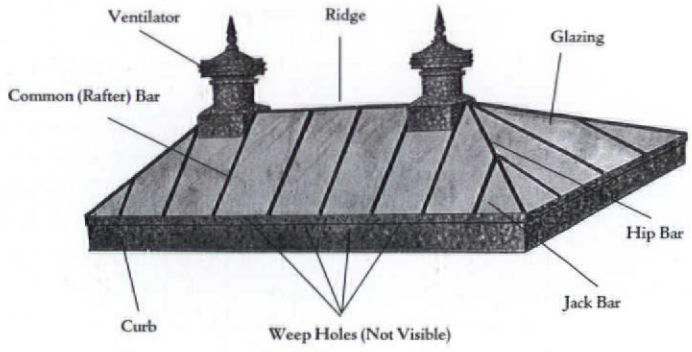
☛ WIRE GLASS — glass imbedded with a thin open mesh that resembles chicken wire fencing. Wire glass can be broken, but will not shatter into harmful shards.

☛ TEMPERED GLASS — glass that has been reheated and cooled suddenly, a process that gives it up to five times the strength of ordinary glass. If broken, the resulting tiny fragments have harmless rounded edges. Today, tempered glass is usually used in conjunction with laminated glass.

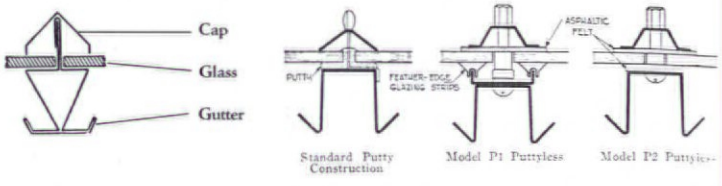
☛ LAMINATED GLASS — a fairly modern product, this is glass made up of a thin sheet of vinyl plastic sandwiched between two layers of glass. It is resilient and, like wire glass, will not shatter into pieces if broken.

☛ CORRUGATED GLASS — glass with a ribbed surface that gives it added strength, much like the corrugated cardboard in boxes or corrugated metal siding. Corrugated glass has the added advantage of being able to direct moisture along its ridges. Thus corrugated skylight glass was always configured to drain rain or condensation away from potential problem areas. Corrugated wire glass was once very common in skylights, but is now hard to get.

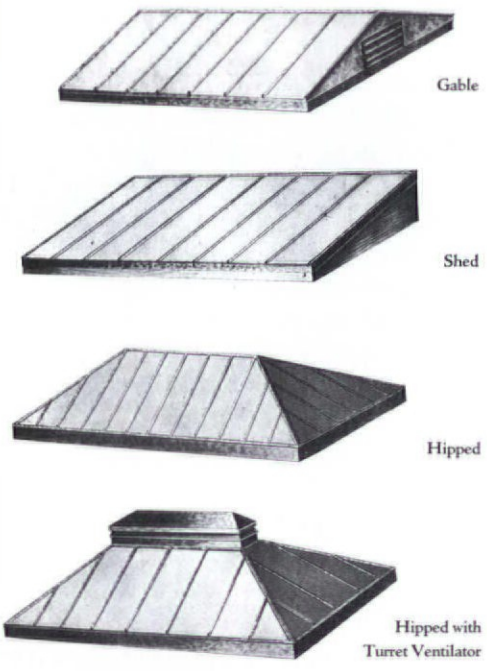
Skylight Glossary



PARTS OF A SKYLIGHT



TYPICAL GLAZING BAR PROFILES



SKYLIGHT TYPES

• METALS — Copper-framed skylights normally don't need a lot of maintenance due to the protective green patina. Aluminum skylight frames are usually trouble-free as well. Still, keep lead-based paints, lime mortars or wood preservatives with hydroxide or acidic ingredients away from these skylights because they will attack the aluminum. Clean corroded aluminum with a mild abrasive powder such as Bon Ami, and help protect it with an annual rubbing of oil or kerosene.

Galvanized metals eventually loose their original protective zinc coating. When this happens and the base metal (iron or steel) begins to rust the skylight should be cleaned and painted:

- Clean the metal with a wire brush or aluminum-oxide sandpaper to remove all loose rust.
- Vacuum and/or wipe the surfaces clean with mineral spirits.
- Prime with a rust-inhibiting metal primer. These primers usually contain zinc or zinc chromate. (Two brand names are Rustoleum and Republic.)
- Finish with a rust-inhibiting paint that is made for metal and is compatible with the prime coat. Metal surfaces will need to be repainted regularly.

• GLASS — Glass that is cracked (especially if it is wire or laminated glass) is usually not a serious problem but should be inspected regularly. If the crack widens, or the glass is loose in its frame, it's time to reglaze.

Look for glazing putty that is cracked, powdery or missing. Reputtying is a job most homeowners can tackle. By the way, the lower (downside) edge of most skylight glass overlaps the bottom rail or frame edge, allowing water to escape. Sometimes, in an act of misguided maintenance, these joints are sealed with window putty or asphalt cement. Carefully scrape off these later "repairs."

Many skylights were "puttyless" — that is, the glass was sealed with gasket-like asphaltic felt or lead cames held in place under a metal glazing cap. If these felts or cames are deteriorated they should be replaced (check glass shops or stained glass suppliers for materials).

This beautiful stained-glass dome sits below a stairway skylight in a c.1880 San Francisco townhouse.

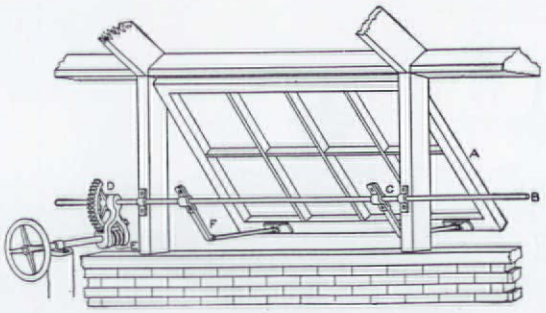
SKYLIGHT REPAIRS

SOME OLDER SKYLIGHT REPAIRS — SUCH AS reglazing — are well within the scope of the average old-house restorer's skills. To replace broken glass or missing putty, you must first remove the glazing bar cap. This will probably be a V-shaped metal channel fitted over the support bars (the muntin-like members that enframe the window). These caps will be held in place by clips, tabs, riveted cleats, or screws. Clips and screws can be removed or

Photograph by J. Randall Cotton

backed out, but rivets will need to be snipped or drilled.

Carefully scrape away the old putty or felt seals and remove the glass. Don't forget to also scrape away the back putty on the underside of the glass. Replacement glass that exactly matches the original may be hard to find. Check the Yellow Pages under "Glass" for local suppliers. Shops that replace automobile glass will usually stock and cut laminated glass. Wire glass is still available, although most of it is now made in Japan. Corrugated glass will be even harder to obtain.



Manually operated rack-and-pinion skylight vents are common, and should be lubricated with penetrating oil where moving parts meet.

Reputtying is a relatively simple — but critical — repair. Use standard, high-quality glazing compound. The basics are the same as for a metal casement window, but one point deserves reiterating here. Don't forget to back putty the glass — that is, lay a bead of compound on the glazing bars that meet the backside of the glass. This will serve to both cushion and thoroughly seal the glass.

Finally, reinstall the glazing-bar cap. If rivets or clips were snipped in removing the cap, you may not be able to reuse them. An acceptable alternative is to caulk the window with a silicone sealant after cleaning the joint with rubbing (denatured) alcohol. Buy the best silicone sealant available; the initial investment will pay for itself in durability.

An ambitious or experienced restorer may want to tackle repairs to broken rivets, split solder joints, or torn skylight flashing. Spot welding or soldering can correct many of these problems, but usually these are jobs for a good metalworker or roofer

Skylight Metals

☛ GALVANIZED IRON AND STEEL — commercially available by the 1840s, these metals became popular for numerous outdoor applications, notably metal cornices and skylight frames. Galvanized (zinc-coated) iron is a relatively affordable material and will not rust as long as a substantial portion of the galvanizing remains.

☛ COPPER — still the "Cadillac" of architectural metals, its expense is offset by its long-lasting, low-maintenance qualities, which made it a good choice for skylight frames and roof flashing. A green patina provides copper with a natural protective coating that inhibits further corrosion.

☛ ALUMINUM — initially a very expensive metal, but by the 20th century widely used in skylights because of its strength, light weight, workability, and resistance to corrosion.

☛ BRONZE — a top-of-the-line metal for skylight frames, but rarely seen because of its high cost.

Replacing Old Skylights

EVENTUALLY, OLD skylights will wear out. If the wood or metal framework is extensively rotted, corroded or broken, or if there are structural failures, it may be less expensive to replace the skylight. A good time to do this is when the roof itself is being replaced since the skylight curbs and flashing will be exposed.

Who can replicate old skylights? Look for an old-time sheet-metal shop or contractor that specializes in metal roofs. Check the Yellow Pages, or your regional contractor's Blue Book, under "Skylights", "Sheet Metal", "Roofing Contractors, Metal", or "Specialty Roofing." A local preservation organization might be able to refer you to an appropriate craftsperson. Once you've found someone who can do the work, here's some additional points to remember:

- Ask the contractor for references from similar jobs, and don't hesitate to inspect other skylights he's made.
- Get written estimates from several contractors (these should be provided at no cost). Replicating a skylight can be expensive, and you can save a considerable amount by getting bids.
- Obtain a written contract for the work. The contract should include a detailed account of the scope of work, the methods and materials to be used, and state how add-on costs are to be handled. When an old skylight is removed there may be hidden conditions — rotted curbs or roof sheathing, for example — that require additional work to correct.
- Specify 16 oz. or thicker copper for replacement skylights. Galvanized metal should be 24-gauge or heavier.
- Make sure skylight glass is one of the safety types: wire, laminate, tempered, or a combination of these.
- Provide for condensation run-off in skylight designs by including weep holes, condensation gutters, and similar features.

Thanks to Bill Wagner for providing much of the information in this article. His sheet-metal shop, which specializes in fabricating traditional skylights, is at: Albert J. Wagner and Son, 3762 North Clark Street Dept. OHJ, Chicago, IL 60613, (312) 935-1414. Other firms that can fabricate metal skylights:

J. S. Wagner Company, Inc.
4909 46th Ave. Dept. OHJ
Hyattsville, MD 20781
(301) 927-9030

Fisher Skylights
50 Snake Hill Rd. Dept. OHJ
West Nyack, NY 10994
(914) 358-9000

OLD-HOUSE JOURNAL

Getting Rid of LEAD

BY MARYLEE MACDONALD

"YOU'VE GOT TO HELP ME. WE'RE IN THE MIDDLE of restoring an old house in St. Louis, and we've just found out our kids have been lead poisoned." The woman on the phone sounded frantic and ridden with guilt.

"Have you talked with lead abatement contractors?" I asked.

"Yes, but they're too expensive, and the changes they want to make would *ruin* our house."

Bids for lead abatement had ranged from $36,500 to $40,000. The contractors wanted to remove all doors and mouldings to strip them off site. Vinyl replacement windows would take the place of two-over-two double hungs. The contractors advised covering walls with vinyl wallpaper, and sandblasting radiators. The mantels would have to go, and the stair balusters laboriously stripped. While work was underway, the family would have to move out — for an estimated two months.

When people call me with questions about lead at the Building Research Council, the first advice I give is, "Don't panic." Lead paint can be managed in place: In many cases, it's safer to leave it where it is rather than remove it. However, if your home has a lead problem, don't do any construction, paint stripping, sanding, plaster demolition, or repainting until you understand how these activities can be done safely.

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What Causes Lead Poisoning?

LEAD COMES FROM FOUR sources — canned food, paint, drinking water, and dust. Often the most hazardous form of lead is dust, which is always present in old homes, especially during renovation.

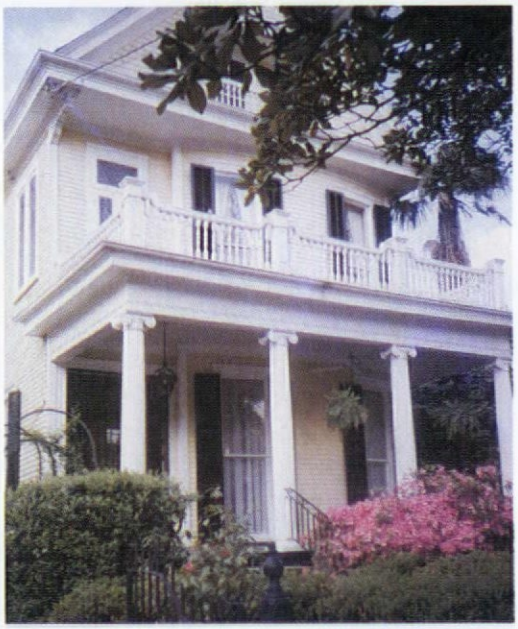
Changes in federal law have reduced lead exposure from all four sources. Lead poisoning has dropped from 6 to 8 percent in the 1970s to 1 to 2 percent in the 1980s. But federal law alone cannot reduce the hazards closest to home. If your renovation has included these activities, the building should be checked for possible lead problems:

Abatement contractors are used to working in low-income housing, where it's standard procedure to remove architectural components and replace them.

Photograph by City Builders, Baltimore

- Dry-sanding floors
- Dry-sanding paint prior to repainting
- Dry-scraping loose paint
- Using a heat plate or heat gun and dry-sweeping the residue
- Plaster demolition
- Drilling through painted surfaces

IF CHILDREN UNDER THE AGE OF SIX OR seven are exposed to lead, the exposure can have long-term consequences. Children are at risk because their nervous systems and brains are still developing. Mothers whose blood lead levels are high can also endanger development of the fetus. Lead damages a child's brain by disrupting the formation of neurons and their connections. Even those with moderate exposures can have damage to the kidneys, blood, and central nervous system.



Candidate for lead abatement? In New Orleans, 60 to 70 percent of the housing contains lead paint — a hazard even in affluent areas, as it is in deteriorated housing.

The Agency for Toxic Substances and Disease Registry (ATSDR) estimates that 3 to 4 million children in the United States suffer adverse health effects from lead exposure.

Children can be exposed to lead in the home through different "pathways." The first pathway is chalking paint. Outside a building, rain washes off sunlight-degraded resins, exposing lead particles which fall as dust. Interiors are shaded from ultraviolet rays so resins don't break down as rapidly, but dust from deteriorated paint in window wells can enter the house.

The second pathway for children's exposure is chewing on building surfaces. Richard Morris, Senior Technical Advisor for the National Association of Home Builders, thinks it's most likely kids would chew on window sills, but when children are teething (between 8 and 12 months), parental supervision, or using a playpen, can reduce the risk from this source.

The third pathway is children eating paint chips. A small number of children (8 percent) have a psychological problem called "pica." Children with pica eat non-food substances, such as dirt and paint chips.

The fourth lead pathway is from exterior lead dust. Children become exposed when they play outside or track dirt in on their shoes. Lead dust comes from auto emissions. Studies in the 1980s found that lead concentrations in inner-city soils were much higher than in low traffic, rural areas. Dust particles from this source are extremely small, and readily absorbed through the child's intestinal tract. Lead dust accumulating on objects on the floor is an important pathway. If children pick things up off the floor and chew on them to relieve the discomfort of new teeth, or if they suck their thumbs, this "hand-to-mouth" behavior can expose them to the lead hazard.

Of all the pathways, hand-to-mouth behavior and ingestion of dust particles seems to be the most important pathway. That's why children in a house undergoing restoration are at such high risk.

Lead in paint: Architectural paint can be a source of lead in historic houses if the paint is badly deteriorated and peeling. Lead paint was used until the late 1970s. If you live in an old house, you can assume it has lead paint on some, if not all, surfaces.

Jim McCabe, head of City Builders in Baltimore, is in charge of lead abatement in the city's low-income housing units. "In Baltimore," says Jim, "we're finding lead on any surface that would have required a gloss paint." Lead lurks on interior wood trim, in kitchens, baths, and the entryway wainscots.

In Massachusetts, state regulations for lead prevention require all homeowners (or landlords) with children under the age of six to do lead abatement. The state law requires lead abatement on:

- all peeling or loose paint, plaster, or putty on the interior or exterior;
- windows with sills 5 feet or less from the floor;
- window surfaces that are movable or come in contact with movable surfaces;
- all chewable surfaces that stick out 1½ inch or more, and that are below 5'4".

In Massachusetts, the law is interpreted to include doors, door frames, the face of window casings, window putty, movable window sash, stair rails, stair spindles, stair treads from the tread to the lip and to the riser and below. Porch railings are also included because they could be chewed. Even mantels require abatement if they have lead paint, chewable surfaces, and are below the 5'4" height limit.

• • •

Lead Paint Abatement

BEFORE YOU BEGIN REMOVING PAINT, find out if the paint contains enough lead to be considered hazardous. (See "Testing for Lead.") Then decide which abatement strategy is best for each area where lead paint is found.

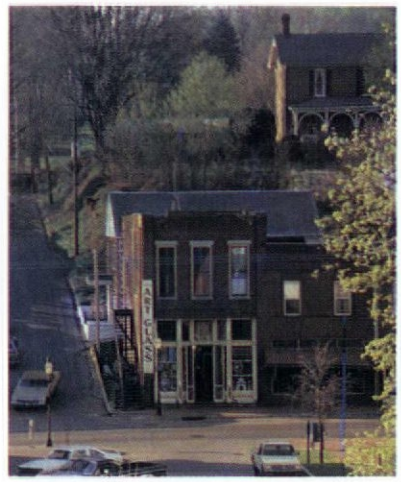
Mechanical removal. Mechanical removal methods are generally not recommended. Scraping generates chips. Dry-sanding produces lead dust, which can be

tracked throughout the house. Water blasting or grit blasting can scatter chips, and it's not good for the building.

Scraping molten paint with the aid of a heating coil or air gun can be acceptable if it has a low level heating element with temperature below 1,000 degrees F. Heat plates typically range from 500 to 800 degrees F. Heat guns are from 500 to 750 degrees F. Temperatures at these levels don't vaporize lead. If you use this method, wear a respirator. Seal off the room, including the grilles for the warm-air heating system.

Chemical removal. Chemical removal, in some states, is limited to caustic based strippers. These are okay if neutralized properly. Methylene chloride-based strippers, because they contain a known carcinogen, cannot be used in some states.

Off-site dipping can be used for easily removable components. Doors are easiest to move to an off-site location. Label doors before you take them away. The stripping company should have tanks large enough to submerge a door. Trim (built-up mouldings around doors and windows, baseboards) is another story. It's hard to take off painted trim without splitting it..



Leaded gasoline was the source of much of the lead in soil. In rural areas (Jonesboro, Tennessee, above), soil is less likely to contain lead because traffic volume was historically low.

Encapsulation. Another strategy you can use is encapsulation, which captures the true spirit of conservation. You conserve what is there by "mothballing it" until a time when children are older. For example, when kids are over 7, there is little danger that intact paint on a marbleized mantel or door can do them any harm. Protect kids by encapsulating known hazards. A fireplace or radiator, for instance, can be covered with a sheet-metal surround until kids are past the danger point.

To cover walls with loose or flaking plaster, you can use an encapsulant such the Glid-Wall system: A vapor barrier paint (Insulaid, made by Glidden) is rolled on the wall, and while it is still wet, it is covered with a fabric covering. You can put wallpaper over it. (In court-mandated lead abatement, regular wallpaper is not acceptable because the surface has to be washable and easy to maintain.)

Additional layers of latex paint don't count as encapsulation in some states. However, where it's accepted, an additional latex or oil-based paint coating provides adequate protection.

Under an encapsulation scenario, floors could be covered with 12-foot-wide linoleum that is tucked under quarter-round at the edges of the room, but not attached with mastic, rendering it reversible. Other options for floors include wet-buffing them to remove dust and dirt, then coating with polyurethane or paint.

Vinyl siding, technically acceptable, is not recommended for historic buildings. A better approach is to safely strip the paint, preserving a small area for paint chronology.

Replacement. If you can't do anything else except replace parts, store them in an area for later reinstallation when the children are grown.

Baltimore, which in the past has replaced doors, windows, baseboards, and mouldings, is currently moving away from wholesale replacement. They still replace windows, because they believe windows are the major source of the lead problem, but they are taking a more "reasoned preventive-maintenance approach."

ABATEMENT PRIORITIES

IF YOU ARE LIVING IN YOUR HOME, YOU would obviously prefer not to move out while abatement is going on. If your child

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OHJ has been quiet on the lead abatement issue in recent months — uncharacteristically, as we were the first consumer magazine to target lead poisoning as a renovation hazard, and to describe safer methods of paint removal.

Since those days, however, the lead scare has reached a fever pitch, especially in such states as Massachusetts and Maryland, where owners of immaculate older homes are counselled by their attorneys not to rent to couples with children lest they be sued down the road. In such a climate, it seemed virtually impossible for us to give how-to advice without being condemned for "making light" of the hazard.

But enough. If you own an old house, you may be exposed to lead paint, or to laws about lead paint, and we owe it to you to explain the matter in a non-hysterical and practical way. Not concerned with "abatement"? — if your renovation includes paint stripping (for aesthetic reasons), you will be working with lead paint and you may be in danger of releasing it into your home, where it could potentially poison you insidiously.

One caveat: Stripping leaded paint is no job for a woman who is considering pregnancy or who is pregnant, and it's not a job for a family with young children. That's no hedge statement — I truly believe it. Some risks are not worth taking; the house will wait, as it waited for you.

— *Patricia Poore*

Testing for Lead

Before you begin abatement, test the existing paint for lead. Jim McCabe of City Builders, Baltimore, says that testing can be done two ways. A portable xray fluorescence (XRF) analyzer can be brought to the home. ("Spectrum analyzer" XRF machines are more accurate than "direct reading" XRFs.) This portable screening technique does nondestructive testing and can look at several places in the house without destroying the finish.

Alternately, a paint chip can be sent to the laboratory for testing by the "weight method." Paint chips with lead are heavier than nonlead chips. The sample must be 1 x 1 inch square and include all paint layers down to the wood substrate, but no wood chips.

The sodium sulfide test is not accepted in Maryland, but it is accepted in some other states for screening only. A few drops of 8% sodium sulfide solution are placed on a paint sample having all the surface layers exposed. The tester is supposed to observe whether the solution turns grey. Accurate interpretation is difficult with dark paints and can give false positives. An over-the-counter lead testing kit, such as "Lead Test," is also considered inaccurate, according to Jim McCabe, because it will react with lead dust.

Immediately after you finish cleaning a room, test to see what levels of dust remain. Take a couple of samples from the floor, the window sill, and the window well.

Addresses of 300-plus test laboratories are published in the *Directory of Testing Laboratories*, ASTM, 1916 Race Street, Philadelphia, PA 19103; (215) 299-5400; $55. Your local library may also have a copy.

has blood lead levels under 10 micrograms per deciliter, moving may not be necessary if you are willing to tackle a major clean-up quickly and carefully.

For interior work, before you do any paint removal or encapsulation, follow the suggestions in "Low-Tech Abatement." After cleaning, use the paint removal or encapsulation strategies outlined above. Protect children by sealing off the room you are working on and following clean work procedures.

If you're having work done outside, make sure windows stay shut. Lead fumes and dust may drift indoors. I recently heard from a family whose child had elevated blood lead levels from paint scraping and sanding on the exterior of their neighbor's house. Windows were open, and dust drifted into the baby's room.

Make sure you don't contaminate soil around the house. Layers of polyethylene can be placed on the ground and tacked to the side of the house. For safety, cover the polyethylene with painters' tarps, or the surface will be slippery. Keep cats and dogs away from work areas. Wash them frequently so they do not bring dust inside the house. Make sure you take measures to remove or bury contaminated soil. You don't want your children exposed to lead dust outside.

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Keeping the House Clean

AFTER ABATEMENT AND MINOR REMODELing needed to make the house safe, make sure the house stays clean. Wash and rinse floors and baseboards once or twice a week with a grease-cutting agent, such as Soilax, or a strong detergent. Dust tops of doorways with a damp rag. Change furnace filters regularly so dust doesn't circulate through the heating systems. You might even consider installing an electrostatic precipitator on the furnace. This will capture small lead particles that can remain suspended in the air for three years.

When washing floors, use sponge mops, not rag mops. You have to be able to wring out excess water and mop with clean water. With a rag mop, you're more likely to spread dust around, not eliminate it. Wash down steps leading into and out of the house frequently. Wet down the broom before you sweep.

In urban areas, do a neighborhood cleanup if soil lead levels test high. Check parking areas for exposed dirt, and resod. Use borders to prevent lead-contaminated soil from washing onto sidewalks.

Behavioral changes can help too. Leave shoes at the front door. Cover area rugs where a baby or toddler plays with clean blankets. If you have a crawling baby, wash his hands several times a day. Wash off pacifiers that fall on the floor.

Continue to monitor the children's blood lead levels. If they remain high, check other sources of contamination, such as a babysitter's, the neighbor's yard, or the day-care center.

If Your Child Tests Positive

What is a "dangerous" blood lead level? In the early 1960s, the Centers for Disease Control set 60 micrograms per deciliter of blood as the danger level. In the early 1980s, the level was dropped to 25 micrograms per deciliter. The CDC recently lowered its danger level to 10 micrograms per deciliter. (The average background blood lead level for children is 8.) The new CDC guidelines say that children with levels of 10 or above should be rescreened every 3 to 4 months. "At levels of 15 or more," according to Catherine Staes of the CDC, "children should be rescreened, and the local health department should check the children's nutritional level and look for sources of lead." Children with high-fat diets are more at risk than those with low-fat diets.

If blood lead levels are above 20, children should be seen by a doctor. The doctor will check for side effects such as anemia, and will recommend treatment. Blood lead levels greater than 60 to 80 micrograms per deciliter may indicate the child eats nonfood substances.

Children may be exposed to lead long before they show symptoms. Symptoms are similar to flu, and it's easy for parents to overlook the true cause. At low blood lead levels, children may have no symptoms. The only way to know if a child has been exposed is to do a blood test. The Centers for Disease Control recommends a venous blood test (where blood is drawn from a vein) rather than the fingertip screening test used in the past.

If your child tests high, the best approach is immediate cleanup. Wash down the child's living space first and limit access to the rest of the house. Focus on reducing children's *exposure* to lead.

LEAD

Low-Tech Abatement

JUDY ADAMS BECAME CONCERNED about the lead issue when she found many kids in her Minneapolis neighborhood were testing positive for lead. So she founded a lead-abatement contracting company called Lead Free Kids.

Minnesota's laws give flexibility to the contractor doing the work, although the lead level requirements after abatement are among the strictest in the nation. Ms. Adams meets the state's requirements using methods that can be adopted by a conscientious homeowner.

"What I do is basically high-tech cleaning, plus a little remodeling," she explains. "Everything has to be clean enough for people to eat off — because kids will." Her encapsulation, paint removal, and cleanup job usually runs $600 to $1,000, not counting labor: the cost do-it-yourselfers can anticipate.

The primary goal is to keep lead dust from accumulating. Judy Adams says "always work wet." Every aspect of construction is done with a mist bottle or mop nearby. She never dry-sands because it creates dust. She chases every dampened paint chip with a vacuum. When drilling or pounding, she stops every few minutes to vacuum.

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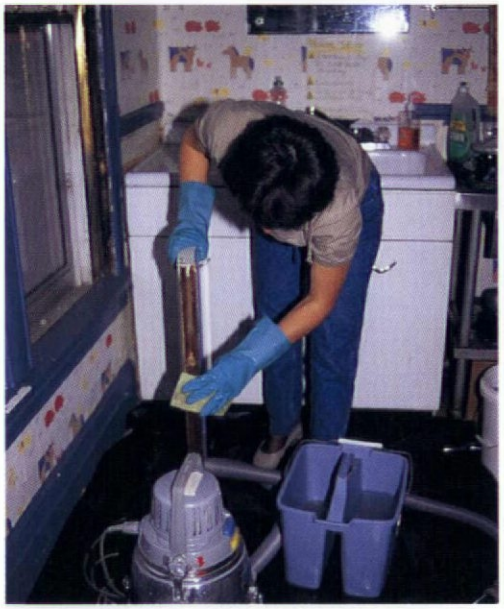
The Lead Abater's Tool Kit

BEFORE BEGINNING, ASSEMBLE A BASIC tool kit. You may be able to rent tools that are expensive or used only occasionally. (See Sources of Supply at the end of the article.)

Gloves should be chemical-resistant, not dishwashing gloves. You'll find these at a welding shop or hardware store, not at the supermarket. Ansell/Edmont Inc.'s "Chemical Resistant Gloves", are good for washing walls and woodwork. The company also makes "Heavy Duty Neoprene Gloves" that should be used for paint stripping.

You should have a regular **wet/dry shop vac** on hand. Always use this in the "wet" mode: any dust or paint chips vacuumed must be wet. Otherwise, the lead dust will pass through the vacuum cleaner and spread through the air.



Low-tech but effective: Alternate washing and vacuuming until most of the loose paint chips and dust are gone.

You'll need two large (5 gallon) **plastic buckets**. These buckets will be used for washing parts of the building. Have on hand a supply of clean rags, such as those sold in most paint stores. Flannel and terrycloth work best.

One of the most important parts of a cleanup will be a **phosphate wash** of walls, woodwork, and windows. Lead dust becomes soluble in a water/phosphate solution. Lay in a supply of TSP (trisodium phosphate). Sold in powder form in hardware stores, TSP can be sprinkled in warm water. Strong solutions of TSP will remove latex paint or varnish.

Depending on your state laws, you may also need a "high efficiency particulate accumulator" **(HEPA) vacuum**. This type of vacuum has low suction, but it traps small particles that would pass through the filter of a normal vacuum. Some states require HEPA vacuum cleaners on all abatement work. Capacity and cost vary among the major manufacturers such as Nilfisk, Hako, and Euroclean. In larger capacity vacuums, the price can edge up from $1,000 to $2,000. These aren't sold in most hardware stores, but you can take a look at several different models in a catalog from Lab Safety Supply Inc. If you do purchase a HEPA vac, get a combination wet/dry unit because it will give you greater flexibility.

As you work, you will also need new **HEPA filters**. If you don't have a local supplier, order both filters and vacuums from Lab Safety Supply Inc.

You should know that many abatement contractors feel a regular shop vac is nearly as effective as a HEPA vacuum, and that it has much better suction. After the shop vac has been used for a while, and depending on what it has been vacuuming, the surface of the filter clogs up with particulates. This "filter clogging" *improves* the ability of the vacuum to capture lead particles. The problem is that you have no way of knowing when the filter is letting lead pass through it. If you decide to use a shop vac instead of a HEPA vac, make sure you *always* vacuum wet. Damp particles should not pass through the filter.

Use **duct tape** to seal sections of

the vacuum cleaner wand. You don't want the wand to come apart if you accidentally drop it.

In spite of your efforts to hold down dust levels by working wet, some activities will generate dust. Whenever you generate dust or are forced to clean up or work in a very dirty building, you must wear a **HEPA face mask**. Unlike the HEPA vac, this is not an optional requirement. Other masks can be used for exterior paint removal.

It's best to use disposable overalls if you're doing paint removal. These can be tossed at the end of the day, and they will keep you from contaminating your own clothes with lead dust. **Overalls or cover-ups**, including shoes, should remain in the work area. A change of clothes can be kept in the room, but should be protected in a plastic bag until the end of the day. Change shoes before walking to other rooms in the house.

Have heavy-duty **6 mil plastic** on hand for covering floors in the work area and for sealing off doors to other rooms. Unroll plastic or butcher paper between the work area and the nearest door.

A **Thermos** eliminates trips to get a drink of water. If you're doing the work yourself, make sure you clean the **bathroom** daily. Keep kids out of the area until you're completely done.

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Abatement Techniques

AFTER VACUUMING, USE ONE OF THE LOW-tech repair methods described below for each element that needs deleading.

WINDOW SASH & WELLS

WASH OF THE WINDOW WITH A MIXTURE of TSP and warm water. Use ¼ gallon of wash water and 1 gallon of rinse water, and put ⅛ cup of TSP per gallon in the wash water.

You'll need a 5-gallon wash bucket and a 5-gallon rinse bucket. Always squeeze out your sponge, squeege, or mop in the wash water before getting a clean sponge-full of rinse water. Change both wash and rinse water frequently. Wet-vac as you go.

After you have washed and rinsed all parts of the window, remove the sash from the frame, then remove all hardware and any sash cord. If the hardware has been painted, stripping the hardware will add another step to the process. Use a wide knife to remove old weatherstripping.

If you add more TSP to the wash water, the stronger mixture will pull the paint off. Alternate washing with vacuuming. Using a vacuum also keeps paint chips out of the water.

Patching compound, used to cover chipped paint, can be smoothed with a sponge to avoid dry-sanding.

Sash cord can become stiff and pitted with flaking paint. Replace the cord before you replace the sash.

If the window is in good condition, you'll need to strip paint from the sash edges that could scrape against the window jamb or stop. Minnesota doesn't require the whole sash to be stripped — only the areas that rub. For this modest amount of paint removal, you can use one of the new, less toxic paint strippers, such as 3M "Safest Stripper" or Savogran "StrypSafer." Remove lead paint along all friction points. Don't paint these edges when you replace the window.

The window track, parting bead, and inside edge of the window stop should also be stripped if they have been painted and if the sash will be operable. Another approach is to encapsulate (i.e., cover) the track completely by using a replacement such as Quaker City Mfg.'s "Window Fixer." This is a screw-in track that keeps tension against the sash; the tension takes the place of window weights. If you have heavy double-hungs, it's best if you go ahead and strip the original track. That way, you can still use the window weights and the sash will be properly counterbalanced.

If replacing the sash, try Marvin Windows' "E-Z Tilt Pac."

A "window well" is the area where the interior and exterior sill meet. High levels of lead are found in window wells.

Wash the well with the TSP mixture (or Soilax). The water will loosen paint that is not firmly attached. Alternate washing and vacuuming with a wet-vac.

Seal cracks between sills and jambs with a patching compound such as "Readi-Patch." Spread the Readi-Patch with a 3- to 4-inch putty knife. With a gloved finger, work the mud into corners. Smooth out uneven areas with a sponge. When the window well is totally clean, paint the parts of the window that will be exposed. Paint the window well, too.

If it won't ruin the look of a highly visible historic window, make the window well easier to clean in the future by installing flashing over it. Use aluminum (for an inexpensive job) or sheet-metal flashing. Make a pattern with cardboard or butcher paper, then cut the flashing with tin snips. The flashing should fit snugly in the window well and be caulked with polysulfide caulk in the corners. Put the flashing in first if you are going to use jamb liners.

WINDOW GLASS

REPAIR THE WINDOW'S GLAZING PUTTY TO prevent further window deterioration. Some states require old putty to be removed because it may contain lead. However, if glazing putty is well maintained and covered with paint, it should not cause lead problems.

The accumulated grime on the out-

Photographs by Marylee MacDonald

sides of windows contains a great deal of lead. If you're wet-scraping it off with razor blades, catch the debris before it falls to the floor. Scrubbies also work well for cleaning sash and glass. Use a coarser scrub when you start. Then switch to a scrub pad with a handle for final scrub. A good scrubbing tool is Padco's "Drywall Wet Sander."

WINDOW SILLS

HERE'S AN AREA THAT NEEDS SPECIAL attention because toddlers can reach it. They may chew on the sill. Young children will hang on the sill to look outside. Encapsulation is a time-saving strategy here — and it can be done in such a way that it's reversible for true restoration in the future. Cover the sill with 4-inch oak or pine lattice. Use a strip of half round on the interior.

DOORS

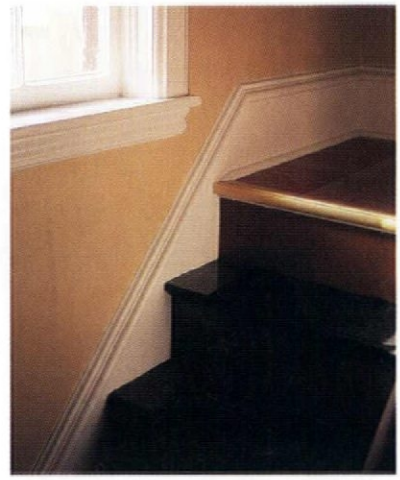
DOORS CAN BE DEGLOSSED WITH LIQUID sandpaper, primed, and repainted. Remove paint from the edge of the door and the jamb if paint build-up is excessive. Removing the paint should allow the door to close without binding. A small amount of chemical stripper will do the job quickly.

WALLS

YOU WANT SMOOTH CLEANABLE SURFACES on the interior — nothing kids can pick at. Repair strategy depends on the condition of the paint and the underlying plaster.

If paint is smooth, and firmly attached to a plaster wall that is in good condition, use "liquid sandpaper" to degloss the surface. Prime the wall up to the edges of any cracks or areas that need minor repair. Then use joint compound. Smooth the joint compound with a damp sponge instead of sanding it. Use multiple coats, and make each one as smooth as possible. The key is never to sand. Don't even sand joint compound or Readi-Patch. Use a scrubbing pad and sponges. Always work wet.

If the paint buildup is cracked and alligatored, covering the wall is the best way to deal with it. Use a fabric coating such as the "Glid-Wall" system.



The walls, skirting, and treads of this once-dilapidated stairway have been abated by "encapsulation": Masonite covers the risers, and washable rubber treads protect the stairs.

If the walls are filthy, the plaster surface is poor, and the paint is in bad shape (big, loose flakes), wash the walls thoroughly before patching. Then use a 12-inch drywall taping knife and cover all loose, flaking material with a thin layer of all-purpose joint compound. The mud will stick to dirty surfaces. You will "bury" loose paint and plaster beneath the joint compound. This stabilizes the wall and allows you to wash areas that are merely dirty, where the paint is in relatively good condition.

If plaster is in bad condition, cover it with ⅜-inch drywall. This is much safer that wholesale plaster demolition. Use screws to hang drywall because pounding nails stirs up dust.

Wash areas that have not been covered with joint compound. Use Soilax or the TSP/water solution. These degrease the wall and get dirt off. After washing and rinsing, continue to smooth out uneven walls with drywall topping compound. Topping compound is easier to smooth than all-purpose joint compound. Both topping compound and Readi-Patch can be washed smooth with plain water, especially if they are applied in thin layers.

In lead-dust situations, wallpaper should be washable, and only vinyl wallpaper meets this criterion. One solution is to use a vinyl wallpaper now, but plan to replace it with a more historically appropriate paper later on.

STAIRS

BECAUSE RISERS ON STAIRS ARE CONSTANTLY kicked, paint on these risers is more likely to come off. Consider using kick plates or face guards on the stairs. Masonite is an inexpensive cover-up. It keeps toes from kicking loose chips. It can easily be tacked in place and removed later on. Masonite can be painted to match trim.

Washable rubber stair guards can also be used on stairs. While these are not especially attractive, they are one way to encapsulate paint, and they could be a help if you are in a hurry to reduce a child's exposure.

FLOORS AND CARPET

A BUFFING PAD AND WATER WITH TSP, FOLlowed by a mop rinse, can be used to clean up almost any floor, including wood. Again, "always work wet." Keep a wet-dry vacuum running, and vacuum as soon as you've buffed. Do not use buckets full of water

Additional Reading

Lead Prevention Guide, (Owner/Contractor edition), Lead Free Kids, Box 8595, Minneapolis, MN 55408; 612/377-4304. LFK also sells lead test kits and other lead-related products and information.

Historic Buildings and the Lead Paint Hazard, State Bookstore, Rm. 116, State House, Boston, MA 02133; 617/727-2834. Send $2 plus an 8 ½ x 11 inch stamped envelope.

Comprehensive and Workable Plan for the Abatement of Lead-Based Paint in Privately Owned Housing, Office of Policy Development and Research, U.S. Department of Housing and Urban Development, Washington DC, 20410. January 1991, HUD-PDR-1295.

Preventing Lead Poisoning in Young Children, Public Health Service, Centers for Disease Control, Atlanta, GA 30333.

or leave water in contact with the surface too long, or you could damage the wood.

To make maintenance easier in the future, regular water washing is going to be necessary. The only finish that will stand up to repeated water washing is polyurethane. Use water-based polyurethane to avoid exposure to solvents.

If carpet has been underfoot during major restoration, it is probably contaminated with lead dust. Vacuum the carpet and send a sample of the dust to a testing lab to find out.

If a carpet is contaminated, get rid of it. It is very difficult to remove lead dust embedded in deep carpet pile. Commercial carpets, with tight loops, can be more easily cleaned and maintained, and may serve as an interim substitute.

Bare floors are easiest to maintain because they can be washed and vacuumed quickly. Use area rugs if necessary, and take them to the cleaners frequently.

EXTERIOR PAINT

IF EXTERIOR PAINT IS FLAKING AND FALLING to the ground, remove it. As an interim measure, until you have the time to do a more thorough job on the exterior, you could wash down the house with a long-handled brush, TSP, water, and a light spray. Use tarps to catch debris. Use canvas tarps to collect paint chips. The woven material lets water run through and strains out the chips. Plastic tarps can also be used. Paint chips should be wet-vacuumed off the plastic at the end of the work day.

Don't forget to do basement window wells. If you're removing exterior paint, the debris will drop into the window wells and contaminate them.

The best options for removing paint are to use heat plates, heat guns, chemical removers, or just plain washing and repainting. Whatever you do, don't dry-sand. Sanding can produce 600 ppm of lead. *Sanding paint creates the lead hazard you're trying to eliminate.*

Keep windows closed when working on the exterior. Don't let workers walk into the house. Keep the decks and porches washed down so you don't track dust inside. Don't leave paint chips on plants.

FOUNDATIONS

WHEN PAINT CHIPS ARE IN THE SOIL FROM previous jobs, wet down the surface soil. Suck up 1 inch of soil in a shop vac. Vacuum chips where siding meets the foundation. Use a hose to flush out chips embedded in the joint where the foundation meets the siding and where the soil meets the foundation. The sludge in these locations is high in lead.

Once exterior painting has been done, take care of the soil next to the foundation. You can use a shopvac or shovel to remove the top inch of soil. A licensed hauler can then dispose of the waste.

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Disposal

DISPOSING OF LEAD WASTE ALSO TAKES MORE time than simply throwing it in the garbage. Collect all waste from wash buckets, vacuum cleaners, and soil, and treat it as if it were toxic— because it is.

Wet debris from washing windows and walls contains paint chips or sand (from plaster). Screen debris to keep from clogging up sinks. Make a screen from fine wire mesh and run all water through the screen. The strained water can be flushed down the toilet.

Lead dust collected in vacuum cleaner filter bags should also be labeled and stored. Never open a vacuum cleaner to change its filter inside the house. Always take it to a safe area outside, well away from the children's play area. Bag the debris in heavy-duty trash bags. Seal the plastic. Put bags in cardboard boxes so they won't break. Seal with duct tape.

The waste may sit in the basement until you dispose of it. Waste should not be accessible to kids. The state Environmental Protection Agency will have a list of licensed haulers who can transport it to a licensed landfill.

Marylee MacDonald is Editor of the Building Research Council, University of Illinois, 1 East St. Mary's Road, Champaign, Ill. 61820. Write the Council for a free list of publications.

Sources of Supply

Safety Equipment
HEPA vacuums and filters can be ordered from Lab Safety Supply company. They also have a number of safety publications.
Lab Safety Supply Inc., P.O. Box 1368, Janesville, WI, 53547 (800) 356-0722

Gloves
Chemical Resistant Heavy Duty Rubber Gloves *(for washing walls and woodwork)*, Heavy Duty Neoprene Gloves *(for stripping paint)*
Ansell/Edmont Inc., 1300 Walnut St., Box 6000, Coshocton, OH 43812 (614) 622-4311

Paint Stripper
"Safest Stripper"
3M Corp., (800) 842-4946

"STRYPSAFER"
Savogran, (800) 225-9872

Replacement Window Channel
"WINDOW FIXER"
Quaker City Mfg., 201 Elmwood Ave., Sharon Hill, PA 19079 (215) 586-4770

Sander
DRYWALL WET SANDER
Padco Inc., 2220 Elm St. SE, Minneapolis, MN 55414-2693 (612) 378-7270

DUST-FREE SANDER
Fein Power Tools, 3019 W. Carson St., Pittsburgh, PA 15204 (800) 441-9878
(Hand-held orbital sander that extracts 98% of dust creating during sanding.)

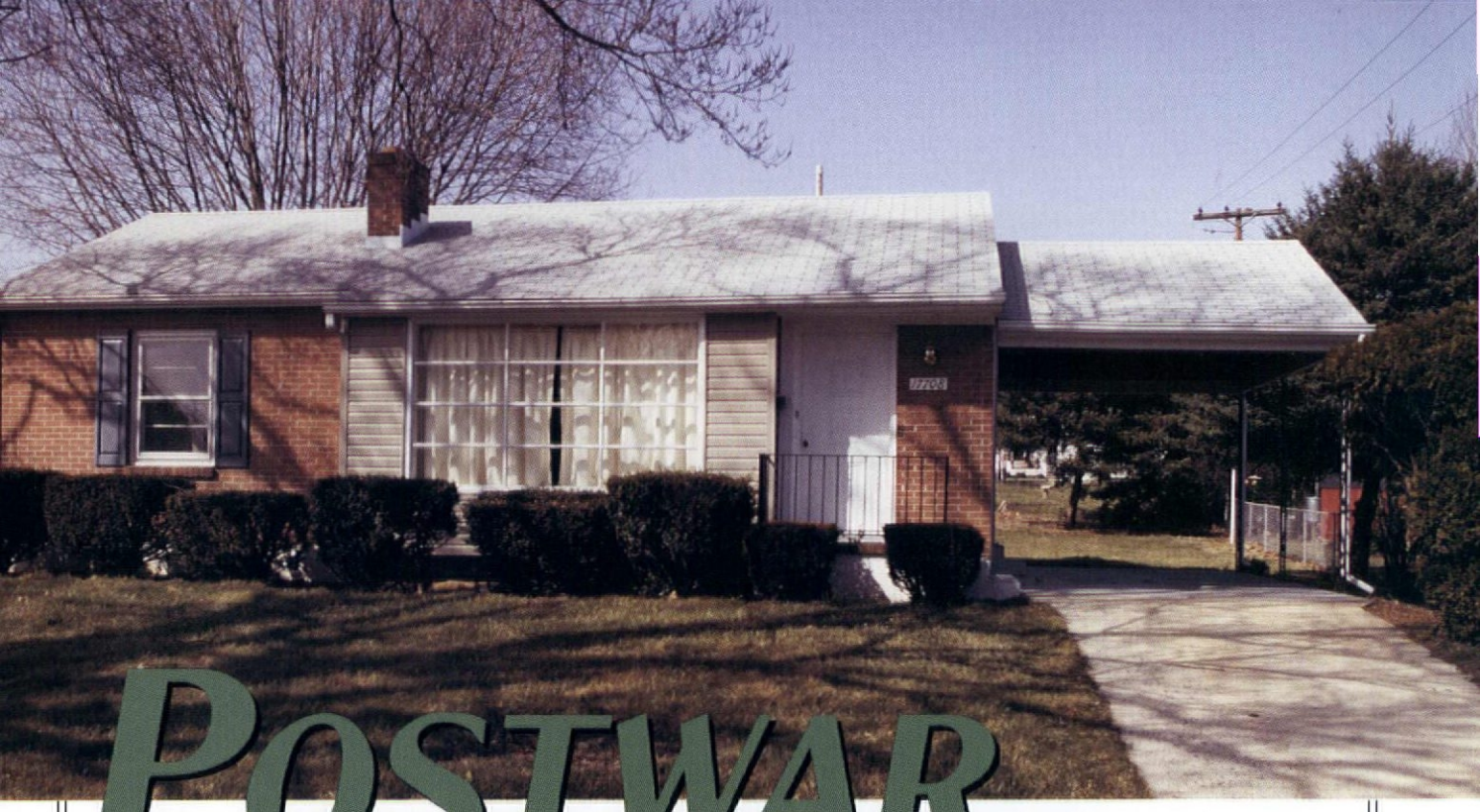
Patching Compound
READI-PATCH
Mantrose Haueser Co., 500 Post Rd. East, Westport, CT 06880 (800) 344-4229

Replacement Sash
E-Z TILT PAC
Marvin Windows, Warroad, MN 56763 (800) 346-5044

Fabric Encapsulation
GLID-WALL SYSTEM
Glidden Coatings & Resins, 925 Euclid Ave., Cleveland, OH 44115 (800) 221-4100

HEPA Face Masks
High efficiency particulate accumulator (HEPA) filter cartridge face masks are available from the following companies:
"3M EASI-AIR"
3M Corp., (800) 328-1667

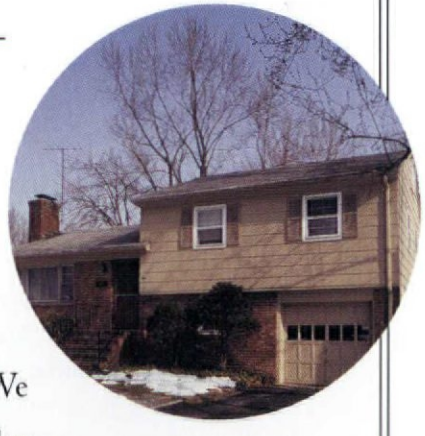
"GLENDALE MX PF 9500"
Glendale Protective Technologies, 130 Crossways Park Drive, Woodbury, NY 11797 (800) 645-7530



POSTWAR Houses

and the Cape Cods and Split-Levels of the 1940s

THIS IS IT, FOLKS. THE END OF THE LINE. FOR THE LAST THREE YEARS OR SO, WE'VE shared a ride on a fast track with OHJ readers, hurtling through the centuries like travelers on a long and varied journey. Shouting out the stations, we lurched past one American architectural style after another — Georgian and neo-Georgian, Colonial and its countless revivals, French and German, Greek and Gothic, Italianate, Romanesque, Queen Anne, Eastlake, Arts & Crafts, Academic Classicism, Italian, Spanish, French and Old English revivals, Pueblo, Art Deco, Moderne, International, Mail-Order Houses, Pre-Cuts, and Builder-Style. Now, at last and almost unbelievably, it's over. We haven't run out of steam, but styles. Just for the time being, you understand, because no matter how fast you run (or ride), you never quite catch up with history. While it's still on our minds, though, there is just one more historical style we'd like to talk about. Picture this:



Could it be the 1950s without a garage? The increasingly-important car now had its own room, as both the postwar house with a carport (top) and the split-level with an attached garage (above) show.

By Shirley Maxwell and James C. Massey

Photographs by James C. Massey

World War II is over. America's young men — and women— have come home with their G.I. Bill benefits (including VA-insured, no-down-payment mortgage loans) burning holes in the pockets of their brand-new civvies. They have small families about to get bigger and jobs in a robust economy. Home ownership beckons, but the homes have to be built before they can be bought. What will these houses of the late 1940s and 1950s be like? Mixed in — and quite often mixed up — with the Cape Cods and Colonial Revivals left over from prewar days, there will be ranch houses, split-levels, and, yes, prefabs.

(above) The shutters on this Summit, New Jersey split-level are a long way from window size, but they soften the stark facade with Colonial overtones. (inset) A mix of brick, wood siding, and stone veneer (on the front wall only) proclaim the postwar origins of this house in Alexandria, Virginia.

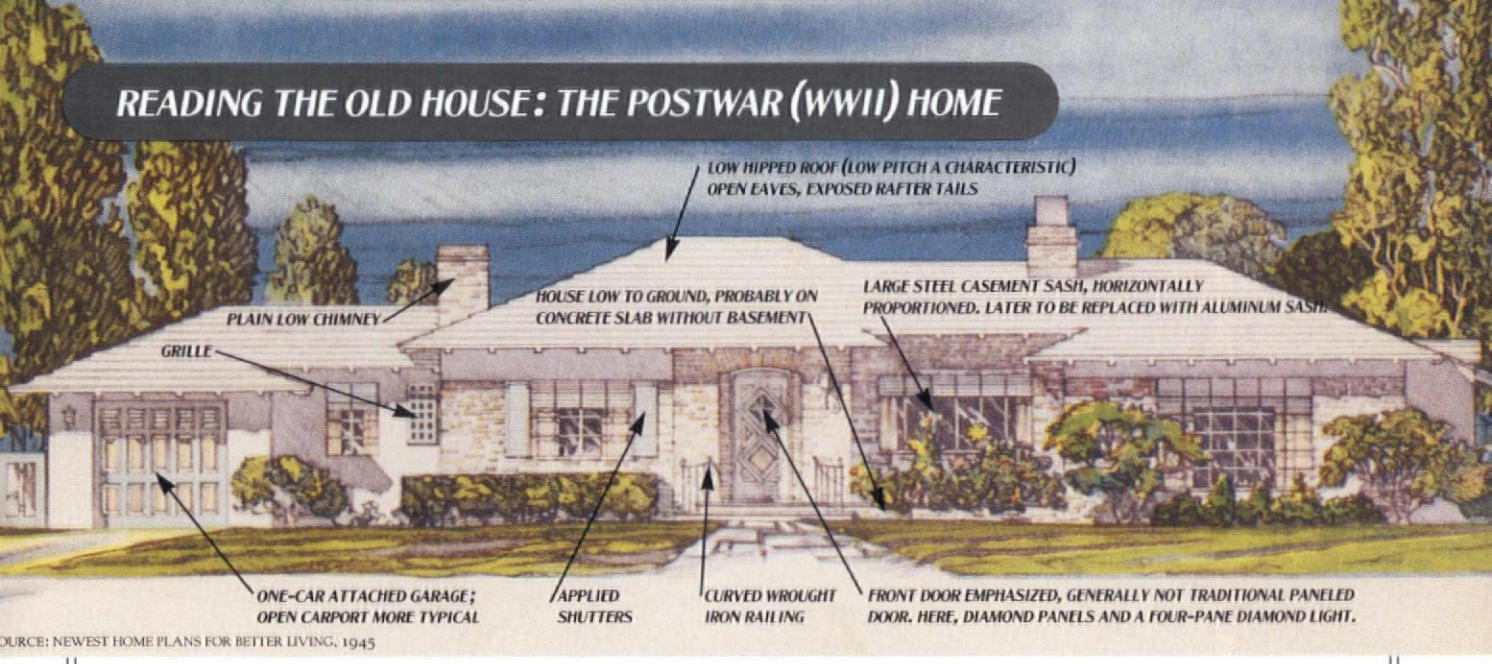
Okay, we hear you. That's not historical architecture, you're protesting. That's the house you grew up in! The house with the basement rec room, the American car in the carport, and Mom in the kitchen putting Redi-Whip on the cherry Jell-O. We know. But that very same house is now headed for its fiftieth birthday, at which time the National Park Service will gladly consider it for listing on the National Register of Historic Places. And the truth is, they really don't build houses like that anymore. That house is — no kidding — history. How did this happen? As usual, there's a story behind the styles.

Back for a moment to our returning G.I. with his small-but-growing family (they didn't call it a Baby Boom for nothing) and his pent-up yearning for a house with a yard. Remember, there had been a four-year war with strict rationing of building materials and labor, preceded by twelve years of nationwide economic hardship; sixteen years of building postponed. That meant a lot of houses were needed — very small houses for the most part, but millions of them. At the end of the war, government estimates suggested the need for 12.5 million new housing units by 1955.

Although labor and materials were expensive in the postwar world (hence the small houses), there was still plenty of relatively cheap land to be had in buildable, but heretofore overlooked, places. Developers bought up thousands of acres of farmland miles beyond major cities and industrial areas and began constructing whole towns of little houses, using assembly-line methods to reduce the need for skilled craftsmen. Farm sites on Long Island, New York, in Pennsylvania, New Jersey, and hundreds of similar tracts across the country became the settings for cookie-cutter developments that stirred indignation and contempt in architects and intellectuals, but not necessarily in the people who lived there. Between 1947 and 1952, Levitt and Sons (the most famous developer of the era) built more than 17,000 fully equipped houses in what had once been a single Long Island potato field, providing homes for 75,000 people. Although they were very similar in size and appearance, not all subdivisions had thousands of identical houses. Developers catered to the consumer's hankering for individuality by making subtle changes in a few stock plans and facades. Usually accessible only by car, these new, centerless towns helped make the automotive industry the great multiplying factor of America's peacetime economy.

AN ERA OF HOMOGENEITY

And what were these houses like? For the most part, they were minor variations on the major themes of prewar years. There was still a battle for dominance between the forces of tradition (represented by a simplified Colonial Revival style) and the forces of modernism (represented at the popular level by ranch houses, split-levels, and prefabs). However, the battle now was not just between architects, but between architects and consumers. The architects' vision of moderism had won hands down in the architecture schools, and lost resoundingly in the popular market. Despite the assembly-line methods of fabrication,



OURCE: NEWEST HOME PLANS FOR BETTER LIVING, 1945

postwar houses were nearly always traditional (or at least conventional) in appearance, largely because mortgage lenders distrusted the resale value of flat-roofed, modern-looking houses. Cape Cod cottages, conservative split-levels, and ranch houses with brick, wood or asphalt-shingle siding were considered much safer investments.

Throughout the postwar period, professional architects were designing modern boxes with flat or butterfly roofs, clerestory windows, and cantilevered rooms, often for their own homes. However, in terms of the mass market, the most innovative house types of the period were the ranch house and the split-level, designed to eke out a maximum of living space from the least square footage. In the best modern manner, both were likely to be erected above poured-concrete foundations with no basements. Since they were intended to occupy fairly wide lots, they exploited the trend toward horizontal rather than vertical living, and were generally quite shallow in order to make the most of available light and views. The ranch house was a loose adaptation of a one-storey house with a long, ground-level front porch, which was popularly assumed to be typical of ranch dwellings in the American West. The split-level offered a single storey at one end and two stories at the other, with the entrance somewhere in between. Given the realities of the market, ranch houses and split-levels were often hybrids that offered a soupçon of watered-down traditionalism for cosmetic effect without compromising their basic modernism. A couple of narrow stationary shutters at a picture window, a little non-functional aluminum cupola on the roof, and maybe a black aluminum eagle over the front door were enough to do the trick. Such houses also used a combination of cladding materials — an acceptable practice in either the traditional or the modern idiom.

In terms of architectural styles, there was not much to pick from in this era of homogeneity. Most of the eclectic-revival styles of the early twentieth century had died with the war. A simplified Colonial Revival was still the style of choice, but it was a far cry from the more accurate representations of early buildings that had been seen before the war. For one thing, the roofline of the later traditional designs had a lower pitch. Gables (front or side-facing or both) were most frequent, but low-pitched hipped roofs were also used. Although a popular variant featured a broad chimney near the center of the front wall or on an end wall, chimneys were plain and generally not prominent. Roofs were sheathed in asphalt shingles or asbestos-cement tile rather than slate or wood shingles. (However, there was a strong interest in hand-split rustic wood shakes, actually a new development since 18th-century shingles were drawknifed or sawed smooth.) While brick and stone facades were still enormously popular, they were patently surface treatments, only one layer deep and fastened to the walls of the building. In keeping with the current preference

Broad windows and a low-pitched hip roof emphasize the horizontal lines of this suburban house in Springfield, Missouri. The corner window and recessed doorway with wrought-iron railings are typical postwar details.

for a mixture of building finishes, the same house might have thinly sliced stone (real or fake) disguising its poured-concrete block walls, a layer of vertical wood siding around the entry, and horizontal wood siding in the gable ends.

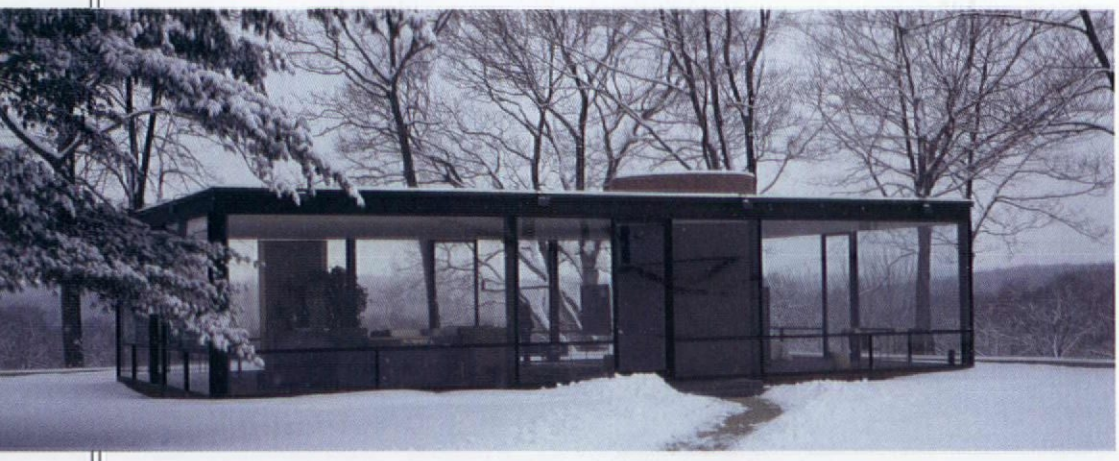
Window sashes were usually made of steel or aluminum rather than of wood and although double-hung sashes had not completely disappeared, metal casement, awning, and jalousie windows were used in many different combinations. Corner windows were commonplace and large picture windows, often the centerpiece of a three-part glazing ensemble, abounded. As one-over-one or two-over-two horizontal sash replaced traditional six-over-six panes, windows were broader than they were tall and less likely to be symmetrically placed, winding up anywhere there was a need for light or a view. Steel casements with traditional small panes (sometimes even diamond-shaped ones) also permitted large expanses of windows. Generally, though, street-front windows were smaller and placed higher on the walls than those at the rear of the house, where sliding glass doors or nearly wall-sized windows faced the increasingly important back yard and concrete patio.

CHILD-ORIENTED INTERIORS

On the interior, the colonial styles (more and more frequently called Early American) clung to traditional floorplans with center halls and separate dining and living rooms. For the most part, however, the houses of the 1950s favored moderately open floor plans, with living and dining areas flowing together. Kitchens were now often expanded to include informal family living spaces. This was the first child-oriented architecture in American history. The lack of servants, nannies, or nearby female relatives left housewives with heavy childcare and housekeeping burdens. It was hoped that open floorplans, big yards, efficient machinery, and homogeneous neighborhoods of young families (in which nearly all the mothers were at home) would lighten the burden. Perhaps with that goal in mind, bedrooms were usually set apart from the rest of the house and, in an increasing number of homes, parent's and children's quarters were located at opposite ends of the house.

To save floor space and to create the illusion of more room, entry halls and vestibules were often eliminated so that visitors came directly into the living room. Unnecessary partitions and doors, such as those between living and dining areas, were also omitted. Glass-enclosed Florida rooms or "living porches" at the rear of the house encouraged family activities in the back yard. Since rigid standardization of building materials and stock sizes was at the heart of postwar building efficiency, eight-foot ceilings became the norm. Interior trim was plain or omitted altogether.

The big news of these houses was not in the way they looked, but in what they contained. Bathrooms, while small, were easy to use and easy to clean because of plastic counters, built-in porcelain or enameled steel tubs and showers, countertops of plastic laminate, and floors of ceramic or asphalt tile, or nearly-seamless linoleum. Although more expensive, rubber tile was also available. And there were usually more bathrooms than in older houses. One full bath and a tubless powder room was a minimum requirement, yet two or even three baths were frequently found. Kitchens also changed. Although continuous linoleum or plastic countertops were well known and often used before the war, they became ubiquitous afterward. Overhead cabinets of wood or metal became standard. Gone forever were the



A study in contrasts: A Colonial Revival cottage with double-hung sash windows (above) goes the traditional route, while architect Philip Johnson's famous flat-roofed, glass home in New Canaan, Connecticut (left) is the quintessential modern house. In case you're wondering, the bathroom is located inside the circular stone section.

The pink trim on this Hagerstown, Maryland modern house would not have been unusual. Note the 1950s details of a flat roof, steel window sash, carport, and attached garage.

hodge-podge of cabinets, worktables, sinks, and stoves on porcelain legs. Walls and ceilings gleamed with glossy enamel paints in all the fresh new colors, generally somewhat softer than the primary hues of the '20s and the dark tones of the '30s and '40s. (Remember avocado green and harvest gold?) Work areas were well thought out and illuminated with recessed ceiling fixtures or flourescent tubes, undercounter lights, and big windows. Peninsula and island counters made work easier.

Clean-burning, closet-size, whole-house heaters were standard, and air conditioners soon became nearly so. This eliminated the need for the basement altogether or freed the space for other activities. Smaller laundry machines were generally moved to a more accessible space in first-floor utility rooms.

The car, which had become a de facto family member with the move to the suburbs, now took up a place of honor at the front of the house in its own room, a carport or attached two-car garage on the side of the house. Indeed, the carport (a descendant of the more stately porte-cochere) was perhaps the most typical feature of the postwar house. This versatile space wound up serving a multitude of purposes, from toddler's play yard to outdoor kitchen for the charcoal grill to storage area.

PREFABS OF THE FUTURE

Construction methods and materials were also undergoing change. The prefabricated house — particularly the prefabricated metal house — had been heralded as the wave of the future by architectural pundits during the long building hiatus of the Depression and war years. The most famous postwar name in the prefab metal building industry was Lustron, which manufactured an all-steel house that it boasted could be sold for $7,000 (although it turned out to cost $9,000). All interior and exterior surfaces, except for the aluminum window frames, were porcelainized steel. The radiant heating systems supplied with these houses were satisfactory in moderate climates, but was not adequate for colder temperatures due to the uninsulated concrete slab floors, minimal wall insulation, and single-glazed windows. A skilled crew assembled each house on site using 3,000 factory-made pieces. The procedure took 350 hours, more than twice the hoped-for time. Eventually, Lustron failed because of its inability to make the project profitable. Although they were not entirely maintenance free after all, owners tended to like the steel buildings.

In the postwar period as in other eras, the man-in-the-suburban-street didn't much care what the architects were arguing about. He just wanted his house — and quickly. He wanted it to look traditional but to act modern. He craved comfort, convience, and familiarity enclosed in a traditional building envelope with up-to-the-minute materials, kitchens, bathrooms, heating and cooling systems, insulation, siding, roofing, and windows. And he got what he wanted. Small as they were, postwar buildings were remarkably well-made and well-equipped. They took advantage of technology and materials to make up for the fact that America's already tiny servant class had now been siphoned off into factories, offices, college classrooms — and the middle class.

In Brookfield, Illinois, the roof, walls (interior and exterior), and ceilings of this prefabricated Lustron house are made of porcelain enamel-finished steel panels.

Photograph (bottom) by Thomas Fetters

RESTORATION PRODUCTS

Lead Testing Kits

by Lynn Elliott

ALONG WITH THE GROWING AWARENESS OF lead as a health problem, there's been a growth in the number of lead-testing products on the market. Here's a sampling of three different approaches to home testing:

Five toxic substances can be detected with Safer Home Test Kit.

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THE LEAD-CHECK SWABS TEST KIT IS a one-piece system that simplifies indentifying lead because the testing solution is contained within individual swabs. In order to mix the solution, the swab is squeezed at two points and then can be rubbed on a variety of suspect surfaces, including old china, pottery, and paint. The swab will reproducibly detect 2 micrograms of lead and will turn pink in its presence in approximately 30 seconds. A test confirmation card is included to double check the results. Although they cannot check for lead in water, the swabs are one of the few methods that can detect lead in dust. Available at hardware and home supply stores, Lead-Check retails for $10.99. For a list of distributors, contact HybriVet Systems, P.O. Box 1210, Dept. OHJ, Framingham, MA 01701; (800) 262-LEAD.

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IF YOU ARE CONCERNED ABOUT HEALTH threats in your home beyond lead, the Safer Home Test Kit, which contains five different products for testing lead, radon, carbon monoxide, ultraviolet rays, and radiation leakage from microwave ovens, is a comprehensive product. The lead alert kit employs a six-step system that provides enough materials for close to 100 tests. A mixture of "indicating" solution and "leaching" solution is placed on a swab, which turns pink in the presence of lead. The charcoal canister is a easy way to check the levels of radon in your home. Place the open canister in your basement for two to five days and then send it to a laboratory for analysis. The carbon monoxide monitor, which changes color when exposed to the gas, can be put in your car or home. The ultraviolet intensity meter card evaluates the effectiveness of sunglasses, windows, and sunscreens; the microwave oven tester detects radiation leakage. The kit retails for $49.95. For a list of distributors, contact DSK Safer Home Test Kit, 325 N. Oakhurst, Dept. OHJ, Beverly Hills, CA 90210; (213) 550-7600.

THE LEAD DETECTIVE

YET A THIRD PRODUCT IS THE LEAD Detective kit, which is based on a sodium sulfide solution. This system turns black to indicate the presence of lead and will detect it in paint down to 1%. The kit contains enough solution for 100 tests, disposable gloves, razor blades for chipping paint, tweezers, a magnifying glass, and an applicator tip for the test solution bottle. The Lead Detective costs $29.95, and is code-complying for Massachusetts. For a list of distributors, contact Innovative Synthesis Corporation, 45 Lexington St., Suite 2, Dept. OHJ, Newton, MA 02165; (617) 244-9078.

The Lead Dectective kit screens painted surfaces or paint chips for lead.

RESTORATION PRODUCTS

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A STORM'S BREWING

First used during the 17th century, weather glasses (also called storm glasses) are instruments that forecast the weather by the increase or decrease in atmospheric pressure. The 14" weather glass (shown left) consists of a hand-blown glass flask with a slender spout as the only opening, a mounting bracket, and a wooden plaque. When the flask is filled with water to an 1" above the spout's joint, the water will rise in the spout to indicate foul weather or drop in the case of fair conditions. Colored ink can be added to the water for a decorative effect. The weather glass costs $30. For information, contact Wind & Weather, The Albion Street Water Tower, P.O. Box 2320, Dept. OHJ, Mendocino, CA 95460; (800) 922-9463.

A weather glass, like this one, can accurately forecast weather changes 8 to 12 hours in advance.

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This lightning rod with 4" blue ceramic ball and bayonet ornament is appropriate for Victorian houses.

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Banners, such as this Swallowtail type, can be personalized with letters or numbers.

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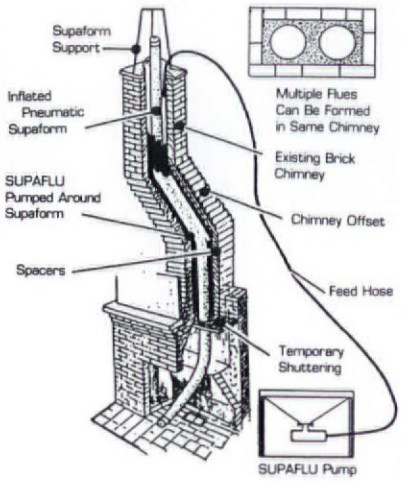

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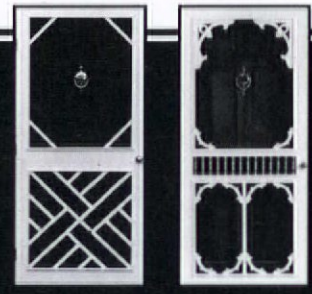

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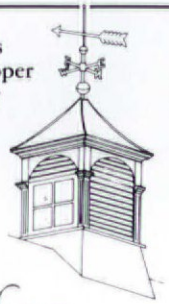

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- Window and door schedule.
- Building cross sections: cornice, fireplace, and cabinet sections when needed to help your builder understand major interior details.
- Framing diagrams that show layouts of framing pieces and their locations for roof, first and second floors.
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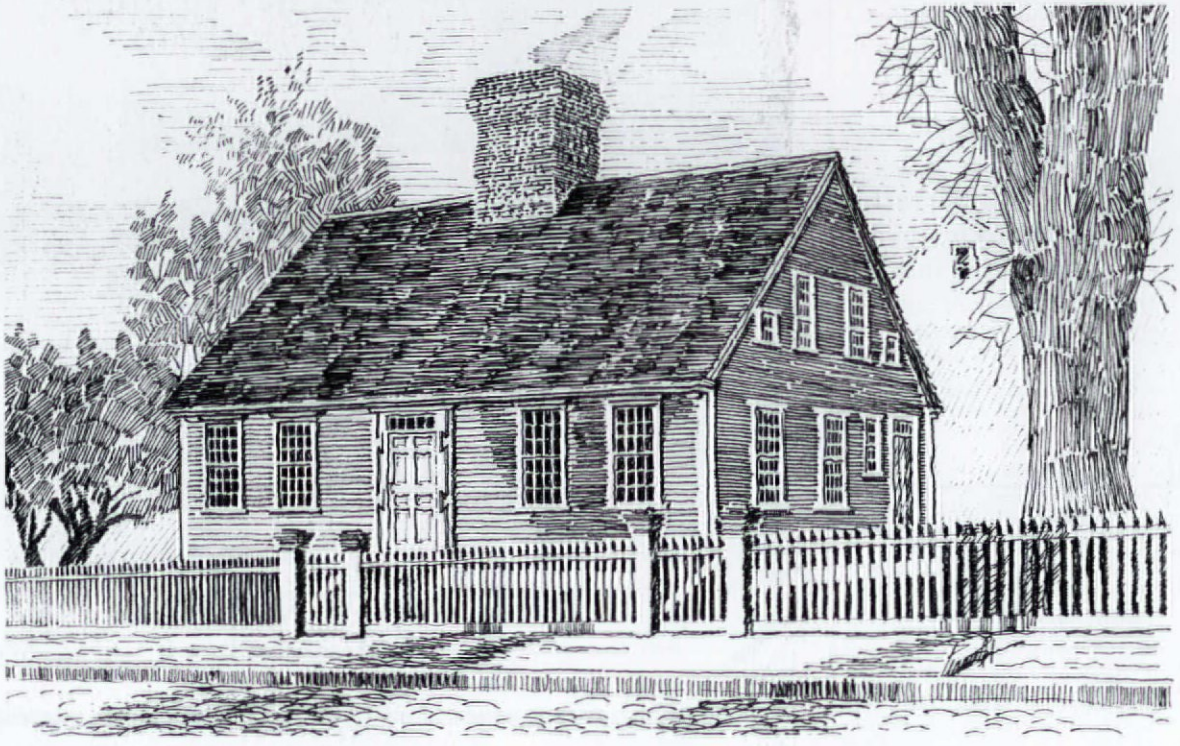
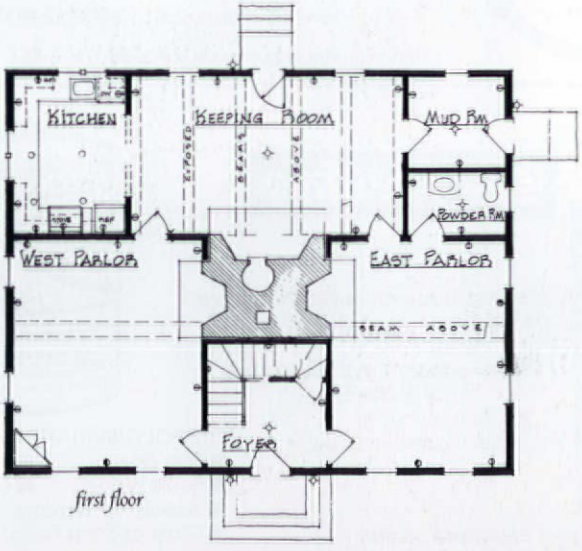


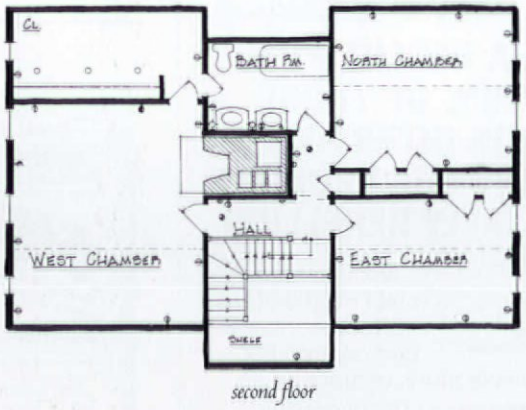
THIS 18TH-CENTURY COLONIAL VILLAGE CAPE IS A POPULAR HOUSE TYPE THAT dots the New England landscape. Attention to interior details is the hallmark of this design. Its traditional center-chimney plan features a keeping room with a brick bake oven, east and west parlors, and a front-stair hall. In addition to four Rumford fireboxes and a classic corner cupboard, the interior plans specify period mouldings, paneling, and mantels. A tasteful front entry with transom lights graces the exterior. Note the beaded clapboards and traditional cornice. Working drawings include a catalog of reproduction materials for producing the finest authentic period details.

Plan: LH-02-C

Costs: $400; $475 (*set of 5*); $520 (*set of 8*)
Square Footage: 2280 (*total*), 1280 (*first floor*), 1000 (*second floor*)
Ceiling Height: 8' (*first floor*), 8' (*second floor*)
Overall Dimensions:
Width: 32', Depth: 40'



first floor



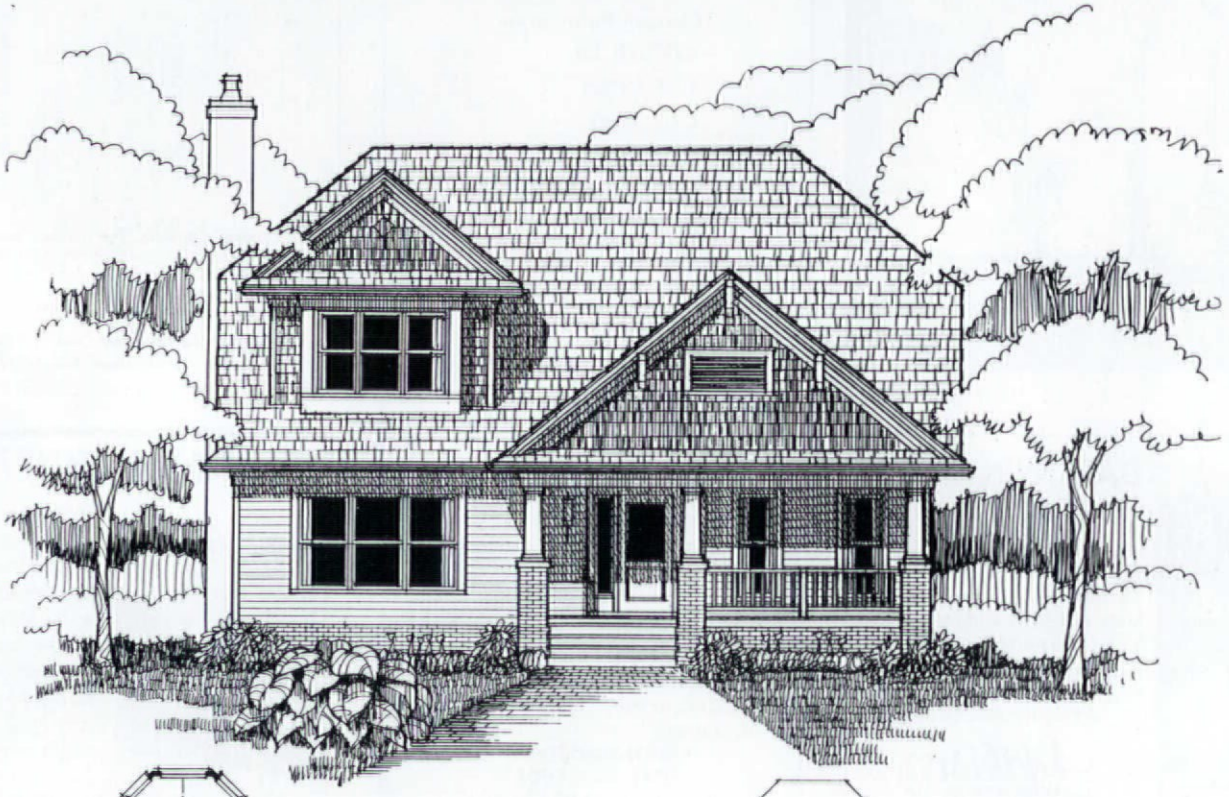
second floor

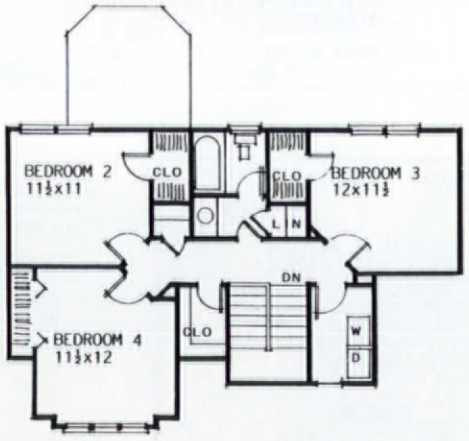
Arts & Crafts-Style Cottage

MANY READERS HAVE REQUESTED POST-VICTORIAN HOUSE PLANS AND this early 20th-century-style cottage is one of the best we've seen. Like the originals, it has low-pitched, clipped gables with supporting braces, clapboard siding, and a partial-width porch. The porch supports — columns on piers that continue to the ground level — are also typical. Although this house is under 2,000 sq. ft., the plan incorporates four bedrooms and well-proportioned living areas comfortably. The breakfast nook, which is accessible from the kitchen and the dining room, has a vaulted ceiling.

Plan: RT-01-P

Costs: $200; $260 *(set of 5)*; $310 *(set of 8)*
Square Footage: 1798 *(total)*, 1114 *(first floor)*, 684 *(second floor)*.
Ceiling Height 9' *(first floor)*, 9' *(second floor)*.
Overall Dimensions:
Width: 37', Depth: 39'.





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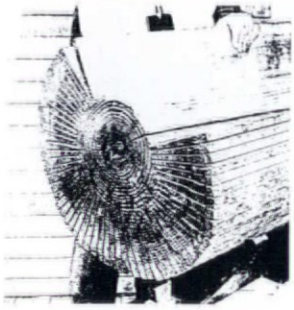

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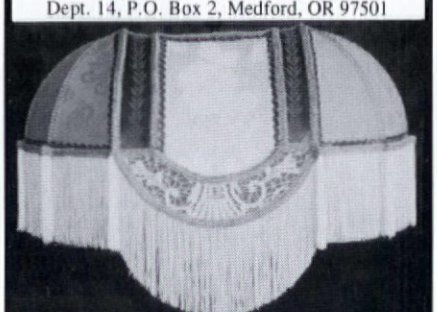

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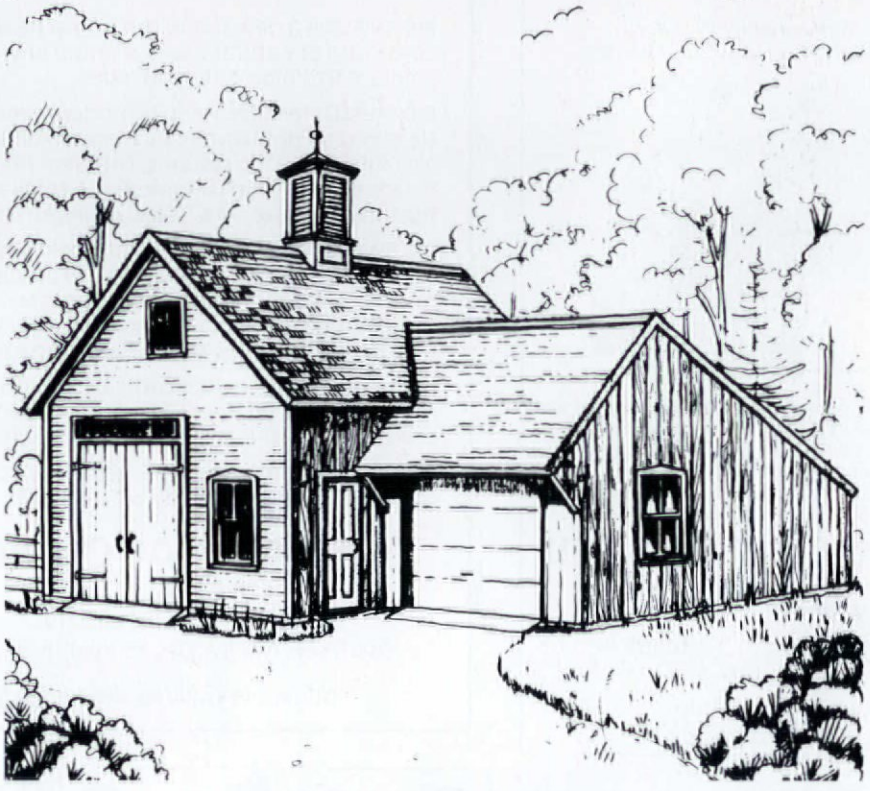

Plan: CD-06-G
Cost: $50
Square Footage: 78
Ceiling Height: 20' to ridge
Overall Dimension:
Width: 26', Depth: 30'

Equipment Shed

THE STRAIGHTFORWARD DESIGN OF THIS EQUIPment shed, with vertical board siding and a batten barn door, makes it an appropriate addition to a 19th-century landscape. The shed can fit a workbench for tools and large equipment, such as lawn tractors and snowmobiles. In the loft, there is more storage space for smaller items.

Plan: CD-07-G
Cost: $25
Square Footage: 192
Ceiling Height: 14' 10" to ridge
Overall Dimensions:
Width: 16', Depth: 12'

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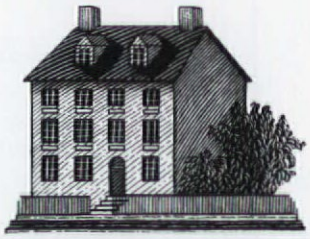
This special classified section is available to designers, consultants, contractors, and craftspeople offering hard-to-find restoration services. Rates are $200 for the first 40 words, $4.00 for each additional word. Logos can be printed on a space-available basis. The deadline for inclusion is the 1st of the month, 2 months prior to publication (January 1st for the March/April issue). Submissions must be in writing accompanied by a check.

Old-House Journal
Attn: Restoration Services
2 Main Street
Gloucester, MA 01930



EMPORIUM

Old-House Journal • July/August 1992

Real Estate

LACON, IL — 1900 Colonial on triple lot. 11 rooms, 5 bedrooms with transoms, 2-1/2 baths (master has gold-etched tiles and original fixtures). 4600 sq. ft., maple and pine floors, leaded and beveled glass, silk-painted dining room, 12' ceilings with columns, library and music alcoves, 2 onyx fireplaces. $189,000. Call (309) 246-3516.

SEARSPORT, ME — Restored circa 1820s Colonial Revival sea captain's house with ocean views. Residential and/or commercial use. 4 large bedrooms, 3 baths including whirlpool jacuzzi. Fireplaces, spacious formal dining room, den, eat-in kitchen. Attached big barn. $179,000. Call Jim Rose at (207) 548-6117.

BALTIMORE, MD — Victorian row house, 1880s Italianate style in Mount Vernon Historic District. 3 floors plus basement, 11 rooms, 4 bedrooms, 2 baths. Many original features including floors, mouldings, and fixtures. Major systems recently updated, restoration in progress, needs TLC. Owners must relocate. $114,500. Call (410) 547-1161.

PORT TOWNSEND, WA — One of Port Townsend's most charming bread and breakfast inns. Situated in the center of the Historic District with water and mountain views. Beautifully renovated inside and out with 6 bedrooms and five baths. Priced at $465,000 completely furnished. H.J. Carroll Real Estate, (800) 344-7199.

FORT BRIDGER, WY — 1800s 2-storey Victorian. Was part of original Army officer's quarter's. Must be moved off site. Needs major restoration. Price negotiable. Contact: Fort Bridger Historical Association, PO Box 112, Fort Bridger, WY 82933, (307) 782-3842.

NORTH FORK, LI, NY — New York State's oldest settlement. Late 1600s. 2 stories, 4 rooms, 4 fireplaces, central chimney and hall. Gutted with new roof and foundation. Shaded by giant buttonwood tree. $100,000. Call (516) 734-7474.

TAYLOR, TX — 2-storey 1903 Colonial. 5800 sq. ft. on 3 lots. 4 bedrooms, 4 baths. 4 fireplaces, working elevator. Antique fixtures, bevelled and stained glass windows, custom cabinetry in all rooms, and many more elegant features. Swimming pool, carriage house/garage with apartment. $350,000. Call (512) 352-8212 or 352-9324.

SAVANNAH, GA — Charming Victorian cottage. 2 bedrooms. Wainscotting in large kitchen and bath. Parlor with bay window. Carved front door and 4 beautiful carved oak mantels with beveled mirrors. Wrap-a-round porch. Extra storage. Azaleas and dogwood. Ideal for small business. $65,000. Call (803) 648-1390 after 5pm est.

BOSTON, MA — 6-family, antique gingerbread Victorian. Located on tree-lined street. Details, turrets, 3-storey dumbwaiters. 2 or 3 bedrooms, living room, dining room, kitchen with pantry in each unit. Live free with substantial positive cash flow. $229,000. Call (617) 523-7810 ext. 241.

BLOOMSBURY, NJ — Idyllic setting for today's country lifestyle. 3000 sq. ft., 18th-century, 10-room Colonial cape. Renovated barn boasts home office/studio plus abundant storage, 2 outbuildings, exquisite landscaping with specimen plantings. Minutes to I-78. $299,900. Call (919) 975-1194.

VERNON, NJ — Circa 1920 summer log cabin in small family-oriented lake community. 2 bedrooms, fieldstone fireplace, hardwood floors, cathedral ceiling, enclosed porch. 80x100 property bordering woods. 75 minutes to NYC. $41,000. Call (908) 322-8156.

ROCKPORT, MA — Converted 3500 sq. ft. barn to finish. Potential for large workshop or studio. Country kitchen with wood-burning stove. Oversized living room and master bed room with 15' ceilings, large windows and skylights with sunset view. Near beach, schools, farms, woods, and ponds. $179,000. Call (508) 546-2150.

PRINCETON, KY — Century-old restorable log house with 15 acres, 2 small lakes, meadows, and woods. Electricity, phone, county roads. For photos, contact: Dr. Jim Shrewsbury, 505 S. Jefferson, Princeton, KY 42445, (502) 365-6119.

LAKE VIEW TERRACE, CA — 3-storey Queen Anne. 7 bedrooms, formal dining room, 2 parlors, ornate plaster and mouldings. Small yard. Perfect for people who want ecology. No off street parking, near new subway. $299,000. Call Dale at (818) 899-2105.

NORFOLK, VA — Circa 1910 3-storey brick Federal with 3900 sq. ft. in outstanding condition. On waterfront in Ghent Historic District. 6 bedrooms, 4-½ baths, gourmet kitchen, a/c, and security. Near Eastern, VA medical complex. $445,000. Call (804) 640-0828.

STOCKTON, NJ — Small stone, 1740 house with spacious converted 1930 barn. On wooded and rolling 21 acres with waterfall and stream. Picturesque seclusion with semi-formal gardens. 5 miles from town. $330,000. Call (305) 296-1866.

DELLROY, OH — Two 1870s at Atwood Lake summer resort area. 2-floor on main drag, appraised $39,000. Cottage on crest of hill overlooking village, appraised $25,000. Unmuddled. Both would make lovely "Painted Ladies." Call (216) 937-6891.

GILROY, CA — Circa 1887 Queen Anne. County and city historical list. Approximately 3000 sq. ft. Large rooms, 11-1/2' ceilings, original gasaleirs in most rooms. Exterior painting almost complete. Being refurbished inside and out. Granny apartment completed. $290,000. Call (408) 848-8424.

BROOKLYN, NY — Restored 1896 4-storey townhouse. Original oak and cherry woodwork, 6 fireplaces, interior wood shutters, beautiful stained glass windows and skylights, country kitchen with Garland stove, large back yard. Loaded with details. Rental income. $425,000. Call (607) 967-8745.

DELAWARE COUNTY, PA — Circa 1880 Colonial farmhouse. 4 bedrooms, 4-1/2 baths. "Renovated" in the 1920s. Many lovely old-house features. 3/4 acre property backs into 600 acre arboretum. 30 minutes to Philadelphia. $239,500. Call (215) 891-0659.

NORTHEASTERN, OH — Circa 1850s dismantled Greek timber-frame home. 1-1/2-storey, 20 x 36. Completely tagged and drawings to reassemble. Includes flooring, doors, casing, cornice, baseboards, all framing material. Photos and floor plans available. Call Mark Havener at (216) 274-3210 or 274-3633.

ALBANY, NY — Circa 1780 Greek Revival. Selling for $158,900 or willing to trade for property in Princeton, NJ. 16 rooms, clapboard, post and beam, slate roof, original detailing, upgraded electrical, new kitchen, good mechanicals. Upstairs has been gutted. 6 acres, large maples, small creek, 2 barns. Call (518) 753-7576 or (609) 466-1982.

ST. CHARLES, IL — Victorian jewel. Carved front door with original brass hardware, handbell, and etched glass window. Plaster walls with crown mouldings and ceiling medallions. Antique light fixtures, large kitchen, romantic dining and living rooms, 3 bedrooms, 1 bath. Full basement with toilet and workshop area. Generous closet/storage space. $149,000. Call (708) 365-6354.

EMPORIUM

MANCHESTER, NY — Circa 1826 cobblestone. 11 rooms, 2-1/2 baths, formal dining room. Approximately 3800 sq. ft., deep windows, 2 staircases, new electric and copper plumbing. Very private with 5 acres. $199,500. For fact sheet contact: Box 302, Manchester, NY 14504, (716) 289-4166.

LEIPSIC, DE — Circa 1885 Victorian Gothic in fishing village near river, wildlife refuge. 2 stories, attic, porches added 1920s. 38x123' lot. Restorable. $15,000. Contact: S. Pratt, 2613 Hamill Ct., Virginia Beach, VA 23456, (804) 468-4561.

MOHAWK VALLEY, NY — Restorer's dream. 1840 unspoiled, hand-tooled limestone Greek Revival. Unique architectural features. Situated in the middle of 53 private acres overlooking the valley. Restorable Dutch barn. 7 miles from NYS thruway, 40 miles to Albany. $149,000. Call (914) 354-3905.

NORTHERN MI — 1895 historically-preserved Victorian mansion on National Register. An established B&B since 1989. 10 rooms, 4 bedrooms with baths and separate living quarters. Prime resort area. $195,000. Call Barb Richards at (616) 533-6111.

HOMER, NY — Unique commercial property. "The Old Firehouse" is listed in the National Historic Register. 1700 sq. ft., original brick, ample municipal parking, many possibilities (antique shop, boutique, deli, professional offices). Call Monique Richardson, Yaman Real Estate, at (607) 753-9644.

GRAFTON, MA — 1917 completely restored, 10-room craftsman-style home. French doors, fieldstone fireplace in living room, museum quality woodwork throughout. Spectacular-view kitchen with historically-accurate cabinets, 4-6 sun-filled bedrooms. 4-1/2 acres, stone walls, mature plantings. 50 minutes to Boston. Call (508) 839-9227.

GOSHEN, NH — Unique 1789 plank cape. 9 rooms, 4 bedrooms, 2 baths, 4 fireplaces. Restored with all modern conveniences. Large barn, utility building, well water, 21 acres with pond, brook, fruit trees, berries. Near skiing, golf, beach. Owner's sacrifice: $259,000. Call (603) 863-4881 or 863-2200.

S. PLAINFIELD, NJ — 1762-1792 Colonial. 3-4 bedrooms, 1-1/2 baths, great country kitchen, large bath with skylight. Beamed ceilings, ceramic tile and hardwood floors, beautiful brick and stonework. Not far from NYC. $179,000. Call (908) 753-7909.

PISCATAWAY, NJ — Restored vernacular farmhouse in nominated National Register Historic District. 1782 core (stone cellar, floor), 1880 exterior with bracketed crossgable and sawtooth frieze, and interior with centerhalls, woodwork, and hardware. 4+ bedrooms, finished attic, shop, rental apartment. 2 acres on river preservation area. $215,000. Call (908) 463-0624.

LANCASTER COUNTY, PA — 1720-1745, 4-floor stone house on 1 acre. Historic Register. Original features. 7 bedrooms, 3 baths, 3 apartments. Can be large mansion. 3 new furnaces, $20,000 heating system, new plumbing. $132,000. Call (717) 442-3075 or (416) 986-5148.

Gloucester, MA — Gallery on the Moors. Dramatic 1916 Tudor originally a theatre and art gallery. Minutes from Rocky Neck art colony and harbor. 4 bedrooms, office suite, 25' x 40' living room with balcony for your soliloquies. 1 acre. $399,000. Call (508) 281-2533.

MINE HILL, NJ — Turn-of-the-Century Victorian, totally restored. 3 bedrooms, large country kitchen, formal dining room, foyer with living room, large wrap-around porch with circular corner. 2-car garage, 3/4 acre, 300 acre park to roam. Call (201) 361-7460.

NASHVILLE, TN — 1912 Colonial Revival, perfect for bed & breakfast. 7 bedrooms, 4 baths, 6 fireplaces. Innkeeper's apartment, guest house. 2-½ acres. Minutes to Opryland, Convention Center, Music Row. Once owned by Opry founder. $265,00. Call (404) 416-7674.

DANIELSON, CT — Circa 1740 center-chimney Colonial. 8 rooms meticulously restored. 2 full baths, original wide pine floors, gunstock corners, exposed beams, 5 fireplaces. Terraced yard with perennial gardens. 30 minutes to Providence/Worcester. $159,900. Call (203) 779-3422 evenings.

HACKENSACK, NJ — Beautifully renovated 1906 American foursquare. Wrap-around lemonade porch, stained glass windows, parquet floors, new cherry kitchen, butler's pantry, 4 bedrooms, 2 baths, finished attic, 2-car garage. Easy NY commute. $195,000. Call (201) 489-8413.

WESTFORD, MA — 7000+ sq. ft., 1794 Colonial in excellent condition. 3600 sq. ft. carriage house, 7200+ sq. ft. antique barn. 2.3 acre buildable lot with grass tennis court. New boiler, electrical service and b&f alarm. Wrap-around porch/portcochere, 5 working fireplaces, inlaid hardwood floors, built-in icebox. Call Robert Parker at (508) 443-4933.

BARBOURSVILLE, VA — Circa 1913, Sears house, modified "Westly". 4 bedrooms, 2 baths, 4 porches. 2.5 acres with addition and small cottage. Tastefully renovated throughout. 16 miles from Charlottesville. $195,000. Call (703) 832-3700.

CATSKILLS, NY — 1850 Greek Revival farmhouse, 2 hours from NYC, on 10 wooded acres. 4 bedrooms, parlor, Colonial fireplace. Lovingly restored partially. Needs another lover of old houses to bring it the rest of the way. $100,000. Call (708) 869-1969.

LYNCHBURG, VA — "Belfontaine", circa 1885, restored Victorian. Historical home of Lynchburg mayor N. Manson. 3 bedrooms, 2-1/2 baths, French and Italianate detailing, fireplaces, porches, garage, rented cottage. Expansion possible. $285,000. ERA Hill City Realty, Shirley Mikkelson, (804) 237-6580 or 237-1239.

NYACK, NY — 1859 Victorian in pretty Hudson River town, 30 minutes from Manhattan. Great river views. Tin ceilings, natural woodwork, pocket doors, wraparound porch, wonderful old kitchen. Top floor converted to architect's office. 4700+ sq. ft. $445,000. Many other fine old homes available in all price ranges. Let me add you to my mailing list. Wright Bros., Kara Bergman, (914) 353-5810.

PLAINFIELD, NJ — 1890 Queen Anne Victorian in close-knit historic district. Distinctive wraparound porch, turret. Exquisite woodwork, 8' stained glass window, 4 fireplaces. New kitchens, baths, furnace, electrical system. 3 charming apartments, each appropriate for owner occupier. $249,000. Call (908) 561-0710.

ST. JOE, IN — 1860 Victorian manor. 9 rooms, 3 bedrooms, 2 baths, 10' ceilings, formal parlor with fireplace. Natural butternut and ash woodwork, pocket doors, updated furnace and electric. Large closets, floored full attic, transoms, chandeliers, iron fence. 3200 sq. ft. $85,000. Contact: Martin Loy, PO Box 227, St. Joe, IN 46785, (219) 337-5666.

Gloucester, MA — 1756 Colonial in historic district, 2 blocks from harbor with peaks at water and boats. 5 bedrooms. Suitable for home office, or convenient in-town living. 35 miles to Boston and Logan Airport. $179,000. Call (508) 283-9286.

For Sale

TUB & SINK — Sidefill clawfoot tub in excellent condition with original fixtures, showerhead unit, and curtain ring: $2000. Marble-vanity wall-hung sink with china basin and original faucets: $200. Contact: R. Shrode, 8320 T 123, Findlay, OH 45840, (419) 293-2857.

SLATE ROOF SHINGLES — 18" x 9". Red and gray. Several hundred available at 20¢ each. Call (513) 393-3793 after 6pm est.

PRE-1900S HOMESTEAD — With large house and 3 barns. Many good beams, lumber, and flooring. Many cut stones for recycling. Excepting bids for removal this year. Located in West Virginia. Call (914) 832-6248 weekends or (304) 623-9687 between 9 am and 11 pm weekdays.

POCKET DOORS — 6 panels, painted. 8'10" tall, 4'3/4" wide. No hardware. $125 for pair. Call (718) 979-3569.

ANTIQUE LAUNDRY STOVE — Cast iron. Model 632A King. $145. Call (513) 393-3793 after 6pm est.

SINK & STOVE — 1930s-period, deep double sink and electric stove. Call (301) 271-9931.

OVER-MANTEL SHELF UNIT — 1882, oak. 55" wide, 39" high, 8" deep. Mirror: 36" wide, 22" high. $400. Contact: C.J. Haughey, 17 Summit Road, Riverside, CT 06878, (203) 637-2131.

CLAY ROOFING TILE — Ludowici Celadon Conoscera (1890s) and French. Write: PO Box 1491, Skokie, IL 60076.

TIFFANY STUDIO WINDOWS — Magnificent, original, fully authenticated. Serious inquiries only. Call Rich at (718) 523-4274.

EMPORIUM

Antiques Magazine — 1966-90, plus others. 289 issues. An excellent reference source for antiques as well as architecture. Newsstand price per copy today is $5. Asking $200. Call (413) 245-7679 between 6:30 - 10 pm est.

Free to a Good Home — Roper enamel stove, circa 1920-30, with all parts. Needs some work (small amount of rust, one foot is broken but not missing). Call (202) 726-7930.

Rocker & Containers— Antique tufted, upholstered oak mission Stickley-era rocker. For hoosier cabinets: original glass spice bottles, and glass coffee, tea, sugar jars with aluminum lids. Photos on request. Call (717) 345-2130.

Pianos, Back Bar & Magazines — 2 elegant square grands: Chickering and Halleck-Davis, $2500 each. Walnut back bar: 8' wide, 9' high, with 4 lights, pink marble, mirror (69" x 50"), and brass latches, $2500. Complete Harper's: December 1850-November 1899, make an offer. Call (616) 646-9341.

Rare Tiles — 6" x 6" handmade, unglazed mosaic tiles, circa 1935. Persian, Ribbon, and Deco patterns. Crafted by Cuban artisan for former National Mosaic Tile of Mobile. 3000 never-used. Write: Box 1826, Columbus, MS 39703.

Gas Stoves — 1923 Aristocrat: 4 burners, 2 ovens, black graniteware interior, mint condition, $1500. 1940s Chambers: 3 burners, sunken crock with accessories, griddle/broiler, 2 ovens, great condition, $1000. 1940s O'Keefe & Merritt: 4 burners, chrome top, griddle, great condition, $1000. All are white porcelain. Call (303) 592-1944.

Miscellaneous — Ludowici mission roofing tile: about 7 squares, green, $500 sq. 5 foot clawfoot tub: refinish, $150. GA white marble slabs, $5 square foot Doors and window sash. Refinished oak mantel, $300. 1920s kitchen stove, $90. Call (404) 577-2621 or (912) 994-9225.

House Parts — 1875 Victorian bullseye woodwork in oak, mahogany, cherry, pine, original finish, bundled and numbered. Doors with transoms, carved mahogany window surround, complete oak staircase, cast-iron mantels, windows with weights and pulleys, some gingerbread. Call (812) 354-3512.

Doors, Cupboard & Chests — 1 pair of pine arched panelled doors, 9'5-1/2" x 22", $600. Pine Colonial corner cupboard, 7'6-1/2" tall with top glass paned door and 2 blind bottom doors, $750. Blanket chests and trunks, $50-$3500. A.C. Ellis, 113 Wokomis, Medford Lakes, NJ 08055.

Industrial Intercom Unit — 1930s era, tube-type with 2 large wall-mount speakers. 1940s galvanized steel "Dr. Pepper" cooler. Contact: Fink, 118 Madison St., Lynchburg, VA 24504, (804) 528-8872.

Roof Tile & Pool Table — Ludowici clay roof tiles in French, Norman, and Spanish styles. 1875 vintage Eclips-style Brunswick pool table, 4 x 8 inlaid. Call (612) 259-0294.

Bathtub Fixture — Turn-of-the-century, unusual fixture (faucet and shower attachment). Cleaned and polished. Photo available on request. $300 firm. Call (203) 795-4419.

2 Clawfoot Tubs — Early 1900s. 1 is full sized in excellent condition, $500. 1 is half sized in good condition but needs small repair, $150. Both have original faucets. Call (516) 757-5249.

Entire Inventory — Kitchen, bathroom fixtures, cabinets, interior/exterior doors, hardware, pine and poplar trim, leaded glass, etc. Civil War to 1940s. Lost my lease! $20,000 value for $12,000. Send S.A.S.E. to H.A.R.T., 7809 Loraine Rd., Cleveland, OH 44102.

Antique Chestnut Flooring — In beautiful condition. 80 miles north of NYC. Call (914) 234-7905.

Original Barn Siding — Beautifully weathered, 3/4" thick, 4" to 9" wide, 4' to 12' long. Contact E. Keith, PO Box 1048, Delran, NJ 08075, (609) 461-8837.

Removal For Salvage — Old barn 30' x 40', circa 1900. Authentic large hand-hewn pegged beams, plenty of weathered siding, and wide board chestnut flooring. Call (914) 526-3292.

Oak Staircase — With treads, risers, newels. 36" wide, 10" run, 8" rise, 7 steps, right turn landing, 7 more steps. $2500 or trade for 1875 mantel. Late Victorian double-door lock set, $250. Call (614) 258-4563.

Refrigerating Machine — General Electric, type DR-2, with round coil top. Circa 1930s. Form E-AC motor, single phase, 110v, 1/8 HP, 60 cyc, 2.5 amp. $250 or B.O. Mahogany RR station benches in parts. $150 or B.O. for lot. Call (609) 737-1801.

Wanted

Fellow Renovators — Currently renovating 1889 Victorian in Somerville, MA. Would like to meet other OHJ renovators in the area to share hints, horrors, and hellos, in addition to wonderful discoveries and accomplishments. Erskine Family, 15 Sycamore St., Somerville, MA 02143, (617) 628-8708.

Fir Door & Windows— 5-horizontal-panel, preferably not painted, light stain. 24" x 72" overall, 15" x 8" panels. Also 3- and 2-unit "piano" windows. Contact: Glenn Carson, Rt. 1 Box 187, Chaseburg, WI 54621, (608) 483-2579.

Restoration Work — Qualified restorationist looking for occasional part-time work on interesting projects in the Northern Westchester, NY area. Reasonable rates or would consider a barter arrangement. Call Howell at (914) 628-2446 evenings.

Stock Certificates — Send or sell "worthless" stock certificates. We enjoy the beautiful engravings and use them to accent period rooms. Write: Rosanne & Jim Triano, 1113 Kinsington Rd., Grosse Pointe Park, MI 48230.

Light Shades — Frosted "cut star" style. 4" gas, 2-1/4" electric, and 3-1/2" stalactite. Will consider singles or sets. Have photos of shades I'm trying to match up. No repros please. Contact: Bob Seager, 308 S. Main St., Plainwell, MI 49080, (616) 685-9661.

Columns & Door — Pair of interior columns, 6-8' tall, quartersawn oak or birch. Raised-panel door, 38" x 84" quartersawn oak. Contact: Jon Westby, 1971 Kenwood Parkway, Minneapolis, MN 55405, (612) 374-2245.

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Furniture — 1950s Herman, Miller & Knoll furniture designed by Charles Eames, Isamu Noguchi, and George Nelson. Letters, photographs, furniture catalogs, design magazines from 1945-1959, and Russell Wright wooden bowls. Call (301) 699-9248.

Dining Room Table — Large and ornate for 1895 Victorian home. Send pictures and price to Melvin Pierce, Rt. 2 Box 15A, Scranton, ND 58653.

Books & Publications

Sautter House Five — Wallpapers of a German-American Farmstead. Text, color/b&w photos of wall coverings, 1860s-1916, Nebraska's pioneer period. Historically documented. 1983, 33pp., pbk., 8-1/2 x 11, $8.50 + $2.50 shipping. Bulk rate available. Historical Society of Douglas County, PO Box 11398, Omaha, NE 68111, (402) 455-9990.

Events

Preservation Workshop — July 5-17, in Cape May, NJ. 2 week-long courses in historic preservation. Contact the Mid-Atlantic Center for the Arts, 1048 Washington St., Cape May, NJ 08204, (609) 884-5404.

Gold Rush Days Art & Craft Show — July 18 and 19, in Victor, CO. Contact: Victor Chamber of Commerce, PO Box 83, Victor, CO 80860.

American Crafts Festival — July 4, 5, 11, and 12, at Lincoln Center for the Performing Arts, NYC. Write to: American Concern for Art and Craftsmanship, 226 E. 83rd St. #38, New York, NY 10028.

Great American Home Awards — The deadline for the National Trust for Historic Preservation's Great American Home Awards contest is August 31. Recognizing outstanding residential rehabilitation efforts in exterior, interior, additions, landscape design and bed & breakfasts. Both homeowners and professionals may enter. For entry forms, (202) 673-4283.

Renovation Courses — Starting August 2 and August 16. A hands-on approach is used in both studio and site work, using student projects and an actual building under renovation. Contact: Yestermorrow School, PO Box 344, Warren, VT 05674, (802) 496-5545.

Stencil Artisans League Convention — July 30-August 2 at the Sheraton Inn Syracuse in Syracuse, NY. 94 classes will be offered in stenciling, faux finishes, marbling, and wall glazing. Write: Stencil Artisans League, Inc., PO Box 920190, Norcross, GA 30092.

Classified ads in The Emporium are FREE to current subscribers for one-of-a-kind or non-commercial items, including personal house or property sales. Free ads are limited to a maximum of 40 words. Free ads and b&w photos are printed on a space available basis. For paid ads (real estate through agents, books & publications, etc.), rates are $125 for the first 40 words, $2 for each additional word, $75 for a photograph. Deadline is the 1st of the month, two months prior to publication. For example: January 1st for the March/April issue. All submissions must be in writing and accompanied by a current mailing label for free ads, or a check for paid ads.

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"Could you imagine watching the daily progress on your neighbor's house (above) as they create a giant nose? I wonder what is on the inside." asks Glenn Vernon of Pittsburgh, Pennsylvania. "The flying buttresses (left) are some poorly guided attempts to modernize this fine old structure," comments Bette A. Axe in Youngstown, Ohio. "It makes my toes curl when I think about the changes."

Pox Proboscis

BACK IN 1991, WE CALLED ATTENTION TO appendage-itis, a not-so-rare example of infectious remuddling. Now a new strain has been spotted: pox proboscis. So far, this modernist malady seems to afflict only American Foursquares on the East Coast. It is easily identified by one or more buttresslike beaks protruding from the facade. A most severe case is the giant red snout on this Pennsylvania Foursquare (*above*) that mystifies onlookers as to its purpose. A slide for the kiddies, perhaps? Only the nose knows. The c.1900 Foursquare (*inset*) — also in Pennsylvania — began suffering from this post-Victorian plague in 1980, when it came down with multiple symptoms (and a bout of shingles). One house doctor suggests radical schnozz-ectomy as the only restorative treatment. Hopefully, this architectural infirmity will just run its course.

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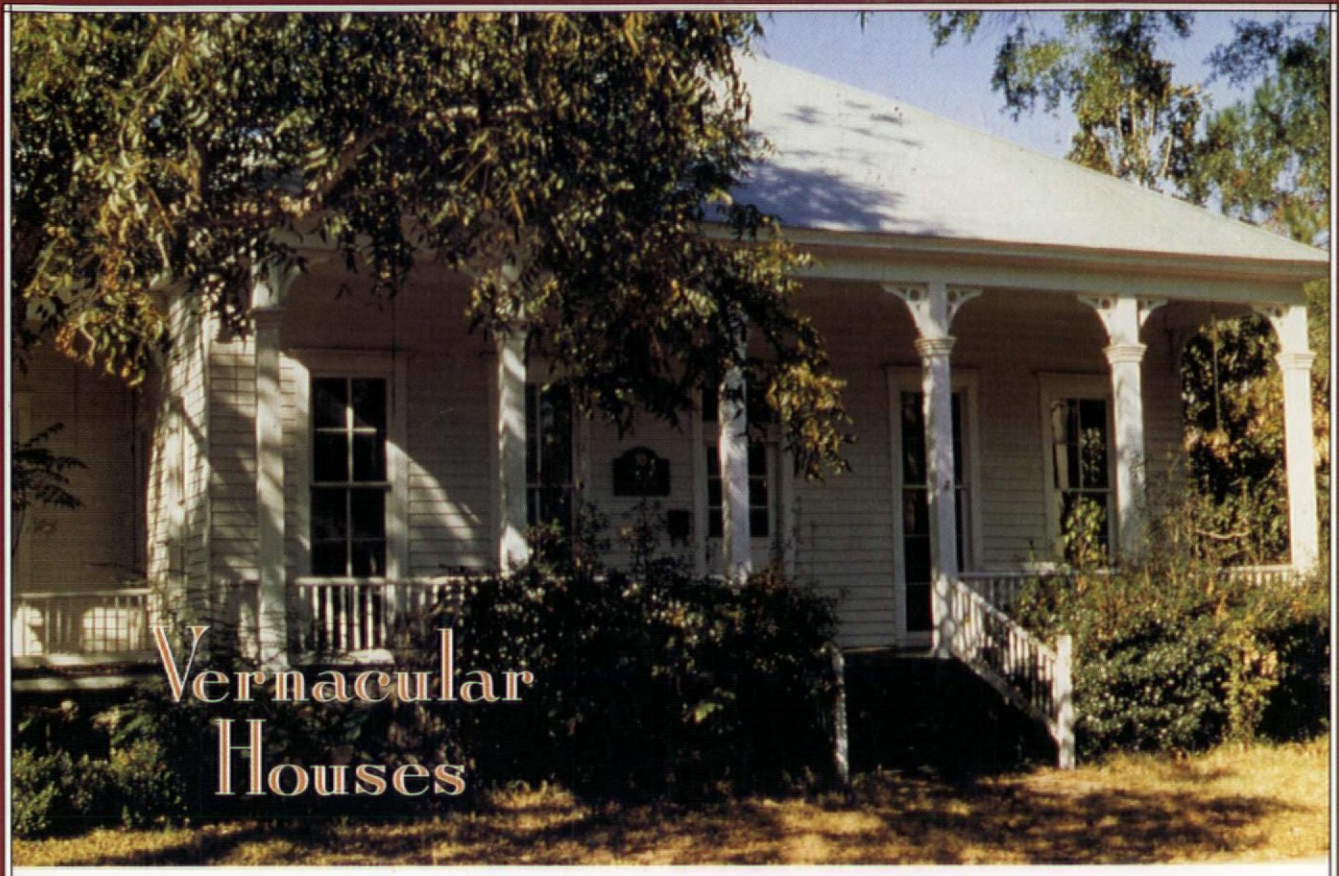
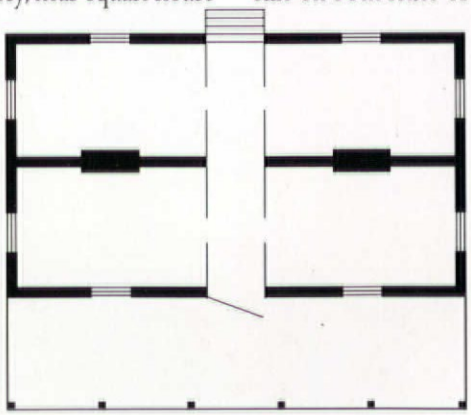


Vernacular Houses

Pyramidal Cottages of the Gulf Coast

FOUND FROM TEXAS TO FLORIDA AND IN THE MISSISSIPPI river valley, the pyramidal or hip-roofed cottage is the most picturesque vernacular house along the southern Gulf Coast states. The single-storey, near-square house with hip roof is a basic folk form and was typically graced with a full-facade porch, ornamented by Victorian spindle or jigsaw brackets and porch balusters. The exteriors are simple, lapped-wood siding of cypress, heart pine or cedar. In later years, novelty siding also became popular.

These cottages were commonly built in port towns between 1870 and 1888 as rental units or single-family homes and were often inhabited by sailors, bar pilots, tugboat captains, and their families. A single-family home has a narrow side hall with three to four small rooms to one side. Duplex versions have more than one entrance door, each opening into a room. The floor plan is symmetrical with rooms of equal size on both sides of the house, but lacks a hall.



The typical single-family pyramidal cottage, as shown in top photo, has a center hall floor plan with two chimneys (above).

Influenced by both French Colonial and Caribbean building traditions, pyramidal cottages were an efficient response to the Gulf Coast's nearly tropical environment. The cottages were built two to three feet above grade on brick piers. This cooled the houses and raised them above flood waters, snakes, and other pests. However, many have been severely altered and are almost unrecognizable or are threatened with demolition.

— DIANA JARVIS GODWIN
Navarre, Florida

OLD-HOUSE JOURNAL